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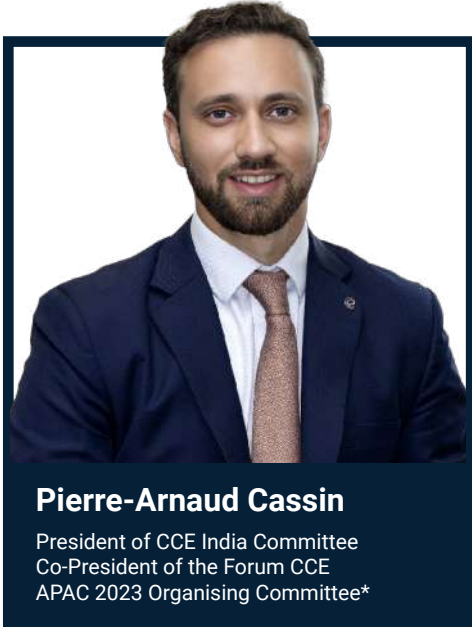


# *Future* ASEAN SUSTAINABLE CITIES



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# Foreword



**Pierre-Arnaud Cassin**

President of CCE India Committee  
Co-President of the Forum CCE  
APAC 2023 Organising Committee\*

The Asia-Pacific region continues to emerge as a central force in the shifting global landscape, driving around 50% of the world's GDP growth. Anchored between the world's two most populous nations, China and India, the region is shaped by increasing economic integration, evidenced through diverse trade agreements and shared development initiatives.

This year's French Foreign Trade Advisors APAC Forum in New Delhi focuses, among other topics, on exploring trends in Technology and Innovation, plans for Cities of the Future, and the evolving dynamics of consumer behavior in the Asia-Pacific region.

The present study on the future of sustainable cities in ASEAN, undertaken within the framework of the APAC French Trade Advisors Forum and carried out by Eurogroup Consulting, captures emerging trends in the ASEAN markets and offers actionable insights for businesses looking to engage with this dynamic region.

ASEAN exemplifies a growing focus on sustainable urbanization within the developing Asia-Pacific, emphasizing the challenge of balancing rapid growth with inclusive and environmentally responsible practices. Across the region, cities are undergoing transformative changes, driven by infrastructure projects and real estate development, which hold the promise of long-term sustainability while addressing challenges such as climate vulnerabilities and the demands of rapidly growing populations.

In this context, the development of smart cities has emerged as a key trend, with urban hubs increasingly adopting advanced technologies and sustainable designs. These cities aim to enhance residents' quality of life, optimize resource use, and build resilient infrastructure. By integrating digital solutions such as energy-efficient systems, waste reduction strategies, and efficient transportation networks, these urban centers are setting new benchmarks for urban planning while addressing the unique pressures of rapid urbanization. This trend underscores the region's commitment to creating cities that are economically vibrant, socially equitable, and environmentally sustainable.

Wishing you all success in your ventures within APAC's promising landscape.

\*The French Foreign Trade Advisors (CCE - les Conseillers du Commerce Extérieur de la France) is a network of business leaders and international experts who support and promote French companies operating internationally by providing advice, support, training, and promotion.

# Introduction



Southeast Asia is undergoing a profound transformation as its cities adapt to the twin imperatives of rapid urbanization and sustainability. With a population projected to surpass 527 million in urban areas by 2050 (up from 334 million in 2020), the ASEAN region faces unprecedented challenges and opportunities in shaping the future of its cities.



From bustling megacities to emerging secondary urban hubs, the region is at the forefront of a high-speed, high-intensity shift that demands bold innovation, collaborative governance, and targeted investments to create sustainable, inclusive, and resilient urban environments.

The future of ASEAN cities is being shaped by key trends that highlight the region's drive for sustainability. From the integration of renewable energy in urban infrastructure to the rise of smart urban mobility solutions, Southeast Asia is embracing transformative technologies to enhance urban living. Initiatives like green architecture, waste-to-energy solutions, and data-driven urban planning are not only addressing environmental challenges but also unlocking new avenues for business and investment. Smart city technologies, digital twins, and AI-driven systems are rapidly becoming essential tools to optimize resources, manage growth, and improve quality of life.

However, the road ahead is not without challenges. Climate change poses significant risks,

with rising sea levels, floods, and extreme weather events threatening urban resilience. Infrastructure deficits, social inequalities, and the environmental toll of rapid growth underscore the urgency for comprehensive, forward-looking strategies. Despite these obstacles, Southeast Asia's commitment to sustainability is evident in its shift towards cleaner energy systems, expanded public transport and smart mobility solutions, green buildings and infrastructure, circular economy practices, enhanced climate resilience, biodiversity protection, and investments in social development to foster inclusive and equitable cities.

For businesses, these challenges are accompanied by immense opportunities. ASEAN's commitment to sustainable development and its transition towards greener cities offer fertile ground for companies that align their strategies with the region's sustainability agenda. From green energy and smart mobility to circular economy solutions and eco-conscious consumer products, the potential to contribute to and benefit from Southeast Asia's urban

transformation is vast. The ASEAN region is open for business, offering a dynamic environment for companies ready to innovate and grow.

This study provides a comprehensive analysis of the context, challenges, and trends shaping the future of ASEAN sustainable cities. It also highlights the business opportunities that lie within this transformation, offering insights to guide investments and strategic decisions. By understanding and embracing the unique dynamics of Southeast Asia's urban evolution, stakeholders can position themselves as key contributors to a more sustainable and prosperous future for the region.

As ASEAN cities step into this era of transformation, the need for collaborative action, innovative solutions, and sustained investment has never been greater. Whether through advancing renewable energy, fostering inclusive urban policies, or leveraging smart technologies, the time to act is now to navigate and capitalize on the exciting potential of ASEAN's sustainable urban future.

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# Executive Summary

Southeast Asia's rapidly urbanizing cities are at the forefront of a transformation shaped by sustainable development imperatives, green technological advancements, and rising awareness. The region's ongoing economic growth and commitment to sustainability present expanding opportunities for businesses to invest and operate in this diverse and dynamic market, driving solutions that support greener, more inclusive urban development.



By 2020, half of Southeast Asia's population—334 million people—lived in urban areas, a number expected to reach 527 million by 2050. While major Tier 1 cities remain key economic hubs, Tier 2 cities are emerging as powerful growth drivers. By 2030, secondary cities (with populations ranging from 200,000 - 2Mn people) are projected to account for over 40% of ASEAN's GDP. The region's burgeoning middle class is another catalyst, set to grow from 29% of the population in 2010 to 65% (472Mn people) by 2030, driving demand for modern housing, consumer goods, and sustainable lifestyles. Southeast Asia's economic fundamentals are robust, with a combined GDP of US\$3.8Tn in 2023 and projected annual growth of 4.6% through 2029, outpacing the global average of 3.2% for the same period. With healthy debt levels and youthful, tech-savvy populations, ASEAN economies are well-positioned to sustain their momentum as global growth engines.

However, this rapid growth will place immense pressure on cities across the region to balance economic development with sustainability. Urban infrastructure—already strained in many areas—must be expanded to accommodate surging populations, ensuring adequate housing, transportation, and public services. Energy demand, expected to account for over 25% of global growth by 2035, continues to rise sharply, with the energy mix still heavily reliant on fossil fuels. This dependency presents a critical challenge for transitioning to renewable energy sources while simultaneously meeting the needs of growing urban populations. Environmental issues such as deforestation, pollution, and rising CO2 emissions are intensifying. In 2020, ASEAN contributed 6.5% to global emissions levels and is responsible for some of the fastest growth in rates worldwide.

Southeast Asia, home to nearly 20% of the planet's plant and animal species, faces an urgent challenge to defend its biodiversity, with accelerating habitat destruction threatening up to 42% of species by the end of the century and intensifying pressure on natural resources. Climate risks further amplify the urgency of urban resilience, as four out of the ten global cities most at risk from rising sea levels are in Southeast Asia, underscoring the immense challenge of building adaptive infrastructure capable of withstanding natural disasters and protecting vulnerable populations. Achieving inclusive growth also remains a critical challenge, as wealth is concentrated, leaving a significant share of urban residents in precarious living conditions with limited access to housing, basic services, and economic mobility. To secure a sustainable urban future, cities must implement bold, integrated approaches to planning, governance, and investment.



# 8 Trends Driving the Future of Sustainable Cities in Southeast Asia

## Trend 1



### Powering the Future: Southeast Asia's Transition to Greener Energy

Southeast Asia's energy landscape is diversifying, driven by ambitious renewable energy targets and evolving policies. Solar energy, hydropower, and emerging technologies like green hydrogen and carbon capture are transforming the energy mix. However, fossil fuels remain dominant, presenting challenges for decarbonization. Financing gaps and harmonized policies are key to success. Investments in energy efficiency, electrification, and regional cooperation, such as the ASEAN Power Grid, are crucial for enabling sustainable transitions.

## Trend 2



### Building Tomorrow: The Rise of Green Architecture in ASEAN

Green architecture is addressing the environmental challenges of traditional buildings, which account for 37% of global CO2 emissions. Trends include adopting sustainable materials, smart technologies, and bioclimatic designs to improve energy efficiency. Some cities are leading the adoption of green building certifications and retrofitting old infrastructure, setting benchmarks for sustainable development. High costs and regulatory disparities still hinder broader adoption, but technological innovations and financial incentives are paving the way for greener urban spaces.

## Trend 3



### From Congestion to Connection: The Evolution Towards Hybrid and Smart Urban Mobility

Rapid urbanization has strained Southeast Asia's transport infrastructure, worsening congestion and pollution. Solutions include expanding MRT and BRT networks, advancing electric vehicles, and promoting shared mobility platforms. Efforts to integrate AI for traffic management and seamless transport experiences are emerging. Infrastructure funding remains a key challenge, with US\$8.4Tn needed by 2030 for sustainable mobility solutions.

## Trend 4



### Cleaner Cities, Clearer Waters: Advancing Waste and Water Management through Circular Economy Practices

Urbanization is increasing waste generation and water demand, pressuring outdated management systems. Circular economy practices, such as waste-to-energy projects and water recycling, are emerging across the region. Policies to reduce plastic waste and improve clean water access are gaining traction. However, poor infrastructure and limited public awareness slow progress, highlighting the need for modern systems and stronger public-private partnerships.



**Trend 5**

## **Weathering the Storm: Strengthening Climate Resilience Across ASEAN**

Southeast Asia faces acute climate risks, including rising sea levels, typhoons, and floods. Some countries invest heavily in coastal defenses and disaster preparedness, while others focus on ecosystem restoration or community-based resilience projects. The deployment of climate strategies remains uneven, requiring greater investment, coordination, and scalable solutions to enhance regional adaptation.

**Trend 6**

## **Livable Urban Futures: Building More Inclusive and Quality-of-Life-Focused Cities**

Governments are increasingly prioritizing social equity through investments in affordable housing, education, and healthcare. Comprehensive social housing programs, upgrades to informal settlements, and integration of green spaces are steps toward more inclusive urban living. Accessibility improvements in public services also reflect progress. However, much remains to be done to address inequalities and ensure all urban residents benefit, but these efforts mark a positive shift toward more equitable and livable cities.

**Trend 7**

## **Data in the City: Integrating Urban Planning, Engineering, and Data for Sustainable Cities**

Urban planning in ASEAN is increasingly integrating data and technology to optimize resources and enhance resilience. Smart city initiatives, such as real-time traffic management, energy optimization, predictive urban planning, and digital twins, are gaining momentum in leading cities, showcasing their potential to transform urban living. The deployment of these technologies remains yet nascent in most countries, with limited reach beyond pilot projects. Partnerships and investments in smart city technologies are crucial for scaling these efforts and bridging the technology gap across urban areas.

**Trend 8**

## **Rising Green Awareness: How Southeast Asia's Consumers and Society Embrace Sustainability**

Sustainability is becoming a priority for ASEAN consumers, with over 70% valuing eco-friendly products and practices. Trends include green e-commerce, reusable solutions, local sourcing, zero-waste stores, biodegradable packaging, and digital tools like carbon footprint trackers. The sharing economy and plant-based diets are also gaining traction. Public awareness campaigns, subsidies, and clearer regulations are essential to continue fostering sustainable consumption practices and behaviors across the region.



# Recommendations for Advancing ASEAN Sustainable Cities of the Future



## Recommendation 1

### Localize to Thrive – Build Strategic Partnerships and Trust at the Local Level

- **Conduct Deep Market Research and Align with Regional Agendas** to understand local markets and align strategies with ASEAN sustainability priorities.
- **Strategic and Lasting** to enhance credibility and market access.
- **Co-Create and Innovate with Local Stakeholders** to design tailored solutions and foster innovation for regional challenges.
- **Invest in Understanding Cultural Nuances** to build trust and avoid missteps
- **Build Local Capacity** to empower local teams for sustainable outcomes.



## Recommendation 2

### Demonstrate Technology – Showcase Real-Life Solutions Driving Value

- **Showcase Proven Expertise and Demonstrate Business Impact** by highlighting real-life, at-scale projects that emphasize feasibility, scalability, and measurable outcomes.
- **Emphasize Value Creation** by building a compelling narrative that highlights the financial, environmental, and societal benefits of your solutions, with clear ROI and efficiency gains.
- **Focus on Technology and Hybrid Solutions** by blending global best practices with local adaptations.
- **Invest in Demonstrations and Pilots** to deliver live demos, pilot programs, and interactive exhibits that showcase tangible impacts and scalability.
- **Invest in Marketing** to promote your solutions through targeted campaigns, innovative experiences, media engagements, and trade expos.



### Recommendation 3

## Collaborate for Impact – Work in Ecosystems and Influence Change

- **Work in Ecosystems and Engage in Multi-Stakeholder Initiatives** by fostering collaboration with business, governments, NGOs, academia, technology providers, and local communities to co-create impactful sustainability solutions.
- **Hunt in Packs** by forming partnerships with local and international companies to strengthen collective positioning and develop joint go-to-market strategies.
- **Be Connected and Influential** through participation in forums, trade associations, and government-led initiatives to influence in shaping the sustainability agenda.
- **Contribute to Shaping Standards and Advocate for Regional Cooperation** by participating in policy discussions, supporting sustainability normalization, and promoting cross-border collaboration to address shared challenges.
- **Provide Thought Leadership and Global Expertise** by publishing whitepapers, sharing benchmarks, and hosting events that inspire and support local implementations.



### Recommendation 4

## Unlock Opportunities – Leverage Extensive Financing and Support Tools

- **Access Diverse Financing Options** to secure funding from banks, private equity, venture capital, international donors, and blended finance models to support project growth.
- **Leverage ESG and Green Finance Trends** to attract investors by positioning your company as an ESG leader and exploring funding mechanisms like green bonds and carbon credits.
- **Engage Local and Multilateral Institutions** to partner with local banks, development banks, and regional organizations for concessional financing and technical assistance.
- **Capitalize on Business Development Platforms** to gain visibility, foster partnerships, and scale operations through trade forums, industry expos, and government initiatives.
- **Combine Financial Support with Technical Expertise** to strengthen proposals by demonstrating feasibility, presenting ROI, and aligning with stakeholder priorities.





# Is There a Path to Sustainable Urbanization in ASEAN?

This chapter explores the context and challenges of sustainable urbanization in Southeast Asia, highlighting its rapid urbanization boom, strong economic growth, and surging energy demand. It examines persistent inequalities, threats to biodiversity, climate change impacts, and the growing role of sustainability governance in ASEAN, emphasizing the urgency of balancing rapid growth with sustainable transitions.

## Challenge 1

# Addressing the Challenges of Rapid Urbanization



Urbanization in Southeast Asia has evolved from ancient trade cities like Angkor and Malacca into modern megacities. The colonial era spurred port-based growth, while post-independence industrialization in the mid-20th century accelerated rural-to-urban migration. However, inadequate urban planning during this period often resulted in overcrowded cities

and infrastructure deficits. Since the 1990s, economic liberalization has accelerated urban growth, with key cities emerging as major economic hubs. This expansion has been propelled by industrialization and economic development, which have attracted rural migrants seeking improved livelihoods and access to better services. Population growth, enhanced infrastructure, and globalization—bolstered by foreign investments and trade integration—have further shaped urban areas into vibrant centers of economic and social activity.

The region has progressively embraced sustainable urbanization, starting with investments in public transit systems to reduce congestion and enhance mobility. Climate adaptation projects, including flood control measures and infrastructure designed for resilience,

are addressing environmental vulnerabilities. Smart city initiatives are utilizing advanced technologies to optimize resource use, improve connectivity, and streamline urban services. Efforts have also been made to address social challenges, such as upgrading informal settlements and promoting inclusive urban policies to improve living conditions and reduce inequalities in rapidly growing cities.

Urbanization has grown rapidly in recent decades, with the urban population in Southeast Asia increasing from 21% in 1970 to 50% in 2020, representing about 334 million people living in cities. But projections suggest this number will rise to 527 million by 2050 (66% of total population). ASEAN is facing an urbanization boom, with 150 million more people projected to live in cities by 2050.

## World - Urban & Rural Population Growth 2020 - 2050

Total Population	2020			2050			2020-2050 Evolution (m)
	Urban (m)	Rural (m)	Urban (%)	Urban (m)	Rural (m)	Urban (%)	
World	4 379	3 416	56%	6 680	3 092	68%	2 301
Northern America	305	64	83%	387	48	89%	82
Latin America and the Caribbean	539	125	81%	685	95	88%	146
Western Europe	157	39	80%	174	26	87%	17
Africa	588	765	43%	1 489	1 039	59%	901
Middle -East	204	78	72%	323	74	81%	119
South Asia (incl. India)	709	1 226	37%	1 282	1 100	54%	572
East Asia (incl. China)	1 078	585	65%	1 291	296	81%	212
<b>Southeast Asia</b>	<b>334</b>	<b>335</b>	<b>50%</b>	<b>527</b>	<b>271</b>	<b>66%</b>	<b>192</b>

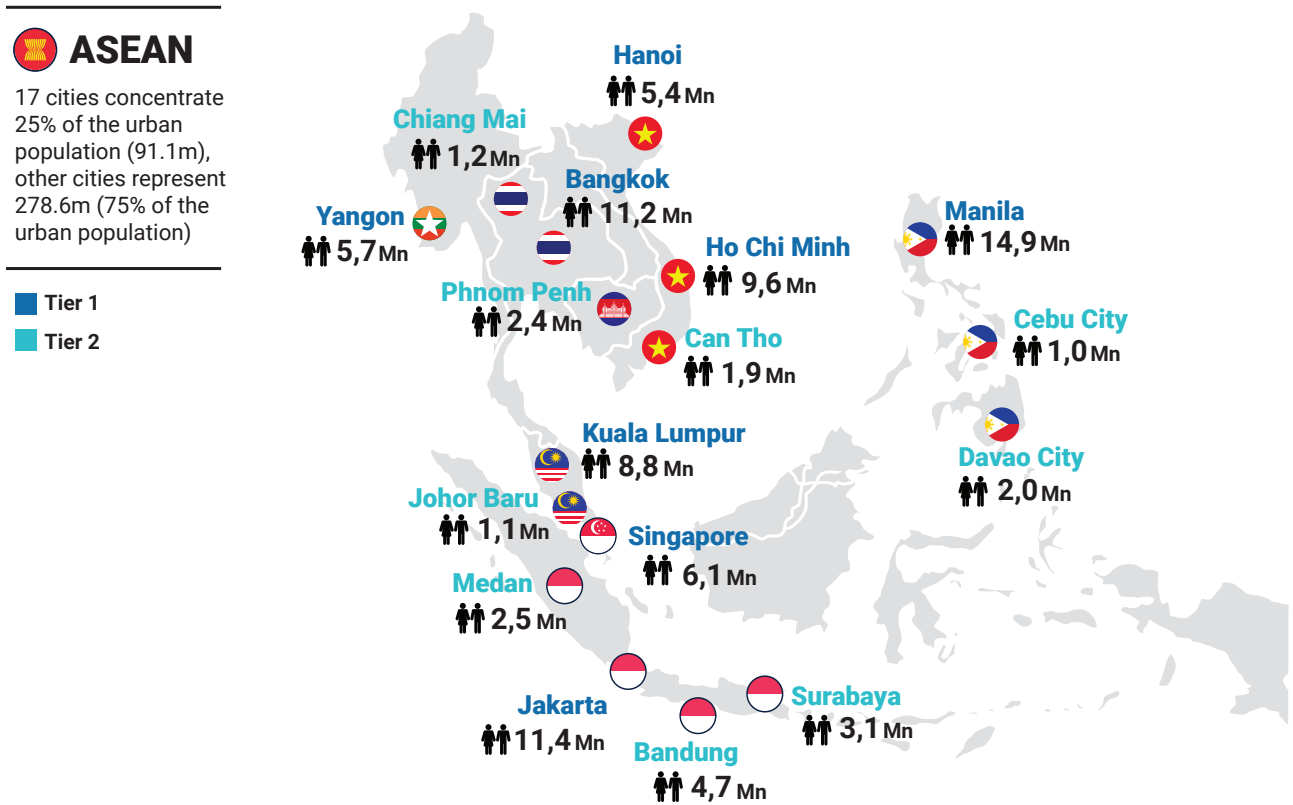
Source : United Nations - Department of Economic and Social Affairs

Tier 1 and Tier 2 cities—17 cities each with over 1 million inhabitants— collectively house 90 million people, accounting for almost 15% of the region’s total population, reflecting their role as economic and social hubs. This unprecedented urban growth is also expected to lead to a rapid rise of more than 200 smaller cities. Millions of new residents are expected to migrate to urban areas in the coming decades.

This massive urbanization places immense pressure on infrastructure, housing, transportation, and public services, while exacerbating environmental degradation and social inequality. The urgency for sustainable urban planning has never been greater, as cities must balance the needs of their growing populations with long-term resilience, inclusivity, and environmental stewardship to ensure a livable future for all.



**Concentration of Population in Tier 1 and Tier 2 Cities in ASEAN in 2024**



“Cities currently account for about 70% of global greenhouse gas emissions, while covering only 2% of the Earth’s surface and hosting more than 50% of the population.”

 **Julien Mialaret**, Operating Partner, Eurazeo

## The Green Energy Transition Challenge

Amid booming urbanization, the energy systems tasked with supporting this rapid growth will, more particularly, face intense pressure, precisely at a time when they must undergo a critical transition to greener alternatives. A sharp increase in energy demand is projected to represent more than 25% of global growth by 2035.

From 2000 to 2020, energy demand in ASEAN increased by over 80%. In 2021, 80% of the population in Southeast Asia still did not have air conditioning systems, even though electrification reached 97% in the region according to IEA. Increase of air conditioning installation could have a significant impact on the region's electricity consumption.

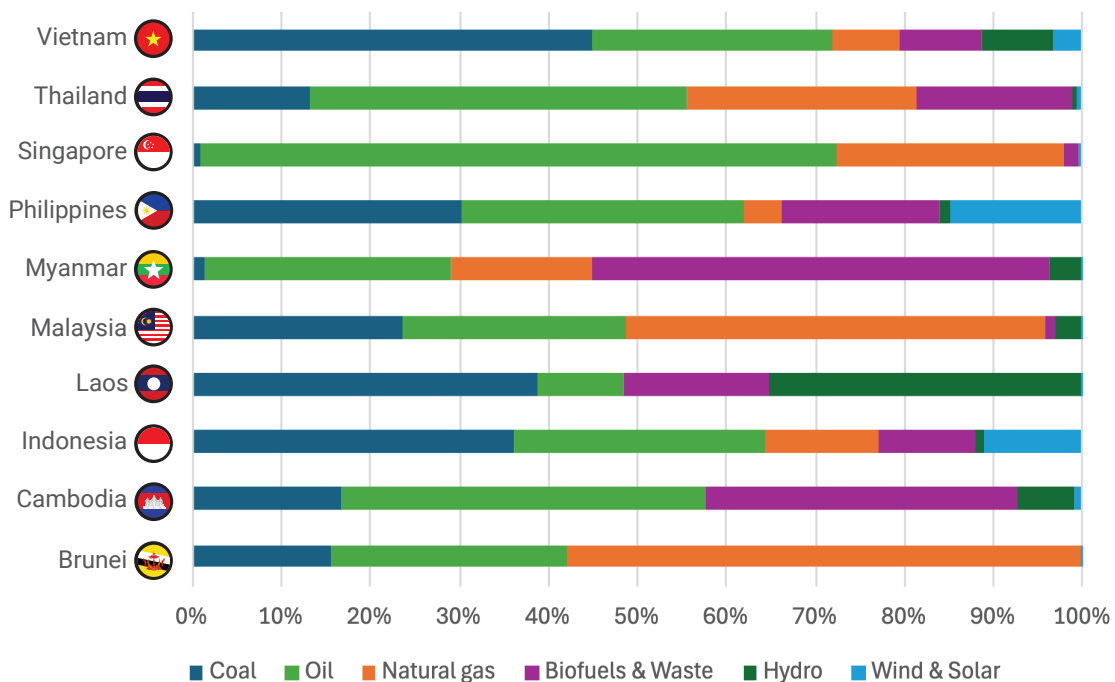
The region is on track to become a major player in global energy demand.

While this is lower compared to major emitters like China (30%) and the United States (15%), ASEAN's per capita emissions remain relatively modest, averaging 3.9 tons compared to the global average of 4.7 tons. However, emissions are rising faster in ASEAN than in many regions, driven by coal dependency for electricity and increasing vehicle usage. With a growing population and expanding economies, ASEAN's role in global emissions is becoming more significant, highlighting the need for transitions to renewable energy

and sustainable urban practices to mitigate future impacts.

To drive its green energy transition, Southeast Asia holds significant potential for renewable energy, driven by abundant natural resources and growing energy demand. The region is rich in solar, wind, and hydropower opportunities, with solar energy particularly promising due to its high levels of sunlight year-round. Hydropower already plays a key role in several countries, while offshore wind projects are emerging as viable alternatives. The geothermal potential in tectonically active areas further adds to the mix.

Energy Mix, Total Energy Supply (TES)\*, 2022



Source: International Energy Agency (IEA)

\*TES includes all the energy produced in or imported to a country, minus that which is exported or stored. It represents all the energy required to supply end users in the country. Some of these energy sources are used directly while most are transformed into fuels or electricity for final consumption.

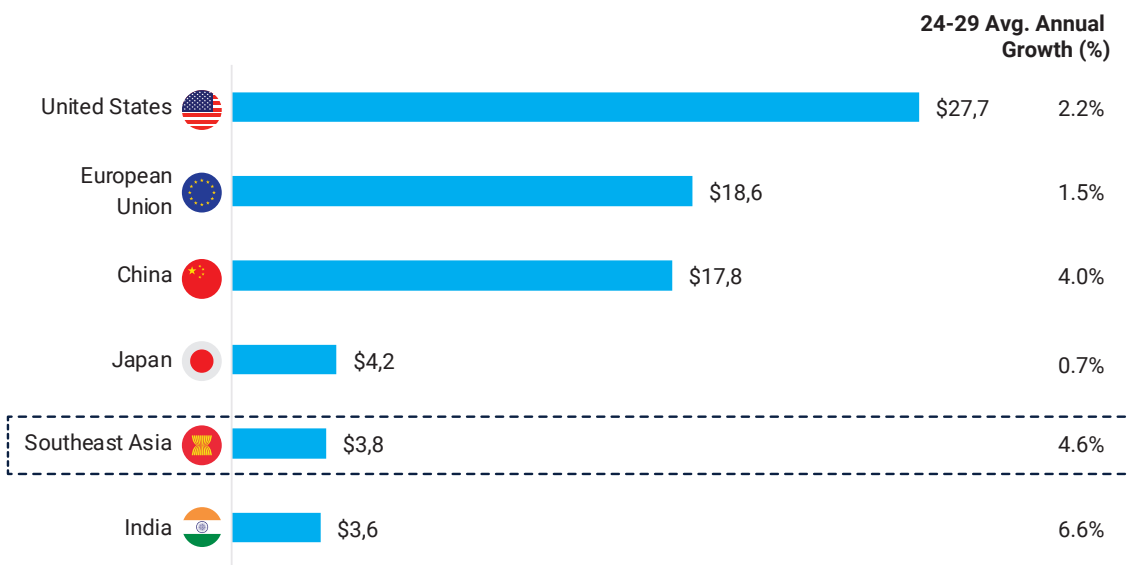
**Challenge 2**

# Ensuring Equitable and Sustainable Growth



ASEAN is poised for strong economic growth, outperforming many regions globally. With a combined GDP of US\$3.8Tn in 2023, ASEAN is projected to grow at an annual average of 4.6% through 2029, compared to the global average of 3.2% on 2024-2029 period. By 2050, ASEAN is expected to become the world’s fourth-largest economy, with its middle-class population projected to grow significantly, driving consumption and investment. In contrast, advanced economies face stagnating growth due to aging populations, and other emerging regions struggle with political and economic instability. ASEAN’s youthful workforce, increasing urbanization, and trade initiatives like RCEP (Regional Comprehensive Economic Partnership) position it as a global growth engine.

**ASEAN GDP vs. Other Main Economies**



Source: International Monetary Fund (IMF)

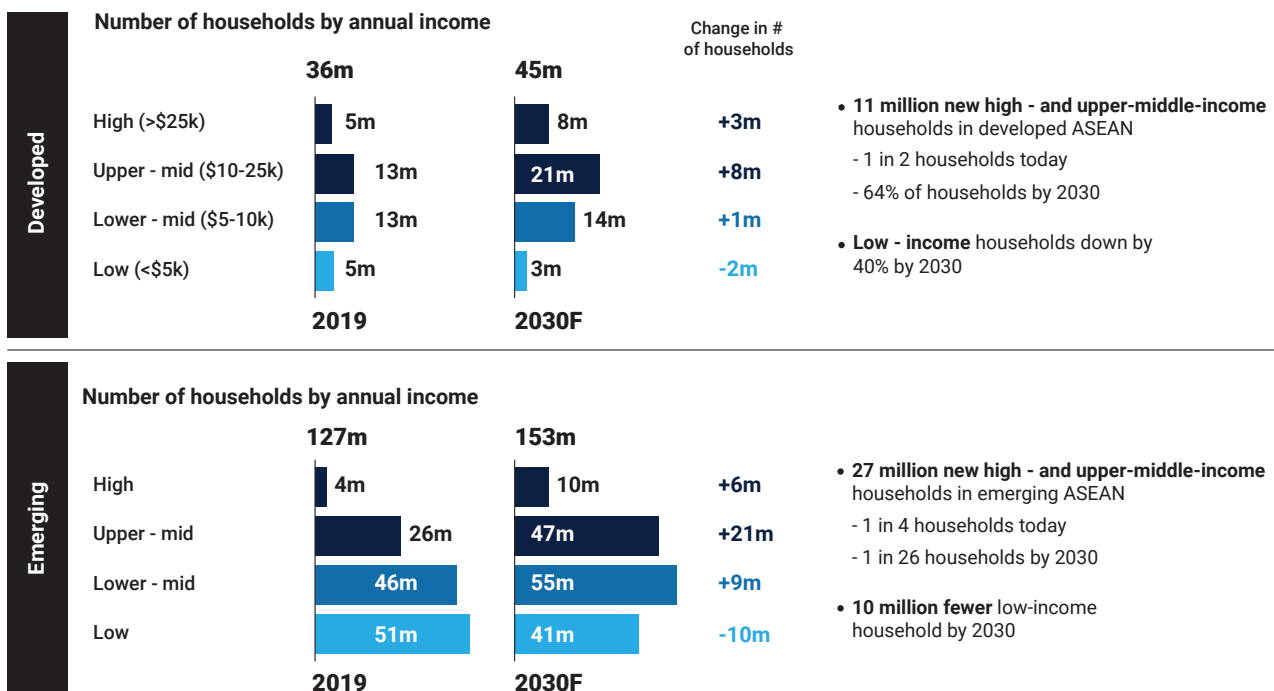
■ GDP 2023 (US\$bn)





The middle class is set to more than double. The middle class (The middle income segment refers to a daily expenditure of ten to one hundred U.S. dollars) is set to more than double, from representing 29% of the population in 2010 (approx. 172m people) to 65% of ASEAN's population (472m people in 2030). This burgeoning middle class is boosting demand across sectors—from consumer goods and technology to real estate and travel—as households seek larger homes, modern appliances, and improved quality of life. ASEAN's young, tech-savvy population is another driving force, with 80% of ASEAN's population expected to be internet users by 2030 (575m people). This digitally aware generation, with a strong focus on ethical, environmental, and social concerns, will also play a key role in promoting sustainable consumption across the region.

### Changing household income profiles in developed versus emerging ASEAN



Source: World Economic Forum (WEF)



**Secondary cities are leading economic growth, expected to contribute to almost 40% of ASEAN's GDP growth by 2030.** ASEAN's economic growth is increasingly driven by secondary cities, which contribute significantly to the region's GDP expansion, with many growing at rates of 5-8% annually, outpacing primary urban centers. By 2030, secondary cities (the one with populations ranging from 200,000 to 2m) are projected to account for over 40% of ASEAN's GDP, fueled by industrial diversification, infrastructure investments, and the rise of new economic zones.

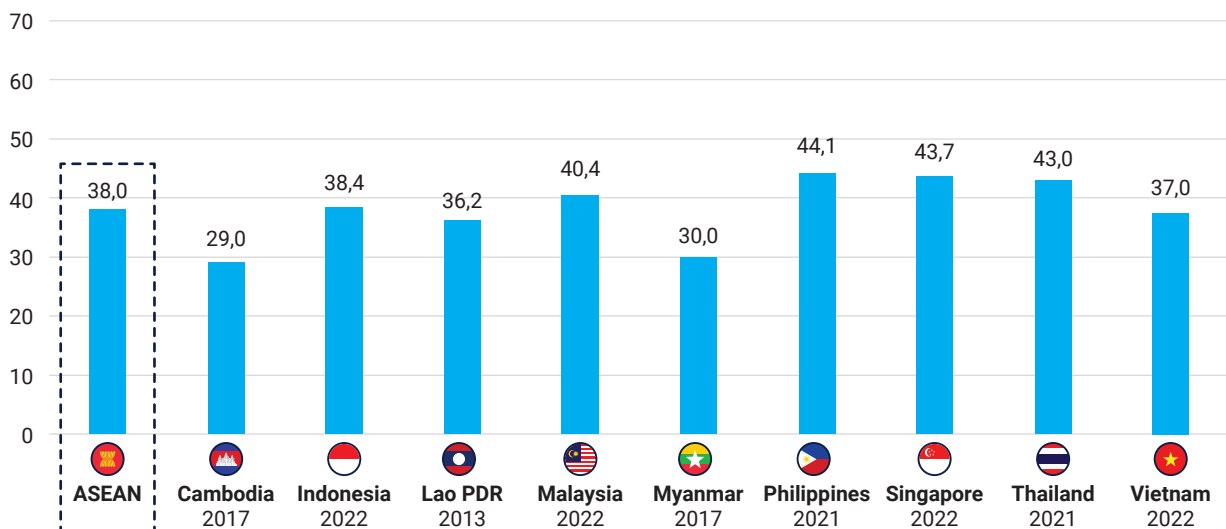


**ASEAN's economic health** is characterized by moderate debt levels, with an average government debt-to-GDP ratio of around 60%, reflecting moderate levels compared to global standards. Debt levels have increased compared to pre-pandemic figures, driven by expanded fiscal measures to support growth. This also reflects the region's investments in infrastructure, economic recovery initiatives, and development programs in recent years.



**Southeast Asia exhibits persistent economic and social inequalities** despite its rapid economic growth. Wealth is heavily concentrated in urban areas and among higher-income groups, while rural communities and marginalized populations often face limited access to quality education, healthcare, and employment opportunities. On average, the richest 10% hold between 60% and 70% of the wealth, while the poorest 50% account for less than 5% of total wealth. Gender inequality also persists. Inequalities, measured by the Gini coefficient (which ranges from 0, indicating perfect income equality, to 100, where all income goes to one person), reach or exceed 40 in many Southeast Asian countries. As a result, in some cities, up to 40% of residents live in precarious conditions.

### Gini Index, Latest Available\*



\*Ranges from 0, indicating perfect income equality, to 100, where all income goes to one person

With robust economic expansion underway, ASEAN faces the challenge of balancing growth with equity, making sure that progress benefits all segments of society. Rapid development risks widening inequalities and creating uneven access to opportunities, underscoring the importance of inclusive policies and broad-based investments to foster a more equitable future.

“Southeast Asian countries, with a few exceptions, are in robust macroeconomic health, evidenced by fiscal balances and debt levels. The region has a powerful budgetary capacity, coupled with a strong private sector trusted by governments.”



**Jean-Pierre Marcelli**, Regional Director, Agence Française de Développement (AFD) Southeast Asia

**Challenge 3**

# Defending Biodiversity, Combating Climate Change, and Fostering Livable Cities

Southeast Asian countries face the intertwined challenges of fighting climate change, defending their rich but increasingly threatened biodiversity, and fostering more livable cities. Rapid urbanization intensifies environmental pressures, from deforestation and habitat loss to rising emissions and urban heat islands. These challenges are compounded by worsening air and water pollution, driven by industrial growth and inadequate waste management, as well as an increase in natural disasters such as floods, typhoons, and droughts, exacerbated by climate change.

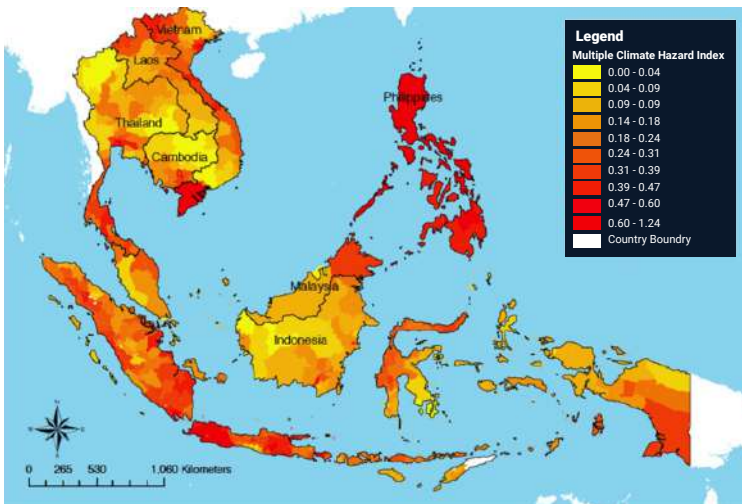
Southeast Asia is a reservoir of biodiversity at risk. The region is home to nearly 20% of the planet's plant and animal species. Southeast Asia is one of the world's richest regions in terms of biodiversity, harboring an immense variety of flora and fauna across its diverse ecosystems, which range from dense tropical forests to coral reefs and coastal wetlands. 3 of the 17 "megadiverse" countries—characterized by exceptional biological richness—are found in Southeast Asia: Indonesia, Malaysia, and the Philippines. While occupying just 3% of the planet's total land area, the region is home to nearly 20% of the planet's plant and animal species, 30% of the world's coastal and marine habitats, 30% of coral reef species, more than 40% of tropical peatlands,

and nearly 40% of global mangrove areas.

However, with deforestation, habitat destruction, and climate change accelerating, Southeast Asia's ecosystems are under severe threat. As biodiversity loss and ecosystem collapse ranks as the 3rd most severe risk for economies and societies over the next decade—a particularly urgent issue for Southeast Asia, given its rich biodiversity. If current trends continue, up to 42% of Southeast Asia's biodiversity could be lost by the end of the century.

Southeast Asia is at the forefront of climate change impacts, with a high level of natural risk exposure. Southeast Asia's tropical climate, characterized by high temperatures, heavy rainfall, and distinct monsoon seasons, makes it particularly vulnerable to frequent natural disasters such as typhoons, floods, droughts, and heatwaves. These risks are further intensified by climate change, which is driving rising sea levels, more violent storms due to warmer oceans, shifting rainfall patterns causing prolonged droughts, and extreme heatwaves that strain health systems and energy demands.





Vulnerability to climate in Southeast Asia accounting for exposure to climate hazards, sensitivity and adaptive capacity. 0= Lowest vulnerability, 1 = Highest Vulnerability

Source: Economy and Environment Program for Southeast Asia (EEPSEA)

## Some figures highlight the level of risk exposure to climate change



**54% of the Asian population at risk of rising sea levels.** Of the ten major cities most threatened by rising ocean levels, 4 are located in Southeast Asia (Jakarta, Manila, Ho Chi Minh city, Bangkok). In low-lying coastal areas, 54% of the Asian population is at risk, with projections indicating that by 2030, at least 15 million people in Asia could be affected by coastal erosion.



**80% likelihood of deadly heatwaves in Asia by 2050.** By 2050, under a high-emission scenario (RCP 8.5), between 600 million and 1 billion people in Asia will be living in areas with an annual risk of deadly heatwaves.



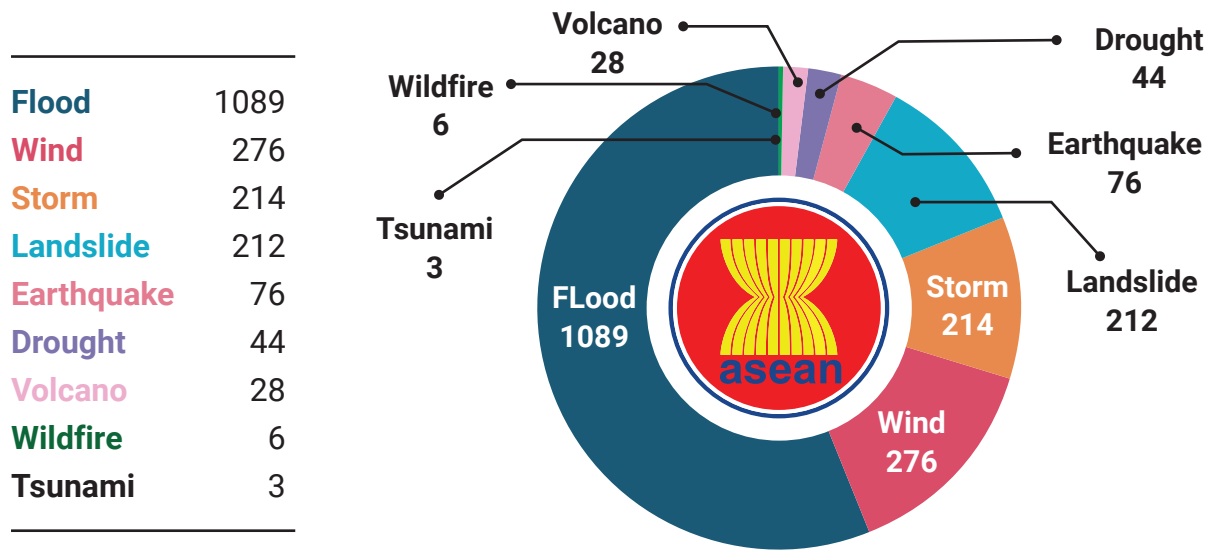
**Floodings are the most common type of natural disaster in Asia.** Last year, 80% of climate disasters in Asia were linked to floods and storms.



**8 of the 10 Most At-Risk Cities for Cyclones Are in Southeast Asia.** The Philippines, one of the most typhoon-prone nations globally, faces an average of 20 typhoons each year, several of which have been classified as "super typhoons" in recent years.



### Type of Disasters in ASEAN Countries 2012 - 2020



Source : ASEAN Secretariat

Disasters are becoming both more frequent and severe, threatening infrastructure, livelihoods, and ecosystems. In Southeast Asia alone, the number of people displaced by climate and natural disasters exceeded 69m between 2010 and 2021—an average of 5.8m people per year, representing approx. 31% of the global total of disaster-related displacements during that period.

Beyond displacement, climate change brings profound health risks. In 2019, 45% of disaster-related deaths globally occurred in Asia. Globally, the WHO estimates that between 2030 and 2050, climate change could cause an additional 250,000 deaths annually.

Economically, the consequences of climate change are equally alarming. Southeast Asia could see its GDP decline by 4.2% (below 2°C increase scenario) to 37.4% (3,2°C increase scenario) by 2050, depending on the extent of global warming. Furthermore, extreme climate events such as typhoons and floods threaten to severely disrupt essential public services, including health, education, and housing infrastructure, potentially pushing millions of people into poverty.

“Southeast Asia is home to some of the world’s richest, yet most threatened, ecosystems.”



**Jean-Pierre Marcelli**, Regional Director, Agence Française de Développement (AFD) Southeast Asia



**Challenge 4**

# Enhancing Sustainability Governance

Southeast Asia's ultimate challenge in sustainable urbanization lies in balancing rapid economic growth with the urgent need for sustainability transitions. Urban centers are expanding at an unprecedented pace, creating opportunities for development while simultaneously putting immense pressure on resources, infrastructure, ecosystems and communities. Achieving this balance requires addressing key challenges across multiple dimensions:



## Economic Transition & Workforce

- **Economy & Workforce Transition:** Building a sustainable economy by fostering green industries, reducing reliance on resource-intensive sectors, ensuring equitable growth across regions, and preparing the workforce for shifts.
- **Financing:** Mobilizing resources through innovative funding mechanisms such as green bonds and public-private partnerships to support large-scale sustainable infrastructure projects.



## Infrastructure & Urban Development

- **Infrastructure:** Closing gaps in urban infrastructure, from transport and housing to energy systems, while ensuring they align with long-term sustainability standards.
- **Urban Planning & Technology Adoption:** Developing inclusive, forward-looking plans to accommodate growing populations and bridging the digital divide to integrate smart technologies and data-driven solutions into urban planning.
- **Migration and Urban Sprawl:** Managing the rapid influx of rural-to-urban migrants to prevent unplanned urban sprawl, informal settlements, and increased strain on city services.



## Environment & Resource Management

- **Environment:** Protecting ecosystems and natural resources, combating pollution, deforestation, and climate risks, particularly in vulnerable urban areas.
- **Energy:** Managing surging energy demand with a transition to renewables, improving energy efficiency, and diversifying energy sources for resilience.
- **Food Security & Water Management:** Ensuring sustainable agricultural and water-use practices to address resource competition and climate impacts.



## Social Equity & Quality of Life

- **Social:** Reducing inequalities by improving access to housing, healthcare, education, and social services for marginalized populations and rural-to-urban migrants.
- **Quality of Life:** Enhancing urban livability through efficient public transport, increased green spaces, and improved waste management.



## Governance & Cultural Shifts

- **Governance & Policy Alignment:** Strengthening collaboration while ensuring coherence across national, regional, and local policies.
- **Culture of Sustainability:** Fostering a shift in mindset toward sustainability through widespread education, awareness, and incentives to promote sustainable practices among governments, businesses, and citizens.



“Allowing the private sector to self-regulate will not be sufficient. Governments must impose clear and ambitious standards.”



**Antoine Gondard**, Business Development & Sustainability Manager, Bouygues Bâtiment International

**Sustainability governance will play a crucial role in addressing this challenge.** Governance of sustainability in ASEAN operates through regional frameworks, national strategies, and local initiatives. For example, the ASEAN Socio-Cultural Community (ASCC) Blueprint 2025 emphasizes climate resilience, sustainable development, and environmental protection. Member states focus on renewable energy, carbon reduction, and sustainable urbanization to align with global commitments like the Paris Agreement. However, challenges remain, such as disparities in governance capacities, inconsistent cross-border coordination, and the need for stronger enforcement mechanisms. Increasingly, local governments and private sector collaborations play a crucial role in advancing sustainability efforts across the region.

### Some sustainability-related ASEAN governance tools



**ASEAN Integrated Food Security Framework (2021-2025):** Strengthens food production, trade, and sustainability, emphasizing resilient agriculture, technology sharing, and policy alignment to combat food insecurity.



**ASEAN Smart Cities Network (2018):** Links 30 cities to advance sustainable mobility, waste management, and energy efficiency for resilient urban development.



**ASEAN Plan of Action for Energy Cooperation (2016-2025):** Enhances energy security with renewable energy promotion, reduced energy intensity, cross-border electricity trade, and capacity building in civilian nuclear energy.



**ASEAN Strategic Plan for Culture and Arts (2016-2025):** Promotes cultural heritage preservation and integration of cultural considerations into sustainable development policies.



**ASEAN Strategic Plan on Health Development (2016-2020):** Addresses health challenges in the region, emphasizing sustainable health systems and universal health coverage.



**ASEAN Socio-Cultural Community Blueprint 2025 (2015-2025):** Focuses on sustainability, disaster resilience, climate change, and equitable opportunities, integrating human rights and sustainable development to narrow gaps and foster innovation.



**ASEAN Action Plan on Joint Response to Climate Change (2012):** Outlines collaborative efforts to address climate change impacts, including mitigation and adaptation strategies.



**ASEAN Framework for Equitable Economic Development (2011):** Seeks to ensure that economic growth benefits all member states and reduces development gaps within the region.



**ASEAN Declaration on Environmental Sustainability (2007):** Affirms the commitment of member states to pursue sustainable development and environmental protection in the region.



**ASEAN Centre for Biodiversity (2005):** Promotes biodiversity conservation and sustainable use through regional cooperation.





# What Trends Are Shaping the Future of Asean Sustainable Cities?

Southeast Asia's urban landscape is transforming against a backdrop of fast-evolving environmental, economic, and social pressures. Cities strive to balance rapid growth with sustainability. From advancing renewable energy to fostering inclusive urban living, these trends reflect the region's commitment to addressing environmental challenges, improving quality of life, and embracing innovative technologies. The rise of smart cities, green architecture, and circular economy practices, coupled with growing climate resilience and consumer awareness, showcases ASEAN's pursuit of a sustainable and vibrant future for its urban communities.

**Trend 1**

# Powering the Future: Southeast Asia’s Transition to Greener Energy

The 8th ASEAN Energy Outlook (AE08) outlines four scenarios for the region's energy mix evolution up to 2050.

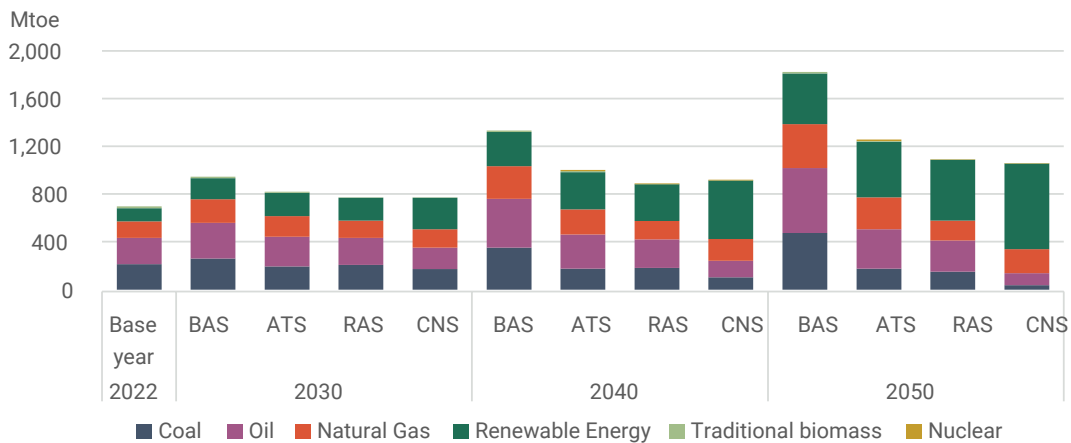
- Baseline Scenario (BAS):** Fossil fuels dominate the TPES at 76.1% by 2050, with oil supply increasing by 321.3 Mtoe. Natural gas remains steady (268 Mtoe), but renewable energy uptake is limited, with biomass as the largest contributor. Import dependence on fossil fuels grows, making energy security a concern as ASEAN becomes a net importer of natural gas by 2027.
- AMS Target Scenario (ATS):** Fossil fuel reliance drops to 63.4% by 2050, with renewables rising to 38.1%, supported by significant growth in solar and wind (from 4.8 Mtoe to 168.3 Mtoe). Coal declines by 297 Mtoe as policies favor cleaner energy. Natural gas plays a bridging role, and energy intensity reductions reach 63.2%, showing a balanced shift driven by current national targets.
- Regional Aspiration Scenario (RAS):** Fossil fuels fall to 56.9% of TPES, with renewables expanding



to 50.4%. Coal use drops further to 148.3 Mtoe, while natural gas stabilizes at 166.6 Mtoe, facilitating the transition. Strong regional cooperation supports solar, wind, and bioenergy adoption, while battery storage integration enhances grid stability, helping meet rising electricity demand (2,920 TWh by 2050).

- Carbon Neutrality Scenario (CNS):** Fossil fuels are cut to 33.3%, with renewables soaring by 6.6 times to 70.2% of TPES by 2050. Technologies like tidal and wave energy contribute 18 Mtoe, while geothermal increases to 263.1 Mtoe, and solar/wind reach 184.2 Mtoe. Advanced CCS systems and nuclear energy also play crucial roles, reflecting ASEAN’s most ambitious pathway to sustainability and energy security.

**Total Primary Energy Supply Across Scenarios**



Note: Renewable Energy includes hydro, geothermal, biomass, solar, wind, tidal and wave, excluding traditional biomass used by households.

Source : ASEAN Secretariat

## According to the different scenarios, ASEAN's future energy mix is set to diversify significantly, with greener energy playing a key role:



**Renewables:** Solar energy will dominate due to abundant sunlight, with rapid growth in utility-scale and rooftop solar. Offshore wind, especially in Vietnam and the Philippines, and significant hydropower in Laos, Myanmar, and Cambodia will complement this. Biomass and geothermal energy will also expand, particularly in Indonesia and Thailand.



**Fossil Fuels:** While declining, fossil fuels will still play a role. Natural gas will serve as a "transition fuel", while coal usage will decrease as countries adopt cleaner technologies, though it may persist in areas lacking renewable infrastructure.



**Emerging Technologies:** Carbon capture, utilization, and storage (CCUS) could transform the energy mix, decarbonizing hard-to-abate sectors like heavy industry, provided sufficient investments and policy support.



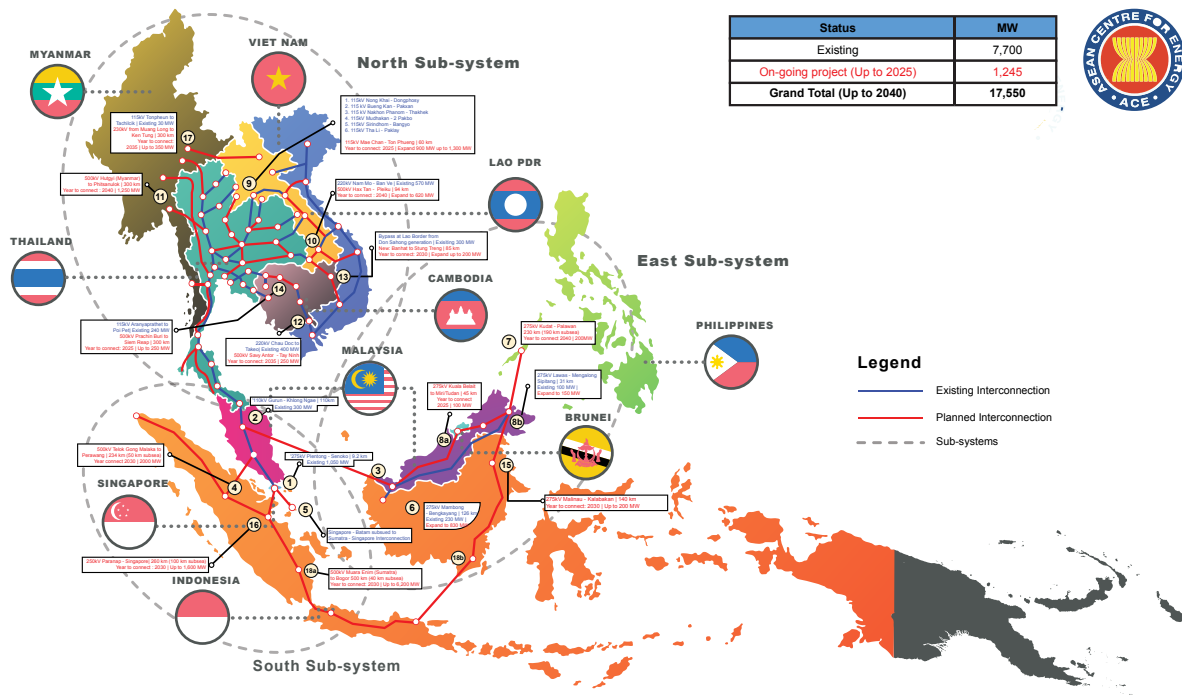
**Electrification:** Electric vehicle adoption and investments in smart grids and energy storage will drive demand for cleaner electricity and enable better integration of renewables.



**Efficiency and Decentralized Systems:** Energy efficiency programs will focus on retrofitting buildings and adopting standards, while off-grid and mini-grid solutions will accelerate rural electrification, particularly in remote areas.

The ASEAN Power Grid (APG) aims to facilitate electricity trade between countries, leveraging renewable energy resources where they are most abundant: Hydropower-rich countries like Laos will export surplus electricity to energy-deficient neighbors. Integration will reduce costs and enhance regional energy security.

**ASEAN Power Grid Map**



Source : ASEAN Secretariat

Financing renewable energy projects remains a significant hurdle, alongside the need to ensure grid stability as variable sources like solar and wind increase. Inconsistent policies across member states further complicate efforts, while the social and environmental impacts of large projects, such as hydropower, often generate resistance. Additionally, technical and institutional capacity gaps hinder the adoption of advanced energy technologies necessary for a sustainable transition.

Regional cooperation through the ASEAN Power Grid can enable cross-border electricity trade and improve energy security. Private investments and international partnerships can drive renewable energy development, leveraging the region's abundant solar, wind, and geothermal resources. Advances in energy storage and smart grid technologies offer solutions for integrating renewables more effectively. Moreover, decentralized systems like mini-grids can bring electricity to remote areas, fostering inclusive growth.



“Green hydrogen is emerging as a potential game-changer in ASEAN.”



**Antoine Sirgi**, Senior Country Officer, Crédit Agricole CIB Singapore & Southeast Asia

## Illustrative Initiatives



**Solar Energy Initiative in Ho Chi Minh:** Powers 50% public buildings, cutting energy costs by 10% and CO<sub>2</sub> emissions by 5,000 tons annually. This is part of a broader strategy to increase renewable energy adoption by 2030.

**The Davao Renewable Energy Hub:** It will transform the city into a leader in renewable energy with solar and wind power facilities. This project aims to generate 25% of Davao's energy from renewables by 2030 and reduce greenhouse gas emissions by 15%.

**Singapore Green Finance Hub:** Singapore is positioning itself as a leader in green financing to support the region's energy transition. Initiatives such as the establishment of the Carbon Market Alliance and the Singapore Emission Factors Registry aim to enhance transparency and accessibility in carbon trading. By fostering a robust carbon market, Singapore facilitates investments in renewable energy projects and incentivizes emission reductions across Southeast Asia

**The Carbon Storage Hub Development** in Malaysia is a groundbreaking initiative, aiming to establish a CO<sub>2</sub> merchant storage service for industrial decarbonization across Asia. Located in the Malay Basin, the project involves assessing multiple storage sites, including saline aquifers and depleted offshore fields, to secure safe and long-term CO<sub>2</sub> sequestration. By leveraging Malaysia's geological assets and strategic regional positioning, the initiative seeks to create a central CCS hub in Southeast Asia.

**Hydrogen Valley in Thailand:** The Thai Ministry of Energy aims to establish a "hydrogen valley" in the Eastern Economic Corridor (EEC) to advance hydrogen as a clean energy source. The pilot project includes cost-reduction research, tax incentives, and infrastructure development for electricity, industry, and transport. Tests on pipelines and transport systems will involve key stakeholders, with commercial hydrogen use expected post-2030 and widespread adoption by 2040, targeting 20-25% hydrogen blending in electricity production.

**Trend 2**

# Building Tomorrow: The Rise of Green Architecture in ASEAN

Buildings contribute to 37% of global energy-related CO<sub>2</sub> emissions (2022), including embodied emissions from materials and construction, operational emissions, and deconstruction emissions. Buildings require high energy for cooling, with electricity use for cooling rising 7.5 times from 1990 to 2017, with only 15% of households having air conditioners in 2021. Poor insulation, lighting systems, and outdated energy practices worsen the environmental impact, with residential buildings dominating energy buildings consumption.

In this context, green buildings are gaining traction to address environmental and energy challenges. Key trends shaping the future green building landscape include:

- **Green Financing Solutions:** Green loans are expanding but remain hard to access for small developers due to certification requirements.
- **Green Certification:** Cities are adopting international standards like LEED, with for example Thailand (448 projects) and Malaysia (233) leading in certifications.
- **Sustainable Materials:** Recycled concrete, bamboo, certified wood, and modular construction are reducing waste and improving resource efficiency.
- **Bioclimatic Design:** Natural ventilation, green roofs, and passive shading are mitigating the region's hot, humid climate and reducing air conditioning reliance.
- **Smart Technologies:** IoT-equipped buildings, like those in Singapore,

optimize energy, air quality, and water use to cut costs and emissions.

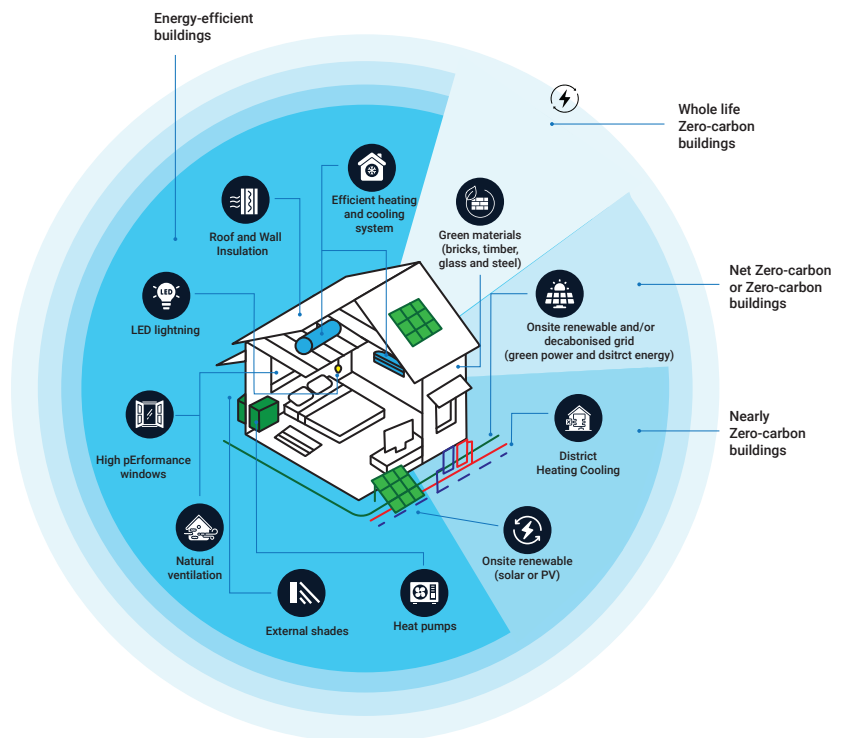
- **Retrofitting:** Upgrading older buildings to meet modern green standards is increasingly common.
- **Energy Efficiency and Zero-Energy Buildings:** Innovative designs focus on cutting energy consumption and achieving zero-energy performance.
- **Regional Collaboration:** Efforts like the Global ABC Regional Roadmap aim for zero-emission, efficient, and resilient buildings by 2050.

The combination of technological innovations, new materials, and green certifications could result in more than

a 60% reduction in CO<sub>2</sub> emissions from buildings by 2040 compared to 2020.

Transitioning to green buildings in Southeast Asia faces various challenges. Among others, high costs of green materials and certifications, adding a 5%-10% premium, limit adoption in low- to middle-income areas, compounded by a lack of affordable financing. Regulatory disparities further hinder progress. Addressing these challenges demands harmonized policies, financial incentives, technological advancements, and education to drive sustainable transformation.

## Different levels of zero-carbon buildings



Source : IEA and ASEAN

## Illustrative Initiatives



**Malaysia's S11 House:** The S11 House in Petaling Jaya stands as Malaysia's first Green Building Index Platinum-rated residence. Designed with a focus on sustainability, it incorporates features such as rainwater harvesting, solar panels, and natural ventilation systems. The house serves as a model for eco-friendly residential design in the region

**Bamboo Housing for Banana Workers in Davao:** Aimed to provide sustainable bamboo housing for banana workers. Over 1,200 bamboo houses were constructed, sheltering around 5,000 people across 14 communities, with structures designed to withstand typhoons, earthquakes, and termites.

**Marina Bay District Cooling System in Singapore:** This is the world's largest underground district cooling network. This system produces and distributes chilled water through a 5km network to cool buildings, providing energy-efficient air conditioning. It achieves

up to 40% energy savings compared to traditional methods, and reduces carbon emissions by 20,000 tons/year —equivalent to removing about 17,672 cars from the road. The project exemplifies Singapore's dedication to sustainable urban development and efficient energy use in dense urban settings.

**Keppel Bay Tower and BCA Academy campus in Singapore.** Keppel Bay Tower, a retrofitted 20-year-old building, became Singapore's first to achieve BCA Green Mark Platinum (Zero Energy) certification in 2020, cutting energy use by nearly 50% through smart technologies like efficient lighting, advanced air systems, and solar panels. The BCA Academy's new campus features a 7-storey Zero Energy Building and a 16-storey Super Low Energy Building, achieving over 46% energy savings with innovations like Mass Engineered Timber and renewable energy systems. Both projects exemplify eco-friendly design and significant energy efficiency.

“Without financial incentives, the adoption of green standards will remain too slow, and retrofitting later is far more expensive than building sustainably from the outset.”



**Pierre-Jean Malgouyres,**  
Co-founder & CEO, Archetype Group



**Trend 3**

# From Congestion to Connection: The Evolution Towards Hybrid and Smart Urban Mobility

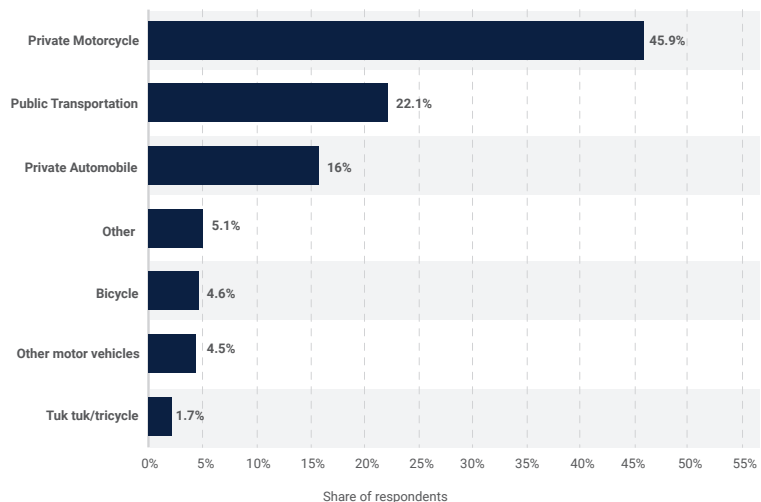
The rapid urbanization of Southeast Asia has outpaced transport infrastructure, forcing heavy reliance on private vehicles. Private car ownership is rising in Indonesia and Vietnam, where cars symbolize status and public transport remains underdeveloped. Two-wheelers dominate in Vietnam, Indonesia, and Thailand, account for over to 85% of transport modes in some cities. This increased reliance on individual vehicles worsened congestion and air pollution. Some figures:

- In Bangkok, drivers lose 64 hours annually in traffic, costing €2.5m in fuel daily.
- Transport is the top CO<sup>2</sup> emitter, with Asia-Pacific transport emissions accounting for 31% of GHG transport emissions, driven by gasoline and diesel vehicle sales.
- Most cities lack robust transport networks despite MRT and BRT projects : Meeting the region's transport infrastructure needs require US\$8.4Tn between 2016-2030 (ADB).

Urban mobility in Southeast Asia is undergoing significant transformation. Public Transport Development is on the table broadly, electric vehicles are spreading fast, while electric scooters are slowly gaining traction across the region. At the same time, shared mobility is booming, with platforms like Grab and Gojek, offering alternatives to ownership. In Singapore, solutions like autonomous transport and smart public transport networks are being developed.



**Leading modes of transportation in Southeast Asia in 2022**



**Additional information:** Asia, Februari 2022; 10,239 respondent; among respondents from Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, and Vietnam.

Source : Statista 2024

“One of the biggest challenges for ASEAN cities is to build infrastructure that is not only adapted to current needs, but also scalable and sustainable in the long term.”



**Henri Pottier**, CEO Asia-Pacific, RATP Dev

# Emerging Trends and Solutions

- **Public Transport Development:** MRT and BRT systems are key to reducing congestion. Singapore's MRT serves as a regional model, with Jakarta, Manila, and Ho Chi Minh City advancing similar projects.
- **Transport Electrification:** EV sales tripled in 2023 in the region, with Thailand leading with a 400% rise compared to 2022. Electric buses and hybrid vehicles are also expanding. Governments supports the transition with subsidies and investments charging infrastructure.
- **Shared Mobility & Micromobility:** Platforms like Grab and Gojek offer practical and accessible alternatives to private transport, demand for services like electric scooters and micromobility solutions grows.
- **Technology Integration:** AI traffic management, e-ticketing, and autonomous vehicle tests in cities like Singapore aim to ease congestion and improve safety, though autonomous driving remains experimental.
- **Service Experience:** Seamless dealership interactions, transparency, and post-purchase support, such as maintenance and warranties, are crucial for consumer trust and loyalty in the automotive sector.



“The service culture is pervasive in Asia, and it transcends class or price barriers.”



Daniel Gonzalez, Senior Vice President and COO ASEAN, Stellantis

## Illustrative Initiatives



**Jakarta's Integrated Transportation System:** Jakarta is developing an integrated transportation system that combines bus rapid transit (BRT), mass rapid transit (MRT), and light rail transit (LRT) networks. The city is also implementing a unified electronic payment system to facilitate seamless transfers between different modes of transport, reducing reliance on private vehicles and alleviating traffic congestion.

**Kuala Lumpur's Autonomous Rapid Transit (ART):** Kuala Lumpur is introducing the Autonomous Rapid Transit (ART) system, a hybrid between buses and trams, operating on dedicated lanes with autonomous driving capabilities. The ART system offers a cost-effective and flexible solution to urban mobility challenges, aiming to reduce traffic congestion and provide efficient public transportation options.

**Bangkok's Electric Vehicle (EV) Adoption:** Bangkok is promoting the adoption of electric vehicles (EVs) to reduce urban pollution and traffic congestion. The city is expanding its EV charging infrastructure and offering incentives for EV purchases. Additionally, Bangkok is integrating EVs into public transportation, including electric buses and tuk-tuks, to create a more sustainable urban mobility ecosystem.

**Singapore's Smart Mobility 2030 Plan:** Singapore's Land Transport Authority (LTA) has implemented the Smart Mobility 2030 plan, integrating intelligent transport systems (ITS) to optimize traffic flow and improve commuter experiences. Key components include real-time traffic monitoring, predictive analytics for congestion management, and the development of autonomous vehicle technologies.



## Trend 4

# Cleaner Cities, Clearer Waters: Advancing Waste and Water Management through Circular Economy Practices



Rapid urbanization and economic growth are increasing waste generation and water demand, straining outdated management systems amid rising droughts and floods. Efforts have been done to reduce waste and manage water resources more efficiently. However, while pioneering initiatives have been emerging, the region as a whole continues to rely on limited infrastructure and traditional management practices. However, the growing commitment of governments to promote sustainability policies, coupled with the emergence of some innovative technologies and public-private partnerships, would make the waste and water management an essential component of urban planning. The implementation of modern

infrastructure and increased public awareness will remain crucial factors for successfully transitioning toward more sustainable waste and water management. Some figures highlight the challenge:

- Waste volume in Southeast Asia has reached about 150 million tonnes in 2016, and the amount is expected to more than double by 2030. Poor collection or treatment leave much of the waste in landfills or waterways.
- Plastic waste is a significant issue for cities and oceans in Southeast Asia. Efforts to manage single-use plastics remains limited.
- 110m people are facing water insecurity in SEA despite progress in the water sector.

Circularity in Southeast Asia is quite nascent but promising if efforts extend beyond waste management to encompass broader resource regeneration.

Cities are beginning to integrate circular principles in urban planning, emphasizing green infrastructure and local ecosystems' regeneration. Businesses are innovating with sustainable production models, while technologies like AI and digital platforms enable circular supply chains and material reuse. Regional policies, such as those led by ASEAN, promote sustainable trade, innovation, and resource efficiency, fostering a shift toward closed-loop systems. Though in its early stages, these initiatives signal the region's potential for a transformative circular economy.

## The Framework of Circular Economy in ASEAN



**Enablers:** Policy framework & institutions/ Enhanced awareness & competences across sectors/ 4IR for circular economy/ Partnership and collaboration

Source: ASEAN Secretariat

The Framework for Circular Economy for the AEC sets out an ambitious long-term vision of the circular economy, building on the strengths of existing ASEAN initiatives, and identifies priority focus areas for action along with enablers, to accelerate the realisation of a circular economy in ASEAN.

“In capitals cities, projects progress slowly but steadily due to the complexity of urban structures and other priorities. On the other hand, smaller cities [...], less burdened by complex infrastructure, are showing rapid development and are often more flexible in adopting innovative solutions.”



**Jérôme Le Borgne**, Country Representative Thailand and Development Director Southeast Asia, Veolia



Emerging Solid Waste and Water Management Trends and Solutions include:

- **Solid Waste Reduction at Source:** Policies to reduce waste at the source are gaining traction, incl. cutting single-use plastics and promoting reusable packaging, with Singapore leading through its Zero Waste Masterplan (2019).
- **Recycling & Solid Waste Valorization:** Cities are expanding recycling efforts and waste-to-energy projects, includ. biogas production and repurposing plastic waste into construction materials.
- **Water Recycling:** Integrated water management solutions, such as wastewater recycling for industrial and agricultural use and rainwater reuse, are growing.
- **Clean Water Access:** Countries are investing in modern water treatment facilities and sanitation infrastructure to serve underserved areas.
- **Rainwater Harvesting:** Cities are integrating rainwater harvesting systems into urban planning to improve water security, reduce reliance on treated water and mitigate the effects of urban flooding, by collecting and storing rainwater for non-potable uses.

“The circular economy, by converting waste into energy can reduce landfill use and generate sustainability, thanks to advanced technologies where [...] innovations could provide solutions to the region’s challenge.”



**Anne-Sophie Vervial**, Leader of the Task Force Communication & Advocacy Asia Pacific, TotalEnergies Exploration & Production

## Illustrative Initiatives



**The Bukit Tagar Sanitary Landfill** near Kuala Lumpur is Malaysia’s largest landfill gas power facility, generating 12 MW of electricity annually from waste-to-energy technology. By capturing methane for power, it channels 339m kWh of electricity to the national grid, cutting 2.7m tonnes of carbon emissions—equivalent to planting 43.6m trees over 10 years or removing 570,000 vehicles annually. This project supports Malaysia’s goal of 40% renewable energy in power generation by 2035.

### Indonesia’s Circular Plastics Economy Projects:

Indonesia is implementing demonstration projects aimed at transitioning to a circular plastics economy. These projects focus on improving waste management by enhancing recycling quality and increasing the value of plastics. The initiatives also promote regional knowledge sharing to support the circular economy transition.

**Singapore’s NEWater Program:** Singapore has developed the NEWater program, which treats and purifies wastewater into high-grade reclaimed water. This initiative reduces reliance on imported water

and ensures a sustainable water supply. NEWater is used for industrial processes and, during dry periods, supplements the public water supply.

### Thailand’s Bio-Circular-Green (BCG) Economy Model:

Thailand has adopted the BCG Economy Model, integrating bioeconomy, circular economy, and green economy principles. This model focuses on promoting sustainable agriculture, renewable energy, and waste management to drive economic growth while preserving the environment.

### The Singapore-CEA Alliance for Research in Circular Economy (SCARCE)

focuses on developing innovative, energy-efficient solutions for recycling and recovering resources from electronic waste (e-waste). The joint laboratory addresses the recycling of lithium-ion batteries, silicon-based solar panels, printed circuit boards, and the detoxification and recycling of toxic plastics in e-waste. SCARCE aims to advance sustainable e-waste management practices and contribute to the circular economy in Singapore and beyond.







**Trend 5**

# Weathering the Storm: Strengthening Climate Resilience Across ASEAN



Climate resilience has become a central priority for Southeast Asian cities. This resilience, defined as the ability of cities to withstand, adapt to, and recover from the effects of climate change, is part of a broader sustainability framework that integrates economic, environmental, and social aspects.

However, the level of awareness, the implementation of actions, and the effectiveness of measures vary significantly from one country to another. Here is an overview of the situation at the regional level and by country:

Region / Country	Climate Resilience Overview
 <b>Singapore</b>	<ul style="list-style-type: none"> <li>• Vulnerable to rising sea levels, extreme heatwaves, urban flooding</li> <li>• Leader in ASEAN for climate resilience : Over the next 100 years, more than US\$70Bn investment in polders, coastal defenses, and raising reclaimed lands to 4m above sea level</li> </ul>
 <b>Philippines</b>	<ul style="list-style-type: none"> <li>• Highly exposed to typhoons, floods, earthquakes, and coastal submersion by 2050.</li> <li>• Strong early warning systems but limited post-disaster recovery due to funding gaps.</li> <li>• Ready-to-Rebuild Program enhanced resilience in 197 provinces post-Typhoon Rai using GeoRiskPH tools.</li> </ul>
 <b>Indonesia</b>	<ul style="list-style-type: none"> <li>• Faces sea-level rise, coastal erosion, and extreme heat, with 95% of Northern Jakarta at risk by 2050.</li> <li>• Allocated US\$5Bn-US\$6Bn annually to climate initiatives (2016-2020). Resilience efforts hindered by funding.</li> <li>• Capital relocation to Nusantara (US\$32Bn) aims to create a green "forest city".</li> </ul>
 <b>Vietnam</b>	<ul style="list-style-type: none"> <li>• Among the most climate-affected, flooding and saline intrusion threaten Mekong Delta agriculture.</li> <li>• Initiatives include mangrove restoration, upgraded sea dikes, and community-focused storm management in Hai An</li> </ul>
 <b>Thailand</b>	<ul style="list-style-type: none"> <li>• Faces land subsidence, sea-level rise, and extreme heat, with Bangkok at risk of partial submersion by 2100.</li> <li>• Growing climate awareness but limited coordination in implementation.</li> <li>• Key initiatives: Bangkok Flood Masterplan with flood tunnels and retention ponds, and Tsunami Early Warning System with detection buoys and evacuation drills.</li> </ul>
 <b>Cambodia</b>	<ul style="list-style-type: none"> <li>• Faces flooding, droughts, and shifting rainfall, threatening agriculture.</li> <li>• Limited resources and expertise, relying heavily on international aid.</li> <li>• Climate Change Strategic Plan prioritizes ecosystem resilience, low-carbon tech, and disaster management.</li> </ul>

Overall, awareness is rising in ASEAN countries, but the implementation of effective and sufficient actions remains inconsistent. Singapore leads the region with well-coordinated and funded actions, while other countries, like the Philippines and Indonesia, are constrained by limited resources and the complexity of the challenges they face. ASEAN, as a whole, requires more investment, international cooperation, and coordinated action plans to address future climate challenges.

## Illustrative Initiatives



The Philippines' **Ready-to-Rebuild (R2R) Program**, aims to equip participants with essential tools for disaster preparedness and recovery. It provides science-based planning resources, including the GeoRiskPH hazard database, and supports creating pre- and post-disaster frameworks. R2R also guides local governments in establishing disaster risk financing strategies. Following Typhoon Rai, the program enabled swift recovery planning, demonstrating its impact by reducing delays and enhancing local resilience across 197 provinces and cities.

**Singapore Long Island Project:** This large-scale initiative plans to construct a barrier of artificial islands to address rising sea levels and limited land area. The islands will not only be strategically placed to reduce the impact of waves, tides and storms, thus protecting coastal areas from flooding and erosion, but it will also accommodate 60,000+ public and private properties. This new land could meet the country's needs for the next 30 to 50 years.

**Vietnam's Mekong Delta Integrated Climate Resilience and Sustainable Livelihoods Project:** This project aims to enhance climate resilience in the Mekong Delta through improved water resource management, sustainable agricultural practices, and the development of resilient infrastructure. It addresses the challenges posed by sea-level rise, salinity intrusion, and changing rainfall patterns.

**Project NOAH in the Philippines:** The Nationwide Operational Assessment of Hazards (NOAH) is a disaster risk reduction program that provides real-time weather data, flood forecasts, and hazard maps. By integrating advanced technologies, Project NOAH enhances the country's capacity to prepare for

and respond to natural disasters, thereby reducing vulnerability to climate-related hazards.

Bangkok has incorporated rainwater harvesting systems as part of its urban resilience plans to manage flooding in **Chulalongkorn University Centenary Park**. It serves as a model for water-sensitive urban design by storing rainwater with a total capacity of 4m liters and mitigating floods during the rainy season. The design includes a retention pond, which collects stormwater runoff. This system is complemented by a series of internal wastewater filters that treat water before it is released back into the surrounding area, enhancing local water quality, as well as native grasses and plants are utilized to enhance water aeration and filtration.

“The project for Indonesia’s new capital, Nusantara, stands out for its ambition to create a sustainable city in an archipelago in the heart of the tropical rainforest, covering approximately 2,500 km<sup>2</sup>, with the goal of housing 2 million inhabitants by 2045.”



**Manuelle Franck**, Professor of Southeast Asia geography, Inalco

**Trend 6**

# Livable Urban Futures: Building More Inclusive and Quality-of-Life-Focused Cities

In Southeast Asia, where a share of 20-40% of urban residents live in precarious conditions, and the poorest are disproportionately exposed to climate disasters, social development is becoming increasingly important in urban policies, evolving alongside the economic growth. Governments are investing more to promote inclusive growth, strengthen social equity, protect vulnerable populations, while safeguarding culture and expanding access to education and healthcare. However, results vary: while some cities are ahead, others continue to struggle with bureaucracy or lack of funding. These efforts (combined with others: transport, green spaces, pollution, ...) contribute to fostering more livable cities and improving quality of life.



## Housing and Urban Environment

Improving social housing is at the forefront of efforts to create more inclusive and equitable cities in Southeast Asia. Governments across the region are prioritizing the development of affordable housing projects that cater to diverse population segments, addressing the chronic shortage of quality homes for low and middle-income groups. Large-scale initiatives, such as Vietnam's national housing program and Singapore's Housing Development Board (HDB) model, showcase how well-planned social housing can provide stable, dignified living conditions while fostering community integration. These projects are designed with a focus on accessibility to employment hubs, public transport, and essential services, ensuring that residents are not isolated from economic and social opportunities.

In parallel, cities are taking steps to improve housing conditions for marginalized communities, particularly those living in informal settlements. Programs in cities like Manila and Jakarta aim to upgrade slum areas by improving sanitation, infrastructure, and legal recognition of tenure. Relocation projects are being implemented with more community involvement to ensure they meet the needs of residents and minimize displacement. These housing efforts are complemented by urban infrastructure improvements, such as the integration of universal design principles to make public spaces and transit systems accessible to everyone, including persons with disabilities. Cities like Bangkok and Jakarta are retrofitting public spaces and transport systems to accommodate people with disabilities, incorporating features like tactile paving, ramps, and accessible transit stops. This holistic approach underscores the growing commitment to fostering inclusive urban environments that prioritize both adequate housing and equitable access to infrastructure and opportunities.



## Education

The future of education in Southeast Asia will be marked by significant growth and transformation. The gross enrollment ratio for higher education in Southeast Asia already rose from 32.5% in 2015 to 40% in 2021, reflecting greater access and demand for advanced learning opportunities. The Edtech market alone, which is a portion of the education market is experiencing significant growth. According to Statista, the revenue in the Online Education market is projected to reach approximately US\$2.06 billion in 2024, with an expected annual growth rate (CAGR) of 4.14%, leading to a market volume of about US\$2.52 billion by 2029. Surveys indicate that 77% of professionals in the region plan to upskill, highlighting a strong commitment to future-proofing careers.

Education in Southeast Asia is evolving with an emphasis on inclusivity, technology, and lifelong learning. STEM (Science, Technology, Engineering, and Mathematics) education is a priority, equipping students with skills for the digital economy, while transnational education initiatives are fostering international collaboration. Digital learning technologies, such as online platforms and hybrid models, are rapidly expanding access to education across urban and rural areas. Governments are also promoting lifelong learning through specific programs ensuring individuals continuously adapt to dynamic job markets. Moreover, regional efforts, such as ASEAN's education harmonization strategies, aim to facilitate student mobility and mutual recognition of qualifications, fostering a more interconnected and skilled workforce. That said disparities across countries persist. Tertiary school enrollment, percent of all eligible children, 2021: The average for 2021 based on 9 countries was 39.9%. The highest value was in Singapore: 97.1% and the lowest value was in Laos: 12.46%.



## Culture

ASEAN gathers 45 UNESCO World Heritage Sites. As skyscrapers rise in Southeast Asia, cities race to preserve cultural heritage, with over 70% of World Heritage cultural sites located in urban areas and thus, at risk from modernization. Many cities increasingly integrate heritage into development strategies, promoting cultural initiatives to protect identity, enhance diplomacy, and boost tourism. However, while some cities leverage their heritage to attract tourists and strengthen their soft power, others are still lagging, risking the disappearance of key elements of their historical identity.

### Culture and Arts



Source : Unesco (2023), World Heritage list 2023

## Diversity and Inclusivity

ASEAN's approach to diversity and inclusivity is nascent but steadily evolving. Key initiatives address gender inclusivity through programs like Quezon City's "Safe Cities" to improve safety for women, and economic empowerment efforts that support women entrepreneurs in informal sectors. Inclusive governance is promoted through participatory urban planning and digital platforms like Bangkok's "Traffy Fondue", fostering community involvement in decision-making. ASEAN also celebrates cultural diversity by integrating ethnic minorities into mainstream urban life via festivals and cultural programs, while advancing rights with legal milestones such as Thailand's same-sex marriage law.



### Health

Southeast Asia's healthcare systems face mounting pressure from the rise of non-communicable diseases (NCDs) like heart disease, diabetes, and cancer, alongside persistent infectious diseases such as tuberculosis and dengue. Urban challenges, including air pollution, sedentary lifestyles, and stress, further exacerbate health issues. Rapid urbanization and migration amplify social pressures, rising living costs, and mental health challenges, particularly for young workers and newcomers, driving demand for well-being solutions.

Countries in the region vary in their healthcare responses. Singapore excels in high-quality healthcare but faces challenges with affordability, while emphasizing mental and physical well-being. Thailand's universal health coverage provides affordable access to care and is adapting its infrastructure for aging populations and chronic disease management. In contrast, Indonesia and the Philippines, with fragmented healthcare systems and reliance on out-of-pocket payments, struggle to meet the needs of vulnerable populations.

NCDs account for 62% of deaths annually (9 million), while air pollution causes 1.3 million deaths each year, contributing to respiratory illnesses. Mental health issues affect 1 in 7 individuals. Urban residents, especially migrants and young workers, report higher levels of anxiety. The aging population adds strain, with 25% of Singapore's residents projected to be over 65 by 2030. Meanwhile, healthcare access remains limited in informal settlements, where 43% of urban residents in the Philippines lack basic services. High healthcare costs, especially in Indonesia, see families spending up to 30% of their income on medical care, leaving many uninsured in the informal sector. Addressing these challenges requires urgent reforms, investments in infrastructure, and expanded access to affordable care.

## Key Healthcare Trends Southeast Asia

- **Healthcare Infrastructure Investment:** The hospitals market is projected to grow 6.76% annually, reaching US\$92.89Bn by 2029, driven by public and private investments to improve access and quality of care.
- **Digital Health Technologies:** The adoption of telemedicine and digital health platforms is transforming healthcare access. The digital health market is projected to reach US\$6.7Bn by 2024, driven by advancements in AI and health tech.
- **Preventive Care and Wellness:** Preventive health programs and wellness clinics are on the rise as consumers proactively manage their health, emphasizing long-term health and well-being.
- **Non-communicable diseases (NCDs) Prevention:** National campaigns like Singapore's Healthy Lifestyle program encourage healthier behaviors among residents. Additionally, urban initiatives such as the development of bike lanes and green spaces aim to promote physical activity and reduce the prevalence of lifestyle-related illnesses, contributing to healthier urban living environments.
- **Mental Health Support:** Programs addressing mental health needs are also developed, particularly among youth. Singapore has recently launched "Chat", a national youth mental health outreach and assessment service, which has helped more than 7,600 young people at risk of mental health conditions, and mental health startups are on the rise in Indonesia.
- **Aging Population Facilities:** Senior living options are growing in Singapore and Thailand, as cultural attitudes shift from traditional family-based elder care although family care remains common, with initiatives offering independent housing with support services.



## Illustrative Initiatives



**Philippines' Social Housing Finance Corporation (SHFC):** The SHFC's Community Mortgage Program empowers informal settlers to collectively buy land they occupy or relocate to safe housing. By facilitating community-driven development, the program promotes inclusive urban growth and reduces inequality.

**Inclusive Urban Infrastructure in Ho Chi Minh City, Vietnam:** The Green Transport Development Project integrates socially inclusive transport systems, focusing on women, the elderly, and people with disabilities. It includes reserved seating, low-floor buses, and gender-sensitive urban planning to improve accessibility and safety.

**Jakarta's Kampung Improvement Program (KIP), Indonesia:** This long-standing initiative upgrades informal settlements to ensure better housing, sanitation, and roads while involving residents in planning. The KIP has enhanced the quality of life for urban poor communities and set a model for participatory urban development.

**Malaysia's Zero Barriers Initiative:** This initiative, led by NGOs and local governments, focuses on integrating migrant workers into local communities. It offers language courses, health services, and legal aid to ensure their rights are respected and they can contribute effectively to urban growth.

**Kuala Lumpur's River of Life Project:** The River of Life project in Kuala Lumpur focuses on transforming the city's rivers into vibrant waterfronts through river cleaning, beautification, and development of public spaces. This initiative aims to enhance urban livability by providing recreational areas and improving environmental quality.

**Singapore's Housing Development Board (HDB) Green Towns Programme:** Singapore's HDB has initiated the Green Towns Programme to enhance the sustainability and livability of public housing estates. The program focuses on reducing energy consumption, recycling rainwater, and increasing green spaces, thereby improving residents' quality of life.

**Universal Health Coverage (Thailand, 2002):** Known as the Gold Card, this program provides free or low-cost healthcare, ensuring extensive medical coverage for all citizens. Thailand was one of the first middle-income countries to implement such an initiative.

**STEM Education Initiatives in Thailand (2012):** Thailand has launched several initiatives to promote STEM education, including the "Chevron Enjoy Science" program, which aims to make STEM education accessible to all by combining classroom and extracurricular learning. A national STEM education network has been established to encourage students' creativity and integrate science, technology, engineering, and mathematics into school curricula. The country also participates in international science Olympiads, further strengthening its efforts to prepare young people for a technology-driven economy.

**New Generation Schools (2014)** are public schools, benefiting from systemic reforms, launched by the Cambodian government to improve the quality of education. These schools emphasize teaching science, technology, engineering, and mathematics (STEM) while providing a modern learning environment. They also aim to provide free access to quality education for children from disadvantaged backgrounds, reducing disparities between public and private schools.

**ASEAN Cultural Heritage Digital Archive (ACHDA):** Launched in 2018, ACHDA aims to digitize and provide online access to cultural artifacts from ASEAN member states. This initiative enhances the preservation of cultural heritage and promotes regional identity by making cultural resources accessible to a global audience.

**UNESCO Creative Cities Network Expansion:** Cities in Southeast Asia, such as Bandung in Indonesia and Phuket in Thailand, have joined UNESCO's Creative Cities Network. This inclusion fosters international cooperation and promotes creativity as a strategic factor for sustainable urban development.

**Trend 7**

# Data in the City: Integrating Urban Planning, Engineering, and Data for Sustainable Cities



## The necessary development of urban planning and engineering

Urban planning and engineering are crucial for achieving sustainable urbanization, providing the foundation for efficient green infrastructure, environmental resilience, and social equity. In Southeast Asia, these fields have advanced significantly in recent years, though progress varies widely across the region, reflecting different stages of development and planning effectiveness.

- **Advanced Urban Planning:** Countries like Singapore and Malaysia have implemented comprehensive urban planning frameworks. Singapore's Urban Redevelopment Authority (URA) meticulously manages land use, integrating sustainable practices and smart city technologies to enhance livability. Malaysia's Vision 2020 emphasizes urban development with a focus on sustainability and economic growth.

- **Emerging Urban Planning Efforts:** Nations such as Thailand, Indonesia, and the Philippines are making strides in urban planning, though challenges persist. Bangkok is expanding its public transportation network to alleviate congestion, while Jakarta is addressing issues related to rapid urbanization, including informal settlements and infrastructure deficits. Manila is focusing on disaster resilience and housing improvements.
- **Challenges in Urban Planning:** In countries like Cambodia, Laos, and Myanmar, urban planning is in

nascent stages. Rapid urbanization often outpaces planning efforts, leading to informal settlements and inadequate infrastructure. Limited resources and institutional capacities further hinder effective urban development.

The ASEAN Smart Cities Network (ASCN) exemplifies regional collaboration, aiming to synergize urban planning efforts across member states. This initiative promotes sustainable urban development through the adoption of smart technologies and shared best practices.

“Southeast Asian governments now understand the critical role of urban infrastructure in driving economic growth. However, economic priorities still tend to take precedence, and environmental awareness is advancing gradually.”



**Philippe Schulzinger**, Asia Regional Director  
Transportation Business Line, Egis

## How to Ensure Sustainable Planning?

The Asian Development Bank (ADB) provides seven guiding principles for urban planning:



**Integrated Multisectoral Projects:** Urban initiatives should address multiple needs simultaneously to create a "multiplier effect" of environmental, economic, and social gains, with cross-sector collaboration between infrastructure, energy, transport, and public health sectors.



**Climate Resilience and Adaptation:** Planning must anticipate climate risks with measures like wetlands and green spaces to absorb stormwater and reduce heat impacts.



**Data-Driven Planning:** Using scientific data and digital tools like GIS and climate modeling, helps predict challenges, optimize resources, and protect high-risk areas.



**Participatory and Inclusive Planning:** Engaging diverse community voices ensures urban projects meet residents' needs, with public consultations fostering inclusivity and support.



**Flexible Planning:** Adaptive, short-term planning cycles allow cities to respond to changing needs and new data and feedback.



**Public-Private Partnerships (PPPs):** PPPs provide funding, innovation, and expertise for urban projects in transport, housing, and waste management, easing financial strain on cities.



**Strengthening Governance:** Strong governance with diagnostics to assess institutional needs, transparency, and improved revenue strategies is essential for sustainable urban development.

### Summary: Building "From Scratch" vs. Adapting Existing Infrastructure

- Building "From Scratch" allows for innovation and modernity, enabling the design of optimized, resilient urban layouts with efficient transportation systems and inclusive spaces. Large-scale examples include Nusantara, Indonesia's new capital city designed to reduce congestion in Jakarta while incorporating smart and sustainable infrastructure, and Putrajaya, Malaysia's meticulously planned administrative hub with green spaces and modern transport networks. While these projects can drive economic growth and foster social innovation, they involve high costs, long timelines, and risks like inequality and lack of community appeal.
- Adapting Existing Infrastructure focuses on accessibility and preservation, retaining established communities, stimulating local economies, and preserving cultural heritage. Key examples include Ho Chi Minh City's Thu Thiem New Urban Area, transforming marshlands into a vibrant mixed-use district, and Singapore's Greater Southern Waterfront, repurposing port infrastructure into a livable, green urban space. This approach is cost-effective and environmentally friendly but faces challenges such as technical complexity, high maintenance costs, and the risk of gentrification displacing vulnerable populations.

# The Rise of Data-Driven Planning and Smart City Management

Data enhances urban planning by enabling evidence-based decisions, optimizing infrastructure design, and improving resource allocation. Real-time data from sensors and IoT devices helps manage traffic, energy, and water systems more efficiently, while predictive modeling anticipates future growth and challenges. Data also promotes inclusivity by identifying underserved areas and fostering community engagement through open platforms. By leveraging data, cities can become more sustainable, resilient, and better equipped to meet the needs of their populations.



**Energy Optimization:** Smart buildings use sensors and IoT systems to dynamically manage energy consumption based on occupancy and needs, reducing CO<sub>2</sub> emissions and enhancing efficiency. For instance, the Cyberjaya Smart City in Malaysia integrates IoT-enabled sensors and AI algorithms to monitor and optimize energy usage in real-time across smart buildings.



**Mobility Management:** Data-driven systems monitor traffic flows, adjust traffic lights in real-time, and optimize public transportation routes, reducing congestion and emissions. Jakarta exemplifies this approach with its traffic management systems, which analyze patterns from traffic cameras to improve urban mobility and safety.



**Resource Optimization:** Data systems track consumption and detect waste or leaks, enabling efficient resource allocation and reducing wastage. Cities like Bandung leverage smart city platforms to enhance public service delivery and resource management through citizen engagement.



**Climate Resilience:** Environmental data collection and analysis improve cities' preparedness for natural disasters, enabling better emergency planning and responses. Ho Chi Minh City uses data analytics to plan flood management strategies and strengthen infrastructure against climate risks.



**Health and Public Safety:** AI and data systems enhance public health monitoring, risk mitigation, and emergency responses, particularly in densely populated areas. Singapore's Virtual Singapore platform integrates real-time data for disaster preparedness, urban planning, and public safety improvements.

“In a region where each country has its own sustainability priorities, establishing common standards is crucial. [...] Quality data, rigorously collected, is crucial for developing applicable and auditable standards.”



**Henri Nejade**, Chairman, Singapore Chemical Industry Council (SCIC)

Southeast Asia is at an early to intermediate stage in leveraging data for urban planning. Singapore, Jakarta, and Kuala Lumpur are leading the way by integrating data-driven technologies into urban planning processes. Singapore's Virtual Singapore platform is a benchmark in using 3D modeling and real-time data for planning infrastructure and managing urban challenges. In contrast, other capitals in the region—Bangkok, Jakarta, Kuala Lumpur, Manila, Hanoi, and Ho Chi Minh City—are implementing local initiatives, providing concrete daily improvements, with a more modest level of technology.

In less-developed countries, cities are facing resource constraints and lack access to the necessary technology and expertise. Many urban areas lack the infrastructure to collect, store, and analyze large datasets, limiting their ability to make data-informed decisions. Bureaucratic inefficiencies and limited inter-agency collaboration hinder the widespread use of data in urban planning.

As smart city technologies become more accessible, more cities in the region are expected to adopt data-driven urban planning approaches. Collaborations with technology providers and private-sector stakeholders could accelerate the implementation of advanced data systems.



## Illustrative Initiatives



**Digital Twin of the City:** Virtual Singapore created a detailed digital twin of the country, enabling urban planners and decision-makers to optimize planning, infrastructure, and disaster response. Building on this, ASEAN has initiated a pilot network of digitally twinned smart cities, including Jakarta and Cauayan City, to collaboratively address urban challenges through shared expertise and resources.

**Ho Chi Minh City's Smart Traffic Management:** Ho Chi Minh City is implementing a smart traffic management system that utilizes IoT sensors, cameras, and data analytics to monitor and control traffic flow in real-time. The system provides dynamic traffic signal adjustments, incident detection, and information dissemination to commuters, aiming to reduce congestion and improve road safety.

**Ho Chi Minh City's Urban Observatory:** Ho Chi Minh City is establishing an Urban Observatory that collects and analyzes data on various urban indicators, including air quality, traffic, and land use. This data-

driven approach supports informed decision-making in urban planning and environmental management, contributing to the city's sustainable development goals.

**Kuala Lumpur's Integrated Transport Information System (ITIS):** Kuala Lumpur has developed the ITIS, a centralized data platform that collects and analyzes traffic information in real-time. This system aids urban planners and engineers in optimizing traffic flow, reducing congestion, and planning future transportation infrastructure, thereby enhancing the city's sustainability.

**Jakarta's Smart City Program:** Jakarta has implemented a Smart City Program that utilizes data analytics and digital platforms to address urban challenges. The program includes a city-wide data integration system that monitors traffic, waste management, and public services, enabling more efficient urban planning and resource management.

**Trend 8**

# Rising Green Awareness: How Southeast Asia's Consumers and Society Embrace Sustainability

Overall, there is a growing consciousness within ASEAN regarding the necessity of transitioning towards sustainability. ASEAN governments are aligning with global goals like the UN SDGs, with country initiatives and regional programs like ASCC and Smart Green ASEAN Cities foster collaboration and strategic sustainability efforts. Businesses are adopting ESG practices to meet market demands and regulations like the EU's deforestation-free policies. Public-private partnerships promote sustainable investments and transparent supply chains. Youth-led movements, shifting consumer preferences for eco-friendly products, and sustainability-focused education are driving a cultural shift toward environmental consciousness across ASEAN.

Sustainability has become a growing priority for consumers worldwide in recent years, compelling companies to adapt. Globally, 69% of consumers now feel that sustainability is more important to them than it was two years ago. This trend is also evident in Southeast Asia, where Indonesia leads with 86% of consumers prioritizing sustainability more than two years ago, followed by Thailand at 74% and Singapore at 72%.

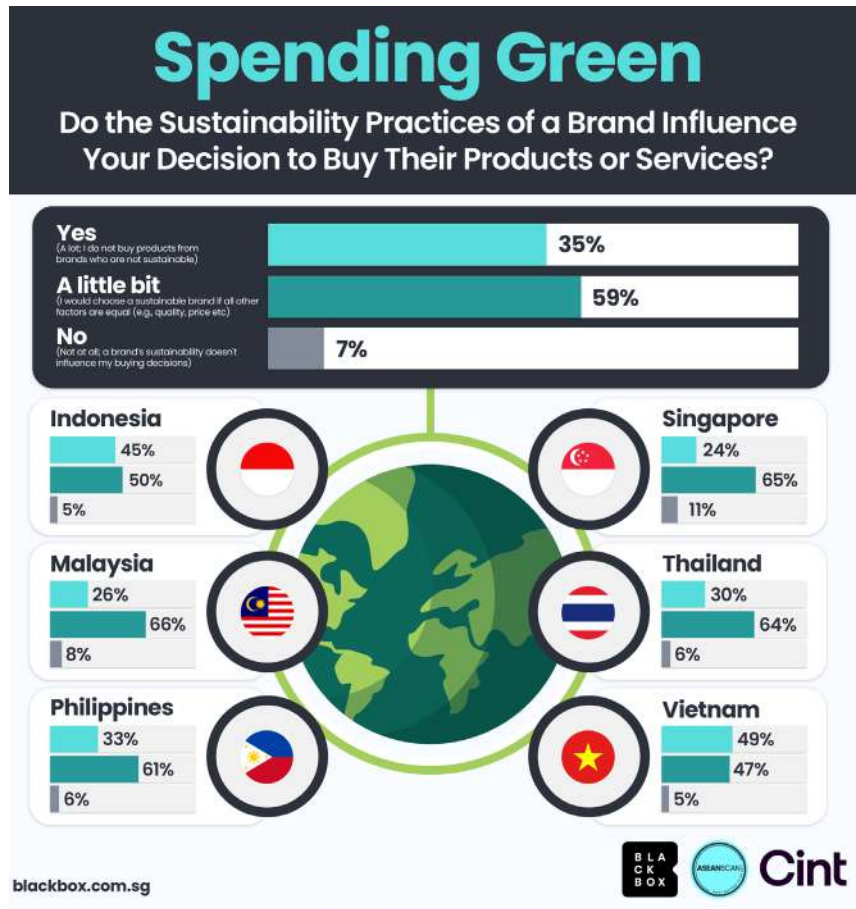
## Some developing sustainable consumption trends include

- **Eco-Friendly Tourism:** Southeast Asia's booming travel industry is rapidly shifting toward low-impact and community-driven tourism, addressing the region's environmental challenges.

“Younger generations expect companies to prioritize ethical and sustainable practices.”



**Jean-Philippe Garraux**, Business Development & Real Estate Leader, Decathlon Group



Source: Blackbox

- **Green E-Commerce:** The rise of online shopping platforms integrating eco-friendly products and carbon-neutral logistics aligns with the region's growing digital economy.
  - **Eco-Friendly Food:** Increasing interest in plant-based diets and sustainable seafood is transforming food consumption in urban areas.
  - **Reusable Solutions:** Refillable products and reusable packaging for food delivery are becoming essential in addressing the region's significant plastic waste issue.
  - **Local Sourcing:** Supporting locally produced goods and farm-to-table dining is reducing transportation emissions and promoting regional economies.
  - **Packaging-Free Solutions:** Zero-waste stores and biodegradable packaging are emerging, especially in urban hubs like Bangkok and Jakarta.
  - **Sharing Economy:** Platforms for carpooling, tool-sharing, and co-living are growing steadily, particularly in urban centers.
  - **Digital Consciousness Tools:** Apps tracking carbon footprints and promoting secondhand goods are helping consumers make informed, sustainable decisions.
  - Trends like minimalist consumption, repair and maintenance, and DIY and upcycling are still in their infancy.
- Several challenges continue to limit the rise of sustainable consumption in ASEAN. Sustainable products, such as organic food and eco-friendly technologies, are often more expensive due to demanding production processes and a lack of subsidies, driving budget-conscious consumers toward conventional alternatives. Access is also sometimes uneven, with underdeveloped distribution networks and limited retail options hindering availability. Furthermore, the proliferation of eco-labels and vague claims creates confusion, making it difficult for consumers to identify genuine sustainable products. While awareness is growing, many still lack understanding of their environmental impact or how to adopt sustainable practices. Deeply entrenched habits, such as reliance on single-use plastics and fast fashion, remain significant hurdles. Balancing rapid industrialization with sustainability still presents a major challenge.

## Illustrative Initiatives



**Nature-Based Climate Adaptation in Penang, Malaysia:** Led by Think City, this program develops inclusive strategies for climate adaptation in urban areas of Penang Island. It emphasizes community engagement and the use of digital tools to create resilient urban environments that cater to diverse populations.

**Vietnam's Community-Based Waste Management Projects:** Vietnam has launched projects that engage local communities in waste segregation, recycling, and composting. These initiatives empower residents to manage waste effectively, reduce environmental impact, and promote sustainable practices.

**Philippines' Sustainable Tourism Initiatives:** The Philippines is promoting sustainable tourism through eco-friendly practices and community-based programs. Efforts include the development of eco-parks, conservation projects, and the promotion of responsible travel behaviors among tourists and local communities.

**The "3M Plus" Campaign in Jakarta:** This campaign encourages residents to drain water reservoirs, cover water containers, and recycle waste to eliminate mosquito breeding sites, thus reducing the risk of dengue fever.

**Loyalty points for purchases of sustainable products in Thailand:** In Thailand, the supermarket chain Big C offers additional loyalty points for purchases of sustainable products. These points can be redeemed for discounts, encouraging consumers to regularly choose environmentally-friendly products.

**The "Sehat Bersama" program in Indonesia** focuses on educating consumers about waste sorting and recycling. It leverages collaborations with local influencers to promote sustainable practices such as using reusable products and returning plastic packaging for recycling. This initiative aims to strengthen sustainability and encourage responsible consumer behaviors, contributing to environmental awareness and waste reduction in Indonesia.

# How Investments Are Affecting Sustainability in ASEAN?

Investment in sustainability and ESG is one of the key levers to help the region reach its net-zero objectives, which for most countries in ASEAN are for a 2050-2060 time horizon. According to ADB, Southeast Asia's climate change adaptation needs, and renewable energy transition, will require some US\$210Bn per year in climate financing through to 2030.

This level of investment is far from being reached today. In this section, we first start to define Climate Finance and Green Finance, as the sizing of investments in both differs significantly. Then we examine the Climate Finance investments instruments, and how this lever is utilized to support investments in sustainability. The next section provides estimates of the current levels of investments in Climate Finance in Southeast Asia, and

the way it is broken down by sector. The subsequent part about investments in Green Finance and the expected projections specific to the energy sector, compares different scenarios and what is needed to reach net zero emissions levels. Lastly, we review the role of international organizations in funding investments in sustainability and the role of the private sector and its level of FDI in ASEAN.



# Understanding the Difference of Concept Between Climate Finance and Green Finance

The terms Climate Finance and Green Finance are often used interchangeably, but they have distinct meanings and scopes. Here's a breakdown of the differences:



## Climate Finance:

- **Definition:** Specifically targets investments that address climate change mitigation (reducing greenhouse gas emissions) or adaptation (resilience against climate change impacts).
- **Scope:**
  - Mitigation projects (e.g., renewable energy, energy efficiency, carbon capture)
  - Adaptation projects (e.g., coastal defenses, flood management, drought-resistant crops)
  - Financing provided through international mechanisms such as the Green Climate Fund.
  - Purpose: Meeting global climate change targets (e.g., Paris Agreement, COP goals).
  - Example: Financing solar energy plants to reduce emissions or building flood defenses in climate-vulnerable regions.
- **Purpose:** Meeting global climate change targets (e.g., Paris Agreement, COP goals).
- **Example:** Financing solar energy plants to reduce emissions or building flood defenses in climate-vulnerable regions.



## Green Finance:

- **Definition:** Refers to financing investments that provide environmental benefits. This includes funding for projects aimed at improving environmental outcomes beyond just addressing climate change.
- **Scope:**
  - Renewable energy, energy efficiency
  - Waste management, pollution reduction
  - Biodiversity conservation and ecosystem restoration
  - Sustainable agriculture and forestry
- **Purpose:** Broader environmental protection and sustainability goals.
- **Example:** Financing a biodiversity restoration project or pollution control technology.

Aspect	Green Finance	Climate Finance
<b>Focus</b>	Broad environmental sustainability	Climate change mitigation/adaptation
<b>Scope</b>	Includes non-climate environmental goals (e.g., pollution reduction, biodiversity)	Exclusive to climate-related projects
<b>Objective</b>	Environmental protection and sustainability	Achieving net-zero emissions, reducing climate risks
<b>Governance</b>	May involve local, national, or private initiatives	Often tied to international agreements (e.g., COP, Paris Agreement)
<b>Examples</b>	Sustainable agriculture, green buildings	Renewable energy, flood defenses

Source: Climate policy initiative, World Bank

# Climate Finance in ASEAN: Structure and Investment Impact

Climate investments aim to deliver both financial returns and positive environmental outcomes. These investments encompass projects such as renewable energy, energy efficiency, clean technologies, sustainable agriculture, waste management, and water conservation. Economic players which are the public, private sectors, as well as international institutions, SMEs and households, all have a role to play to facilitate the transition towards climate investments. Environmental investments demand significant capital, making the financial sector—which includes financial institutions, capital markets, and other funding sources—essential in facilitating climate financing. It also develops and provides green financial products and services designed to meet consumer needs.

ASEAN countries use a variety of financial instruments tailored to diverse investment needs:

1. **Grants:** Non-repayable funds from governments or environmental agencies used to incentivize or subsidize green projects, often covering initial losses but lacking incentives for project viability.
2. **Equity Instruments:** Capital investments in exchange for ownership, commonly used for early-stage or high-risk projects, including stocks, public-private partnerships (PPPs), and private equity.
3. **Debt Instruments:** Borrowing mechanisms suited for low-risk projects, including green loans, green bonds (corporate and sovereign), and Islamic green



finance instruments like Green Sukuk.

4. **Sustainability Instruments:** Broader tools like sustainability bonds and sustainability-linked loans or bonds, which tie returns to environmental, social, and governance (ESG) performance.
5. **Risk-sharing Mechanisms:** Tools like credit guarantees, risk-sharing facilities, and default swaps to enhance project credibility and borrowing capacity.

Debt instruments dominate climate financing in ASEAN due to their suitability for the region's environmental investment needs.

This preference stems from a well-

developed regulatory framework, particularly for green bonds, and ongoing efforts by ASEAN countries to enhance these regulations. Debt instruments also allow investors to track environmental performance more easily than equity financing, which involves more complex fund utilization disclosures. Additionally, equity instruments are typically used for high-risk, early-stage projects involving specialized environmental technologies, which are less common in ASEAN. Government support through subsidies and tax incentives further strengthens the appeal of green debt instruments, making them the primary focus for green financing development in the region.

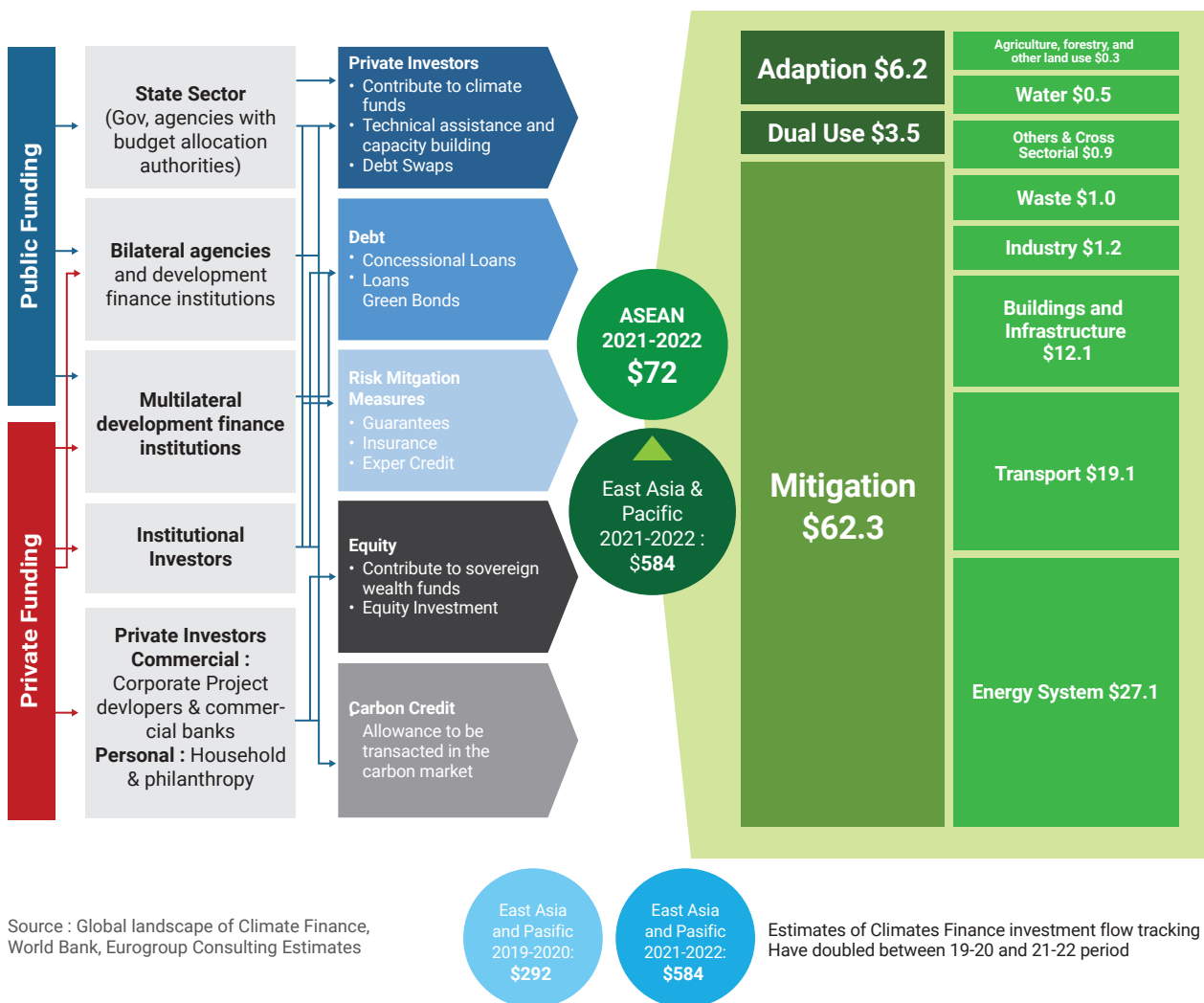
Between 2016 and 2023, ASEAN countries issued around US\$58.16Bn in green debt instruments, representing just 2% of global green debt financing. Six key nations—Indonesia, Malaysia, the Philippines, Singapore, Thailand, and Vietnam—have been consistent in issuing green financial products, leading to significant growth in market size and diversification of instruments, such as green loans, corporate and sovereign bonds, and green sukuk. The market has also seen an expansion in participants and green projects across various sectors.

# Investment in Climate Finance has doubled in 2022 compared to 2020 to reach US\$72Bn

Climate Finance refers to financial resources—sourced from public, private, and alternative channels—that support actions aimed at mitigating and adapting to climate change. This encompasses investments in renewable energy, energy efficiency, sustainable agriculture, and other initiatives that reduce greenhouse gas emissions or enhance resilience to climate impacts.

The Global Landscape of Climate Finance, in a report from October 2024, estimates the overall investment inflow of climate finance to the East Asia & Pacific region to be US\$584Bn (average between 2021 and 2022). From this, Eurogroup Consulting estimates Climate Finance specifically for ASEAN region to be about US\$72Bn yearly, and broken down as follows in the chart below:

**The Climate Finance System (US\$Bn)**





This map highlights the size of climate finance related to mitigation, adaptation and dual use investments with energy systems, transportation, building and infrastructure taking the lions’ share of Climate finance investments. It is interesting to note that Climate Finance annual sizing has evolved significantly between 2019-2020 average and 2021-2022 average where East Asia & Pacific region went from US\$292Bn to US\$584Bn with ASEAN representing US\$72Bn in 2022, which includes all private and public fundings highlighted above. The table below estimates the climate finance allocated in ASEAN per sector yearly as of now.

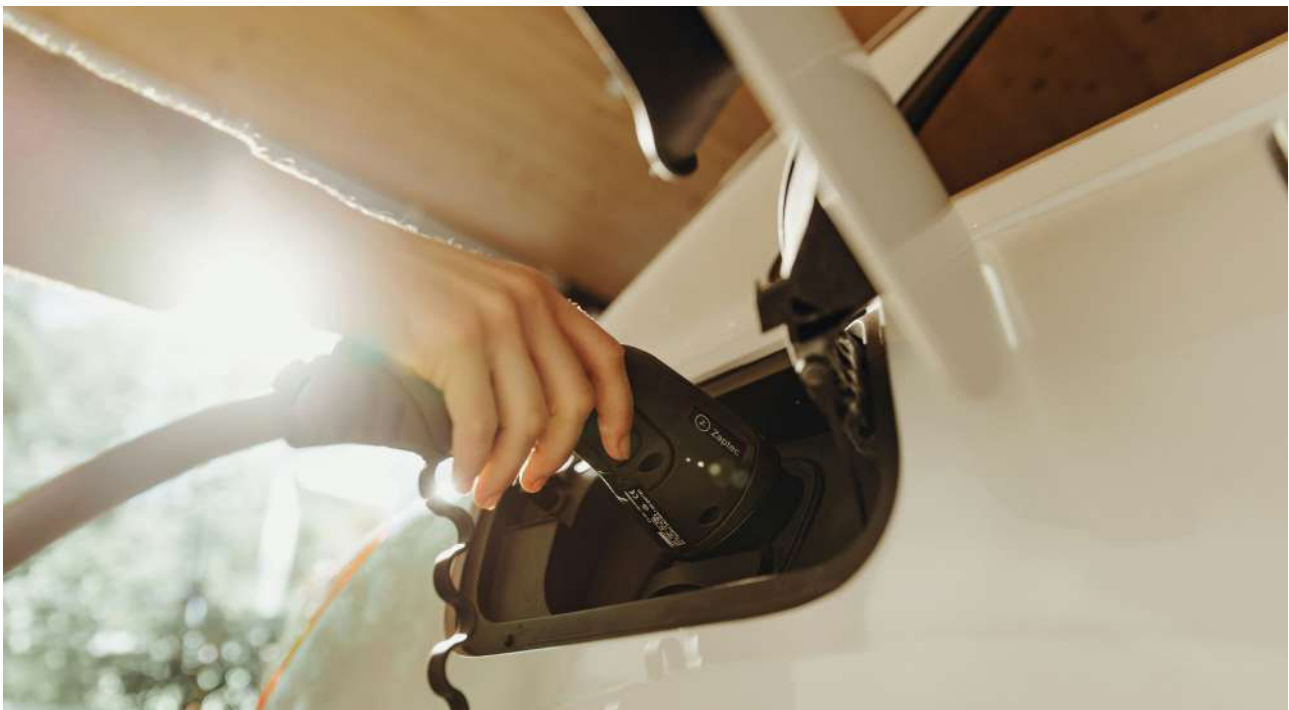
Sectors’ potential for climate finance	Amount	Opportunities
1. Energy Systems	US\$27.1Bn	Power production: Renewable energy, energy efficiency, energy storage, smart grids
2. Transportation	US\$19.1Bn	Low carbon transport such as new mobility (EV, FCEV, fuel substitution, biofuels, mass transit systems, etc)
3. Building and Infrastructure	US\$12.1Bn	Green buildings (incl. Data Centers), Green cement/ building materials, energy efficiency systems
4. Industry	US\$1.2Bn	Green supply chain and green manufacturing
5. Waste & Water	US\$1.5Bn	Waste and water management, plastic recycling, etc.
6. Agriculture, Forestry and other land use	US\$0.3	Precision agriculture, regenerative agriculture,
7. Other	US\$0.9	Cross sectorial
<b>Total</b>	<b>\$72Bn</b>	

All of these sectors present significant opportunities for private businesses. Whether through exports, direct sales (such as winning tenders), public-private partnerships (PPP), or Build-Operate-Transfer (BOT) projects, there are numerous ways for businesses to succeed. Companies with specialized expertise, advanced technologies, and the capability to manage complex, multinational projects are particularly well-positioned to capitalize on these opportunities across the highlighted sectors.

# ASEAN Green Investments: Bridging the Gap to Net Zero by 2050

Several government and financial institutions agree on the amount of green investments needed to follow COP 26 objectives and keep on track with the net zero objectives by 2050-2060. While ADB estimates that US\$210Bn per year is needed until 2030, the Monetary Authority of Singapore (MAS) estimates US\$200Bn of green investment is needed in South East Asia. This number does not seem huge compared to the size of ASEAN economies (it represents only 5.3% of US\$3,775Bn of ASEAN countries GDP for the year 2023), but it is in fact higher than the value produced by the 10 ASEAN countries combined when growing yearly at about 4% as they did between 2022 and 2023: ~US\$180Bn of incremental GDP growth.

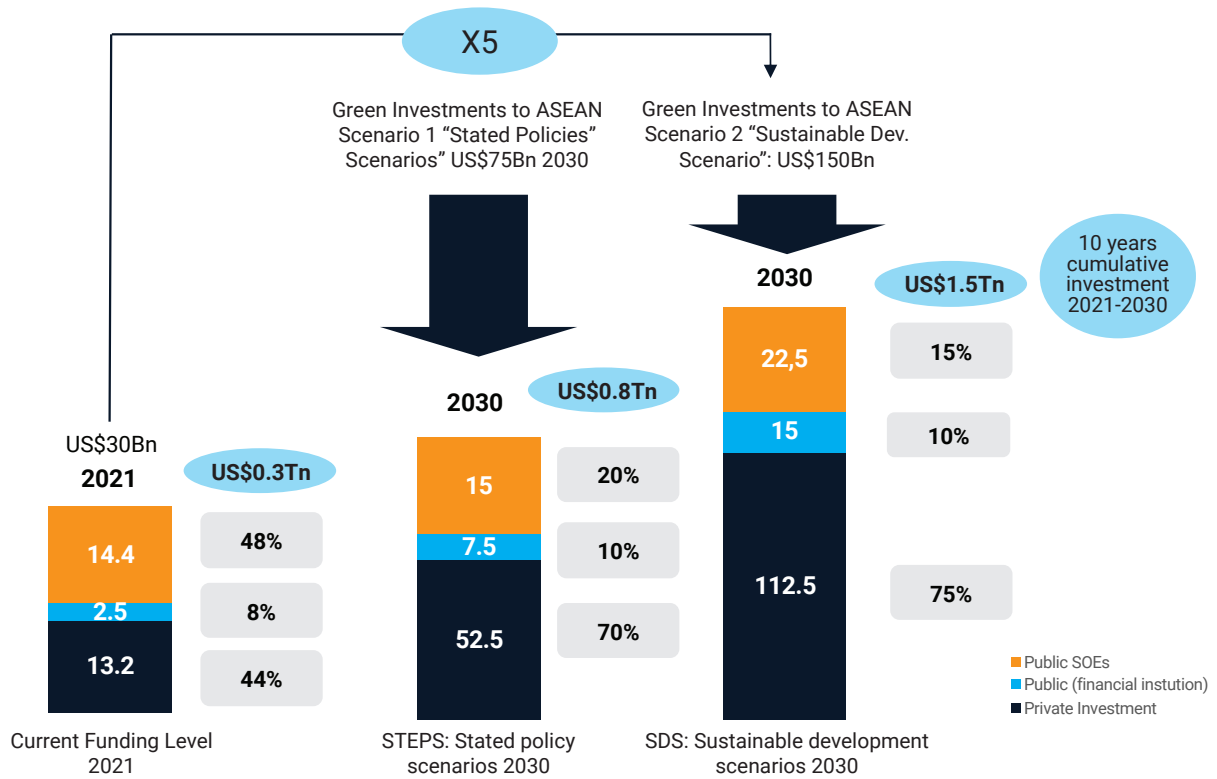
Investments have so far fallen short. According to a United Nations Environment Programme report, annual flows of green finance in Southeast Asia were estimated at just US\$30Bn while MAS estimated to be US\$40Bn.



## ASEAN's 2030 Investment Gap: The Energy Transition Challenge

Among the different sectors where these investments for sustainability are needed, clean energy is crucial to reduce GHG emissions. IEA estimates that ASEAN will require approximately US\$150Bn in annual clean energy investments by 2030 to align with the Paris Agreement goals. Yet, in 2021, the region attracted only US\$30Bn per year, highlighting a substantial investment shortfall. The split of investment in 2021 between public, private and financial institutions was as follows: US\$14.4Bn (48%) from public investments, US\$13.2Bn (44%) from private companies and US\$2.4Bn (8%) from financial institutions (BCG/IAE/Eurogroup Consulting estimates, 2021 figures). Reaching the sustainable development scenario of US\$150Bn per year will not be achieved without a much larger contribution from the private sector, given that in the ideal scenario, investments in clean energy need to cumulate to US\$1,500Bn over the period to keep up with the COP agreements.

### Clean energy investment gap in ASEAN today, and looking at 2 possible scenarios for 2030



Source IEA, BCG Analysis, Eurogroup Consulting Analysis

Scenario 1: STEPS (Stated Policies Scenario by 2030)	Scenario 2: SDS (Sustainable Development Scenario by 2030)
Represents projections based on current policies and announced government commitments.	Reflects the level of investment required to meet global climate goals, including those aligned with the Paris Agreement and achieving net-zero emissions.
It reflects the most likely trajectory if no significant additional policy actions are implemented.	This scenario assumes aggressive policy measures, increased private-sector participation, and public-private collaboration to drive sustainable development.
Investment in clean energy under this scenario is projected at US\$75Bn annually by 2030.	Investment in clean energy under this scenario is projected at US\$150Bn annually by 2030.

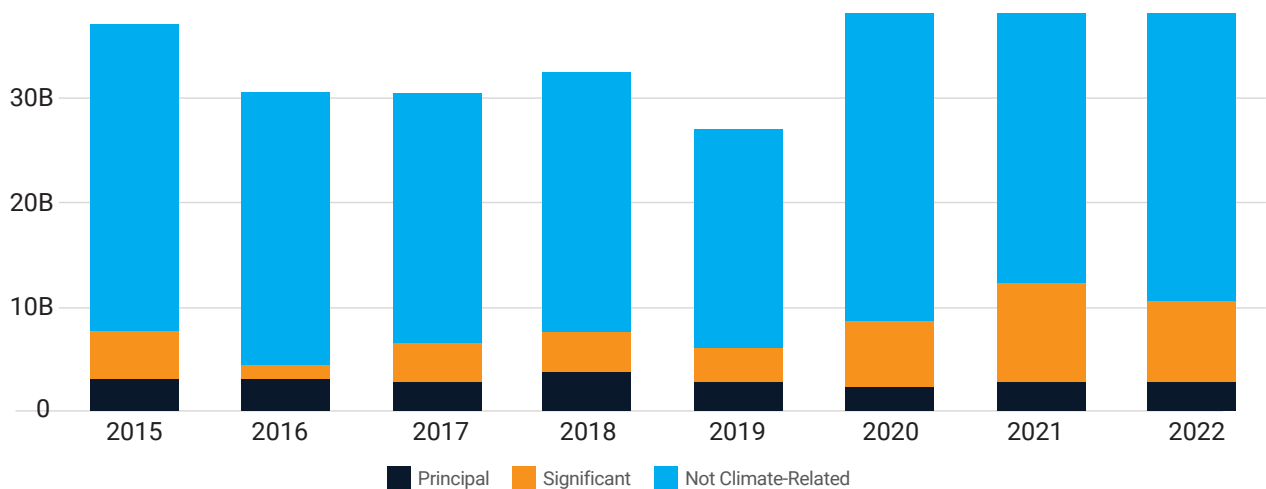


# The Role of Development Finance and Public Institutions in Financing the Energy Transition



Financial institutions are the smallest contributor among the 3 main investors for energy transition, yet International financial institutions play a key role in driving investments in sustainable development. When looking at Climate Development Finance, supported by financial institutions, The Southeast Asia Map Published by Lowy Institute reveals that an average of US\$8.1Bn in climate-related development finance was disbursed annually in Southeast Asia from 2015 to 2022. These investments are not only related to energy as depicted in the previous charts, but are dedicated to overall climate related projects.

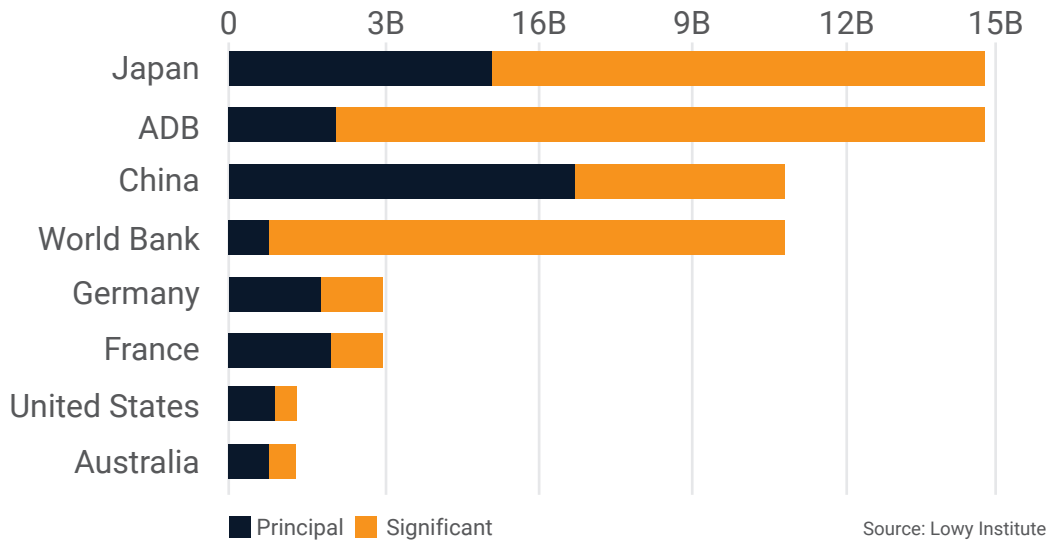
**Climate-related development finance to Southeast Asia**  
*Constant 2022 US\$*



Source: Lowy Institute

The chart above identifies whether projects have climate-related objectives (i.e. mitigation or adaptation) as their “principal” purpose or as a “significant” objective within a project otherwise focused on other development objectives.

**Climate-related development finance in Southeast Asia, by partner**  
*Spent, 2015-22, constant 2022 US\$*



Japan stands as the leading provider of climate-related finance in the region, allocating US\$14.7Bn—43% of its total Official Development Finance (ODF) budget—to climate-focused projects over the 2015-2022 period. Meanwhile, the two major multilateral development banks, the ADB and World Bank, collectively contributed US\$23.3Bn toward climate-related goals, accounting for 30% of their total ODF in the region.

Despite increased climate-related Official Development Finance (ODF), challenges remain, according to the Lowy Institute. Growth has been driven by projects with “significant” rather than “principal” climate objectives, which have stagnated. China’s leadership in “principal” climate financing, notably hydropower projects in Laos, raises concerns about environmental, social, and debt sustainability issues, as Laos heavily relies on China as its main creditor. Additionally, while financing for non-renewable energy has declined, investments in new renewable projects have also dropped, indicating misalignment with the region’s urgent need for cleaner energy solutions.





# The Role of the Private Sector: FDI in ASEAN

## Private sector investment: FDI have remained stable between 2022 and 2023 in Southeast Asia



In 2023, the top 10 investors accounted for 80% of FDI in ASEAN, up from 75% in 2022, highlighting their critical role in sustaining high inflows.



U.S. companies led FDI inflows, contributing US\$74Bn (one-third of total FDI), with over 90% directed to Singapore and about 70% focused on finance and insurance, which saw significant growth.



Chinese FDI increased by nearly 20% to US\$17Bn, with investments concentrated in manufacturing (35%), wholesale and retail trade, and real estate (20% each).



India rejoined the top 10 investor countries, doubling its FDI to US\$5.6Bn, with over 80% in financial activities.



FDI from key sources such as Hong Kong (China), intra-ASEAN investments, Japan, South Korea, and the Netherlands saw significant declines concentrated in manufacturing (35%), wholesale and retail trade, and real estate (20% each).

### ASEAN: Top 10 sources of FDI, 2022-2023 (US\$Bn)

Source	2022	Source	2023
Intra-ASEAN	33.5	United States	74.4
United States	30.0	Intra-ASEAN	21.9
Japan	24.2	China	17.3
Republic of Korea	14.9	Hong Kong, China	15.0
China	14.6	Japan	14.5
Hong Kong, China	14.5	Republic of Korea	10.9
Netherlands	13.9	Netherlands	8.7
United Kingdom	10.3	Taiwan Province of China	8.0
Taiwan Province of China	9.3	India	5.6
France	7.6	Switzerland	5.2
<b>Total</b>	<b>172.7</b>		<b>181.5</b>
<b>Top 10 share of total FDI (%)</b>	<b>75.4</b>		<b>80.0</b>
<b>Total FDI in ASEAN</b>	<b>229.2</b>		<b>229.8</b>

Source : ASEAN Secretariat

These FDI are not specifically targeted on green investments, they account for all FDI combined in SEA. The share of FDI Specific to sustainability is difficult to estimate. ASEAN Secretariat states that between 2020 and 2023, greenfield investments in industries related to the renewable energy supply chain in ASEAN averaged over US\$27Bn annually, comprising approximately 25% of all announced greenfield investments.

An aerial photograph of a city skyline, likely Singapore, featuring numerous skyscrapers and modern buildings. In the foreground, there is a vast, lush green park with many trees and a winding path. The sky is blue with scattered white clouds.

# How to Strive in the Future of ASEAN Sustainable Cities?

To drive sustainable urban development across ASEAN, businesses must adopt strategies that address the region's unique challenges while leveraging its dynamic opportunities. The following recommendations outline actionable pathways to thrive locally, demonstrate impactful solutions, foster collaboration across ecosystems, and unlock financial and operational resources. By aligning with regional sustainability priorities and engaging stakeholders effectively, companies can position themselves as leaders in shaping the future of ASEAN's sustainable cities.

**Recommendation 1**

# Localize to Thrive – Build Strategic Partnerships and Trust at the Local Level

Southeast Asia’s diversity demands that businesses adopt a localized and inclusive approach to succeed in creating sustainable urban solutions. Tailored strategies that build trust, align with regional priorities, and engage local stakeholders are essential for lasting impact.



**Conduct Deep Market Research and Align with Regional Agendas** by thoroughly understanding the cultural, social, and economic dynamics of each market. Companies must ensure their strategies align with the sustainability priorities of cities, countries, and ASEAN as a whole. This alignment creates synergy between the company’s goals and regional aspirations, fostering trust and credibility among local stakeholders.

**Build Strategic and Lasting Local Partnerships** by collaborating with local or regional business, NGOs, and government agencies. Such partnerships enhance market access, provide valuable local insights, and strengthen credibility. A strong emphasis should be placed on forming alliances with reliable entities that share a commitment to sustainability goals and long-term development.

**Co-Create and Co-Innovate with Local Stakeholders** by actively involving governments, businesses, and communities in designing tailored solutions. This co-creation process ensures that proposed solutions are not only relevant but also broadly supported and aligned with local needs. Combining global expertise with local knowledge can spark innovation to tackle region-specific challenges.

**Invest in Understanding Cultural Nuances** by respecting local languages, traditions, and decision-making processes. This cultural intelligence is critical for building trust and avoiding missteps that could derail partnerships or project execution.

**Build Local Capacity** by offering training programs and skill development opportunities for local teams. Empowering local talent ensures the sustainability of projects over time and reinforces the company’s commitment to long-term regional development.

**Recommendation 2**

# Demonstrate Technology – Showcase Real-Life Solutions Driving Value

ASEAN’s rapidly urbanizing cities are increasingly looking to solutions to address sustainability challenges, with stakeholders showing a strong appetite for scalable, impactful innovations. While cutting-edge technologies often lead the way, innovative low-tech solutions also play a vital role in achieving sustainable urban transformation, especially in resource-limited settings. Balancing high-tech innovations with adaptable low-tech solutions further ensures inclusive and impactful progress toward a sustainable urban future in ASEAN.



**Showcase Proven Expertise and Demonstrate Business Impact** by highlighting real-life, at-scale projects that emphasize feasibility, scalability, and measurable value creation. Successful examples serve as powerful proof points, inspiring confidence in the solutions’ ability to deliver on their promises.

**Emphasize Value Creation** by building a compelling narrative that highlights the financial, environmental, and societal benefits of your solutions. Clear articulation of ROI, efficiency gains, and long-term impacts is essential to communicate the value of your offerings to stakeholders, particularly governments and investors.

**Focus on Technology and Hybrid Solutions** by deploying advanced, scalable technologies such as smart grids, renewable energy systems, and AI-driven tools while blending global best practices with local adaptations. This approach ensures solutions are both cutting-edge and relevant to regional challenges.

**Invest in Demonstrations and Pilots** to deliver live demos, pilot programs, and interactive exhibits that showcase the tangible impacts of your solutions. These initiatives provide stakeholders with firsthand experience of the scalability and effectiveness of the proposed technologies.

**Invest in Marketing to Promote Solutions** by leveraging targeted campaigns, media engagements, and trade expos. Utilize innovative tools like AR/VR and immersive exhibits to visually communicate your solutions’ impact, ensuring they resonate with diverse audiences.

**Recommendation 3**

# Collaborate for Impact – Work in Ecosystems and Influence Change

Collaboration is essential to achieving impactful and scalable sustainability solutions across ASEAN cities. Success lies in building ecosystems that unite diverse stakeholders, from business and governments to NGOs, academia, and local communities. Businesses must leverage partnerships, influence policy, and provide thought leadership to drive change and deliver results that meet the region's unique challenges.



**Work in Ecosystems and Engage in Multi-Stakeholder Initiatives** to foster cross-sector collaboration by involving business, governments, NGOs, academic institutions, technology providers, and local communities. Engage Urban Planners and System Engineers Early, by actively participating in urban planning discussions to align your solutions with city-specific development priorities. Co-creating solutions with these stakeholders ensures relevance, inclusivity, and scalability for regional sustainability challenges.

**Hunt in Packs** by forming strategic partnerships with local and international companies to pool resources, share risks, and strengthen collective positioning. Developing joint go-to-market strategies and creating consortiums can amplify the impact of shared sustainability goals.

**Be Connected and Influential** through active participation in forums, trade associations, government-led initiatives, and sustainability networks. Engaging in these platforms enhances visibility and ensures your organization plays a vital role in shaping the sustainability agenda.

**Contribute to Shaping Standards and Advocate for Regional Cooperation** by engaging in policy discussions, influencing the development of sustainability standards, and promoting cross-border collaborations. These efforts are critical for addressing shared challenges such as energy integration, waste management, and climate resilience.

**Provide Thought Leadership and Global Expertise** by publishing whitepapers, sharing benchmarks, and organizing policy workshops. These actions help to inspire local implementations, align global solutions with regional needs, and solidify business leadership in sustainable development.

**Recommendation 4**

# Unlock Opportunities – Leverage Extensive Financing and Support Tools

Financing is a critical enabler for sustainable urban development in ASEAN, with businesses needing to tap into diverse funding sources and leverage support mechanisms to scale their operations. From ESG-focused investments to regional trade platforms, unlocking financial opportunities requires a strategic, multi-faceted approach.



“The success of international companies in ASEAN’s sustainable urban development hinges on their ability to leverage global expertise while understanding and adapting to the unique local context.”



Gilles Fromageot, Regional CEO Asia, AXA XL

**Access Diverse Financing Options** to secure funding from banks, private equity, venture capital, international donors, and blended finance models. By diversifying financial streams, businesses can mitigate risks and ensure consistent growth for sustainability projects.

**Leverage ESG and Green Finance Trends** to attract sustainability-driven investors. Position your business as leader in ESG practices and explore funding mechanisms such as green bonds, sustainability-linked loans, and carbon credit trading to support environmentally focused initiatives.

**Engage Local and Multilateral Institutions** to collaborate with local banks, development banks, and regional organizations. These partnerships provide access to concessional financing, technical assistance, and alignment with regional priorities, easing the implementation of large-scale projects.

**Capitalize on Business Development Platforms** to gain visibility, foster partnerships, and scale operations through regional trade forums, industry expos, and government-led initiatives. These platforms serve as a launchpad to establish connections and showcase your sustainability credentials.

**Combine Financial Support with Technical Expertise** to strengthen funding proposals by demonstrating feasibility, presenting ROI, and aligning with stakeholder priorities. Offering technical assistance alongside funding ensures greater buy-in and confidence from investors and partners.



# Concluding Remarks **Patience, Perseverance, Prudence, and Passion are Keys to Success**

The journey toward sustainable cities in ASEAN is both an ambitious and inspiring undertaking. Success in this dynamic and diverse region demands more than just technological expertise or financial investment—it requires a mindset grounded in Patience, Perseverance, Prudence, and Passion. These four guiding principles form the foundation for navigating the complexities of emerging markets while fostering meaningful and lasting impact.

# “Success in emerging markets is driven by what I call the 4Ps: Patience, Perseverance, Prudence, and Passion.”



Pierre-Jean Malgouyres, Co-founder & CEO, Archetype Group



## Patience: The Art of Building Relationships

ASEAN’s business environment is deeply rooted in relationships, where trust and mutual respect often hold as much value as formal agreements. Patience is essential for building strong local partnerships and navigating cultural differences. Companies must invest time in understanding local customs, communication styles, and decision-making processes. The establishment of these relationships often determines the longevity and success of projects. Developing trust requires consistent engagement, transparency, and a willingness to adapt to local expectations, even when progress feels slow.



## Perseverance: Commitment to the Long Term

Succeeding in ASEAN’s emerging markets is a marathon, not a sprint. Companies that thrive here are those willing to commit to long-term strategies, even in the face of short-term challenges. The early years may demand significant investment in building credibility and aligning with local needs, often without immediate profit. Perseverance requires adaptability—whether through tailoring solutions to local realities, responding to regulatory shifts, or weathering economic uncertainties. By maintaining a steadfast presence and demonstrating reliability, businesses position themselves as trustworthy partners in the eyes of stakeholders.



## Prudence: Navigating Complexity with Care

In ASEAN’s varied and evolving regulatory environments, prudence is critical. Companies must avoid rushing into exclusive, large-scale agreements without thoroughly assessing their partners’ visions and long-term goals. Initial alignments can mask deeper divergences that may hinder collaboration down the line. Starting small with flexible agreements allows businesses to test partnerships, refine their approaches, and mitigate risks. Prudence also involves an astute understanding of the local regulatory landscape, ensuring compliance while retaining the flexibility to seize future opportunities.



## Passion: A Genuine Connection to People and Culture

Success in ASEAN is not just about business—it’s about embracing the cultures and people that define the region. Passion for the local lifestyle, traditions, and values is a powerful driver of authentic connections. Representatives who immerse themselves in local cultures and engage with communities beyond business transactions create a deeper foundation of trust. This respect for the local context fosters goodwill and strengthens relationships, paving the way for meaningful collaborations and sustainable growth.





# Experts and Business Leaders Interviews

**Interview 1**

# Sustainable Urbanization in ASEAN: Lessons and Opportunities for French Companies



## Gérard Wolf

Special advisor for sustainable cities to the Minister for Europe and Foreign Affairs

Gérard Wolf is currently Special advisor for sustainable cities to the Minister at the Ministry for Europe and Foreign Affairs since 2016, playing a key role in promoting sustainable cities.

He is also the Chairman of the Sustainable City Task Force and Vice-President of the Africa Committee at MEDEF International since 2014, supporting international development in emerging markets.

In parallel, he leads BRICS ACCESS, an organization dedicated to the growth of emerging markets. Previously, Gérard Wolf held various positions at EDF for 14 years, eventually becoming Senior Executive Vice President. He also held several roles in the prefectural body and ministerial cabinets at the Ministry of the Interior for 15 years. He graduated from Sciences Po and AgroParisTech.

Gérard Wolf discusses the unique challenges and rich potential of sustainable urbanization in ASEAN, highlighting how French expertise can support the region's green transition, from water management to digital infrastructure.

**Q: Which sectors hold the greatest significance in advancing sustainability within the ASEAN region?**

**A:** In the region, a few sectors are particularly relevant to strengthen urban sustainability, among these are waste management, water management and energy.

Water management is a critical issue in cities like Jakarta. The ASEAN region often faces an excess of water, much of which is polluted. Although some solutions have been considered, the issue has not yet been

fully resolved. Both countries and companies need to adopt a circular economy mindset and explore global solutions tailored to this region.

Regarding energy, the acceptance of renewable energy sources, such as solar, wind, or tidal power, is widespread, but obstacles like typhoons, particularly in Taiwan, complicate their development.

In terms of waste management, aside from Singapore and Hong Kong, infrastructures could be further developed. However, work can be done in waste-to-energy transformation, where French companies are among global leaders.

Transport is also a key sector in ASEAN, with a regional peculiarity: inland waterway transportation.

Sustainable tourism is also becoming

an important issue. Tourists from around the world are increasingly seeking environmentally-friendly destinations. This demand is growing, particularly in Southeast Asia, and during the 2024 Olympic Games, France showcased its ability to deliver effective solutions.

Finally, another point that deserves attention is digitalization. French companies like Egis or Dassault Systèmes are at the forefront of modeling the cities of tomorrow, particularly through digitalization tools that optimize city design based on sun exposure, airflows, and more. This is becoming an essential element in the design of smart cities, and it is a field where we must continue to innovate.

In India, all urban sectors are of great significance because of the very high urban growth rate.

**Q: What is the current state of sustainability in ASEAN cities? How are countries prepared for potential transformation?**

**A:** This is a complex question, as ASEAN is a very diverse area.

Successful initiatives led by ASEAN countries show that the region is not lagging. The topic of sustainable cities is present in every country in the region, and each country addresses these challenges in one way or another. The challenge remains in spreading a holistic vision across all the countries in the region. However, tourism is an important lever in terms of creating value, whether through jobs or local financing, and it could strengthen urban sustainability in ASEAN.

**Q: What role does ASEAN play in the agenda of French companies?**

**A:** ASEAN is a region full of potential,

but it presents challenges for French companies. We have a strong presence in certain countries, but not throughout the region. Many companies know Thailand well, but are less familiar with countries like Vietnam, Indonesia, or Malaysia.

Apart from large companies that have the resources to maintain a permanent presence or organize missions regularly in Asia, establishment in the region can be complex. It represents a significant intellectual and financial investment.

That being said, distance can strengthen cohesion, and French companies often show greater solidarity in the region. In Hong Kong, for example, local unity and leadership have enabled the completion of impressive projects.

To improve their establishment, French companies need to better understand local issues and seize emerging opportunities. Forums, like

the CCE forum, are essential to raise awareness and encourage companies to explore these markets. The context is favorable for France, particularly thanks to the success of the Olympic Games, which demonstrated our expertise in infrastructure and transport. It is crucial to capitalize on this know-how to further penetrate the region.

**Q: What key success factors can be learned from the French companies' initiative in Hong Kong?**

**A:** The success of French companies in Hong Kong is based on a strong local initiative. The local leaders, with support from their teams in Paris, took the initiative to contribute to reducing the city's carbon footprint by forming working groups that developed a concrete program and closely collaborated with local companies. They knew that simply selling French solutions would not be enough: partnership with local stakeholders was essential.

A concrete example is their program aimed at making Hong Kong greener. Their success was such that a local health minister later expressed the need to apply the same principle to hospitals, which consume a lot of energy and generate large amounts of medical waste. In less than a month, they adapted the plan to optimize energy and waste management in hospitals.

The key to success lies in responsiveness, team cohesion, and a deep understanding of the local context. While Vietnam or Indonesia may not be Hong Kong in terms of size or context, the basic process—a collaborative and adaptable approach—can be successfully replicated in other ASEAN countries, taking local specificities into account.



**Interview 2**

# Nusantara: The Challenge of Creating a 100% Sustainable Jungle Megacity for 2 Million People by 2045



**Manuelle Franck**  
Professor of Southeast Asia  
Geography, Inalco

Manuelle Franck is a professor of Southeast Asia geography at Inalco (National Institute for Oriental Languages and Civilizations) for 20 years, having also served as a President for 6 years.

She focuses her research on urbanization and metropolitan processes, particularly in secondary cities. Her work also explores regional integration between China and Southeast Asia and its effects on urban systems.

Recently, she has been involved in studying Indonesia's new capital project, which aims to be a model for sustainable and smart cities. Fluent in Indonesian, she has extensive field research experience in the region.

Indonesia's ambitious Nusantara project aims to create a sustainable "forest city" for two million people deep in the rainforest. Manuelle Franck shares insights on the unique environmental, logistical, and economic challenges that come with building this visionary yet complex megacity from scratch.

## ***A Bold Vision Deep in Indonesia's Rainforest***

The project for Indonesia's new capital, Nusantara, stands out for its ambition to create a sustainable city in an archipelago in the heart of the tropical rainforest, covering approximately 2,500 km<sup>2</sup>, with the goal of housing 2 million inhabitants by 2045. What makes this project particularly innovative is the intention to design a "forest city", where clusters of housing are surrounded by vast green spaces and canals, the so-called "green and blue corridors".

The city will be built directly within the forest, with a forest belt on its outskirts to limit urban sprawl and protect biodiversity. The project plans to allocate 75% of its land to green spaces and to restore degraded tropical forests, which are often replaced by palm oil or eucalyptus plantations. Integrating nature at every scale, down to the durable materials used for the buildings, is a key element of the project.

Nusantara is committed to achieving carbon neutrality by 2045, 15 years ahead of the national target, relying on renewable energy, smart technologies for waste, water, and mobility management, and low-impact ecological buildings. Measures are being implemented to minimize the environmental impact at all stages of the project, from construction to operation.

The project also envisions modern

infrastructure and a lifestyle adapted to contemporary challenges, with a city made up of dense housing clusters and vertical buildings. One of the key principles of this model is the concept of the "10-minute city", where every resident will have quick access to services and public transportation, promoting soft and collective mobility.

Beyond environmental concerns, the Nusantara project represents an opportunity for Indonesia to rebalance its economy and create a new administrative center. Currently, most economic and political activity is concentrated on the island of Java, home to major cities like Jakarta and Surabaya. By creating a new capital on Borneo, Indonesia hopes to boost the economy of this underdeveloped region while relieving congestion in Java by relocating essential functions. The objective is to establish Nusantara as a major administrative and political center,

capable of attracting businesses and infrastructure to stimulate economic activity locally, while also generating trickle-down effects that benefit the more remote and impoverished areas of eastern Indonesia.

### ***The Challenges of Construction in a Remote Island Jungle***

Building a city of this scale in the middle of a tropical jungle, in an archipelagic country like Indonesia, presents significant challenges. Nusantara is located in the province of East-Kalimantan, on the island of Borneo, a region far from the country's main economic centers. Although it is near the Makassar Strait, an expanding international maritime route, and the cities of Balikpapan and Samarinda, which have ports and airports providing some connectivity, Nusantara remains isolated. Geographic isolation and limited infrastructure are two of the main obstacles to the completion of this ambitious project.

Transporting the materials needed for construction presents logistical challenges. While reaching the port of Balikpapan, the nearest major city, is manageable, getting materials to the Nusantara site is where complications arise. On the one hand, the main roads are under development or often in poor condition, with only some sections recently paved, making the journey long and complex. On the other hand, relying on the waterway remains complicated due to insufficient port infrastructure, especially in the Balikpapan Bay where the public logistic dock is not fully operational, requiring companies involved in construction to devise their own logistical solutions to unload materials. Although efforts have been made to improve connectivity, the region remains difficult to access.

These obstacles not only affect the construction phase but also raise concerns about the city's longer-term attractiveness as long as connectivity infrastructures are not fully developed. The isolation could deter investments and make it difficult to attract the first waves of residents and businesses.

### ***From Vision to Reality: The Struggles of Implementation***

The Nusantara project, despite its great ambition, faces concrete realities. The gap between the initial objectives and what is currently being built is already evident, particularly regarding ecological and environmental standards. In the current construction phase, the sites are generating a significant amount of pollution, and the tight deadlines imposed by the government make it difficult to consistently meet the strictest standards. The tension between the urgency of completing the project and the goal of sustainability creates a situation where some compromises are inevitable. Furthermore, the administrative buildings already in place do not always comply with

the most rigorous "green building" standards. Similarly, while the stated goal is to power the city entirely with renewable energy, the solar panels currently installed will only account for 30% of the electricity supply.

Mobility is also a concern. Although the project aims to promote public transport and limit access to private cars, some current infrastructure, such as the wide roads built around government buildings, suggests that cars will still remain a priority, at least in certain areas.

### ***The Financial Hurdle of Securing Investments for Nusantara***

The financing of Nusantara represents a critical challenge for the success of the project. With only 20% of the costs covered by the Indonesian government, the remaining funds must come from private investors or public-private partnerships. However, investors have so far been hesitant to commit, which risks delaying the project or reducing its scope.

Currently, most of the infrastructure is still financed by the state, with companies primarily working



on public contracts. This situation is particularly challenging given that Indonesia has never built a large-scale new city, unlike Malaysia, which undertook new city projects as early as the 1980s. In Indonesia, the private sector, particularly real estate developers, typically plays a key role in urban development, while the public sector lacks the expertise, leading to many issues at the start of Nusantara.

European companies, particularly French ones, known for their expertise in sustainability, could become strategic partners. However, the question remains as to what extent they are willing to invest their own capital in a project that still presents significant risks, both in terms of logistics and profitability. The complexity of Indonesia's financial and legal framework, combined with the lack of solid guarantees, also hinders their involvement.

Finally, budget forecasts for 2025 show a significant reduction in resources allocated to the new capital, with funds being half of what they were in 2024. Added to this are the rising operational costs of the administrative authority overseeing the project, which now has to maintain the structures that have been built. Insufficient funding has also led to changes in construction partners, with cheaper planning firms being selected. Although government ambitions are high, the many projects requiring funding and the limited resources available make the implementation of this monumental project challenging.

### ***Economic Aspirations Limited by Geography and Resources***

The ambition to transform Nusantara from a mere administrative city into an economic center faces several major obstacles, especially since

examples from other countries show that it is very difficult to develop a true economic dynamic in new cities.

The location of the city, 60 km inland and far from the major commercial shipping routes, does not work in its favor, unlike cities like Singapore, which owe their vitality to their strategic position. The Makassar Strait, though providing access to the South China Sea, does not hold the same commercial importance as the Malacca Strait. This Southeastern part of the South China Sea region is marked by maritime border disputes, illegal flows and areas of instability, which limit its commercial prospects. The trade flows through the area especially those which involve flows between China and Australia will probably increase, but they are far smaller than those in strategic zones like Singapore or even Malaysia. As a result, despite its positioning in this region, it will take time before the new capital becomes a major maritime hub, if it ever become one.

The province of East-Kalimantan, where Nusantara is located, has historically relied on the extraction of natural resources. However, the gradual depletion of oil reserves is putting pressure on cities like Balikpapan, which are trying to diversify their economies. While coal provides temporary stability, the province is now looking to focus on resource processing, as well as other activities such as tourism. However, this economic model, primarily based on non-renewable resources, is not sustainable in the long term and raises doubts about the region's ability to support a new economic dynamic.

Another major challenge is the province's low population, with only 4 million inhabitants, accompanied by a lack of skilled labor, which is essential

for attracting high-tech industries.

### ***The Journey to Establishing Authority From Scratch***

Although moving the capital is an interesting idea due to Indonesia's ambition in the international arena and its territorial imbalance, doubts remain about the project's full completion due to uncertainty over the political support of the new government. The new capital is intended to host the executive and legislative branches, but construction of the Parliament has not yet begun, and many civil servants are hesitant to relocate to this isolated region, far from Jakarta. This lack of attractiveness complicates the establishment of a fully functional administrative center.

The initial planning of the project also revealed its weaknesses: the planning was insufficient, and many elements could have been anticipated before construction began. Moreover, fiscal incentives and extended leases are still not enough to attract sufficient private investment, further increasing the uncertainty surrounding the project. The governance of the project remains a major challenge in making Nusantara a true administrative center.



Photo courtesy: The Economist

## Interview 3

## Egis: Transforming Urban Landscapes Towards a Sustainable Future



**Philippe Schulzinger**  
Asia Regional Director  
Transportation Business Line,  
Egis  
CCE Thailand

Philippe Schulzinger is currently the Asia Regional Director for the Transportation Business Line at Egis, based in Bangkok. In this role, he oversees the development of transport infrastructure across Asia, including rail, road, maritime, and civil infrastructure. Prior to joining Egis, Philippe gained more than 27 years of experience in the transportation sector, holding various leadership roles, such as Technical Director and Bid Director for the APAC region. He has also worked as a Track Engineer and Trackwork Site Manager in both Europe and Asia, with his first project in Asia dating back to 2001. Philippe holds a degree in Civil Engineering from ESTP, a graduate school of engineering for civil engineering and construction works.

Egis is an international player active in architecture, consulting, construction engineering and mobility services. 81% of the activity relies on architecture, engineering & consulting, and 19% on operations. Present in over 100 countries, the company employs 19,500 people and achieved a revenue of €1.9 billion in 2023, with ambitions to double its size and reach €4 billion by 2029. In 2024, Egis ranked 7th globally in the transport sector and 8th in the buildings sector. Through its wide range of activities, Egis is a key player in the collective organization of society and the living environment of citizens all over the world.

### Q: What are Egis' activities in Asia?

**A:** Egis has had a strong presence in Asia since 1955. Our regional headquarters are in Hong Kong, with offices across Thailand, Philippines, Singapore, Indonesia and more recently, Taiwan. These strategically located technical hubs in Asia drive innovation and excellence, enabling us to develop cutting-edge solutions, not only in the region but also for global markets.

We have actively contributed to public transport infrastructure projects, including metros, monorails, and BRT (Bus Rapid Transit) systems. Since 1989, we have been involved in major developments in Thailand, such as Bangkok's metro and monorail lines.

Beyond transport, Egis also engages in urban development projects.

Specialized teams in Hong Kong and Singapore focus on innovative architecture, facade engineering and building services, while in Indonesia and the Philippines—where urban construction markets are still developing—Egis conducts tailored feasibility studies to meet local needs.

### Q: What are Egis' key projects in Asia?

**A:** Here are some of Egis' key mobility projects in Asia:

- Manila Metro, Philippines: This is the first underground metro infrastructure in the Philippines, backed by JICA and in partnership with Colas Rail and Hitachi Rail. Egis provides

expertise in system engineering, system integration and platform screen door turnkey package including installation, with full delivery anticipated by 2030.

- MRT new line and extensions in Bangkok, Thailand: These projects aim to reshape Bangkok's public transport network, Egis being involved on extending the Blue Line and on the construction of the Eastern Orange Line (with a pending Western extension to start shortly) and expanding the Purple line. In addition, Egis is part of the delivery of the Pink monorail line for improved citywide accessibility.
- ATLAS Project (Advancing Transport and Logistics

Accessibility Services) in Indonesia: This feasibility study aims to enhance logistics and transport infrastructure in Indonesia, supported by an Indonesia-USA alliance through MCC, a semi-public-private organization.

- Sustainable Urban Mobility Plan in Surabaya, Indonesia: This study explores sustainable transport options, including tramways, BRT (Bus Rapid Transit), and LRT (Light Rail Transit), to efficiently connect various urban hubs and traffic corridors across Surabaya.
- BRT Networks in Medan and Bandung, Indonesia: Funded by the World Bank, this project promotes eco-friendly urban mobility through BRT (Bus Rapid Transit) systems in Medan and Bandung, where Egis serves as a project management consultant for design and implementation.
- ART Network in Sarawak, Malaysia: This project introduces a hydrogen-powered Autonomous Rapid Transit (ART) system, fueled by hydrogen from local oil and gas industry waste, presenting an innovative, eco-friendly transit solution unique in the region.
- MRT Cross Island Line, Singapore: Egis provides back-office design support from Bangkok for Singapore's Cross Island MRT line, collaborating with China Harbour Engineering on this significant transport initiative.
- Monorail in Tainan, Taiwan: Egis is working on the basic design of Tainan's first monorail line, the Blue Line, which will at term connect the high-speed rail station to downtown as part of a larger urban development effort.

**Q: How mature is the Southeast Asian market in integrating sustainability**



**into infrastructure projects?**

**A:** Southeast Asian governments now understand the critical role of urban infrastructure in driving economic growth. Cities like Jakarta and Surabaya view infrastructure projects as key to enhancing mobility and stimulating business development. However, economic priorities still tend to take precedence, and environmental awareness is advancing gradually. Since the COVID-19 pandemic, we have noticed a shift in perspective. Governments and ministries in countries like Thailand and Indonesia are increasingly open to incorporating sustainability goals, though their maturity in this area still lags behind Europe. At the community level, residents may be hesitant to change long-standing habits.

**Q: What are the main types of contracts for infrastructure projects in Southeast Asia?**

**A:** Infrastructure projects in Southeast Asia use various contract models tailored to the needs of each country:

- PPP (Public-Private Partnership): Widely used in Thailand for projects like BTS metro lines and airports, this model allows for risk-sharing between the public and private sectors, often including subsidies based on passenger numbers.
- Design-Build: Common in the Philippines and other countries, this model assigns both design and construction to the same contractor. In some cases, the government provides the design, which is then opened for competitive construction bids to select the construction contractor.
- Super Turnkey: Primarily seen in Taiwan, this model goes a step further by entrusting a single contractor with the entire project. This includes not only the design and construction but also the installation of the rail system. An example of this can be seen in metro projects in Taipei, where one contractor manages all aspects of the project from start to finish.



Some countries, like Thailand, also use a combination of these models, adapting the approach to suit specific projects by sometimes separating design and construction for greater flexibility.

**Q: How are large infrastructure projects funded?**

**A:** In Southeast Asia, large infrastructure projects are primarily funded by major institutions like the Japan International Cooperation Agency (JICA) and the Asian Development Bank (ADB), which provide substantial loans for these initiatives. These large-scale projects often encompass multiple consulting contracts, such as construction supervision, which alone can cost up to €200 million, with total construction expenses running into billions. For example, JICA recently supported a project in Manila with a €5 billion loan,

one of its largest investments to date.

On a smaller scale, the French Development Agency (AFD) funds feasibility studies and smaller projects, typically with budgets ranging from €500,000 to €5 millions.

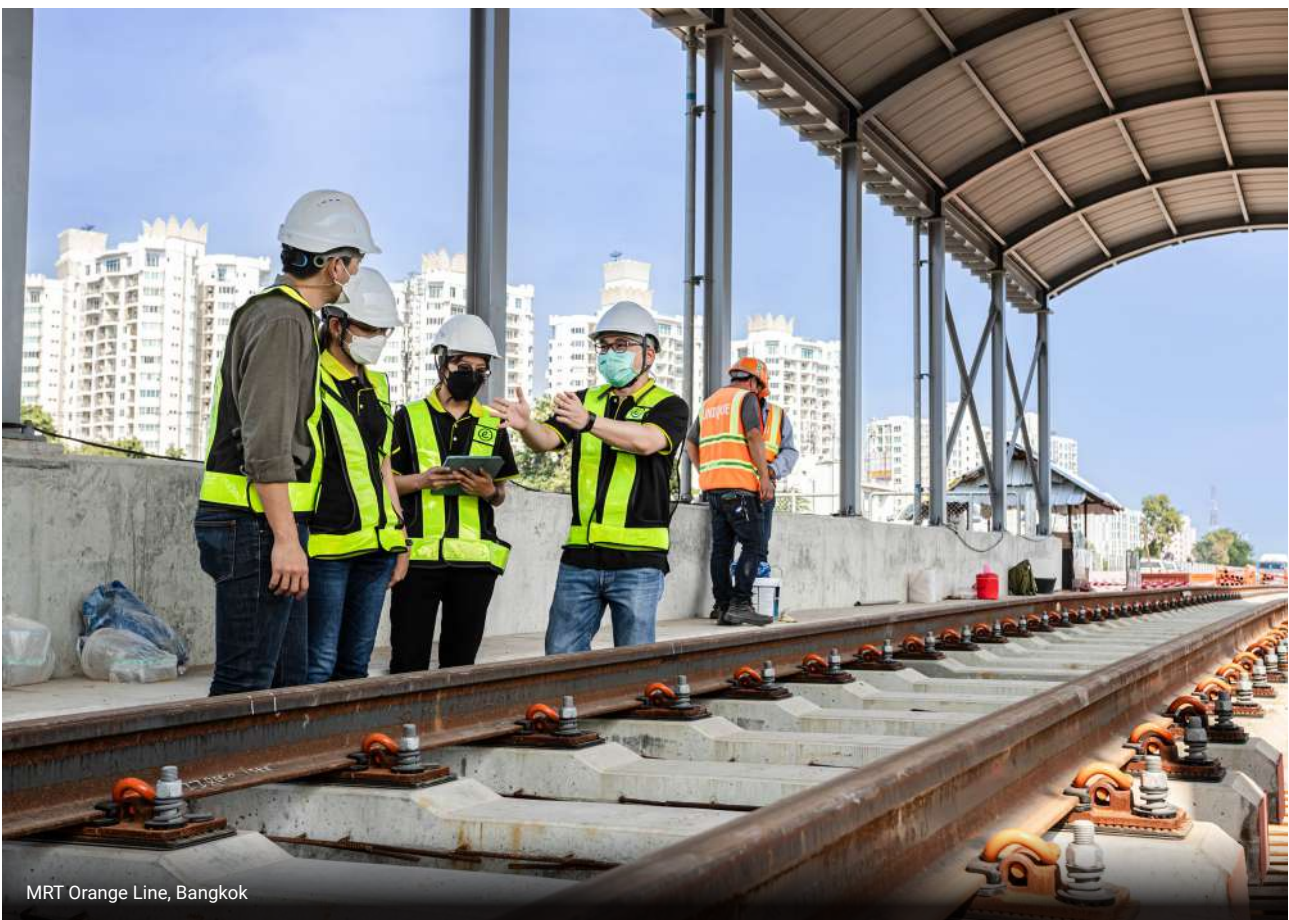
**Q: How does Egis position itself against competitors?**

**A:** We have structured our approach around four essential pillars to position ourselves well against the competition:

1. Adopting a Holistic and Sustainable Approach: We take a comprehensive view of urban development, addressing environment, mobility, energy, and building needs in an integrated manner. Instead of merely building a transit line, we ensure each project contributes to the city's sustainability and

fits seamlessly within the urban landscape.

2. Implementing Local Centers of Excellence: We have established two regional hubs to enhance our capabilities. In Jakarta, our center specializes in urban transport planning, while our Bangkok hub, a global design center, brings expertise in civil infrastructure, geotechnics, port systems, and rail systems to support projects across Asia, Europe, and the Middle East. This local presence allows us to respond quickly and effectively to regional needs.
3. Establishing Strategic Partnerships: Recognizing the benefits of collaboration, we work closely with both local and international companies. By partnering with firms from Japan and Korea, known for competitive pricing and strong local networks, we leverage shared strengths



MRT Orange Line, Bangkok

to establish a robust market presence.

4. **Committing to Innovation:** Innovation drives our approach, with ongoing R&D investments to remain at the forefront of technology. We explore cutting-edge solutions, like AI-driven metro operation optimization in collaboration with universities in Thailand and France, and hydrogen propulsion systems in Malaysia. These advancements keep us agile and responsive to the sector's evolving demands.

**Q: Is there room for foreign players in markets with strong local competition?**

**A:** Foreign players do face challenges in markets with strong local competition, especially when projects are funded by institutions like JICA or the ADB, which often favor local companies. Funding structures

typically encourage investment in local products and require long-term maintenance arrangements that benefit the local economy. In these setups, local firms generally retain control over equipment and maintenance. However, they usually prefer to outsource construction and integration risks to international partners, creating specific opportunities for foreign companies like Egis.

Egis leverages its French expertise, the capability to deliver turnkey systems, and a strong reputation for managing complex projects—particularly those involving diverse subsystems and cross-border partnerships—making it a valued partner in these challenging environments.

**Q: What are the key factors for successful implementation in the region?**

**A:** In Southeast Asia, successful project implementation hinges on building strong, trust-based relationships that take years of consistent dialogue to establish. This trust is often personal, tied more to individuals than to the company itself, making it essential to have skilled people and a reliable network of local partners.

Additionally, commitment to quality and reliability is crucial, even if it means going beyond the initial budget. Companies aiming to make a lasting impact in the region need to deliver projects that meet high standards and are completed on time. For example, in our first project in Taiwan this year, we prioritized quality and timeliness, accepting potential additional costs as a worthwhile investment. In Asia, a successful first impression is vital—an early misstep can significantly hinder future opportunities.



## Interview 4

## Archetype Group: Expanding French Engineering and Architecture Expertises to Shape Sustainable Buildings in Emerging Markets



**Pierre-Jean Malgouyres**

Co-founder & CEO, Archetype Group

CCE Vietnam

Pierre-Jean Malgouyres is the co-founder & CEO of Archetype Group. He also serves as the Chairman of the Business Council France-Bangladesh at MEDEF International, while being as well a Foreign Trade Advisor (CCE) since 2012 in Vietnam and now in France.

Pierre-Jean used to live in Asean from 1997 to 2019 before returning to France to expand the activities of Archetype Group in Africa and Latin America. He is the former President of the French Chamber of Commerce in Vietnam (CCIFV) and the former founding President of the EU Vietnam Business Network (EVBN).

Pierre-Jean holds a dual degree in civil engineering and urban planning from INSA Lyon and in entrepreneurship from HEC Paris, combining technical and strategic expertise.

Archetype Group is transforming the construction industry in emerging markets, bridging French expertise with local needs and sustainability. Pierre-Jean Malgouyres discusses the challenges and strategies driving virtuous development across Southeast Asia.

**Q: What is Archetype Group, and what are its activities worldwide?**

**A:** Archetype Group is a French company established in 2002 in Vietnam (French companies abroad - EFE), with 100% French capital, though it operates like an Anglo-Saxon company by integrating all construction consultancy services under one roof. We offer architecture, design, building and process engineering, project management, and cost management services. Our unique strength is the ability to

manage a project from the master planning and initial concept design up to construction completion. In France, this integrated approach is rare due to regulations that traditionally separate the roles of architects, engineers, and project managers.

Archetype Group operates in two main sectors: first hospitality and real estate, and second industrial sectors. In real estate and hospitality, we focus on world-class hotels, high-rise buildings, healthcare, luxury retail and office/residential buildings. In the industrial sectors, we shape factories for multinational corporations in key sectors such as pharmaceuticals, agri-food, chemicals, automotive and increasingly IT related with semi conductors and data centers.

We have a presence in 27 offices across 20 countries, still mainly

in Asia with 13 countries, and expansions into Africa (Ivory Coast, Tunisia), the Middle East (Saudi Arabia), and the Americas (Brazil, Mexico). Recently we opened an office in the U.S. to capitalize on the attractiveness of the industrial sector. Our dual French and international identity allows us to bridge the gap between European investors and the U.S. market, as we did with OP Mobility for their global hydrogen plant projects.

**Q: What is Archetype Group's sustainability strategy?**

**A:** Archetype Group is fully committed to sustainable projects. Within the next five years, our goal is for 100% of our projects to meet sustainability criteria, which is particularly ambitious in emerging markets where these issues are not



always prioritized. We have already completed nearly 100 certified green buildings, mostly in the industrial sector, and a few in real estate.

Archetype Group ensures the achievement of certifications like LEED, EDGE, or BREEM for investors. We also focus on reducing carbon footprints and are exploring low-carbon and energy-positive building solutions. For more complex aspects, such as energy efficiency, we collaborate with specialized partners like Green Building Consulting & Engineering (GBCE), an award-winning EFE company providing building design consultancy based in Bangkok.

Notable achievements include Pacific Place in Hanoi, which achieved LEED Gold certification after renovation, e.town 6 in Ho Chi Minh City, one of the first LEED Platinum-certified office buildings in Vietnam, and industrial projects for Pandora in Vietnam, a factory for luxury goods in Cambodia, or Ducati in Thailand, and many more for food manufacturing factories in India, China and Indonesia.

**Q: What is the stage of Southeast Asia in adopting sustainability in the construction sector?**

**A:** In Southeast Asia, we must differentiate between the industry and real estate sectors.

In the industrial sector, multinational corporations, particularly Western ones, lead the transition toward sustainable buildings. Companies like OP Mobility are committed to reducing their carbon footprint by 50% by 2035 by adopting geothermal, wind, and solar solutions. Around 75% of our industrial projects include international sustainability certifications, and the remaining often opt for lighter local certifications.

On the other hand, real estate is lagging. With rapid population growth in Asia, there is a push to quickly build infrastructure and housing, hospitals, schools etc. Sustainability is not a priority, and land costs encourage fast construction, often at the expense of environmental standards. Initiatives like the World

Bank's EDGE certification, which adds only 1 to 2% to project costs, are crucial in introducing sustainability for reasonable investments. However, half the developers are still reluctant to invest in these additional costs. In the future, tying bank financing to EDGE certification could be a significant leverage to accelerate sustainable building adoption in the region.

**Q: Given the rapid urbanization in Southeast Asia, how should the region address the challenges of sustainability?**

**A:** The key to sustainability lies in constrained financing. In centrally controlled countries like China and Vietnam, strict standards can be imposed. However, in decentralized countries like India, such regulations are more difficult to develop.

The solution could come from international financial institutions like the World Bank or the IMF, which should tie their financing to sustainability criteria. They could raise

interest rates for non-sustainable projects or lower them for green projects, thereby incentivizing developers to adopt more sustainable practices. Without these financial incentives, the adoption of green standards will remain too slow, and retrofitting later is far more expensive than building sustainably from the outset.

Private financing is also crucial for sustainability projects, but this raises the question of balancing regulatory standards with economic incentives. Transnational institutions could play a vital role in pushing private banks to channel their funds towards more sustainable projects.

We have already seen a shift in this direction, with many banks halting their funding for coal-related projects. However, some, particularly in China, continue to finance this sector. This demonstrates that clear regulatory constraints can drive significant change in the financial world. If we want to accelerate progress in sustainability financing, imposing such constraints is essential. Without them, the current trajectory could lead

to worsening environmental impacts, pushing us closer to a point of no return.

**Q: How can French companies stand out internationally in the Green Building sector?**

**A:** French companies are well-positioned in certification and quality, with major players in the region like Bureau Veritas or Apave. However, they are less prominent internationally in architecture and engineering due to regulatory restrictions imposed by the National Council of Architects in France, which unfortunately limits structurally the size and international expansion of French architecture firms. These highly creative entities lack the commercial dimension necessary to compete with Anglo-Saxon firms like Foster + Partners or Zaha Hadid Architects for example, which have structured themselves for global expansion despite building their initial reputation on one name/person only

Some French companies like Egis have recently begun acquiring architectural firms internationally,

but the French presence remains limited. Yet, France has significant expertise in green design, which could be better emphasized internationally. Overcoming current structural barriers is essential. France has many platforms, such as Bpifrance (Banque Publique d'Investissement) and the French Architects for Export (AFEX), to support international missions.

Overall, Archetype Group seeks to collaborate with French architecture firms on projects where they design and where we can manage the engineering, project management, cost management and even the architectural detailed design if needed.

**Q: How can French companies abroad (EFE) strategically broaden French influence?**

**A:** The main challenge for French companies abroad (EFE) is their difficulty in scaling up, limiting their impact. Strengthening engineering within EFEs would benefit the entire French expertise promotion, integrating high-quality products like those for instance from Legrand,



Saint-Gobain, and Schneider, and supporting the French industrial export.

One solution is to provide EFEs with the same export assistance as other French companies. Although EFEs do not pay direct taxes in France, they are not tax exiles and contribute significantly to external trade. For example, Archetype Group manages €1.5bn to €2bn in annual projects, a significant portion of which uses French products, know-how and services, thus enhancing France’s economic influence.

However, EFEs struggle to secure financing because local banks hesitate to fund foreign companies, while French banks consider them as local entities. Therefore, creating tailored financing conditions—slightly less favourable than for French SMEs but competitive in emerging markets—is crucial. Additionally, the National Council of Architects

should ease certain rules that limit the international growth of French firms because engineering firms are limited to 25% of the capital of any Architecture firm in France that must be detained at 51% at least by individual French architects registered at the Council (we cannot do better in terms of protectionism...).

To help EFEs achieve critical mass and increase French influence internationally, improving access to financing, removing certain regulatory barriers, and better utilizing existing mechanisms are essential steps that could greatly contribute to the improvement of our French foreign trade!

**Q: What are the key success factors for French companies seeking to develop in emerging markets, especially in Asia?**

**A:** Success in emerging markets is driven by what I call the 4Ps: Patience,

Perseverance, Prudence, and Passion.

- **Patience:** Business in these regions often relies on building strong relationships, which takes time. In some countries, relationships often carry as much weight as formal agreements, requiring patience to navigate potential miscommunications or cultural differences.
- **Perseverance:** Companies that succeed in emerging markets do so by committing to long-term strategies. Businesses must establish themselves as stable, trustworthy players in the local market, even if this means foregoing profit in the early years. Companies should maintain their presence, adapt to local demands, and cultivate lasting relationships.
- **Prudence:** Companies should not rush into long-term exclusive agreements without fully understanding the vision and goals of potential partners. Often, initial alignments can later reveal significant divergences. In countries with complex regulatory environments, starting small with flexible arrangements is safer than entering into rigid, large-scale deals that might limit future options.
- **Passion:** A genuine appreciation and respect for local cultures is a must. If a representative on the ground cannot embrace the local lifestyle or show interest in the country’s culture, they may struggle to build strong connections. Passion for the culture and the people is necessary to foster long-lasting, fruitful relationships.

These values allow businesses to navigate the unique challenges of these regions while building a strong foundation for sustainable growth.



## Interview 5

## Energy Transition in Southeast Asia: Vision and Projects of TotalEnergies



### Anne-Sophie Vervial

Leader of the Task Force Communication & Advocacy Asia Pacific, TotalEnergies Exploration & Production

CCE Singapore

Anne-Sophie Vervial is the Leader of the Task Force Communication & Advocacy, APAC, TotalEnergies E&P. She joined Elf E&P in 1991 and has since held diverse roles within TotalEnergies. Her career includes positions in E&P, Gas and Power, Trading-Shipping, and Americas and Africa Divisions.

She has managed exploration affiliates in different parts of the globe. She also was VP Northern Asia Pacific Country delegate for China, Malaysia, Thailand, Brunei, Vietnam, Cambodia, among others. Anne-Sophie graduated as a Mechanical Engineer from École Centrale de Nantes and as a Petroleum Engineer from French Petroleum Institute.

TotalEnergies is a global integrated energy company that produces and markets a variety of energies, including oil and biofuels, natural gas and green gases, renewables, and electricity. With over 100,000 employees in nearly 120 countries, the company is committed to providing energy that is more affordable, reliable, and sustainable.

Southeast Asia is a key stage for the global energy transition. With rapidly growing energy demand fueled by fast urbanization and increasing industrialization, the region faces a complex equation: how to meet this demand while achieving the climate goals set by the Paris Agreement? To address this challenge, TotalEnergies employs an innovative and diversified strategy tailored to local specificities. Through the development of renewable energy, expansion of liquefied natural gas (LNG), and carbon capture and storage (CCS) technologies, the company provides concrete solutions to support the region in its energy transition.

### **TotalEnergies Strategy for a Low-Carbon Future**

#### **Becoming a multi-energy company.**

TotalEnergies intends to play an active role in the transformation

underway in the energy industry, by becoming a multi-energy company and one of the top five global producers of renewable electricity by 2030. TotalEnergies' vision rests on a balance: supporting countries in their transition while meeting their immediate energy needs. By 2030, the group aims for its global energy production mix to comprise 40% oil, 40% natural gas, and 20% renewables. TotalEnergies remain strongly rooted on two pillars:

- Oil and Gas Efficiency, maintaining oil, growing gas particularly on LNG, and continuing to upgrade a low-cost and low-emission portfolio
- Integrated Power, building a profitable business on renewable assets (offshore wind, onshore wind, solar), flexible assets (combined cycle gas turbines), and storage capacity (batteries).

**Going to Net Zero.** TotalEnergies is committed to achieving carbon neutrality by 2050. To this end, the company relies on carbon capture and storage (CCS), targeting a capacity of 10 million metric tons of CO<sub>2</sub> per year by 2030; conducting a global campaign to measure methane emissions from all upstream sites, using a drone based technology called AUSEA (Airborne Ultralight Spectrometer for Environmental Applications) to aim for near-zero methane emissions by 2030 with this real-time detection equipment.

#### **ASEAN Energy Roadmap**

In Asia, energy demand is expected to grow, with an increased shift to cleaner energy sources, with renewables expanding and Liquefied Natural Gas progressively replacing coal.



The recent developments included in the 8th ASEAN Energy Outlook notably cover:

- The ASEAN Power Grid (APG), which enables multilateral power trade across ASEAN. To date, 9 out of 18 interconnection projects have been completed, with the current installed regional capacity at 7.7 GW. Notable projects include the LTMS-PIP, the first multilateral power project (2022), importing up to 100 MW of hydroelectric power from Laos to Singapore, and the BIMP-PIP, which plans for 17 interconnections to reduce costs and dependence on fossil fuels.
- Another important aspect is the ASEAN Gas Infrastructure. For example, the Trans-ASEAN Gas Pipeline is an integrated network of pipelines and regasification terminals. As of 2018, 13 bilateral pipelines (3,631 km) connect six countries: Singapore, Malaysia, Myanmar, Thailand, Vietnam, and Indonesia.
- The Carbon Capture and Storage (CCS) is part of the key measures for ASEAN countries to meet their Carbon Neutrality target by 2050. Due to high costs of CCS projects, CCS hub business model offers economies of scale and lower CO<sub>2</sub> transportation and storage unit costs. As an example, Malaysia is aiming for a capture and storage hub by forming international collaboration to establish a regional hub for high emissions countries, especially those who are ASEAN members. They paved the way with a CCS Bill expected to be tabled by end 2024 for a comprehensive legal framework to implement CCUS initiatives.



Several avenues to support the transition with appropriate policies





are under consideration, such as harmonizing regulatory frameworks, as clear rules are necessary to encourage investments in CCS and hydrogen; fiscal incentives is essential for accelerating their adoption.

#### **Flagship Projects in Southeast Asia by TotalEnergies**

In line with its 2-pillars strategy, TotalEnergies is leveraging its LNG portfolio and renewables assets such as:

- Projects to enhance energy security through LNG. In Papua New Guinea, TotalEnergies launched the Front-End Engineering Design of a project of ~5.6 million tons of LNG per year. The produced CO<sub>2</sub> will be reinjected into the

reservoirs, marks a world first for the company at this scale. In Malaysia, the agreements signed early 2024 to acquire 100% shares of SapuraOMV, a strategic company with low GHG emissions (<10 kgCO<sub>2</sub>/boe) and competitive operating costs (< US\$ 5/boe), subject to customary closing adjustments, illustrates TotalEnergies' ambition to establish itself as a regional leader in LNG. Carbon capture and storage projects are an essential lever. In Malaysia, TotalEnergies has partnered with Petronas and Mitsui to study the development of CCS infrastructures capable of storing CO<sub>2</sub> from heavy industries. As industry leader, acting on operational excellence to avoid

and reduce emissions is key. It is the basis for keeping the license to operate and virtuous to remain competitive. Our responsibility extends beyond just producing oil and gas; it's about producing it right because our first duty as an O&G producer is to slash down the GHG linked to our operations.

- Innovative cross-border projects include a 1 GW solar electricity project between Indonesia and Singapore: in September 2024, TotalEnergies and RGE have been granted Conditional Approval from Singapore's Energy Market Authority, a first step towards the license to import firm solar photovoltaic energy. This approval marks a significant milestone towards enhancing regional energy cooperation and

advancing renewable energy initiatives in Southeast Asia. The project will harness Indonesia's abundant solar resources to generate clean energy, which will be exported to Singapore, contributing to its sustainability goals. In addition, it will supply solar PV energy for Indonesia's domestic consumption to power green industrial complexes in the Riau Province of Indonesia. This will support Indonesia's plan to increase its deployment of renewable energy from 13% in 2023 to 31% by 2050 and its transition to net zero by 2060. This project is a materialization of a win-win solution for both Indonesia and Singapore by supplying green electricity to both countries to decarbonise their energy supply and achieve their energy transition goals. In Cambodia, TotalEnergies acquired a 74 MW peak Solar Power Plant, one of the largest in the country, which plays a crucial role in the country's efforts to increase its renewable energy capacity and reduce carbon emissions. As in Thailand,

TotalEnergies runs the largest portfolio of BtoB rooftop solar installations with 24MW installed.

TotalEnergies also attaches the utmost importance to be active in bringing expertise on energy and climate policies, knowledge sharing, technology transfer, joint research, development initiatives and fostering public-private partnerships. Based on 100 years of history in oil and gas activities, TotalEnergies has built trustful partnerships and collaboration with National O&G companies in Indonesia, Malaysia, Thailand and Myanmar, which are now extended to offshore wind with PTTEP in Europe and renewables with Gentari in Malaysia.

All in all, TotalEnergies ranks among the leaders in sustainability, as evidenced by ESG ratings.

**Opportunities for French Companies in Southeast Asia's New Energy Sector**

Several areas of expertise for French companies can be leveraged in the region.

- Renewable energy including

solar and wind power, that is developing massively across the region.

- Green hydrogen, though expensive, offers enormous potential in the medium term, particularly for decarbonizing heavy industry.
- Energy storage and smart grids are crucial with the rise of intermittent energies. French companies, pioneers in these areas, can benefit from this demand.
- The circular economy, by converting waste into energy can reduce landfill use and generate sustainability, thanks to advanced technologies where French innovations could provide solutions to the region's challenge.

For success, several factors must be considered: relying on local partnerships and collaborating with regional players, adapting to cultural contexts since each ASEAN country has specific realities requiring operational flexibility, and actively participating in regional initiatives.



## Interview 6

## Legrand: Developing Sustainable Electrical Solutions to Power Green Buildings in Southeast Asia



**Karine Alquier-Caro**  
Vice-President Southeast Asia,  
Legrand  
CCE Singapore

Karine Alquier-Caro has been a dedicated professional at Legrand for 23 years, currently serving as the Vice-President for Southeast Asia. In this role, she is responsible for the overall management and strategic direction of operations across ten countries, including Singapore, Malaysia, Indonesia, Thailand, Vietnam, Cambodia, Laos, Myanmar, Brunei, and Taiwan. Her responsibilities include monitoring and enhancing the performance of Legrand's entities in the region. A graduate of HEC Paris, Karine Alquier-Caro began her career in financial auditing at Deloitte, where she developed a strong foundation in financial management and organizational strategy.

Legrand is a global leader in electrical and digital building infrastructures, specializing in the design and manufacturing of a wide range of solutions for residential, commercial, and industrial applications. With a strong commitment to sustainability and innovation, Legrand operates in over 90 countries, providing products that enhance energy efficiency, connectivity, and user comfort. The company's diverse portfolio includes wiring devices, circuit breakers, home automation systems, and cable management solutions, all aimed at improving the quality of life and optimizing energy consumption in buildings.

**Q: How Has Legrand Established Its Presence in Southeast Asia Over the Past 50 Years?**

**A:** Legrand operates in 8 Southeast Asian countries: Singapore, Malaysia, Indonesia, Thailand, the Philippines, Cambodia, Myanmar, and Vietnam, with operations also in Taiwan. The company boasts a solid historical presence, having established its roots around 50 years ago. Currently, 740 people are employed across the region. Its growth is attributed to strategic acquisitions of leading companies, thus expanding its product portfolio and distribution network.

Operations vary from country to

country, with a key logistics hub in Singapore and manufacturing plants in Indonesia, Malaysia, Thailand, and Vietnam.

The increasing urbanization in the region offers significant opportunities, particularly in the residential sector with rapid developments in the smart home sector, as well as in data centers, which generate approximately 35% of Legrand's revenue in Southeast Asia (compared to only 15% globally).

Legrand has established a regional organization to adapt to the specifics of each market, with a structure organized at three levels (transversal, local, and shared services).

**Q: How Does Legrand Innovate in the Building Market?**

**A:** Legrand focuses on innovative equipment and products, while establishing strategic partnerships for system management. The company prioritizes interoperable solutions, allowing its products to seamlessly integrate with other systems during collaborations. This differentiating approach attracts partners looking to interface their solutions with Legrand's, creating a rich and flexible ecosystem.

By offering this flexibility, Legrand enables its customers, for instance hotels, to select systems that meet their specific needs while adapting

to the local requirements of each market. Customers benefit from tailored solutions that optimize energy efficiency and enhance their overall experience.

Sustainability has also become a critical commercial factor, with “Green” being the key word. Clients, especially large international corporations, incorporate environmental goals into their strategies. When choosing a data center, solution providers that can demonstrate the use of green energy and a reduction in their ecological footprint are often favored. This ability to prove the positive environmental impact of our solutions becomes a significant competitive advantage. It is therefore crucial to present tangible data, clearly illustrating the before-and-after effects of our offerings.

**Q: How Is Legrand Integrating Circularity into Its Supply Chains?**

**A:** Circularity is at the core of our journey toward a more sustainable future, as we embed eco-design principles into product development. This involves a thorough environmental profile analysis of our products and the search for recycled materials to minimize our impact. We are committed to incorporating approximately 15% recycled plastic in our 300,000-product range, and 40% for metals.

Our sustainability efforts go beyond just the products. We use 100% recycled packaging and have eliminated single-use plastics. In terms of product longevity, we place a strong emphasis on repairability and energy efficiency, addressing growing customer demands for environmental responsibility right from the design stage.



We are also exploring circular economy loops, where end-of-life products are recovered and reintegrated into the supply chain. This promotes a sustainable approach and reduces waste. However, it is crucial to maintain a strong quality image, as second-hand products are still not widely accepted in our sector. Customer trust hinges on the assurance that our solutions are both durable and reliable.

By incorporating these practices, we are not only meeting current sustainability expectations but also paving the way for a new mindset in how resources are built and utilized in the construction sector.

**Q: What Are the Promising Advances and Persistent Challenges of Sustainability in ASEAN?**

**A: The Sustainability Landscape in ASEAN is Diverse:** ASEAN countries exhibit varying levels of development regarding sustainability. Singapore, Vietnam, and Thailand stand out with advanced initiatives, while others, such as the Philippines, show increasing interest.

Overall, legislation on green buildings, efforts to align business ethics, and data management with sustainability standards are progressing. However, demand remains limited in many countries in the region.

**Commercial Demand and Differentiation are Drivers of Sustainability:** Sustainability is driven by commercial necessities but is not innate. For example, in the hotel sector in Vietnam, international customer demand for low-energy footprint establishments pushes operators to adapt to attract these clients. Similarly, when major clients, such as real estate developers, launch green projects, it encourages other players to follow suit. Regional players also feel pressure to avoid being outpaced by competition, especially from international groups. For them, sustainability becomes a means of differentiation and is primarily integrated as a competitive advantage. Overall, sustainability is not perceived as a necessity from the outset, with a significant portion of final demand still favoring products that offer good value for money.

### **Diversity and Inclusion are Relatively Lagging Compared to European Standards:**

Diversity and inclusion are sensitive topics in the local culture. Countries in the region naturally place great importance on well-being, human resources, and safety. However, in the business context, these issues are much less prioritized than in Europe. Themes related to the inclusion of people with disabilities or sexual orientation remain delicate to address. While some countries are relatively open to these issues—like Thailand—others treat them as taboo.

### **Q: How Do French Companies Compete Against Global Rivals?**

**A:** French companies have a strong voice in the competition. France is distinguished by its innovation and design, although China has made significant strides in these areas. Chinese players also have a strong presence, covering a wide range of segments—not only mid-range and low-end markets. Their strength lies in the efficiency of their supply chain. They not only offer good products at competitive prices but also excel in speed and delivery management. Most customers also share a Chinese culture, thereby strengthening their market connections. Japanese leaders also active in the region contribute to competitive diversity.

### **Q: What Strategies Are Essential for French Firms to Successfully Navigate Diverse Asian Markets?**

**A: Capitalize on the Rise of the Middle Class in Southeast Asia:** Southeast Asian markets are expanding rapidly, with a growing population and middle class. Strategic positioning is necessary to capture demand and meet the specific expectations of key demographic segments. Indonesia, with its 280 million inhabitants, is a crucial market, but targeting its most

promising segments is essential.

**Adopt an Asia-Centric Approach:** For French groups, it is crucial to adopt an “Asian Centric” strategy to adapt to the specifics of each local market. Moreover, Asia is not a homogeneous market but rather a mosaic of unique markets requiring personalized approaches. In this context, local R&D is vital for success, as it enables better time-to-market and adaptation to market needs. Customers do not expect delays once the order is placed.

### **Ensure Efficiency and Quality of Solutions:**

Demonstrating the economic value of products is essential, proving how this can translate into a competitive advantage at the product/service level or cost savings for the customer. It is also necessary to compare these solutions with those of competitors.

### **Choose Reliable Local Partnerships:**

In the context of exporting, the quality

of partners chosen in each country is crucial. Once a successful partnership is established, it is rarely questioned, as the business culture in the region tends to be conservative. Companies prefer to build lasting relationships rather than frequently change partners.

### **Q: What Are the Key Challenges French Startups Face When Expanding in ASEAN?**

**A:** French startups seeking to establish themselves internationally often face challenges related to their scalability. While they can collaborate with international companies like Legrand to facilitate their deployment, managing operations from France often proves complicated. This lack of local presence prompts large groups to consider new partnerships with small local companies. The latter play a crucial role in testing innovations in the region and may hope for international development at the group level.



**Interview 7**

## **Bouygues Bâtiment International: Building Sustainable and Resilient Infrastructure in Southeast Asia**



**Antoine Gondard**  
Business Development & Sustainability Manager, Bouygues Bâtiment International

Antoine Gondard has 12 years of experience at Bouygues Bâtiment International in the APAC region, where he serves as a Business Development & Sustainability Manager. Antoine holds a master's degree from Kedge Business School and specializes in business development, sustainability and partnership development.

Bouygues Bâtiment International is a subsidiary of the Bouygues Construction group, a global leader in the construction industry. With a strong presence on 5 continents in over 60 countries, the company is known for delivering innovative and sustainable construction solutions with a strong focus on residential, commercial, industrial, and public projects. Bouygues Bâtiment International has a reputation for executing complex projects in diverse environments, contributing to urban development and infrastructure modernization.

Bouygues Bâtiment International is shaping sustainable infrastructure projects across Southeast Asia. Antoine Gondard shares how the company navigates unique regional challenges to deliver green solutions, balancing innovation with the practical demands of local markets.

**Q: What is Bouygues Bâtiment International's positioning and projects in Asia?**

**A:** In Asia, we have maintained a strong presence for over 35 years in key markets where we are well-established and where the industries are relatively mature: Singapore, Thailand, and Hong Kong. In Thailand and Singapore, our activities primarily focus on the private sector, while in Hong Kong, we are more involved in public sector projects.

Over the years, we have also explored other regional markets such as

Indonesia, Vietnam, or Myanmar, often engaging in a limited number of specific projects. More recently we have expanded our activities in the Philippines, where we concentrate on the high-end private sector, and in Australia, where we acquired AW Edwards. This acquisition has enabled us to position ourselves in burgeoning sectors such as data centers, hospital infrastructures and large solar farms.

We take pride in our involvement in several landmark projects in Southeast Asia, including the Mahanakhon Tower in Bangkok, a 314-meter skyscraper featuring a pixelated design; the Kai Tak Cruise Terminal in Hong Kong, designed by Norman Foster; and, more recently, the CapitaSpring Tower, the second tallest tower in Singapore.

Our expertise extends beyond construction to include the design of the building we build. Through design

optimization and the implementation of value engineering, we offer to our client to reduce costs while enhancing quality.

Moving forward we plan to further develop in strategic sectors such as airport, healthcare, data centers, luxury hotels, and smart logistics, while continuing to support our key clients in the countries where we are already present.

**Q: How is Bouygues Construction committed to reducing the carbon footprint of its projects, particularly in Southeast Asia?**

**A:** The construction sector accounts for 30% of global carbon emissions, 70% of which come from the energy consumed by buildings during their 50-year lifecycle, and 30% from the materials used to build them, such as cement or steel.

Aware of our key role in reducing these emissions, we are committed to aligning our actions with the Paris Agreement, with the goal of limiting global warming to 1.5 degrees by 2050. This includes a 40% reduction in our Scope 1 and 2 CO2 emissions by 2030 compared to 2021 and a 30% reduction in intensity for Scope 3 emissions compared to 2021. As part of this commitment, we are certified by the Science Based Targets Initiative (SBTi), which ensures that our objectives and actions are aligned with the Paris Agreement.

Since 2021, our approach has been based on three main pillars. First, reducing the carbon footprint on our construction sites by using electric machinery and generating green energy on-site. Second, the eco-design of energy-efficient buildings with low-carbon materials such as green concrete, recycled steel, or bio-sourced materials. Finally, the

renovation and reuse of materials in a circular economy approach.

We have already implemented these principles in several landmark projects. For example, in Singapore, we built the CapitaSpring project, a 280-meter tower with Green Mark Platinum certification, which is 40% more energy-efficient than a conventional building. We also designed and built the Phase 2 extension of the BCA Academy project, which includes a zero-energy building made of Cross Laminated Timber (CLT) wood timber and a Super Low Energy building built using only off-site construction elements.

**Q: How do you sell green building in a region where the price-quality ratio is crucial?**

**A:** In Southeast Asia, the development of green taxonomy is less advanced compared to Europe, where

government incentives and green loans are more prevalent. However, green financing—which offers preferential rates provided that strict environmental criteria are met is starting to emerge in the region. Singapore and Australia are making strides in this area, whereas countries like Indonesia and Thailand are still in the early stages of such initiatives.

In this region, where price is a decisive factor, making sustainable projects more affordable is crucial. Some clients are receptive to these solutions as they recognize the long-term benefits. They evaluate whether to invest more today in sustainable buildings that will be better valued in 20 to 30 years and will not require demolition. This decision also affects their brand image: adopting sustainable solutions can enhance the perception of their company among shareholders, clients, and partners, an increasingly important consideration.

We often get involved early in the design phase to suggest modifications that can make projects more sustainable without increasing costs. However, in some cases, greener solutions do involve additional expenses, and it is ultimately up to the client to decide whether to proceed.

**Q: What role should governments play in the green transition?**

**A:** To truly promote sustainable cities, I believe a strong government intervention is essential. Allowing the private sector to self-regulate will not be sufficient. Governments must impose clear and ambitious standards.

For example, as a company listed on the Paris Stock Exchange, we are subject to the European Corporate



Mahanakhon Building, Bangkok

Sustainability Reporting Directive (CSRD), which mandates adherence to strict sustainability standards. Some of our clients are also impacted by these obligations, pushing the entire sector toward greater transparency and sustainability. However, in Southeast Asia, the CSRD is not yet a priority, although initiatives are beginning to emerge.

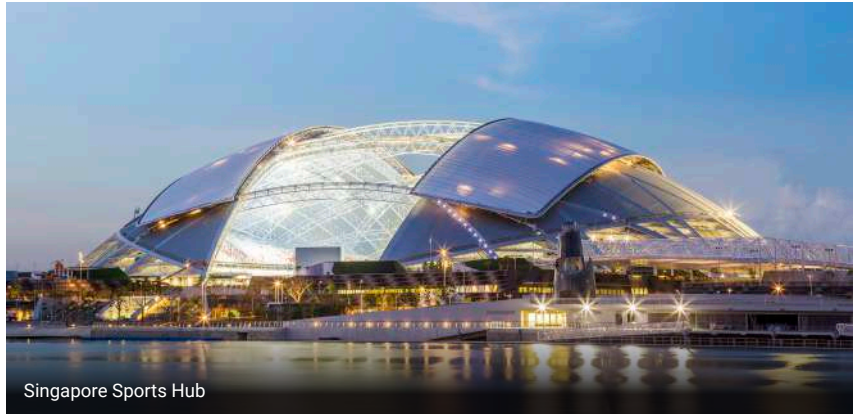
All Southeast Asian countries have plans for the coming years, but the real challenge lies in their effective implementation. This will require significant investments, and we are likely to see disparities between countries that genuinely commit and those that do so more for appearances.

Singapore serves as a good example, where all land is state-owned. When the state sells land to the private sector, it imposes strict conditions, such as the use of modular construction methods, the requirement to achieve Green Platinum certification, and maintaining 85% green space in every project. This rigid real estate development framework ensures compliance with environmental standards, leaving developers no choice but to conform.

In comparison, Thailand and Indonesia do not yet have such strict frameworks. Hong Kong has recently introduced similar requirements, such as mandating the use of green concrete in infrastructure projects like metros and tunnels.

Ultimately, I believe it is the governments that must lead this transformation, with the private sector following suit to comply with the regulations.

**Q: What are the challenges and opportunities for French companies**



**in the field of green construction in Southeast Asia, and how can they stand out against the competition?**

**A:** French companies have a strong position in the field of environmental and sustainable construction, with major assets such as their expertise in waste management, city decarbonization, and the use of advanced technologies like low-carbon concrete and timber construction. For instance, in France and in Europe, high-rise buildings using wood as the main structural element are already being constructed, which often surprises clients in Southeast Asia.

One key to success lies in the proactive promotion of this expertise to local authorities and decision-makers. By planting the seeds today through such initiatives, French companies can expect to reap the rewards in the coming years, as change in this sector takes time.

Under the patronage of the Consul General of France, the French Foreign Trade Advisors (CCE), and Business France, Bouygues Bâtiment International, led by Bruno Botella, Chief Executive Officer for Asia Pacific and CCE member, along with eight other French companies, have gathered to prepare a “green paper” on decarbonization intended to promote the know-how of French

companies in this field. The InnoEx expo 13-16 April 2024 with the « So French So Innovative » booth and seminar resulted in a 9-page document which was presented on April 16 to government officials and bodies. This green paper covers the following sectors: construction, energy, transport and waste management. This initiative demonstrates the power of collaboration, showcasing how combining expertise and resources can amplify impact and extend reach to achieve significant environmental advancements.

Their ability of French companies to intervene at the early design stages is also important because the earlier they are involved, the more they can influence the entire project. This positioning as designers and planners is an asset, as it allows to define technical and sustainable solutions before the project enters the execution phase.

Although French engineers possess strong skills, it is important to recognize that competition is tough. Other firms are also highly competent, and Southeast Asia does not have a specific preference for French engineering. Therefore, exporting French engineering services to this region takes time and can be challenging in some markets or sectors.



## Interview 8

## RATP Dev: Public transport at the core of future sustainable cities of Southeast Asia



**Henri Pottier**

CEO Asia-Pacific, RATP Dev

CCE Singapore

Currently CEO Asia-Pacific at RATP Dev, Henri Pottier oversees regional projects, including the Hong Kong tramway, the management of LRT1 in Manila, and the new automated metro line for Western Sydney Airport. Under his leadership, RATP Dev's presence in the region has grown sixfold since 2019. Henri Pottier has more than 15 years of experience in public transportation, having worked in operational and commercial roles before becoming the CEO for Asia-Pacific. He holds degrees from several institutions, including École Polytechnique, Imperial College London, UCL, and INSEAD.

RATP Dev is a subsidiary of the RATP Group, global leader in high-capacity urban rail and the world's third largest public transport operator. All over the world, our 23,000 people design, operate, maintain and modernize public transit networks of automated metros, commuter rail, tramway, bus and many other modes. Thanks to this unrivalled know-how, we serve more than 100 cities in 15 countries and 5 continents. We provide custom-made solutions that meet their specific challenges in terms of the environment, social inclusion, growth or attractiveness.

Headquartered in Singapore, RATP Dev Asia-Pacific extends its operations to Hong Kong, Australia, and the Philippines. With a dedicated team of nearly 700 employees and a global network of experts, RATP Dev contributes to the mobility of 500,000 passengers daily across various urban transportation modes. Over the past 15 years, we have built the strongest regional presence and extensive local expertise, enabling us to secure and manage multi-billion-dollar contracts spanning decades, while addressing the region's evolving challenges and driving sustainable growth.

Rapid urbanization in ASEAN countries poses unique challenges to sustainability. However, it also opens up considerable opportunities for French companies, particularly in terms of supporting urban development plans and the development of public transport infrastructure. Henri Pottier shares his thoughts on these issues and proposes ways to meet these challenges through innovative solutions and strategic partnerships.

**Urban planning and public transport: The essential tandem for a sustainable city**

The combination of smart urban planning and well-designed public transport is key to creating sustainable cities that can meet the challenges posed by rapid urbanisation.

**Urban planning: Reducing travel for a sustainable future**

One of the most powerful levers for a sustainable city is to reduce the need for travel by designing urban spaces where essential services are accessible nearby. The concept of the "quarter-hour city", in which residents can access their daily needs in a few minutes on foot or by bike, is

a particularly effective solution for reducing carbon emissions and urban congestion.

French companies, with their experience in the planning of many 'new towns' in France, have valuable expertise in urban development. They can help ASEAN governments develop compact and well-planned cities, thus ensuring smart territorial structuring.

**Public transport: the only green solution offering the required capacity**



Urban rail is meant to be the backbone of any dense city, commuter trains and metros forming the most capacitive section and tramways and light rail a complementary link to less dense areas. Urban rail is propelled by electricity since its beginnings more than a century ago. Hence, public transport plays a key role in reducing CO2 emissions and improving the quality of life in major cities.

Singapore is a model when it comes to public transport use, with almost 60-70% of its population using it daily. In Hong Kong, this figure is as high as 80%. This demonstrates the importance of efficient transport systems to reduce car dependency. However, in the rest of ASEAN, there is still a significant deficit in public transport infrastructure.

One of the challenges in supporting this transition is to make public transport an attractive mode of

transport. This is where RATP Dev proposes its services to operate safely and reliably these systems and brings a capacity for innovation in the design of the physical and digital experiences offered to users.

**Design infrastructure that is built to last**

One of the biggest challenges for ASEAN cities is to build infrastructure that is not only adapted to current needs, but also scalable and sustainable in the long term. Companies with a long legacy, such as RATP in Paris, bring a real expertise when it comes to future-proofing infrastructure.

**Anticipating the future with scalable infrastructures**

Infrastructures must be designed from the onset to evolve over time. This involves anticipating population growth, as well as technological changes that may influence

transportation needs. Scalable systems make it possible to increase infrastructure capacity without the need for costly rebuilds in the future.

Line 14 of the Paris metro is an example of this approach. Since its inauguration in 1997, RATP has anticipated the evolution of future needs by allowing the expansion of train capacity from 6-car to 8-car without having to revise the stations. This is a model of foresight that cities in Southeast Asia could adopt.

**Integrating sustainability by design**

Building sustainable infrastructure from the onset is essential to avoid high maintenance costs and ensure its environmental performance. This includes the use of sustainable materials, optimized energy management, as well as the reduction of the ecological footprint throughout the life cycle of the infrastructure. In Australia, RATP is the operator of the future Western Sydney

Airport metro line and is working in partnership with two European companies (WeBuild and Siemens) to integrate technical solutions that optimize energy use in rail systems. This collaboration is based on a shared vision, with planning that anticipates future energy needs, while maximizing operational efficiency.

### **The financing of public transport in ASEAN: a challenge of Capex and Opex**

Financing public transport infrastructure in ASEAN is a major challenge, both for its initial construction (Capex) and for its long-term management (Opex).

#### **Capex: Financing the construction of infrastructure**

Financing for the construction of public transport infrastructure is often provided by development banks or public-private partnerships. However, even when initial funding is secured, it is essential to ensure that the project is designed in a way that optimizes operating and maintenance costs.

In Hanoi, the metro project, financed in part by the French Development Agency (AFD), represents an example of mobilizing international funding for the construction of new lines. However, cities also need to think about how they will manage operating costs once infrastructure is built.

#### **Opex: The challenge of financing long-term operations**

The operating cost (Opex) is often underestimated in infrastructure projects. Fares are usually kept low to attract passengers which requires heavy subsidies to keep the system afloat. Moreover, costs of operating and maintaining can quickly blow up if not managed by a professional operator. Hence, the value proposition of professional operators to commit



to a competitive cost of operation and maintenance to ease the burden for local governments and let them decide the fare level according to the subsidies they are willing to provide. Solutions should include business models that optimize operational efficiency while maintaining high-quality service.

In the Philippines, while the construction of new metro lines is largely funded, the real challenge lies in the long-term management of operating costs. Leveraging its expertise in long-term projects, RATP has shown that costs can be optimized through various ways. This includes the implementation of technologies such as energy recovery in train braking systems, which help reducing energy needs.

### **The cultural and political dimension of sustainable development**

The adoption of public transport is not only based on technical or financial issues, but also on cultural and political factors.

#### **Perception of public transport and social status**

In some ASEAN countries, the car remains a status symbol, which can slow down the adoption of public transport. It is therefore crucial to make public transport systems attractive and socially accepted in order to fully integrate them into the lifestyle of the inhabitants. In Paris, public transport is widely used by all social classes. Conversely, in countries such as Indonesia or Vietnam, the use of public transport is perceived as a second-choice option.

To reverse this trend, operators need to innovate in terms of services and offer improved user experiences. In an increasingly digital world, RATP vision is to provide a digital experience comparable to car-hailing companies (information accuracy, ease of use, etc.) on top of world class service in terms of reliability and safety.

**The role of public policies**

Governments play a crucial role in the development of public transport infrastructure. Strong political will is often needed to speed up the development of transport systems, but also to overcome administrative or cultural barriers.

Singapore and Hong Kong have managed to build high-performing public transport systems thanks to strong political support. On the other hand, in countries such as Vietnam, political and regulatory barriers still hinder the participation of private or foreign companies in the operations of transport systems.

**Conclusion: Recommendations for French companies wishing to develop in ASEAN**

The development of the public transport sector in ASEAN offers many opportunities for French companies:

- Supporting urban development schemes: The experience acquired in France in the construction of new cities allows French companies to play a key role in the urban planning of Southeast Asian cities.
- Adapting solutions to local realities: The success of public transport projects depends on their ability to meet the specific needs of local populations while considering cultural and social contexts. RATP Dev adds value in the concrete implementation of these projects by committing to results while ensuring sustainability over time and future-proofing its operations.
- Develop long-term partnerships: Collaborations with local actors are essential to ensure the long-term success of projects, based

on shared values and a common strategic vision. It is important to focus on knowledge transfer to secure the durability of projects through human resources and to guarantee effective partnership relationships.

- Certainty to optimize operating costs (Opex): Companies must offer innovative solutions to reduce infrastructure operating costs, using modern technologies and optimized management practices.

By relying on these strategies, French companies can not only contribute to the sustainable development of ASEAN cities, but also establish themselves as partners of choice for public transport projects.



Manila light rail transit metro

## Interview 9

## Stellantis: Shaping Smart and Sustainable Automotive Solutions for Southeast Asia's Emerging Mobility Trends



**Daniel Gonzalez**  
Senior Vice President and COO  
ASEAN, Stellantis

Daniel Gonzalez is a Senior Vice President and COO for ASEAN markets at Stellantis. He is responsible for overseeing the company's operations across 18+ countries in Southeast Asia, focusing on expanding Stellantis' presence in sustainable mobility. His role involves driving business reviews, enhancing operational efficiency, and implementing long-term strategic business plans. Daniel Gonzalez began his career in financial audit at KPMG, and he later joined Fiat Chrysler Automobiles, where he held various leadership positions in finance before the merger that created Stellantis.

Stellantis is a global automotive manufacturing company formed in 2021 through the merger of Fiat Chrysler Automobiles (FCA) and Peugeot S.A. (PSA). It is one of the world's largest automakers, with a diverse portfolio of iconic brands, including Jeep, Ram, Maserati, Peugeot, Alfa Romeo, and Citroën. Headquartered in Amsterdam, Stellantis operates in over 130 markets and has a strong presence in North America, Europe, South America, and growing influence in Middle East, Africa and Asia. The company is focused on electrification, sustainable mobility, and innovative technology, aiming to lead the automotive industry's transition to a greener, more connected future.

As Southeast Asia's mobility landscape evolves, Daniel Gonzalez shares insights into the region's unique mobility trends, from electric vehicles to intelligent transport, and how Stellantis is adapting to meet high consumer expectations.

**Q: What is Stellantis' development strategy in Asia?**

**A:** In Asia (Asia-Pacific and India), we see significant growth potential. Despite a modest market share, we have strengthened our presence in the region with a solid foothold in Malaysia, industrial partnerships in Vietnam, several ongoing projects in Indonesia, and a well-established network of suppliers in Thailand. Our strategy is based on an in-depth

analysis of local needs.

Unlike other Western manufacturers that are heavily reliant on the Chinese market, we have adopted an "asset light" approach in China. Rather than making massive investments in infrastructure, we have opted for strategic partnerships that allow us to remain competitive while minimizing risks. In this context, we launched the Leapmotor brand, resulting from the 51/49 Stellantis-led joint venture with Leapmotor. Leapmotor International, has the exclusive rights for the export and sales, as well as manufacturing of Leapmotor products outside Greater China. This strategy enables us to maintain a presence in the Chinese market while remaining flexible and responsive to local

competition, particularly from Chinese manufacturers, who are especially aggressive.

Stellantis has high expectations for the future, and although we still have areas for improvement, we are well-positioned to continue our growth.

**Q: What are the specific characteristics of the Asian market in terms of both supply and demand?**

**A:** The Asian market, particularly in Southeast Asia, has distinct characteristics. On the one hand, supply is strongly impacted by intense competition, and on the other hand, demand is characterized by very high expectations from local consumers.

**Supply: Intensified Global Competition**

The Asian automotive industry is undergoing a period of rapid transformation. This moment of transition presents both challenges and opportunities for companies in the sector. The disruption impacting the industry is accelerated by competitive dynamics, particularly the aggressiveness of Chinese manufacturers, who have been able to capitalize on their advantages in terms of cost and vertical integration. This competition has taken many Western automotive manufacturers (OEMs) by surprise, as they did not anticipate such a rapid evolution of the market.

It is essential to understand that this industry is cyclical, and the current competition is just one stage in this cycle. When the market is at its peak, it is crucial to prepare for a downturn or sudden changes, which can happen sooner than expected. Manufacturers must be quick and agile enough to remain competitive and survive in this period of disruption. However, even though this competition may seem tough, it is actually beneficial. At Stellantis, we want to be challenged by the best because it pushes our company to improve and innovate. We often say that we are already “in the future”, as being a manufacturer based in Southeast Asia, we face challenges that other manufacturers abroad will encounter only months or years from now.

**Demand: Exceptionally High Customer Service Expectations**

It is not just about selling a product but solving a mobility problem and providing service to the consumer. This point is crucial: in Asia, consumers have extremely high



expectations regarding customer service, whether it is for a budget vehicle or a luxury one. This requires a personalized and high-quality level of service, from the initial purchase of the vehicle to exceptional after-sales service. This is where Stellantis leverages its diverse portfolio of brands, including Alfa Romeo, Peugeot, Maserati, and Jeep. Each brand has a rich history and a distinct identity, allowing us to cater to different segments of consumers based on their specific expectations.

These high expectations force manufacturers to adapt their approach right from the product design stage. It is not enough to simply transport products from Europe or the United States to Asia; instead, products and services must be tailored to meet the specific needs of local customers. In Southeast Asia, for example, we integrate R&D activities locally and ensure that local representatives are included in the design process to make sure we meet the precise expectations of local consumers. This is a model we have successfully implemented in India and are gradually expanding

to other Asian markets. In South America, where we have a strong presence, this approach has already proven effective, with products largely designed by local teams, ensuring a perfect match with market expectations.

In fact, the service culture is pervasive in Asia, and it transcends class or price barriers. It is much more common here for households to hire a driver, even for more modest market segments, whereas in Europe or the United States, this would be reserved for a very small elite. This accessibility to services once seen as luxurious is an opportunity to create new business models, such as chauffeur-driven car-sharing. Understanding this culture and responding to it is fundamental to remaining competitive.

**Q: What are the mobility trends in Asia?**

**A:** Southeast Asia is undergoing significant changes in mobility, marked by several key trends that are transforming the automotive market and the way people move.

### The rise of electric (EV) and hybrid vehicles

Southeast Asia is witnessing a growing adoption of electric and hybrid vehicles, although the pace differs from country to country. In Indonesia and Thailand, the adoption of EVs is progressing strongly, driven by public initiatives and increasing environmental awareness. However, in countries like Vietnam and the Philippines, the transition to electric vehicles is slower, mainly due to a lack of adequate infrastructure, particularly charging networks, which hampers widespread adoption. Hybrids, on the other hand, present a particularly attractive intermediate solution for consumers, as they offer energy consumption flexibility while complying with emerging environmental regulations. In the short to medium term, it is likely that the growth of hybrids will surpass that of fully electric vehicles in several countries in the region.

### The importance of public transportation in major cities

Public transportation has become a necessity in the large cities of Southeast Asia, such as Kuala Lumpur, Bangkok, and Jakarta. Road congestion is so severe that public transport is often the most effective solution for daily

commuting. Nevertheless, this evolution should not be seen as a threat to automakers. The ratio of cars to people in ASEAN countries remains very low compared to other regions of the world. In Indonesia, there are only less than 100 cars per 1000 people, while the number of two-wheelers remains very high, especially in Vietnam and Indonesia. Furthermore, the region has a young and growing population, combined with rising GDPs, which will likely lead to increased vehicle ownership in the coming years. This leaves significant growth potential for individual vehicle ownership. Public transportation and personal cars are complementary, with the former being essential for daily urban trips, and the latter preferred for leisure or longer journeys.

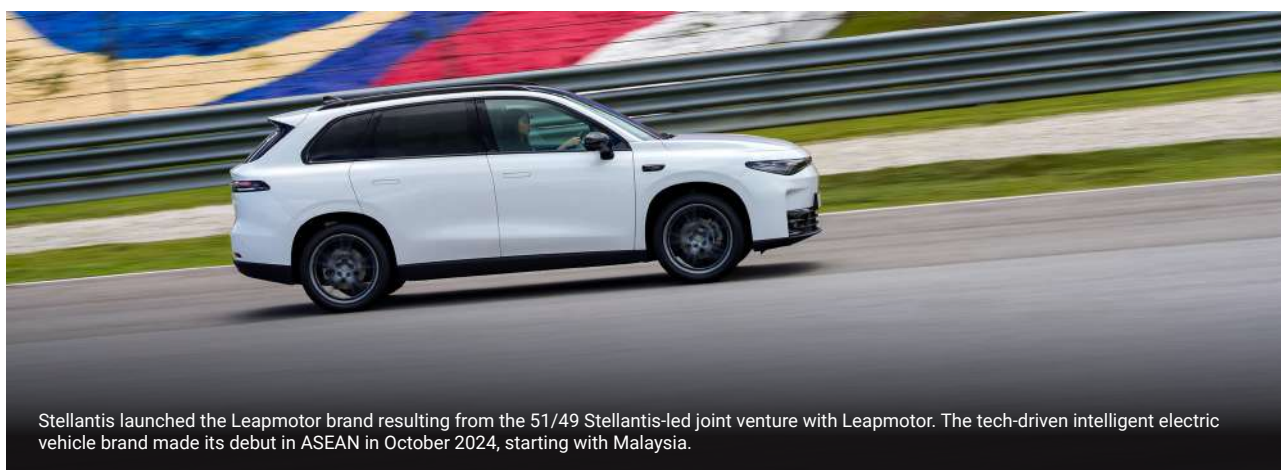
### The development of intelligent and autonomous mobility

Autonomous mobility is booming, especially in China, which is rapidly advancing in this field thanks to adapted infrastructure and cutting-edge technology. It is likely that China will be the first market to adopt these innovations on a large scale, followed perhaps by innovative urban projects such as Nusantara in Indonesia. However, integrating autonomous driving in the rest of Southeast Asia is more

complex, where the density of cities, the unpredictability of pedestrian behavior, and the prevalence of two-wheelers can disrupt autonomous driving systems. Stellantis, through its R&D teams and in partnership with technology companies, is actively working to develop solutions. The goal is not only to facilitate transportation but also to transform the car into a connected space where users can work, entertain themselves, and enjoy a unique experience during their journeys.

### “Mobility as a Service” (MaaS) versus private vehicle ownership

One of the key questions for the future of mobility in Southeast Asia is whether new economic models, such as “Mobility as a Service” (MaaS), will replace traditional vehicle ownership. While owning a vehicle remains a symbol of social status in the region, especially for previous generations who had to work hard to own a tangible asset, the young, tech-savvy Asian population could adopt these new solutions more quickly. Although the adoption of MaaS may take longer than in Europe, e-hailing platforms like Grab, which provide access to multiple forms of transport through a single app, have already demonstrated the effectiveness of these models.



Stellantis launched the Leapmotor brand resulting from the 51/49 Stellantis-led joint venture with Leapmotor. The tech-driven intelligent electric vehicle brand made its debut in ASEAN in October 2024, starting with Malaysia.

**Interview 10**

# Veolia: Tailoring Partnerships for Waste and Water Management to Southeast Asia’s Unique Context



**Jérôme Le Borgne**  
 Country Representative Thailand  
 and Development Director  
 Southeast Asia, Veolia  
 CCE Thailand

Jérôme Le Borgne, currently serving as the Country Representative for Thailand and Development Director for Southeast Asia at Veolia following its merger with Suez, Jérôme Le Borgne is a recognized advocate for decarbonization and the circular economy. A graduate of Arts et Métiers ParisTech with a Master’s in Mechanical and Industrial Engineering, Jérôme Le Borgne has spent over a decade in the waste management and recycling sector, primarily with Veolia and Suez.

Veolia is a major player in Southeast Asia, with a presence in several countries, including Singapore, Malaysia, Indonesia, Thailand, The company is present through the industrial and municipal sectors, and focuses on:

- Water management: developing solutions for the treatment and distribution of drinking water as well as wastewater treatment
- Waste management: implementing recycling , waste recovery systems and depollution
- Energy: engaging in projects aimed at improving energy efficiency and decarbonisation

Veolia is pioneering sustainable water and waste solutions across Southeast Asia, adapting to the region’s unique regulatory and environmental landscapes. Jérôme Le Borgne shares insights on the innovative partnerships and tailored approaches that drive Veolia’s impact in addressing ASEAN’s diverse urban challenges.

**Q: How Are ASEAN Cities Embracing Sustainability?**

**A:** Sustainability in ASEAN cities present a mixed picture.

Each city has its own interpretation of what constitutes a sustainable or smart city. In Singapore, for example, sustainability is embodied through the use of a digital twin

that simulates the environmental impact of new buildings. In contrast, cities like Bangkok often settle for simpler improvements, such as the installation of smart electricity systems, while traffic lights remaining mostly manually controlled.

There are also significant disparities between capital cities and intermediate cities. While cities like Penang and Phuket show remarkable dynamism, many second-tier cities struggle to secure funding for sustainable projects.

However, a movement toward sustainability is emerging, often driven by simple and ingenious solutions. For instance, instead of building costly concrete wastewater treatment plants, some cities are

opting for natural areas incorporating multiple filtration stages. This is the case in Bangkok, which recently created a low-cost, low-tech wetland in Benjakitti Park. These initiatives, while rudimentary, demonstrate that sustainability is achievable even in resource-constrained settings. These solutions can also involve the informal sector. Veolia, for example, has implemented a plastic recycling program in Indonesia, working extensively with the informal sector. Although we do not have automated sorting centers like in Europe, we still manage to collect 30,000 tons of plastic bottles annually. These initiatives, while basic, show that sustainability is possible even with limited resources.



**Q: What is the current regulatory framework for projects in the ASEAN region, and how is it evolving? Is this evolution favorable for Veolia's business development, particularly in the municipal and industrial sectors?**

**A:** In the Asia-Pacific region, Veolia is present in both the industrial and municipal sectors, but in Southeast Asia, our municipal presence remains limited.

Outside of Singapore, the ASEAN region presents notable challenges for public-private partnerships (PPPs) in public services. These challenges include strong competition from local players who are often willing to take risks that foreign companies hesitate to accept and compliance issues. The lack of clarity around concessions and the absence of performance guarantees make the municipal sector less attractive. For example, in Thailand, PPPs for wastewater treatment are not appealing to foreign investors due to the lack of payment guarantees from municipalities. Furthermore, regulatory standards in Asia are often less stringent

than in Europe, which increases foreign actors' reluctance to engage, as Veolia must adhere to strict environmental standards throughout its supply chain.

While we aim to strengthen our footprint in the municipal waste sector through PPPs, there is not yet a clear regulatory framework in place, and no concrete projects have been identified. However, signs of regulatory evolution suggest a more favorable situation in the next three to four years. The progression of PPPs varies by country: Cambodia and Laos are still lagging, while Thailand and Indonesia are beginning to develop more favorable frameworks, despite ongoing challenges, such as municipal solvency. In Indonesia, the Infrastructure Guarantee Fund (IIGF) offers certain guarantees, while in Thailand, the lack of such a mechanism complicates the securing of PPP projects.

Meanwhile, an alternative model to PPPs, known as the Merchant model, is emerging. This financing model relies on revenues generated from

actual service usage rather than public guarantees. This allows Veolia to work in municipal waste recycling without direct interaction with municipalities. However, this model is risky and not applicable to all sectors; for instance, it may work for organic waste treatment but is limited to very specific cases.

Finally, regarding equipment sales, there is a growing demand for Water Treatment technologies, with players like Moya, the leading water concessionaire in Indonesia, purchasing plants from Veolia or Suez.

**Q: Can Singapore's environmental and technological strategies for urban development be replicated in other ASEAN cities?**

**A:** The Singapore model cannot be replicated elsewhere due to its unique status as a city-state with a strict regulatory framework and meticulous urban planning. The ecosystems in Southeast Asia differ too much for direct transposition. While there are similarities with Hong Kong,



its connection to mainland China creates significant differences. Cities like Bangkok, Jakarta, or Kuala Lumpur have distinct histories and cultural contexts, making the application of Singapore's strategies difficult.

Certain technologies developed in Singapore are highly efficient, but deploying them on a large scale in bigger, less organized cities is often challenging. These technologies require rigorous urban planning and a suitable regulatory framework, which is often lacking in these large cities. For instance, district cooling, a centralized cooling system for multiple buildings, is a model of energy efficiency at Marina Bay (Singapore), but it is nearly impossible to apply it on a large scale in Bangkok, which is much more spread out. The few existing projects in private districts represent only isolated solutions.

Initiatives also depend on local needs and infrastructure. In Singapore, wastewater is treated in advanced ways to produce biogas, whereas in Jakarta or Bangkok, only 50% of wastewater is treated, making their implementation almost impossible. Smart metering, which works well in Singapore where every drop of water is precious, would not be profitable in Jakarta, where water costs are very low.

However, it is important to note differences between capitals and secondary cities. In capitals, projects progress slowly but steadily due to the complexity of urban structures and other priorities. On the other hand, smaller cities like Penang or Phuket, less burdened by complex infrastructure, are showing rapid development and are often more flexible in adopting innovative solutions. These cities could even

surpass the capitals in terms of sustainable innovations over the next five years.

**Q: What are the competitive advantages of French companies?**

**A:** The operating models vary significantly across different regions. In some cases, companies function primarily on a government-to-government basis, while others may operate in less structured environments, establishing local partnerships based on uncertain commitments. Some competitors tend to focus mainly on technology and equipment sales. In contrast, French companies offer a broader range of activities, including consulting, equipment, and operations. Additionally, their flexibility and willingness to compromise allow them to build successful partnerships with large conglomerates and strong networks of partners, which increases their chances of securing projects.

**Q: What are the key success factors for French companies in ASEAN?**

**A:** The key success factors for French companies in ASEAN rely

on several essential elements. First, direct access to customers is crucial for understanding their needs and better responding to tenders, as the specified technology can determine the chosen supplier.

Choosing a suitable partner is also fundamental, especially during the initial entry into the region, as a good partnership facilitates market entry.

French consultants, thanks to their expertise in sustainable development, can provide innovative solutions. By getting involved early in projects, these consultants can design specifications that favor French companies, unlike local consultants who often prioritize Chinese equipment. Moreover, the consulting sector presents enormous potential, as many large development funds finance studies, thereby opening opportunities for companies looking to engage in consulting projects.

Finally, public-private partnerships (PPPs) should be examined on a case-by-case basis, with flexibility being essential to navigate the complexities of the various ASEAN markets.



## Interview 11

## Sodexo: Setting the Standards of a Healthy Lifestyle Through Sustainable Facility Management and Dining Solutions in Southeast Asia



**Arnaud Bialecki**  
Managing Director  
Southeast Asia, Sodexo  
CCE Thailand

Arnaud Bialecki is currently the Managing Director for Southeast Asia at Sodexo. He also serves as President of the French Foreign Trade Advisors (CCE) in Thailand.

Prior to joining Sodexo, Arnaud Bialecki held management positions at PCS and Thomson CSF. With 25 years of experience in the facility management industry in Asia, he has established several joint ventures across Southeast Asia and the Middle East and led acquisitions in Vietnam, Singapore, and Thailand.

Sodexo, founded in 1966, is the global leader in quality-of-life services, offering integrated solutions in food services and facility management to 80m consumers. Sodexo provides food services by preparing fresh and healthy meals tailored to clients' needs, as well as retail services, food delivery and digital food ordering services.

Facility management services include soft services (access control, deep cleaning, space planning, front-of-house services, grounds maintenance, waste management, mail management, commercial cleaning, workspace management and pest control) and hard services (technical service management, assets management, building maintenance, energy management, project management, HVAC systems).

With more than 420,000 employees, Sodexo serves a wide range of sectors, including corporate offices, hospitals, schools, and government facilities. The firm operates across more than 45 countries. In Asia, Sodexo operates 12 territories and employs over 75,000 employees (including about 11,000 in Southeast Asia) that provide services to more than 11.2m consumers.

As Southeast Asia is evolving, Sodexo is seizing the opportunity to reshape facility management and food services. Arnaud Bialecki shares how the company is optimizing energy use, minimizing food waste, and supporting healthier choices across the region.

**Q: What are Sodexo's major sustainability targets?**

**A:** Sodexo has set ambitious sustainability goals, aiming for carbon neutrality by 2040, with a shorter-term

target to reduce our carbon footprint by 34% by 2025, based on 2019 levels.

To achieve this, we monitor over 300 key performance indicators (KPIs) across sustainability areas, from environmental to social responsibility in food services and facility management. All site managers share the same targets, reporting monthly to consolidate data globally. However, comparable year-on-year evolutions at both site and country levels are ensured to enable accurate measurement and comparison of

progress across diverse regions.

In food services, we partner with clients to minimize overproduced food waste and promote sustainable sourcing practices. This includes using Fair Trade coffee, practicing sustainable fishing, eliminating deforestation-linked palm oil, reducing single-use plastics, and promoting animal welfare – for instance, by tracking cage-free eggs in the supply chain.

For facility management, we monitor

emissions under the Greenhouse Gas Protocol: Scope 1 covers direct emissions (under 1% of our total), Scope 2 relates to indirect emissions, and Scope 3 covers emissions from our supply chain and client operations, which consume most of the energy. By collaborating closely with clients, we amplify the impact of our emission reduction efforts.

Our transparent reporting framework enhances accountability, enabling clients to monitor the impact of our initiatives, while internally, it helps benchmark progress and identify improvement areas.

Sodexo's consistent recognition as a sustainability leader, ranking among the top in the Dow Jones Sustainability World Index for 17 consecutive years, underscores our commitment to these objectives and alignment with evolving sustainability priorities.

**Q: How is sustainable development integrated into your products and services offering?**

**A:** Sustainability is central to our approach across both facility management and food services.

In facility management, energy efficiency is essential, especially in high-consumption regions like Asia. We encourage clients to adopt energy-reduction measures - such as installing solar panels, adding insulation to reduce air conditioning needs, and upgrading equipment to energy-efficient models like LED lighting – to replace outdated equipment, such as energy-intensive chillers.

In food services, reducing food waste is crucial, as it is a major contributor to greenhouse gas emissions. To tackle this, we launched WasteWatch, a program using digital weighing

scales at thousands of sites globally. Each day, kitchen teams track waste from food preparation, unconsumed portions, and client plate waste, allowing for detailed analysis. For example, if the garnish of a dish is frequently left uneaten, we remove the garnish, making our approach pragmatic and waste-conscious. This systematic measurement has consistently reduced food waste, with metrics such as weight, cost, and CO2 value assessed differently across countries due to unique regional factors. We also promote plant-based diets, as seen at the Paris Olympics, where we provided sustainable menu options with ingredients sourced within a 200-kilometer radius, trying to cater to as many tastes as possible in a reduced number of meals, and we ensured 30% of the menu was plant-based.

Our KPIs extend to the broad supply chain process, from local sourcing



to transportation emissions, as Scope 3 generates the largest carbon footprint. It considers social impact as well, including promoting local SMEs and measuring the proportion of women-owned businesses in the supply chain.

**Q: Do you face any challenges regarding sustainability in Asia?**

**A:** In Asia, integrating sustainability involves navigating challenges tied to market maturity and supply chain limitations. While we're on track with our 34% reduction goal for 2025, certain targets, such as sourcing cage-free eggs, are more difficult in regions where supply is limited or nonexistent. We decided to drive market creation locally, by acting as market makers aiming to build local demand and encourage suppliers to enter the market, which could gradually lower prices.

Healthy eating standards also bring unique reflections. Cultural preferences vary across Southeast Asia, which affects how quickly sustainable or plant-based menus can be integrated. For instance, it is easier to introduce plant-based options in countries like India, where these are culturally accepted, even if across the region, receptiveness to healthier options is growing.

Promoting sustainability also involves financial considerations, as the limited supply chain often drives up costs. This prompts ongoing discussions at a country-by-country level on whether to absorb these costs or adjust prices, balancing sustainability goals with market realities. However, if some clients remain cost-sensitive - especially in regions where it may be challenging to justify higher costs for sustainable products - in Southeast Asia overall, we see more and more clients willing to pay a premium for

environmentally friendly and health-promoting products.

**Q: Is Southeast Asia a promising market for sustainable considerations?**

**A:** Southeast Asia is indeed a promising market as sustainability becomes a global priority.

With a large consumer base and a robust economy, ASEAN is a market

with a scale comparable to that of India or China. All in all, it serves as a valuable counterbalance in the region to diversify, reinforcing its strategic importance.

It also represents growth opportunities; especially as free trade agreements expand. The EU's ongoing negotiations regarding a potential agreement with Thailand, further enhance access for French and European companies.



**Interview 12**

# Standardization and Sustainable Development: Challenges and Trends in Southeast Asia



**Henri Nejade**

Chairman, Singapore Chemical Industry Council (SCIC)

CCE Singapore

Henri Nejade is the Chairman of the Singapore Chemical Industry Council (SCIC). He previously held several senior management positions in the chemical industry, including President and CEO for Asia-Pacific at the Brenntag Group, as well as positions at General Electric and Solvay (formerly Rhodia) in Europe. He holds a postgraduate degree in Chemistry, an Executive MBA, and a Certificate in Corporate Governance from INSEAD.

The Singapore Chemical Industry Council Limited (SCIC) is the official industry association representing the Singapore Energy and Chemicals cluster in the private sector. It actively represents the interests of this manufacturing sector and continues to promote it as a major economic pillar of Singapore.

SCIC has a network of more than 170 member companies, including key multinational corporations (MNCs) and small & medium enterprises (SMEs) that support the entire chemical industry supply chain.

These members provide vast resources and opportunities to foster a favorable business environment for the chemical industry. SCIC also offers a platform for industry members to strengthen their position in health, safety, environment & security performance and advocates regulatory issues as a unified body.

With increasing pressure on economies worldwide to adopt sustainable practices, Southeast Asia is positioning itself as a key area for the transition to sustainable environmental and energy solutions. Henri Nejade, Chairman of SCIC, shares his vision on the role of standards and the challenges of harmonizing practices in the region.

***The Singapore Chemical Industry Council: A Promoter of Standardization for a Sustainable and Competitive Industry in Singapore***

The Singapore Chemical Industry Council (SCIC) is the main organization bringing together actors in Singapore's chemical industry. As

Chairman, Henri Nejade actively works to enhance the competitiveness and sustainability of this strategic industry. SCIC acts as a collaboration hub between the private sector and Singaporean government agencies, particularly for the industries on Jurong Island, Singapore's nerve center for chemicals and energy.

One of SCIC's objectives is to ensure that chemical industries evolve by adhering to strict standards that minimize their environmental impact while optimizing competitiveness. To this end, SCIC collaborates with government agencies, like Enterprise Singapore, to define sustainability standards adapted to Singapore and potentially exportable to other

Southeast Asian countries. These standards cover essential areas such as waste management, energy efficiency, wastewater treatment, human health & safety, environmental management and more.

As an example of "pragmatic standardization", SCIC is working on standardizing worker transportation. In a region where many foreign workers are transported daily to industrial sites, the safety of these commutes is crucial. SCIC is working to establish rigorous standards governing the number of passengers per vehicle, seatbelt use, and boarding regulations to ensure safe transportation. This type of pragmatic standardization addresses immediate

needs but also lays the groundwork for a safer and more competitive work environment in the long term.

### **Standardization: A Pillar for a Sustainable Transition in Southeast Asia**

In a region where each country has its own sustainability priorities, establishing common standards is crucial. Standardization is essential to ensure that sustainable development efforts are effective and valuable at a regional level. Thus, both the National standards and industry standards developed by SCIC through the government appointed Standards Development Organisation are not limited to Singapore; they are designed to potentially be adopted by neighbouring countries, like Malaysia and Indonesia, which are also integrating sustainability into their policies.

### **Toward a Circular Economy: Challenges in Recycling and Cross-Border Waste Management**

Plastic recycling provides a striking example of regional standardization challenges. Singapore consumes an insufficient amount of plastic to justify building a recycling plant. The solution would be to centralize these operations in neighboring countries (Malaysia, Indonesia), but this requires government approval for cross-border waste transport and the application of shared standards to ensure secure and efficient management of recyclable material flows.

SCIC also works with neighboring countries to establish circular value chains, particularly in the management of used cooking oil from the food industry. In Singapore, a Neste Chemical-funded plant converts cooking oils into eco-



friendly kerosene. Singapore Airlines partially uses this fuel, demonstrating the feasibility of this sustainable approach.

### **The Importance of Data for Establishing Measurable and Reliable Standards**

A major challenge for standardization in Southeast Asia is the lack of reliable and comparable data, making impact assessments or inter-country comparisons difficult. Quality data, rigorously collected, is crucial for developing applicable and auditable standards. The current lack of reliable and comprehensive data hampers the harmonization of practices among countries in the region.

SCIC plans to collaborate with other regional associations to develop a common data collection and sharing system in sectors like petrochemicals, energy, and transportation. Ultimately, this would allow governments and businesses to compare their sustainability results and set shared goals.

### **Carbon Tax and Carbon Credit Markets: Emerging Standardization Models**

To encourage CO<sub>2</sub> emission reductions, Singapore has introduced a progressive carbon tax. Starting at USD 5 per ton of CO<sub>2</sub>, the tax gradually increases, allowing companies to plan investments in CO<sub>2</sub> capture technologies. Many multinationals are actively engaged in this transition, exploring CO<sub>2</sub> capture and reuse solutions. The structuring of the carbon credit market also enables companies to offset emissions by investing in CO<sub>2</sub> reduction projects.

Developing a regional carbon credit market requires coordination to establish common standards on CO<sub>2</sub> taxation and offsetting. Standardizing carbon taxes could be a turning point for the competitiveness of regional companies. However, the lack of a harmonized legal framework currently hinders progress on these discussions at the regional level.

### **Standardization and Competitiveness: SCIC in Search of a Sustainable Balance**

Adopting high standards and carbon taxes can present a financial challenge for some companies, especially SMEs. It is essential to strike a balance between demanding

sustainability standards and the economic competitiveness of regional companies. SCIC advocates for governments to provide subsidies or tax relief to companies to offset the initial costs of complying with standards.

In Singapore, government grants help companies adopt CO<sub>2</sub> capture technologies, allowing the sector to maintain a balance between competitiveness and compliance with new standards.

***European Influence: A Source of Inspiration for the Region***

Europe, a pioneer in environmental standards, serves as an inspiration for sustainability initiatives in Southeast Asia. A more proactive promotion of European experiences and advances in standardization could further accelerate the adoption of standards and strengthen cooperation between European and Asian companies.

***Conclusion: A Collective Challenge for the Future***

To address environmental challenges, a regional (and beyond global) approach is necessary. Through standardization committees, like SCIC's initiative in the chemical and energy sectors, Singapore and Southeast Asia are on the path toward harmonizing sustainable practices. On the long journey to sustainable transition, standardization in Southeast Asia is becoming a key lever to ensure a more sustainable and competitive future, thanks to the commitment of governments, industry players, and international organizations.





## Interview 13

## Decathlon's Sustainability Journey in Southeast Asia: Fostering Community Well-Being and Green Business Practices



**Jean-Philippe Garraux**  
Business Development & Real Estate Leader, Decathlon Group  
CCE Singapore

Currently based in Singapore, Jean-Philippe is the global Business Development & Real Estate Leader, at Decathlon. He has held key roles in multiple Asian markets for Decathlon, including Malaysia, India, China, South East Asia. Prior to Decathlon, Jean-Philippe worked for Carrefour in India and Indonesia. His expertise extends to Cambodia, Sri Lanka, and Japan, where he supported market entry and strategic growth initiatives.

Decathlon is a leading global multi-specialist sports brand. With more than 108,000 teammates, the company operates over 1,814 stores with a global presence in 78 territories, making it one of the world's largest sporting goods retailers. Decathlon's vertically integrated business model encompasses research, design, production, logistics, and distribution, allowing the company to offer high-quality products at competitive prices. The company markets its products under more than 20 in-house brands, each catering to specific sports or activities. The company's purpose is to move people through the wonders of sports, driving its commitment to innovation, sustainability, and customer satisfaction.

Decathlon, a global leader in sports retail, has a significant presence in Southeast Asia, a region undergoing rapid urbanization and socio-economic transformation. During an insightful interview with Jean-Philippe Garraux, Decathlon's Business Development Leader, we delved into the company's activities, its approach to sustainability, and its commitment to fostering community well-being. This article explores Decathlon's regional initiatives, consumer trends in sports and wellness, and the company's strategies to create a sustainable, green future.

**Q: What is Decathlon's Presence and Role in Southeast Asia?**

**A:** Decathlon has established a

robust footprint in Southeast Asia, reflecting its mission to make sports accessible to everyone and "move people to the wonders of Sport". Since its regional debut in China in 2003, the company has expanded to countries like Singapore, Thailand, Vietnam, Malaysia, Indonesia, and the Philippines. With over 200 stores in China, 128 Stores in India and significant networks in other nations, Decathlon has localized its offerings to suit the sporting cultures of each country. For instance in India; with Cricket-specific products (catering to the country's most beloved sport); in China, with a focus on badminton and outdoor sports; in Malaysia and Thailand with Community-centric hubs offering yoga, boxing, and fitness classes.

This regional adaptation ensures Decathlon meets the unique needs of its diverse customer base.

**Q: What Are the Key Trends in Sports and Well-Being in Southeast Asia?**

**A:** Urbanization and evolving lifestyles have significantly influenced sports and wellness trends in the region.

Three key trends stand out:

- **Proximity and Accessibility:** People increasingly demand sports services and facilities within their neighborhoods, leading to the rise of localized ecosystems.
- **Community Engagement:** A strong sense of community drives sports participation, with individuals seeking group

activities like running, cycling, or fitness sessions.

- **Health Awareness:** The COVID-19 pandemic heightened health consciousness, with sports now seen as a vital tool for physical and mental well-being.

**Q: How Does Decathlon Engage with Local Communities?**

**A:** Decathlon goes beyond selling sports products by actively fostering community from well-being to movement with the purpose to “Move people through the wonders of Sport & making sport accessible to the many”—is deeply rooted in community engagement. Some of the company’s key initiatives include:

- **Educational Programs:** Decathlon partners with schools to provide sports equipment and organize physical activity sessions, particularly in underserved areas.
- **Community Events:** Retail locations serve as hubs for sports enthusiasts, hosting regular activities such as running clubs and yoga sessions.
- **Collaborations:** By working with local organizations and influencers, Decathlon builds connections that encourage sports participation and community interaction.

These efforts not only nurture a culture of wellness but also reinforce Decathlon’s role as a community partner.

**Q: How Is Circularity Incorporated Into Decathlon’s Business Model?**

**A:** Circularity is at the heart of Decathlon’s efforts to minimize environmental impact and promote sustainable consumption. The company’s initiatives include:

- **Second-Hand Sales:** Decathlon refurbishes and resells used



products at affordable prices, reducing waste and encouraging reuse.

- **Repair Services:** In-store repair hubs and mobile services make it easier for customers to maintain their sports equipment, extending product lifecycle.
- **Rental Programs:** Customers can rent sports equipment, allowing them to enjoy activities without owning the gear. This promotes the sharing economy increasing possibilities for non-essential consumption.
- **Buy-Back Schemes:** Decathlon encourages customers to return used items in exchange for store credit, which are then refurbished and resold through its second hand programme.
- **Recycling Initiatives:** Old products are repurposed into raw materials for new items

or used to create community infrastructure, such as playgrounds made from recycled running shoes.

These models not only reduce environmental impact but also create cost-effective and flexible options for consumers, showcasing Decathlon’s commitment to sustainable retail.

**Q: How Does Decathlon Incorporate Sustainability into Its Business Model?**

**A:** Sustainability is a cornerstone of Decathlon’s operations, given its reliance on nature as its “playground.” The company’s green initiatives span multiple areas:

- **Eco-Designed approach:** Through the analysis of a product’s lifecycle, Decathlon has developed an eco-design



approach to produce more products that fall into either of these criteria; Durability, Repairability, Made of recycled or renewable materials, Optimized manufacturing processes.

- Green Retail Infrastructure:** Decathlon’s stores are increasingly certified under standards like EDGE, incorporating energy-efficient designs and renewable energy solutions such as solar panels, LED lighting, and energy management systems.
- Sustainable Supply Chains:** Local sourcing minimizes transportation-related carbon emissions while supporting regional economies. Production facilities across Vietnam, India, and Malaysia focus on manufacturing closer to the customer base.
- Sustainable Packaging and Supply Chains:** Reduction and innovations in packaging and local sourcing reduce environmental impact while supporting local economies.
- Waste Reduction:** Decathlon focuses on reducing waste throughout its operations. Initiatives like biodegradable packaging and community recycling programs ensure a minimal environmental footprint.

- Biodiversity and Land Stewardship:** When constructing new facilities, Decathlon prioritizes repurposing existing spaces to avoid unnecessary land disruption. Green spaces, biodiversity projects, and eco-friendly infrastructure are central to new developments.
- Soft Mobility Promotion:** By integrating electric vehicle charging points at its facilities and encouraging cycling and other environmentally friendly transport options, Decathlon supports urban connectivity while reducing carbon footprints.

By integrating these sustainable practices, Decathlon positions itself as an engaged environmentally responsible retail.

**Q: What Opportunities and Challenges Lie Ahead for Decathlon in Southeast Asia?**

**A:** The region presents immense growth potential for Decathlon, but challenges remain:

- Market Diversity:** Adapting to the unique preferences and regulations of each country requires a flexible and tailored

approach.

- Consumer Expectations:** Younger generations expect companies to prioritize ethical and sustainable practices, prompting Decathlon to continuously innovate.
- Technology Integration:** Enhancing the customer experience through digital tools is crucial to staying competitive.
- Proximity-Based Solutions:** Decathlon integrates community-oriented facilities into urban neighborhoods, making sports accessible in densely populated areas. Embedding sports facilities and services into living spaces is essential as Southeast Asia’s urban centers grow.

**Q: Why Is Decathlon Focused on Well-Being Through Sports?**

**A:** Offering affordable and accessible equipment, ensure that sports are within everyone’s reach. The company believes that move people through the wonders of Sports & making sports accessible, benefits both individuals and society well being .

This focus aligns with broader urban planning trends emphasizing proximity and community-oriented living spaces.



**Interview 14**

# Unleashing Market Forces and Strengthening Public Policy Dialogue: AFD's Vision for a Sustainable Transition in Southeast Asia



**Jean-Pierre Marcelli**  
Regional Director, Agence Française de Développement (AFD) Southeast Asia

An agricultural engineer, Jean-Pierre Marcelli joined AFD in 1988. He has held numerous positions at headquarters and internationally such as: Executive Director of Group Operations, Director of the Sub-Saharan Africa Department, Agency Director in Egypt and Kenya, representative for Ethiopia and Eritrea etc. Since 2022, he is the Regional Director for Southeast Asia.

Agence Française de Développement (AFD) works to implement France's policies of development and international solidarity. AFD actions include financing for the public sector and for NGOs, publication of research, training on sustainable development, and awareness raising in France.

In this way, AFD help finance, guide, and accelerate transitions toward a fairer and more resilient world.

The French Development Agency (AFD) has been committed for several decades to supporting ASEAN countries in green growth. Through a combination of financing, private sector support, and political collaborations, AFD seeks to promote reforms that increase the attractiveness of sustainable investments. In a context where climate adaptation, natural resource management, and green finance are more important than ever, Jean-Pierre Marcelli, AFD's director for Southeast Asia, shares his insights on accelerating this transition.

**Thirty Years of Commitment to Sustainable Growth in Southeast Asia**

**30 years of sustainable commitment.**

AFD has been active in Southeast Asia for about thirty years, taking a long-term approach to meeting

the region's growing sustainable development needs. AFD first entered the region with Proparco through the private sector. Expertise France joined more recently to reinforce the effort.

**The "sustainable development" pillar of the Indo-Pacific Strategy.** AFD contributes to France's Indo-Pacific strategy, under the "sustainable development" component alongside other areas such as diplomacy and security. AFD's strategy for Southeast Asia is built on three essential pillars: reducing carbon emissions, adapting to climate risks, and preserving biodiversity. AFD's challenge is to support a transformation that combines development with sustainability.

**Partnerships with 7 ASEAN countries.**

AFD works with seven ASEAN countries as well as the ASEAN

Secretariat to support the region's ecological and social transformation. This gradual, structured approach has allowed AFD to build strong partnerships, offering technical and financial support tailored to local challenges. Through a regional directorate and six country agencies, AFD also collaborates with international financiers (Asian Development Bank, World Bank, 'Team Europe', etc.) and specialized commissions (e.g., Mekong River Commission).

**Climate: AFD's Priority with Two Key Concepts: Mitigation and Adaptation**

**Climate as a priority.** Climate is a priority for AFD in a region experiencing rapid growth in greenhouse gas emissions. Although emissions levels are not comparable to the highest-emitting countries,

led by China and the United States, countries like Indonesia, Vietnam, and Thailand are among the top emitters.

**Mitigation and adaptation.** Strong growth prospects in the region require a focus not only on mitigation but increasingly on adaptation to the impacts of climate change. The region is highly exposed to natural disaster risks, such as frequent typhoons in the Philippines, Vietnam, and other areas. It is also a water-rich region, with seas and rivers exposed to flood risks, as with the Mekong, as well as risks of land collapse and rising sea levels.

### ***Biodiversity and Blue Economy: Another AFD Priority***

**Preserving marine and river ecosystems.** Southeast Asia is home to some of the world's richest, yet most threatened, ecosystems. AFD concentrates its efforts on marine resource preservation, striving to promote a 'sustainable blue economy' through its "ocean strategy." In this water-rich region, with many rivers and coasts exposed to climate hazards, biodiversity is a major priority. Substantial effort is needed as seven of the ten largest marine plastic polluters are in Southeast Asia, making waste management a strategic preservation focus.

**Natural protection solutions for sustainable adaptation.** In this context, AFD supports nature-based solutions, encouraging practices such as coastal reforestation to limit flooding impacts. The goal is to establish green infrastructure that respects local biodiversity, offering an alternative to more costly and invasive engineering solutions.

### ***AFD as a Financial Catalyst, Offering Innovative Models for Green Finance***

**Financial catalyst.** With around one billion euros invested per year in Southeast Asia, AFD acts as a catalyst to direct financial flows toward sustainable projects. This 'financial catalyst' strategy relies on financing with Proparco, support from Expertise France, loans, or innovative solutions like green bonds for municipal projects and guarantees for local currency loans. For example, AFD may provide guarantees to help a city finance an anti-flooding or waste management program, ensuring these funds are directed toward environmental initiatives.

#### **Demonstration projects.**

This financing allows for the implementation of demonstration projects, paving the way for their scaling up. The principle is to encourage demonstration projects with innovative solutions and initial funding so that later, markets, national public policies, and budgetary mechanisms can adopt them.

**Greening public policies and private investments.** The needs for financing sustainable transition are substantial, amounting to hundreds of billions. AFD targets catalytic financing. It aims to green public policies, transform budgetary systems, promote the action of banks, and mobilize the private sector by reorienting private investment toward greener projects.

#### ***Unleashing Market Forces to Finance Sustainable Transition***

**Encouraging private investment in sustainable solutions through profitable models.** AFD advocates an approach that unlocks private investment in environmentally sustainable sectors. The goal is to create an economic and political environment that makes green investments profitable, particularly

in renewable energy and sustainable urban infrastructure. In Vietnam, for example, incentive policies have enabled the country to develop 15 GW of solar energy in just three years through a framework that encourages private investment. In Indonesia, AFD is also promoting floating solar energy, an emerging technology, to diversify the energy mix.

**Public-Private Partnerships as a Lever for Green Growth.** Unleashing market forces also means including private sector partners in the sustainable transition process through a partnership approach with the public sector (public authorities and investments). Energy transition, in particular, requires massive funding. In this challenge, Southeast Asia sees the rise of "Just Energy Transition Partnerships"—a financial cooperation mechanism designed to help an emerging economy heavily reliant on coal achieve a fair energy transition away from coal, balancing public and private financing. In Vietnam, for example, investment in the decarbonization program is split 50% public and 50% private financing. A similar program is underway in Indonesia.

**A region in solid macroeconomic health with capacity to call upon the private sector for transition financing.** Southeast Asian countries, with a few exceptions, are in robust macroeconomic health, evidenced by fiscal balances and debt levels. The region has a powerful budgetary capacity, coupled with a strong private sector trusted by governments. These governments are lightly indebted but seek to maintain fiscal prudence, pushing them to prioritize private sector involvement. Financial levers are available. Our programs and companies can contribute to initiating technical and financial solutions to attract investors and markets at scale.

There are tens of billions ready to be invested, seeking opportunities: they can focus on sustainable investments if we demonstrate their value. That said, it is essential to convince governments that some sectors will always require a share of government support for balance.

### **Accelerating Reforms Through Public Policy Dialogues**

#### **Essential international collaboration.**

Unleashing market forces for climate, environmental, and social challenges requires strengthened public policy dialogues. AFD encourages public policy dialogues that include governments, businesses, and international donors. It promotes knowledge exchange to support business climate reforms (reform packages that allow market forces to be unleashed). AFD conducts diagnostics to equip governments with tools in public policy areas (pricing policies, taxation, human capital training, reliability of off-takers, etc.) and sectoral domains (energy, transport, waste, etc.). For instance, Indonesia and the Philippines are implementing public policy programs supported by intergovernmental exchanges to create a conducive climate for green investments.

**Greening as part of international competition.** Countries in the region are keen on their development and



attractiveness. Once dialogue results in an agreement, sectoral budgetary assistance can be set up, with disbursements occurring as reforms are implemented. Interestingly, some countries join these budgetary programs without necessarily needing them: beyond financial aid, they value the dialogue, recognizing that greening and transitions are part of international competition.

#### **Challenges of regulatory environments and risks.**

One major obstacle remains the regulatory framework and uncertainty over long-term returns. This is crucial for sectors like waste and public transport. Tariff policy instability and the lack of solid business models hinder major infrastructure projects. For example, in solid waste management, AFD participates in large-scale projects, such as a US\$1Bn plastic reduction program in Indonesia, which requires a systemic transformation to achieve full benefits while maintaining economic stability in the sectors.

#### **Opportunities for French Companies**

##### **Fostering dialogue and collective intelligence.**

A key to success lies in listening, understanding, psychology, culture, and conducting business with local partners. There is demand for technological solutions from the private sector (though the appetite for simpler, frugal solutions is still emerging, despite AFD's promotion). Regional NGOs are also actors to consider.

##### **Showcasing France's environmental expertise.**

France leads in environmental and sustainable infrastructure sectors, offering opportunities for French companies in the region. Waste treatment, water depollution, and air quality management are promising

sectors for French expertise. In a region dominated by public-private partnerships, France has the opportunity to position itself as a provider of innovative technical solutions adapted to local specifics. For example, French companies can showcase successful proof-of-concept projects in Latin America, Africa, Asia, or in French overseas territories: La Réunion serves as a notable example of a sustainable island, relevant for addressing island issues in Southeast Asia.

##### **Strengthening French engineering.**

In addition to environmental expertise, French companies can play a key role in engineering, project standards, and specifications for sustainable development projects. French companies already hold strong market shares in some areas. By working closely with local consultancies, they can enhance their influence and visibility, especially in niche markets like water treatment technologies and sustainable mobility infrastructure.

##### **Using available financial tools.**

A wide range of tools is available: Study and Assistance Fund for the Private Sector (FASEP), Capacity Building and Expertise Fund (FERC), innovative bank solutions, and donor support (financing, bonds, guarantees, etc.).

##### **Encouraging European cooperation.**

The European Union plays a significant role in the region through its funding and sustainable investment support initiatives. European companies should communicate, suggest ideas, and propose programs encouraging European investments in the region. Major business forums and economic associations also provide a platform for cooperation between France, its European partners, and local economic actors.

## Interview 15

## Crédit Agricole CIB: Connecting Opportunities in Sustainable Transition Through Sustainable Finance in Southeast Asia



**Antoine Sirgi**  
Senior Country Officer,  
Crédit Agricole CIB  
CCE Singapore

**Roy Chan**  
Director of Sustainable  
Investment Banking Southeast  
Asia, India, and Australia

As Senior Country Officer at Crédit Agricole CIB, Antoine Sirgi oversees all business activities covering Crédit Agricole CIB's clients in Singapore and Southeast Asia. He also holds a group coordination role for Crédit Agricole Group entities present in Singapore, namely Amundi and Indosuez Wealth Management. Antoine Sirgi has over 30 years of experience in the capital markets and banking industry, having previously held the positions of Deputy CEO of Crédit Agricole CIB Hong Kong and Corporate Coverage Coordinator for Asia. Prior to his current role, he was Senior Country Officer of Crédit Agricole CIB Japan, for 7 years.

Currently Director of Sustainable Investment Banking for Southeast Asia, India, and Australia at Crédit Agricole CIB, Roy Chan leads the structuring of sustainable investment banking products (bonds, loans, derivatives) and provides ESG advisory services to corporates, financial institutions, and sovereigns in these regions. Previously, he spent nearly 7 years at Standard Chartered Bank, holding roles in capital structuring and distribution group and ratings advisory in debt capital markets. Roy Chan began his career as a consultant at Synpulse Management Consulting and he holds a degree from Nanyang Technological University in Singapore.

Crédit Agricole Group, one of the largest banking groups in the world, offers specialised investment banking services through its subsidiary Crédit Agricole Corporate and Investment Bank. Crédit Agricole CIB provides a wide range of financial services, including corporate banking, risk management, capital markets, and M&A advisory. Present in over 30 countries, Crédit Agricole CIB supports companies, financial institutions, and institutional clients across Europe, the Americas, Asia-Pacific, and the Middle East.

As Southeast Asia has embarked its green transition, Antoine Sirgi and Roy Chan discuss sustainable finance, the state of social and environmental stakes in ASEAN cities, and the unique opportunities it may present for French companies.

**Q: What are Crédit Agricole CIB's activities and projects in Southeast Asia?**

**A:** Crédit Agricole CIB is the corporate and investment banking arm of the Crédit Agricole Group, the 9th largest

banking group worldwide in terms of balance sheet size (The Banker, July 2024). Having served clients in Singapore for 120 years, Crédit Agricole CIB has been operating as a full branch supervised by the Monetary Authority of Singapore

since 1905. Since then, Crédit Agricole CIB has firmly established itself as one of the leading foreign banks in Singapore and is an important franchise for Southeast Asian clients, offering strong cross-border services across a wide range of banking products. Our goal is to be the leading bank in climate transition, by supporting our clients and society in the shift towards low-carbon businesses.

We are one of the first banks to have established a dedicated Sustainable Investment Banking team (since 2009) to provide best-in-class solutions on key topics such as sustainable finance and climate transition. Crédit Agricole CIB is also a co-founder of the Green Bond Principles and the only European bank in the drafting committee in 2013. Throughout the years, we have been among the world's leaders in Sustainable Finance and were awarded the ESG House of the Year by the International Financing Review for 6 years since 2015. In Asia, Crédit Agricole CIB was named the Best Sustainable Finance House in Asia 2023 by FinanceAsia, and Hong Kong's Best Bank for ESG by Euromoney for two consecutive years in 2023 and 2024.

Southeast Asia offers a compelling growth story for us due to several key factors. With the heightened geopolitical landscape between major powers, many multinational companies have diversified their supply chains into Southeast Asia. While large economies are experiencing a slowdown and facing the risk of recession, Southeast Asia remains rather resilient with high growth potential. Furthermore, the emerging markets in this region continue to show strong domestic growth with younger populations and a growing middle class, even in the

face of global challenges. Operating in this region not only provides diversification for our bank but also opportunities to grow together with our global network of clients in Southeast Asia.

Our vision is driven by our social and environmental commitments to promote financing that is useful to the society. Our pioneering position in sustainable finance has given us a strong competitive advantage and has placed us at the forefront of this global shift.

**Q: How do you position yourself against the competition to succeed?**

**A:** Crédit Agricole CIB stands out as a forerunner in sustainability. Firstly, we are consistently a top dealmaker in the sustainable finance space. According to Dealogic and Environmental Finance, Crédit Agricole CIB is ranked #1 in the Global league table of Sustainability-Linked and Green Loan arrangers in 2023 and #2 Bookrunner for Global Sustainable Bonds from 2018-2023 (all currencies). We devote significant resources to solidify our leadership position in this space with our Sustainable Investment Banking team doubling in size over the last two years, with 14 dedicated professionals based in Dubai, Singapore, Tokyo, and Hong Kong to support our regional franchise.

Secondly, we are a prominent advocator for sustainable finance in the market. Below are some of the notable involvements in Asia-Pacific:

- In May 2024, we gathered sustainable finance experts from across Asia-Pacific markets to explore how the region can bring forward the transition finance agenda together. Given Singapore's role as Southeast Asia's key financial hub, it is one of the ideal marketplaces to bring

together issuers and investors to explore the challenging yet pivotal topic of transition finance. By fostering dialogue between issuers and investors in the transition event, Crédit Agricole CIB plays a pivotal role to galvanise collective action across the financial ecosystem to propel the transition agenda.

- In October 2023, Crédit Agricole CIB co-authored the first sustainable finance thought leadership paper by The Alliance for Green Commercial Banks. A global initiative of the International Finance Corporation (IFC), a member of the World Bank Group, the Alliance's Asia chapter was jointly launched in 2020 with the Hong Kong Monetary Authority (HKMA), the chapter's founding member and the first regional anchor. Titled "Defining an Ambitious Climate Strategy of Green Banking: A Case Study", the paper presents a "Five-Step Approach" to guide the process of transformation towards green banking, inspired by Crédit Agricole CIB's own experience in setting up its strategy to transition towards green banking, as well as supporting clients in their transition journey. We leveraged the paper to encourage industry participants, including financial institutions, to establish a robust climate strategy that will collectively contribute to facilitating climate transition.

Lastly, we are known for bringing innovation to the market by forging new important market benchmarks – for instance, in July 2024, we launched our inaugural Sustainability-Linked Loan Financing Bond (SLLB) Framework to issue our inaugural JPY3 billion SLLB, setting new standards for transparency and





ambition in the Sustainability-Linked Loan market, in line with the recent ICMA Sustainability-Linked Loan Bond Guidelines.

**Q: What are your views on the current and future state of sustainability in ASEAN cities?**

**A:** ASEAN has made significant strides towards sustainability over the recent years. We have seen progressions made by countries towards its Nationally Determined Contributions (NDCs). That said, it is becoming clearer that some national policies will need to be recalibrated in order to meet their net zero ambitions. This transition will also require the active participation of all players in the market, such as corporates, financial institutions, and governments.

A crucial part of the shift towards sustainability is the need for rapid expansion of clean or renewable energy, including the use of green hydrogen and biofuels. The transition comes with a set of challenges not limited to escalating energy demand due to urbanisation in emerging markets, limited funds to meet the scale of decarbonisation projects, and land constraint (specific to Singapore). One of the more exciting opportunities is biofuels. The move towards Sustainable Aviation Fuel (SAF) is a promising step to decarbonise one of the most

carbon intensive sectors (example – Singapore mandates all flights departing from Singapore to use at least 1 per cent SAF, with an aim of increasing it to 3 to 5 per cent by 2030). While there are still barriers such as economic considerations and availability of feedstock, the growing interest and commitment in this region have spurred investments to increase the production of this alternative fuel. Similarly, green hydrogen is emerging as a potential game-changer in ASEAN especially for decarbonisation of industrial and transportation, but is still at its early stages of development.

Equally important, the development of regulations within this region is crucial to provide guidance, promote transparency, and set the pace of adoption. To name a few common developments across the countries:

1. Local and regional taxonomies (example – ASEAN and Singapore-Asia taxonomy) to promote or support transition categories;
2. Carbon pricing/taxes and carbon credit (example – Singapore has developed a bilateral framework for the international transfer of correspondingly adjusted carbon credits between host countries and Singapore, with a set of criteria);
3. ESG disclosures and reporting.

Overall, we are highly optimistic about the direction ASEAN is taking towards sustainability and energy transition, supported by ASEAN's forward-thinking policies and regional collaborations.

**Q: What are the main opportunities and key success factors for French companies in the region?**

**A:** Given the strong emphasis and region's commitment to renewable

energy (example – Indonesia's target for renewable energy mix between 17-19% by 2025), we see significant growth opportunities in the clean energy sector. It certainly provides an opportunistic platform for French companies with expertise in energy transition and clean technologies. The demand for battery storage will grow as a result of the expansion of intermittent renewable energies.

The focus to improve energy efficiency also presents substantial opportunity for companies that are able to deliver energy efficient technologies and solutions. Other relevant areas include retrofitting or improving existing infrastructure and modernising industrial or commercial buildings.

With policies around carbon taxes/pricing, Electric Vehicles (EVs) and their related infrastructure are expected to gain momentum. While ASEAN countries are at different stages of EV adoption, the overall trend is moving towards policy incentives and increasing public awareness of sustainable transport options (example – Singapore has targets to phase out internal combustion engines by 2040).

As the ASEAN region operates at a different pace compared to the European Union, key success factors include understanding specific countries' energy needs regarding energy security, affordability, availability, and accessibility. Companies will also need to adapt to the diverse regulatory environment across the different ASEAN countries, especially for cross-border businesses, and focus more on building local partnerships and collaborations with local businesses and governments to drive long-term success in the fast-evolving landscape.

**Interview 16**

## **Eurazeo: Accelerating Tech and Sustainable Investments in Asia**



**Julien Mialaret**  
Operating Partner, Eurazeo

Julien Mialaret invests in early and growth-stage companies in China and ASEAN for the Smart City Fund I & II, focusing on smarter cities through technologies like mobility, logistics, new energy, tech, and industry 4.0. He supports cross-border growth between Asia and Europe.

Prior to joining Eurazeo in 2011, Julien Mialaret worked on developing and acquiring power projects for EDF in China. He holds degrees from La Sorbonne University, Beijing University, ESCP Business School, and the French School of Oriental Studies. He speaks Mandarin, English, French, Spanish, and Japanese.

Eurazeo is a leading global investment firm that manages over €35 billion in assets across private equity, private debt, and real assets (real estate and infrastructure). It is committed to responsible investment practices that create lasting value for its portfolio companies and stakeholders.

With a focus on long-term growth, Eurazeo invests in and supports about 600 companies across various sectors, including technology, healthcare, and consumer goods, offering strategic support and capital to drive sustainable development. The firm operates internationally, with 13 offices, including 7 in Europe, 4 in Asia and 1 in the United States, and employs 400 persons.

Eurazeo is investing in tech and sustainability in Asia, with a focus on solutions for smart cities. Julien Mialaret delves into these challenges and opportunities, sharing insights on how Eurazeo leverages its expertise to foster sustainable urban development across Asian markets.

**Q: What are Eurazeo's strategic focus and activities in Asia?**

**A:** Eurazeo has 4 offices in Asia: Singapore, Seoul, Shanghai, and, most recently, Tokyo.

Although our core strength lies in the European mid-market, Asia represents a major strategic axis for Eurazeo, and

we are seeing an acceleration of our activities in the region. Our missions in Asia are based on three main pillars:

- 1. Investing locally.** We are currently deploying two main funds. The first, focused on energy transition and sustainable development, is called Smart City II. This €400 million investment program, closed in 2023, is supported by five sovereign entities from France, Europe, and Korea (EIF, Bpifrance, PFR, F.R.C and KVIC) and 18 major companies. Strategic partners are from Europe (EDF, TotalEnergies, Stellantis, Hager Group, ZF, RATP, Mainova and SWK AG,

Duisport), and from Asia (Banpu, Momentum Venture Capital (SMRT), SP Group, Jardine Pacific, IMC PanAsia, Sansiri and SCG). The second fund, an insurtech fund, was created at the request of a global group seeking a dedicated fund. It is backed by a global insurer and it allows for investments ranging from €1 to €50 million in companies based in Asia, with investments notably in Singapore, Indonesia, India.

- 2. Accelerating the expansion of our portfolio companies internationally (esp. in Asia).** Eurazeo specializes in investing

in private companies, with a portfolio of around 600 holdings, including 350 in tech, mainly in Europe but also in Asia. Our mission is to help these companies expand internationally, especially in Asia. Currently, about 10% of our portfolio has already expanded into the region, but we are strongly committed to accelerating this dynamic, particularly for French Tech. While it is often easier for French companies to establish themselves in the United States, Asia, with its diversity and unique challenges, presents specific hurdles. This is where we step in to facilitate their expansion.

3. **Supporting our Asian investors in deploying their capital abroad (esp. in Europe).** We also count many institutional, sovereign, and corporate investors based in Asia among our partners, who invest in our funds in Europe. Overall, Eurazeo manages €25 billion of assets under management on behalf of institutional and private clients. These investors rely on Eurazeo to access opportunities in Europe while benefiting from local support through our Asian offices for their activities in the region.

**Q: How do you see Eurazeo's acceleration in Asia in the coming years?**

**A:** It is still difficult to give a precise answer, but the signs of acceleration are clear. We have just opened an office in Tokyo this year, after establishing offices in Singapore, Seoul, and Shanghai over the past 10 years. I arrived here in 2016, and I was alone at the time. Today, we are 8 or 9 people in Singapore, and we continue to grow each year. Asia is currently growing as well, even if it is still a not

a big part of our group operations (c. 40 people out of 400 in total).

I believe this growth will accelerate, and one area where we see great potential is in sustainable cities. To give some context, cities currently account for about 70% of global greenhouse gas emissions, while covering only 2% of the Earth's surface and hosting more than 50% of the population. If we want to have a significant impact on climate change, solutions must be implemented in cities.

The fund I deploy, Smart City II, is specifically focused on decarbonization and the development of technological solutions in urban areas.

Our analytical approach focuses on 5 urban sectors: energy, buildings, transportation, industry, and logistics. We take a systemic view, as addressing each sector in isolation does not solve the overall emissions problem. We therefore invest in concrete solutions, such as hydrogen electrolyzers, as well as digital technologies that optimize these solutions, for example, to more rapidly deploy assets like solar panels or electric vehicles.

We have a hybrid strategy between hardware and software, with a preference for business models that can quickly achieve a positive EBITDA and low-capital intensity. One of Eurazeo's strengths is to offer continuous financing as the company grows, with the cost of capital decreasing as the company progresses. In addition, we play a role in the transfer of technologies between developed and emerging countries. Most technological innovations originate in the United States, Europe, China, or Israel, but they also need to be adopted

in emerging markets. We use our international network to facilitate this technology transfer.

We also distinguish between two approaches to smart cities. The traditional model, seen in some Japanese companies, involves creating new districts with a comprehensive and integrated vision, but this model is often slow to implement, with development cycles that do not allow for rapid impact. At Eurazeo, we take the opposite approach: we focus on more targeted and pragmatic solutions in existing cities, such as vehicle-sharing platforms, swappable batteries for electric scooters, or green logistics. These services improve existing infrastructure progressively and effectively.

All in all, the challenge of decarbonization is more economic than technological. The difficulty lies in replacing existing solutions with new ones, which are often more expensive, thus slowing the transition. Therefore, we seek to invest in models that can quickly reach profitability and provide entrepreneurs with better access to various types of capital, maximizing their chances of success.

**Q: Is ASEAN lagging behind in the energy transition?**

**A:** This depends on the perspective adopted, and it is therefore important to place the situation in its temporal context.

There is an obvious technological lag compared to regions like Europe or the United States if we base this on current decarbonization indicators, such as the composition of the energy mix or CO2 emissions. The penetration of renewable energies remains very low, with a rate below 10%, or even around 5% in some



cases. In comparison, some European countries, like Spain, reach levels where, on certain days, more than 50% of the energy on the grid comes from renewable sources, highlighting a real deficit to be bridged.

However, if we consider the historical contribution to global emissions, especially since the industrial revolution, the answer is different. ASEAN countries have contributed less to emissions than Western nations. That said, if these countries do not rapidly change their energy structure, they will become major contributors to global emissions in the coming years.

This reality raises important issues. On the one hand, Asian countries are requesting to benefit from technologies and financing to accelerate their energy transition, arguing that they are not the main historical contributors. On the other hand, it is evident that if they do not change their current energy structure, their greenhouse gas emissions will continue to increase.

**Q: Are there market opportunities for French companies?**

**A:** The answer is clearly yes, but it deserves to be nuanced.

For large French groups, which offer

both financing, cutting-edge expertise, and integrated technological solutions, there is a real competitive advantage. These companies are particularly sought after because they can combine technological solutions with financing. However, two major challenges arise for them: on the one hand, their ability to act as quickly as local companies, and on the other hand, access to the market, often hindered by barriers imposed by local actors.

As for SMEs, this is where the real sweet spot lies. They generally have sufficient financial resources, great agility, and proven technologies or business models. The real challenge lies in their implantation, which is still too slow and insufficient in these markets. I firmly believe that if French SMEs adopted a more coherent and coordinated international vision, they could seize many opportunities in ASEAN.

Regarding start-ups, the situation is more nuanced. Some succeed, as we have seen by supporting start-ups in their implantation in Asia. However, this depends on several factors: first, it is crucial to have the financial resources to sustain losses for one or two years, as it is rare to generate profits immediately. In this respect, SMEs are often better prepared for this initial investment

phase. Then, the entrepreneur needs to devote enough time to this market. It is difficult to fight for leadership in Europe while trying to establish oneself in Asia. Spending time on the ground or finding ways to get directly involved is therefore essential. Finally, the business model must be compatible with the local market, and the technologies must not be too expensive, as affordability remains a frequent challenge in ASEAN.

In summary, each type of company has its advantages and disadvantages, but in my opinion, SMEs are the most successful. This is due to their speed, adequate financing, and ability to quickly test market appetite. However, their lack of coordination hinders their international expansion. For example, German SMEs, which are better organized and more collective in exports, are more successful in large international projects, especially in sustainable solutions, even though they are not always more advanced than French companies in Asia. I observe this by looking at the growing SMEs we support. Through the cross-border fund ECAF (Eurazeo China Acceleration Fund) between Europe and China, which has €1bn, we invest in European SMEs and help them develop in China, with the support of the Chinese sovereign fund and BNP Paribas, the main sponsors. However, despite this pan-European fund, French SMEs are not always the most successful. This is less due to the industry and more to a lack of organization, coordination, and international support. That said, French SMEs have proven they can succeed, and it is crucial to continue in this direction. We are also participating in the reindustrialization of France, and one of the keys to supporting this dynamic is helping these SMEs internationalize further.

## Interview 17

## AXA XL : Innovation in Risk Management and Sustainability-Focused Insurance Solutions Tailored for Southeast Asia



**Gilles Fromageot**  
Regional CEO Asia, AXA XL  
CCE Singapore

Gilles Fromageot is the Regional CEO for Asia at AXA XL, where he drives the company's growth strategy and enhances its market presence in the region. With over 20 years of experience in the insurance industry, Gilles has held key leadership roles at AXA, including President & CEO of AXA Korea.

AXA XL, the Property & Casualty and specialty risk division of AXA, provides innovative insurance solutions to businesses of all sizes across more than 200 countries and territories. Known for addressing complex risks, AXA XL is dedicated to helping clients navigate an increasingly uncertain world with tailored solutions in the most challenging environments.

As part of its commitment to sustainability, AXA XL focuses on protecting natural ecosystems, addressing climate change, and embedding sustainable practices across its operations.

**Q: How does AXA XL integrate sustainability into its strategic vision for Asia?**

**A:** AXA XL's strategy in Asia closely aligns with AXA Group's commitment to sustainability, with a focus on resilience and climate adaptation. In ASEAN, urban growth and climate challenges are reshaping city landscapes, particularly impacting transport, housing, and energy infrastructures. As these pressures increase, AXA XL supports work to reduce urban climate vulnerabilities by providing specialized insurance and risk consulting solutions that support cities in balancing growth with climate resilience.

**Q: How do mega-trends like urbanization, climate change, and demographic shifts influence the**

**infrastructure challenges in ASEAN cities, and what role can an insurer play in fostering urban resilience through sustainable solutions?**

**A:** Urbanization and climate change are driving complex challenges for ASEAN cities, particularly in infrastructure. Rapid urbanization places increasing demands on transportation, housing, and essential services, while climate change amplifies these issues, with rising temperatures, stronger storms, and flooding risks adding further pressure on city infrastructure. Additionally, a growing urban population means that more people and assets are exposed to these potential impacts from a changing climate.

Pollution, especially air quality, is an urgent concern across many Asian

cities. The urban heat island effect, combined with high emissions, exacerbates air pollution levels, leading to adverse health impacts, economic strains, and compromised livability. Addressing this issue requires coordinated efforts across sectors, with insurers playing a unique role of mitigating risks and de-risking investments in sustainable, pollution-reducing technologies.

AXA XL contributes to these efforts through innovative risk management and sustainability-focused insurance solutions. For instance, our AXA Essentials program supports SMEs vital to the urban economy, providing resources to enhance resilience against both environmental and operational disruptions. Our AXA Digital Commercial Platform (DCP) could assist businesses and

governments in mapping out Nat Cat and climate risks. This enables informed, targeted adaptation strategies that help protect urban infrastructure and ensure continuity in essential services.

We also prioritize cleaner urban environments by supporting technologies that address pollution at its source, such as electric vehicles and renewable energy projects. By insuring and investing in these sectors, we help cities reduce NOx emissions and support zero-tailpipe emission initiatives.

Our comprehensive suite of products and services enables cities to manage risks holistically, ensuring they remain

sustainable and resilient despite the challenges of rapid growth and climate impacts. By offering solutions that strengthen both physical and social infrastructure, AXA XL plays a pivotal role in fostering livable, resilient cities throughout the ASEAN region.

**Q: What current sustainability initiatives within ASEAN cities stand out as examples of progress, and how do they align with AXA XL's goals for urban resilience and climate adaptation?**

**A:** Across ASEAN, several cities have made commendable progress in adopting sustainable urban initiatives, reflecting a strong commitment

to reducing carbon emissions and building resilience to climate risks. For example, Singapore's Green Plan 2030 aims to position the city as a global hub for sustainability, focusing on energy efficiency, green building standards, and carbon emissions reduction. Thailand's national climate adaptation strategies, which include measures to address water management and flood prevention, also highlight the country's forward-thinking approach. Indonesia is implementing integrated urban development frameworks that emphasize environmental sustainability, including initiatives for waste management and energy-efficient infrastructure.



These local efforts align perfectly with AXA XL's goals of driving urban resilience and climate adaptation in ASEAN cities. We support these regional goals through offering tailored insurance products, climate adaptation services, and specialized risk management solutions. The AXA 2024 Future Risks Report highlights climate risk as a priority concern globally. This reaffirms the crucial importance of engaging with our clients to understand the challenges they face in managing and mitigating the climate impact. Leveraging AXA XL's tools and services aligned with regional resilience strategies, we aim to assist cities in achieving lasting and impactful outcomes.

**Q: How do climate-related risks shape Asia's urban landscape, and what unique strengths does AXA XL bring to address these evolving challenges?**

**A:** Asia's urban landscape is being profoundly shaped by climate-related risks such as rising sea levels, stronger typhoons, and urban flooding, all of which challenge long-term resilience. AXA XL's strength lies in our advanced risk management capabilities and our commitment

to insurance solutions that support sustainability.

Our DCP tool offers data-driven insights that allow businesses and urban planners to assess Nat Cat and climate vulnerabilities, enabling them to implement adaptation strategies that can reduce these risks before they escalate into costly damage. We also offer Climate Adaptation Survey, which combine climate data with field assessments to provide in-depth risk evaluations.

AXA XL's ability to provide localised solutions is also enhanced by our expertise in managing green infrastructure risks. As cities increasingly turn to solutions like solar panels and other renewable technology to reduce environmental impact, AXA XL helps mitigate the associated risks, such as structural vulnerabilities. For example, our risk consulting team has recently conducted studies on the hail resistance of solar panels, ensuring that green infrastructure can withstand extreme weather events.

**Q: What factors will enable international companies, including**

**AXA XL, to succeed in ASEAN's sustainable urban development journey?**

**A:** The success of international companies in ASEAN's sustainable urban development hinges on their ability to leverage global expertise while understanding and adapting to the unique local context. AXA XL exemplifies this by integrating insurance solutions with an in-depth understanding of the region's specific challenges. Our ability to offer localised climate risk assessments and proactive collaboration with local stakeholders ensures that we can tailor our solutions to meet the evolving needs of ASEAN cities.

Our access to insights into green technology and energy efficiency sectors will enhance our ability to support ASEAN in meeting its climate goals. By combining local understanding with global resources, AXA XL aligns its offerings with ASEAN's sustainability objectives, helping cities transition to low-carbon, resilient urban environments that can thrive in a changing climate.





The French Foreign Trade Advisors, known as *Conseillers du Commerce Extérieur de la France (CCE)*, are a network of over 4,500 business professionals and international experts who volunteer their expertise to support France's economic development. Appointed by the Prime Minister, CCEs operate in more than 150 countries, providing guidance to public authorities, assisting businesses in their international expansion, mentoring young professionals, and promoting France's attractiveness as a business destination.

[www.cncef.org](http://www.cncef.org)

## CCE Forum Asia-Pacific 2024 “Challenges and Opportunities for French Companies in the Indo-Pacific Region”



- Organized by the Indian Committee and the Commission for Asia-Pacific of the French Foreign Trade Advisors (CCE)
- From November 27 to 29, 2024, in New Delhi, India
- Over 500 participants from French and international companies
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We operate in various regions across the globe, including Europe, the Americas, Africa, the Middle East, and Asia. Our expertise spans across diverse markets, including frontier markets, developing nations, and developed economies. Our extensive experience covers a wide range of industries such as energy and the environment, construction, mobility, supply chain and logistics, healthcare and life sciences, F&B, financial services and aerospace. This is how we have helped clients capture value and transform positively their businesses in ASEAN:



### ASEAN Market Understanding:

- Sector Market Research
- Competition Analysis
- Detailed Review of Key Customer Accounts
- Value Chain Analysis



### ASEAN Growth Strategy Definition:

- Go-To-Market Study
- Partner Research and Qualification
- Acquisition Target Analysis
- Organic Growth Plan



### ASEAN Digital Roadmap:

- Digital Transformation Plans
- Digital Marketing / Website and User Experience (UX)
- Customer Journey Mapping
- Digital Content & Online Advertising Strategy
- E-commerce / Performance Measurement and Optimization
- Technology and Tool Selection
- Artificial Intelligence and algorithm



### ASEAN Transformation Support:

- HR / Organisational Transformation
- Decarbonization
- Sustainability / ESG Transformation



### ASEAN Operations Improvement:

- Flow Optimization
- Maintenance Operations
- Process Redesign
- Line Redesign / Factory 4.0
- Diagnostic and Performance



### ASEAN Operational Efficiency:

- Performance Benchmarking
- Internal Situation Audit
- Resource Redevelopment Plan
- Cost Reduction and Fast Profitability Improvement Plan

Please [click here](#) to have more details on how Eurogroup Consulting can accelerate your growth in Southeast Asia and improve your operations.



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## About Eurogroup Consulting

Eurogroup Consulting is an independent strategy and management consulting firm with more than 40 years of clients’ success stories. Since 1982, we have been supporting large groups and mid-size companies in their strategic and transformational changes. Operating within a global network of 3,000 consultants, we bring a unique approach to consulting: Positive Transformation. In Asia, Eurogroup Consulting assists clients in achieving their expansion and transformation objectives. Clients chose Eurogroup Consulting to develop new Southeast Asia market growth strategies, to identify potential partners or acquisition targets, to implement new operating models, to manage change, to rethink distribution channels, to boost supply chain effectiveness and to enhance the bottom line.

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