

SELL (From: BUY)

Change in Recommendation

TP: Bt 3.40

Downside : 11.5%

(From: Bt 4.60)

29 SEPTEMBER 2021

Small Cap Research

Absolute Clean Energy (ACE TB)

Less favorable policy

We downgrade ACE to SELL and cut our 12-month SOTP-TP to Bt3.40 as the government's policy to promote bioenergy looks to be less aggressive than we had expected. ACE's projects under development are heavily delayed, while its profit improvement and capacity expansion plan also significantly fall short of our expectation.

Downgrading to SELL

We downgrade ACE to SELL for three reasons: 1) We foresee lower capacity growth potential from the "Community Power Plant" (CPP) scheme, expecting no more bids for bioenergy power plant PPAs until 2024F and less favorable bidding conditions for large-scale operators, 2) we move out our assumed commercial operating dates (COD) for its 166MW of capacity under development (15 projects) by 12-18 months on delays in the granting of environmental approval and clearing up legal issues, and 3) we cut our margin assumptions for bioenergy power plants given higher competition in feedstock procurement and a lower-than-expected tariff price from the recent CPP bid. Thus, we cut our 2022-24F earnings by 18-37% and DCF-derived SOTP-based TP (2022F base year) to Bt3.40 (from Bt4.60).

Expecting less CPP scheme benefits

Government policy for the CPP scheme is now less favorable to major players like ACE after multiple changes in conditions over the year. *First*, power purchase agreements (PPAs) are split into smaller contracts. This raises the chance of minor players winning a share of the quota. ACE thus won total contracts of only 50MW from the latest bid vs. our 100MW expectation. We therefore cut its capacity growth from the CCP scheme to 100MW (from 200MW). *Second*, we expect lower profitability from power plants in the CPP scheme since the tariff price is now based on bidding rather than a fixed feed-in-tariff (FiT) previously, and higher fuel prices as more players are competing for feedstock.

Weak margin at existing plants

We cut our gross margin for ACE's biomass power plants (95MW, 46% of operating capacity) to 36% in 2022-24F from 45%. ACE's fuel cost-reduction plan has been much less successful than we had anticipated earlier. Plant optimization looks to have reached its limit, while there is also pressure from higher feedstock prices as bioenergy crop plantations cannot keep up with growing biomass and biogas power plant capacity in the country. The blended capacity factor from its plants is falling as ACE switches to lower-priced feedstocks to manage costs, but this comes with lower production efficiency and more operational disruption.

Risks from projects under development

ACE's projects being developed are heavily delayed. Four PPA-granted projects (70MW, 16% total capacity) face problems in obtaining EIA approval while facing backlash from the locals. Another ten (80MW, 18%) remain in the legal process to reclaim PPAs. We revise our earnings here to reflect those delays, but we also see a risk of these projects either being penalized or having their contracts revoked if they can't start up by the deadlines.


NUTTAPOL PRASITSUKSANT

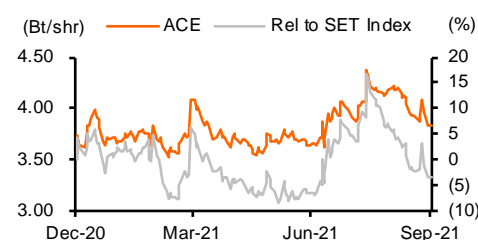
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COMPANY VALUATION

Y/E Dec (Bt m)	2020A	2021F	2022F	2023F
Sales	5,858	5,736	6,980	8,937
Net profit	1,508	1,457	1,843	2,405
Consensus NP	—	1,627	2,555	3,180
Diff frm cons (%)	—	(10.4)	(27.9)	(24.4)
Norm profit	1,327	1,457	1,843	2,405
Prev. Norm profit	—	1,576	2,907	3,415
Chg frm prev (%)	—	(7.5)	(36.6)	(29.6)
Norm EPS (Bt)	0.1	0.1	0.2	0.2
Norm EPS grw (%)	44.4	9.8	26.4	30.5
Norm PE (x)	29.5	26.8	21.2	16.2
EV/EBITDA (x)	21.1	19.8	17.1	13.7
P/BV (x)	3.3	3.0	2.8	2.5
Div yield (%)	1.3	1.5	1.9	2.5
ROE (%)	11.6	11.7	13.7	16.2
Net D/E (%)	28.0	33.6	75.4	100.6

PRICE PERFORMANCE



COMPANY INFORMATION

Price as of 29-Sep-21 (Bt)	3.84
Market Cap (US\$ m)	1,154.0
Listed Shares (m shares)	10,176.0
Free Float (%)	22.6
Avg Daily Turnover (US\$ m)	13.0
12M Price H/L (Bt)	4.38/2.38
Sector	Utilities
Major Shareholder	Songmetta Family 77.38%

Sources: Bloomberg, Company data, Thanachart estimates

Less favorable policy

After multiple changes over the year, CPP policy looks much less favorable to ACE

The government's policy of promoting bioenergy (biomass and biogas from energy crops) as a new source of renewable energy for Thailand through the Community Power Plant scheme (CPP), has been adjusted multiple times over the past year. We regard the final conditions, used in the bid for 150MW of power purchase agreement (PPA) contracts in the pilot phase for the scheme from July to September this year, as much less favorable to large operators such as Absolute Clean Energy Pcl (ACE).

1) PPA is divided to smaller contracts

- First, the PPAs are split into smaller sizes of less than 6MW per contract, from 8-10MW in the subsidized contracts granted during 2012-15. This increases competition in the industry as it improves the chances of smaller firms winning contracts, and also lowers the profitability of the plants given less scale benefits and more players chasing for feedstock, thereby leading to higher fuel costs.

2) Bidding tariff price instead of FiT

- Second, the electricity tariff is changed from a fixed feed-in-tariff (FiT) of Bt4.5/kWh to the bidding price. As the average tariff prices in the latest bidding earlier this month (September 2021) fell to Bt2.8/kWh for biomass plants and Bt3.6/kWh for biogas plants, we see pressure on the profitability of these bioenergy power plants.

3) A 10% stake in the plant has to be held by the local community

- Third, there is a new condition in the CPP scheme that requires operators to give a 10% holding in the power plants for free to the so-called "Community Enterprise", which represents the local community around the plant. Power plants under the CPP scheme are also mandated to carry out contract farming to secure feedstock from local villagers, while most existing biomass plants in the system can freely source their inputs.

Ex 1: Regulations For Bioenergy Plants Much Less Favorable To Large Operators

	Subsidized contracts	
	(2012-15)	CPP scheme (2021)
Contract size (MW)	8 - 10	Less than 6
Electricity tariff (Bt/kWh)	4.48	3.58
Adders for selected area* (Bt/kWh)	0.50	0.50
Shareholder	any	Must give 10% to local community
Source of biofuels	any	Contract farming with locals

Sources: Energy Regulatory Commission (ERC), Thanachart's compilation

Note: *Adders are granted to power plants located in the four southernmost provinces (Yala, Pattani, Narathiwat, and Songkhla)

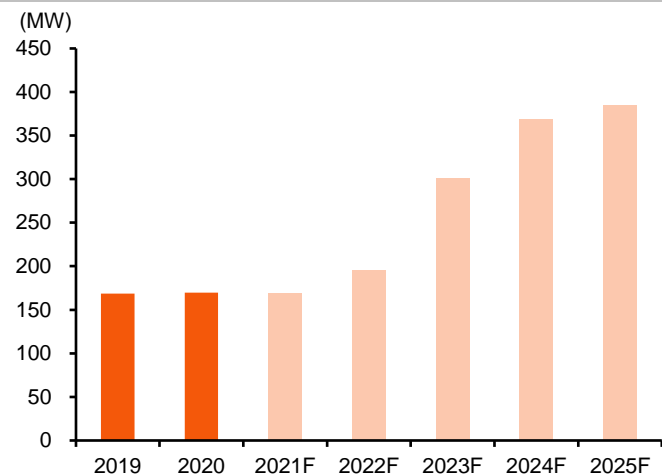
We cut our assumption for CPP capacity for ACE to 100MW from 200MW

Given that ACE won only 50MW of PPA contracts from the latest bid (vs. our previous expectation of 100MW) and stronger-than-expected competition at the bid, we now assume ACE secures a total of 100MW capacity from the entire CPP scheme (down from 200MW) implying it wins another 50MW of capacity from the next bid, likely in 2024F.

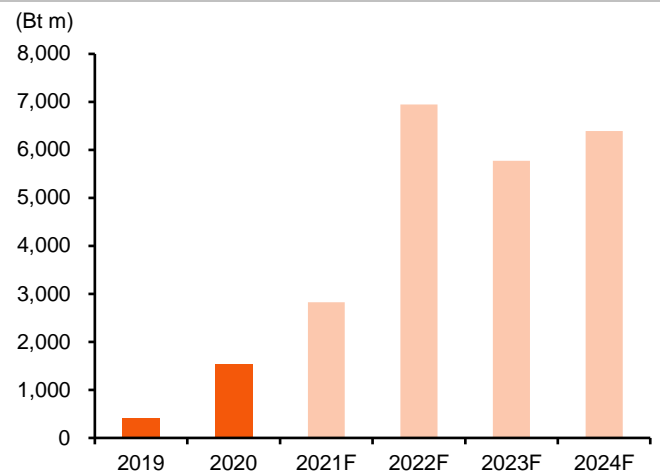
Ex 2: Changes To Our Key Assumptions

	2022F	2023F	2024F
Operating capacity (MW)			
New	195	301	369
Old	220	444	613
Change (%)	(11.2)	(32.3)	(39.8)
Gross margin (%)			
New	37.2	38.2	36.5
Old	38.1	40.6	40.2
Change (pp)	(0.9)	(2.4)	(3.7)
Normalized profit (Bt m)			
New	1,843	2,405	2,815
Old	2,907	3,415	3,431
Change (%)	(36.6)	(29.6)	(17.9)

Sources: Thanachart estimates

Ex 3: Our Projected Pro Rata Capacity For ACE

Sources: Company data, Thanachart estimates

Ex 4: Into A Heavy Capex Period

Sources: Company data, Thanachart estimates

Weak margin at existing plants

**Weaker-than-expected
margin at its existing plants**

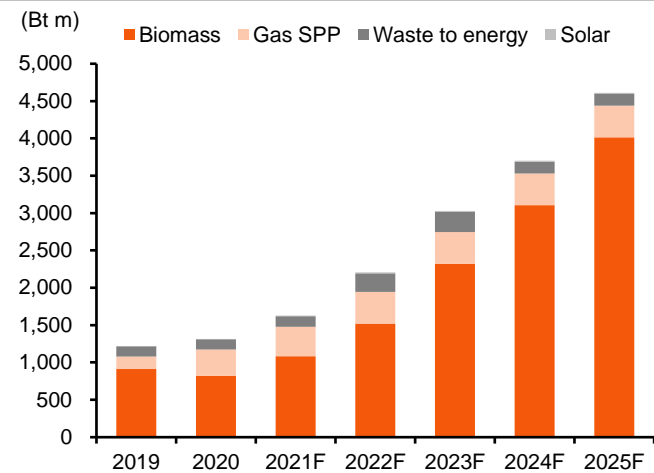
We project a lower gross margin for ACE's biomass power plants of 36% in 2022-24F from 45% earlier, as we assume higher feedstock prices and lower electricity selling prices. ACE's plant efficiency improvement has significantly missed our expectation and its own target over the past two years. We believe this has been because of the higher cost of biofuels in the market, given the rising number of bioenergy plants and more players competing for feedstock, and weaker generating efficiency as ACE has been forced to use less efficient types of energy crops to manage costs. Its ageing plants, which commenced operations in 2012-15, are also approaching a period of major maintenance, thus likely leading to a lower capacity factor.

**Heavy delays in getting its
plants under development
online**

Apart from the profitability issue, our 18-37% earnings cuts over 2022-24F also reflect heavy delays in the development of its 166MW of power plants (162MW of biomass plants and 4MW of solar projects). Some 76MW of its biomass projects are finding it difficult to get EIA (Environmental Impact Assessment) qualifications approved and they are also facing

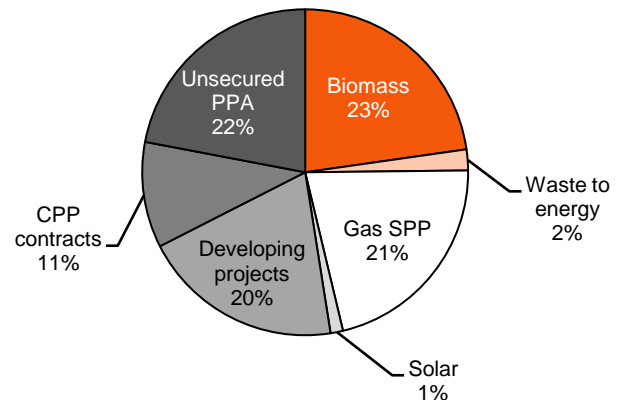
backlash from the locals. Another 80MW of its projects are still in court, as ACE is working on the legal process to reclaim its PPAs from the Provincial Electricity Authority (PEA). After moving out our assumed commencing operation dates (COD) for those power plants by 12-18 months, we also see a risk of those projects being penalized or having their contracts revoked if they cannot deliver electricity to the grid by the deadlines.

Ex 5: Gross Profit Breakdown



Sources: Company data, Thanachart estimates

Ex 6: Capacity Breakdown By Segment As Of 3Q21F



Sources: Company data, Thanachart estimates

Ex 7: Our 12-month DCF-derived Valuation Plus Potential Capacity

(Bt m)	2022F	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F	2031F	2032F	Terminal value
EBITDA excl. depre from right of use	2,912	4,007	5,042	6,073	6,099	5,958	5,645	4,961	4,653	4,526	4,213	
Free cash flow	(4,377)	(2,252)	(1,913)	5,319	5,626	5,524	5,269	4,729	4,338	4,159	3,897	33,439
PV of free cash flow	(4,096)	(1,972)	(1,566)	4,075	3,942	3,604	3,201	2,676	2,286	2,041	1,694	14,537
Risk-free rate (%)	2.5											
Market risk premium (%)	8.0											
Beta	1.0											
WACC (%)	6.9											
Terminal growth (%)	2.0											
Enterprise value - add investments	30,423											
Net debt	4,333											
Minority interest	0											
Equity value	26,090											
# of shares (m)	10,176											
Target price/share (Bt)	2.56											
Valuation method							WACC		Value per ACE's share			
							(%)		(Baht)			
Plus: Potential capacity												
A 50MW net-owned capacity biomass power plant					DCF		10.0%		0.45			
A 20MW net-owned capacity waste-to-energy (WTE) plant					DCF		10.0%		0.39			
Total												3.40

Source: Thanachart estimates

Valuation Comparison

Ex 8: Comparison With Regional Peers

Name	BBG code	Country	EPS growth		PE		P/BV		EV/EBITDA		Div yield	
			21F (%)	22F (%)	21F (x)	22F (x)	21F (x)	22F (x)	21F (x)	22F (x)	21F (%)	22F (%)
Datang International Power	991 HK	China	6.4	10.5	11.0	9.9	0.6	0.6	9.3	9.0	6.8	7.9
Huadian Power	1071 HK	China	8.4	2.4	7.5	7.3	0.5	0.5	8.5	7.8	7.0	7.4
Huaneng Power	600011 CH	China	(34.0)	31.1	24.8	18.9	1.2	1.1	8.7	7.7	2.0	2.5
Cheung Kong Infrastructure	1038 HK	Hong Kong	2.0	11.9	13.2	11.8	1.0	0.9	41.4	40.0	5.7	5.9
China Power Int'l	2380 HK	Hong Kong	4.5	19.8	19.7	16.4	1.2	1.2	10.9	9.4	2.9	3.3
China Resources Power	836 HK	Hong Kong	9.6	19.1	11.9	10.0	1.2	1.1	7.9	7.0	3.3	4.1
CLP Holdings	2 HK	Hong Kong	0.1	7.5	16.8	15.6	1.6	1.6	10.7	10.1	4.2	4.3
Hongkong Electric Holdings	6 HK	Hong Kong	2.9	7.1	15.3	14.3	1.2	1.1	74.0	71.8	6.2	6.2
Huaneng Power	902 HK	Hong Kong	(28.6)	23.8	12.8	10.3	0.5	0.5	8.5	7.6	4.2	5.2
Tata Power	TPWR IN	India	17.6	20.7	31.5	26.1	2.2	2.2	11.7	11.2	1.0	1.2
Tenaga Nasional	TNB MK	Malaysia	8.1	3.3	11.8	11.4	1.0	1.0	6.7	6.5	5.3	5.5
YTL Corp	YTL MK	Malaysia	(68.4)	183.3	101.7	35.9	0.5	0.5	12.1	11.1	4.3	4.4
YTL Power	YTLP MK	Malaysia	47.4	(7.1)	11.8	12.7	0.4	0.4	10.3	10.5	5.8	6.7
Manila Electric	MER PM	Philippines	10.9	1.3	14.5	14.3	3.9	3.5	10.3	9.7	5.0	5.4
Absolute Clean Energy *	ACE TB	Thailand	9.8	26.4	26.8	21.2	3.0	2.8	19.8	17.1	1.5	1.9
BCPG Pcl *	BCPG TB	Thailand	(13.2)	3.3	19.8	19.2	1.7	1.6	17.1	17.5	2.3	2.3
B.Grimm Power Pcl *	BGRIM TB	Thailand	8.0	25.3	37.3	29.8	3.7	3.5	13.7	13.1	1.3	1.7
Banpu Power Pcl *	BPP TB	Thailand	10.2	12.4	14.5	12.9	1.3	1.2	208.9	157.3	4.1	4.6
CK Power Pcl *	CKP TB	Thailand	418.6	8.2	21.3	19.7	1.7	1.6	19.1	18.5	1.9	2.5
EA Pcl*	EA TB	Thailand	15.3	32.6	39.3	29.6	7.2	6.1	23.3	17.9	0.8	1.0
Electricity Generating *	EGCO TB	Thailand	17.9	11.1	8.6	7.7	0.8	0.8	18.0	15.9	4.0	4.3
Global Power Synergy *	GPSC TB	Thailand	20.3	16.7	23.8	20.4	2.0	1.9	15.2	14.1	2.5	2.9
Gulf Energy Dev. Pcl *	GULF TB	Thailand	88.0	37.4	54.7	39.8	7.1	6.7	40.4	31.9	1.1	1.5
Gunkul Engineering *	GUNKUL TB	Thailand	66.7	26.8	18.3	14.4	3.2	2.9	18.8	15.8	3.0	4.2
RATCH Group *	RATCH TB	Thailand	25.2	2.8	9.6	9.3	1.0	1.0	17.4	16.1	5.8	6.5
TPC Power Holding *	TPCH TB	Thailand	52.4	23.3	11.4	9.3	1.3	1.2	8.8	7.5	2.6	3.2
WHA Utilities & Power *	WHAUP TB	Thailand	47.9	24.5	13.5	10.8	1.3	1.2	30.5	26.0	4.5	5.6
Average			27.9	21.7	22.3	17.0	1.9	1.8	25.3	21.8	3.7	4.1

Sources: Bloomberg, * Thanachart estimates

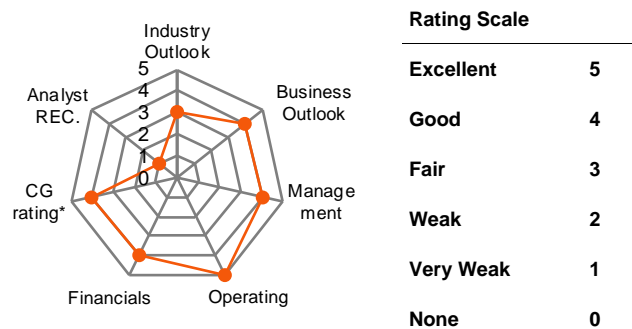
Based on 29 September 2021 closing prices

COMPANY DESCRIPTION

Established in 2015, Absolute Clean Energy Pcl (ACE) is an operator of various power plants under its subsidiaries to deliver electricity for the Provincial Electricity Authority of Thailand (PEA) under long-term power purchase agreement (PPA) contracts. The key focus for the company is on clean energy from biomass, leveraging on the lengthy experience of the founder family with plantations of softwood trees to procure woodchips, which is its key feedstock. ACE has its own R&D team to improve its plant design and mixture of agricultural feedstock to achieve the highest operating efficiency.

Source: Thanachart

COMPANY RATING



Source: Thanachart; * CG rating

THANACHART'S SWOT ANALYSIS

S — Strength

- Strong experience in operating and designing biomass power plants.
- Strong procurement network and good inventory system to secure sufficient feedstock to feed its power plants throughout the year.

O — Opportunity

- Scale benefits and strong expertise among peers create opportunities to expand or acquire more bioenergy power plants.
- Bioenergy power plants are a renewable source for electricity generation, which is a global megatrend.

W — Weakness

- Highly dependent on the government's policy to grow capacity.
- The selling price of electricity in Thailand is also completely regulated by the government.

T — Threat

- Relies heavily on domestic agricultural yield which is highly exposed to environmental risk and unfavourable natural conditions.

CONSENSUS COMPARISON

	Consensus	Thanachart	Diff
Target price (Bt)	4.63	3.40	-27%
Net profit 21F (Bt m)	1,627	1,457	-10%
Net profit 22F (Bt m)	2,555	1,843	-28%
Consensus REC	BUY: 4	HOLD: 1	SELL: 0

HOW ARE WE DIFFERENT FROM THE STREET?

- Our 2022F earnings forecast is 28% below the Bloomberg consensus number, which we attribute to us having a more bearish view on ACE's ability to grow the capacity and profitability of its plants.
- Our TP is therefore 27% lower.

RISKS TO OUR INVESTMENT CASE

- Faster-than-expected commencement of operations of projects under development would be the primary upside risk to our projections.
- More aggressive government policy on bio-energy power plants (biomass and biogas) would represent a secondary upside risk to ACE's growth potential.
- Stronger-than-expected profitability of ACE's power plants, either from lower-than-expected feedstock prices or better-than-expected efficiency improvement, represents another secondary upside risk to our numbers.

Sources: Bloomberg consensus, Thanachart estimates

Source: Thanachart

INCOME STATEMENT

FY ending Dec (Bt m)	2019A	2020A	2021F	2022F	2023F
Sales	5,055	5,858	5,736	6,980	8,937
Cost of sales	3,429	4,067	3,711	4,385	5,521
Gross profit	1,626	1,791	2,024	2,594	3,416
% gross margin	32.2%	30.6%	35.3%	37.2%	38.2%
Selling & administration expenses	330	322	365	423	483
Operating profit	1,296	1,469	1,659	2,171	2,933
% operating margin	25.6%	25.1%	28.9%	31.1%	32.8%
Depreciation & amortization	527	541	536	741	1,074
EBITDA	1,823	2,010	2,196	2,912	4,007
% EBITDA margin	36.1%	34.3%	38.3%	41.7%	44.8%
Non-operating income	33	7	7	8	10
Non-operating expenses	0	0	0	0	0
Interest expense	(413)	(106)	(132)	(239)	(412)
Pre-tax profit	916	1,369	1,534	1,940	2,531
Income tax	(3)	43	77	97	127
After-tax profit	919	1,327	1,457	1,843	2,405
% net margin	18.2%	22.6%	25.4%	26.4%	26.9%
Shares in affiliates' Earnings	0	0	0	0	0
Minority interests	0	0	0	0	0
Extraordinary items	(104)	181	0	0	0
NET PROFIT	815	1,508	1,457	1,843	2,405
Normalized profit	919	1,327	1,457	1,843	2,405
EPS (Bt)	0.1	0.1	0.1	0.2	0.2
Normalized EPS (Bt)	0.1	0.1	0.1	0.2	0.2

We cut our earnings to reflect delays in plants under development

BALANCE SHEET

FY ending Dec (Bt m)	2019A	2020A	2021F	2022F	2023F
ASSETS:					
Current assets:	1,435	1,841	1,295	1,482	1,780
Cash & cash equivalent	418	576	393	393	393
Account receivables	820	829	864	1,052	1,347
Inventories	185	402	254	300	378
Others	11	34	(217)	(264)	(338)
Investments & loans	124	145	145	145	145
Net fixed assets	8,059	9,095	11,427	17,676	22,417
Other assets	4,527	5,348	5,287	6,465	8,289
Total assets	14,145	16,430	18,154	25,768	32,632
LIABILITIES:					
Current liabilities:	1,373	1,213	1,535	3,043	4,371
Account payables	249	269	254	300	378
Bank overdraft & ST loans	227	277	331	550	807
Current LT debt	856	575	879	2,092	3,065
Others current liabilities	40	91	71	101	122
Total LT debt	1,911	3,082	3,517	8,367	12,260
Others LT liabilities	68	142	198	271	357
Total liabilities	3,352	4,437	5,250	11,681	16,989
Minority interest	0	0	0	0	0
Preferreds shares	0	0	0	0	0
Paid-up capital	5,088	5,088	5,088	5,088	5,088
Share premium	3,896	3,896	3,896	3,896	3,896
Warrants	0	0	0	0	0
Surplus	(23)	(23)	(23)	(23)	(23)
Retained earnings	1,832	3,032	3,943	5,126	6,681
Shareholders' equity	10,793	11,993	12,904	14,087	15,642
Liabilities & equity	14,145	16,430	18,154	25,768	32,632

Debt piling up to support upcoming capex cycle

Sources: Company data, Thanachart estimates

CASH FLOW STATEMENT

FY ending Dec (Bt m)	2019A	2020A	2021F	2022F	2023F
Earnings before tax	916	1,369	1,534	1,940	2,531
Tax paid	4	(33)	(82)	(93)	(126)
Depreciation & amortization	527	541	536	741	1,074
Chg In working capital	(243)	(206)	98	(187)	(295)
Chg In other CA & CL / minorities	192	20	236	73	94
Cash flow from operations	1,396	1,692	2,322	2,474	3,279
Capex	(399)	(1,530)	(2,822)	(6,944)	(5,768)
Right of use	0	(37)	(50)	(50)	(50)
ST loans & investments	0	0	0	0	0
LT loans & investments	(24)	(21)	0	0	0
Adj for asset revaluation	0	0	0	0	0
Chg In other assets & liabilities	(160)	(596)	120	(1,102)	(1,734)
Cash flow from investments	(582)	(2,185)	(2,751)	(8,096)	(7,552)
Debt financing	(4,906)	958	792	6,282	5,123
Capital increase	4,405	0	0	0	0
Dividends paid	(834)	(305)	(546)	(660)	(850)
Warrants & other surplus	836	(3)	0	0	0
Cash flow from financing	(499)	651	246	5,622	4,274
Free cash flow	996	162	(499)	(4,470)	(2,489)

Big capex jump in 2022-23F to meet deadlines for projects' COD

VALUATION

FY ending Dec	2019A	2020A	2021F	2022F	2023F
Normalized PE (x)	42.5	29.5	26.8	21.2	16.2
Normalized PE - at target price (x)	37.7	26.1	23.7	18.8	14.4
PE (x)	47.9	25.9	26.8	21.2	16.2
PE - at target price (x)	42.4	22.9	23.7	18.8	14.4
EV/EBITDA (x)	22.9	21.1	19.8	17.1	13.7
EV/EBITDA - at target price (x)	20.4	18.9	17.7	15.5	12.6
P/BV (x)	3.6	3.3	3.0	2.8	2.5
P/BV - at target price (x)	3.2	2.9	2.7	2.5	2.2
P/CFO (x)	28.0	23.1	16.8	15.8	11.9
Price/sales (x)	7.7	6.7	6.8	5.6	4.4
Dividend yield (%)	0.0	1.3	1.5	1.9	2.5
FCF Yield (%)	2.6	0.4	(1.3)	(11.4)	(6.4)
(Bt)					
Normalized EPS	0.1	0.1	0.1	0.2	0.2
EPS	0.1	0.1	0.1	0.2	0.2
DPS	0.0	0.1	0.1	0.1	0.1
BV/share	1.1	1.2	1.3	1.4	1.5
CFO/share	0.1	0.2	0.2	0.2	0.3
FCF/share	0.1	0.0	(0.0)	(0.4)	(0.2)

Sources: Company data, Thanachart estimates

21x PE in 2022F looks expensive, vs. its 17-year average contract life

FINANCIAL RATIOS

FY ending Dec	2019A	2020A	2021F	2022F	2023F
Growth Rate					
Sales (%)	4.6	15.9	(2.1)	21.7	28.0
Net profit (%)	49.2	84.9	(3.3)	26.4	30.5
EPS (%)	49.2	84.9	(3.3)	26.4	30.5
Normalized profit (%)	65.1	44.4	9.8	26.4	30.5
Normalized EPS (%)	65.1	44.4	9.8	26.4	30.5
Dividend payout ratio (%)	0.0	33.7	40.0	40.0	40.0
Operating performance					
Gross margin (%)	32.2	30.6	35.3	37.2	38.2
Operating margin (%)	25.6	25.1	28.9	31.1	32.8
EBITDA margin (%)	36.1	34.3	38.3	41.7	44.8
Net margin (%)	18.2	22.6	25.4	26.4	26.9
D/E (incl. minor) (x)	0.3	0.3	0.4	0.8	1.0
Net D/E (incl. minor) (x)	0.2	0.3	0.3	0.8	1.0
Interest coverage - EBIT (x)	3.1	13.8	12.6	9.1	7.1
Interest coverage - EBITDA (x)	4.4	18.9	16.7	12.2	9.7
ROA - using norm profit (%)	6.6	8.7	8.4	8.4	8.2
ROE - using norm profit (%)	11.2	11.6	11.7	13.7	16.2
DuPont					
ROE - using after tax profit (%)	11.2	11.6	11.7	13.7	16.2
- asset turnover (x)	0.4	0.4	0.3	0.3	0.3
- operating margin (%)	26.3	25.2	29.0	31.2	32.9
- leverage (x)	1.7	1.3	1.4	1.6	2.0
- interest burden (%)	68.9	92.8	92.1	89.0	86.0
- tax burden (%)	100.3	96.9	95.0	95.0	95.0
WACC (%)	6.9	6.9	6.9	6.9	6.9
ROIC (%)	9.8	10.6	10.3	12.0	11.3
NOPAT (Bt m)	1,300	1,423	1,576	2,063	2,786
invested capital (Bt m)	13,370	15,351	17,238	24,703	31,381

Sources: Company data, Thanachart estimates

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