

Absolute Clean Energy

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Public Company Limited

ACE

Bloomberg ACE TB
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Slight progress in capacity growth

Market appetite for ACE has plunged over the past 15 months with trading turnover down 69% from 2021, reflecting disappointment on the lack of progress in capacity growth due to delays in obtaining power purchase agreements for its VSPP biomass and SPP hybrid power plants despite the government's pledge to raise the amount of renewable energy in Thailand to achieve net zero emissions by 2065. The tide turned in March when it was granted PPAs for 18 biogas power plants under the Community Power Plant scheme. This will drive earnings growth from 2024F after only small profit growth in 2023F. NEUTRAL with TP cut to Bt3.6/share.

2022 earnings recap. Net profit in 2022 was Bt1.3bn, down 15% on FX loss; normalized operating net profit fell 9% YoY on lower profit from biomass power plants on more maintenance shutdowns to improve efficiency, especially the three it acquired in 2020. Administrative expenses and finance cost also rose YoY due to the development of new projects. Overall gross margin narrowed to 27.1% in 2022 from 33.5% in 2021 due to high gas cost at the cogeneration plant, although this did not affect the absolute amount of earnings given the SPP cost-passthrough mechanism. Gross margin at the biomass plant fell to 34.8% from 37.6% in 2021 on higher feedstock cost, chiefly in 4Q22 on seasonality and inflation impact. MSW power did the best in 2022 with gross profit up 11% YoY and gross margin up to 57.8% from 54.3% in 2021 on fewer maintenance days of the high margin plant in Khon Kaen.

Unexciting outlook for 2023F. We expect 2023 profit growth to remain slow at <3% YoY as no new capacity will be added until late 4Q23 at the earliest when the biogas power plants start operation, leaving just higher operating efficiency of existing power plants powering core growth, mainly the three acquired biomass power plants that were intensively technically overhauled in 2022 to bring them up to ACE's standard. We expect gross margin of these plants to strengthen to >12% in 2023F from a negative 2.6% in 2022, the level they achieved in 2021. The availability factor of these plants was back to 71% in 4Q22 after falling to only 36% in 3Q22. We expect ACE's finance cost to continue to increase as it develops new projects over the next 3-4 years.

Biogas power plants given the green light. ACE obtained 20-year PPAs for 18 biogas power plants under the Community Power Plants scheme in Mar 2023 after a delay of over 12 months from the original schedule (Jan 2022), with combined capacity of 59MW (50MW under PPA). Construction of these plants will take 8-9 months and they will gradually start up over 2023-25. We expect this to drive earnings in 2024-25F. In addition to these power plants, management expects two more MSW power plants (9.9MW each) to obtain PPAs this year after winning bids from local municipal governments for MSW disposal in 2022. These projects will be able to partly offset delays of ACE's 99-MW VSPP (biomass) and 93MW-SPP Hybrid power plants, most of which are still waiting for PPAs. ACE also expects to win some MW from renewable power plants in Thailand, mainly solar power both with and without a battery energy storage system (BESS solar); the results will be announced in Apr 2023. Out of 300MW submitted, around 200MW already passed the technical evaluation phase.

Slash TP to Bt3.6/sh. We revisited our financial model to be more realistic with some adjustments on capacity growth of power plants to include only those with committed PPAs. This led to a TP cut to Bt3.6/share from Bt4.3 based on DCF method. The share is trading at 2023F PE of 19.7x which is stretched, in our view.

Key risks. 1) delay in PEA's return of biomass plant PPAs and construction, defer startups and cash flow, 2) higher feedstock cost for biomass plants, 3) higher investment costs.

Forecasts and valuation

Year to 31 Dec	Unit	2021	2022	2023F	2024F	2025F
Revenue	(Btmn)	5,727	6,917	6,393	7,124	8,281
EBITDA	(Btmn)	2,249	2,181	2,240	3,801	3,774
Core profit	(Btmn)	1,338	1,227	1,261	1,757	2,385
Reported profit	(Btmn)	1,506	1,282	1,261	1,757	2,385
Core EPS	(Bt)	0.13	0.12	0.12	0.17	0.23
DPS	(Bt)	0.02	0.00	0.04	0.05	0.07
P/E, core	(x)	18.4	20.1	19.5	14.0	10.3
EPS growth, core	(%)	(10.7)	(8.3)	2.8	39.3	35.7
P/BV, core	(x)	1.8	1.7	1.6	1.5	1.3
ROE	(%)	10.6	8.9	8.5	10.9	13.5
Dividend yield	(%)	0.8	0.0	1.7	2.1	2.9
FCF yield	(x)	(0.6)	(1.0)	6.2	5.2	0.3
EV/EBIT	(x)	18.0	20.1	18.4	13.0	9.7
EBIT growth, core	(%)	(4.0)	(8.2)	3.6	37.2	36.0
EV/CE	(x)	2.4	2.2	2.1	1.8	1.6
ROCE	(%)	12.4	10.0	11.1	13.7	16.0
EV/EBITDA	(x)	12.7	13.4	12.4	7.1	7.2
EBITDA growth	(%)	2.7	(3.0)	2.7	69.7	(0.7)

Source: InnovestX Research

Tactical: NEUTRAL

(3-month)

Stock data

Last close (Mar 22) (Bt)	2.42
Target price (Bt)	3.60
Mkt cap (Btbn)	24.63
Mkt cap (US\$m)	716

Beta	L
Mkt cap (%) SET	0.13
Sector % SET	20.27
Shares issued (mn)	10,176
Par value (Bt)	0.50
12-m high / low (Bt)	3.3 / 2.1
Avg. daily 6m (US\$m)	1.43
Foreign limit / actual (%)	49 / 2
Free float (%)	24.0
Dividend policy (%)	≥ 30

2022 Sustainability / 2021 ESG Score

Sustainability Index (THSI)	Included
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ESG Bloomberg Score	41.23
Environmental Score	17.97
Social Score	28.26
Governance Score	77.33

Source: Bloomberg Finance L.P.

Share performance

(%)	1M	3M	12M
Absolute	(1.6)	(5.5)	(22.4)
Relative to SET	2.6	(3.5)	(17.9)

Source: SET, InnovestX Research

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Value proposition

ACE is a holding company for renewable power plants for the Songmetta family, one of Thailand's long-established exporters of wood chips. Via wholly owned subsidiaries, it operates 23 power projects with total capacity of 257.6MW; more than half is renewable power (biomass, municipal solid waste and solar) and the rest is gas-fired SPP cogeneration. The proportion of renewable power plants will go up over time as several projects in the pipeline come on stream. The key advantage is its in-house R&D to increase plant efficiency starting from plant design to feedstock selection and mixing formula. It has successfully cut fuel costs for these plants by 20% over the past three years to <Bt1.3/KWh produced in 2021 from Bt1.6/KWh produced in 2017, though this edged up 3.9% in 2022 due to inflationary pressure. Its strong ties with communities around the power plants underwrite feedstock (agricultural waste) reliability in the long term, leveraging the Songmetta Group's expertise.

Business outlook

ACE expects the return of several PPAs for its VSPP-biomass soon in view of the government's target to achieve 33% of new electricity capacity from renewable power plants by 2037. It will have to renegotiate with the electricity authorities to extend the startup dates for these plants. It was able to sign PPAs with EGAT for three of four SPP hybrid power plants, with combined capacity of 70MW but the scheduled COD of the first plant (20MW) was postponed from end-2023 pending the government green light to start construction. The scheduled startup of 50MW was also shifted, but with no definite timeframe. The PPA for the remaining plant (23MW) is expected to be signed in 2023. ACE also won 50MW additional capacity in the Community Power Plant (CPP) pilot project whose 20-year PPAs with the Provincial Electricity Authority (PEA) was signed in March 2023 after being rescheduled by the regulator from the initially planned Jan 2022. These power projects will gradually start operation during 2024-25.

Bullish views	Bearish views
1. Efficiency improvement at existing power plants, including three acquired biomass power plants, will continue to support earnings growth.	1. Slower than expected execution of new power plants that were committed during the IPO, including more PPAs for VSPP-biomass and SPP hybrid power plants which are under negotiation with the electricity authorities.
2. Capacity expansion plan to meet 1GW by 2024 will be the earnings driver over the next five years.	2. Policy risks on renewable power plants could curb growth.

Key catalysts

Factor	Event	Impact	Comment
Capacity additions in the pipeline.	More signing of PPAs from PEA for VSPP - biomass and SPP Hybrid were delayed - are expected to take place in 2023-24. Other upside potential is 200MW solar projects in Thailand.	Positive/ Negative	This should increase investor optimism on its ability to deliver earnings growth as expected during the IPO. This has been delayed for some time from initial plan.
Further improvement of feedstock cost	ACE targets reducing feedstock cost of biomass power plant.	Positive	ACE was able to reduce feedstock cost by 16% from its peak in 2017 to Bt1.35/KWh produced by changing the mix of feedstock to minimize the heat rate of its power plants.

Sensitivity Analysis

Factor	Earnings impact	TP impact
Gross margin (+1%)	+3.5%	+Bt0.06/share

ESG Disclosure Score

Bloomberg ESG Score	41.23 (2021)	CG Rating 0-5	DJSI	SETTHSI	THSI
Rank in Sector	21/67	ACE	4	No	Yes

Source: Thai Institute of Directors (IOD), SET

Environmental Issue (E)

- ACE has set sustainability targets with plans to increase power capacity focused on clean energy plants to provide ACE with a total installed capacity of at least 1,000MW by 2024.
- ACE's renewable power business helped alleviate chronic environmental problems in Thailand. Its biomass power business helped in reducing open agricultural burning which lessened PM2.5 concentration in Thailand. The MSW power plants could solve the problem of waste management.
- The company is moving toward Carbon Neutral and to Net Zero emissions in the future. This includes the purchase of agricultural waste from farmers around its power plants. The company purchased 1.66mn tons of agricultural waste materials in 2021, reducing CO₂ emissions by approximately 437ktCO₂e.

Social Issue (S)

- ACE provides eucalyptus seedlings from drought-tolerant, disease-resistant, fast-growing cultivars to farmers in 15 areas surrounding the power plants for farmers to plant in the fields, ridge, boundary, canal, rai, end of the field, or unused wasteland. This helps generate additional income and improve the quality of life for the community and creates a sustainable circular economy.
- ACE continues to invest in projects that are beneficial to the economy, society and sustainable coexistence with the community. These include 18 Community Power Plant projects which the company bid for and won in in 2021. This will generate more income for the community under a contract farming scheme.
- ACE maintains its good record in occupational health and safety with zero accidents and lost-time injuries.

Governance Issue (G)

- ACE's board of directors consists of 10 directors, 5 non-executive directors (50% of the entire board), 5 independent directors (50% of the entire board), and 5 executive directors. This includes 3 female members (30% of the entire board).
- ACE has been rated "Very Good" (4 stars) by the Thai Institute of Directors in 2022.
- We view the company's social and governance practices as conforming to general industry standards.

ESG Disclosure Score

	2020	2021
ESG Disclosure Score	31.82	41.23
Environment	2.42	17.97
Emissions Reduction Initiatives	Yes	Yes
Climate Change Policy	Yes	Yes
GHG Scope 1	n.a.	n.a.
Biodiversity Policy	No	Yes
Energy Efficiency Policy	Yes	Yes
Total Energy Consumption	n.a.	n.a.
Social	15.54	28.26
Human Rights Policy	Yes	Yes
Equal Opportunity Policy	Yes	Yes
Health and Safety Policy	Yes	Yes
Fatalities - Employees	n.a.	n.a.
Total Recordable Incident Rate - Employees	n.a.	n.a.
Employee Turnover Pct	n.a.	20.00
Governance	77.33	77.33
Size of the Board	10	10
Number of Board Meetings for the Year	10	10
Board Meeting Attendance Pct	93	93
Number of Female Executives	2	2
Number of Independent Directors	5	5
Board Duration (Years)	n.a.	n.a.

Source: Bloomberg Finance L.P.

Disclaimer

Bloomberg ESG Disclosure Scores rate companies on their level of disclosure of ESG data. Bloomberg offers four disclosure scores, for overall ESG, as well as Environmental, Social, and Governance such as energy consumption, board composition, and workforce accidents.

Company ESG reporting has evolved since our ESG Disclosure Score was originally created in 2010. In order to reflect the evolution in corporate reporting, in early 2022 Bloomberg updated its ESG disclosure scores methodology. The methodology changes were implemented for all years of data for all companies in the ESG Coverage universe.

To review the fully transparent methodology, calculate disclosure scores for any company, and compare a company's scores vs its peers, see ESG Disclosure Score Model in Bloomberg.

Financial statement

Profit and Loss Statement

FY December 31	Unit	2018	2019	2020	2021	2022	2023F	2024F	2025F
Total revenue	(Btmn)	4,833	5,055	5,858	5,727	6,917	6,393	7,124	8,281
Cost of goods sold	(Btmn)	3,416	3,429	4,067	3,808	5,044	4,460	4,623	5,030
Gross profit	(Btmn)	1,417	1,626	1,791	1,919	1,873	1,933	2,501	3,252
SG&A	(Btmn)	379	330	322	350	438	447	456	465
Other income	(Btmn)	16	33	179	13	17	17	17	17
Interest expense	(Btmn)	483	413	106	141	132	216	241	278
Pre-tax profit (before extra)	(Btmn)	572	916	1,541	1,440	1,319	1,288	1,821	2,526
Corporate tax	(Btmn)	16	(3)	43	103	93	26	36	51
Equity a/c profits	(Btmn)	0	0	0	0	0	0	0	0
Minority interests	(Btmn)	0	0	0	0	1	(0)	(27)	(91)
Core profit	(Btmn)	557	919	1,499	1,338	1,227	1,261	1,757	2,385
Extra-ordinary items	(Btmn)	(10)	(104)	9	168	55	0	0	0
Net Profit	(Btmn)	547	815	1,508	1,506	1,282	1,261	1,757	2,385
EBITDA	(Btmn)	1,586	1,856	2,189	2,249	2,181	2,240	3,801	3,774
Core EPS	(Btmn)	0.06	0.10	0.15	0.13	0.12	0.12	0.17	0.23
Net EPS	(Bt)	0.06	0.09	0.15	0.15	0.13	0.12	0.17	0.23
DPS	(Bt)	0.00	0.00	0.05	0.02	0.00	0.04	0.05	0.07

Balance Sheet

FY December 31	Unit	2018	2019	2020	2021	2022	2023F	2024F	2025F
Total current assets	(Btmn)	1,132	1,435	1,841	2,672	3,032	3,451	4,813	5,368
Total fixed assets	(Btmn)	12,755	12,711	14,588	16,068	17,039	17,457	17,817	19,926
Total assets	(Btmn)	13,887	14,145	16,430	18,740	20,071	20,907	22,630	25,294
Total loans	(Btmn)	7,749	2,995	3,922	4,754	5,041	4,716	5,083	5,843
Total current liabilities	(Btmn)	1,624	1,373	1,213	1,327	1,769	1,355	1,359	1,433
Total long-term liabilities	(Btmn)	6,691	1,979	3,224	4,044	4,118	4,106	4,475	5,189
Total liabilities	(Btmn)	8,315	3,352	4,437	5,372	5,886	5,461	5,834	6,622
Paid-up capital	(Btmn)	4,579	5,088	5,088	5,088	5,088	5,088	5,088	5,088
Total equity	(Btmn)	5,572	10,793	11,993	13,315	14,125	15,387	16,737	18,613
BVPS	(Bt)	0.61	1.06	1.18	1.31	1.39	1.51	1.64	1.83

Cash Flow Statement

FY December 31	Unit	2018	2019	2020	2021	2022	2023F	2024F	2025F
Core Profit	(Btmn)	557	919	1,499	1,338	1,227	1,261	1,757	2,385
Depreciation and amortization	(Btmn)	532	527	541	667	730	737	1,739	970
Operating cash flow	(Btmn)	1,697	1,619	1,895	1,869	1,522	2,713	3,393	3,172
Investing cash flow	(Btmn)	(401)	(826)	(1,644)	(2,014)	(1,774)	(1,175)	(2,120)	(3,100)
Financing cash flow	(Btmn)	(1,197)	(825)	161	553	(210)	(325)	(40)	251
Net cash flow	(Btmn)	99	(33)	411	408	(462)	1,213	1,233	323

Key Financial Ratios

FY December 31	Unit	2018	2019	2020	2021	2022	2023F	2024F	2025F
Gross margin	(%)	29.3	32.2	30.6	33.5	27.1	30.2	35.1	39.3
Operating margin	(%)	21.5	25.6	25.1	27.4	20.7	23.2	28.7	33.6
EBITDA margin	(%)	32.8	36.7	37.4	39.3	31.5	35.0	53.4	45.6
EBIT margin	(%)	21.8	26.3	28.1	27.6	21.0	23.5	28.9	33.9
Net profit margin	(%)	11.3	16.1	25.7	26.3	18.5	19.7	24.7	28.8
ROE	(%)	10.5	11.2	13.2	10.6	8.9	8.5	10.9	13.5
ROA	(%)	4.0	6.6	9.8	7.6	6.3	6.2	8.1	10.0
Net D/E	(x)	1.4	0.3	0.3	0.3	0.3	0.2	0.1	0.1
Interest coverage	(x)	3.3	4.5	20.6	15.9	16.5	10.4	15.7	13.6
Debt service coverage	(x)	1.0	1.2	2.3	2.1	1.6	2.0	3.4	3.1
Payout Ratio	(%)	0.0	0.0	33.7	13.5	0.0	32.3	29.0	29.9

Main Assumptions

FY December 31	Unit	2018	2019	2020	2021	2022	2023F	2024F	2025F
Installed capacity (period-end)	(MW)	210	212	246	258	258	281	306	306
Gross margin - Biomass	(%)	0.0	35.1	37.9	33.3	29.8	29.8	29.8	29.8
Gross margin - MSW	(%)	0.0	27.9	30.2	28.6	18.8	25.0	28.0	28.0
Gross margin - Solar	(%)	0.0	50.0	52.4	54.3	57.8	54.0	54.0	54.0
FIT (variable)	(Bt/kWh)	1.86	1.87	1.88	1.89	1.89	1.94	1.96	1.98
Effective interest rate	(%)	5.91	7.65	3.07	3.26	2.70	4.58	4.75	4.75

Financial statement

Profit and Loss Statement

FY December 31	Unit	1Q21	2Q21	3Q21	4Q21	1Q22	2Q22	3Q22	4Q22
Total revenue	(Btmn)	1,314	1,386	1,468	1,559	1,621	1,638	1,815	1,844
Cost of goods sold	(Btmn)	875	920	971	1,042	1,149	1,174	1,351	1,370
Gross profit	(Btmn)	439	466	496	517	472	464	464	473
SG&A	(Btmn)	85	82	106	77	91	96	118	133
Other income	(Btmn)	2	5	2	4	4	8	2	4
Interest expense	(Btmn)	34	36	36	35	35	29	33	36
Pre-tax profit	(Btmn)	323	353	356	408	350	346	315	308
Corporate tax	(Btmn)	29	22	35	17	22	50	36	(16)
Equity a/c profits	(Btmn)	0	0	0	0	0	0	0	0
Minority interests	(Btmn)	0	0	0	0	0	0	0	0
Core profit	(Btmn)	294	331	322	391	327	296	279	324
Extra-ordinary items	(Btmn)	66	35	90	(23)	(5)	87	102	(130)
Net Profit	(Btmn)	360	366	411	368	323	384	381	194
EBITDA	(Btmn)	519	554	559	616	562	558	531	530
Core EPS	(Btmn)	0.03	0.03	0.03	0.04	0.03	0.03	0.03	0.03
Net EPS	(Bt)	0.04	0.04	0.04	0.04	0.03	0.04	0.04	0.02

Balance Sheet

FY December 31	Unit	1Q21	2Q21	3Q21	4Q21	1Q22	2Q22	3Q22	4Q22
Total current assets	(Btmn)	2,247	2,352	2,153	2,672	2,563	3,057	3,145	3,032
Total fixed assets	(Btmn)	15,229	15,521	16,037	16,068	16,292	16,550	16,614	17,039
Total assets	(Btmn)	17,475	17,873	18,191	18,740	18,855	19,607	19,759	20,071
Total loans	(Btmn)	4,526	4,765	4,621	4,754	4,440	4,994	4,680	5,041
Total current liabilities	(Btmn)	1,167	1,303	1,221	1,327	1,273	1,373	1,300	1,769
Total long-term liabilities	(Btmn)	3,955	4,006	3,985	4,044	3,887	4,360	4,215	4,118
Total liabilities	(Btmn)	5,122	5,309	5,206	5,372	5,160	5,732	5,515	5,886
Paid-up capital	(Btmn)	5,088	5,088	5,088	5,088	5,088	5,088	5,088	5,088
Total equity	(Btmn)	12,353	12,536	12,948	13,315	13,638	13,818	14,187	14,125
BVPS	(Bt)	1.21	1.23	1.27	1.31	1.34	1.36	1.39	1.39

Cash Flow Statement

FY December 31	Unit	1Q21	2Q21	3Q21	4Q21	1Q22	2Q22	3Q22	4Q22
Core Profit	(Btmn)	294	331	322	391	327	296	279	324
Depreciation and amortization	(Btmn)	162	165	167	173	178	183	183	186
Operating cash flow	(Btmn)	451	260	580	577	462	419	376	266
Investing cash flow	(Btmn)	(777)	(435)	(631)	(170)	(444)	(352)	(162)	(817)
Financing cash flow	(Btmn)	585	52	(172)	87	(345)	322	(355)	168
Net cash flow	(Btmn)	259	(123)	(223)	495	(327)	389	(142)	(382)

Key Financial Ratios

FY December 31	Unit	1Q21	2Q21	3Q21	4Q21	1Q22	2Q22	3Q22	4Q22
Gross margin	(%)	33.4	33.6	33.8	33.2	29.1	28.3	25.6	25.7
Operating margin	(%)	27.0	27.7	26.6	28.2	23.5	22.5	19.1	18.5
EBITDA margin	(%)	39.5	40.0	38.1	39.5	34.7	34.1	29.2	28.7
EBIT margin	(%)	27.1	28.0	26.7	28.4	23.7	22.9	19.2	18.7
Net profit margin	(%)	27.4	26.4	28.0	23.6	19.9	23.4	21.0	10.5
ROE	(%)	9.7	10.6	10.1	11.9	9.7	8.6	8.0	9.2
ROA	(%)	6.9	7.5	7.1	8.5	7.0	6.2	5.7	6.5
Net D/E	(x)	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Interest coverage	(x)	15.2	15.5	15.5	17.4	16.3	19.2	16.3	14.7
Debt service coverage	(x)	2.4	2.1	2.3	2.3	2.5	2.2	2.4	1.6

Key Statistics

FY December 31	Unit	1Q21	2Q21	3Q21	4Q21	1Q22	2Q22	3Q22	4Q22
Installed capacity (period-end)	(MW)	248	248	248	258	258	258	258	258
Gross profit margin - Biomass	(%)	31.2	32.8	35.1	34.0	31.6	30.4	29.0	28.1
Gross profit margin - MSW	(%)	50.9	52.1	52.7	60.8	57.1	58.7	55.3	59.5
Gross profit margin - Cogen	(%)	32.4	29.9	27.4	25.6	21.0	19.5	18.0	17.5
Effective interest rate	(%)	3.27	3.11	3.11	3.10	3.04	2.49	2.72	3.09

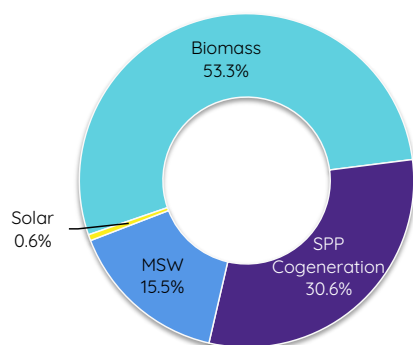
Figure 1: ACE - 4Q22 earnings review

	4Q21	3Q22	4Q22	%YoY	%QoQ	12M21	12M22	%YoY
P&L (Bt, mn)								
Total revenue	1,559	1,815	1,844	18.2	1.6	5,727	6,917	20.8
Gross profit	517	464	473	(8.5)	2.0	1,919	1,873	(2.4)
EBITDA	616	531	530	(14.0)	(0.1)	2,249	2,181	(3.0)
Profit before extra items	391	279	324	(17.1)	16.1	1,338	1,227	(8.3)
Net Profit	368	381	194	(47.2)	(49.1)	1,506	1,282	(14.9)
EPS (Bt)	0.04	0.04	0.02	(47.2)	(49.1)	0.15	0.13	(14.9)
B/S (Bt, mn)								
Total assets	18,740	19,759	20,071	7.1	1.6	18,740	20,071	7.1
Total liabilities	5,372	5,515	5,886	9.6	6.7	5,372	5,886	9.6
Total equity	13,369	14,244	14,185	6.1	(0.4)	13,369	14,185	6.1
BVPS (Bt)	1.31	1.39	1.39	6.1	(0.4)	1.31	1.39	6.1
Financial ratio (%)								
Gross margin (%)	33.2	25.6	25.7	(7.5)	0.1	33.5	27.1	(6.4)
EBITDA margin (%)	39.5	29.2	28.7	(10.8)	(0.5)	39.3	31.5	(7.7)
Net profit margin (%)	23.6	21.0	10.5	(13.1)	(10.5)	26.3	18.5	(7.8)
ROA (%)	8.5	5.7	6.5	(2.0)	0.8	8.6	6.6	(2.0)
ROE (%)	11.9	8.0	9.2	(2.8)	1.2	11.9	9.3	(2.6)
D/E (X)	0.4	0.4	0.4	1.3	2.8	0.4	0.4	1.3

Source: ACE and InnovestX Research

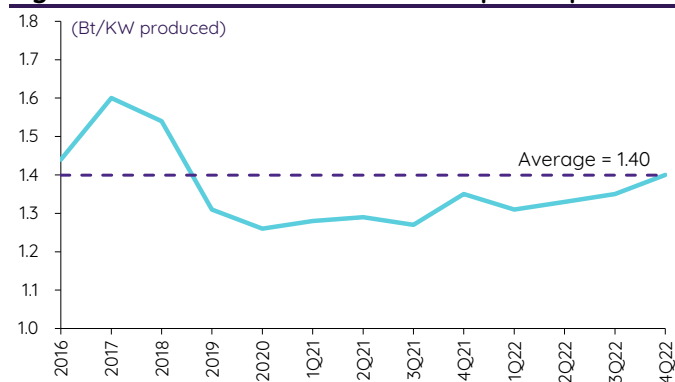
Appendix

Figure 2: Gross profit breakdown (2022)



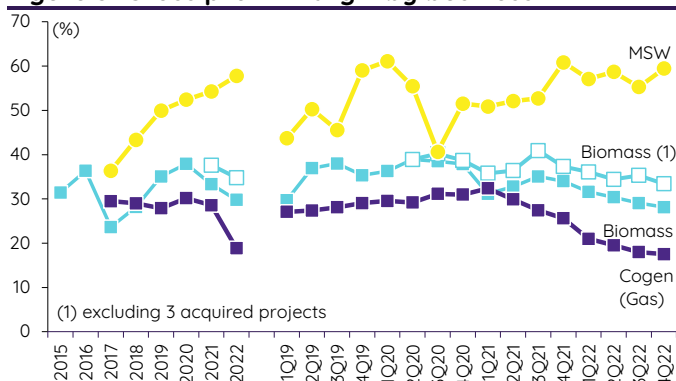
Source: ACE and InnovestX Research

Figure 4: Feedstock cost of biomass power plants



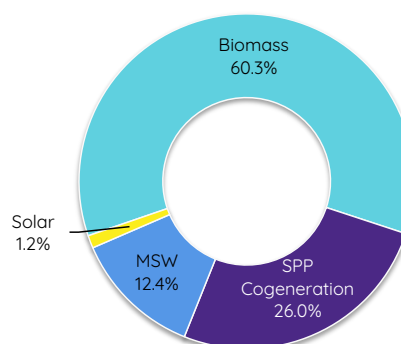
Source: ACE and InnovestX Research

Figure 3: Gross profit margin by business



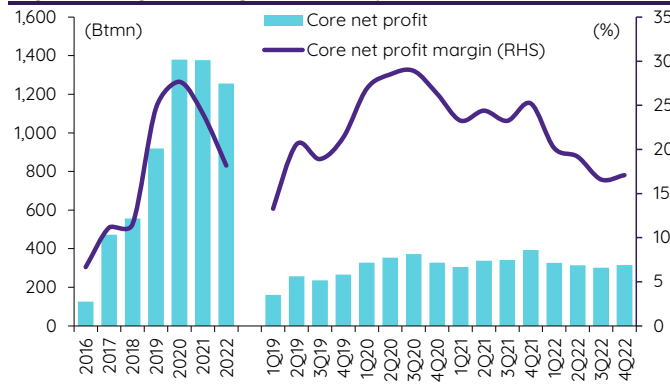
Source: ACE and InnovestX Research

Figure 5: Asset breakdown (2022)



Source: ACE and InnovestX Research

Figure 6: Quarterly core net profit



Source: ACE and InnovestX Research

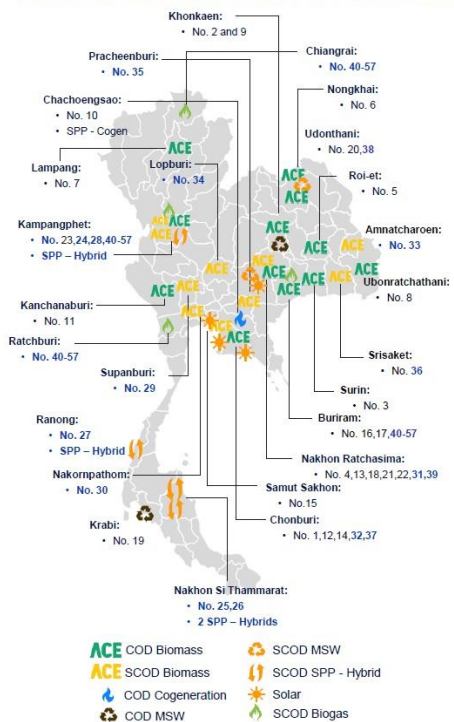
Figure 7: ACE - PBV band



Source: ACE and InnovestX Research

Figure 8: ACE - asset overview (Dec 2022)

- Operating projects
- Under development projects & Pending for development projects



	Type	Installed / Equity MW	PPA MW	Location	COD / SCOD Date	Status		
Existing Projects (23 Projects)	1	VSPP - Biomass	9.9	8	Chonburi	24/4/2012	COD	
	2	VSPP - Biomass	9.9	8	Khonkaen	2/5/2012		
	3	VSPP - Biomass	9.9	8	Surin	30/10/2012		
	4	VSPP - Biomass	9.9	8	Nakhon Ratchasima	16/1/2013		
	5	VSPP - Biomass	9.9	8	Roi-et	4/6/2013		
	6	VSPP - Biomass	9.9	8	Nongkhai	26/12/2013		
	7	VSPP - Biomass	9.9	8	Lampang	9/7/2014		
	8	VSPP - Biomass	9.9	8	Ubonratchathani	14/8/2015		
	9	VSPP - MSW	6	4.5	Khonkaen	29/11/2016		
	10	SPP - Cogeneration	114.35	90	Chachoengsao	10/2/2017		
	11	VSPP - Biomass	9.9	8	Kanchanaburi	16/8/2017		
	12	VSPP - Solar Rooftop	1	1	Chonburi	20/11/2018		
	13	VSPP - Solar Rooftop	0.73	0.73	Nakhon Ratchasima	22/2/2019		
	14	1 Solar Rooftop	1	1	Chonburi	27/9/2019		
	15	1 Solar Rooftop	0.83	0.83	Samut Sakhon	22/5/2020		
	16	VSPP - Biomass	7.5	6.5	Buriram (ACES)	24/1/2006		
	17	VSPP - Biomass	9.5	8	Buriram (ABE)	6/2/2008		
	18	VSPP - Biomass	9.9	8	Nakhon Ratchasima (AAE)	10/11/2011		
	19	VSPP - MSW	6	4.4	Krabi	28/12/2020		
Under Development and pending for development (34 projects)	20	Waste Landfill	N/A	N/A	Udonthani	5/1/2021	PPA signed	
	21	1 Solar Rooftop	0.24	0.24	Nakhon Ratchasima	25/2/2021		
	22	Floating Solar	1,515	1,515	Nakhon Ratchasima	31/3/2021		
	23	VSPP - Biomass	9.9	8	Kampangphet	26/11/2021	EIA Approved	
	24	1 SPP - Hybrid	20	13.31	Kampangphet	Within 2023		
	25,26	2 SPP - Hybrids	50	43	Nakhon Si Thammarat	TBD		
	27	1 SPP - Hybrid	23	20	Ranong	TBD		
	28	VSPP - Biomass	9.9	8	Kampangphet	Within 2024	PPA to be signed	
	29	VSPP - Biomass	9.9	8	Supanburi	Within 2024		
	30	VSPP - Biomass	9.9	8	Nakornpathom	Within 2024		
	31	VSPP - Biomass	9.9	8	Nakhon Ratchasima	Within 2024		
	32	VSPP - Biomass	9.9	8	Chonburi	Within 2024		
	33	VSPP - Biomass	9.9	8	Amnatcharoen	Within 2024		
	34	VSPP - Biomass	9.9	8	Lopburi	Within 2024		
	35	VSPP - Biomass	9.9	8	Pracheenburi	Within 2024		
	36	VSPP - Biomass	9.9	8	Srisaket	Within 2024		Under consideration of Administrative Court
	37	VSPP - Biomass ¹	9.9	8	Chonburi	Within 2024		
	38	VSPP - MSW	9.9	8	Udonthani	Within 2023		
39	VSPP - MSW	9.9	8	Nakhon Ratchasima	Within 2023	PPA to be signed		
40-57	VSPP - Biogas	59	50	Chiangrai / Kamphaengphet / Buriram / Ratchaburi	2023 - 2024			
Total		57	528.37	429.03				

Source: ACE and InnovestX Research

Note: 1/ Including APP's capacity of 9.9MW, Currently, APP's shareholders sent LOI for APP share purchase proposal to ACE

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CG Rating 2022 Companies with CG Rating

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Corporate Governance Report

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Declared (ประกาศเจตนา)

AH, ALT, APCO, ASW, B52, CHG, CI, CPR, CPW, DDD, DHOUSE, DOHOME, ECF, EKH, ETC, EVER, FLOYD, GLOBAL, ILM, INOX, J, JMART, JMT, JTS, KEX, KUMWEL, LDC, MEGA, NCPA, NOVA, NRF, NUSA, OR, PIMO, PLE, RS, SAK, SIS, SSS, STECH, SUPER, SVT, TKN, TMD, TMI, TQM, TRT, TSI, VARO, VCOM, VIBHA, W, WIN

N/A

24CS, 3K-BAT, A, A5, AAI, AAV, ABM, ACAP, ACC, ACE, ACG, ADB, ADD, AEONTS, AFC, AGE, AHC, AIT, AJA, AKR, ALL, ALLA, ALPHAX, ALUCON, AMARC, AMARIN, AMC, AMR, ANAN, AOT, APEX, APP, APURE, AQ, AQUA, ARIN, ARIP, ARROW, ASAP, ASEFA, ASIA, ASIMAR, ASN, ATP30, AU, AUCTION, AURA, BA, BBIK, BBL, BC, BCT, BDMS, BEAUTY, BEM, BGT, BH, BIG, BIOTEC, BIS, BIZ, BJC, BJCHI, BKD, BLAND, BLESS, BLISS, BM, BOL, BR, BRI, BROCK, BSM, BTG, BTNC, BTW, BUI, BVG, CAZ, CBG, CCET, CCP, CEYE, CGD, CH, CHARAN, CHASE, CHAYO, CHIC, CHO, CITY, CIVIL, CK, CKP, CMAN, CMO, CMR, CNT, COLOR, COMAN, CPANEL, CPH, CPT, CRANE, CRD, CSP, CSR, CSS, CTW, CV, CWT, D, DCON, DITTO, DMT, DOD, DPAINT, DTCENT, DTCI, DV8, EASON, ECL, EE, EFORL, EMC, ESSO, F&D, FANCY, FMT, FN, FORTH, FTI, FVC, GENCO, GIFT, GL, GLAND, GLOCON, GLORY, GRAMMY, GRAND, GREEN, GSC, GTB, GTV, GYT, HFT, HL, HPT, HTECH, HUMAN, HYDRO, ICN, IFEC, IHL, IIG, IMH, IND, INGRS, INSET, IP, IRCP, IT, ITC, ITD, ITNS, ITTHI, JAK, JAS, JCK, JCKH, JCT, JDF, JSP, JUBILE, KAMART, KC, KCC, KCM, KDH, KIAT, KISS, KJL, KK, KKC, KLINIQ, KOOL, KTIS, KTMS, KUN, KWC, KWM, KYE, LALIN, LEE, LEO, LIT, LOXLEY, LPH, LST, MACO, MANRIN, MASTER, MATI, MAX, M-CHAI, MCS, MDX, MEB, MENA, METCO, MGT, MICRO, MIDA, MITSIB, MJD, MK, ML, MODERN, MORE, MOSHI, MPIC, MTW, MUD, MVP, NATION, NC, NCH, NCL, NDR, NER, NETBAY, NEW, NEX, NEX, NNCL, NPK, NSL, NTSC, NTV, NV, NVD, NYT, OHTL, OISHI, ONEE, OSP, OTO, PACE, PACO, PAF, PCC, PEACE, PERM, PF, PICO, PIN, PJW, PLUS, PMTA, POLAR, POLY, POMPUI, PORT, POST, PPM, PQS, PRAKIT, PRAPAT, PRECHA, PRI, PRIME, PRIN, PRO, PROEN, PROUD, PRTR, PSG, PTC, PTECH, PTL, RAM, RBF, RCL, READY, RICHY, RJH, ROCK, ROH, ROJNA, RP, RPC, RPH, RSP, RT, S, S11, SA, SABUY, SAF, SAFARI, SALEE, SAM, SAMART, SAMCO, SAMTEL, SANKO, SAUCE, SAWAD, SAWANG, SCAP, SCI, SCP, SDC, SE, SEAFSCO, SECURE, SENAJ, SFLEX, SFP, SFT, SGC, SGF, SHANG, SHR, SIAM, SICT, SIMAT, SISB, SJWD, SK, SKE, SKN, SKY, SLM, SLP, SM, SMART, SMD, SMT, SNNP, SO, SOLAR, SONIC, SPA, SPCG, SPG, SPVI, SQ, SR, SSC, STANLY, STARK, STC, STEC, STHAI, STI, STP, STPI, SUC, SUN, SUTHA, SVOA, SVR, SWC, SYNEC, TACC, TAPAC, TC, TCC, TCCC, TCJ, TCOAT, TEAM, TEAMG, TEGH, TEKA, TFM, TGE, TGPRO, TH, THAI, THANA, THE, THG, THL, THMUI, TIGER, TIPH, TITLE, TK, TKC, TLI, TM, TMC, TMW, TNDT, TNH, TNPC, TOA, TPAC, TPBI, TPCH, TPIPL, TPIPP, TPLAS, TPOLY, TPS, TQR, TR, TRC, TRITN, TRUBB, TRUE, TRV, TSE, TSF, TSR, TTI, TTT, TTW, TVT, TWP, TWZ, TYCN, UAC, UBA, UMI, UMS, UNIQ, UP, UPOIC, UREKA, UTP, UVAN, VL, VNG, VPO, VRANDA, WARRIX, WAVE, WFX, WGE, WINMED, WINNER, WORK, WORLD, WP, WPH, XPG, YGG, YONG

Explanations

Companies participating in Thailand's Private Sector Collective Action Coalition Against Corruption programme (Thai CAC) under Thai Institute of Directors (as of July 7, 2022) are categorised into: companies that have declared their intention to join CAC, and companies certified by CAC.