



Utilities

SET ENER index Close: 5/6/2018 25,915.84 +73.43 / +0.28% Bt16,811mn
 Bloomberg ticker: SET ENER

Prefer WHAUP to TTW

Among utility stocks, TTW and WHAUP have a similar business model and both do well in their water and power businesses. TTW's key earnings driver is its water business, which provides a high 91% of EBIT, with WHA fueled by power, which contributes 72% of EBIT. Based on SOTP valuation, we value TTW at Bt13.5/share and WHA at Bt8.75/share. At last close, WHAUP provides a more attractive TTR of 36% versus only 15% for TTW. We thus prefer WHAUP to TTW.

Utility flagships. TTW (the utilities flagship for leading construction contractor, CK) and WHAUP (the utilities flagship for the WHA group, a lead industrial estate developer) both carry on business in water and power. In this report, we analyze their business structures, operations and valuations.

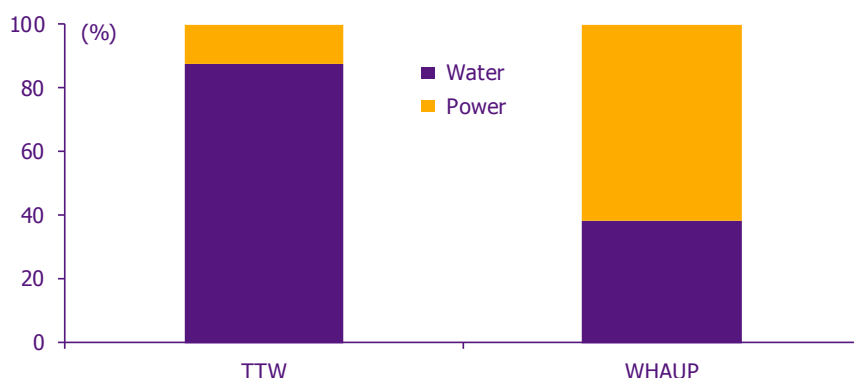
TTW is water driven, WHAUP power driven. Though business models are similar, TTW is most prominent in the water business. It produces potable water of 1.076mn cum/day and has a 25.3% stake in CKP, giving it attributed capacity of 205MW. By 2020, the water business will contribute a high of 91% of total EBIT (including water and power equity income) for TTW. For WHAUP, however, water contributes only 28% of total EBIT with 72% being equity income from power off its large attributed capacity of 543MW.

Water outlook. Thanks to TTW's no-cost raw water, sourced from the Chao Phraya River, whereas water costs are 64% of total cost of goods sold for WHAUP, TTW has a higher EBITDA margin of 81.4% versus only 49.3% for WHAUP. Still, WHAUP has a better growth outlook with 3-year CAGR EBITDA growth of 9.7% for 2017-2020 versus 3.9% for TTW because of WHAUP's stronger sales volume growth of 11% for new and heavy industrial estate customers (SPPs, IPP and petrochemical plants), while TTW's growth is only 5% as it serves households.

Different growth periods for power. The jump in capacity for WHAUP took place over the last 12 months with the startups of five SPPs during May 2017-Jan 2018 that added 32% to total attributed capacity. These five will contribute a full year of earnings from this year. On the other hand, TTW/CKP's capacity growth will take place in 4Q19 with the scheduled startup of Xayaburi hydropower project, its largest project, which will boost TTW's total attributed capacity by 90% and give full-year earnings contribution from 2020.

Prefer WHAUP to TTW. Using sum-of-the-parts valuation, we value the water business on FCFF and power on FCFE, then deduct net debt. We derive a net equity value of Bt13.5/share for TTW and Bt8.75/share for WHAUP. At last close, WHAUP provides a higher TTR of 36% versus only 15% for TTW. WHAUP also has more visible upside risks in line with WHA's expansion, but CKP/TTW is tied to new PPAs. These factors lead us to prefer WHAUP to TTW.

Valuation breakdown (total equity value before deducting net debt)



Source: TTW, WHAUP and SCBS Investment Research

Valuation summary

	Rating	Price (Bt)	TP (Bt)	ETR (%)	P/E (x)	P/BV (x)			
					18F	19F			
BCPG	Neutral	19.4	19.0	1.2	22.3	18.9	2.5	2.4	
BPP	Buy	24.7	30.0	23.9	12.5	11.5	1.8	1.6	
CKP	Neutral	4.0	4.0	1.8	48.1	35.5	1.6	1.6	
EGCO	Buy	241.0	273.0	16.3	12.3	11.8	1.2	1.1	
GLOW	Neutral	83.8	85.0	8.4	14.5	14.6	2.5	2.5	
GPSC	Sell	72.5	60.0	(15.2)	27.1	23.8	2.7	2.5	
RATCH	Buy	52.0	64.0	27.7	10.7	10.1	1.1	1.1	
TTW	Buy	12.3	13.5	15.3	16.2	15.8	4.0	4.0	
WHAUP	Buy	6.6	8.8	36.1	11.4	10.2	1.8	1.6	
Average					12.8	19.5	16.9	2.1	2.0

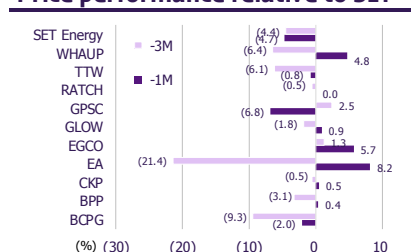
Source: SCBS Investment Research

Price performance

(%)	Absolute			Relative to SET		
	1M	3M	12M	1M	3M	12M
BCPG	(2.5)	(9.3)	33.8	0.1	(5.9)	21.1
BPP	0.0	(3.1)	(3.1)	2.7	0.6	(12.3)
CKP	(2.5)	(0.5)	21.5	0.2	3.3	10.0
EGCO	5.2	1.3	14.8	8.1	5.1	3.9
GLOW	1.5	(1.8)	6.0	4.3	2.0	(4.0)
GPSC	(7.9)	2.5	111.7	(5.4)	6.4	91.7
RATCH	(0.5)	(0.5)	2.0	2.2	3.3	(7.7)
TTW	(2.4)	(6.1)	17.1	0.3	(2.5)	6.1
WHAUP	4.8	(6.4)	20.0	7.6	(2.8)	8.7

Source: SET, SCBS Investment Research

Price performance relative to SET



Source: SET, SCBS Investment Research

Analyst

Sirikarn Krisnipat

Fundamental Investment
 Analyst on Securities
 (66-2) 949-1020
 sirikarn.krisnipat@scb.co.th

Solaya Na Songkhla

Fundamental Investment
 Analyst on Securities
 (66-2) 949-1006
 solaya.na_songkhla@scb.co.th

Investment conclusion: Prefer WHAUP to TTW

In this report, we analyze business structure, operations and valuations of TTW and WHAUP, whose businesses lie in both water and power and equity structure is similar. We present our findings below.

- 1) **TTW's key driver is water, but WHAUP's is power.** With large potable water production capacity (1.076mn cum/day) and a small stake of 25.3% in CKP that gives it implied attributed capacity of 205MW, by 2020 when all power and water plants are operating full out, water will contribute a high 91% of total EBIT (including water and equity income from power), with only 9% directly from power operations. For WHAUP, however, water contributes only 28% of total EBIT with 72% being equity income from power off its large attributed capacity of 543MW.
- 2) **WHAUP has clearer upside.** WHAUP's operations will grow in line with WHA's expansion - both domestic (water and utilities for new industrial estates in Amphoe Ban Khai in Rayong, natural gas distribution) and overseas (utilities for Nghe An Industrial Park in Vietnam). Outside of Thailand, TTW has only the possibility of water operations in Myanmar and size will be small at 40,000cum/day. For power business, although TTW's new Xayaburi hydropower project will boost portfolio capacity by 90% in 2019, this is already factored into our valuation. Upside risk for TTW's power business depends on new PPAs from the Energy Regulatory Commission (ERC) while potential upside for WHAUP is more visible with its plan to provide solar-rooftop service to industrial users on the 2mn sqm rooftop owned or controlled by WHA (capacity of up to 200 MW).
- 3) **We prefer WHAUP to TTW.** Based on sum-of-the-parts, we calculate net equity value for the water business on free-cashflow-to-firm (FCFF) and the power business on free-cashflow-to-equity (FCFE), then deduct net debt. We derive a net equity value of Bt52.5bn (rounded to Bt13.5/share) for TTW and Bt33.3bn (rounded to Bt8.75/share) for WHAUP. TTW's total equity value (before deducting net debt) is weighted to the water business (88%), but WHAUP's is weighed to the power business (62%). At last close, WHAUP provides a more attractive TTR of 36% versus only 15% for TTW. We thus prefer WHAUP to TTW.

Figure 1: Sum-of-the-parts valuation

	Method	Value (Btmn)		Value (Bt/Sh)	
		TTW	WHAUP	TTW	WHAUP
Water business	PV of FCFF	53,000	15,129	13.28	3.96
Power business	PV of FCFE	7,461	24,411	1.87	6.38
Total equity value		60,461	39,540	15.15	10.34
Less: Net debt		(7,981)	(6,235)	(2.00)	(1.63)
Net equity value		52,480	33,304	13.50*	8.75*
Market cap.		49,077	25,245	12.30	6.60
Capital gain (%)				9.8	32.6
Dividend yield (%)				5.5	3.5
Expected total return (%)				15.3	36.1

Source: SCBS Investment Research

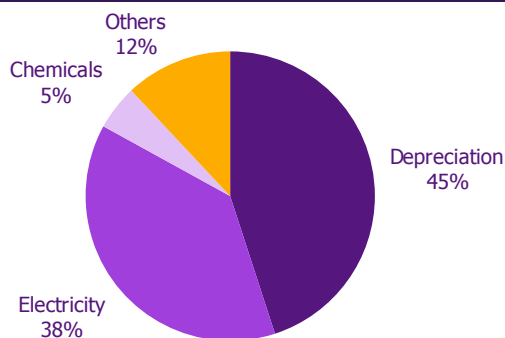
Note: * Rounded number to comply with stock price's trading spread

Water business comparison

TTW is larger with higher profitability...

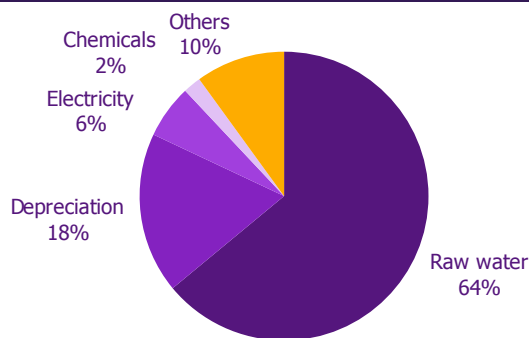
TTW's tap water production capacity (1.076mn cum/day) is four times that of WHAUP (281,376 cum/day), but TTW's EBITDA from water (Bt4.8bn) is five times the latter (Bt956mn) in 2018. This is because TTW has zero cost for raw water sourced from the Chao Phraya River, but WHAUP pays for its water, which comprises a high 64% of total costs: it buys from Eastern Water Resources Development and Management PLC (EASTW). This gives TTW a high EBITDA margin of 81.4% versus WHAUP's 49.3% in 2018.

Figure 2: Cost structure of TTW in 2016



Source: TTW, SCBS Investment Research

Figure 3: Cost structure of WHAUP in 2016

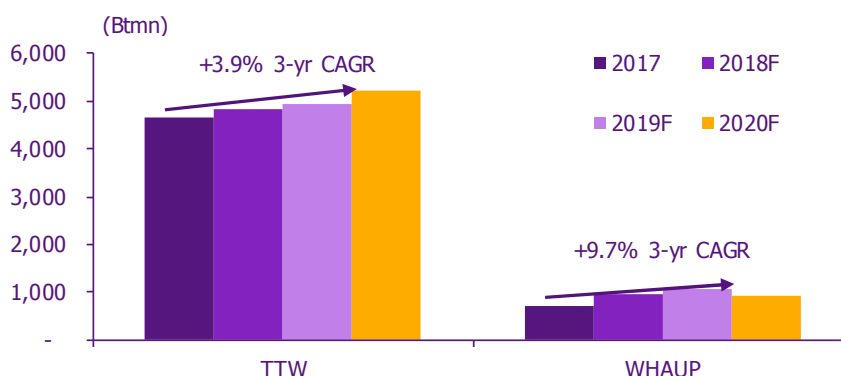


Source: WHAUP, SCBS Investment Research

... but WHAUP has better growth outlook

We expect marginal EBITDA growth of 3.9% for TTW p.a. during 2017-2020 versus 9.7% for WHAUP. This is because TTW serves households – where demand grows rather slowly at only 5% p.a. versus a much more robust demand growth of 11% for WHAUP, which supplies new industrial customers, who are heavy users, including SPPs, IPP and petrochemical plants), where growth is much higher.

Figure 4: EBITDA 3-yrs CAGR of 3.9% for TTW and 9.7% for WHAUP



Source: TTW, WHAUP, SCBS Investment Research

Water valuation

We value the water business based on FCFF valuation. We project cashflow for the remaining WSPA agreements for TTW and the remaining rights to operate for WHAUP, assuming no extension for either company, and no terminal value. We discount cashflow with WACC of 5.4% for TTW and 5.7% for WHAUP. This gives a FCFF of Bt53bn (Bt13.3/share) for TTW and Bt15bn (Bt4.0/share) for WHAUP.

Figure 5: SWOT analysis (water business)

	TTW	WHAUP
Strengths	Long-term water purchasing and selling agreement (WPSA) with Provincial Waterworks Authority or PWA (16 years left for TTW and five years for PTW with option for two 10-year extensions) and rights to operate industrial water and waste water treatment at Bang Pa-in Industrial Estate or BIE (21 years left).	Lengthy contract to provide industrial water to occupants of all WHA Industrial Development PLC or WHAID (48 years left).
	A take or pay agreement covering 66% of current capacity of 1.076mn cum/day.	Monopoly with large customer base of more than 1,000 manufacturers
	Positive inflation link (tariff hike in line with CPI).	Cost-plus.
	Fully pass through cost if there is any rise in cost rated to 1) poor raw water quality; 2) rising raw water cost; and 3) raw water availability.	Recycling water helps improve gross margin.
	Resilient to global/local economic climate and political unrest.	Well capitalize to strong new investment cycle in Thailand spurred by EEC Act.
	Sales growth tied to growing residential housing in Pathum Thani, Samut Sakorn and Nakornpathom and seafood exports from factories in Samut Sakorn.	Sales growth pushed by heavy users (SPP, IPP and petrochemical plants) as they come on stream plus one-time excessive-use charge from them.
Weakness	PTW is build own operate transfer agreement (BOOT), meaning uncertainty with regards to renewal cost and tariffs.	Tariff raised with cost, but there may be a lag as it needs approval from the Industrial Estate Authority of Thailand (IEAT).
	TTW is Build own operate agreement (BOO). Without a water purchase agreement with PWA, the assets are less valuable.	Earnings will drop when PPAs of SPP and IPP customers expire.
	With plant located near the Gulf of Thailand, salinity is a concern. High salinity raises the cost of chemicals and can even halt production in the worst case.	
Opportunities	Potential to get a tap water project in Mawlamyine in Myanmar.	Water investment opportunities in tandem with WHA's expansion both domestic (new IE expansion) and overseas (new IE in Vietnam).
	Water and waste water management services for IEs.	Can take on water and waste management for other IEs.
	Growing demand from domestic administrations switch from underground water to tap water in the service areas.	
Threats	Competition with PWA sometimes, who is also its only customer.	Impact from global/local economic climate
	Uncertain tariff for recent 100,000 cum/day capacity expansion at TTW. Our base case assumes a price of Bt12.20/cum (price for the quantity offtake above MOQ) in 2018.	Raw water sourced primarily from EASTW and there is risk of shortage if there is a drought.
	TTW's selling price is higher than PWA's resale price of Bt10.2/cum for household users, implying PWA is taking a loss on the volume it offtakes from TTW. This suggests there may be pressure to lower its rates down the road.	Raw water cost may rise and the capability of maintaining profitability depends on ability to pass through higher costs.

Source: SCBS Investment Research

Power business comparison

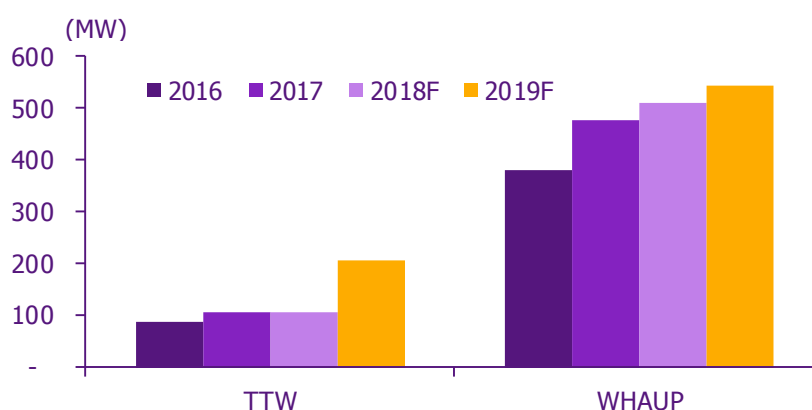
TTW's power portfolio is much smaller in both MW and EBIT contributions

Comparing their attributed capacity based on both operating and projects under development, TTW has 205 MW (based on current shareholding structure with CKP's 30% stake in Xayaburi project) while WHAUP has 543 MW. Based on our earnings estimates for 2020 when all projects come on line, percentage earnings contributions from power to adjusted EBIT (including equity income) is only 9% for TTW vs 72% for WHAUP.

Different growth periods: 2017-18 for WHAUP vs 2019-20 for TTW/CKP

Capacity jumped for WHAUP over the last 12 months with the startups of 5 SPPs during May 2017-Jan 2018 that boosted total attributed capacity by 32%. It will book a full year of earnings from these five projects from 2018. On the other hand, capacity will grow strongest for TTW/CKP in 4Q19 with the scheduled startup of Xayaburi hydropower project, its largest project, which will boost TTW's total attributed capacity by 90% and give s full year of earnings from 2020.

Figure 6: Attributed capacity



Source: TTW, WHAUP, SCBS Investment Research

Both have long weighted average years to PPA expiration

As around 57% of TTW's and 41% of WHAUP's capacity is quite new, with startups during 2016-2019, both have quite long weighted-average years to PPA expiry: 26 years for TTW and 20 years for WHAUP.

Further opportunities

Based on the Power Development Plan (PDP 2015), we see little change for new PPA bidding in Thailand for the next few years. This has led all power producers to move overseas and to private PPAs (to sell electricity to end users). Each has different strengths in this.

CKP: Based on PDP 2015, 700 MW per annum in new capacity from hydropower plants in neighboring countries is planned to start up during 2026-2036 for a total capacity of 7.7 GW. CKP is viewed as the leader in hydropower in Laos with two IPP projects. Of these, the 1,285 MW Xayaburi project will be the first hydropower plant in the mainstream Mekong River to come online. As the leader, CKP has a good chance to get new projects as they become available. CKP is also expanding its solar rooftop service to the group. According to the company, up to 20 MW capacity (or 5 MW attributed capacity for TTW) of solar rooftop could be captured in the future; this is only 0.6% of TTW's power portfolio.

WHAUP: There is sizable demand in the industrial estates under WHA that will open doors for WHAUP to offer electricity to industrial users, especially via solar rooftop projects. Based on 2mn sqm rooftop owned or controlled by WHA and located in WHA's area, up to 200 MW capacity could be served. This is equal to 37% of WHAUP's power portfolio. Management aims to add 10-20 MW capacity this year and more in later years.

Figure 7: Attributed capacity

	TTW	WHAUP
Gross capacity (MW)		
Operating	874	2,143
Under development	1,285	127
Total	2,159	2,270
Attributed capacity (MW)		
Operating	115	511
Under development	90	32
Total	205	543
CAGR over 2017-2019	38%	7%
Capacity breakdown (%)		
IPP/SPP/VSPP	79/19/2	53/46/1
Conventional/renewable*	19/81	95/5
Gas/coal/hydro/solar&waste	18/0/79/2	53/43/4/1
Thailand/Laos	21/79	96/4
Weighted average years to PPA expiry	26	20
Solar rooftop opportunity in the group (MW)*	5	200
Strengths	Leader in Laos	Chance to capture demand in the WHA group
% contribution to adjusted EBIT in 2018/2020***	4/9	76/72

*Note ** Based on demand and rooftop opportunities in the group, according to managements, ** including hydropower, *** Adjusted EBIT includes equity income from power portfolio, 2020 is the first full-year that all committed projects come online*

Source: Company reports and SCBS Investment Research

Power valuation

We value the power business based on discounted cash flow using estimate free cash flow to equity for each project until PPA expiry and the application of 7.4% cost of equity. We derive FCFE of Bt7.5bn or Bt1.9/share for TTW's power portfolio and Bt24.4bn or Bt6.4/share for WHAUP's power portfolio.

Company profile - TTW

TTW is PWA's largest private treated water operator in Thailand

TTW PLC (TTW), the utilities arm of CH. Karnchang PLC (CK), has total tap water capacity of 1.076mn cum/day for its three water plants, of which 66% (712,000 cum/day) is secured by minimum offtake quantity (MOQ) by PWA. It currently owns 205 MW attributed capacity in power plants (based on both operating and projects under development), through its 25.3% stake in CKP, which will be raised to 229 MW attributed capacity if CKP successfully purchases 7.5% in the Xayaburi hydropower project from BEM.

Thai Tap Water plant (TTW). TTW was established on September 11, 2000 to produce tap water for distribution to the PWA in the districts of Nakorn Chaisri, Sampran, and Buddhamonthon in Nakorn Pathom and the districts of Krathum Baen and Muang Samut Sakorn in Samut Sakorn. It has a 30-year (July 21, 2004 – July 20, 2034) WPSA with PWA under a build-own-operate (BOO) agreement.

TTW uses raw water from the middle of the Tha Chin (Nakorn Chaisri) River, which is then treated and distributed through a bulk transmission main (BTM) from its water production plants in Banglane and Krathum Baen in Nakorn Pathom to its own distribution stations in Buddhamonthon and Mahachai. The water is then further disseminated via local distribution networks (LDN), owned by PWA, to end users.

The current tariff is Bt28.92/cum for the offtake of 300,000 cum/day (out of total capacity of 540,000 cum/day) is adjusted annually based on the December CPI for the central region, and Bt12.20/cum for the rest with an annual adjustment using November CPI for the central region. Note that it is negotiating with PWA for the tariff and MOQ for the recently completed capacity of 100,000 cum/day.

Pathum Thani Water plant (PTW). TTW holds 98% in Pathum Thani Water Co., Ltd., who was incorporated on May 29, 1995 to produce and distribute tap water to PWA for distribution to consumers in Muang and Rangsit districts in Pathum Thani province. It received a 25-year (October 15, 1998 – October 14, 2023) water production and distribution license agreement (WPDLA) from PWA under a build-own-operate-transfer (BOOT) agreement. PTW has the option to request two 10-year operation extensions.

PTW takes raw water from the Chao Phraya River into its treatment facility in Pathum Thani's Sam Khok district. The treated water is sent through BTM to PTW's three water distribution stations (Rangsit, Thammasat and Pathum Thani) for final distribution via LDN.

The tariff is a flat Bt12.56/cum and is adjusted annually based on July national CPI. It has MOQ of 358,000 cum/day out of total capacity of 488,000 cum/day.

Bang Pa-in Industrial Estate Water plant (BIE). TTW has 30 years (August 5, 2009-August 6, 2039) rights to provide industrial water and waste water treatment in Bang Pa-in Industrial Estate in Bang Pa-in district in Ayutthaya for industrial manufacturers. The tariff is a flat rate of Bt24.75/cum. It has total capacity of 48,000 cum/day of industrial water and 18,000 cum/day of waste water treatment.

TTW, through subsidiary Thai Water Operations Co., Ltd. provides tap water production and distribution and waste water management services to Amata City Chonburi and Amata City Rayong.

Figure 8: Service areas of TTW and PTW



Source: Wikipedia, SCBS Investment Research

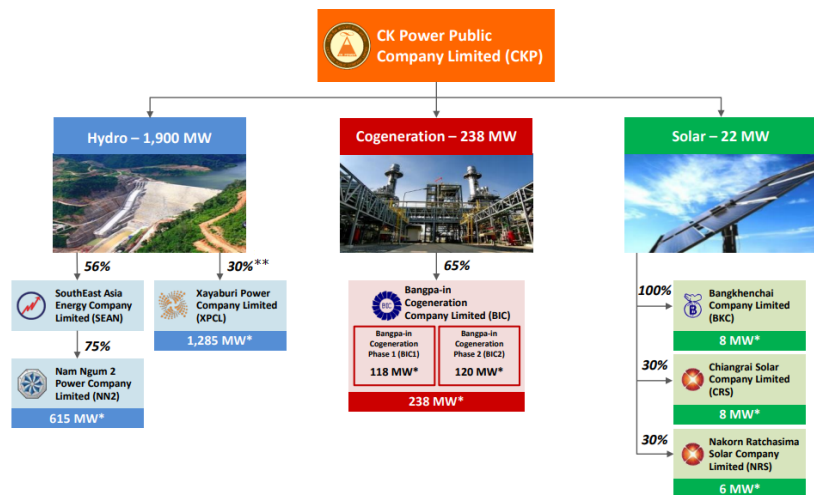
Figure 9: Source of raw water



Source: Wikipedia, SCBS Investment Research

205 MW attributed power capacity via CKP. TTW also holds 25.3% stake in CK Power PLC (CKP), a holding company for CK group's power interests. CKP/TTW's current attributed capacity is 425/108 MW which will go up to 810/205 MW in 2019 after the startup of Xayaburi hydropower project in Oct 2019, based on its scheduled commercial operation date. In addition, CKP is in the process of raising its stake in Xayaburi from 30% to 37.5% (by purchasing shares from BEM) which would raise CKP/TTW's total attributed capacity to 906/229 MW. Based on its current portfolio, 79% of capacity is from Independent Power Producer (IPP) hydropower projects, 19% is from Small Power Producer (SPP) projects in Bangpa-In Industrial Estate and 2% from Very Small Power Producer (VSPP) solar projects.

Figure 10: CKP's business structure



Source: CKP, SCBS Investment Research

Note * Total installed capacity, ** in the process of raising stake to 37.5%

Financial statement - TTW

Profit and Loss Statement

FY December 31	Unit	2013	2014	2015	2016	2017	2018F	2019F	2020F
Total revenue	(Btmn)	5,182	5,383	5,430	5,379	5,595	5,933	6,179	6,546
Cost of goods sold	(Btmn)	1,550	1,535	1,510	1,497	1,564	1,706	1,787	1,902
Gross profit	(Btmn)	3,632	3,848	3,920	3,881	4,031	4,226	4,391	4,644
SG&A	(Btmn)	574	487	543	483	503	513	524	541
Other income	(Btmn)	143	239	145	120	152	124	85	88
Interest expense	(Btmn)	615	566	550	433	407	337	295	275
Pre-tax profit	(Btmn)	2,587	3,034	2,972	3,085	3,273	3,501	3,657	3,916
Corporate tax	(Btmn)	317	156	378	607	632	610	731	761
Equity a/c profits	(Btmn)	63	111	103	14	40	154	208	393
Minority interests	(Btmn)	(23)	(16)	(17)	(17)	(18)	(19)	(21)	(23)
Core profit	(Btmn)	2,310	2,972	2,681	2,476	2,663	3,025	3,113	3,524
Extra-ordinary items	(Btmn)	264	0	0	0	0	0	0	0
Net Profit	(Btmn)	2,574	2,972	2,681	2,476	2,663	3,025	3,113	3,524
EBITDA	(Btmn)	4,086	4,490	4,411	4,415	4,660	4,829	4,945	5,222
Core EPS (Bt)	(Bt)	0.58	0.74	0.67	0.62	0.67	0.76	0.78	0.88
Net EPS (Bt)	(Bt)	0.65	0.74	0.67	0.62	0.67	0.76	0.78	0.88
DPS (Bt)	(Bt)	0.60	0.65	0.60	0.60	0.60	0.68	0.78	0.88

Balance Sheet

FY December 31	Unit	2013	2014	2015	2016	2017	2018F	2019F	2020F
Total current assets	(Btmn)	6,417	7,081	7,299	5,284	3,280	1,744	2,003	1,890
Total fixed assets	(Btmn)	18,108	17,546	19,345	20,481	19,997	20,257	19,021	17,746
Total assets	(Btmn)	24,525	24,627	26,644	25,765	23,277	22,001	21,023	19,635
Total loans	(Btmn)	12,933	12,259	14,407	13,338	10,670	9,089	8,111	6,723
Total current liabilities	(Btmn)	2,707	1,641	3,265	1,854	2,046	3,544	4,454	3,589
Total long-term liabilities	(Btmn)	10,807	11,597	11,949	12,375	9,353	6,273	4,385	3,862
Total liabilities	(Btmn)	13,514	13,238	15,214	14,229	11,399	9,818	8,840	7,452
Paid-up capital	(Btmn)	3,990	3,990	3,990	3,990	3,990	3,990	3,990	3,990
Total equity	(Btmn)	11,012	11,390	11,430	11,535	11,878	12,184	12,184	12,184
BVPS (Bt)	(Bt)	2.75	2.85	2.85	2.88	2.97	3.04	3.04	3.04

Cash Flow Statement

FY December 31	Unit	2013	2014	2015	2016	2017	2018F	2019F	2020F
Core Profit	(Btmn)	2,310	2,972	2,681	2,476	2,663	3,025	3,113	3,524
Depreciation and amortization	(Btmn)	884	890	889	897	980	992	993	1,031
Operating cash flow	(Btmn)	3,279	3,639	3,727	3,272	3,417	4,277	4,375	4,813
Investing cash flow	(Btmn)	(1,101)	(1,306)	(3,678)	(332)	1,734	(1,545)	(50)	(50)
Financing cash flow	(Btmn)	(2,707)	(3,283)	(463)	(3,479)	(5,081)	(4,301)	(4,090)	(4,912)
Net cash flow	(Btmn)	(529)	(950)	(413)	(538)	71	(1,569)	234	(149)

Key Financial Ratios

FY December 31	Unit	2013	2014	2015	2016	2017	2018F	2019F	2020F
Gross margin	(%)	70.1	71.5	72.2	72.2	72.0	71.2	71.1	70.9
Operating margin	(%)	59.0	62.4	62.2	63.2	63.0	62.6	62.6	62.7
EBITDA margin	(%)	78.8	83.4	81.2	82.1	83.3	81.4	80.0	79.8
EBIT margin	(%)	61.8	66.9	64.9	65.4	65.8	64.7	64.0	64.0
Net profit margin	(%)	49.7	55.2	49.4	46.0	47.6	51.0	50.4	53.8
ROE	(%)	21.3	26.5	23.5	21.6	22.7	25.1	25.5	28.9
ROA	(%)	9.4	12.1	10.5	9.4	10.9	13.4	14.5	17.3
Net D/E	(x)	0.6	0.5	0.7	0.7	0.7	0.7	0.6	0.5
Interest coverage	(x)	6.6	7.9	8.0	10.2	11.4	14.3	16.8	19.0
Debt service coverage	(x)	1.4	3.4	1.4	2.9	2.5	1.5	1.2	1.6
Payout Ratio	(x)	93.0	87.3	89.3	96.7	89.9	89.9	100.0	100.0

Main Assumptions

FY December 31	Unit	2013	2014	2015	2016	2017	2018F	2019F	2020F
TTW - Vol sales	('000 Cum/day)	372.8	379.7	377.2	375.1	395.5	419.7	440.7	462.7
TTW - Minimum offtake quantity	('000 Cum/day)	330.0	339.0	348.0	354.0	354.0	354.0	354.0	354.0
PTW - Vol sales	('000 Cum/day)	375.9	366.1	364.5	356.1	369.1	390.7	410.2	430.7
PTW - Minimum offtake quantity	('000 Cum/day)	330.0	330.0	330.0	330.0	330.0	330.0	330.0	330.0
BIE - Vol sales	('000 Cum/day)	18.9	21.2	21.2	21.0	22.7	24.9	26.2	27.5
Tariff - TTW (300K Cum)	(Bt/Cum)	26.9	28.3	28.6	28.3	28.6	28.9	29.5	30.1
Tariff - TTW (>300K Cum)	(Bt/Cum)	11.7	11.9	12.1	12.0	12.0	12.2	12.4	12.7
Tariff - PTW	(Bt/Cum)	12.2	12.4	12.7	12.5	12.5	12.6	12.8	13.1
Tariff - BIE	(Bt/Cum)	22.5	22.5	22.5	23.6	24.5	24.8	24.8	24.8

Financial statement - TTW

Profit and Loss Statement

FY December 31	Unit	2Q16	3Q16	4Q16	1Q17	2Q17	3Q17	4Q17	1Q18
Total revenue	(Btmn)	1,364	1,356	1,329	1,330	1,394	1,433	1,438	1,441
Cost of goods sold	(Btmn)	386	389	351	362	393	401	409	414
Gross profit	(Btmn)	978	967	978	968	1,001	1,032	1,030	1,027
SG&A	(Btmn)	117	121	121	124	118	122	139	124
Other income	(Btmn)	26	27	20	24	33	50	45	9
Interest expense	(Btmn)	107	105	95	93	92	112	110	95
Pre-tax profit	(Btmn)	780	768	782	775	824	848	826	818
Corporate tax	(Btmn)	147	151	164	167	164	150	152	148
Equity a/c profits	(Btmn)	16	30	(45)	(11)	2	41	8	3
Minority interests	(Btmn)	(7)	(4)	(1)	(4)	(4)	(5)	(5)	(5)
Core profit	(Btmn)	641	643	571	593	658	735	677	668
Extra-ordinary items	(Btmn)	0	0	0	0	0	0	0	0
Net Profit	(Btmn)	641	643	571	593	658	735	677	668
EBITDA	(Btmn)	1,123	1,110	1,079	1,099	1,160	1,211	1,189	1,173
Core EPS	(Bt)	0.16	0.16	0.14	0.15	0.16	0.18	0.17	0.17
Net EPS	(Bt)	0.16	0.16	0.14	0.15	0.16	0.18	0.17	0.17

Balance Sheet

FY December 31	Unit	2Q16	3Q16	4Q16	1Q17	2Q17	3Q17	4Q17	1Q18
Total current assets	(Btmn)	5,328	4,064	5,284	5,480	4,828	4,153	3,280	4,196
Total fixed assets	(Btmn)	19,701	20,083	20,481	20,625	20,373	20,195	19,997	19,792
Total assets	(Btmn)	25,029	24,147	25,765	26,105	25,201	24,348	23,277	23,988
Total loans	(Btmn)	12,828	12,635	13,338	13,067	12,795	12,522	10,670	10,550
Total current liabilities	(Btmn)	1,488	1,384	1,854	2,811	2,742	2,613	2,046	2,671
Total long-term liabilities	(Btmn)	12,067	11,823	12,375	11,139	10,837	10,563	9,353	8,736
Total liabilities	(Btmn)	13,554	13,207	14,229	13,950	13,579	13,175	11,399	11,408
Paid-up capital	(Btmn)	3,990	3,990	3,990	3,990	3,990	3,990	3,990	3,990
Total equity	(Btmn)	11,474	10,941	11,535	12,155	11,622	11,173	11,878	12,581
BVPS	(Bt)	2.87	2.73	2.88	3.04	2.90	2.79	2.97	3.14

Cash Flow Statement

FY December 31	Unit	2Q16	3Q16	4Q16	1Q17	2Q17	3Q17	4Q17	1Q18
Core Profit	(Btmn)	641	643	571	593	658	735	677	668
Depreciation and amortization	(Btmn)	236	238	203	231	244	251	253	260
Operating cash flow	(Btmn)	759	695	975	754	803	808	1,052	1,022
Investing cash flow	(Btmn)	(950)	743	(1,805)	(459)	691	611	891	(1,119)
Financing cash flow	(Btmn)	(1,389)	(1,397)	702	(282)	(1,469)	(1,478)	(1,853)	(130)
Net cash flow	(Btmn)	(1,580)	41	(127)	13	24	(58)	91	(227)

Key Financial Ratios

FY December 31	Unit	2Q16	3Q16	4Q16	1Q17	2Q17	3Q17	4Q17	1Q18
Gross margin	(%)	71.7	71.3	73.6	72.8	71.8	72.0	71.6	71.3
Operating margin	(%)	63.1	62.4	64.5	63.5	63.4	63.5	61.9	62.7
EBITDA margin	(%)	82.3	81.9	81.2	82.7	83.2	84.5	82.7	81.4
EBIT margin	(%)	65.0	64.3	66.0	65.3	65.7	67.0	65.1	63.3
Net profit margin	(%)	47.0	47.5	43.0	44.6	47.2	51.3	47.1	46.4
ROE	(%)	21.8	23.0	20.3	20.0	22.1	25.8	23.5	21.9
ROA	(%)	10.1	10.5	9.2	9.1	10.3	11.9	11.4	11.3
Net D/E	(x)	0.7	0.8	0.7	0.7	0.7	0.8	0.7	0.6
Interest coverage	(x)	10.5	10.6	11.4	11.8	12.6	10.8	10.8	12.4
Debt service coverage	(x)	3.4	3.3	2.9	1.8	1.9	1.9	2.5	2.0

Main Assumptions

FY December 31	Unit	2Q16	3Q16	4Q16	1Q17	2Q17	3Q17	4Q17	1Q18
TTW - Vol sales	('000 Cum/day)	386.2	377.0	358.4	363.0	396.0	413.4	409.4	421.7
PTW - Vol sales	('000 Cum/day)	359.8	359.2	347.3	348.4	375.1	374.8	378.1	395.8
BIE - Vol sales	('000 Cum/day)	21.1	21.9	21.9	20.1	22.7	24.5	23.6	22.2
Gross margin - TTW & BIE	(%)	75.5	75.0	74.3	75.6	75.5	75.9	74.9	74.8
Gross margin - PTW	(%)	61.5	61.1	70.1	64.4	61.9	61.3	62.4	61.8

Company profile - WHAUP

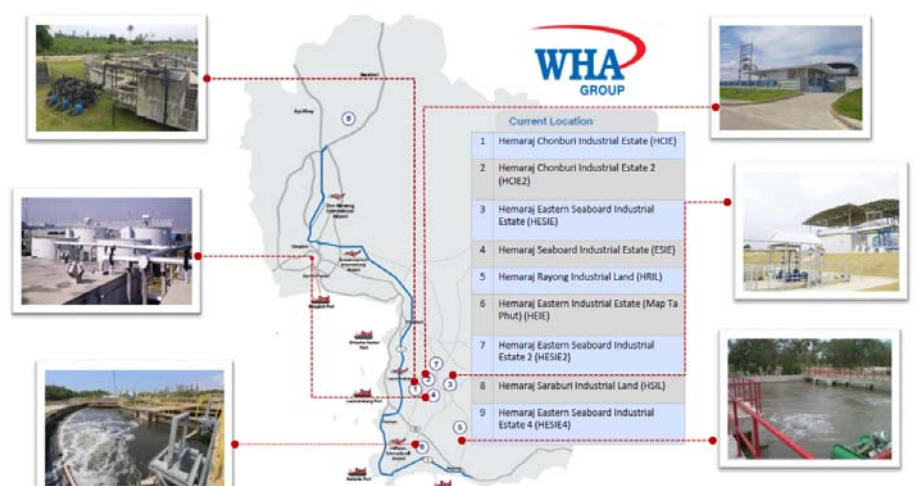
WHAUP is a leading industrial water and power utilities player

WHAUP currently has total capacity of 281,376 cum/day for industrial water and 117,456 cum/day for waste water treatment. It holds 510MWe in power plants, through various investments with partners, which will rise to 542MWe by 4Q19.

WHA Utilities and Power PLC or WHAUP, a subsidiary of WHA Industrial Development PLC (WHAID, formally Hemaraj Land and Development PLC) was established on June 30, 2008 to handle the utilities for WHA and its group. WHA is a fully-integrated industrial and logistics facility developer in Thailand. This group has four integrated lines of business: 1) logistics development, 2) industrial estate development, 3) utilities & power provision and 4) data center services. At present, WHA group holds a 70.8% stake in WHAUP.

In March 2016, WHAUP underwent business restructuring, acquiring all WHAID's water activities and was granted an exclusive 50-year permit to provide water to occupants of all of WHAID's industrial estates in Chonburi, Rayong and Saraburi provinces. WHAUP's services include: raw water, industrial water and wastewater management. WHAUP has daily capacity of 281,376 cum (cubic meters) for industrial water and 117,456 cum for wastewater treatment and serves 1,000 industrial clients in nine IEs. Tariffs go up in line with rising costs with some lag time.

Figure 11: WHAUP service areas



Source: WHAUP

WHAUP currently has 13 operating projects with total gross capacity of 2,413 MW and attributed capacity of 511MW. It also has two projects under development with total gross capacity of 127 MW and attributed capacity of 32 MW; they are scheduled to come on line this year. Altogether, its power portfolio (including both operating and projects under development) has total attributed capacity of 543 MW; of these, 53% is from three Independent Power Producer (IPP) projects, 46% is from Small Power Producer (SPP) projects and 1% is from Very Small Power Producer (VSPP) projects. Note that all projects (except Houay Ho in Laos) are sited in WHA's industrial estates.

Figure 12: WHAUP's power portfolio

Project	Fuel	Holding	Contracted capacity (MW)	Attributed capacity (MW)	Steam (t/h)	Equity t/h	COD/SCOD
Operating assets							
Gheco-One	Coal	35%	660.0	231.0			2012
Glow IPP	Gas	5%	713.0	35.7			2003
Houay Ho	Hydro	13%	152.0	19.4			1999
BGWHA-1	Gas-cogen	25%	121.0	30.3			2016
GJP NLL	Gas-cogen	25%	122.5	30.6	3.0	0.8	2013
WHA Gunkul (4 projects)	Solar	75%	3.3	2.5			2014
Gulf Solar (4 projects)	Solar	25%	0.6	0.1			2014
Gulf VTP	Gas-cogen	25%	130.0	32.5	20.0	5.0	May-17
Gulf TS 1	Gas-cogen	25%	130.0	32.5	42.0	10.5	Jul-17
Gulf TS 2	Gas-cogen	25%	130.0	32.5	36.0	9.0	Sep-17
Gulf TS 3	Gas-cogen	25%	125.0	31.3	25.0	6.3	Nov-17
Gulf TS 4	Gas-cogen	25%	125.0	31.3	25.0	6.3	Jan-18
WHA KM.3 Solar	Solar	100%	0.9	0.9			May-18
<i>Total operating assets</i>			<i>2,413.3</i>	<i>510.5</i>	<i>151.0</i>	<i>37.8</i>	
Under-development projects							
Gulf NLL 2	Gas-cogen	25%	120.0	30.0	10.0	2.5	Jan-19
Waste to Energy	Waste	33%	6.9	2.3			2019
<i>Total under-development projects</i>			<i>126.9</i>	<i>32.3</i>	<i>10.0</i>	<i>2.5</i>	
Total			2,540.2	542.8	161.0	40.3	

Source: WHAUP

Financial statement - WHAUP

Profit and Loss Statement

FY December 31	Unit	2013	2014	2015	2016	2017	2018F	2019F	2020F
Total revenue	(Btmn)	739	811	853	1,468	1,634	1,938	2,186	2,331
Cost of goods sold	(Btmn)	529	588	601	950	1,092	1,292	1,443	1,611
Gross profit	(Btmn)	211	223	252	518	541	646	744	720
SG&A	(Btmn)	35	36	46	69	153	165	177	191
Other income	(Btmn)	1	0	0	92	134	121	141	167
Interest expense	(Btmn)	28	41	47	404	460	270	250	238
Pre-tax profit	(Btmn)	148	146	160	137	63	333	458	458
Corporate tax	(Btmn)	16	19	20	45	18	56	76	76
Equity a/c profits	(Btmn)	(12)	43	18	277	1,218	1,944	2,096	1,807
Minority interests	(Btmn)	0	0	0	0	0	0	0	0
Core profit	(Btmn)	120	170	157	369	1,263	2,221	2,477	2,189
Extra-ordinary items	(Btmn)	0	0	0	0	718	0	0	0
Net Profit	(Btmn)	120	170	157	369	1,981	2,221	2,477	2,189
EBITDA	(Btmn)	0	0	305	715	709	956	1,071	935
Core EPS (Bt)	(Bt)	0.19	0.26	0.24	0.12	0.33	0.58	0.65	0.57
Net EPS (Bt)	(Bt)	0.19	0.26	0.24	0.12	0.52	0.58	0.65	0.57
DPS (Bt)	(Bt)	0.15	-	-	0.05	0.20	0.23	0.26	0.23

Balance Sheet

FY December 31	Unit	2013	2014	2015	2016	2017	2018F	2019F	2020F
Total current assets	(Btmn)	197	196	246	2,136	2,082	3,234	4,733	5,882
Total fixed assets	(Btmn)	1,451	1,707	11,347	16,517	19,296	19,649	19,785	19,887
Total assets	(Btmn)	1,648	1,904	11,593	18,652	21,378	22,883	24,518	25,768
Total loans	(Btmn)	643	782	1,273	10,421	7,930	7,930	7,930	3,937
Total current liabilities	(Btmn)	860	1,085	1,449	2,825	386	447	4,487	546
Total long-term liabilities	(Btmn)	8	10	43	8,408	8,415	8,415	4,422	8,415
Total liabilities	(Btmn)	868	1,095	1,492	11,233	8,801	8,863	8,909	8,961
Paid-up capital	(Btmn)	645	645	645	3,200	3,825	3,825	3,825	3,825
Equity to shareholders	(Btmn)	781	809	934	7,419	12,577	14,020	15,609	16,808
Portion of other shareholders' equity	(Btmn)	0	0	9,166	0	0	0	0	0
Total equity	(Btmn)	781	809	10,100	7,419	12,577	14,020	15,609	16,808
BVPS	(Bt)	1.21	1.25	(12.76)	2.32	3.29	3.67	4.08	4.39

Cash Flow Statement

FY December 31	Unit	2013	2014	2015	2016	2017	2018F	2019F	2020F
Core Profit	(Btmn)	n.a.	170	157	369	1,263	2,221	2,477	2,189
Depreciation and amortization	(Btmn)	n.a.	72	98	174	187	353	364	240
Operating cash flow	(Btmn)	n.a.	255	165	58	870	643	752	651
Investing cash flow	(Btmn)	n.a.	(285)	(507)	(11,740)	(1,102)	(511)	(290)	(160)
Financing cash flow	(Btmn)	n.a.	45	367	11,677	675	972	998	636
Net cash flow	(Btmn)	n.a.	15	25	(5)	444	1,103	1,460	1,126

Key Financial Ratios

FY December 31	Unit	2013	2014	2015	2016	2017	2018F	2019F	2020F
Gross margin	(%)	n.a.	27.4	29.5	35.3	33.1	33.3	34.0	30.9
Operating margin	(%)	n.a.	23.0	24.2	30.6	23.8	24.9	25.9	22.7
EBITDA margin	(%)	n.a.	0.0	35.7	48.7	43.4	49.3	49.0	40.1
EBIT margin	(%)	n.a.	18.0	18.7	9.3	3.9	17.2	20.9	19.6
Net profit margin	(%)	n.a.	21.0	18.4	25.1	121.3	114.6	113.3	93.9
ROE	(%)	n.a.	21.0	16.8	5.0	15.7	15.8	15.9	13.0
ROA	(%)	n.a.	8.9	1.4	2.0	9.3	9.7	10.1	8.5
Net D/E	(x)	n.a.	0.9	1.3	1.4	0.6	0.4	0.3	(0.0)
Interest coverage	(x)	n.a.	0.0	6.5	1.8	1.5	3.5	4.3	3.9
Debt service coverage	(x)	n.a.	0.0	0.4	0.4	0.2	3.5	4.3	0.2
Payout Ratio	(x)	n.a.	n.a.	0.0	40.0	39.3	40.0	40.0	40.0

Main Assumptions

FY December 31	Unit	2013	2014	2015	2016	2017	2018F	2019F	2020F
Sale volume - Raw & industrial water	(Cum, mn)	61.0	63.0	62.0	56.5	65.5	74.3	82.0	88.5
- Waste water treatment	(Cum, mn)	29.0	31.0	32.0	25.2	34.1	38.7	42.7	46.1
Tariff hike - Raw water	(%)	5.0	5.6	0.0	0.0	5.8	2.0	2.0	2.0
- Industrial water	(%)	4.9	4.2	1.7	1.0	5.2	2.0	2.0	2.0
- Waste water treatment	(%)	4.6	0.0	0.7	0.0	3.7	2.0	2.0	2.0
SG&A/Revenue	(%)	4.8	4.4	5.4	4.7	9.4	8.5	8.1	8.2
Attributed capacity	(MW)	317	319	319	350	478	510	540	540
IPP	(MW)	286	286	286	286	286	286	286	286
SPP and VSPP	(MW)	31	33	33	64	192	224	254	254

Financial statement - WHAUP

Profit and Loss Statement

FY December 31	Unit	2Q16	3Q16	4Q16	1Q17	2Q17	3Q17	4Q17	1Q18
Total revenue	(Btmn)	406	371	482	388	405	406	434	422
Cost of goods sold	(Btmn)	242	262	289	258	272	276	285	273
Gross profit	(Btmn)	163	109	194	130	133	130	149	149
SG&A	(Btmn)	11	16	32	25	31	29	68	8
Other income	(Btmn)	10	32	50	46	29	22	38	17
Interest expense	(Btmn)	88	148	143	146	112	104	98	94
Pre-tax profit	(Btmn)	74	(23)	68	4	20	19	20	64
Corporate tax	(Btmn)	17	0	24	(18)	5	3	28	7
Equity a/c profits	(Btmn)	203	208	(181)	(27)	471	434	339	409
Minority interests	(Btmn)	0	0	0	0	0	0	0	0
Core profit	(Btmn)	260	185	(138)	(5)	486	450	332	466
Extra-ordinary items	(Btmn)	0	0	0	278	215	120	106	251
Net Profit	(Btmn)	260	185	(138)	273	701	570	438	716
EBITDA	(Btmn)	198	173	267	235	273	158	187	205
Core EPS	(Bt)	0.08	0.06	(0.04)	(0.00)	0.13	0.12	0.09	0.12
Net EPS	(Bt)	0.08	0.06	(0.04)	0.09	0.18	0.15	0.11	0.19

Balance Sheet

FY December 31	Unit	2Q16	3Q16	4Q16	1Q17	2Q17	3Q17	4Q17	1Q18
Total current assets	(Btmn)	2,569	1,991	2,136	1,792	2,160	1,802	2,082	1,764
Total fixed assets	(Btmn)	15,912	16,638	16,517	17,101	18,169	19,030	19,296	20,231
Total assets	(Btmn)	18,481	18,629	18,652	18,892	20,329	20,832	21,378	21,995
Total loans	(Btmn)	10,473	10,406	10,421	10,419	7,926	7,925	7,930	7,935
Total current liabilities	(Btmn)	10,634	2,662	2,825	4,791	2,338	296	386	287
Total long-term liabilities	(Btmn)	460	8,394	8,408	6,405	6,413	8,393	8,415	8,424
Total liabilities	(Btmn)	11,093	11,056	11,233	11,196	8,751	8,688	8,801	8,711
Paid-up capital	(Btmn)	3,200	3,200	3,200	3,200	3,825	3,825	3,825	3,825
Total equity	(Btmn)	7,388	7,573	7,419	7,696	11,578	12,144	12,577	13,284
BVPS (Bt)	(Bt)	2.31	2.37	2.32	2.41	3.03	3.17	3.29	3.47

Cash Flow Statement

FY December 31	Unit	2Q16	3Q16	4Q16	1Q17	2Q17	3Q17	4Q17	1Q18
Core Profit	(Btmn)	260	185	(138)	(5)	486	450	332	466
Depreciation and amortization	(Btmn)	35	48	56	49	35	35	68	48
Operating cash flow	(Btmn)	546	42	(529)	(74)	207	(13)	750	49
Investing cash flow	(Btmn)	(9,120)	(576)	507	217	(461)	(364)	(494)	(315)
Financing cash flow	(Btmn)	9,179	(71)	(0)	0	683	(7)	(0)	(0)
Net cash flow	(Btmn)	606	(606)	(23)	143	429	(384)	256	(266)

Key Financial Ratios

FY December 31	Unit	2Q16	3Q16	4Q16	1Q17	2Q17	3Q17	4Q17	1Q18
Gross margin	(%)	40.3	29.4	40.1	33.4	32.9	32.0	34.2	35.3
Operating margin	(%)	37.6	25.1	33.4	26.8	25.3	24.9	18.6	33.3
EBITDA margin	(%)	48.8	46.6	55.3	60.7	67.4	38.9	43.0	48.6
EBIT margin	(%)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net profit margin	(%)	64.1	49.9	(28.7)	70.2	172.8	140.3	100.8	169.7
ROE	(%)	14.1	9.8	(7.5)	(0.3)	16.8	14.8	10.5	14.0
ROA	(%)	5.6	4.0	(3.0)	(0.1)	9.6	8.6	6.2	8.5
Net gearing	(x)	1.3	1.4	1.4	1.3	0.6	0.6	0.6	0.6
Interest coverage	(x)	2.2	1.2	1.9	1.6	2.4	1.5	1.9	2.2
Debt service cover	(x)	0.1	0.2	0.3	0.2	0.5	1.5	1.9	2.2

Main Assumptions

FY December 31	Unit	2Q16	3Q16	4Q16	1Q17	2Q17	3Q17	4Q17	1Q18
Gross profit - Sales (raw and industrial water)	(%)	43.7	36.0	30.2	34.5	32.8	33.6	33.4	36.8
- Services (waste water treatment)	(%)	2.2	(28.6)	82.4	24.7	33.1	16.7	40.5	22.0
SG&A/Revenue	(%)	2.7	4.2	6.7	6.6	7.6	7.1	15.7	2.0
Attributed capacity	(MW)	319	319	350	382	415	447	478	510
IPP	(MW)	286	286	286	286	286	286	286	286
SPP and VSPP	(MW)	33	33	64	96	129	161	192	224

Figure 13: Valuation summary (price as of Jun 5, 2018)

	Rating	Price (Bt/Sh)	Target (Bt/Sh)	ETR (%)	P/E (x)			EPS growth (%)			P/BV (x)			ROE (%)			Div. Yield (%)			EV/EBITDA (x)		
					17A	18F	19F	17A	18F	19F	17A	18F	19F	17A	18F	19F	17A	18F	19F	17A	18F	19F
BCPG	Neutral	19.40	19.0	1.2	27.5	22.3	18.9	0	23	18	2.7	2.5	2.4	10	12	13	3.1	3.3	3.5	21.8	22.2	18.7
BPP	Buy	24.70	30.0	23.9	13.5	12.5	11.5	36	8	8	1.9	1.8	1.6	15	15	15	2.4	2.4	2.6	48.8	44.5	37.3
CKP	Neutral	3.96	4.0	1.8	104.9	48.1	35.5	(27)	118	35	1.6	1.6	1.6	2	3	4	0.6	0.8	0.8	16.8	13.7	13.6
EGCO	Buy	241.00	273.0	16.3	12.5	12.3	11.8	16	1	4	1.5	1.2	1.1	12	11	10	2.9	3.0	3.1	19.0	13.6	12.8
GLOW	Neutral	83.75	85.0	8.4	15.7	14.5	14.6	(11)	8	(0)	2.5	2.5	2.5	16	17	17	6.9	6.9	6.9	9.1	8.8	8.7
GPSC	Sell	72.50	60.0	(15.2)	34.2	27.1	23.8	18	26	14	2.8	2.7	2.5	8	10	11	1.7	2.1	2.3	25.3	19.8	19.1
RATCH	Buy	52.00	64.0	27.7	11.6	10.7	10.1	11	8	7	1.2	1.1	1.1	10	11	11	4.6	4.6	4.6	15.3	14.4	14.1
TTW	Buy	12.30	13.5	15.3	18.4	16.2	15.8	8	14	3	4.1	4.0	4.0	23	25	26	4.9	5.5	6.3	12.2	11.8	11.3
WHAUP	Buy	6.60	8.8	36.1	20.0	11.4	10.2	186	76	12	2.0	1.8	1.6	13	17	17	3.1	3.5	3.9	45.9	32.9	28.0
Average					28.7	19.5	16.9	26	31	11	2.3	2.1	2.0	12	13	14	3.4	3.6	3.8	23.8	20.2	18.2

Source: SCBS Investment Research

Disclaimer

The information in this report has been obtained from sources believed to be reliable. However, its accuracy or completeness is not guaranteed. Any opinions expressed herein reflect our judgment at this date and are subject to change without notice. This report is for information only. It is not to be construed as an offer, or solicitation of an offer to sell or buy any securities. We accept no liability for any loss arising from the use of this document. We or our associates may have an interest in the companies mentioned therein.

SCB Securities Company Limited ("SCBS") is a wholly-owned subsidiary of The Siam Commercial Bank Public Company Limited ("SCB"). Any information related to SCB is for sector comparison purposes.

SCB Securities Company Limited ("SCBS") acts as market maker and issuer of Derivative Warrants on the ordinary shares AAV, ADVANC, AMATA, ANAN, AOT, AP, BA, BANPU, BBL, BCH, BCP, BCPG, BDMS, BEAUTY, BEC, BEM, BH, BIG, BJC, BLA, BLAND, BPP, BTS, CBG, CENTEL, CHG, CK, CKP, COM7, CPALL, CPF, CPN, DTAC, EA, EGCO, EPG, GFPT, GLOBAL, GLOW, GPSC, GUNKUL, HANA, HMPRO, INTUCH, IRPC, ITD, IVL, KBANK, KCE, KKP, KTB, KTC, LH, LPN, MAJOR, MALEE, MEGA, MINT, MTC, PLANB, PSH, PTG, PTL, PTT, PTTEP, PTTGC, QH, RATCH, ROBINS, S, SAWAD, SCC, SCCS, SGP, SIRI, SPALI, SPRC, STEC, STPI, SUPER, TASCOS, TCAP, THAI, THANI, THCOM, TKN, TMB, TOP, TPIPL, TRUE, TTA, TU, TVO, UNIQ, VGI, WHA, WORK.

Before making an investment decision over a derivative warrant, an investor should carefully read the prospectus for the details of the said derivative warrants. Any opinion, news, research, analyse, price, statement, forecast, projection and/or other information contained in this document (the "Information") is provided as general purpose information only, and shall not be construed as a recommendation to any person of an offer to buy or sell, or the solicitation of an offer to buy or sell, any securities. SCBS and/or its directors, officers, employees, and agents shall not be liable for any direct, indirect, incidental, special or consequential loss or damage, resulting from the use of, or reliance on, the Information, including without limitation, damages for loss of profits. The investor should use the Information in association with other information and opinion, including his/her own judgment in making investment decision. The Information is obtained from sources believed to be reliable, and SCBS cannot guarantee the accuracy, completeness and/or correctness of the Information.

SCBS reserves the right to modify the Information from time to time at its sole discretion without giving any notice. This document is delivered to intended recipient(s) only and is not permitted to reproduce, retransmit, disseminate, sell, distribute, republish, circulate or commercially exploit the Information in any manner without the prior written consent of SCBS.

This document is prepared by SCB Securities Company Limited ("SCBS") which is wholly-owned by The Siam Commercial Bank Public Company Limited ("SCB"). SCB has acted as financial advisor of Siam Makro Public Company Limited. SCBS has acted as Joint-Lead Underwriter of Siam Makro Public Company Limited. Any opinions, news, research, analyses, prices, statements, forecasts, projections and/or other information contained in this document (the "Information") is provided as general information purposes only, and shall not be construed as individualized recommendation of an offer to buy or sell or the solicitation of an offer to buy or sell any securities. SCBS and/or its directors, officers and employees shall not be liable for any direct, indirect, incidental, special or consequential loss or damage, resulting from the use of or reliance on the Information, including without limitation to, damages for loss of profits. The investors shall use the Information in association with other information and opinion, including their own judgment in making investment decision. The Information is obtained from sources believed to be reliable, and SCBS cannot guarantee the accuracy, completeness and/or correctness of the Information.

Futures and Options trading carry a high level of risk with the potential for substantial losses, and are not suitable for all persons. Before deciding to trade Futures and Options, you should carefully consider your financial position, investment objectives, level of experience, and risk appetite if Futures and Options trading are appropriate. The possibility exists that you could sustain a loss of some or all of your initial investment. You should be aware of all the risks associated with Futures and Options trading, and you are advised to rely on your own judgment while making investment decision and/or should seek advice from professional investment advisor if you have any doubts.

This document is delivered to intended recipient(s) only and is not permitted to reproduce, retransmit, disseminate, sell, distribute, republish, circulate or commercially exploit the Information in any manner without the prior written consent of SCBS.

Copyright©2012 SCB Securities Company Limited. All rights reserved.

CG Rating 2017 Companies with CG Rating

▲▲▲▲▲

ADVANC, AKP, ANAN, AOT, AP, BAFS, BANPU, BAY, BCP, BIGC, BTS, BWG, CFRESH, CHO, CK, CNT, CPF, CPN, CSL, DELTA, DEMCO, DRT, DTAC, DTC, EASTW, EGCO, GC, GCAP, GFPT, GOLD, GPSC, GRAMMY, GUNKUL, HANA, HMPRO, ICC, ICHI, INTUCH, IRPC, IVL, JSP, KBANK, KCE, KKP, KTB, KTC, LHFC, LPN, MBK, MCOT, MINT, MONO, NCH, NKI, NYT, OTO, PHOL, PLANB, PPS, PDJ, PRG, PSH, PSL, PTG, PTT*, PTTEP*, PTTGC, PYLON, Q-CON, QH, QTC, RATCH, ROBINS, SMART, SAMTEL, SAT, SC, SCB, SCC, SCCC, SE-ED, SIM, SIS, SITHAI, SNC, SPALI, SPRC, SSSC, STEC, SVI, SYNTEC, TCAP, THANA, THCOM, THREL, TISCO, TKT, TMB, TNDT, TOP, TRC, TRUE, TSC, TTCL, TU, TVD, UV, VGI, WACOAL, WAVE

▲▲▲▲

2S, AAV, ACAP, AGE, AH, AHC, AIRA, AIT, ALT, AMANAH, AMATA, AMATAV, APCO, ARIP, ASIA, ASIMAR, ASK, ASP, AUCTION, AYUD, BBL, BCPG, BDMS, BEC, BEM, BFIT, BJC, BJCHI, BLA, BOL, BROOK, BRR, BTW, CEN, CENTEL, CGH, CHARAN, CHEWA, CHG, CHOW, CI, CIG, CIMBT, CKP, CM, CNS, COL, COM7, CPI, CSC, CSP, CSS, DCC, EA, EASON, ECF, ECL, EE, EPG, ERW, FN, FNS, FORTH, FPI, FSMART, FVC, GBX, GEL, GLOBAL, GLOW, HARN, JCKH, HYDRO, ILINK, INET, IRC, IT, ITD, JWD, K, KGI, KKC, KOOL, KSL, KTIS, L&E, LALIN, LANNA, LH, LHK, LIT, LOXLEY, LRH, LST, M, MACO, MAJOR, MAKRO, MALEE, MBKET, MC, MEGA, MFC, MFEC, MOONG, MSC, MTI, MTC, NOBLE, NOK, NSI, NTV, NWR, OCC, OGC, OISHI, ORI, PAP, PATO, PB, PCSGH, PDI, PE, PG, PJW, PLANET, PLAT, PM, PPP, PR, PREB, PRINC, PT, RICHY, RML, RS, RWI, S, S & J, SABINA, SALEE, SAMCO, SAWAD, SCG, SCI, SCN, SEAFSCO, SEA OIL, SENA, SFP, SIAM, SINGER, SIRI, SMK, SMP, SMT, SNP, SORKON, SPC, SPI, SPPT, SR, SSF, SST, STA, STPI, SUC, SUSCO, SUTHA, SWC, SYMC, SYNEX, TAE, TAKUNI, TASCOS, TBSP, TCC, TEAM, TF, TFG, TGCI, THAI*, THANI, THIP, THRE, TICON, TIPCO, TIW, TK, TKN, TKS, TMC, TMI, TMILL, TMT, TNITY, TNL, TOG, TPAC, TPCORP, TRT, TRU, TSE, TSR, TSTE, TSTH, TTA, TTW, TVI, TVO, TWP, TWPC, U, UAC, UMI, UP, UPF, UPOIC, UWC, VIH, VNT, WICE, WINNER, XO, YUASA, ZMICO

▲▲▲

AEC, AEONTS, AF, AJ, AKR, ALLA, ALUCON, AMA, AMARIN, AMC, APURE, AQUA, ARROW, AS, ASEFA, ASIAN, ASN, ATP30, AU, BA, BCH, BEAUTY, BH, BIG, BIZ, BLAND, BPP, BR, BROCK, B, BTNC, CBG, CCET, CCP, CGD, CITY, CMR, COLOR, COMAN, CPL, CSR, CTW, CWT, DCON, DIGI, DNA, EFORL, EKH, EPCO, ESSO, ETE, FE, 7UP, FOCUS, FSS, GENCO, GIFT, GJS, GLAND, GSTEL, GTB, GYT, HPT, HTC, HTECH, IFS, IHL, INSURE, IRCP, J, JMART, JMT, JUBILE, KASET, KBS, KCAR, KIAT, KYE, LDC, LEE, LPH, MATCH, MATI, M-CHAI, MDX, METCO, MGT, MILL, MJD, MK, MODERN, MPG, NC, NCL, NDR, NEP, NETBAY, NPK, NPP, NUSA, OCEAN, PDG, PF, PICO, PIMO, PK, PL, PLE, PMTA, PRECHA, PRIN, PSTC, QLT, RCI, RCL, RJH, ROJNA, RPC, S11, SANKO, SAPPE, SCP, SE, SGP, SKR, SKY, SLP, SMIT, SOLAR, SPA, SPCG, SPG, SPVI, SQ, SRICHA, SSC, STANLY, SUPER, SVOA, T, TACC, TCCC, TCMC, JCK, TIC, TLUXE, TM, TMD, TNP, TNR, TOPP, TPA, TPBI, TPCH, TPIPL, TPOLY, TPP, TRITN, TTI, TVT, TYCN, UOBKH, UPA, UREKA, UT, VIBHA, VPO, META, WIJK, WIN

Corporate Governance Report

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

The survey result is as of the date appearing in the Corporate Governance Report of Thai Listed Companies. As a result, the survey result may be changed after that date. SCB Securities Company Limited does not conform nor certify the accuracy of such survey result.

BIGC was voluntarily delisted from the Stock Exchange of Thailand effectively on September 28, 2017

* บริษัทหรือกรรมการหรือผู้บริหารของบริษัทที่มีข่าวด้านการกำกับดูแลกิจการ เช่น การกระทำผิดเกี่ยวกับหลักทรัพย์ การทุจริต คอร์รัปชัน เป็นต้น ซึ่งการใช้ข้อมูล CGR ควรระมัดระวัง ขาดดังกล่าวประกอบด้วย

Anti-corruption Progress Indicator**Certified (ได้รับการรับรอง)**

ADVANC, AKP, AMANAH, AP, ASK, ASP, AYUD, BAFS, BANPU, BAY, BBL, BCH, BCP, BCPG, BKI, BLA, BROOK, BTS, BWG, CENTEL, CFRESH, CIMBT, CM, CNS, CPALL, CPF, CPI, CPN, CSC, CSL, DCC, DEMCO, DIMET, DRT, DTAC, DTC, EASTW, ECL, EGCO, FE, FNS, FSS, GBX, GC, GCAP, GEL, GFPT, GLOW, GOLD, GUNKUL, HANA, HMPRO, HTC, ICC, IFEC, IFS, INTUCH, IRPC, IVL, K, KASET, KBANK, KBS, KCE, KGI, KKP, KSL, KTB, KTC, LANNA, LHFG, LHK, LPN, M, MBK, MBKET, MC, MCOT, MFC, MINT, MONO, MOONG, MSC, MTI, NBC, NINE, NKI, NMG, NSI, OCC, OCEAN, OGC, PB, PCSGH, PDI, PDJ, PE, PG, PHOL, PLAT, PM, PPP, PPS, PREB, PRG, PSH, PSL, PT, PTG, PTT, PTTEP, PTTGC, Q-CON, QH, QLT, RATCH, RML, ROBINS, S & J, SABINA, SAT, SCB, SCC, SCCC, SCG, SCN, SE-ED, SENA, SGP, SINGER, SIS, SITHAI, SMIT, SMP, SNC, SNP, SORKON, SPACK, SPC, SPI, SPRC, SSF, SSI, SSSC, SUSCO, SVI, SYNTEC, TAE, TASCOS, TCAP, TCMC, TFG, TFI, TFMAMA, TGCI, THANI, THCOM, THRE, THREL, TICON, TIP, TIPCO, TISCO, TKT, TMB, TMD, TMT, TNITY, TNL, TOG, TOP, TPA, TPCORP, TRU, TRUE, TSC, TSTH, TTCL, TVD, TVI, U, UOBKH, VGI, VNT, WACOAL, WHA, WICE

Declared (ประกาศเจตนารมณ์)

A, AIE, AJ, AMATAV, AOT, APCO, ARIP, ASIAN, B, BJC, BJCHI, BLAND, BLISS, BR, BRR, BUI, CEN, CGH, CHEWA, CHG, CHO, CHOTI, CI, CIG, COM7, CPR, EKH, EPCO, FN, FSMART, FTE, GGC, GJS, GPI, GPSC, GSTEL, HARN, ILINK, INET, ITEL, JAS, JTS, JUBILE, KTECH, KWC, KWG, L&E, LDC, LEE, LIT, LRH, MAKRO, MALEE, MATCH, MATI, MFEC, MILL, MTC, NCL, NEP, NNCL, NUSA, NWR, PACE, PAP, PATO, PDG, PIMO, PK, PL, PLANB, PLANET, POST, PRINC, PRM, PRO, PSTC, PYLON, QTC, ROJNA, RWI, SAUCE, SC, SCI, SELIC, SIRI, SMK, SPPT, SRICHA, SST, STA, SUPER, SWC, SYMC, TAKUNI, THE, THIP, TKN, TLUXE, TMC, TMILL, TNP, TNR, TOPP, TRITN, TTI, TU, TVT, TWPC, UBIS, UPA, UWC, VIBHA, VIH, WAVE

N/A

2S, AAV, ABICO, ABM, ACAP, ACC, ADAM, ADB, AEC, AEONTS, AF, AFC, AGE, AH, AHC, AI, AIRA, AIT, AJA, AKR, ALLA, ALT, ALUCON, AMA, AMARIN, AMATA, AMC, ANAN, APCO, APEX, APURE, AQ, AQUA, ARIP, AS, ASAP, ASEFA, ASIA, ASIMAR, ASN, ATP30, AU, AUCTION, BA, BAT-3K, BDMS, BEAUTY, BEC, BEM, BFIT, BGRIM, BGT, BH, BIG, BIZ, BKD, BM, BOL, BPP, BROCK, BSBM, BSM, BTNC, BTW, CBG, CCET, CCP, CGD, CHARAN, CHAYO, CHOW, CHUO, CITY, CK, CKP, CMAN, CMO, CMR, CNT, COL, COLOR, COMAN, CPH, CPL, CPT, CRANE, CRD, CSP, CSR, CSS, CTW, CWT, D, DCON, DCORP, DDD, DELTA, DIGI, DNA, DTCI, EA, EARTH, EASON, ECF, EE, EFORL, EIC, EMC, EPG, ERW, ESSO, ESTAR, ETE, EVER, F&D, FANCY, FC, 7UP, FLOYD, FMT, FOCUS, FORTH, FPI, FVC, GENCO, GIFT, GL, GLAND, GLOBAL, GRAMMY, GRAND, GREEN, GTB, GULF, GYT, HFT, JCKH, HPT, HTECH, HUMAN, HYDRO, ICHI, ICN, IEC, IHL, III, INGRS, INOX, INSURE, IRC, IRCP, IT, ITD, J, JCT, JKN, JMART, JMT, JSP, JUTHA, JWD, KAMART, KC, KCAR, KCM, KDH, KIAT, KKC, KOOL, KTIS, KYE, LALIN, LH, LOXLEY, LPH, LST, LTX, LVT, MACO, MAJOR, MANRIN, MAX, MBAX, M-CHAI, MCS, MDX, MEGA, METCO, MGT, MIDA, MJD, MK, ML, MM, MODERN, MPG, MPIC, NC, NCH, NDR, NETBAY, NEW, NEWS, NFC, NOBLE, NOK, NPK, NPP, NTV, NVD, NYT, OHTL, OISHI, ORI, OTO, PAE, PAF, PERM, PF, PICO, PJW, PLE, PMTA, POLAR, POMPUI, PORT, PPM, PRAKTI, PRECHA, PRIN, PTL, RAM, RCI, RCL, RICH, RICHY, RJH, ROCK, ROH, RP, RPC, RPH, RS, RSP, S, S11, SAFARI, SALEE, SAM, SAMART, SAMCO, SAMTEL, SANKO, SAPPE, SAWAD, SAWANG, SCP, SDC, SE, SEAFSCO, SEA OIL, SF, SFP, SGF, SHANG, SIAM, SIMAT, SKE, SKN, SKR, SKY, SLP, SMART, SMM, SMT, SOLAR, SPA, SPALI, SPCG, SPG, SPORT, SPVI, SQ, SR, SSC, SSP, STANLY, STAR, STEC, STHAI, STPI, SUC, SUN, SUTHA, SVH, SVOA, SYNEX, T, TACC, TAPAC, TBSP, TC, TCB, TCC, TCCC, TCJ, TCOAT, TEAM, JCK, TGPRO, TH, THAI, THANA, THG, THL, THMUI, TIC, TITLE, TIW, TK, TKS, TM, TMI, TMW, TNDT, TNH, TNPC, TOA, TPAC, TPBI, TPCH, TPIPL, TPIPP, TPOLY, TPP, TR, TRC, TRT, TRUBB, TSE, TSF, TSI, TSR, TSTE, TTA, TTL, TTTM, TTW, TUCC, TVO, TWP, TWZ, TYCN, UAC, UEC, UKEM, UMI, UMS, UNIQ, UP, UPF, UPOIC, UREKA, UT, UTP, UV, UVAN, VARO, VCOM, VI, VNG, VPO, META, WG, WHAUP, WIJK, WIN, WINNER, WORK, WORLD, WP, WPH, WR, XO, YCI, YNP, YUASA, ZIGA, ZMICO

Explanations

Companies participating in Thailand's Private Sector Collective Action Coalition Against Corruption programme (Thai CAC) under Thai Institute of Directors (as of February 1, 2018) are categorised into: companies that have declared their intention to join CAC, and companies certified by CAC.