



Thai Automotive Industry

Facts and Figures 2022

1. Thailand's Vision on Electric Vehicles

“To be one of the most important EV production bases and component parts in 2035”

The National Electric Vehicle Policy Committee

ZEV Cumulative volume target in 2030

(Zero Emission Vehicle - ZEV = BEV & FCEV)

Vehicle type	Production	Use	Public Charging Station
Passenger cars & Pick-up trucks	2,935,000	2,050,000	12,000 (Fast charge)
Trucks & Buses	156,000	160,000	n.a.
Motorcycles	3,133,000	3,200,000	1,450 (1 Station = 8 outlet)

2. Thailand EV Promotion Measures



SUPPLY SIDE

- EV and charger standard
- Testing facility: ATTRIC
- Supply chain transition program
- End-of-Life Vehicle (ELV) program
- Investment promotion scheme



DEMAND SIDE

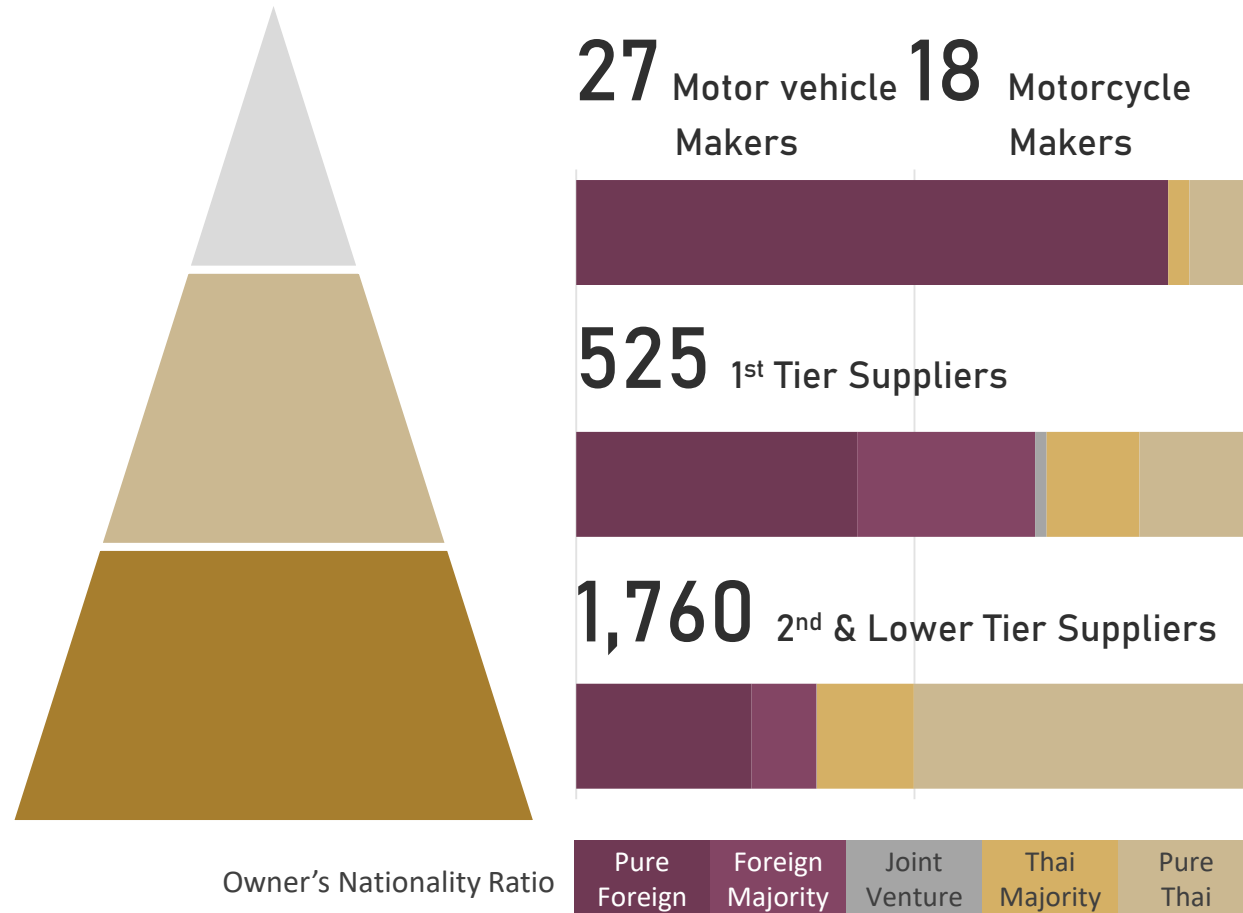
- Incentive measures for EV purchase
 - Customs Tax
 - Excise Tax
 - Subsidy
 - Annual Road Tax



INFRASTRUCTURE

- Install a public charging station

3. Structure of Thai Automotive Industry



- Thai automotive industry is structured in pyramid with car makers on top and auto parts makers in lower layers by deliveries.
- 27 motor vehicle makers and 18 motorcycle makers. Over 90% of which are owned by multinationals.
- 525 suppliers in 1st tier. About 65% of which are majority owned by foreigners.
- 1,760 suppliers in 2nd & lower tiers. About 70% of which are Thai owned.



4. Motor Vehicle

4.1 Motor Vehicle Assemblers in Thailand

No.	Company	Passenger Car		Pick up
		ICE	BEV	
1	Auto Alliance (Thailand) (Mazda)	●	○	●
2	BMW Manufacturing (Thailand)	●		
3	Ford Motor Company (Thailand)			●
4	FOMM (Asia)		●	
5	Great Wall Motor Manufacturing (Thailand)	●	○	
6	Honda Automobile (Thailand)	●	○	
7	Horizon Plus		○	
8	Isuzu Motor Thailand			●
9	Mercedes-Benz Manufacturing (Thailand)	●	●	
10	Mine Mobility		●	●
11	Mitsubishi Motors (Thailand)	●		●
12	Nissan Motor (Thailand)	●	○	●

4 auto assemblers are making BEV – PC & PU:

1. FOMM (Asia): small PC
2. Takano Auto (Thailand): small PU
3. Mine Mobility (Energy Absolute): PU
4. Mercedes-Benz Manufacturing (Thailand): PC

Most auto makers set to commence EV production from 2567 onward.

Note: ● In operation
○ BOI-approved BEV project

4.1 Motor Vehicle Assemblers in Thailand

No.	Company	Passenger Car		Pick up
		ICE	BEV	
13	SAIC Motor - CP	●	○	●
14	Suzuki Motor (Thailand)	●		
15	Suplaor	✧		
16	Takano Auto Thailand		●	
17	Tan Chong Subaru Automotive (Thailand)	●		
18	Toyota Motor Thailand	●	○	●

No.	Company	Van	Bus & Truck	
			ICE	BEV
19	Cho Tawee		●	●
20	Foton CP Motor		●	
21	Hino Motors Manufacturing (Thailand)		●	
-	Isuzu Motor Thailand		●	
22	Absolute Assembly	●	●	●
23	Panus Assembly			●
24	Scania Manufacturing (Thailand)		●	
25	Sakun C Innovation		●	●
26	Thai-Swedish Assembly		●	
27	Toyota Auto Works	●		

4 auto assemblers are making BEV – Bus & Truck.

1. Cho Tawee: small Bus & Truck
2. Absolute Assembly: Bus
3. Panus Assembly: Bus
4. Sakun C Innovation: PC

Note: ● In operation
 ○ BOI-approved BEV project
 ✧ Not started production yet

4.2 Activities Related to Battery Production

Battery Cell Production



Beta Energy Solution



Amita Technology



Global Power Synergy



EVlomo

Battery Pack Assembly



Honda Automobile (HEV)



Toyota Motor (HEV)



Nissan Powertrain
supply for Nissan Motor
(HEV)



Thonburi Energy Storage
supply for Mercedes-Benz
(PHEV)



DTS Draexlmaier supply for
BMW Manufacturing (PHEV)



MMTH Engine supply for
Mitsubishi Motor (PHEV)



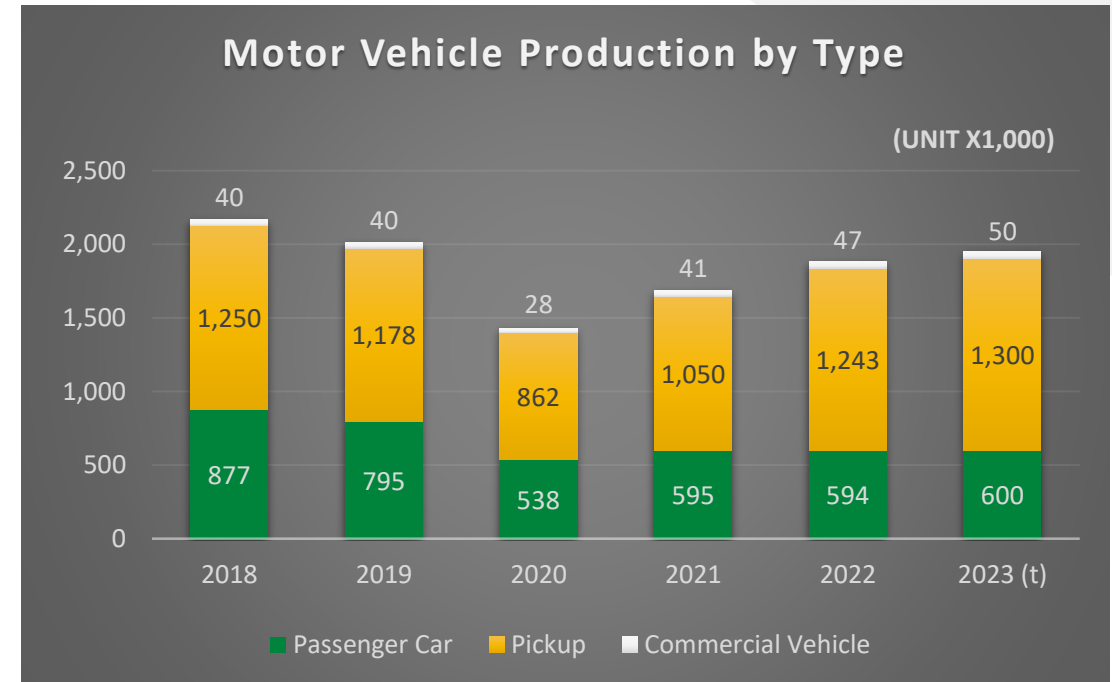
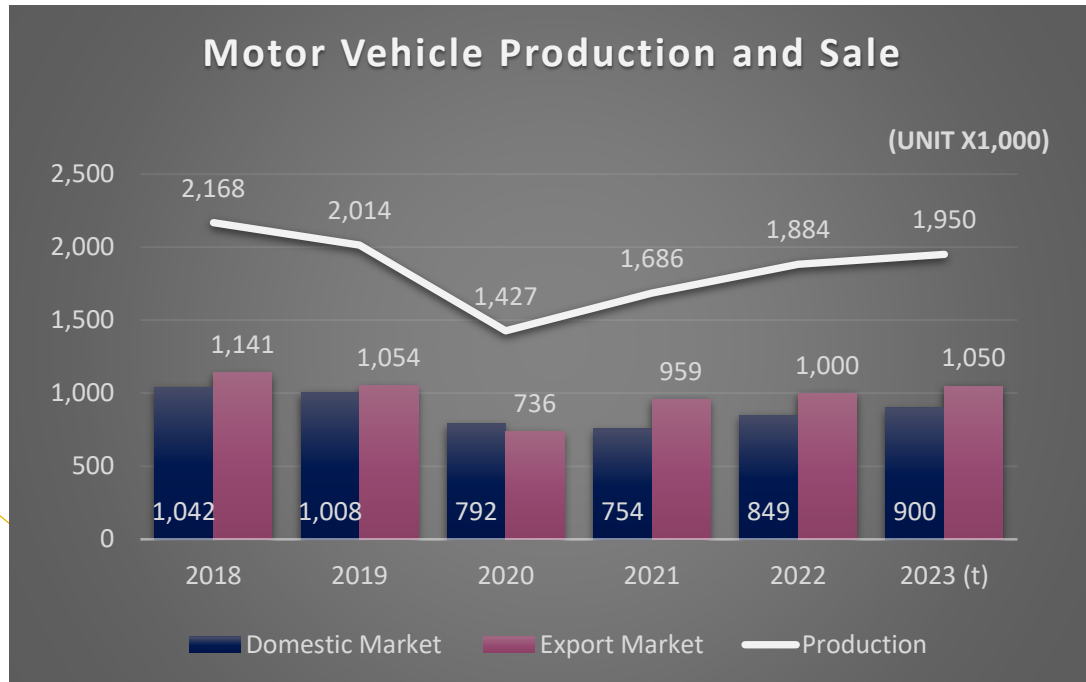
SAIC Motor-CP (PHEV)



Mine Mobility (BEV)

- EV battery chain in Thailand starts from importing/producing cells or modules. Most of battery pack assemblers are owned or controlled by auto makers or their subsidiaries.
- Typically, battery cell manufacturing facilities produce battery for energy storage that cannot be supplied to auto makers in the country.

4.3 Motor Vehicle Production

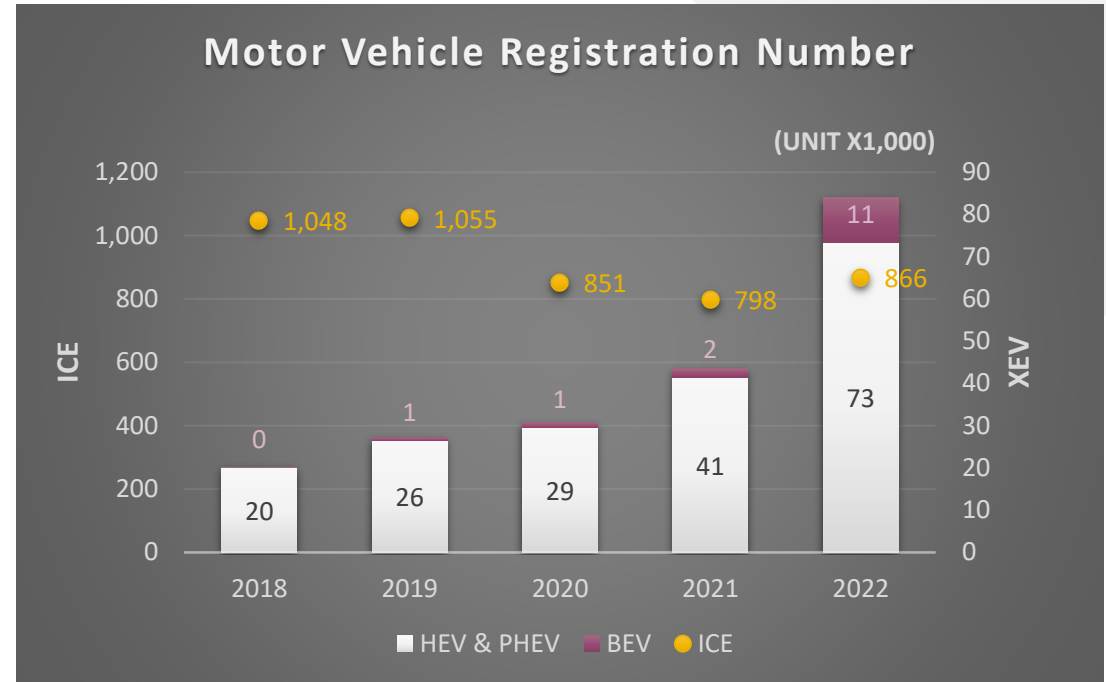
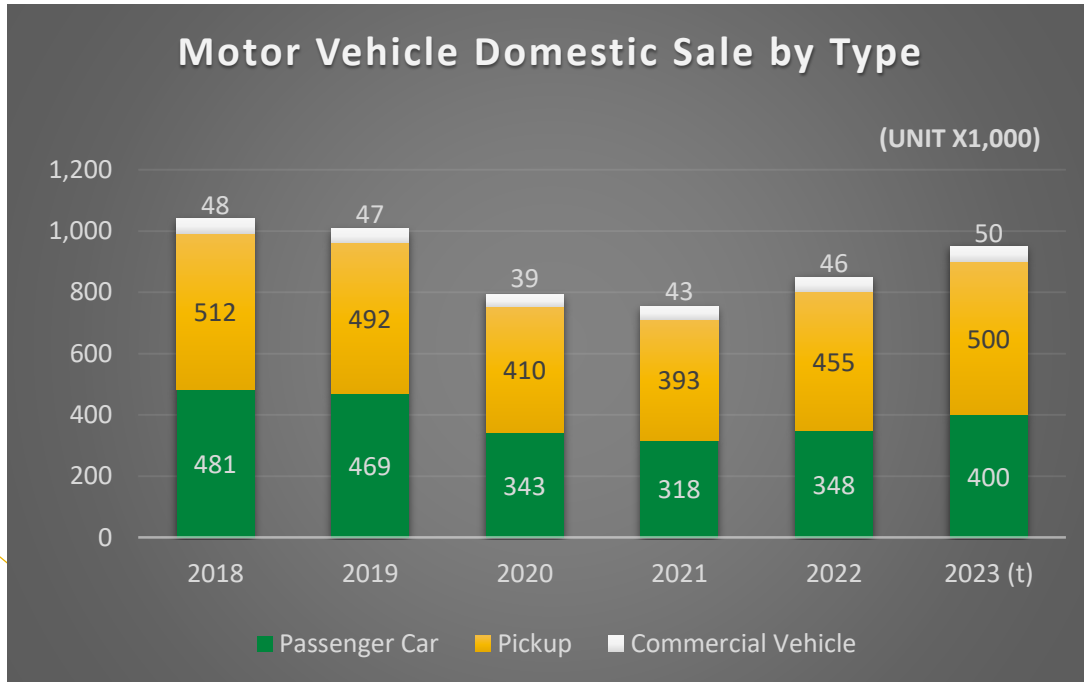


- In 2022, Thailand's car production totaled 1.88 million. Of total, 0.84 million cars were assembled for domestic distribution and 1 million for export. Total car production is forecast at 1.95 million in 2023, up 3.5% from 2022.
- Pickups represented 62% of total car production in Thailand, while passenger cars shared 35% and other commercial vehicles (trucks, vans and buses) 2%. The country's BEV production was still small.

Source: Automotive Industry Club - The Federation Of Thai Industries

Note: (t) = Targeted by Automotive Industry Club - The Federation Of Thai Industries

4.4 Motor Vehicle Domestic Sale

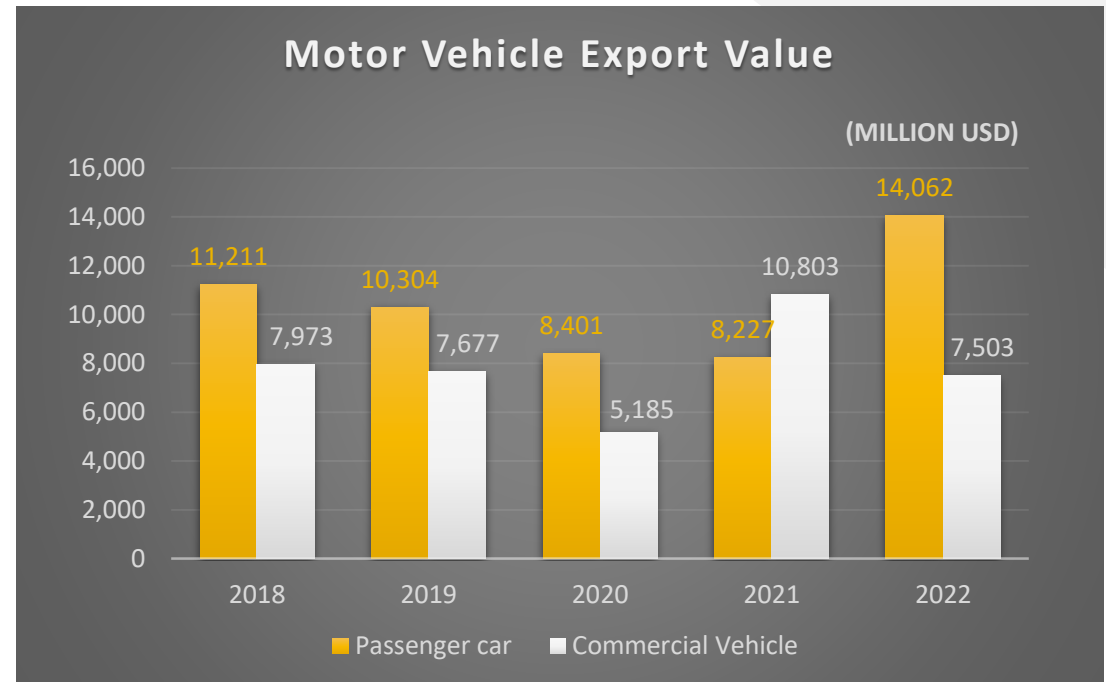
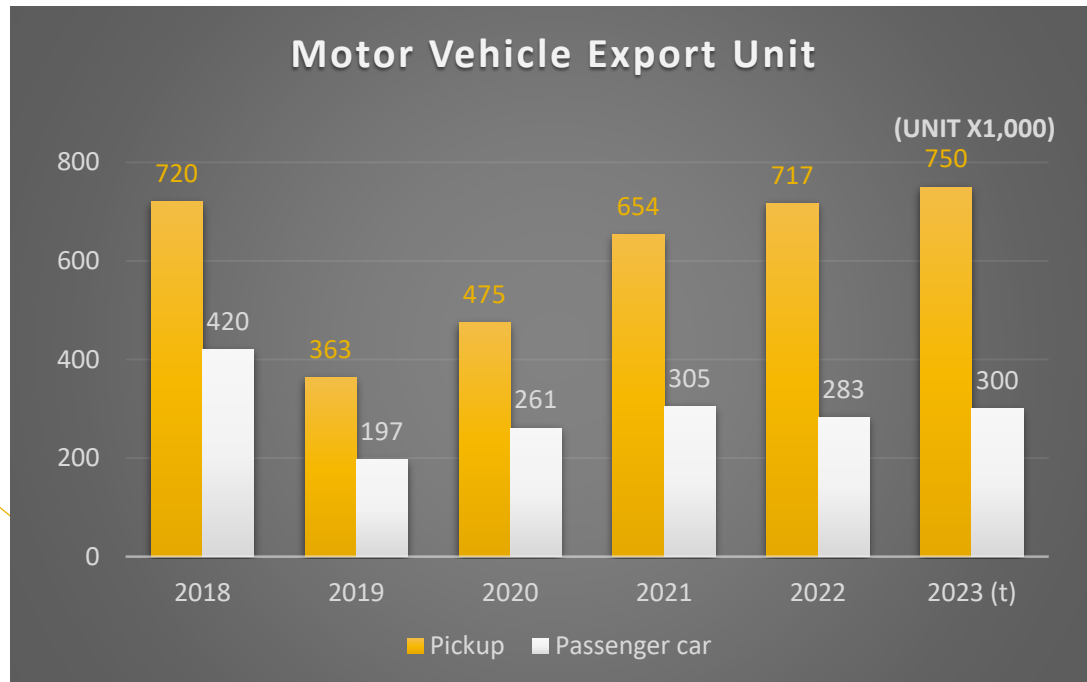


- Thailand's domestic car sales totaled 0.84 million in 2022, up 12% from a year ago. The 2023 figure is estimated at 0.90 million. Pickups accounts for 54% of domestic sales, while passenger cars at 41% and other commercial vehicles (trucks, vans and buses) at 5%.
- BEV car registration continued to rise with an increase of 413% in 2022. Almost BEVs for domestic sales were imported particularly from China. Although newly-registered BEV cars surged when compared with the previous year's figure, its share to total cars newly registered in Thailand was still small at only about 1%.

Source: Automotive Industry Club - The Federation Of Thai Industries, Department of Land Transport

Note: (t) = target by the Automotive Industry Club - The Federation Of Thai Industries

4.5 Motor Vehicle Export



- One million cars were exported in 2022, up 10% from a year before. The 2023 figure is projected at 1.00 million cars.
- About 72% of total car exports went to pickups, while the remaining 28% passenger cars. In terms of value, passenger cars made up of 65% of total export value.

Source: Automotive Industry Club - The Federation Of Thai Industries

Note: (t) = Targeted by Automotive Industry Club - The Federation Of Thai Industries



5. Motorcycle

5.1 Motorcycle Assemblers in Thailand

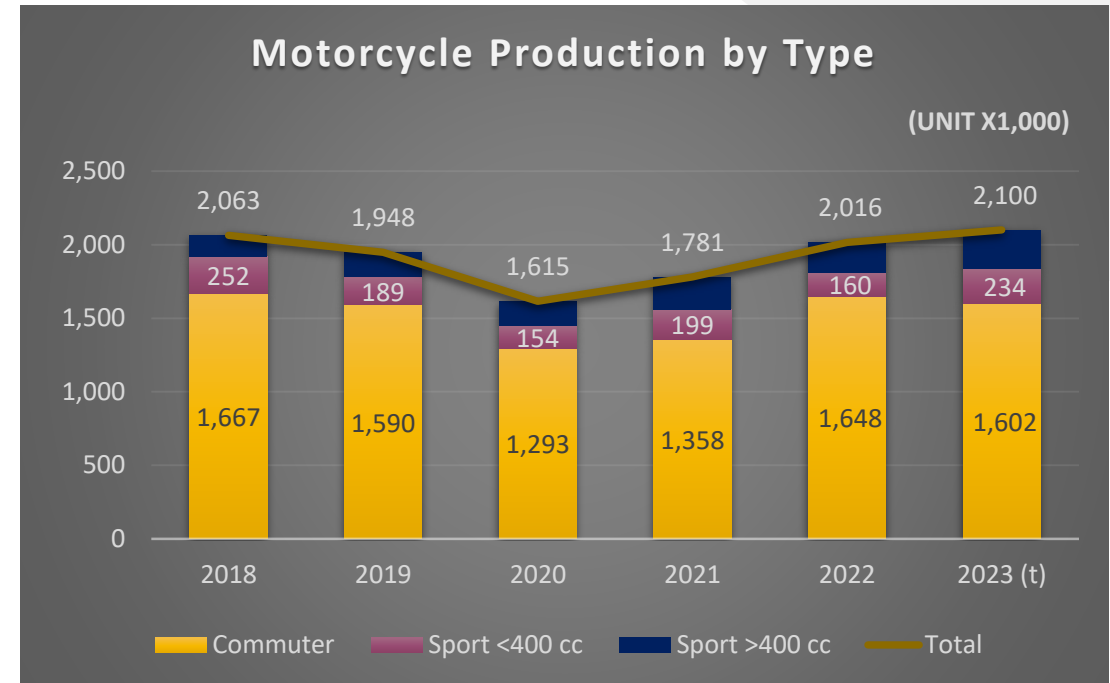
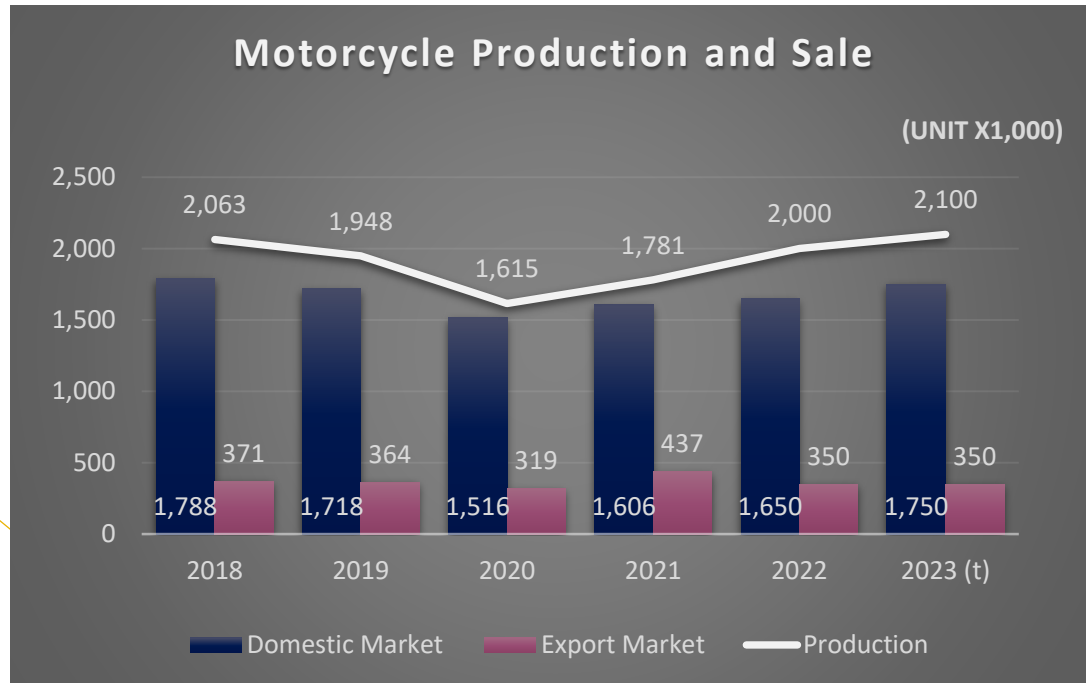
No.	Company	ICE	BEV
1	BMW Manufacturing (Thailand)	●	
2	Deco Green Energy		●
3	Ducati Motor (Thailand)	●	
4	Edison Motor		●
5	Etran (Thailand)		●
6	GP Motor (Thailand)	●	
7	Harley-Davidson (Thailand)	●	
8	I-Motor Manufacturing		○ ✦
9	Kawasaki Motors Enterprise (Thailand)	●	
10	Power Stalian	●	●
11	Siam Green Energy Electric		●
12	Swag EV		●
13	Thai Honda Manufacturing	●	
14	Thai Suzuki Motor	●	
15	Thai Yamaha Motor	●	
16	Triumph Motorcycles (Thailand)	●	



- BEV remains the new comer in Thailand’s motor vehicle market where is currently dominated by ICE vehicles.

Note: ● In operation
○ BOI Approved BEV project
✦ Not start production yet

5.2 Motorcycle Production

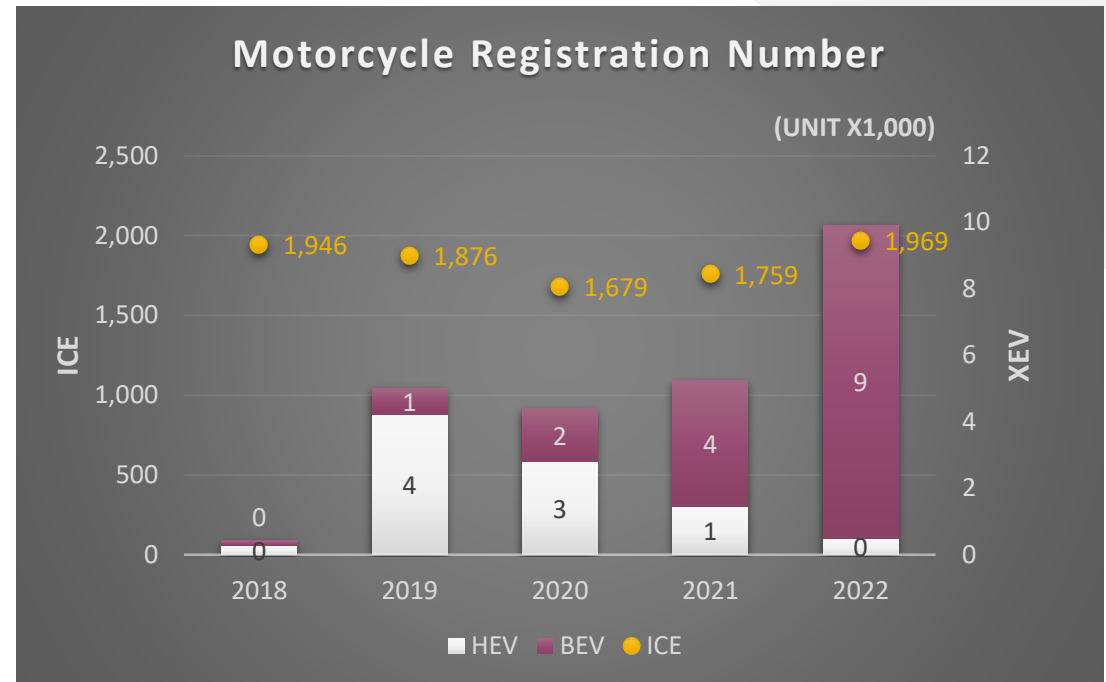
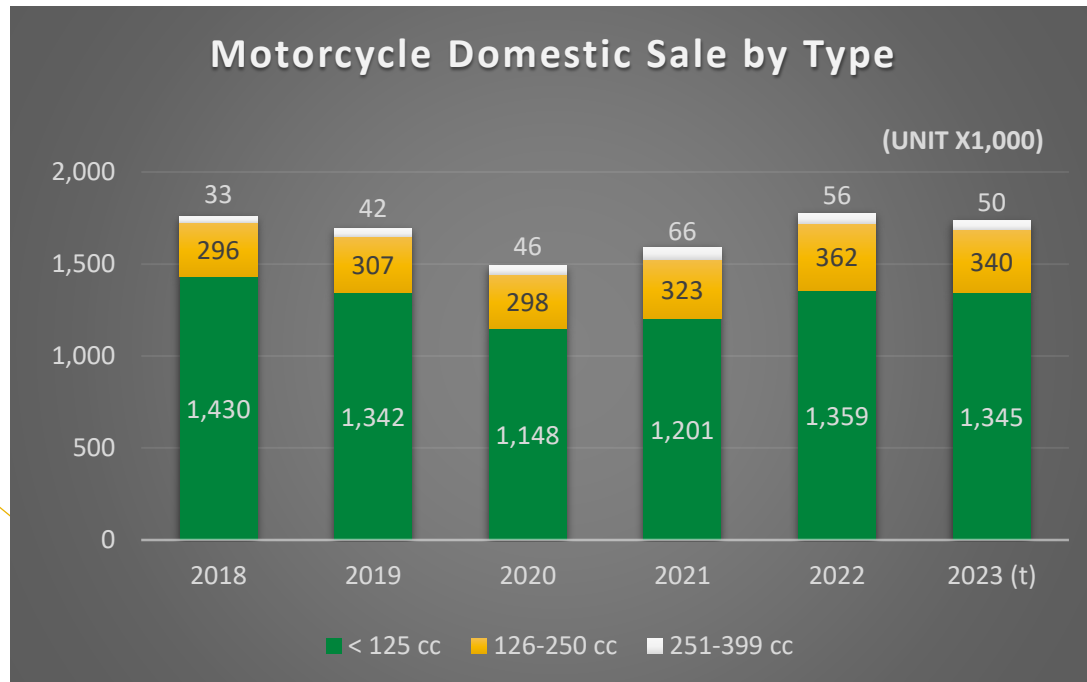


- In 2022, about 2.01 million motorcycles were produced in Thailand. Of total, 1.79 million were for domestic sales and 0.42 million for export. The 2023 figure is expected at 2.1 million, up 4% from 2022.
- Commuters represented 82% of total motorcycle production, sport (<150 cc, 150-399 cc, >400 cc) shared the remaining 18%. Meanwhile, the BEV motorcycle production was small.

Source: Automotive Industry Club - The Federation Of Thai Industries

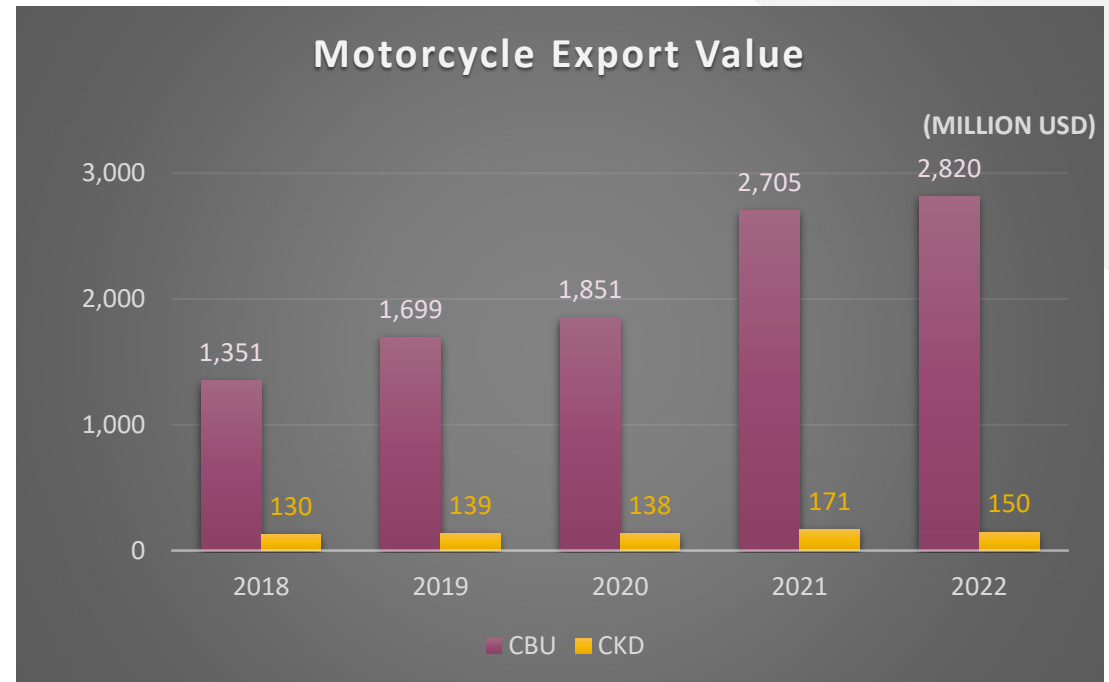
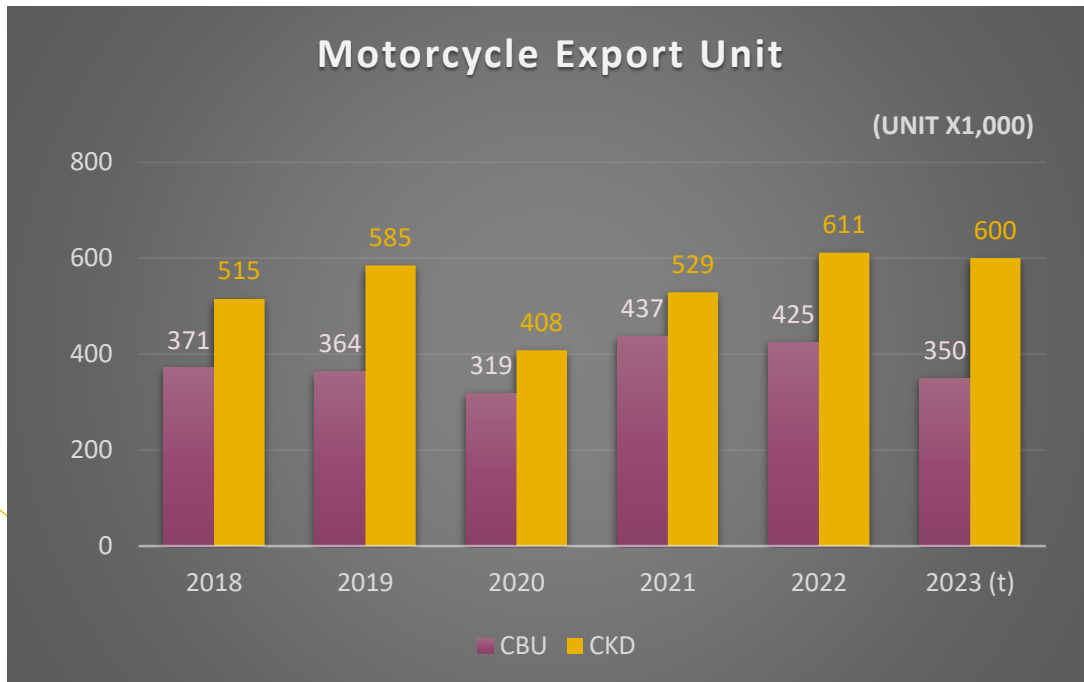
Note: (f) = Forecast by Thailand Automotive Institute | (t) = Targeted by Automotive Industry Club - The Federation Of Thai Industries

5.3 Motorcycle Vehicle Domestic Sale



- Thailand's domestic motorcycle sales reached 1.79 million in 2022, up 12% from 2021. The 2023 figure is anticipated at 1.75 million. Motorcycles with a displacement of less than 125 cc represented 76% of total domestic sales.
- In 2022, BEV motorcycle registration soared 150% from a year earlier, while ICE motorcycle registration inched up 0.5%.

5.4 Motorcycle Export



- In 2022, 0.42 million motorcycle CBUs and 0.61 million CKDs were exported. The CBU export decreased 3%, however, CKD export jumped 30% from the previous year.
- CBUs accounted for 95% of total motorcycle exports in terms of value, thanks to those of high-value big bikes. CKDs exported were smaller bikes with lower value.

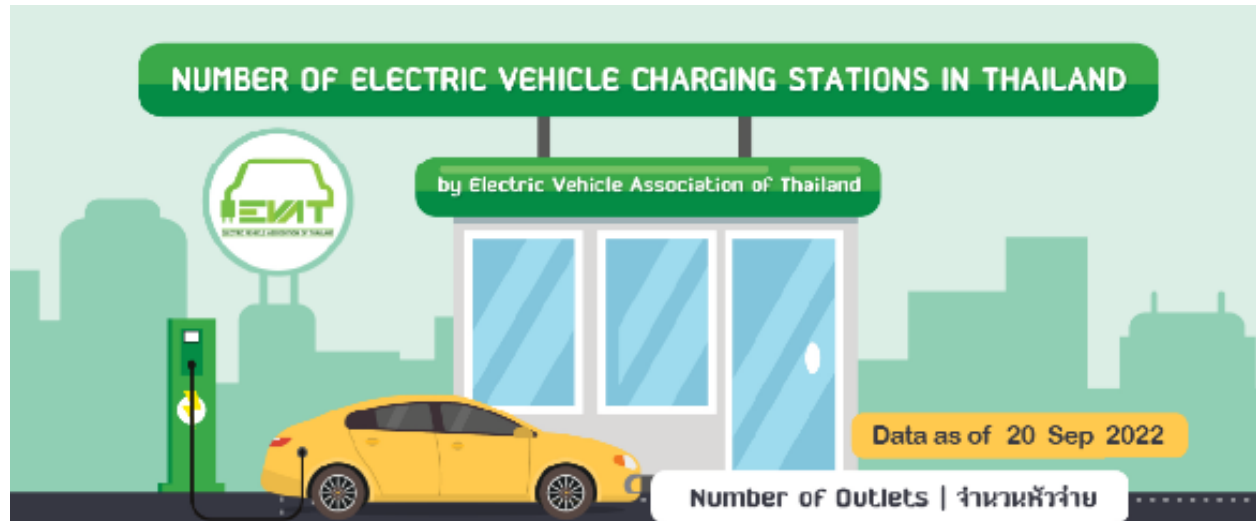
Source: Automotive Industry Club - The Federation Of Thai Industries

Note: (t) = Targeted by Automotive Industry Club - The Federation Of Thai Industries



6. Infrastructure for Next-Generation Vehicle

6.1 Public Charging Station



- Charging Plug & Socket : TISI Standard 2749
 - Passenger car: AC Charging = CCS 2
 - Bus: AC and DC Charging = CCS 2
- 12 EV charging service providers in 869 locations with a total of 2,572 EV chargers (1,384 AC chargers - type 2, 246 CHAdeMO chargers and 942 DC chargers - CSS2)
- Electricity price for EV charging station was set at 2.6 baht per kilowatt-hour.

Service Providers ผู้ให้บริการ	Number of Locations จำนวนแห่ง	AC	DC	DC	ALL
		AC TYPE 2	DC CHAdeMO	DC CCS 2	TOTAL
	406	579	-	576	1,155
	116	162	86	94	342
	99	169	9	16	194
	76	209	-	14	223
	73	76	137	138	351
	42	49	4	87	140
	29	51	10	9	70
	13	49	-	-	49
	6	18	-	-	18
	4	7	-	-	7
	4	15	-	2	17
	1	0	-	6	6
TOTAL	869	1,384	246	942	2,572

6.2 Battery for EV Testing Laboratory

Location	Automotive and Tyre Testing, Research and Innovation Center (ATTRIC), Chachoengsao
Operated by	Thailand Automotive Institute
Area	3,000 m ²
Testing scope	Battery performance testing and battery safety testing, which requires a safety test room that can support burning or battery explosion from the test. Plan to expand the scope in the future as well
Opening	2 nd Quarter of 2022



UNECE R100 (Cars) and UNECE R136 (Motorcycles) Testing capability

- | | | |
|--------------------------|--------------------------------|--------------------------------------|
| 1) Mechanical Integrity | 2) Over Temperature Protection | 3) External Short Circuit Protection |
| 4) Overcharge Protection | 5) Over-discharge Protection | 6) Mechanical Shock |
| 7) Vibration | 8) Thermal Shock | 9) Fire Resistance |



Thank you



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