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Policy Brief

Towards an ASEAN–Japan Next-Generation Vehicle Industry Masterplan Aligning Industrial Transformation, Decarbonisation, and Regional Competitiveness

Key Messages:

1. **ASEAN's automotive transition must follow varied and carefully sequenced pathways.**
   A differentiated transition that sustains internal combustion engine (ICE) and hybrid electric (HEV) vehicle production while scaling plug-in electric vehicle (xEV) is essential to preserve competitiveness, employment, and investment capacity across the region.
2. **Policy predictability – not technology – is now the main constraint on investment.**
   Clear, credible, and regionally aligned policy signals are urgently needed to unlock private investment in next-generation vehicles and supply chains.
3. **Fragmentation is eroding ASEAN's automotive competitiveness relative to China and India.**
   Without deeper regional integration and market aggregation, ASEAN risks losing scale advantages in the global automotive transition.
4. **ASEAN–Japan co-creation provides an actionable pathway from strategy to implementation.**
   Targeted collaboration with Japan can accelerate supplier upgrading, regulatory alignment, and technology diffusion across varied powertrains and mobility services.

ASEAN's automotive industry is entering a critical transition phase as electrification, digitalisation, and decarbonisation reshape global vehicle markets. While electric vehicle (EV) adoption is accelerating across ASEAN, the region faces structural challenges: policy uncertainty, prolonged market stagnation, and fragmented industrial competitiveness. At the same time, ASEAN remains a vital production base in the global automotive value chain, particularly for internal combustion engine (ICE) and hybrid electric vehicles (HEVs).

This policy brief draws on ERIA's ongoing work under the ASEAN–Japan Co-Creation Initiative and the proposed ASEAN–Japan Next-Generation Vehicle Industry Masterplan. It argues that ASEAN's transition should follow varied, differentiated pathways *rather than a single, linear electrification trajectory. A phased and diversified approach – combining ICE, HEV, xEV, sustainable fuels, and mobility services – is essential to preserve industrial competitiveness while advancing climate objectives.*

The brief outlines a strategic framework built around three pillars: (i) technology and market transition pathways; (ii) industrial transformation through decarbonisation, digitalisation, and servitisation; and (iii) strengthened regional and ASEAN–Japan collaboration. It concludes with policy recommendations to enhance policy predictability, mobilise investment, and position ASEAN as a resilient and competitive hub in the global next-generation vehicle ecosystem.

1. Background: ASEAN at a Turning Point in Automotive Transformation

ASEAN countries are shifting into a higher gear in the global race toward next-generation vehicle manufacturing. Several ASEAN Member States (AMS) are moving beyond their traditional roles as vehicle importers or assemblers and are increasingly positioning themselves as full-fledged producers across a range of powertrain technologies.

Recent developments illustrate this momentum. In December 2025, Malaysia's largest automaker, Perodua, unveiled its first domestically developed electric vehicle (EV), the QV-E – marking the emergence of ASEAN's second national EV brand after Viet Nam's VinFast. Indonesia, meanwhile, has adopted a transition strategy similar to Thailand's, leveraging foreign investment and policy incentives to develop domestic EV manufacturing capacity. Between February 2024 and December 2025, Indonesia imported more than 125,000 battery electric vehicles (BEVs) under a temporary import duty waiver, with mandatory localisation requirements taking effect from January 2026.

As a result, BEV sales in ASEAN are projected to reach 12%–17% of total vehicle sales in 2025 – significantly higher than global averages just two years earlier. These figures reflect strong policy signals and rising consumer acceptance.

Yet beneath this encouraging momentum lie deeper structural challenges that threaten ASEAN's long-term competitiveness if left unaddressed.

2. Structural Challenges Facing ASEAN's Automotive Industry

2.1. Investment Hesitation amidst Policy Uncertainty

ERIA surveys indicate that automotive suppliers and original equipment manufacturers (OEMs) remain cautious about committing new investment in next-generation technologies. The primary concern is not technological readiness, but policy uncertainty – particularly regarding long-term powertrain strategies, fiscal incentives, and regulatory standards.

Inconsistent policy signals increase investment risk and delay capital-intensive decisions, especially for suppliers embedded in long automotive value chains.

2.2. Prolonged Market Stagnation

ASEAN's automotive market has stagnated for more than a decade. Combined annual vehicle sales have not exceeded 3.4 million units since 2012. This stagnation deepened in 2023–2024, with notable contractions in Indonesia and Thailand.

Weak demand growth constrains economies of scale, discourages investment in new technologies, and limits the ability of firms to absorb transition costs.

2.3. Fragmented Trade Competitiveness

ASEAN's automotive competitiveness remains fragmented across countries and product segments. Trade data from 2013–2023 show Thailand as the region's principal automotive hub, while other countries specialise in selected components such as basic metals or electrical machinery.

This fragmentation contrasts sharply with China and India, where scale, integration, and policy coherence underpin stronger global competitiveness. Without deeper regional integration, ASEAN risks being squeezed between low-cost mass producers and advanced technology leaders.

3. Rethinking the Transition: The Case for Varied Pathways

In response to these challenges, ERIA's ASEAN–Japan Next-Generation Vehicle Industry Masterplan rejects a one-size-fits-all electrification pathway. Instead, it advocates *diversified and phased transition pathways* aligned with ASEAN's economic realities, energy systems, and development gaps.

3.1. Five Vision Pillars

The proposed masterplan is anchored in five interlinked pillars:

(1) Maintaining ASEAN as a competitive export hub for ICE and HEVs, particularly for emerging markets.

(2) Building an advanced, cost-competitive, and integrated regional supply chain.

(3) Gradual integration into xEV component and system value chains.

(4) Decarbonising automotive production and logistics.

(5) Developing innovative mobility services tailored to ASEAN markets.

This approach balances near-term economic resilience with long-term technological transformation.

4. Strategic Framework I: Technology and Market Transition Pathways

4.1. 2025–2035: Dual-Track Development

During the next decade, ASEAN should prioritise meeting strong regional demand for ICE and HEVs while accelerating xEV market development. Sustainable biofuels play a crucial role in aligning ICE and HEV production with decarbonisation targets.

Policy predictability is critical during this phase. Clear timelines for incentive schemes, localisation requirements, and emissions standards will help firms plan investments and avoid abrupt disruptions.

4.2. Beyond 2035: Integration into Global xEV Value Chains

Beyond 2035, ASEAN should emphasise low-emission HEVs supported by sustainable biofuels and e-fuels, alongside a mature xEV ecosystem. This transition positions ASEAN not merely as an assembly base, but as an integrated supplier of components, systems, and services.

Key Policy Insight

Transition pathways must reflect ASEAN's diversity in income levels, energy mixes, and industrial maturity. Premature policy convergence risks undermining competitiveness rather than accelerating decarbonisation.

5. Strategic Framework II: Industrial Transformation through Decarbonisation, Digitalisation, and Servitisation

5.1. Decarbonisation across the Value Chain

Decarbonisation must extend beyond vehicle tailpipes to encompass manufacturing, logistics, and energy use. Policies should support renewable energy supply security, green industrial parks, and alignment with international carbon standards.

5.2. Digitalisation as an Enabler

Digital technologies – data platforms, connected vehicles, and smart manufacturing – enable productivity gains and facilitate compliance with environmental standards. Digitalisation also supports new business models.

5.3. Servitisation and 'Outcome-as-a-Service'

ASEAN's automotive industry should gradually transition from pure product sales toward bundled mobility services. These include maintenance contracts, shared mobility, fleet management, and software-enabled services.

This transformation unfolds across three phases:

- **Upstream:** Renewable energy and data infrastructure development
- **Midstream:** Alignment with global standards and digital systems
- **Downstream:** Vehicle inspection, OEM-led maintenance, and diversified ownership models

6. Strategic Framework III: Strengthening Regional and ASEAN–Japan Collaboration

6.1. ASEAN-Level Co-ordination

Deeper regional collaboration is essential to overcome market fragmentation. ASEAN countries can play differentiated but complementary roles – export hubs, manufacturing bases, supporting hubs, and technology centres – while benefiting from a larger integrated market.

6.2. Japan as a Strategic Partner

Japan remains a critical partner in ASEAN's automotive transformation. Collaboration with Japanese firms enhances technology transfer, supplier upgrading, and standards alignment across a range of powertrains.

ERIA identifies **eight priority ASEAN–Japan co-creation areas:**

(1) Sustainable Biofuel and e-fuel development

(2) Human resource enhancement

(3) Commonisation of automotive regulations

(4) Recycling and circularity frameworks

(5) Data and information standardisation

(6) Green energy industrial parks

(7) Strengthening the ASEAN Single Window

(8) Support for innovative mobility services

Key Statistics at a Glance

ASEAN Automotive Transition Snapshot

- BEV share of ASEAN vehicle sales (2025): **12%–17%**
- Indonesia BEV imports (Feb 2024–Dec 2025): **125,769 units**
- ASEAN peak annual vehicle sales since 2012: **3.4 million units**
- Number of identified ASEAN–Japan co-creation areas: **8**

7. Policy Recommendations

- **Provide Clear and Predictable Policy Signals**

  Governments should articulate long-term transition pathways that recognise diverse powertrains and avoid abrupt policy shifts.

- **Support a Balanced Technology Mix**

  ICE, HEV, xEV, sustainable biofuels, and e-fuels should be treated as complementary elements of ASEAN's transition strategy.

- **Strengthen Regional Market Integration**

  Harmonise standards, rules of origin, and digital systems to unlock economies of scale.

- **Accelerate Industrial Decarbonisation and Digitalisation**

  Invest in green energy parks, renewable energy supply chains, and robust carbon measurement systems,alongside the use of digital technologies to support industrial transformation. These efforts can improve material and emissions traceability, enhance resource circularity, and enable innovation in business models, such as servitisation.

- **Invest in Human Capital**

  Upskill workers for digital, green, and service-oriented automotive jobs.

- **Deepen ASEAN–Japan Co-Creation**

  Translate strategic alignment into concrete projects across the eight priority areas.

9. Conclusion

ASEAN's automotive transition is not merely a technological shift – it is an industrial, economic, and strategic transformation. A diversified, phased, and collaborative approach offers ASEAN the best path to remain competitive while advancing climate goals. The ASEAN–Japan Next-Generation Vehicle Industry Masterplan provides a practical roadmap to achieve this balance, ensuring that ASEAN remains a vital player in the evolving global automotive landscape.

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