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# Beyond decarbonisation: How geopolitics is reshaping climate investments in Asia





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- **Strategic necessity rather than pure environmental ambition is reshaping climate investing in Asia.** Energy security, supply-chain resilience and food vulnerability are accelerating the green transition and becoming central to the capital allocation framework.
- **Climate-linked investment opportunities are commercially grounded.** Structural demand, falling clean energy adoption costs (from technological advancements), reconfigured supply chains, and regulatory tailwinds are widening the investable universe beyond traditional “climate capital”.
- **Private capital can play a leading role.** Governments can set the broad direction and catalyse investments, but constrained public balance sheets limit their ability to fund the green transition alone.
- **The more attractive prospects may be beyond the most crowded segments.** Mid-market businesses across renewable energy value chains, industrial decarbonisation, the circular economy, mobility value chain and services, as well as sustainable agriculture which offer clearer scale and stronger growth, are best captured by investors with classic growth-equity discipline and deep sector engagement.
- **Successful execution matters more than policy narrative.** The strongest outcomes from this multi-decade opportunity will come from businesses with sound unit economics, disciplined valuations and capable management where decarbonisation acts as a commercial growth accelerant rather than a substitute for fundamentals — investments that would be compelling even without the climate overlay.

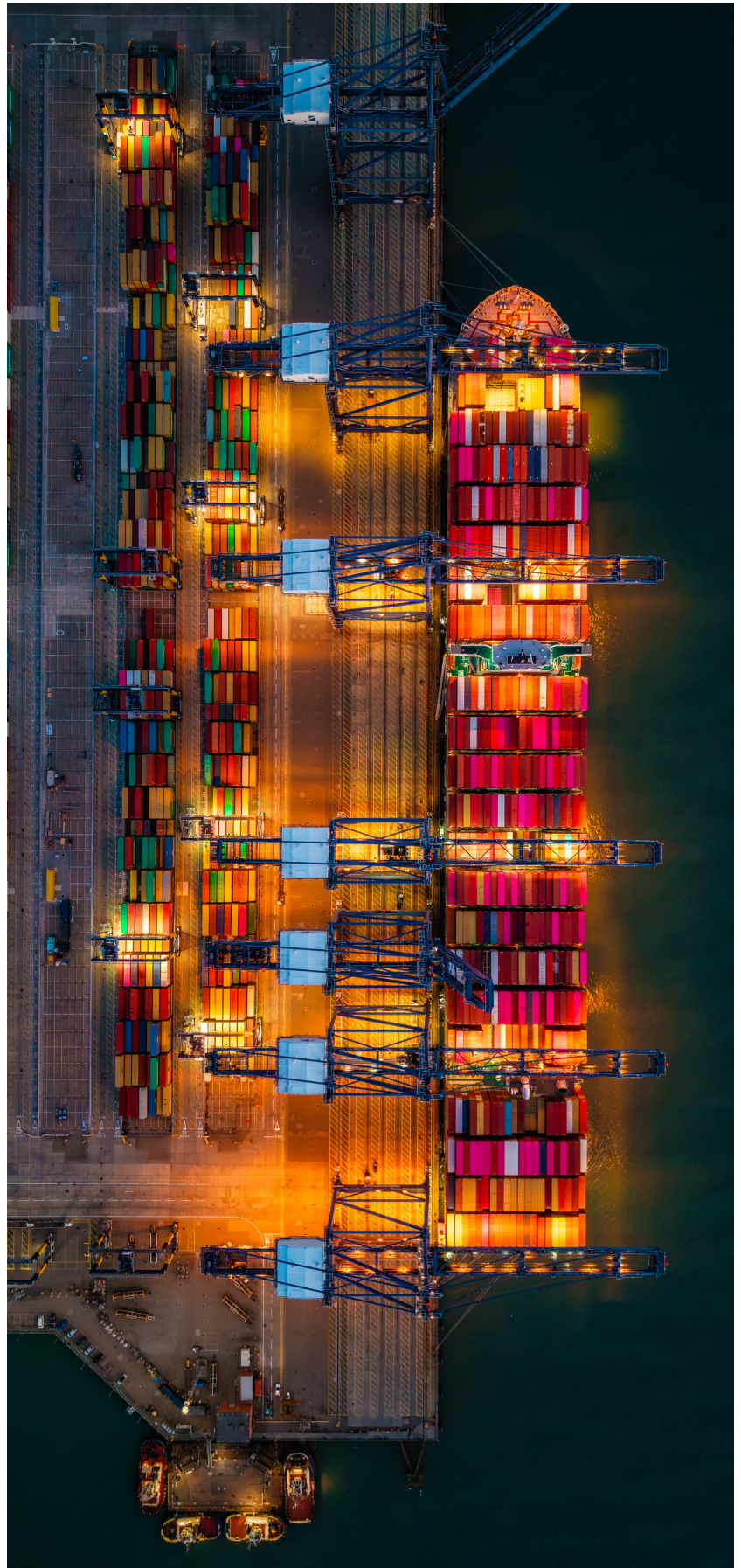
# The shift no one priced in

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A new geopolitical reality is unfolding across Emerging Asia – defined by energy insecurity, supply chain fragmentation, and rising food vulnerability. These forces are reshaping national priorities and capital allocation in profound ways and market participants are rapidly adapting to this new reality.

What was once framed as a climate transition has become something far more consequential: a structural and economic reorganisation driven by strategic necessity, not environmental ambition alone. Governments and corporates around the world, particularly in trade-reliant economies such as India and Southeast Asia, are accelerating the green economy not always because they want to but increasingly because they have to. Energy import dependence, carbon border taxes, and supply chain resilience have made the transition a competitive imperative.

This transforms climate-linked sectors from policy-driven themes into commercially grounded opportunities that are underpinned by structural demand, cost competitiveness, and regulatory tailwinds. And it opens a set of investment opportunities that look fundamentally different, and potentially more attractive, from what most investors typically associate with “climate capital.”



# Converging factors of resilience and security, supply chain reconfiguration, and more stringent standards are rewiring capital

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Three interlocking geopolitical dynamics are driving structural demand across Asia's climate-linked sectors. What makes this moment distinct is the simultaneous convergence of these dynamics — creating national and commercial urgency that policy ambition alone never could.

## Resilience: Energy and food security are now national priorities

Southeast Asia is expected to account for a quarter of global energy demand growth by 2035, with electricity demand growing at ~4% annually<sup>1</sup>. Many of these economies remain critically dependent on imported fossil fuels — a vulnerability laid bare by the 2022 energy price shocks and now compounded by ongoing geopolitical instability. This reality is already driving energy diversification with ASEAN targeting 45% renewable power capacity by 2030<sup>2</sup> and India targeting 500 GW of non-fossil capacity by 2030, with roughly half already achieved<sup>3</sup>.

What is underappreciated is how decisively the economics have shifted. In India, solar tariffs have fallen to ~USD 0.03/kWh<sup>4</sup>. In parts of Southeast Asia, solar power is now at or below new coal generation costs<sup>5</sup>. On a similar trend, lithium-ion battery costs have fallen by ~90% since 2010, approaching the USD 100-150/kWh threshold for grid-scale viability<sup>6</sup>.

Intuitively, the energy transition in this region is being driven by cost and security, which makes it far more compelling than policy-dependent transitions elsewhere. It also means the opportunity set extends well beyond power generation assets into the industrial and commercial layers of the energy value chain.

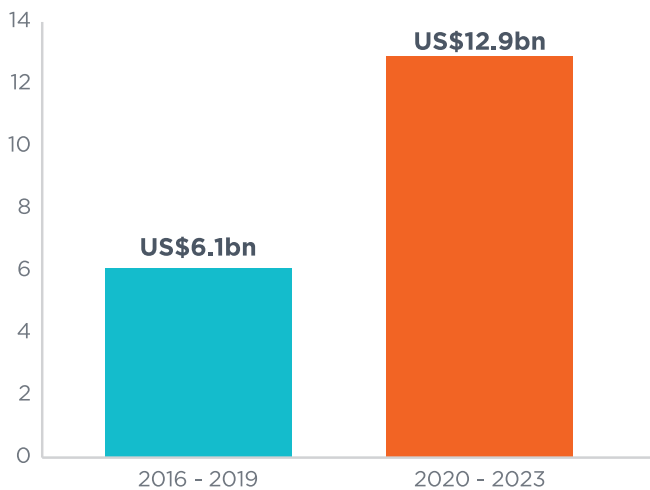
In the same vein, food and resource security are rising on the policy agenda. Climate volatility directly impacts crop yields and supply predictability, amplified by the fact that India and many Southeast Asia countries are net importers of key agricultural inputs such as fertilisers. Agriculture, waste, and biomass are being repositioned as strategic sectors necessary for domestic self-sufficiency; though investors should note that policy ambitions in the region have occasionally outpaced implementation, making it important to focus on businesses where the commercial case holds independent of government incentives.

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1. International Energy Agency — Southeast Asia Energy Outlook 2022 / 2024
  2. <https://www.businesstoday.com.my/2025/10/16/asean-targets-45-renewable-power-capacity-by-2030/>
  3. <https://www.pib.gov.in/PressReleaseIframePage.aspx?PRID=2165645&ref=official-press.com&reg=3&lang=2>
  4. <https://www.pv-tech.org/india-approves-us0-03-kwh-solar-tariffs-launches-new-tendering-regulations/>
  5. <https://zerocarbon-analytics.org/energy/coal-vs-renewables-asean-energy-crisis/>
  6. <https://about.bnef.com/insights/clean-energy/battery-pack-prices-fall-to-an-average-of-132-kwh-but-rising-commodity-prices-start-to-bite/>

## Fragmenting supply chains creating new industrial champions

China+1 is not a wholesale relocation but a structural diversification of manufacturing into India and Southeast Asia. Since 2022, announced greenfield FDI into China have reduced by two-thirds<sup>7</sup>; whilst over the same period, FDI into Southeast Asia consistently exceeded US\$200b annually, which is 50% higher than the previous decade's average<sup>8</sup>. Chinese manufacturing FDI into ASEAN itself also doubled from ~\$6.1bn (2016-19) to ~\$12.9bn (2020-23)<sup>9</sup>. In India, the country has become the third-largest recipient of greenfield FDI.

### Chinese manufacturing FDI into ASEAN doubled



Source: <https://fulcrum.sg/has-chinas-great-relocation-helped-southeast-asia-industrialise/>

The second-order effect matters more for investors than the headline: as production footprints shift, so does demand for localised energy solutions, waste management, industrial services, and transportation

infrastructure. The companies best positioned to capture this are often the mid-market operators with deep local relationships, specialised capabilities, and the ability to serve both domestic and multinational clients, very often the segment of the economy that is most underserved by institutional capital.

Of course, this phenomenon carries its own complexities. For example, Chinese overcapacity in key segments — particularly EV components, solar equipment, and batteries — is simultaneously flooding Southeast Asian markets, compressing margins for domestic manufacturers in hardware-exposed categories. This makes positioning critical: we believe that the opportunity favours service businesses, platform operators, and specialised industrial companies with differentiated offerings rather than commoditised manufacturing.

## Decarbonisation is becoming mandatory capex

Companies today are increasingly required to invest in decarbonisation for the right to operate, access markets and stay competitive. For example, carbon-linked trade policies such as the Carbon Border Adjustment Mechanism (CBAM) in Europe, are adding compliance costs for exporters where businesses without established sustainability systems face genuine competitive disadvantages. This is converting decarbonisation from a voluntary exercise into mandatory industrial capex, spurring demand for services, equipment, and solutions providers across the value chain.

7. <https://www.mckinsey.com/mgi/media-center/asias-new-roles-amid-the-fdi-shake-up>

8. <https://www.edb.gov.sg/en/business-insights/insights/why-southeast-asia-has-attracted-strong-fdi-inflows-from-advanced-manufacturing-to-the-digital-economy.html>

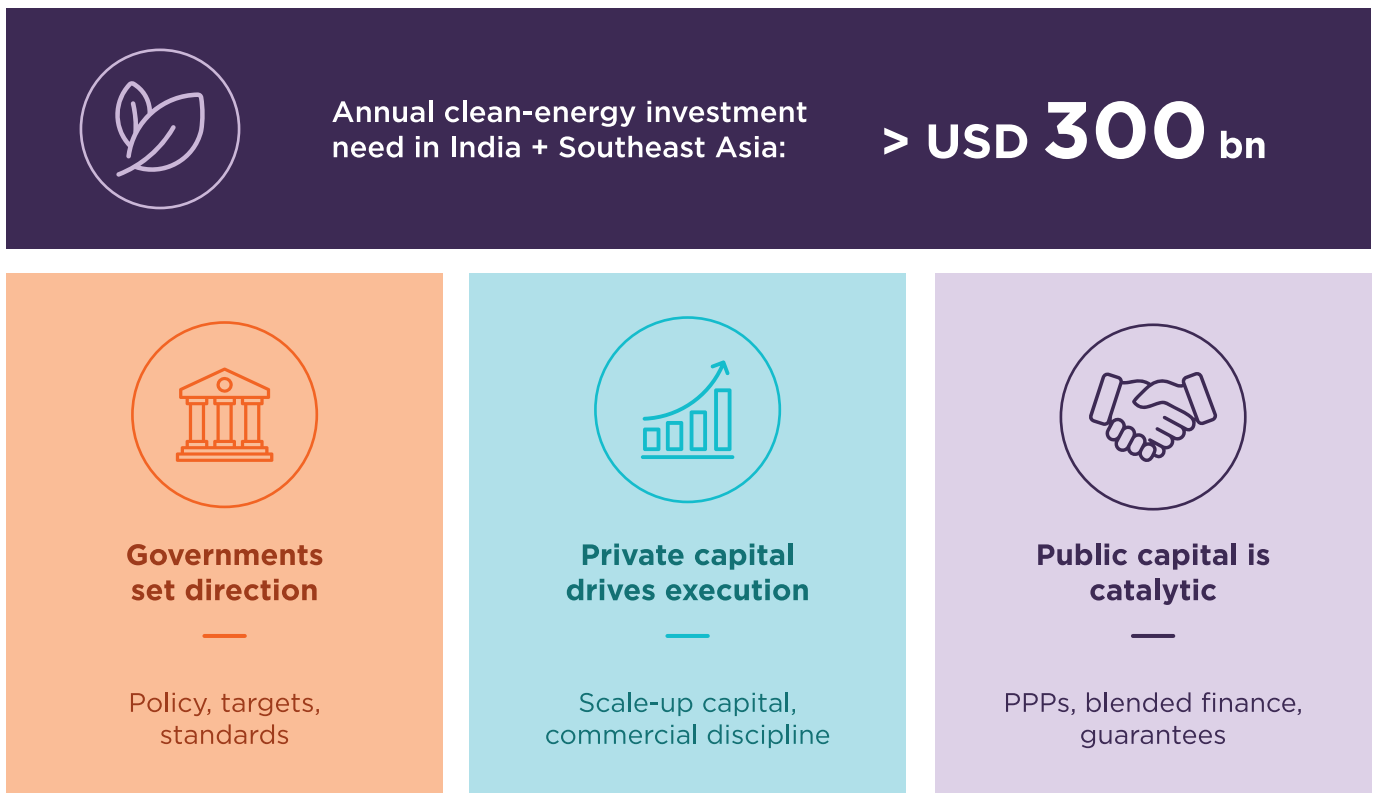
9. [https://fulcrum.sg/has-chinas-great-relocation-helped-southeast-asia-industrialise/#:~:text=The%20impact%20of%20China's%20investment,US\\$8.5%20billion%20in%202016.](https://fulcrum.sg/has-chinas-great-relocation-helped-southeast-asia-industrialise/#:~:text=The%20impact%20of%20China's%20investment,US$8.5%20billion%20in%202016.)

# Private capital at the centre

While policy ambition is accelerating, public balance sheets are not keeping pace. India and Southeast Asia alone require over ~USD 300 billion of annual investment in clean energy<sup>10,11</sup>, and that is only one segment of the broader transition. Many ASEAN economies face elevated debt-to-GDP levels post-COVID, amidst competing development priorities in healthcare, education, and infrastructure.

The implication is clear: governments will set direction, but they cannot finance the transition alone. Even where public capital is deployed, it is increasingly catalytic — structured to crowd in private investment through blended finance, public-private partnerships (PPPs), and guarantees. The energy and industrial transition in Emerging Asia will be private capital-led.

## Emerging Asia's green transition is capital intensive but private capital will drive execution



For illustrative purposes

This creates a structural opportunity but also a question of how different pools of capital can most effectively participate. The answer depends on where each investor's comparative advantage lies.

10. [https://www.oecd.org/content/dam/oecd/en/publications/reports/2022/10/clean-energy-finance-and-investment-roadmap-of-india\\_a9979593/21b6e411-en.pdf](https://www.oecd.org/content/dam/oecd/en/publications/reports/2022/10/clean-energy-finance-and-investment-roadmap-of-india_a9979593/21b6e411-en.pdf)

11. <https://www.iea.org/news/southeast-asias-role-in-the-global-energy-system-is-set-to-grow-strongly-over-next-decade>

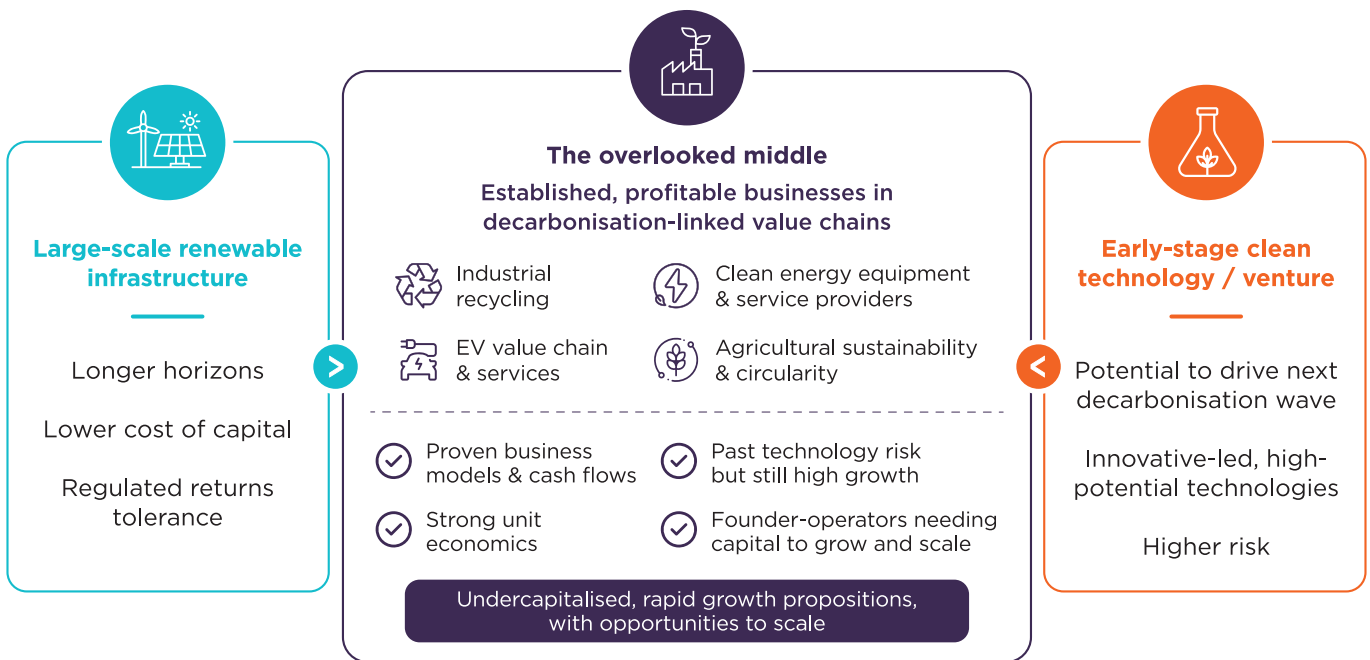
# A broadening opportunity set

The climate investment opportunity in Asia has historically been associated with two dominant categories: large-scale renewable energy infrastructure and early-stage clean technology. Both play essential roles in the transition. Infrastructure capital, with its longer horizons, lower cost of capital, and tolerance for regulated returns, is critical for financing the generation buildout. Venture capital serves an equally important function in incubating the technologies that will drive the next wave of decarbonisation.

But between these two well-served categories lies an opportunity set that is growing rapidly

and remains relatively undercapitalised: **established, profitable businesses operating in decarbonisation-linked industrial and commercial value chains.** These are companies with revenues typically in the \$20-100M range, proven business models, and strong unit economics — operating in sectors like industrial recycling, EV value chain & services, clean energy equipment & service providers, as well as agricultural sustainability & circularity. These companies are past the technology risk stage but still in their high-growth phase, often run by capable founder-operators who need institutional capital and governance support to scale.

## Underappreciated opportunities in established mid-market companies



For illustrative purposes

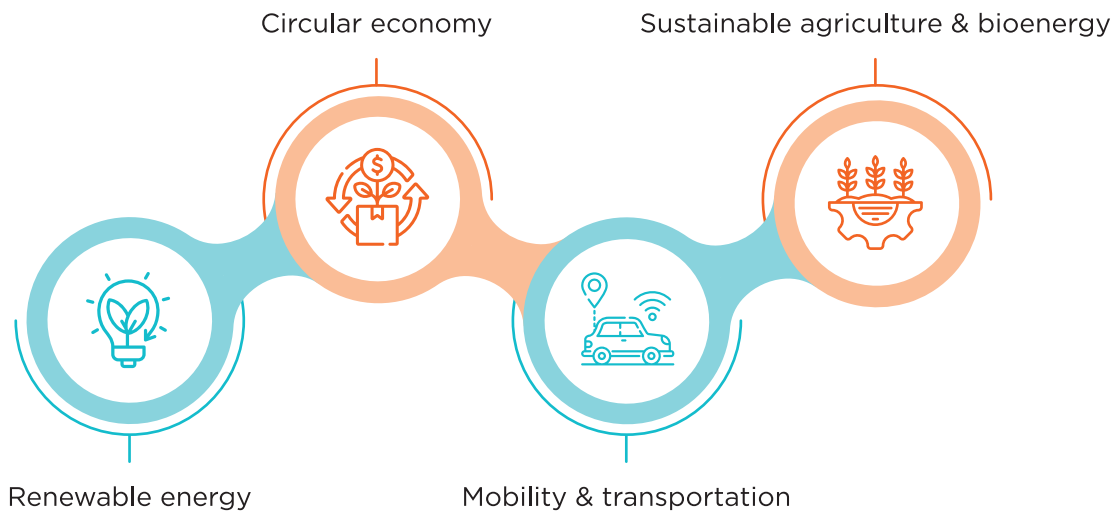
This segment sits at the intersection of commercial private equity and climate investing, precisely where the two disciplines mutually reinforce each other. These businesses benefit from decarbonisation tailwinds (growing customer demand, regulatory support, preferential financing) while offering the cash flow, margins and return profiles that commercial growth equity investors look for.

The challenge is that finding and underwriting these opportunities requires deep on-the-ground presence, sector expertise, and the willingness to engage at a level of granularity that macro-level thematic investing typically does not. It requires, for example, understanding the unit economics of pyrolysis oil conversion ratios or the route optimisation algorithms behind corporate transport platforms and not just the top-down market sizing.

# Where the opportunities are emerging

These dynamics are accelerating growth across four key sectors, each offering differentiated entry points for investors who combine climate conviction with commercial rigour.

## Identified emerging opportunity areas



For illustrative purposes

### Renewable energy: Value chain depth over generation scale

As renewable energy capacity scales across Asia, core generation assets are increasingly subject to tariff compression, competitive auctions, and limited differentiation. This is a natural maturation of the sector, and it is creating attractive infrastructure-grade investments for specific pools of capital.

For growth equity investors, the more compelling opportunities are deeper in the value chain in areas such as equipment and component manufacturers, storage integration, industrial decarbonisation technologies, and energy management services, where value is defined by performance, reliability, and customer outcomes rather than lowest cost per kilowatt-hour. These segments benefit from higher barriers to entry, stronger customer stickiness, and the ability to capture premium margins as corporates across the region prioritise energy security, cost savings, and compliance with evolving carbon regulations.

### Circular economy: Where industrial logic meets waste streams

India and Southeast Asia combine abundant feedstock, low-cost processing, existing recycling ecosystems, and strengthening regulatory tailwinds — creating an environment where circular economy models are not only environmentally necessary, but economically competitive at scale. Indonesia and Malaysia alone produce hundreds of millions of tonnes of palm-related biomass annually. Across the region, industrial clusters in textiles, palm oil, and chemicals generate concentrated waste streams that offer opportunities for reuse, recycling, and waste-to-energy.

But waste volume alone does not translate to returns. What separates compelling opportunities from interesting narratives is the same thing that distinguishes good businesses in any sector: reliable supply chains, consistent product quality, long-term customer relationships, and defensible market positions.

Consider the end-of-life tire recycling sector in Thailand, where roughly half of all waste tyres are still improperly disposed and ~80% of industrial energy use remains fossil fuel-based<sup>12</sup>. The leading operators in this space such as Pyro Energie<sup>13</sup>, have built defensible businesses characterised by strong market position, attractive growth, and healthy margins. Through pyrolysis, waste tyres are converted into pyrolysis oil, recovered carbon black, and wire scrap — feedstocks that displace fossil-derived inputs for major industrial customers' circularity commitments.

With international certifications like ISCC PLUS, these businesses are transitioning from industrial fuel suppliers to strategic circular economy partners. The combination of market leadership, recurring blue-chip customer revenue, regulatory tailwinds from incoming Extended Producer Responsibility (EPR) legislation, and expansion into higher-value distilled products creates a compelling growth story alongside significant decarbonisation impact. The investment case would hold even without the sustainability overlay — which is precisely what makes it durable.

### Mobility & transportation: Decarbonisation in overlooked places

The EV narrative in Asia is well-established. Significant amounts of capital have flowed into vehicle OEMs, battery manufacturers, and charging infrastructure — rightly so, as electrification of transport is a critical decarbonisation pathway.

But there is a parallel opportunity that receives far less attention: the **services and platforms layer** that decarbonises existing

transportation systems without requiring a wholesale fleet replacement. In markets like India, corporate employee transportation alone moves millions of workers daily across major cities. These commutes typically run through fragmented vendor networks with low vehicle occupancy, redundant routes, and minimal data visibility. The carbon footprint is significant, but the decarbonisation pathway is surprisingly capital-light: it requires software, route optimisation, demand aggregation, and operational discipline, all of which improve economics while reducing emissions.

The leading platforms in this space such as Routematic<sup>13</sup>, are achieving remarkable growth trajectories — by consolidating fragmented multi-vendor corporate transport into single managed networks. Their technology engine improves vehicle occupancy and eliminates redundant trips through dynamic routing. In parallel, they progressively integrate electric vehicles where the unit economics support it, using their demand visibility to de-risk EV deployment and support higher asset utilisation. The result is a classic platform business: high switching costs, improving margins at scale, a technology moat, and a massive addressable market that is still overwhelmingly informal. The decarbonisation impact through avoided emissions from higher occupancy, optimised routing, and fleet electrification, is a structural tailwind, not the sole investment thesis.

These businesses represent the kind of decarbonisation opportunity that hides in plain sight: not glamorous enough to attract headline capital, but offering precisely the combination of growth, margins, and defensibility that experienced growth

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12. Source: DEDE (Thailand Energy Situation Report 2023).

13. Note: References to specific companies for illustration purposes. It does not constitute any recommendation. Views are subject to change without prior notice.



equity investors prize. The real risks of such businesses are no different from other sectors and typically relate to execution, currency and exits – risks that experienced investors can navigate through valuation discipline, conservative underwriting, diversified exit strategies, and a focus on businesses that do not rely on government regulation and incentives.

### **Sustainable agriculture & bioenergy: From farm to fuel**

Across the region, agricultural systems are under pressure from erratic weather patterns, water stress, and rising input costs – driving demand for solutions that stabilise yields and improve resilience. This is accelerating adoption of climate-resilient inputs, precision irrigation, and digital farm management tools that enhance productivity while reducing resource intensity.

At the same time, the abundance of agricultural waste creates a parallel opportunity in bioenergy and circular models where waste can be converted into biomass fuels, biogas, or other value-added products. The investable opportunity lies in businesses that operate at the intersection of agricultural supply chains and energy production, capturing value across multiple stages while supporting more resilient food and energy systems. As with every sector, the filter that matters most is not the size of the addressable market but whether the specific business generates compelling returns on capital at the unit level.

# What separates outcomes from narratives

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The climate transition in Emerging Asia is creating a multi-decade investment opportunity. That much is broadly recognised. What ultimately determines outcomes and separates strong returns from the inevitable disappointments, is where and how capital is deployed.



## Unit economics first

Before any macro thesis, the fundamental question is whether a business generates attractive returns on capital employed. Revenue growth in a hot sector means nothing if contribution margins, working capital dynamics, and capital efficiency do not work at the unit level. The best climate investments are businesses that would be compelling even in a non-climate context — where the decarbonisation angle is complementary rather than a substitute for commercial fundamentals.



## Valuation discipline

Climate investing has not been immune to the valuation premiums that periodically inflate Emerging Market growth investing. The most reliable path to returns is investing at reasonable multiples into market-leading businesses with defensible positions and proven profitability, a similar approach that the best growth equity investors globally have typically followed.



## Management over macro

In Emerging Asia, the management team is the investment. The companies that generate the strongest outcomes have capable, aligned founders who have built real businesses. The value-creation work is specific, deliberate and institutional - strengthening finance functions, building robust reporting systems, refining go-to-market strategy, and preparing the business for a range of exit outcomes.



## Decarbonisation as commercial outcome

The most durable climate investments are those where decarbonisation and value creation are one and the same, where a company reduces emissions because it improves operational efficiency, because its customers demand it, or because regulation makes the alternative more expensive. When the climate outcome is commercially self-sustaining, it does not depend on continued subsidies, evolving carbon prices, or investor sentiment.



# A multi-decade opportunity

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The climate investment landscape in Emerging Asia is undergoing a fundamental structural shift. It is no longer driven solely by environmental ambition but by strategic necessity across both public and private sectors.

Fiscal realities are redefining how this transition will be financed - governments will set the direction, but private capital will drive execution. Together, these forces of strong policy tailwinds, robust structural demand, and a sustained capital gap, underpin a compelling multi-decade investment opportunity.

Within this landscape, a growing segment of established, profitable, climate-linked businesses across India and Southeast Asia are reaching an inflection point — ready for institutional capital that can support the next phase of their growth while maintaining the discipline that sustainable value creation demands.

For investors willing to look beyond the most visible and well-capitalised segments of the transition, the opportunity is substantial. The question is not whether private capital has a role to play as it clearly does, it is whether investors will deploy it with the commercial rigour the opportunity demands.

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