

Thailand Utilities - EV

การมาของ Tesla และ BYD จะช่วยกระตุ้นอุตสาหกรรมยานยนต์ไฟฟ้า

- เราเชื่อว่าการเข้าสู่ตลาดยานยนต์ไฟฟ้าของไทยของผู้เล่นรายใหญ่อย่าง Tesla และ BYD จะกระตุ้นการพัฒนาของอุตสาหกรรมเป็นอย่างมากทั้งในด้านความต้องการและอุปทาน
- มาตรการสนับสนุนยานยนต์ไฟฟ้าของรัฐบาลไทยมีผลให้ราคาขายปลีกยานยนต์ไฟฟ้าลดลงมาอยู่ในระดับใกล้เคียงหรือต่ำกว่ารถยนต์ที่ใช้เครื่องยนต์สันดาปภายในถึง 20-30%
- ปัจจุบัน EA และ NEX กำลังเพิ่มกำลังการผลิต

ชัยชนะของทั้งผู้บริโภค นักลงทุนและรัฐบาล

เราเชื่อว่าการตัดสินใจเข้าสู่ตลาดยานยนต์ไฟฟ้าของไทยของ Tesla และ BYD อาจปฏิวัติและพลิกโฉมอุตสาหกรรมยานยนต์ที่หยุดชะงักของไทยให้เป็นกลุ่มที่มีการเติบโตอย่างรวดเร็วและมีการแข่งขันสูงในปี 2022-25 ในขณะที่ Tesla ตั้งเป้าทำตลาดยานยนต์ไฟฟ้าภายใต้ยี่ห้อ Tesla ทางฝั่ง BYD ซึ่งเป็นผู้ผลิตรายใหญ่ของจีนวางแผนนำเข้ายานยนต์ไฟฟ้าที่ผลิตในจีนเข้าสู่ประเทศไทยภายใต้มาตรการส่งเสริมยานยนต์ไฟฟ้าของรัฐบาล ซึ่งมีผลให้ราคาขายปลีกของยานยนต์ไฟฟ้าอยู่ในระดับที่ใกล้เคียงหรือต่ำกว่าคู่แข่งที่ใช้เครื่องยนต์สันดาปภายในถึง 20-30% เมื่อเทียบกับรถยนต์ที่มีขนาดและประสิทธิภาพใกล้เคียงกัน ปัจจุบันราคาขายรถยนต์ไฟฟ้าจะอยู่ในช่วงต่ำเพียง 0.3 ลบ. สำหรับรถยนต์ไฟฟ้าขนาดเล็กอย่าง "Pocco" DD (ขนาดแบตเตอรี่ 2.96kWh) และสูงถึง 3.4 ลบ. สำหรับ BMW iX3 M Sport (80kWh) ของเยอรมัน

'Shark Tank effect': Tesla และ BYD อาจจุดประกายให้อุตสาหกรรมยานยนต์ไทยโตแบบก้าวกระโดด

เราเชื่อว่าการถือกำเนิดของ Tesla และ BYD จะกระตุ้นการพัฒนาอุตสาหกรรมยานยนต์ไฟฟ้าของไทยเป็นอย่างมากทั้งในด้านความต้องการและอุปทาน ในด้านอุปทานเราคิดว่าผลิตภัณฑ์ยานยนต์ไฟฟ้าจาก Tesla และ BYD จะสนับสนุนหรืออาจถึงกับบังคับให้ผู้เล่นรายอื่นในปัจจุบันซึ่งส่วนมากเป็นผู้ผลิตรถยนต์สัญชาติญี่ปุ่นและยุโรป รวมถึงผู้เล่นใหม่อย่าง Great Wall Motors จากจีนให้เร่งแผนการผลิต การตลาด และการจัดจำหน่ายเพื่อเตรียมพร้อมก่อนการแข่งขันในอุตสาหกรรมที่กำลังจะมาถึง ในด้านความต้องการเราคิดว่าการปรากฏตัวของ Tesla และ BYD จะสนับสนุนให้ผู้บริโภคเปลี่ยนจากยานยนต์ที่ใช้เครื่องยนต์สันดาปภายในเป็นยานยนต์ไฟฟ้าใหม่ในราคาที่เอื้อมถึงได้มากยิ่งขึ้น

อัตราการเติบโตของยานยนต์ไฟฟ้าใหม่ที่เพิ่มขึ้นสอดคล้องกับความสามารถในการซื้อและความพร้อมใช้ของสถานีชาร์จ

ในเดือน เม.ย. 22 จำนวนยานยนต์ไฟฟ้าที่ใช้แบตเตอรี่จดทะเบียน (BEVs) ใหม่เพิ่มเท่าตัว y-y เป็น 1,232 ในขณะที่การจดทะเบียนยานยนต์ไฟฟ้าไฮบริดใหม่ (HEV) และยานยนต์ไฟฟ้าไฮบริดแบบใช้ปลั๊กไฟ (PHEV) โต 53% y-y และ 45% y-y ตามลำดับ จากแผนการขยายธุรกิจที่ประกาศแล้วของผู้ประกอบการในปัจจุบันและผู้ประกอบการใหม่ เราคาดว่าตัวเลขสถานีชาร์จจะเพิ่มอย่างมีนัยสำคัญจาก 693 สถานีและ 2,285 หัวชาร์จในปี 2021 เป็นกว่า 1,500 สถานีและ 4,000 หัวชาร์จภายในสิ้นปี 2022 จากแผนการขยายธุรกิจของผู้ประกอบการสถานีชาร์จรายใหญ่ซึ่งนำโดย EA (+500), OR (+450), EGAT (+57), Evolt (+120), MEA (+17), และ PEA (+11) ในปี 2022

EA เป็นผู้ชนะในทุกด้าน; NEX เป็นหุ้นเติบโตและพลิกฟื้นในอุตสาหกรรมยานยนต์ไฟฟ้า

หลังการผลิตและส่งมอบรถยนต์ไฟฟ้าใหม่ที่น่าผิดหวังใน 4Q21-1Q22 จากปัญหาการขาดแคลนแรงงานฝีมือ EA และ NEX ประสบความสำเร็จในการแก้ปัญหาและกำลังเพิ่มการผลิตในปัจจุบัน ผู้บริหารคาดว่าจะลดโดยสายไฟฟ้า 150 คันจะออกจากสายการผลิตได้ในเดือน มิ.ย. 22 ก่อนเพิ่มเป็น 400-500 คันต่อเดือนตั้งแต่วันที่ 1 ก.ค. 22 ซึ่งจะทำให้การผลิตกลับมาตามแผนเพื่อให้ส่งมอบรถยนต์ไฟฟ้าได้ 2,500-3,000 คันในปี 2022



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Tesla and BYD to electrify the pace of EV industry development

In the past month, there were two key events that could revolutionise and turn Thailand's stagnant automotive industry into a fast-growing and increasingly competitive sector in 2022-25.

First, Tesla (TSLA), the world's leading EV manufacturer, officially entered Thailand's market by establishing Tesla (Thailand) Company (TTC) on 25 Apr-22 with registered capital of THB3m. According to PPTV, TTC aims to market EVs under the Tesla brand.

Second, BYD, the leading Chinese EV manufacturer, established its official presence via a new subsidiary, BYD Thailand (BYT). It launched the website bydthai.com and announced plans to import Chinese-produced EVs into Thailand. While BYD already markets electric forklifts and EV minivans in the country via agents, BYT plans to import EVs under the Thai government's EV promotional package that provides up to THB150,000 in subsidies and a range of tax cuts on EV imports in 2022-23.

Exhibit 1: Tesla's price list for its models in Thailand



Source: Smart SME

Exhibit 2: BYD EV minivan prices in Thailand



Source: BYDThailand.com

Thailand's EV market

The government's EV subsidy package aims to promote demand for EVs in Thailand to spur the development of a local EV industry value chain, which includes battery manufacturing plants, EV production facilities, auto parts businesses, and EV charging stations.

Exhibit 3: EV models in Thailand 2022

	MINE SPA1	FOMM One	BYD e6	BYD M3, T3	ORA Good cat	MG EP Wagon EV	MG ZS EV	VOLVO XC40 Recharge	Hyundai KONA Electric	Hyundai IONIQ Electric	KIA All-new Soul EV
Brand											
Model											
Socket type	AC Type 2	AC Type 2	AC Type 2	AC Type 2	AC Type 2 & CCS2	AC Type 2 & CCS2	AC Type 2 & CCS2	AC Type 2 & CCS2	AC Type 2 & CCS2	AC Type 2 & CCS2	AC Type 1 & CCS1
EV range (km)	220	160	400	300	400(Teach) 400(Pro) 500(Ultra)	380	337	418	312(SE) 482(SEL)	280	452
Battery size (KWh)	30	11.8	80	50.3	47.8(Teach) 47.8(Pro) 63.1(Ultra)	50.3	44.5	78	39.2(SE) 64(SEL)	28	64
Country of origin	Thailand	Thailand	China	China	China	China	China	China	Korea	Korea	Korea
Import tax (%)	0	0	0	0	0	0	0	0	40	40	40
Excise tax (%)	2	2	8	8	8	8	8	8	8	8	8
Price tag – Thailand (THB m)	1.2	0.664	1.4	1.89(M3) 1.059(T3)	0.989(Teach) 1.059(Pro) 1.199(Ultra)	0.988	1.19	2.59	1.849(SE) 2.259(SEL)	1.749	2.387

Source: EVAT

According to the Electric Vehicle Association of Thailand (EVAT), there are many EV models actively being marketed to consumers. However, after the Thai government approved its EV package in 4Q21, the retail selling price of EVs is now comparable or even 20-30% lower than ICE-based vehicles of similar size and efficiency.

Exhibit 4: EV models in Thailand 2022

	NISSAN LEAF	LEXUS UX 300e	JAGUAR I-Pace	MINI Cooper SE	TESLA Model 3	PORSCHE Taycan	AUDI e-tron55 quattro	BMW i3s	BMW iX	BMW iX3	BMW i4
Brand											
Model											
Socket type	AC Type 1 & DC CHadeMO	AC Type 2 & DC CHadeMO	AC Type 2 & CCS2	AC Type 2 & CCS2	AC Type 2 & CCS2	AC Type 2 & CCS2	AC Type 2 & CCS2	AC Type 2 & CCS2	AC Type 2 & CCS2	AC Type 2 & CCS2	AC Type 2 & CCS2
EV range (km)	311	360	470	217	386	407(4s) 447(Turbo) 412(Turbo s)	417	280	960	460	590
Battery size (KWh)	40	54	90	32.6	62	79(4s) 93(Turbo) 93(Turbo s)	95	33	111.5	80	83.9
Country of origin	Japan	Japan	UK	UK	USA	Germany	Germany	Germany	Germany	Germany	Germany
Import tax (%)	20	20	80	80	80	80	80	80	80	80	80
Excise tax (%)	8	8	8	8	8	8	8	8	8	8	8
Price tag – Thailand (THB m)	1.49	3.49	5.499(S) 6.299(SE) 6.999(HSE)	2.29	2.99	7.1(4s) 9.9(Turbo) 11.7(Turbo s)	5.099	2.23	5.99	3.399	4.499

Source: EVAT

The EV package provides a price subsidy of THB75,000-150,000 per EV depending on the battery size. Also, the new comprehensive EV promotion plan is supplementary to the previous policies issued by Thailand's Board of Investment (BOI), creating a comprehensive set of incentives covering all major aspects of the EV supply chain, with a focus on BEVs, local production of critical parts, and the inclusion of commercial vehicles of all sizes, as well as ships.

Exhibit 5: EV promotion plan for passenger BEVs and motorbikes with retail selling prices under THB2m

	Policy	Beneficiary	Amount	Effective promotion duration
1	Subsidy from energy fund	Consumers/EV buyers	THB70,000 per EV under 30kWh	1-3 years
			THB150,000 per EV over 30kWh	
2	Excise tax reduction	Producers/EV buyers	From 8% to 2%	2-3 years
3	Import duty tax reduction	Producers/EV buyers	From 20-80% to 0-40%	2-3 years
Conditions for eligibility				
1	Must be domestic manufacturers			
2	Must produce EVs at 1.0x to 1.5x the number of imported and subsidised EVs during the promotion's duration			
3	Must produce and use a domestically produced battery (from cell level) for EVs produced domestically			
4	Must produce the same models as the imported models			

Source: Bangkok Post

The EV package brings the selling prices of imported EVs down to as low as THB0.3m for made-in-China models such as the eco EV "Pocco" DD (2.96kWh) and THB0.8-1.2m for the mid-sized ORA Good Cat (47.8-63.1kWh), to THB2.6m for Sweden's high-end luxury Volvo XC40 (78kWh) and THB3.4m for Germany's BMW iX3 M Sport (80kWh).

Exhibit 6: Pocco DD mini eco EV



Source: [Sanook.com](https://www.sanook.com)

Exhibit 7: ORA Good Cat EV



Source: [Sanook.com](https://www.sanook.com)

Exhibit 8: BMW iX3 M sport EVSource: [Sanook.com](https://www.sanook.com)**Exhibit 9: Volvo XC40 EV**Source: [Sanook.com](https://www.sanook.com)

Tesla is coming to town. Despite gaining no benefit from the EV package, which requires that EV importers produce one EV locally in exchange for one imported EV, Tesla plans to import its EVs from China, which would allow it to benefit from the zero-import tax rate under the bilateral free trade agreement between Thailand and China. Tesla buyers will have to pay other taxes including the excise tax, value-added tax, and other taxes, that together account for over 25% of the final retail selling price.

According to News.trueid.net, Tesla will import four models to be marketed in Thailand, including 1) the model S with the original selling price of THB3.5m-4.7m based on the selling prices in the US; 2) model 3 at THB1.59m-2.15m; and model X at THB3.9m-4.7m.

While the selling prices for imported EVs from China will be 25% higher due to Thailand's excise, duty, and VAT taxes, we think Tesla should be able to sell its products in Thailand given its strong brand position and premium value position.

Exhibit 10: Tesla model SSource: [News.trueid.net](https://www.news.trueid.net)**Exhibit 11: Tesla model Y**Source: [News.trueid.net](https://www.news.trueid.net)

BYD is coming to town. BYD, which stands for “Build Your Dream”, is a leading Chinese EV manufacturer that has already entered the Thailand market via a JV with Siam Motors Group (SMP), Thailand’s leading Nissan dealer, to sell its flagship EV “Dolphin” SUV.

According to AutolifeThailand.tv, BYD will invest up to THB20b to set up a new EV manufacturing plant in Thailand under the name BYD Automotive (Thailand). Previously, BYD granted SMP the rights to market and distribute its imported EVs in Thailand. The investment will include THB17.3b for the manufacturing plant and THB2.3b for sales and distribution with an 85% investment from Thai companies and 15% from BYD.

Exhibit 12: BYD Dolphin model EV



Source: autolifeThailand.tv

Exhibit 13: BYD Dolphin model EV



Source: autolifeThailand.tv

Could the “Shark Tank effect” occur from the entries of Tesla and BYD in Thailand? We believe the EV industry in Thailand could develop at a significantly faster pace following the entries of Tesla and BYD, the world’s two largest EV producers.

The Shark Tank effect is a term derived from the American reality TV series “Shark Tank” that premiered on 9 Aug-09 on the ABC network. The show featured entrepreneurs pitching their business plans to a panel of five investors or “sharks”, who would then decide whether to invest in the company. The Shark Tank effect meant that any business gaining publicity by appearing on the show – even without getting an offer – had the potential to significantly boost their sales by over 10-20x after the show’s airing.

Exhibit 14: ABC’s Shark Tank



Source: Wikipedia

Exhibit 15: The investment track record of one of five judges on the Shark Tank panel – Robert Herjavec



Source: Inc.com

We believe that the arrival of Tesla and BYD represents a sea change in Thailand's EV industry, not only for demand but also for the supply-side value chain, that could lead to a potential "great leap forward" for the EV and automotive industry.

On the supply side, we think the presence of highly competitive EV products from Tesla and BYD is likely to encourage – if not force – the incumbent players, mostly Japanese and European car manufacturers, and newcomers such as Great Wall Motors from China, to speed up their plans to enter, invest and build production plants and marketing and distribution channels ahead of looming industry competition.

On the demand side, we think the appearance of Tesla and BYD products on Thailand's roads and highways will encourage consumers who are still reluctant about the switch from ICE to EV to move forward with their purchases of new EVs, considering:

- 1) the greater availability of highly recognised EV brands at affordable prices thanks to the government's EV package; and
- 2) the projected mushrooming growth of charging stations nationwide, given that both Tesla and BYD's market penetration strategies are preceded by adding new charging stations. We think this tactic will boost consumer confidence regarding the convenience of EV mobility and chargeability via increased access to an adequate number of convenient and reliable charging stations outside Bangkok and the vicinity.

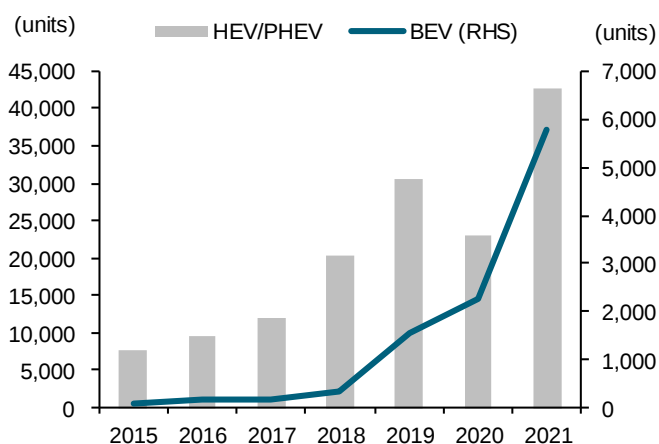
Current EV market trends following the government's EV package approval

According to the Department of Land Transportation (DLT), BEV numbers grew significantly in April-22, with BEV registrations doubling y-y to 1,232. At the same time, the number of newly registered HEVs and PHEVs grew at a much slower rate of 53% y-y for HEVs and 45% y-y for PHEVs.

During 2018-21, the accumulated total of BEVs was 11,382 – comprising 6,749 e-bikes, 4,132 EV cars, 238 e-buses, and 263 e-tricycles (e-Tuk-Tuks). HEVs and PHEVs totalled 227,727, comprising 219,121 cars, 11,382 motorbikes, one bus and one truck.

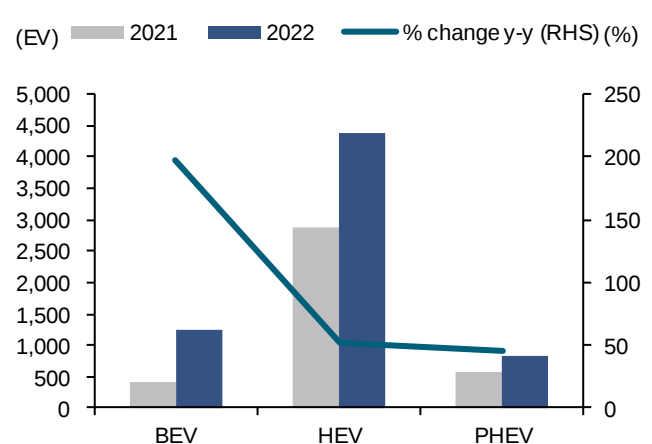
The higher growth in new EV registrations reflects the success of the government's EV package to stimulate the demand for EVs. However, the total number of EVs (BEV, HEV, and PHEV) remains low at only 3.0% of the total 215,907 new registered vehicles in Apr-22, but still up from less than 1% in Apr-21.

Exhibit 16: Number of new EV registrations in 2015-21



Source: DLT

Exhibit 17: Number of new EV registrations in Apr-22

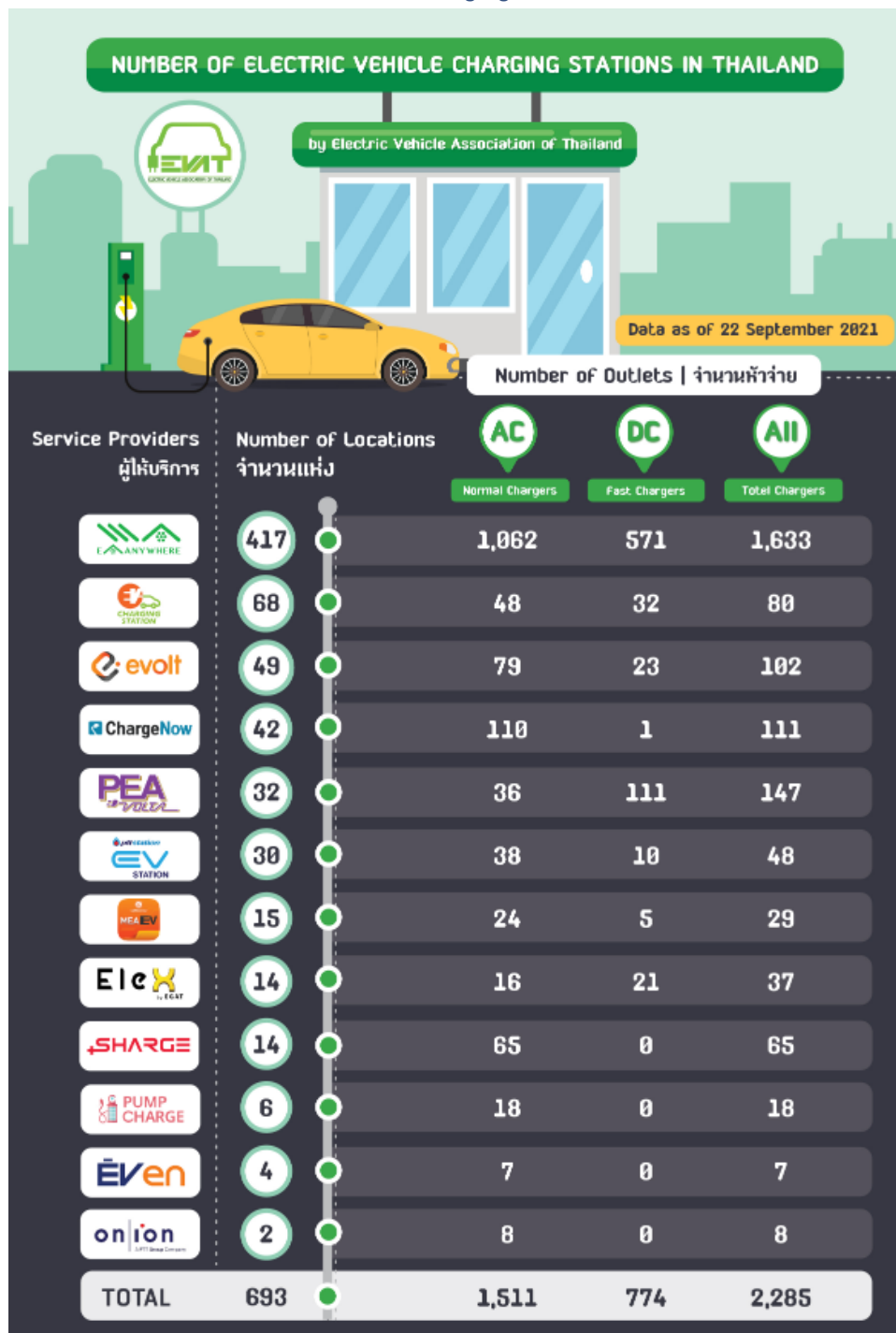


Source: DLT

While the total number of charging stations in Thailand remains unavailable in 2022, we estimate that the number of charging stations will significantly increase from 693 stations and 2,285 chargers in 2021 to over 1,500 stations and 4,000 chargers by the end of 2022, based on the expansion plans of major charging operators.

Major charging operators have already stepped up their plans to add charging stations in 2022 and target further increases in the next 10-20 years, based on company announcements. Energy Absolute (EA TB, BUY), Thailand's largest and most integrated EV provider, plans to add 500 new charging stations in 2022 and targets 1,000 by 2023; PTT Oil and Retail Business (OR TB, BUY) plans to add 450 by end-2022 and 7,000 more by 2030; the Electricity Generating Authority of Thailand (EGAT) intends to add 57; Evolt plans to add 120 stations in 2022 and 12,000 stations by 2040; the Metropolitan Electricity Authority (MEA) +17 stations; and the Provincial Electricity Authority (PEA) +11.

Exhibit 18: Number of electric vehicle charging stations in Thailand



Source: EVAT

Winners of the EV market boom in 2022

In 2021, the number of new EV registrations surged by over 2x y-y, even though consumers had been waiting for the government's plan to subsidise the price of EVs and offer multiple tax incentives for producers in the EV value chain (batteries, EVs, charging stations).

We believe that in 2022, with the government's incentive plan for EVs already in place, the number of new BEV registrations should almost double to over 15,000, up from a mere 5,781 new EVs in 2021.

We think EA and Nex Point (NEX TB, BUY) – Thailand's two leading players in the battery and EV businesses – will see their share prices outperform in 2022, thanks to the strong net profit growth momentum that we project in 2021-23 due to their fully integrated, first-mover advantage over competitors that has allowed them to timely capture regulatory benefits ahead of the booming demand for EVs expected in 2022 onward.

After disappointing production and deliveries of new e-buses in 4Q21-1Q22 due to the skilled worker shortage, EA and NEX have successfully resolved the problem and are now in the process of ramping up production to 150 e-buses in Jun-22 before rising to 400-500 per month starting in Jul-22. The rising production rate puts them on track to reach their 2,500-3,000 e-bus delivery target in 2022, according to management.

Exhibit 19: Peer comparisons

Company	BBG code	Rec	Share Price	Target price	Up side	Market Cap	3Y EPS CAGR	----- PE -----		----- ROE -----		----- PBV -----		EV / EBITDA	
								22E	23E	22E	23E	22E	23E	22E	23E
			(LCY)	(LCY)	(%)	(USD m)	(%)	(x)	(x)	(%)	(%)	(x)	(x)	(x)	(x)
THAILAND															
Energy Absolute	EA TB	BUY	89.25	101	13	9,699	28.5	28.0	28.1	31.5	25.0	7.8	6.4	24.4	23.2
BANPU	BANPU TB	BUY	12.9	18.8	46	2,543	(10.0)	3.2	3.9	30.4	24.0	0.8	0.8	3.6	3.9
Banpu Power	BPP TB	BUY	16	20	25	1,421	29.1	9.0	8.7	11.5	11.2	1.0	0.9	34.5	25.8
Nex Point	NEX TB	BUY	17.4	21.6	24	849	nm	44.5	23.0	20.1	30.0	8.0	6.1	(240.7)	179.7
Global Power	GPSC TB	HOLD	66.0	70.0	6	5,422	11.2	38.2	24.2	4.5	7.0	1.7	1.7	20.5	17.2
Thailand avg						19,934	15.3	27.0	22.4	22.1	19.2	4.8	4.0	10.1	25.9
US															
Tesla Inc	TSLA US	NA	714.84	NA	NA	740,581	59.1	60.1	45.9	33.6	31.6	17.9	12.4	36.6	26.9
Nio Inc - Adr	NIO US	NA	19.18	NA	NA	32,041	nm	nm	nm	(18.0)	(7.8)	6.8	7.6	nm	360.7
Nikola Corp	NKLA US	NA	6.49	NA	NA	2,733	nm	nm	nm	(68.4)	(87.2)	4.1	7.0	nm	nm
Workhorse	WKHS US	NA	2.94	NA	NA	481	nm	nm	nm	(62.8)	(24.5)	3.3	3.0	nm	nm
US avg						775,836	59.1	57.3	43.8	31.0	29.6	17.4	12.1	34.9	40.6
Alternative energy under coverage															
Average (all)						795,770	58.7	56.6	43.3	30.8	29.3	17.1	11.9	34.3	40.2

Share prices as of 6 June 2022

Sources: Bloomberg, FSSIA estimates

Corporate Governance report of Thai listed companies 2020

EXCELLENT LEVEL										
AAV	ADVANC	AF	AIRA	AKP	AKR	ALT	AMA	AMATA	AMATAV	ANAN
AOT	AP	ARIP	ARROW	ASP	BAFS	BANPU	BAY	BCP	BCPG	BDMS
BEC	BEM	BGRIM	BIZ	BKI	BLA	BOL	BPP	BRR	BTS	BWG
CENTEL	CFRESH	CHEWA	CHO	CIMBT	CK	CKP	CM	CNT	COL	COMAN
COTTO	CPALL	CPF	CPI	CPN	CSS	DELTA	DEMCO	DRT	DTAC	DTC
DV8	EA	EASTW	ECF	ECL	EGCO	EPG	ETE	FNS	FPI	FPT
FSMART	GBX	GC	GCAP	GEL	GFPT	GGC	GPSC	GRAMMY	GUNKUL	HANA
HARN	HMPRO	ICC	ICHI	III	ILINK	INTUCH	IRPC	IVL	JKN	JSP
JWD	K	KBANK	KCE	KKP	KSL	KTB	KTC	LANNA	LH	LHFG
LIT	LPN	MAKRO	MALEE	MBK	MBKET	MC	MCOT	METCO	MFEC	MINT
MONO	MOONG	MSC	MTC	NCH	NCL	NEP	NKI	NOBLE	NSI	NVD
NYT	OISHI	ORI	OTO	PAP	PCSGH	PDJ	PG	PHOL	PLANB	PLANET
PLAT	PORT	PPS	PR9	PREB	PRG	PRM	PSH	PSL	PTG	PTT
PTTEP	PTTGC	PYLON	Q-CON	QH	QTC	RATCH	RS	S	S & J	SAAM
SABINA	SAMART	SAMTEL	SAT	SC	SCB	SCC	SCCC	SCG	SCN	SDC
SEAFCO	SEOIL	SE-ED	SELIC	SENA	SIRI	SIS	SITHAI	SMK	SMPC	SNC
SONIC	SORKON	SPI	SPR	SPRC	SPVI	SSSC	SST	STA	SUSCO	SUTHA
SVI	SYMC	SYNTEC	TACC	TASCO	TCAP	TFMAMA	THANA	THANI	THCOM	THG
THIP	THRE	THREL	TIP	TIPCO	TISCO	TK	TKT	TTB	TMILL	TNDT
TNL	TOA	TOP	TPBI	TQM	TRC	TSC	TSR	TSTE	TSTH	TTA
TTCL	TTW	TU	TVD	TVI	TVO	TWPC	U	UAC	UBIS	UV
VGI	VIH	WACOAL	WAVE	WHA	WHAUP	WICE	WINNER	TRUE		

VERY GOOD LEVEL										
2S	ABM	ACE	ACG	ADB	AEC	AEONTS	AGE	AH	AHC	AIT
ALLA	AMANAHA	AMARIN	APCO	APCS	APURE	AQUA	ASAP	ASEFA	ASIA	ASIAN
ASIMAR	ASK	ASN	ATP30	AUCT	AWC	AYUD	B	BA	BAM	BBL
BFIT	BGC	BJC	BJCHI	BROOK	BTW	CBG	CEN	CGH	CHARAN	CHAYO
CHG	CHOTI	CHOW	CI	CIG	CMC	COLOR	COM7	CPL	CRC	CRD
CSC	CSP	CWT	DCC	DCON	DDD	DOD	DOHOME	EASON	EE	ERW
ESTAR	FE	FLOYD	FN	FORTH	FSS	FTE	FVC	GENCO	GJS	GL
GLAND	GLOBAL	GLOCON	GPI	GULF	GYT	HPT	HTC	ICN	IFS	ILM
IMH	INET	INSURE	IRC	IRCP	IT	ITD	ITEL	J	JAS	JCK
JCKH	JMART	JMT	KBS	KCAR	KGI	KIAT	KOOL	KTIS	KWC	KWM
L&E	LALIN	LDC	LHK	LOXLEY	LPH	LRH	LST	M	MACO	MAJOR
MBAX	MEGA	META	MFC	MGT	MILL	MITSI	MK	MODERN	MTI	MVP
NETBAY	NEX	NINE	NTV	NWR	OCC	OGC	OSP	PATO	PB	PDG
PDI	PICO	PIMO	PJW	PL	PM	PPP	PRIN	PRINC	PSTC	PT
QLT	RCL	RICHY	RML	RPC	RWI	S11	SALEE	SAMCO	SANKO	SAPPE
SAWAD	SCI	SCP	SE	SEG	SFP	SGF	SHR	SIAM	SINGER	SKE
SKR	SKY	SMIT	SMT	SNP	SPA	SPC	SPCG	SR	SRICHA	SSC
SSF	STANLY	STI	STPI	SUC	SUN	SYNEX	T	TAE	TAKUNI	TBSP
TCC	TCMC	TEAM	TEAMG	TFG	TIGER	TITLE	TKN	TKS	TM	TMC
TMD	TMI	TMT	TNITY	TNP	TNR	TOG	TPA	TPAC	TPCORP	TPOLY
TPS	TRITN	TRT	TRU	TSE	TVT	TWP	UEC	UMI	UOBKH	UP
UPF	UPOIC	UT	UTP	UWC	VL	VNT	VPO	WIJK	WP	XO
YUASA	ZEN	ZIGA	ZMICO							

GOOD LEVEL										
7UP	A	ABICO	AJ	ALL	ALUCON	AMC	APP	ARIN	AS	AU
B52	BC	BCH	BEAUTY	BGT	BH	BIG	BKD	BLAND	BM	BR
BROCK	BSBM	BSM	BTNC	CAZ	CCP	CGD	CITY	CMAN	CMO	CMR
CPT	CPW	CRANE	CSR	D	EKH	EP	ESSO	FMT	GIFT	GREEN
GSC	GTB	HTECH	HUMAN	IHL	INOX	INSET	IP	JTS	JUBILE	KASET
KCM	KKC	KUMWEL	KUN	KWG	KYE	LEE	MATCH	MATI	M-CHAI	MCS
MDX	MJD	MM	MORE	NC	NDR	NER	NFC	NNCL	NPK	NUSA
OCEAN	PAF	PF	PK	PLE	PMTA	POST	PPM	PRAKIT	PRECHA	PRIME
PROUD	PTL	RBF	RCI	RJH	ROJNA	RP	RPH	RSP	SF	SFLEX
SGP	SISB	SKN	SLP	SMART	SOLAR	SPG	SQ	SSP	STARK	STC
SUPER	SVOA	TC	TCCC	THMUI	TIW	TNH	TOPP	TPCH	TPIPP	TPLAS
TTI	TYCN	UKEM	UMS	VCOM	VRANDA	WIN	WORK	WPH		

Description

Score Range

Excellent

90-100

Very Good

80-89

Good

70-79

Disclaimer:

The disclosure of the survey results of the Thai Institute of Directors Association ("IOD") regarding corporate governance is made pursuant to the policy of the Office of the Securities and Exchange Commission. The survey of the IOD is based on the information of a company listed on the Stock Exchange of Thailand and the Market for Alternative Investment disclosed to the public and able to be accessed by a general public investor. The result, therefore, is from the perspective of a third party. It is not an evaluation of operation and is not based on inside information.

The survey result is as of the date appearing in the Corporate Governance Report of Thai Listed Companies. As a result, the survey results may be changed after that date. FSS International Investment Advisory Company Limited does not confirm nor certify the accuracy of such survey results.

* CGR scoring should be considered with news regarding wrong doing of the company or director or executive of the company such unfair practice on securities trading, fraud, and corruption SEC imposed a civil sanction against insider trading of director and executive; ** delisted

Source: Thai Institute of Directors Association (IOD); FSSIA's compilation

Anti-corruption Progress Indicator 2020

CERTIFIED										
2S	ADVANC	AI	AIE	AIRA	AKP	AMA	AMANAHA	AP	AQUA	ARROW
ASK	ASP	AYUD	B	BAFS	BANPU	BAY	BBL	BCH	BCP	BCPG
BGC	BGRIM	BJCHI	BKI	BLA	BPP	BROOK	BRR	BSBM	BTS	BWG
CEN	CENTEL	CFRESH	CGH	CHEWA	CHOTI	CHOW	CIG	CIMBT	CM	CMC
COL	COM7	CPALL	CPF	CPI	CPN	CSC	DCC	DELTA	DEMCO	DIMET
DRT	DTAC	DTC	EASTW	ECL	EGCO	FE	FNS	FPI	FPT	FSS
FTE	GBX	GC	GCAP	GEL	GFPT	GGC	GJS	GPSC	GSTEEL	GUNKUL
HANA	HARN	HMPRO	HTC	ICC	ICHI	IFS	INET	INSURE	INTUCH	IRPC
ITEL	IVL	K	KASET	KBANK	KBS	KCAR	KCE	KGI	KKP	KSL
KTB	KTC	KWC	L&E	LANNA	LHFG	LHK	LPN	LRH	M	MAKRO
MALEE	MBAX	MBK	MBKET	MC	MCOT	MFC	MFEC	MINT	MONO	MOONG
MPG	MSC	MTC	MTI	NBC	NEP	NINE	NKI	NMG	NNCL	NSI
NWR	OCC	OCEAN	OGC	ORI	PAP	PATO	PB	PCSGH	PDG	PDI
PDJ	PE	PG	PHOL	PL	PLANB	PLANET	PLAT	PM	PPP	PPPM
PPS	PREB	PRG	PRINC	PRM	PSH	PSL	PSTC	PT	PTG	PTT
PTTEP	PTTGC	PYLON	Q-CON	QH	QLT	QTC	RATCH	RML	RWI	S & J
SABINA	SAT	SC	SCB	SCC	SCCC	SCG	SCN	SEAOIL	SE-ED	SELIC
SENA	SGP	SIRI	SITHAI	SMIT	SMK	SMPC	SNC	SNP	SORKON	SPACK
SPC	SPI	SPRC	SRICHA	SSF	SSSC	SST	STA	SUSCO	SVI	SYNTEC
TAE	TAKUNI	TASCO	TBSP	TCAP	TCMC	TFG	TFI	TFMAMA	THANI	THCOM
THIP	THRE	THREL	TIP	TIPCO	TISCO	TKT	TTB	TMD	TMILL	TMT
TNITY	TNL	TNP	TNR	TOG	TOP	TPA	TPCORP	TPP	TRU	TSC
TSTH	TTCL	TU	TVD	TVI	TVO	TWPC	U	UBIS	UEC	UKEM
UOBKH	UWC	VGI	VIH	VNT	WACOAL	WHA	WHAUP	WICE	WIIK	XO
ZEN	TRUE									
DECLARED										
7UP	ABICO	AF	ALT	AMARIN	AMATA	AMATAV	ANAN	APURE	B52	BKD
BM	BROCK	BUI	CHO	CI	COTTO	DDD	EA	EFORL	EP	ERW
ESTAR	ETE	EVER	FSMART	GPI	ILINK	IRC	J	JKN	JMART	JMT
JSP	JTS	KWG	LDC	MAJOR	META	NCL	NOBLE	NOK	PK	PLE
ROJNA	SAAM	SAPPE	SCI	SE	SHANG	SINGER	SKR	SPALI	SSP	STANLY
SUPER	SYNEX	THAI	TKS	TOPP	TRITN	TTA	UPF	UV	WIN	ZIGA

Level	
Certified	This level indicates practical participation with thoroughly examination in relation to the recommended procedures from the audit committee or the SEC's certified auditor, being a certified member of Thailand's Private Sector Collective Action Coalition Against Corruption programme (Thai CAC) or already passed examination to ensure independence from external parties.
Declared	This level indicates determination to participate in the Thailand's Private Sector Collective Action Coalition Against Corruption programme (Thai CAC)

Disclaimer:

The disclosure of the Anti-Corruption Progress Indicators of a listed company on the Stock Exchange of Thailand, which is assessed by Thaipat Institute, is made in order to comply with the policy and sustainable development plan for the listed companies of the Office of the Securities and Exchange Commission. Thaipat Institute made this assessment based on the information received from the listed company, as stipulated in the form for the assessment of Anti-corruption which refers to the Annual Registration Statement (Form 56-1), Annual Report (Form 56-2), or other relevant documents or reports of such listed company. The assessment result is therefore made from the perspective of Thaipat Institute that is a third party. It is not an assessment of operation and is not based on any inside information. Since this assessment is only the assessment result as of the date appearing in the assessment result, it may be changed after that date or when there is any change to the relevant information. Nevertheless, FSS International Investment Advisory Company Limited does not confirm, verify, or certify the accuracy and completeness of the assessment results.

Note: Companies participating in Thailand's Private Sector Collective Action Coalition Against Corruption programme (Thai CAC) under Thai Institute of Directors (as of June 24, 2019) are categorised into: 1) companies that have declared their intention to join CAC, and; 2) companies certified by CAC.

Source: The Securities and Exchange Commission, Thailand; * FSSIA's compilation

GENERAL DISCLAIMER

ANALYST(S) CERTIFICATION

Suwat Sinsadok, CFA, FRM, ERP FSS International Investment Advisory Securities Co., Ltd

The individual(s) identified above certify(ies) that (i) all views expressed in this report accurately reflect the personal view of the analyst(s) with regard to any and all of the subject securities, companies or issuers mentioned in this report; and (ii) no part of the compensation of the analyst(s) was, is, or will be, directly or indirectly, related to the specific recommendations or views expressed herein.

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Company	Ticker	Price	Rating	Valuation & Risks
Energy Absolute	EA TB	THB 88.50	BUY	Downside risks to our SoTP-based TP include: 1) lower-than-expected demand for electricity in Thailand; 2) lower crude prices; and 3) lower-than-expected demand for batteries.
Banpu	BANPU TB	THB 13.30	BUY	We see downside risks to our SoTP-based TP from lower coal prices, higher diesel costs and any unplanned shutdowns of its power plants.
Banpu Power	BPP TB	THB 15.60	BUY	Downside risks to our SOTP valuation are the start-up delays of its new projects and government intervention in the electricity tariff.
Nex Point	NEX TB	THB 17.50	BUY	Downside risks to our SOTP-based TP include: 1) a lower-than-expected bus sales volume; 2) delays in bus deliveries; and 3) risk from regulatory changes.
Global Power Synergy	GPSC TB	THB 64.75	HOLD	The downside risks to our SoTP-based TP on GPSC include 1) lower-than-expected demand for electricity in Thailand; 2) a lower crude price; and 3) lower-than-expected demand from industrial users. Upside risks are a lower gas price and higher sales volume.
PTT Oil and Retail Business	OR TB	THB 27.75	BUY	The downside risks to our SOTP-based TP include: 1) lower-than-expected demand for petroleum products; 2) a lower marketing margin; and 3) weaker-than-expected jet demand.

Source: FSSIA estimates

Additional Disclosures

Target price history, stock price charts, valuation and risk details, and equity rating histories applicable to each company rated in this report is available in our most recently published reports. You can contact the analyst named on the front of this note or your representative at Finansia Syrus Securities Public Company Limited

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All share prices are as at market close on 07-Jun-2022 unless otherwise stated.

RECOMMENDATION STRUCTURE

Stock ratings

Stock ratings are based on absolute upside or downside, which we define as (target price* - current price) / current price.

BUY (B). The upside is 10% or more.

HOLD (H). The upside or downside is less than 10%.

REDUCE (R). The downside is 10% or more.

Unless otherwise specified, these recommendations are set with a 12-month horizon. Thus, it is possible that future price volatility may cause a temporary mismatch between upside/downside for a stock based on market price and the formal recommendation.

* In most cases, the target price will equal the analyst's assessment of the current fair value of the stock. However, if the analyst doesn't think the market will reassess the stock over the specified time horizon due to a lack of events or catalysts, then the target price may differ from fair value. In most cases, therefore, our recommendation is an assessment of the mismatch between current market price and our assessment of current fair value.

Industry Recommendations

Overweight. The analyst expects the fundamental conditions of the sector to be positive over the next 12 months.

Neutral. The analyst expects the fundamental conditions of the sector to be maintained over the next 12 months.

Underweight. The analyst expects the fundamental conditions of the sector to be negative over the next 12 months.

Country (Strategy) Recommendations

Overweight (O). Over the next 12 months, the analyst expects the market to score positively on two or more of the criteria used to determine market recommendations: index returns relative to the regional benchmark, index sharpe ratio relative to the regional benchmark and index returns relative to the market cost of equity.

Neutral (N). Over the next 12 months, the analyst expects the market to score positively on one of the criteria used to determine market recommendations: index returns relative to the regional benchmark, index sharpe ratio relative to the regional benchmark and index returns relative to the market cost of equity.

Underweight (U). Over the next 12 months, the analyst does not expect the market to score positively on any of the criteria used to determine market recommendations: index returns relative to the regional benchmark, index sharpe ratio relative to the regional benchmark and index returns relative to the market cost of equity.