Thailand Company Focus

Energy Absolute

Bloomberg: EA TB | Reuters: EA.BK

Refer to important disclosures at the end of this report

DBS Group Research . Equity

25 Mar 2021

BUY

(Initiating Coverage)

Last Traded Price (24 Mar 2021): Bt58.75 (**SET :** 1,570.83)
Price Target 12-mth: Bt72.00 (23% upside)

Potential Catalyst: Upcycle for battery and EV businesses, cheaper battery costs, and electricity demand recovery.

Analyst
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Price Relative

Forecasts and Valuation

FY Dec (Btm)	2019A	2020A	2021F	2022F
Revenue	14,887	17,080	31,085	38,731
EBITDA	9,760	9,387	10,425	12,745
Pre-tax Profit	6,016	5,029	5,945	8,178
Net Profit	6,082	5,205	5,886	8,014
Net Pft (Pre Ex.)	5,922	5,195	5,886	8,014
EPS (Bt)	1.63	1.40	1.58	2.15
EPS Pre Ex. (Bt)	1.59	1.39	1.58	2.15
EPS Gth (%)	18	(14)	13	36
EPS Gth Pre Ex (%)	45	(12)	13	36
Diluted EPS (Bt)	1.63	1.40	1.58	2.15
Net DPS (Bt)	0.30	0.30	0.47	0.64
BV Per Share (Bt)	6.26	7.46	9.03	11.2
PE (X)	36.0	42.1	37.2	27.3
PE Pre Ex. (X)	37.0	42.2	37.2	27.3
P/Cash Flow (X)	25.2	23.7	31.2	23.3
EV/EBITDA (X)	26.1	28.3	25.7	20.8
Net Div Yield (%)	0.5	0.5	0.8	1.1
P/Book Value (X)	9.4	7.9	6.5	5.3
Net Debt/Equity (X)	1.4	1.5	1.3	1.0
ROAE (%)	29.2	20.3	19.1	21.3
Consensus EPS (Bt):		N/A	1.78	2.08
Other Broker Recs:		B: 2	S: 1	H: 2

GIC Industry : Utilities
GIC Sector: Electricity Utilities
Principal Business: EA is one of key domestic renewable players with total c.664MW installed capacity. To cope up with EV trend, it will start up battery factory plant with capacity of 1Gwh in 2Q21F.

Source of all data on this page: Company, DBSVTH, Bloomberg Finance L.P.

The sole integrated battery player

- The only domestic integrated battery player that covers upstream to downstream activities – manufacturing of battery, EV assembly line and energy storage system
- Thailand to produce 18.4m and to use 15.5m of EVs locally by 2035F with privileges for producers
- Net profit CAGR of c.14% over 2020-2025F, supported by 1-4 Gwh battery plant and EV business
- Initiate with BUY rating and FY21F TP of Bt72

Integrated battery player in Thailand. Energy Absolute (EA) is involved in the biodiesel and renewable power businesses. In the last few years, EA has successfully expanded into energy storage as a manufacturer of lithium-ion batteries as well as downstream businesses such as electric vehicle (EV) and energy storage system. In partnership with AMITA and NEX, EA has become an integrated battery player in the domestic market.

Net profit CAGR of c.14% over 2020-2025F. This is backed by i) expected uptrend of Ft rate (Fuel adjustment charge) due to higher oil prices in 2021F, ii) strong B100 demand after the government raised the B100 component in pure diesel fuel from B7 to B10, and iii) expectations of maiden revenue from the first phase of the battery business with a capacity of 1Gwh (COD in 2Q21F) and first sale of e-bus in 3Q21F.

Initiate with BUY rating and FY21F of Bt72. Our view is supported by: i) a net profit CAGR of c.14% during 2020-2025F, ii) revenue contribution from the commercialisation of 1Gwh battery plant in 2Q21F, iii) EA being a potential winner of e-bus tender with Bangkok Mass Transit Authority's (BMTA), and iv) uptrend in demand for battery and EV on the back of the prospects of supporting battery capacity of 49Gwh and EV assembly lines in the future.

Valuation:
Our TP of Bt72 is derived from DCF with WACC of 7.75% and terminal growth rate of 3% for the battery business.

Key Risks to Our View:
i) Change in energy policy by government. ii) Declining battery price. iii) Delay of the second phase of 49Gwh battery plant.

At A Glance

Issued Capital (m shrs)	3,730
Mkt. Cap (Btm/US$m)	219,138 / 7,068
Major Shareholders (%)	
Mr. Somphote Ahunai	23.50
UBS AG Singapore Branch	23.23
Sotus & Faith #1 Limited	5.36
Free Float (%)	39.7
3m Avg. Daily Val (US$m)	74.9

ed: CK/ sa: PY, CS

Table of Contents

Investment Summary

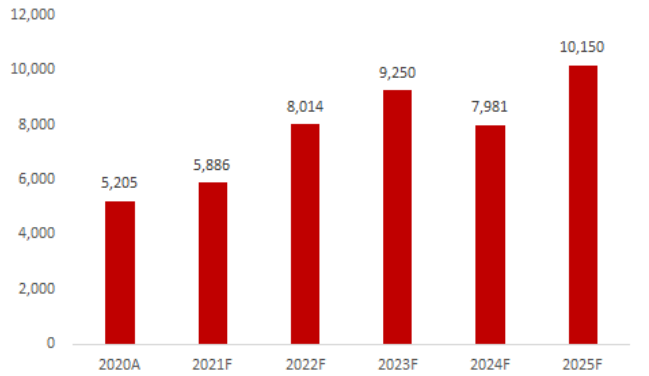
Initiate with BUY rating and FY21F TP of Bt72. We initiate our coverage of EA with a BUY rating and FY21F target price of Bt72 a share. This provides c.20% potential upside from the current share price of Bt58/share. Our TP is based on: i) a weighted average cost of capital (WACC) of 7.75% and ii) terminal growth rate of 3% for the battery business.

Our recommendation is supported by: i) a net profit CAGR of c.14% during 2020-2025F, ii) strong demand for biodiesel and improving biodiesel margins after the government increased the B100 component from B7 to B10 in late 2020, iii) revenue contribution from the commercialisation of the 1Gwh battery plant in 2Q21F and first sale of e-bus in 3Q21F, iv) EA being a potential winner of the e-bus tender with BMTA, v) uptrend in demand for battery and EV on the back of the prospects of supporting battery capacity of 49Gwh and EV assembly lines, and vi) potential renewable power projects domestically and internationally, such as solar farm and hydro power projects.

We are positive about EA's prospects. This is supported by the following factors: i) uptrend in power usage for the transportation sector with a CAGR of c.40% during 2017-2019 in Thailand, ii) battery import value CAGR of c.10% during 2017-2019 in Thailand, iii) c.60% growth of EVs sold worldwide over 2014-2019, iv) uptrend in EV usage boosting the demand for EA's batteries, v) domestic electricity demand is expected to increase at an average annual CAGR of 3% over 2020-2025F, and vi) strong demand for B100 as the government increased the B100 component in diesel from B7 to B10.

Net profit CAGR of c.14% over 2020-2025F. We project its net profit to grow at a CAGR of 14.1% over 2020-2025F, i.e. from Bt5.2bn in 2020 to Bt10.15bn in 2025F. This is supported by i) expected uptrend of Ft rate due to rising oil prices in 2021F, ii) strong B100 demand after the government increased the B100 component in pure diesel fuel from B7 to B10, iii) expectations of maiden revenue from the first phase of the battery business with a capacity of 1Gwh (COD in 2Q21 and will be increased to 4Gwh in 2025F), and iv) first sale of e-bus in 2H21F (c.500-1,000 units booked).

Net profit CAGR of c.14% over 2020-2025F (Btm)

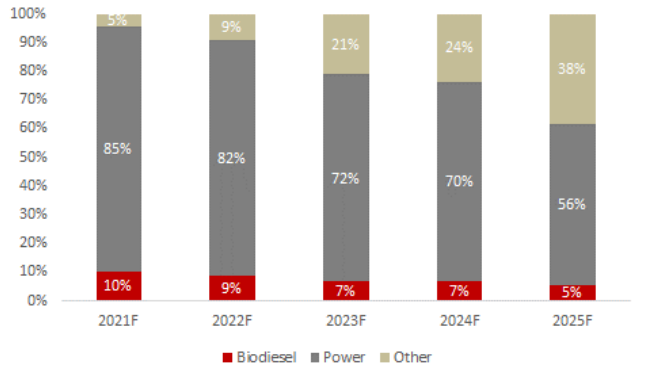


Source: Company, DBSVTH

Expect EBITDA contribution from battery business to rise to 32% by 2025F. Historically, the renewable business's revenue contribution stood at c.70% and EBITDA at c.90% on a consolidated basis. The rest comes from the yielded biodiesel business. Generally, its gross profit margin for biodiesel (ranging between 7% and 13%) is inferior to that of the renewable business (ranging between 70% and 80%). The inferior margins for biodiesel arise from volatile prices of commodities such as crude oil, diesel, and crude palm oil.

With the commercialisation of the first phase of the battery plant with a capacity of 1Gwh in 2Q21F, we expect rising revenue and EBITDA contribution from the battery business whose gross and EBITDA margins (c.20-30% on average) are superior to those of the biodiesel business. By 2025F, we expect c.32% EBITDA contribution from the battery and downstream businesses on a consolidated basis.

EBITDA contribution breakdown by business unit



Source: Company, DBSVTH

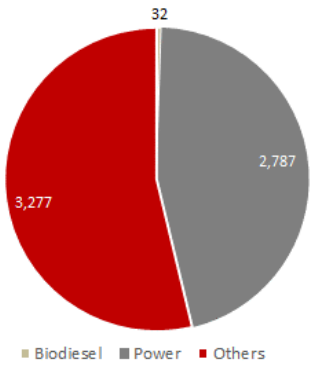
Most of 2021F capex will go to battery business. EA has set c.Bt6.1bn of capital spending in 2021F, of which the majority will go to the battery and application businesses, such as battery plants and the EV value chain business. The c.Bt6.1bn can be broken down into:

i) Biodiesel business – c.Bt32m investment in small machinery and equipment for Phase Change Material or BioPCM.

ii) Power business – c.Bt2,782m for new renewable energy projects such as hydro power plants and solar farms. This also includes spending on improving existing solar plants.

iii) Other businesses – An amount of c.Bt3,277m will be spent on the battery and downstream businesses. Specifically, c.Bt1,223m will be spent on the first phase of the battery manufacture plant with a capacity of c.1.0Gwh whose maiden revenue contribution is expected in early 2Q21F. Another c.Bt1,506m will be spent on the assembly lines of e-bus and e-ferry, and c.Bt426m on the expansion of EV charging stations nationwide.

2021F Capital expenditure



Source: Company, DBSVTH

Global EV sales volume CAGR of c.13% expected during 2019-2030F. Due to environmental concerns, many countries are continuing to promote the use of EVs. This includes setting targets for reducing greenhouse gas emissions in the transport sector, limiting the level of carbon dioxide emissions, setting goals to increase sales and registration of EVs, as well as monetary incentives to support the use of EVs by entrepreneurs and consumers. In this regard, the policy to discourage the sale of fuel-based vehicles or promote the sale of only EVs will become clearer in many countries from 2035 onwards.

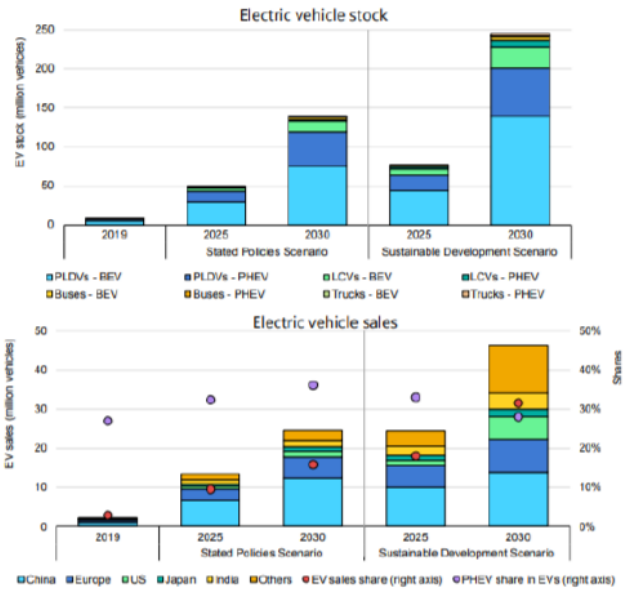
More than 30 automakers have also announced their marketing campaigns to accompany the launch of new EVs in the near future. These includes:

i) BMW (Germany) plans to launch two new EVs in 2022.
ii) Ford (US) plans to launch more than 20 EVs by 2023.
iii) Honda (Japan) plans to launch four EVs by 2022.
iv) Kia (South Korea) plans to launch 12 EVs by 2025.
v) MG (China) plans to launch one EV in 2021.
vi) Tesla (US) plans to launch four EVs by 2022.

Based on the IEA's projection, the strong global EV consumption growth over 2025-2030F will see c.25m per annum of EVs sold worldwide with a cumulative sales of about 140m units. This translates into a CAGR of 13% during 2019-2030. However, there is the potential for global sales to increase to more than 45m units per annum with cumulative worldwide sales exceeding 245m units If all nations join in advocating the EV30@30 policy (a policy that aims to realise multiple benefits offered by electric mobility for innovation, economic and industrial developments, energy security, and reduction of local air pollution). Thus, this will lead to the widespread use of all types of EVs worldwide (excluding 2-wheel vehicles), thus boosting EV's market share to 30% by 2030F.

Note that small passenger cars are expected to enjoy the highest annual and cumulative sales. China, Europe, the US and India are expected to have significant sales growth for EVs in the next 10 years.

Global EV stocks and sales by scenario by 2030



Source: IEA, DBSVTH

Thai government wants every EV sold in Thailand to have been produced locally by 2035F, 5 years earlier than original plan. The National New Generation Vehicle Committee along with the Federation of Thai Industries (FTI) aim to make Thailand to become a global production based for EV within 15 years (by end of 2035). The new plan is for Thailand to produce i) 1.05m units of EV by 2025F, ii) 6.22m units of EV by 2030F, and iii) 18.41m units of EV by 2035F.

Moreover, the committee is also aiming to raise local demand for EV usage of totally 15.58m units (of which income 6.4m units of passenger cars and pickup trucks, 8.75m units of motorcycles, and 0.43m units of buses and heavy-duty trucks.

The meeting also approved the establishment of four sub-committees, which will coordinate research into issues such as EV infrastructure, privileges and taxes, plus the development of an ecosystem suitable for an EV production site.

As a result, EA will most benefit from such announcement, compared with other domestic battery competitors. This is due to i) EA has the largest battery manufacturing plant in Thailand of 1Gwh, ii) EA benefits from full value chain of battery business as it has EV assembly plants for EV car and e-bus (Absolute Assembly (AAB) and Mine Mobility Corp (MMC) as well as after sales service provider (Next Point Plc (NEX TB).

Thailand's EV production and use targets

Target	Types of Veicles	2025	2030	2035
Use	Cars/pickup trucks	402,000	2,050,000	6,400,000
	Motorbikes	622,000	3,200,000	8,750,000
	Buses/trucks	31,000	160,000	430,000
	Total	**1,055,000**	**5,410,000**	**15,580,000**
Production	Cars/pickup trucks	400,000	2,935,000	8,625,000
	Motorbikes	620,000	3,133,000	9,330,000
	Buses/trucks	31,000	156,000	458,000
	Total	**1,051,000**	**6,224,000**	**18,413,000**

Source: Bangkok Post, Industry Ministry, DBSVTH

Uptrend for Thailand's EV imports. The value of Thailand's EV imports is growing, along with the availability of a wider variety of EV models domestically to provide more options to general and commercial users. According to the IEA, Thailand has a small registered EV base (light duty vehicle) of nearly 19,400 vehicles (of which, 890 are BEVs and 18,480 are PHEVs) in 2019, representing an increase from about 9,000 vehicles in the previous year.

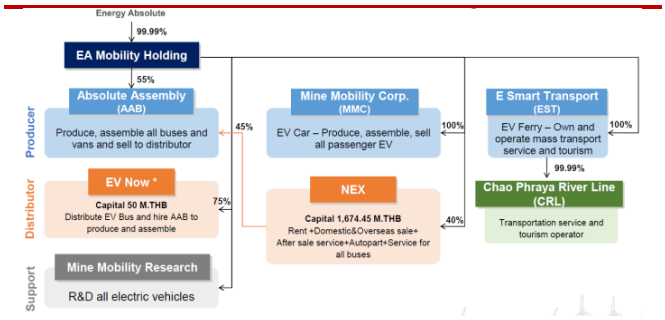
Opportunities in battery value chain. In 2019, EA started designing and launching electric cars under the "MINE Mobility" brand and SPA1 model under Mine Mobility Corp – one of EA's subsidiaries. MINE Mobility is a multipurpose electric car, that is 100% driven by electricity using batteries manufactured by EA Group – which is a new car business operator in the industry that has several entrepreneurs or business operators, especially the big ones with large production capacity.

Moreover, EA has formulated a strategy to focus on the segment that can fill the gaps in the market, i.e. public service vehicles or taxis, by investing in a joint venture with Next Point Parts (NEX TB) that provides after sales services for e-bus.

Moreover, the NEX factory is located next to EA's EV car assembly plants. Hence, there are synergy benefits arising from sharing manpower, technology, and equipment. Moreover, EA has secured the e-bus order for approximately 500-1,000 buses.

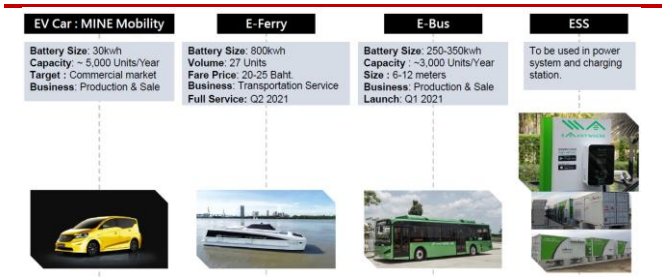
We expect an IRR of c.15% for EV cars and e-bus, with strong cash flow expected for these projects in the future. However, the e-ferry project will generate low IRRs, as it is a public service vehicle that mainly serves to demonstrate EA's technology prowess. Moreover, EA enjoys tax-free privileges from the Board of Investment (BOI) for the first eight years after the commercialisation of its EV business and 50% tax reduction for the next five years.

EA's electric vehicle business structure



Source: Company, DBSVTH

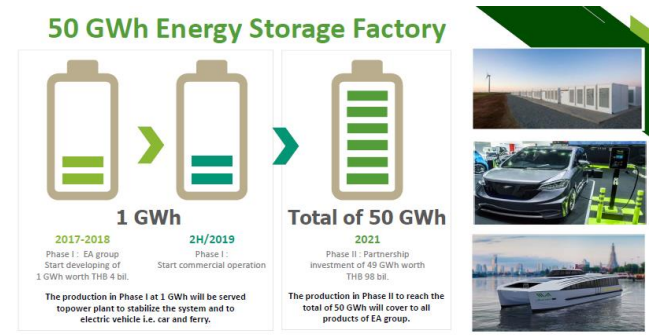
EA's electric vehicle business structure



Source: Company, DBSVTH

Second phase of 49Gwh battery plant could boost EBITDA CAGR to 17% over 2020-2030F. Initially, EA rolled out its battery and downstream businesses in 2018. It expected to launch the first phase of the battery plant with a capacity of 1Ghw in 2H19 and the second phase of 49Ghw in 2021F with a total investment of c.Bt102bn.

Battery business*



Source: Company, DBSVTH
**Note that this presentation took place in 4Q18*

However, the commercialisation of the first phase 1Ghw has been delayed and it is expected to commence operations in early 2021F. As a result, we assume that the company will spend c.Bt100bn (c.Bt2.0bn per 1Gwh) on the development and construction of the second phase (capacity of 49Gwh) in next 10 years. Such capacity will be supported by captive demand for downstream businesses, such as EV cars, e-bus, e-ferry and other energy storage systems.

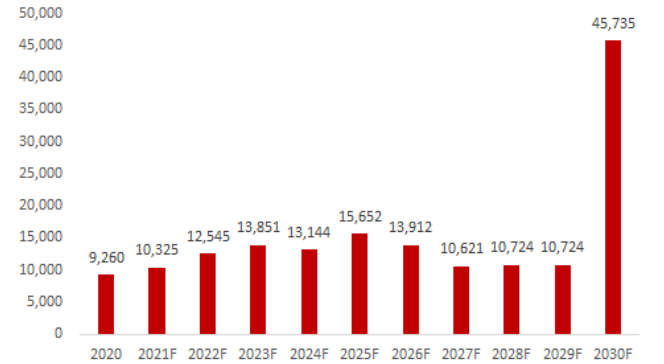
As per conversation with company, EA intended to increase battery manufacturing capacity from currently 1Gwh to 4Gwh by 2025F with capex of c.Bt2.0bn per 1Gwh.

Battery business

Source: Company, DBSVTH

As a result, we expect consolidated EBITDA at c.Bt45.73bn in 2030F, a CAGR of c.17% during 2020-2030F.

Total EBITDA with 49Ghw battery plant (Btm)



Source: Company, DBSVTH

Valuation & Peers Comparison

Initiate with BUY rating and FY21F TP of Bt72. We deem EA a green energy company as opposed to a pure commodity or conventional power producer. Historically, c.70% of its total revenue comes from the renewable business and the remaining comes from the biodiesel business. However, we expect the battery business to start contributing to consolidated revenue and EBITDA from 2021F onwards. We estimate that c.43% of revenue and c.32% of EBITDA will stem from the battery business in 2025F. This is thanks to expansion of its battery plant with a capacity of 1Gwh (up to 4Gwh by 2025F) and downstream and service businesses, such as EV assembly, EV cars, e-bus, e-ferry and energy storage systems.

We initiate our coverage of EA with a BUY rating and FY21F target price of Bt72 a share. Our TP is based on: i) a weighted average cost of capital (WACC) of 7.75% and terminal growth rate of 3% for the battery business. Our recommendation is supported by: i) a net profit CAGR of c.14% during 2020-2025F, ii) strong demand and improving biodiesel margins after the government increased the B100 component from B7 to B10 in late 2020, iii) revenue contribution from the commercialisation of 1Gwh battery plant in 2Q21, iv) EA being a potential winner of e-bus tender with BMTA, and v) uptrend in demand for battery and EV on the back of the prospects of supporting battery capacity of 49Gwh and EV assembly lines, and vi) potential renewable power projects domestically and internationally, such as solar farm and hydro power projects.

EA valuation

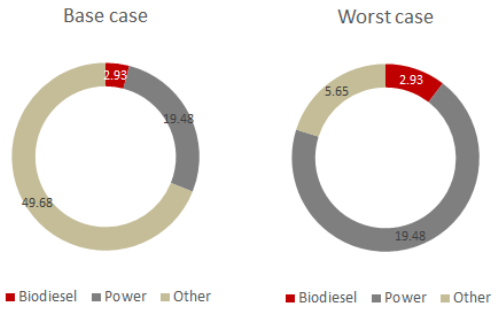
	2021F	2022F	2023F	2024F
EBITDA	10,894	13,076	14,383	13,144
(-)CAPEX	(6,100)	(6,000)	(6,000)	(6,000)
(-) NWC	(162)	(56)	(11)	169
(-)Tax	0	0	0	0
Free Cashflow	**4,633**	**7,020**	**8,372**	**7,314**
PV	4,299	5,976	6,456	5,172
Total PV of FCFF	311,879			
(-) Market value of debt	43,000			
Share price (Bt/share)	**72.09**			

Source: DBSVTH

Worst-case TP of Bt28/share assuming no future projects. Our FY21F TP of Bt72 comprises of: i) 664MW of renewable power projects, ii) 800k litres/day demand for the biodiesel business, iii) e-Bus assembly plant, iv) EV charging station business, and v) 50Ghw of battery plants.

However, we expect a flat consolidated EBITDA CAGR of 0.05% should there be no commercialisation of the second phase of battery plants (capacity of c.46Gwh). Under this scenario, we anticipate consolidated EBITDA to drop from Bt45.73bn to Bt9.3bn in 2030F. Such a decline would be caused by the expiration of Adder privileges for all solar farm projects (Bt8/unit for Lopburi solar farm, and Bt6.5/unit for Lampang, Nakornsawan, and Pitsanulok solar farms, amounting to 278MW). As a result, our FY21F worst-case TP comes to Bt28/share, based on a WACC of 7.75% and battery business terminal growth rate of 3%.

FY21F target prices (Bt per share)

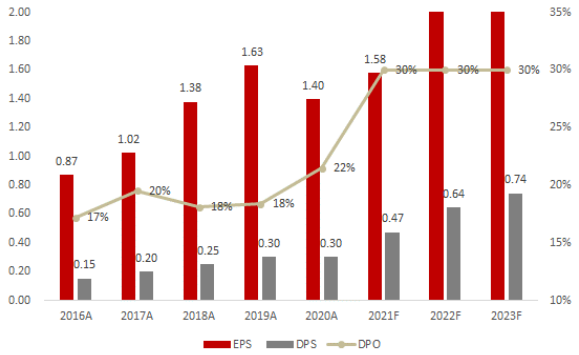


Source: Company, DBSVTH
Note that other business includes battery manufacturing plant, EV charging station, EV car

No less than 30% dividend payout ratio. EA has a policy to pay annual dividends of at least 30% of net profit after deducting all income tax and reserves, as specified in its articles of association. Dividend payment is subject to its cash flow, investment plans, conditions and requirements of the company's contracts, including legal limitations and other obligations in the future.

Based on a dividend payout ratio assumption of 30%, we estimate an FY21/FY22F dividend per share (DPS) of Bt0.47/Bt0.64 respectively. This translates into a dividend yield of c.1%, based on the 18 Mar 2021 closing share price, of Bt58 a share.

EPS and DPS projection



Source: Company, DBSVTH

Trading at premium relative to peers. EA is trading at a premium relative to its peers in terms of: i) FY21F PE of c.23x (vs. peers' c.16x), ii) PBV multiple of c.4x (vs peers' c.1.6x), and iii) EV/EBITDA multiple of c.17x (vs peers' c.16x). We think such premium is justified as EA is i) one of the first domestic battery players (currently EA and GSPC are the only battery players in the market and we expect their first battery sale to take place in 2Q21F), and ii) EA is the one of the potential bidders for the e-bus tender in 2021F – if it can emerge as the winning bidder, it can capture the a large part of the value chain of the battery business since its e-bus assembly plant will use batteries supplied by EA Group.

Compared to its closest peer such as GPSC, EA's EPS growth is expected to be in line with GPSC's with a CAGR of c.9% during 2020-2023F while its ROE of c.17% is superior to GSPC's c.10%. However, EA's FY21F-FY22F dividend yield of c.1% is less attractive compared to GPSC's c.2% and peers' 4%.

Peer comparison

		Market Cap	PE (x)		PBV (x)		EV/EBITDA (x)		Div Yield (%)	ROE (%)
BB Ticker	Name	US$m	21F	22F	21F	22F	21F	22F	21F	22F
BCPG TB Equity	BCPG PCL	1,289	20.1	19.8	1.6	1.5	14.4	13.6	2.6	9.1
BGRIM TB Equity	B GRIMM POWER PCL	3,945	34.3	27.7	3.8	3.4	14.2	12.8	1.2	10.7
BPP TB Equity	BANPU POWER PCL	1,915	14.5	12.8	1.4	1.3	69.1	63.8	3.6	9.4
DEMCO TB Equity	DEMCO PCL	81	14.2	14.8	0.5	0.5	30.7	31.5	2.6	3.7
EA TB Equity	**ENERGY ABSOLUTE PCL**	**7,068**	**33.1**	**28.3**	**6.4**	**5.4**	**23.1**	**20.1**	**0.6**	**21.2**
EGCO TB Equity	ELECTRICITY GENERATING PCL	3,101	9.0	8.0	0.8	0.8	16.3	15.3	3.8	9.8
GPSC TB Equity	GLOBAL POWER SYNERGY PCL	6,952	24.5	23.3	1.9	1.8	13.8	13.4	2.2	8.0
GULF TB Equity	GULF ENERGY DEVELOPMENT PCL	12,889	49.5	34.9	5.2	4.7	30.6	22.3	1.1	11.3
GUNKUL TB Equity	GUNKUL ENGINEERING PCL	972	14.0	14.2	2.2	2.1	13.1	13.8	3.7	16.4
RATCH TB Equity	RATCH GROUP PCL	2,442	11.0	10.0	1.2	1.1	14.6	13.2	5.0	10.6
SPCG TB Equity	SPCG PCL	698	8.9	8.4	1.2	1.1	6.8	5.2	4.5	14.3
SUPER TB Equity	SUPER ENERGY CORP PCL	846	10.6	9.5	1.2	n/a	8.4	6.8	1.4	11.5
TPIPP TB Equity	TPI POLENE POWER PCL	1,176	7.3	8.4	1.2	1.1	7.4	8.3	8.3	16.3
600025 CH Equity	HUANENG LANCANG RIVER HYDR-A	15,153	18.5	16.5	1.8	1.7	11.8	11.3	2.7	9.9
600116 CH Equity	CHONGQING THREE GORGES-A	2,781	25.5	19.9	2.4	2.3	24.2	18.6	n/a	9.4
600236 CH Equity	GUANGXI GUIGUAN ELECTRIC-A	6,867	20.0	18.7	2.9	2.8	10.4	10.3	3.5	14.8
916 HK Equity	CHINA LONGYUAN POWER GROUP-H	9,523	12.9	11.2	1.4	1.2	8.3	7.4	1.3	9.1
015760 KS Equity	KOREA ELECTRIC POWER CORP	13,539	13.4	10.4	0.2	0.2	5.9	5.6	3.6	1.4
2 HK Equity	CLP HOLDINGS LTD	24,113	15.6	15.0	1.6	1.5	10.2	9.7	4.3	10.5
991 HK Equity	DATANG INTL POWER GEN CO-H	5,864	8.2	7.6	0.5	0.5	8.3	8.2	6.1	3.5
902 HK Equity	HUANENG POWER INTL INC-H	9,154	4.8	4.4	0.4	0.4	8.1	7.6	9.2	5.9
6 HK Equity	POWER ASSETS HOLDINGS LTD	12,357	15.4	14.8	1.1	1.1	64.3	77.5	6.2	7.1
836 HK Equity	CHINA RESOURCES POWER HOLDIN	5,675	5.3	4.6	0.6	0.5	5.7	5.1	7.6	10.7
2380 HK Equity	CHINA POWER INTERNATIONAL	2,223	7.4	5.8	0.6	0.5	9.3	8.4	7.3	5.7
TNB MK Equity	TENAGA NASIONAL BHD	14,981	12.6	12.1	1.1	1.0	7.1	7.0	5.0	8.6
YTLP MK Equity	YTL POWER INTERNATIONAL BHD	1,537	15.3	13.9	0.6	0.6	10.6	10.5	3.8	3.1
MMC MK Equity	MMC CORP BHD	874	10.0	9.1	0.4	0.4	9.9	9.6	4.2	3.7
TPWR IN Equity	TATA POWER CO LTD	4,918	23.3	18.1	1.6	1.5	9.7	9.6	1.4	7.1
SUPER TB Equity	SUPER ENERGY CORP PCL	846	10.6	9.5	1.2	n/a	8.4	6.8	1.4	11.5
TPIPP TB Equity	TPI POLENE POWER PCL	1,176	7.3	8.4	1.2	1.1	7.4	8.3	8.3	16.3
600025 CH Equity	HUANENG LANCANG RIVER HYDR-A	15,153	18.5	16.5	1.8	1.7	11.8	11.3	2.7	9.9
600116 CH Equity	CHONGQING THREE GORGES-A	2,781	25.5	19.9	2.4	2.3	24.2	18.6	n/a	9.4
600236 CH Equity	GUANGXI GUIGUAN ELECTRIC-A	6,867	20.0	18.7	2.9	2.8	10.4	10.3	3.5	14.8
916 HK Equity	CHINA LONGYUAN POWER GROUP-H	9,523	12.9	11.2	1.4	1.2	8.3	7.4	1.3	9.1
	Average (simple)		16.4	14.4	1.6	1.5	16.7	16.0	4.0	9.4

Source: Bloomberg Finance, data as of 16 Mar 2021, DBSVTH

Company Background

Corporate History. Energy Absolute Plc (EA TB) was first incorporated on 6 March 2006 using its original name of Suntech Palm Oil Company Limited, with a registered capital of Bt50m.

In 2008, the company was converted into a public limited company and renamed Energy Absolute Public Company Limited (EA TB). Its registered capital was also increased from Bt50m Bt250m.

In early 2013, EA had registered shares of 3,730m, with a par value of Bt 0.10 per share and total market capitalisation of Bt373m on the "Market for Alternative Investment" (mMAI). At end-2016, the company submitted a request to the Stock Exchange of Thailand (SET) to approve the transfer of the trading of EA's securities from MAI to SET.

Three main business units. As for its current operations, its businesses can be divided into the following three groups:

i) Biodiesel business
ii) Renewable power plant business
iii) Other businesses

EA began its operations with the biodiesel business, as a producer and distributor of biodiesel (B100), purified glycerine and by-products. Later, EA has expanded this business to encompass renewable power plants, starting with the establishment of solar power and wind power plants as power producers that sells electricity to the Provincial Electricity Authority (PEA) and the Electricity Generating Authority of Thailand (EGAT).

At present, EA has four solar power plants with a total production capacity of 278MW, and wind power plants with a total production capacity of 386MW.

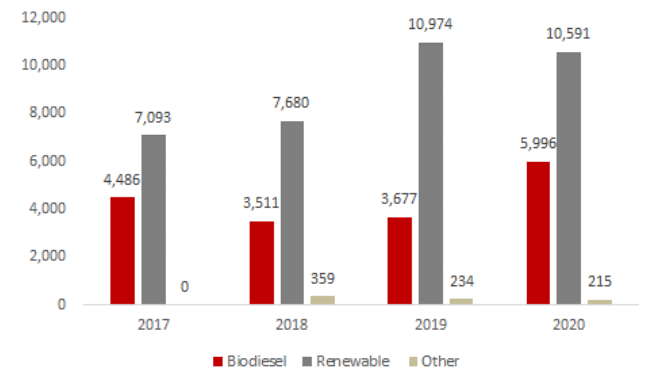
For other businesses, EA has expanded such operations to the development and manufacture of lithium-ion polymer batteries. Initially, EA has invested 35.20% of its ordinary shares issued in Amita Technologies Inc. (Amita-Taiwan) – this company was incorporated under the law of the Republic of China (Taiwan) and also listed on the Emerging Stock Market (ESM) of the Stock Exchange of Taiwan. The aim of the investment is to expand and enhance the competitiveness of EA, including to achieve its business objective of being an environmentally-friendly company.

Furthermore, EA has broadened the scope of operations by establishing electric charging stations for EVs under the trademark of "EA Anywhere". This venture aims to harness clean energy in the automotive industry as well as reduce the emission of carbon dioxide gas and to promote the use of environmental-friendly energy.

In addition to its business expansion, EA will continue to foray into other business such as the production and distribution of automobiles, the import-export of automotive parts and EVs. Additionally, EA has expanded its business scope to hub stations and logistics with the aim of supporting its core business (biodiesel/charging). These new businesses will encompass the provision of such services as stop spots for energy refill (including electric charging and fuel refilling), restaurants (complete with food and beverages), and product distribution centres.

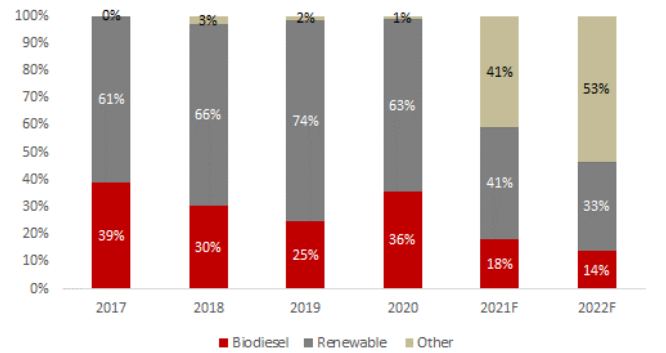
Revenue structure. The majority of EA's revenues come from three sources as follow; i) the biodiesel business, namely the sale of biodiesel, purified glycerine and by-products, ii) the renewable power plant business, namely generation of solar electric power, wind electric power, as well as subsidy for adders, and iii) other businesses, namely production of battery units.

Revenue breakdown (Btm)



Source: Company, DBSVTH

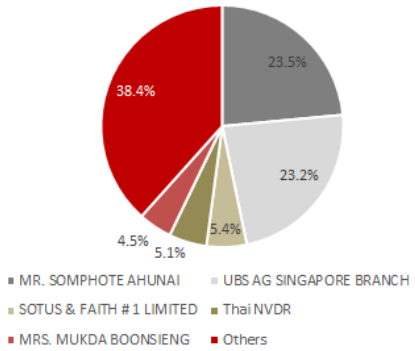
Revenue breakdown (%)



Source: Company, DBSVTH

Major shareholders. EA's major shareholders are Mr. Somphote Ahunai (23.50% stake), UBS AG Singapore Branch (23.23%), Sotus & Faith #1 Ltd (5.36%), Thai NVDR Co., Ltd (5.05%), Mrs. Mukda Boonsieng (4.48%) and Luchai Phukhuan-Anadha (3.90%). Note that total shares from top ten largest shareholders account for c.72% of total share outstanding.

Major shareholders



Source: Company, DBSVTH

Business Overview

Biodiesel business

In this segment, EA is involved in the production and distribution of biodiesel products, namely biodiesel (B100), purified glycerine and by-products. It has obtained an oil trader licence pursuant to Section 7 of the Fuel Trade B.E.2543. This licence is mandatory for oil traders whose annual trade volume for each type of fuel or all types of fuels collectively exceed 100,000k tonnes or 120m litres.

Furthermore, EA is also conducting research and development on high value-added biodiesel using crude palm oil as a primary material. Such research and development activities are derived from a biodiesel production method called Phase Change Materials (PCM) and are conducted by its subsidiary company – EA Bio Innovation Company Limited.

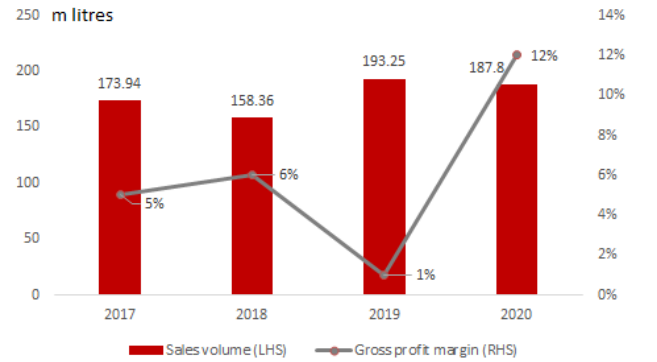
Currently, PCMs are in demand in many countries that are aiming to reduce energy consumption or use resources more efficiency. By the way, the use of crude palm oil also helps to support the local oil palm planters and promote the price stability of crude palm oil.

Biodiesel (B100) is a liquid fuel produced from vegetable oil and animal fat, such as crude palm oil and refined bleached deodorised palm oil, with stearin being engaged in a chemical reaction called trans-esterification process in triglyceride to combine with alcohol such as methanol to generate ester substance. As ester substance has similar properties with diesel fuel, it can be a direct substitute for diesel fuel and takes on the name of B100 biodiesel. B100 biodiesel refers to a fuel that contains only biodiesel elements. EA has enhanced its production process to ramp up its daily production of B100 from 650k litres to 800k litres at the end of 2020.

Note that its gross profit margin dropped to 1% in 2019 due to product improvement initiatives that were announced to the Department of Energy Business. The Ministry of Energy has reduced the proportion of B100 with monoglyceride from 0.7% to below 0.4%. As a consequence, EA's production of B100 decreased from 800k litres per day to 650k litres per day.

The revenue contribution on a consolidated basis from the biodiesel business averaged c.30% from 2017 to 2020, while its gross profit margin moved in the range of 1-12% during the same period.

Biodiesel performance

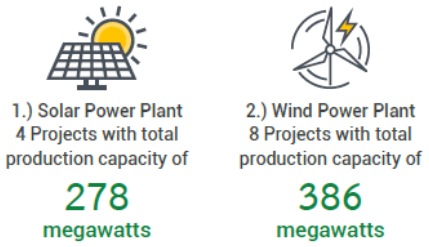


Source: Company, DBSVTH

Renewable business

EA has expanded this business to include the production and distribution of solar and wind electric power. The aim is to maximise the utilisation of resources within the country by complying with government policies that promote the production of electricity from renewable sources to reduce the dependence on imported energy and to ensure energy security. At present, EA operates 12 projects (664MW) that include i) four solar projects with a capacity of 278MW, and eight wind farm projects with a capacity of 386MW.

Renewable business



Source: Company, DBSVTH

i) Solar project (four projects, capacity of 278MW)
EA's three solar power plants at Nakhonsawan, Lampang, and Phitsanulok are classified as Small Power Producers (SPP), while its Lopburi project is classified as a Very Small Power Producer (VSPP).

EA has signed power purchase agreements (PPAs) of five years with the Electricity Generating Authority of Thailand (EGAT) for most of its solar projects (for the Lopburi project, it has only an agreement with the Provincial Electricity Authority (PEA)). The default valid renewal period is five years under the condition that a party who wishes to renew the agreement must

inform the other party in writing at least 30 days before the expiration date of the agreement.

Moreover, all of its solar projects were granted the Adder privilege for renewable energy VSPP/SPP of Bt8.50/6.50 per unit for 10 years from the commercialisation date.

Its solar farm projects were also granted tax benefits by the Board of Investment (BOI) for eight years in terms of corporate income tax exemption and 50% reduction of corporate income tax on net profit derived from promoted activities for five years.

Renewable business – solar farm projects

Project	Capacity (MW)	COD	Adder (Bt/kWh)	Buyer
Lopburi	8	17 Oct12	8	PEA
Nakhonsawan	90	23 Dec 13	6.5	EGAT
Lampang	90	17 Feb 15	6.5	EGAT
Phitsanulok	90	1 Apr 16	6.5	EGAT
Total	278			

Source: Company, DBSVTH

ii) Wind project (eight projects with capacity of 386MW)
The eight wind farm power plants under the management of EA are classified as SPPs, with each farm being tied down by PPAs between EA and the EGAT for five years. The valid default renewal period for each farm is five years under the condition that a party who wishes to renew the agreement must inform the other party in writing at least 30 days before the expiration date of the agreement.

Moreover, all of its wind farm projects were granted Adder privilege for renewable energy SPP of Bt3.50 per unit for 10 years from the commercialisation date.

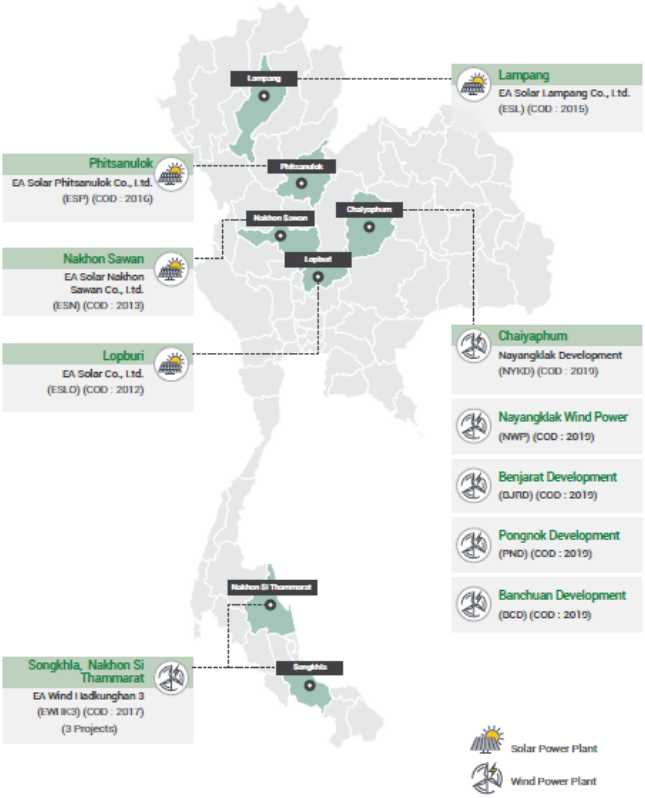
They were also granted tax benefits by the Board of Investment (BOI) for eight years in terms of corporate income tax exemption and 50% reduction of corporate income tax on net profit derived from promoted activities for five years.

Renewable business – wind farm projects

Project	Capacity (MW)	COD	Adder (Bt/kWh)	Buyer
Hadkanghan 1	36	3 Mar 17	3.5	EGAT
Hadkanghan 2	45	10 Jun 17	3.5	EGAT
Hadkanghan 3	45	24 Jun 17	3.5	EGAT
Hanuman 1	45	25 Jan 19	3.5	EGAT
Hanuman 5	48	22 Mar 19	3.5	EGAT
Hanuman 8	45	25 Jan 19	3.5	EGAT
Hanuman 9	42	30 Mar 19	3.5	EGAT
Hanuman 10	80	13 Apr 19	3.5	EGAT
Total	386			

Source: Company, DBSVTH

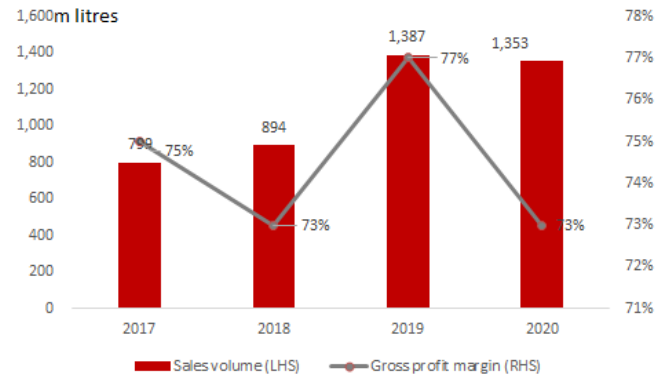
Renewable business



Source: Company, DBSVTH

The revenue contribution on a consolidated basis from the renewable business averaged c.65% from 2017 to 2020, while its gross profit margin moved in the range of 72-77% depending on wind speed, light intensity, and Ft rate during the same period.

Renewable performance



Source: Company, DBSVTH

Other businesses

i) Battery business

To enhance its competitiveness in the renewable energy business and to comply with the business operation policies of EA Group, EA has acquired ordinary shares of Amita Technologies Inc. (AMITA-Taiwan) in Dec 2016, a company incorporated under the law of Taiwan, the Republic of China (ROC) and listed on the Emerging Stock Market of the Stock Exchange of Taiwan to operate the lithium-ion polymer battery development and manufacturing business.

At present, EA has acquired newly-issued ordinary shares of Amita Technologies Inc. Upon the acquisition, it will own 96,609,821 shares in AMITA-Taiwan, representing 65.61% of its total issued and paid-up shares. In addition, EA has established a subsidiary, i.e. Amita Technology (Thailand) Co., Ltd. to develop, manufacture, and distribute lithium-ion batteries.

Generally, lithium-ion battery is an energy storage device that can store a high volume of electric charge. After electricity is used up, the battery can be recharged as it contains chemicals that can react to changes to their former form by putting electricity into the equipment called "changer."

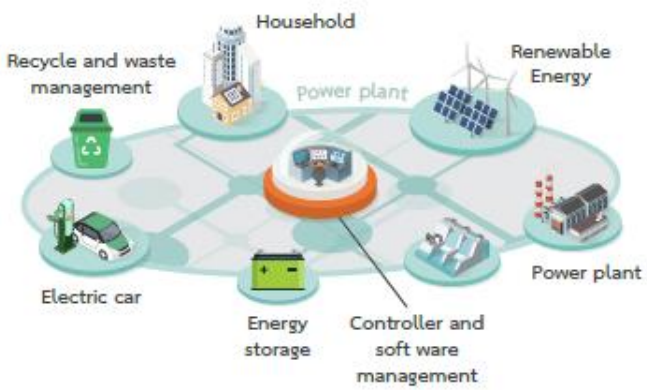
To enhance the performance of its battery products, EA has incorporated the following properties for its lithium-ion batteries: i) high volume of energy, ii) light weight, and iii) longer useful life. Besides the fact that its lithium-ion batteries do not use chemicals that are hazardous to environment, such as acid liquid or lead, they also have STOBA components to ensure a higher level of safety when they are used – this can reduce the amount of heat emitted during changing to mitigate the risk of battery explosion.

EA is committed to developing and manufacturing lithium-ion batteries for a diverse range of applications, as follows:

a) EVs
The use of EVs, including electric passenger cars, electric trucks and electric transport boats, can help reduce pollution arising from internal combustion engines, the use of fuel oil, and the emission of exhaust gases into the air. The use of electric power in automobiles is a form of alternative energy than can efficiently replace fuel energy. This is becoming increasingly important amid growing concerns over global warming, as lithium-ion batteries can be a cleaner source of core power for electric automobiles that can contribute towards saving the environment.

b) Energy storage system (ESS)
ESS refers to a system and equipment that can change electric power or electricity to other forms of power, so that electricity can be stored for use when needed, and will change the stored energy to electric power again when electricity is needed. ESS is very essential to electric systems in the future as it can help stabilise the electricity generating system and maintain consistent electricity quality. In addition, on top of supporting the change of electrical loads at appropriate times. For example, when electricity generated exceeds the existing electrical load, instead of throwing the excess energy away, it can be stored in ESS for use during periods of lower electricity generation. This will ensure overall smooth energy management.

ESS Ecology



Source: Company, DBSVTH

ii) Charging station business

EA has expanded its business to electric charging stations for electric vehicles under the "EA Anywhere" brand. This is operated by Energy Mahanakhon Company Limited, a subsidiary of EA. Its objective is to promote the use of clean energy in the automobile industry by reducing greenhouse gas emissions and also the use of renewable energy that is environmentally friendly in place of fuel energy in the country's transport system. This is also in response to the development of infrastructure in preparation for electric automobile innovations or the next generation automotive industry.

Electric charging stations provide charging services for electric automobiles, including plug-in hybrid electric vehicles (PHEVs) and battery electric vehicles (BEVs). Its electric charging stations are based on conductive charging technology. During the charging process, EVs will be connected to the chargers using cables (or charging cables) that are widely available nowadays.

The charging of EVs is available for direct current and alternating current. Alternating current can be charged up to 44kWh, depending on the onboard charger of each automotive model. Meanwhile, direct current chargers can accept charges of up to 150kWh.

At the end of Nov 2020, the total number of charging stations in Thailand for EVs stood at 1,611 stations (EA with a 82% market share). This can be categorised into DC chargers (559 stations) and AC chargers (1,052 stations).

Charging stations

											Total
No. of Locations	405	86	68	25	16	13	11	10	7	6	647
AC (Normal Charge)	1052	26	48	33	38	7	13	11	12	18	1220
DC (Fast Charge)	559*	80	32	0	1	9	13	12	0	0	706
Total Chargers	1,611	106	80	33	39	16	26	33	12	18	1,974

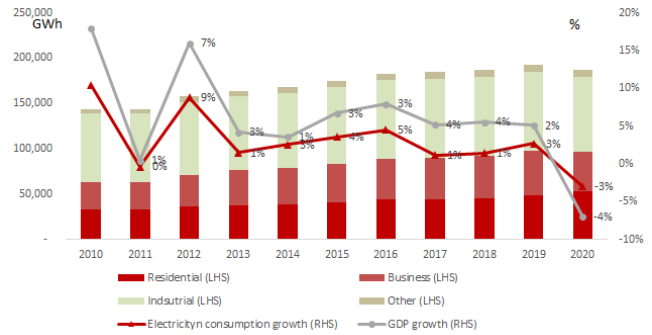
Source: Company, DBSVTH

Industry overview

Power business

Electricity demand grows along with domestic GDP growth. Electricity demand in Thailand has continued to increase at an average annual clip of c.3% over 2010-2020, which is in line with the domestic GDP growth rate of 2.9% over the same period. Based on the Power Development Plan (PDP) 2018, electricity demand is expected to increase at an average annual CAGR of 3% over the next five years, compared with an expected annual GDP growth of 3.8% over 2018-2037. Thus, higher energy efficiency is believed to be the key reason behind the slower growth of electricity demand compared to economic growth.

Electricity demand growth and domestic GDP growth



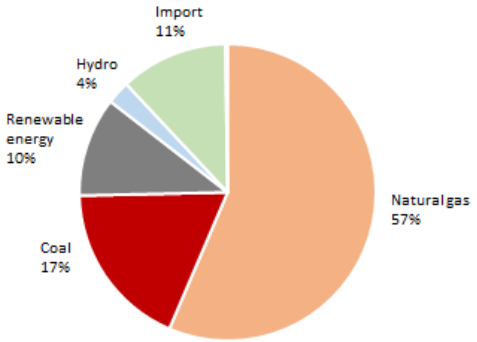
Source: EPPO, DBSVTH
Note: Ithers include non-profit organisations, public usage, agriculture players, and EV charging stations.

Power plants offer stable revenues. Thailand's electricity generating sector is considered to be one of the most stable businesses in Thailand for private operators given the long-term power purchase agreement with EGAT that is still the major power supplier in Thailand. Nonetheless, new business opportunities appear to be limited due to the current excess capacity while demand growth is slower than previously expected due to the COVID-19 pandemic and economic slowdown. The only bright spot in the sector is renewable energy power plants, which are currently promoted by the government to reduce the heavy reliance on fossil fuel, especially gas, and to reduce the environmental impact of power generation.

Natural gas still a primary source for power plants. Thailand's primary source of power production is still natural gas from the Gulf of Thailand, Myanmar and imported LNG – making up 54% of Thailand's total electricity generated, followed by clean coal (17%) and renewable energy (13%). As at end-January 2021, Thailand's installed electricity generation capacity was 45,476MW. As Thailand is one of the leaders in Southeast Asia in solar and wind energy production, we are starting to see a shift in the country's electricity generation to solar power and wind farms over time, but we believe gas will remain the mainstay. According to the new Power Development Plan (PDP) 2018, total electricity generation capacity is set to increase to 77,211MW by 2037, 10% higher than the target of 70,335MW under the earlier plan (PDP 2015).

The Ministry of Energy has projected an additional (net) new power capacity of 56,431MW over 2018-2037, after the expected closure of c.25,310MW during the period. Thus, contribution from natural gas is expected to increase substantially from 37% to 53% in 2037, led by an increase in installed capacity of c.8,300MW.

Power generation by type of fuel (2M20)



Source: EPPO, DBSVTH

Targets set under PDP2018 vs. PDP2015

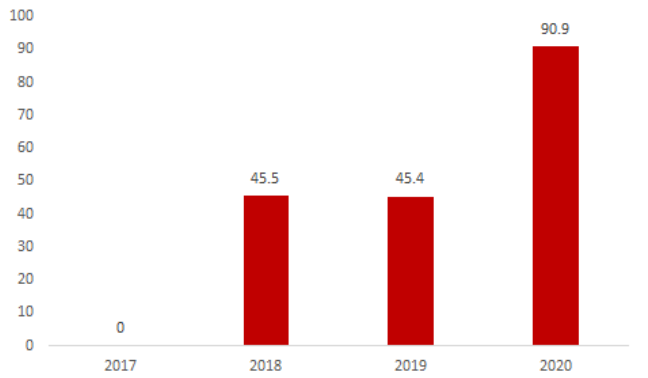
Fuel	PDP2015	PDP2018
Natural gas	37%	53%
Coal	23%	13%
Hydro	15%	9%
Renewable	20%	18%
Nuclear	5%	0%
Other	0%	6%
Total	100%	100%

Source: EPPO, DBSVTH

Uptrend of power usage in transportation sector. In 2020, the electricity used in EV charging stations has more than doubled from that of 2019. Corresponding to the number of battery electric vehicles (BEVs) in 2020, there were new EV registrations of c.3,000 or an average of 250 vehicles per month. This is a lot higher than the average of the previous year, i.e. new EV registrations at 130 units per month.

The cumulative EVs registered at end of December 2020 was 5,685 vehicles, with an average retail price of Bt2.64 per unit (for voltages of less than 22kV).

Total electricity usage in electric vehicles (kwh)



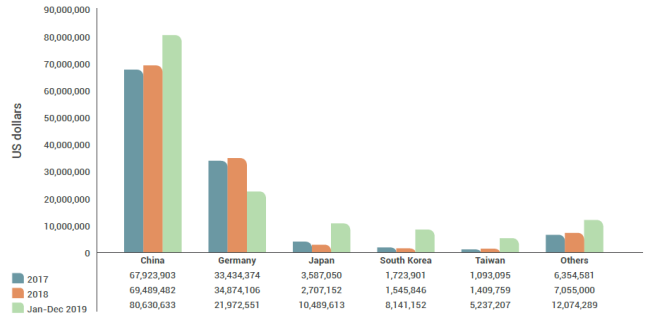
Source: EPPO, DBSVTH

Battery business

Battery import value CAGR of c.10% over 2017-2019 in Thailand. Generally, most lithium-ion batteries used in Thailand ae imported. In 2019, Thailand's lithium-ion battery imports amounted to US$138.5m by value, +15.5% y-o-y. This implies a CAGR of c.10% since 2017. Specifically, imports from China formed the largest proportion with a total value of US$80.6m with a market share of 58.20% and growth rate of 13.82% y-o-y.

Currently, Thailand still imports lithium-ion batteries in large volumes. Any future increase in investment in lithium-ion battery manufacturing will help reduce import and import costs. In addition, this provides opportunities for manufacturers of lithium-ion battery components, infrastructure and equipment, such as wireless charging devices and charging stations for EVs, etc (that will be discussed in the following sections).

Thailand's imports of lithium-ion battery during 2017-2019



Source: Company, Ministry of Commerce, DBSVTH

Declining lithium-ion battery costs, thanks to technology advancement. In 2019, the IEA estimated that the average lithium-ion (li-ion)battery cost dropped to US$156 per kilowatt-hour (kWh), with the current technology able to increase the average battery capacity used in light passenger cars (both BEVs and PHEVs) by 44 kWh (higher vs. 2018's average capacity of 37 kWh).

However, battery capacity in many countries ranges from 50-70 kWh for BEVs. We expect lithium-ion batteries to remain popular in the next 5-10 years and they will continue to be developed to achieve higher efficiency (e.g. faster charge rate, ability to store more lights, higher power supply, longer service life, more safety features, and lower production costs). This will help reduce the cost of ownership of EVs, perhaps to a level that approaches that of fuel-powered cars sometime in the future.

Based on Bloomberg's latest survey in early December 2020, the average lithium-ion battery cost has dropped to US$137 per kWh and this is expected to decline to US$101 per kWh by 2023.

Uptrend of EV usage bodes well for battery demand . The booming EV car market will also benefit the EV-related businesses of EA. These businesses include: i) battery business (manufacture and sale of batteries, maintenance of original batteries, battery replacement, battery recycling, etc.), ii) maintenance services for EV engines, iii) EV taxis, iv) design and installation of electric charging equipment in residential buildings, offices and commercial buildings, and v) development of services and products to facilitate the use of EVs.

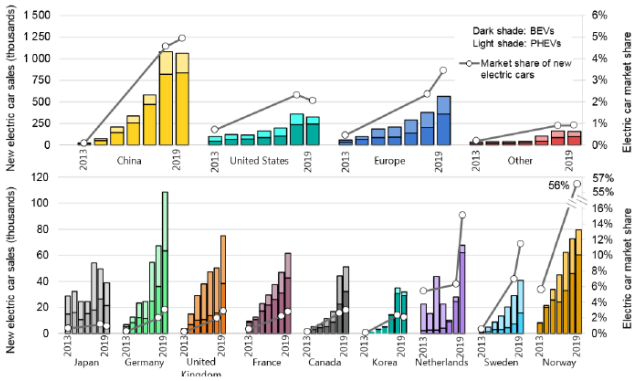
Global EV sales growth of c.60% over 2014-2019. In 2019, the global registration of light duty EVs amounted to 7.17m units, representing an increase of 40% from 2018 and an average annual growth of 60% over 2014-2019. Specifically, battery electric vehicles (BEVs) accounted for 67% of the total number of such cars in 2019, and the remaining 33% were electric hybrid vehicles that need to be plugged in and charged – known as a plug-in hybrid electric vehicles (PHEVs).

The top EV-consuming countries/regions are as follows;

i) China (3.35m units, 47% of global sales volume, +46% y-o-y)
ii) Europe (1.7m units, 25% of global sales volume, +49% y-o-y)
iii) The US (1.5m units, 20% of global sales volume, +29% y-o-y)

Global sales of EVs came in at 2.1m units (+6% y-o-y) in 2019, accounting for 2.6% of total global car sales and with BEVs still being more popular than PHEVs.

Passenger EV sales and market share during 2013-2019



Source: IEA, DBSVTH

Global EV sales volume CAGR of c.13% expected during 2019-2030. Due to environmental concerns, many countries are continuing to promote the use of EVs. This includes setting targets for reducing greenhouse gas emissions in the transport sector, limiting the level of carbon dioxide emissions, setting goals to increase the sale and registration of EVs, and monetary incentives to support the use of EVs by entrepreneurs and consumers. In this regard, the policy to discourage the sale of fuel-based vehicles or promote the sale of only EVs will become clearer in many countries from 2035 onwards.

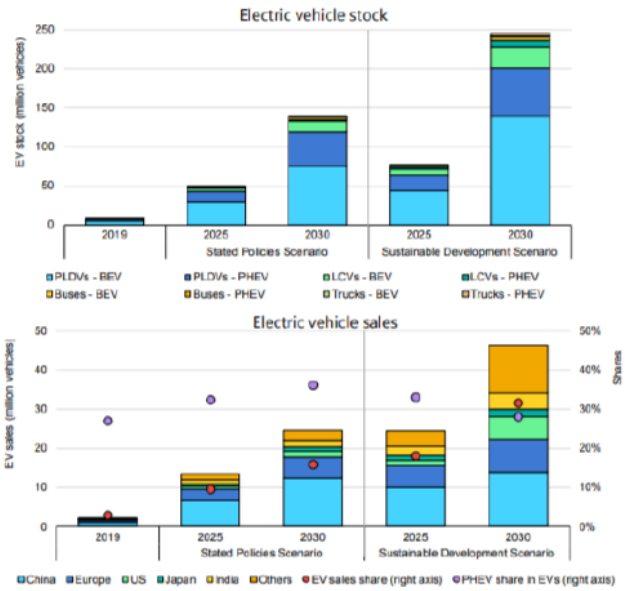
Beside environmental concern, more than 30 automakers also announced their marketing campaigns for the launch of new EVs in the near future. These includes:

i) BMW (Germany) plans to launch two new EVs in 2022.
ii) Ford (US) plans to launch more than 20 EVs by 2023.
iii) Honda (Japan) plans to launch four EVs by 2022.
iv) Kia (South Korea) plans to launch 12 EVs by 2025.
v) MG (China) plans to launch one EV in 2021.
vi) Tesla (US) plans to launch four EVs by 2022.

Based on the IEA's projection, the strong global EV consumption growth over 2025-2030 will see c.25m units per annum of EVs sold worldwide with a cumulative sales of about 140m units. This translates into a CAGR of 13% during 2019-2030. However, there is the potential for global sales to increase to more than 45m units per annum with cumulative worldwide sales exceeding 245m units if all nations join in advocating the EV30@30 policy (a policy that aims to realise multiple benefits offered by electric mobility for innovation, economic and industrial developments, energy security, and reduction of local air pollution). Thus, this will lead to the widespread use of all types of EVs worldwide (excluding 2-wheel vehicles), thus boosting EV's market share to 30% by 2030.

Note that small passenger cars are expected to enjoy the highest annual and cumulative sales. China, Europe, the US and India are expected to have significant sales growth for EVs in the next 10 years.

Global EV stocks and sales by scenario by 2030



Source: IEA, DBSVTH

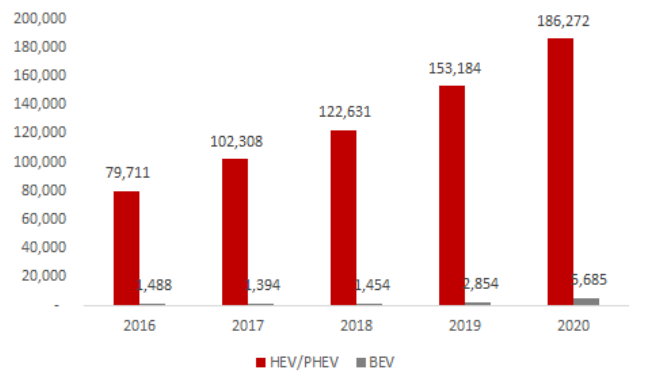
Uptrend for Thailand's EV imports. The value of Thailand's EV imports is growing, along with the availability of a wider variety of EV models domestically to provide more options to general and commercial users. According to the IEA, Thailand has a small registered EV base (light duty vehicle) of nearly 19,400 vehicles (of which, 890 are BEVs and 18,480 are PHEVs) in 2019, representing an increase from about 9,000 vehicles in the previous year.

Thailand's EV sales volume CAGR of c.20% over 2015-2020. Based on data compiled by the Electric Vehicle Association of Thailand, HEV/PHEV sales grew at a CAGR of 19% from 79,711 to 186,272 vehicles over 2016-2020 and BEV sales at a CAGR of 31% (from 1,488 vehicles to 5,685 vehicles).
At the end of 2020, the total number of new EV registrations in Thailand stood at 35,263 vehicles, including cars, motorcycles, buses, trucks and three-wheelers (representing

a 10% increase from 2019). This can be broken down into 32,264 HEVs/ PHEVs (a 5% increase from 2019) and 2,999 BEVs (a 91% increase from 2019).

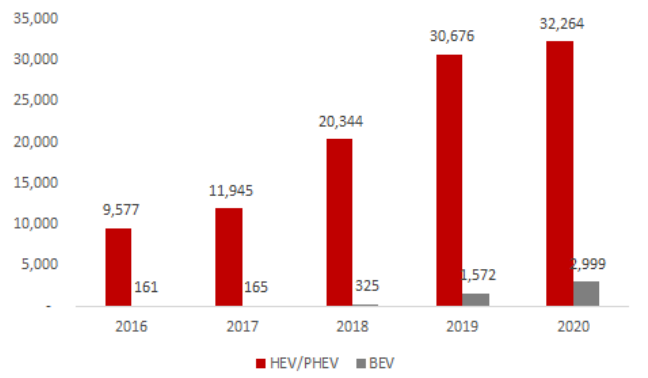
Additionally, the total number of public EV charging stations, as of 18 November 2020, stood at 647 locations nationwide. These included 10 service providers offering a total of 1,974 power heads (1,220 slow chargers and 706 fast chargers).

Total registered EVs in Thailand from 2016-2020



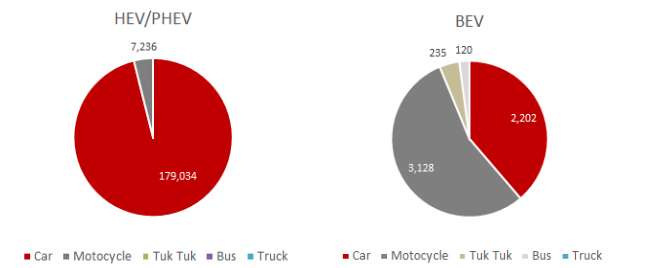
Source: EVAT, DBSVTH

New registered EVs in Thailand from 2016-2020



Source: EVAT, DBSVTH

New registered EV breakdown by type



Source: EVAT, DBSVTH

SWOT Analysis

Strengths	Weakness
• One of top seven largest biodiesel manufacturers with a capacity of 800k litres/day (Thailand's total capacity stood at c.9m litres/day). • Steady revenue and cashflow from the power business (c.70% of consolidated revenue) whose selling prices and volumes are secured by PPA contracts. • One of the first domestic battery makers whose first phase capacity of 1Gwh will start commercialisation by 2Q21F. • Ability to capture opportunities in the battery value chain, as it operates upstream (via battery manufacturing) and downstream (via EV assembly plants for cars, buses and taxis and being a provider of ESS solutions). This is thanks to the JV with NEX and its investment in AMITA Taiwan. • Largest market share (c.80%) of EV charging stations in Thailand that are mostly located in major public areas such as shopping malls.	• Inability to control light intensity, wind speed, and Ft rate that could adversely affect its power business's performance. • Adder privileges for solar projects at Lopburi (8MW) and Lampang (90MW) will expire by the end of 2023 and 2025 respectively. • Higher leverage level vs peers' c.0.6-0.8x, with its 2021F net D/E projected to come in at c.1.0x.
Opportunities	**Threats**
• Thailand's post-COVID-19 economic growth is expected to be strong. This implies a stronger pulse for industrial and manufacturing activities and hence, higher electricity consumption over time. • The potential to win bids for renewable power plant projects domestically and internationally (especially hydro power projects in Laos). • Ample opportunities arising from the robust growth in demand for batteries, EVs and energy storage systems. • Expansion into downstream EV/battery businesses, such as EV assembly plants and service providers. This encompasses EV cars, buses, taxis, and ferries,	• Uncertainties on the regulatory front regarding the new PDP2018 plan and new SPP scheme. • Uncertainties over the Ministry of Energy's biodiesel policy that could adversely affect B100 demand and prices. • Declining battery prices due to technology advancements. • New players with competitive cost advantages coming into the battery markets.

Source: DBSVTH

Critical Factors

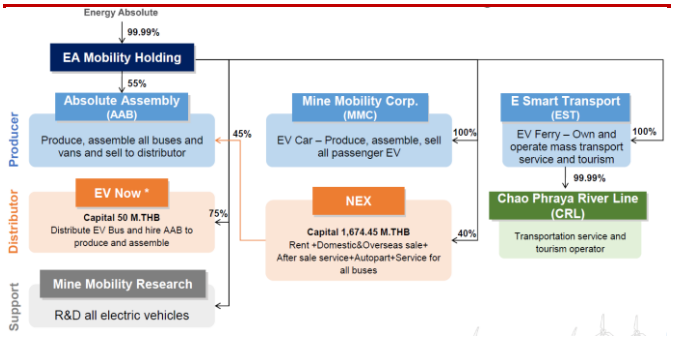
Opportunities in battery value chain. In 2019, EA started designing and launching electric cars under the "MINE Mobility" brand and SPA1 model under Mine Mobility Corp – one of EA's subsidiaries. MINE Mobility is a multipurpose electric car, that is 100% driven by electricity using batteries manufactured by EA Group – which is a new car business operator in the industry that has several entrepreneurs or business operators, especially the big ones with large production capacity.

Moreover, EA has formulated a strategy to focus on the segment that can fill the gaps in the market, i.e. public service vehicles or taxis, by investing in a joint venture with Next Point Parts (NEX TB) that provides after sales services for e-bus.

Moreover, the NEX factory is located next to EA's EV car assembly plants. Hence, there are synergy benefits arising from sharing manpower, technology, and equipment. Moreover, EA has secured the e-bus order for approximately 1,000 buses.

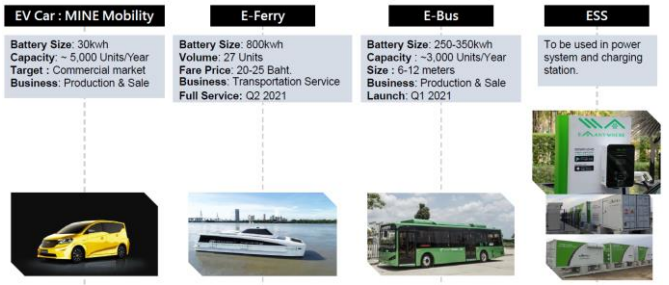
We expect an IRR of c.15% for EV cars and e-bus, with strong cash flow expected for these projects in the future. However, the e-ferry project will generate low IRRs, as it is a public service vehicle that mainly serves to demonstrate EA's technology prowess. Moreover, EA enjoys tax-free privileges from the Board of Investment (BOI) for the first eight years after the commercialisation of its EV business and 50% tax reduction for the next five years.

EA's EV business structure



Source: Company, DBSVTH

EA's electric vehicle business structure



Source: Company, DBSVTH

Expect BMTA's e-bus tender to take place in 2021. We expect the tender for Bangkok Mass Transit Authority's (BMTA) electric bus (e-bus) project to take place in 2021F. However, we are aware of the specific timeline for the auction but it should materialise in 2H21. According to EA's management, the auction will happen sometime after the approval of the Terms of Reference (TORs) by the cabinet, which has been postponed since Oct 2020. Currently, the Ministry of Transport (MOT) is reviewing the auction details before asking for the cabinet's approval.

EA is confident of clinching this project as it appears to have the best fit with regard to meeting most of the tender criteria, such as i) energy usage reduction, ii) energy cost reduction, and iii) less carbon emission.

Opportunity to win EV order of c.5000 units for union taxi. The Vehicle Act B.E. 2522 requires the useful life of each taxi car to not exceed nine years from the date of registration to ensure public cars are in good and safe condition to serve the general public. Hence, the number of taxis that will reach the end of their useful lives (after which, their services will be terminated) in each year is shown in the table below.

Useful life of taxis

Registration date	Individual person vehicles (units)	Juristic person vehicles (units)	Total (units)	Useful life ending year	Remark
Jan-Dec 2005-2008	6,884	25,380	32,264	2017	Expired
Jan-Dec 2009	1,872	8,277	10,149	2018	
Jan-Nov 2010	1,765	5,018	6,783	2019	
Dec 2010	136	411	547	2020	Useful life ended on the date and in the month matching those of registration
Jan-Dec 2011	2,649	5,257	7,906	2020	
Jan-Dec 2012	3,969	4,914	8,883	2021	
Jan-Dec 2013	5,022	3,934	8,956	2022	
Jan-Dec 2014	3,437	2,778	6,215	2023	
Jan-Dec 2015	5,526	4,491	10,017	2024	
Jan-Dec 2016	5,027	3,240	8,267	2025	
Jan-Dec 2017	4,546	3,776	8,322	2026	
Jan-Dec 2018	5,736	8,560	14,296	2027	
Jan-Nov 2019	2,972	3,892	6,864	2028	
Total	39,020	41,253	80,273		

Source: Company, DBSVTH

Note that there are c.8,880 taxis that will see the end of their useful lives in 2021. As a result, we anticipate the opportunity for EA to clinch EV car orders of up to 5,000 units (equivalent to EV's car assembly capacity of 5,000 units per year) for use as taxis. Moreover, the taxi market requires no advertising and public relations budget, or other marketing expenses, unlike other users. Hence, the prices can be set close to those of its competitors.

For public taxis, EA will focus on presenting its strengths, i.e. battery safety (it uses technology that prevents short circuits that might trigger explosions and fires) and lower energy expenses compared with the use of fuel oil and gas, coupled with the availability of energy charging stations for EVs and after-sale maintenance services for taxis and general customers.

Electricity tariff downtrend for power business from 2023. The electricity tariff of EA's sales to EGAT and PEA customers is based on the base tariff, plus i) adder privilege that is subsidised by the government, and ii) fuel adjustment charge (Ft rate) that is based on fuel cost, inflation rate and foreign exchange rate.

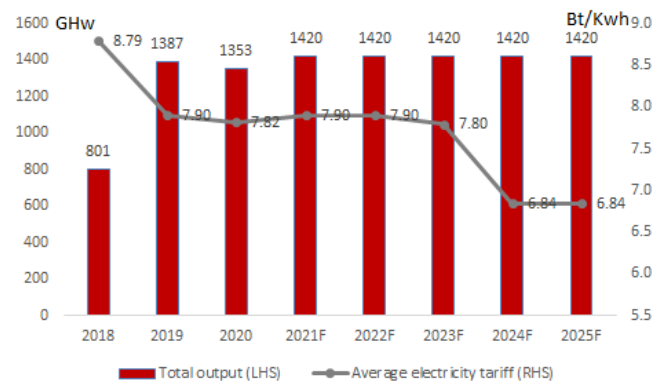
Generally, the adder privilege for solar far is Bt8.5/unit for the Lopburi solar project and Bt6.5/unit for remaining three solar projects (Lampang, Nakornsawan and Phitsanulok).

As at end-2020, tariff rates averaged Bt9.74/unit (-0.8% y-o-y) for solar power plants and Bt6.20/unit (-2% y-o-y) for wind farm plants. The decline in tariff rate is due to downward adjustment for the Ft rate (fuel adjustment charge) as energy cost dropped (on declining fuel oil and LNG prices) due to the outbreak of the COVID-19 pandemic.

Going forward to 2021F-2022F, we expect an upward adjustment for the Ft rate as oil prices have bounced back from US$40/bbl in 2020 to US$60/bbl in 2021F. As a result, we expect to marginal improvements for the average tariff rate for 2021F-2022F.

However, the adder subsidy for some of its solar projects will expire in 2023 and 2024, including i) the Lopburi solar farm with 8MW installed capacity, and ii) the Nakornsawan solar farm with 90MW installed capacity. As a result, we expect the profitability of its renewable business to decline from 2023 onwards, holding all other factors constant.

Power business – electricity sales volume and tariff rate



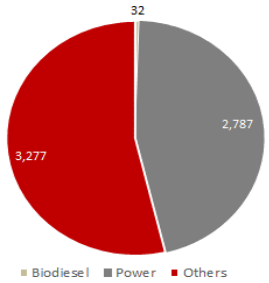
Source: Company, DBSVTH

Based on our sensitivity analysis of electricity tariff on consolidated EBITDA, every Bt0.10/unit change in the average electricity tariff rate will result in a change of c.Bt130m in 2021F consolidated EBITDA – or c.1.1% of our baseline.

Most of 2021F capex will go to battery business. EA has set c.Bt6.1bn of capital spending in 2021F, of which the majority will go to the battery and application businesses, such as battery manufacturing plants and the EV value chain business. The c.Bt6.1bn can be broken down into:

i) Biodiesel business – c.Bt32m investment in small machinery and equipment for Phase Change Material or BioPCM.
ii) Power business – c.Bt2,782m for new renewable energy projects such as hydro power plants and solar farms. This also includes spending on improving existing solar plants.
iii) Other businesses – An amount of c.Bt3,277m will be spent on the battery and downstream businesses. Specifically, c.Bt1,223m will be spent on the first phase of the battery manufacture plant with a capacity of c.1.0Gwh whose maiden revenue contribution is expected in early 2Q21F. Another c.Bt1,506m will be spent on the assembly lines of e-bus and e-ferry, and c.Bt426m on the expansion of EV charging stations nationwide.

2021F capital expenditure



Source: Company, DBSVTH

Key Risks

Market risks

Biodiesel manufacturing and distribution industry. Competition tends to intensify due to the expansion of production capacity by existing manufacturers and the entry of newcomers. As such, EA has to counter the risks of higher competition in the domestic market by offering discounts on biodiesel prices that are announced by the government from time to time etc.

Renewable energy manufacturing and distribution Industry. As this is an industry with high growth potential and good returns on investment, competition from both existing and new players has been intensifying and the same goes for its home and overseas markets. Thus, the expected rates of returns are in a downtrend.

However, EA has a strategy of adopting high technologies via the use of power storage systems to differentiate itself from its competitors (that could act as a barrier to entry). This includes offering renewable power generating systems in conjunction with energy storage systems as a total solution to satisfy the needs of various electricity users.

Energy storage or lithium-ion battery industry. Competition in this market is based on the ability to develop batteries with longer useful lives, lower costs and higher electricity storage capacity. These batteries need to meet various electric power applications, e.g. usage in short periods of time and diverse industries with high safety standards. Intense competition can be seen in the ongoing quest to develop new models with better quality.

EA has employed a strategy of collaborating with institutions that have ready-to use advanced technologies and skilled personnel in Taiwan and Thailand to develop new products. EA has also specially-trained and highly-qualified personnel on hand to undertake the adoption of new technologies.

In addition, EA is ready to invest in a lithium manufacturing plant project with a generating capacity of 50GWh per year. Apart from having the most advanced technologies in ASEAN, the company is also able to keep its costs at a low level and compete with other manufacturers well.

Business risk

Risk of dependence on large customers. For the biodiesel business, EA relies on 6-7 large customers under sales agreements. This ensure that sales to each customer will not exceed 30% of its total revenue.

For the renewable power business, EGAT and PEA are sole buyers of EA's electricity using PPA contracts. The contractual period is five years from the date of commercialisation. The renewal of these agreements can be made for five years each unless any of the contract parties terminates the agreements.

Risk of change in electricity offtake rate. Solar and wind power plants may not be able to operate normally if there are natural disasters or abnormal weather conditions, such as the incidences of stronger-than-normal winds, flash floods, lightning strikes, etc. These incidents may lead to damages to machinery and equipment, or the acceleration of their wear and tear.

Financial risks

Risks may arise from the automatic adjustment of electricity tariff or Ft that the Energy Regulatory Commission (ERC) announces every four months with reference to uncontrollable fuel costs in the production of electricity, i.e. fuel prices, inflation rate and foreign exchange rate. Therefore, revenues from electricity sale will be determined by the Ft rate to a certain extent.

Risks of investment returns lagging behind projections. EA's decisions to invest in new projects depend on the returns on investment for such projects. EA will need to take into account the nature of the new projects, as well as their investment risks and returns, including specific mandatory tools and equipment that need to be imported – such as solar panels, wind turbines, and EV chargers, etc. Each new project also comes with its own set of specific risks such as forex volatility, demand and supply fluctuations, and cost overrun risks.

Compliance risks

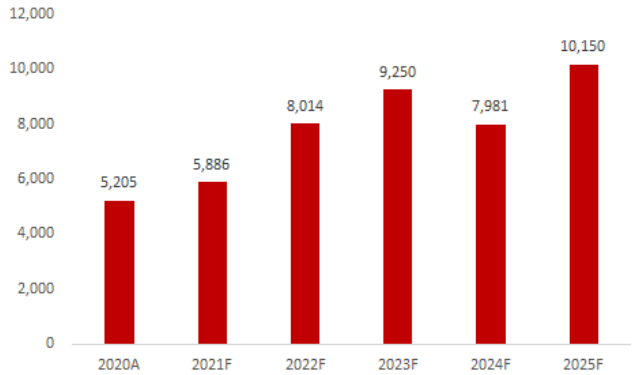
Policy on biodiesel business. Any change in the energy policy of the government will be done with the aim of optimising palm oil supply for use as fuel within the country. This is an external factor that is beyond EA's control. As a result, any negative change in B100's blended component in biodiesel could adversely affect the demand, prices and margins of its biodiesel business.

Policy on renewable power plant business. The country's masterplan on alternative energy development underlines the priority and promotion of the proportionate use of alternative or renewable energy to reduce environmental impact and increase Thailand's dependence on domestic energy sources in place of imports. However, in practice, the implementation of the policy seems to be delayed since 2019. Such uncertainties could adversely affect the prospects of the renewable energy industry.

Financials

Net profit CAGR of c.14% over 2020-2025F. We project its net profit to grow at a CAGR of 14.1% over 2020-2025F, i.e. from Bt5.2bn in 2020 to Bt610.15bn in 2025F. This is supported by i) expected uptrend of Ft rate due to rising oil prices in 2021F, ii) strong B100 demand after the government increased the B100 component in pure diesel fuel from B7 to B10, iii) expectations of maiden revenue from the first phase of the battery business with a capacity of 1Gwh (COD in 2Q21 and will be increased to 4Gwh in 2025F), and iv) first sale of e-bus in 2H21F.

Net profit CAGR of c.14% over 2020-2025F (Btm)



Source: Company, DBSVTH

Sensitivity analysis of net income. We carried out a sensitivity analysis of FY21F net profit based on changes in i) weighted average tariff, and ii) electricity sales volume, as follows:

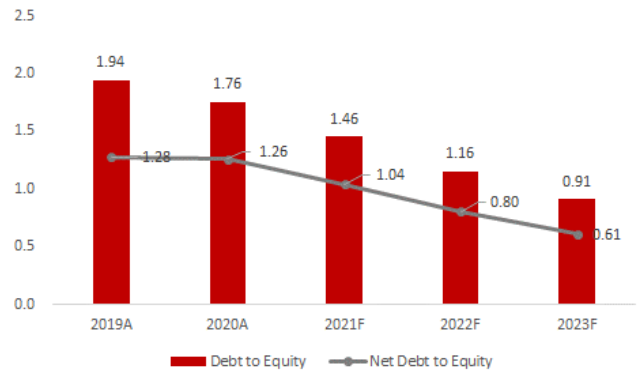
i) Net profit will change by c.Bt110m per year, for every Bt0.10/Kwh change in the weighted average tariff rate – that could arise from changes in Ft rate (that is announced by the government) and base tariff, holding all else constant. We assume no income tax being applied to the power business since all solar farms are entitled to BOI tax privileges.

ii) Net profit will change by c.Bt536m per year, for every 0.10Gwh change in total electricity sold to EGAT and PEA – that could arise from changes in light intensity and/or wind speed, holding all else constant. We also assume no income tax being applied to the power business since both solar and wind farms are entitled to BOI tax privileges.

Expect leverage to head south in next three years. We expect EA's leverage to fall gradually over 2021-2023F, assuming an annual capex of c.Bt6.0-7.0bn over 2021-2023F. This is thanks to the steady income and cashflow stream from the power business of c.Bt7.0bn per annum.

Hence, we expect its debt-to-equity and net debt-to-equity ratio to fall in the next three years (2021-2023F) to 0.91x and 0.61x by 2023F respectively.

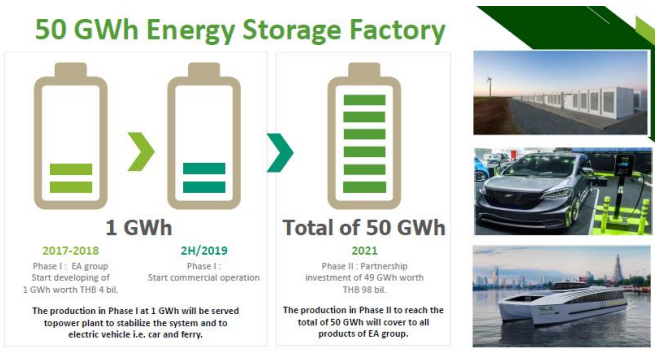
Debt-to-equity and net debt-to-equity ratios



Source: Company, DBSVTH

Second phase of 49Gwh battery plant could boost EBITDA CAGR to 17% over 2020-2030F. Initially, EA rolled out its battery and downstream businesses in 2018. It expects to launch the first phase of the battery plant with a capacity of 1Ghw in 2H19 and the second phase of 49Ghw in 2021F with a total investment of c.Bt102bn.

Battery business*



Source: Company, DBSVTH
**Note that this presentation is dated back in 4Q18*

However, the commercialisation of the first phase 1Ghw has been delayed and it is expected to commence operations in early 2021F. As a result, we assume that the company will spend c.Bt100bn on the development and construction of the second phase (capacity of 49Gwh) in next 10 years. Such capacity will be supported by captive demand for downstream businesses, such as EV cars, e-bus, e-ferry and other energy storage systems.

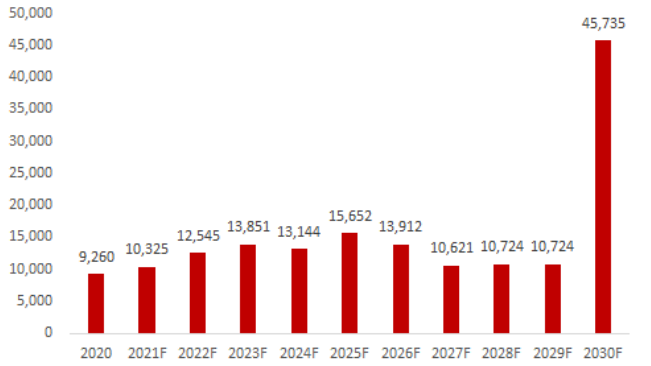
As per conversation with company, EA intended to increase battery manufacturing capacity from currently 1Gwh to 4Gwh by 2025F with capex of c.Bt2.0bn per 1Gwh.

Battery business

Source: Company, DBSVTH

As a result, we expect consolidated EBITDA at c.Bt45.73bn in 2030F, a CAGR of c.17% during 2020-2030F.

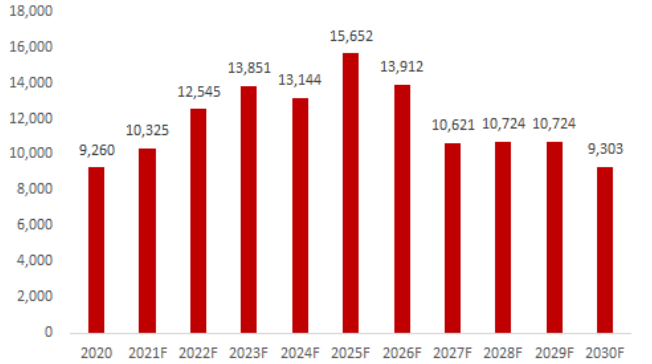
Total EBITDA with 49Ghw battery plant (Btm)



Source: Company, DBSVTH

However, we expect a flat consolidated EBITDA CAGR of 0.05% should there be no commercialisation of the second phase of battery plants (capacity of c.46Gwh). Under this scenario, we anticipate consolidated EBITDA to drop from Bt45.73bn to Bt9.3bn in 2030F. Such a decline would be caused by the expiration of Adder privileges for all solar farm projects (Bt8/unit for Lopburi solar farm, and Bt6.5/unit for Lampang, Nakornsawan, and Pitsanulok solar farms, amounting to 278MW).

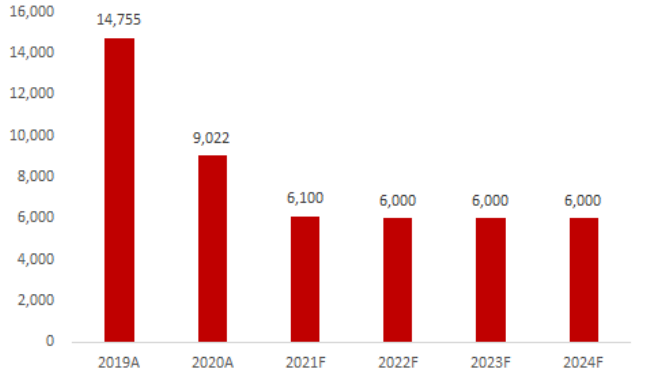
Total EBITDA without 46Ghw battery plant (Btm)



Source: Company, DBSVTH

Expect annual capex of c.Bt6.0bn over 2021-2023F. EA has set c.Bt6.1bn of capital spending in 2021F, of which the majority will go to the battery and application businesses, such as battery manufacturing plants and the EV value chain business – as discussed in the previous sections. However, we assume an annual capex of Bt6.0bn for 2022-2024F to be spent on: i) EV assembly lines (EV cars, e-bus and e-ferry) and energy storage systems, and ii) new renewable power projects such as hydro power plants.

Capex over 2020-2024F (Btm)



Source: Company, DBSVTH

Key Assumptions

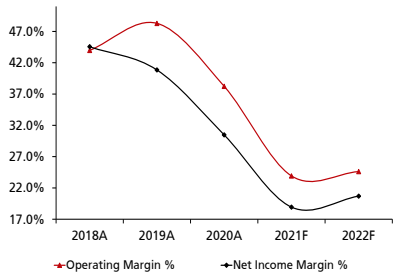
FY Dec	2017A	2018A	2019A	2020A	2021F	2022F
Effective power capacity - (MW)	#,##0;	404	664	664	664	664
Power gross profit margin (%)	#,##0;	0.75%	0.77%	0.72	75%	71%
Battery capacity (Gwh)	N.A	N.A	N.A	#,##0;(	1.00	1.00
Battery utilisation rate	N.A	N.A	N.A	#,##0;(	75.0	95.0
CAPEX	#,##0;	5,489	14,755	9,022	6,100	6,000

Income Statement (Btm)

FY Dec	2017A	2018A	2019A	2020A	2021F	2022F
Revenue	11,580	11,552	14,887	17,080	31,085	38,731
Cost of Goods Sold	(6,046)	(5,668)	(6,752)	(9,271)	(20,903)	(26,109)
Gross Profit	**5,534**	**5,884**	**8,134**	**7,808**	**10,183**	**12,622**
Other Opng (Exp)/Inc	(667)	(805)	(946)	(1,278)	(2,746)	(3,090)
Operating Profit	**4,867**	**5,079**	**7,189**	**6,530**	**7,436**	**9,532**
Other Non Opg (Exp)/Inc	94.0	43.7	67.7	188	100	100
Associates & JV Inc	(62.3)	(6.3)	(14.3)	(61.1)	0.0	100
Net Interest (Exp)/Inc	(1,184)	(1,086)	(1,386)	(1,637)	(1,591)	(1,554)
Exceptional Gain/(Loss)	60.9	1,061	160	9.77	0.0	0.0
Pre-tax Profit	**3,775**	**5,091**	**6,016**	**5,029**	**5,945**	**8,178**
Tax	42.3	(29.4)	10.8	18.2	0.0	0.0
Minority Interest	0.0	86.2	55.0	157	(59.5)	(164)
Preference Dividend	0.0	0.0	0.0	0.0	0.0	0.0
Net Profit	**3,817**	**5,148**	**6,082**	**5,205**	**5,886**	**8,014**
Net Profit before Except.	3,757	4,087	5,922	5,195	5,886	8,014
EBITDA	6,426	6,950	9,760	9,387	10,425	12,745
Growth						
Revenue Gth (%)	11.4	(0.2)	28.9	14.7	82.0	24.6
EBITDA Gth (%)	17.7	8.1	40.4	(3.8)	11.1	22.3
Opg Profit Gth (%)	13.3	4.4	41.5	(9.2)	13.9	28.2
Net Profit Gth (Pre-ex)	12.0	8.8	44.9	(12.3)	13.3	36.2
Margins & Ratio						
Gross Margins (%)	47.8	50.9	54.6	45.7	32.8	32.6
Opg Profit Margin (%)	42.0	44.0	48.3	38.2	23.9	24.6
Net Profit Margin (%)	33.0	44.6	40.9	30.5	18.9	20.7
ROAE (%)	29.3	31.2	29.2	20.3	19.1	21.3
ROA (%)	8.9	9.9	9.4	7.0	7.2	9.0
ROCE (%)	6.1	6.4	7.6	4.9	5.4	7.4
Div Payout Ratio (%)	19.5	18.1	18.4	21.5	30.0	30.0
Net Interest Cover (x)	4.1	4.7	5.2	4.0	4.7	6.1

Source: Company, DBSVTH

Margins Trend



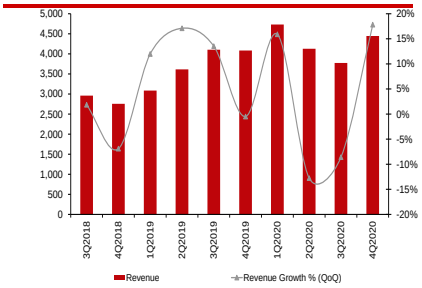
DBS
Live more, Bank less

Quarterly Income Statement (Btm)

FY Dec	3Q2019	4Q2019	1Q2020	2Q2020	3Q2020	4Q2020
Revenue	4,103	4,083	4,732	4,128	3,773	4,446
Cost of Goods Sold	(1,814)	(1,792)	(2,669)	(2,244)	(2,044)	(2,315)
Gross Profit	**2,289**	**2,291**	**2,063**	**1,884**	**1,730**	**2,131**
Other Oper. (Exp)/Inc	(189)	(231)	(288)	(392)	(268)	(330)
Operating Profit	**2,100**	**2,059**	**1,775**	**1,492**	**1,462**	**1,801**
Other Non Opg (Exp)/Inc	14.5	24.9	53.5	64.3	48.7	21.0
Associates & JV Inc	(6.2)	(1.7)	(13.9)	(1.7)	(3.2)	(42.2)
Net Interest (Exp)/Inc	(383)	(400)	(433)	(408)	(421)	(375)
Exceptional Gain/(Loss)	(84.1)	68.5	35.6	(20.1)	3.88	(9.6)
Pre-tax Profit	**1,642**	**1,751**	**1,417**	**1,127**	**1,090**	**1,395**
Tax	5.87	(0.1)	(1.1)	(7.0)	(4.0)	30.3
Minority Interest	31.2	(1.1)	35.7	29.6	33.1	58.8
Net Profit	**1,679**	**1,750**	**1,452**	**1,149**	**1,119**	**1,484**
Net profit bef Except.	1,763	1,681	1,416	1,170	1,115	1,494
EBITDA	2,791	2,784	2,395	2,308	2,190	2,494
Growth						
Revenue Gth (%)	13.5	(0.5)	15.9	(12.8)	(8.6)	17.8
EBITDA Gth (%)	21.3	(0.3)	(14.0)	(3.6)	(5.1)	13.9
Opg Profit Gth (%)	27.7	(1.9)	(13.8)	(15.9)	(2.0)	23.2
Net Profit Gth (Pre-ex)	31.2	(4.6)	(15.7)	(17.4)	(4.7)	33.9
Margins						
Gross Margins (%)	55.8	56.1	43.6	45.6	45.8	47.9
Opg Profit Margins (%)	51.2	50.4	37.5	36.1	38.7	40.5
Net Profit Margins (%)	40.9	42.9	30.7	27.8	29.7	33.4

Source: Company, DBSVTH

Revenue Trend

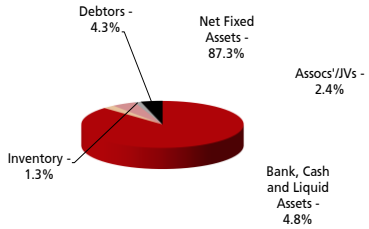


Balance Sheet (Btm)

FY Dec	2017A	2018A	2019A	2020A	2021F	2022F
Net Fixed Assets	35,220	47,587	51,371	55,857	69,327	72,314
Invts in Associates & JVs	920	0.0	100	1,529	1,545	1,560
Other LT Assets	1,369	3,470	4,716	13,708	8,078	10,218
Cash & ST Invts	4,508	5,525	10,100	3,044	1,105	3,356
Inventory	128	330	758	833	1,517	1,890
Debtors	1,708	1,651	2,666	2,750	2,613	2,482
Other Current Assets	680	644	510	761	761	761
Total Assets	**44,531**	**59,208**	**70,220**	**78,483**	**84,946**	**92,582**
ST Debt	1,313	3,081	4,968	12,081	11,000	10,000
Creditor	91.4	150	285	373	757	943
Other Current Liab	1,183	9,271	817	1,111	1,111	1,111
LT Debt	27,200	27,187	39,283	35,292	36,203	36,203
Other LT Liabilities	0.0	0.0	0.0	0.0	0.0	0.0
Shareholder's Equity	14,668	18,311	23,365	27,812	33,697	41,711
Minority Interests	76.0	1,207	1,502	1,815	2,178	2,614
Total Cap. & Liab.	**44,530**	**59,208**	**70,220**	**78,484**	**84,946**	**92,582**
Non-Cash Wkg. Capital	1,241	(6,796)	2,831	2,861	3,023	3,079
Net Cash/(Debt)	(24,005)	(24,744)	(34,151)	(44,330)	(46,097)	(42,846)
Debtors Turn (avg days)	47.7	53.1	52.9	57.9	31.5	24.0
Creditors Turn (avg days)	6.2	11.5	18.8	18.4	11.4	13.4
Inventory Turn (avg days)	12.7	21.8	46.9	44.4	23.8	26.9
Asset Turnover (x)	0.3	0.2	0.2	0.2	0.4	0.4
Current Ratio (x)	2.7	0.7	2.3	0.5	0.5	0.7
Quick Ratio (x)	2.4	0.6	2.1	0.4	0.3	0.5
Net Debt/Equity (X)	1.6	1.3	1.4	1.5	1.3	1.0
Net Debt/Equity ex MI (X)	1.6	1.4	1.5	1.6	1.4	1.0
Capex to Debt (%)	13.4	18.1	33.3	19.0	12.9	13.0

Source: Company, DBSVTH

Asset Breakdown

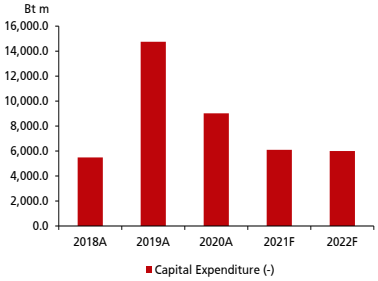


Cash Flow Statement (Btm)

FY Dec	2017A	2018A	2019A	2020A	2021F	2022F
Pre-Tax Profit	3,775	5,091	6,016	5,029	5,886	8,014
Dep. & Amort.	1,528	1,833	2,517	2,730	2,889	3,013
Tax Paid	(8.9)	(44.1)	(19.5)	(28.8)	0.0	0.0
Assoc. & JV Inc/(loss)	0.0	0.0	0.0	0.0	0.0	0.0
Chg in Wkg.Cap.	(340)	205	(1,209)	(199)	(162)	(56.3)
Other Operating CF	1,267	108	1,398	1,706	(1,591)	(1,554)
Net Operating CF	**6,221**	**7,193**	**8,703**	**9,238**	**7,022**	**9,417**
Capital Exp.(net)	(3,812)	(5,489)	(14,755)	(9,022)	(6,100)	(6,000)
Other Invts.(net)	1,689	(78.1)	(79.7)	(5,174)	0.0	0.0
Invts in Assoc. & JV	0.0	0.0	0.0	0.0	0.0	0.0
Div from Assoc & JV	0.0	0.0	0.0	0.0	0.0	0.0
Other Investing CF	0.0	0.0	0.0	0.0	0.0	0.0
Net Investing CF	**(2,123)**	**(5,567)**	**(14,834)**	**(14,196)**	**(6,100)**	**(6,000)**
Div Paid	(559)	(746)	(932)	(1,119)	(1,119)	(1,766)
Chg in Gross Debt	0.0	0.0	0.0	0.0	0.0	0.0
Capital Issues	110	395	11,268	0.0	0.0	0.0
Other Financing CF	(1,817)	(248)	388	(1,022)	(1,730)	0.0
Net Financing CF	**(2,266)**	**(598)**	**10,723**	**(2,141)**	**(2,849)**	**(1,766)**
Currency Adjustments	0.0	(54.8)	(41.6)	20.5	0.0	0.0
Chg in Cash	1,833	973	4,550	(7,078)	(1,927)	1,651
Opg CFPS (Bt)	1.76	1.87	2.66	2.53	1.93	2.54
Free CFPS (Bt)	0.65	0.46	(1.6)	0.06	0.25	0.92

Source: Company, DBSVTH

Capital Expenditure



THAI-CAC (as of Jun 2020)
Corporate Governance CG Rating (as of Oct 2019)

Certified

THAI-CAC is Companies participating in Thailand's Private Sector Collective Action Coalition Against Corruption programme (Thai CAC) under Thai Institute of Directors (as of May 2018) are categorised into:

Score	Description
Declared	Companies that have declared their intention to join CAC
Certified	Companies certified by CAC.

Corporate Governance CG Rating is based on Thai Institute of Directors (IOD)'s annual assessment of corporate governance practices of listed companies. The assessment covers 235 criteria in five categories including board responsibilities (35% weighting), disclosure and transparency (20%), role of stakeholders (20%), equitable treatment of shareholders (10%) and rights of shareholders (15%). The IOD then assigns numbers of logos to each company based on their scoring as follows:

Score	Range Number of Logo	Description
90-100		Excellent
80-89		Very Good
70-79		Good
60-69		Satisfactory
50-59		Pass
<50	No logo given	N/A

DBSVTH recommendations are based on Absolute Total Return* Rating system, defined as follows:
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BUY (>15% total return over the next 12 months for small caps, >10% for large caps)
HOLD (-10% to +15% total return over the next 12 months for small caps, -10% to +10% for large caps)
FULLY VALUED (negative total return, i.e., > -10% over the next 12 months)
SELL (negative total return of > -20% over the next 3 months, with identifiable share price catalysts within this time frame)

**Share price appreciation + dividends*

Completed Date: 25 Mar 2021 10:59:11 (THA)
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