

# The Rise of ASEAN EV

## *In Focus:*

The push for electric vehicles (EVs) is gaining momentum (4-year CAGR sales of 43% in 2016-20) and is fast approaching a tipping point.

We expect EVs penetration rate, currently at 4% in 2020 to reach 20% by 2025, 50% by 2030 and outsell ICEVs from 2035. ASEAN's EV race continues to heat up, progressively updating their EV roadmaps.

We see greater adoption of the electric 2-wheelers segment in the ASEAN market in the near term, for it has a ready-made commercial solution in place.



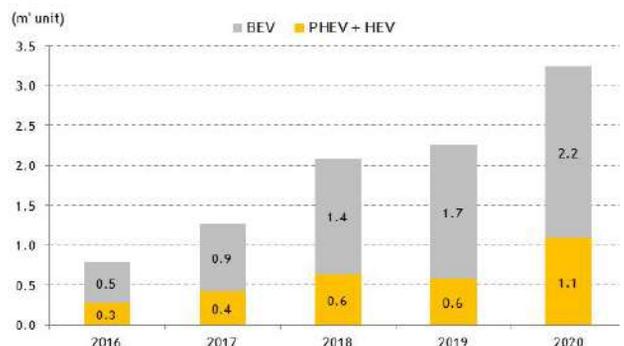
**Liaw Thong Jung**  
Analyst, Automotive, Research

The global climate push to reduce GHG and the imposition of stricter CO2 emissions regulations worldwide with punitive penalties (if unmet) has led to:

- Governments worldwide regulating the phasing out of internal combustion engine vehicles (ICEVs) and incentivizing electric vehicles (EVs)
- Global automotive OEMs re-strategizing vehicles pipelines with a strong push towards electrification

The push for EVs is gaining momentum. EV sales are on the rise, growing at a rapid pace (4-year CAGR sales of 43% in 2016-2020). This will be a continuous trend as mass adoption is set to take off.

## Global EV sales



Source: EV-volumes

Based on our analysis, we expect:

- EV's penetration rate worldwide (currently at an embryonic stage; 4%) to super-charge at a growth rate of 5x, to 20% by 2025
- EV-to-ICEV sales to reach parity (1:1) by 2030
- EVs to outsell ICEVs from 2035

The EV adoption could accelerate as:

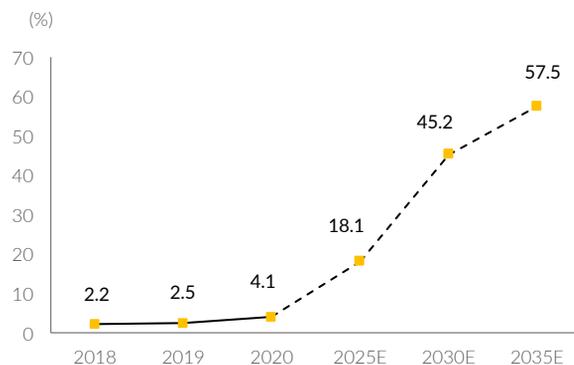
- Total cost of ownership (TCO) for EVs fall over time, due to technological breakthrough and rising economies of scale
- EV infrastructure expands
- The millennial generation adopts EVs

The 2-wheeler will see faster EV adoption. ASEAN is 673m people strong (9% of global population). It has a 4-wheels (4Ws) and 2-wheels (2Ws) market size of 40m and 220m units, respectively.

Between them, we see greater EV adoption at the 2W segment in the ASEAN market for it has a ready-made commercial solution currently, i.e. smart batteries (swaps and share) and infrastructure.

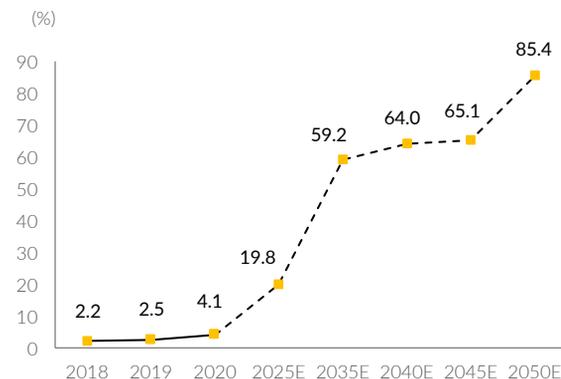
Battery swaps are easily deployed and addresses range-anxiety issues, charging infrastructure availability and upfront capital cost concerns. This would appeal to the mass market, especially those in the rural areas.

### EV penetration (by country)



Source: Maybank Kim Eng

### EV penetration (by automotive OEMs)



Source: Maybank Kim Eng

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## ASEAN vehicle sales and EV and ICEV targets

Country	Vehicle sales (unit)		EV Targets	
	2018	2019		
Indonesia	1,152,789	1,043,017	2025	Minimum of 20% of its vehicles to be electric
			2035	Bans sales of ICEVs for both passenger cars and motorcycles
			2050	EV/PHEV to account for 5% of market share
Thailand	1,086,929	1,007,552	2025	EV hub for ASEAN
			2035	50% (vs. 30% previously) of its cars to be electric
			2035	To phase out ICEVs, all vehicles to be fully electric
Malaysia	598,714	604,287	N/A	N/A
Philippines	401,345	415,826	N/A	N/A
Vietnam	246,500	280,742	N/A	N/A
Singapore	95,206	90,900	2025	To cease new diesel car and taxi registrations
			2040	To phase out ICEVs
Brunei	13,000	11,600	2035	60% of its vehicle sales to be made up of electric models

Source: Various, Maybank Kim Eng

ASEAN countries are progressively updating their EV roadmaps. We see Singapore as the most forward-looking and the fastest to embrace e-mobility; to phase out ICEVs by 2040.

Thailand is accelerating its EV adoption, by bringing forward its projections (production and domestic use) 5 years earlier with the aim to be the ASEAN EV hub by 2025. 2030: 50% (versus 30% previously) of its cars will be electric; 2035: To phase out ICEVs, all vehicles to be full electric.

Indonesia has a clear EV policy and is pro-EV FDI. It has the largest nickel reserves in the world, a key raw material used to manufacture batteries. To phase out ICEVs by 2035.

Brunei too, has recently unveiled its EV policy, setting targets to have 60% of its sales be electric by 2035.

Vinfast, Vietnam's EV flagship manufacturer (scooter, bus and vehicles manufacturing), is set to export its models worldwide.

Malaysia and the Philippines are the laggards in the EV race in ASEAN. The former is in the midst of formulating its EV policy while the latter's EV roadmap still lacks clarity and direction.

ASEAN should look at China and pure-EV companies for EV opportunities/ partnership/ investment and pursue green technology/projects (hydrogen) at the same time.