

# Petrochemicals

SET Petro Index Close: 3/10/2023 678.00 -20.65 / -2.96% Bt1,062mn  
Bloomberg ticker: SETPETRO

## Better week for naphtha-based producers

**Lower naphtha cost (-3% WoW) gave short-lived breathing room for naphtha-based producers and average PE/PP spread remains lower than cash cost. We believe more inefficient capacities will need to be shuttered to rebalance the market and revive product spread amidst new capacity additions. We retain our caution on the sector as demand growth in key consumer markets China and India shows no material improvement while higher oil price continues to push up feedstock cost.**

**Lower naphtha cost pushes up average PE/PP spread.** While PE and PP were stable WoW, average PE/PP spread shot up 7% WoW to US\$327/t, though still below 12MMA of US\$375/t and cash cost of US\$350/t for integrated producers. We expect the recent widening in product spread to be short-lived as buyers will bargain for lower PE/PP prices on lower demand and oil price. We expect to see more high-cost naphtha-based producers cut operating rates in the near term to limit their cash losses. PE and PP overcapacity will persist through 2024 and millions of metric tons of high-cost production will have to be shut down. (*S&P Global*)

**Aromatics product spreads recover WoW.** PX and benzene prices weakened WoW on slower demand from downstream producers and more feedstock supply from oil refineries after the end of summer. Lower naphtha cost, however, had more impact on spread, up 1% WoW for PX and 7% for benzene. PX spread outperformed other products in 3Q23 despite a marginal increase of 1% QoQ to US\$490/t vs. 12MMA of US\$461/t. Slower demand for PX is expected in 4Q23 on lower demand for downstream, especially for PET bottle chips. We see upside on demand for benzene from downstream PS and ABS ahead of holiday season in 4Q23 but excess capacity will continue to hinder the recovery of benzene spread.

**Integrated PET spread up WoW.** Integrated PET spread improved 7% WoW to US\$97/t on a 3% WoW drop in feedstock MEG cost but this is still far below 12MMA of US\$143/t. Average spread in 3Q23 fell 44% QoQ to only US\$106/t, suggesting much lower earnings contribution from the PET business in Asia for IVL. We expect price of PET bottle chips to weaken in 4Q23 due to lower seasonal demand and capacity additions in China. Further, concerns about the global economic outlook will reduce stockpiling, in our view. This will continue to depress integrated PET spread in 4Q23.

### Key product prices and spread

(US\$/t)	Current 29-Sep-23	-1W	-1M	-3M	-6M	-12M	3Q23 QTD	2Q23	QoQ%	2023 YTD	YoY%	12MMA
Naphtha (Japan) C&F	703	-3%	5%	33%	6%	7%	656	599	9%	652	-21%	658
Ethylene (SE Asia) CFR	905	3%	5%	20%	-6%	0%	829	874	-5%	875	-22%	880
Propylene (SE Asia) CFR	810	-1%	-5%	9%	-13%	-10%	810	855	-5%	869	-18%	870
HDPE (SE Asia Film) CFR	1,050	0%	2%	8%	-4%	0%	1,017	1,035	-2%	1,043	-15%	1,035
LDPE (SE Asia Film) CFR	1,060	0%	3%	14%	-5%	-13%	999	1,036	-4%	1,061	-30%	1,087
LLDPE (SE Asia Film) CFR	1,020	0%	1%	7%	-3%	-4%	992	1,007	-1%	1,024	-19%	1,024
PP (SE Asia Inj) CFR	990	0%	2%	11%	-3%	-7%	951	992	-4%	1,002	-18%	995
<b>Related stocks</b>	PTTGC (-)	SCC (+)	IRPC (+)									
Paraxylene (FOB)	1,180	-2%	1%	12%	6%	2%	1,146	1,083	6%	1,111	-15%	1,119
Benzene (FOB Korea Spot)	980	-1%	8%	31%	1%	10%	912	869	5%	907	-18%	888
<b>Related stocks</b>	PTTGC (+)	TOP (+)										
MEG (SE Asia) CFR	480	-3%	1%	4%	-7%	-6%	485	498	-3%	503	-18%	498
PTA (SE Asia) CFR	820	-1%	0%	6%	-3%	-6%	814	810	1%	810	-11%	813
PET Bottle (NE Asia) FOB	940	-1%	1%	2%	-6%	-15%	931	983	-5%	965	-19%	961
<b>Related stocks</b>	PTTGC (-)	IVL (+)										
ABS (SE Asia) CFR	1,400	0%	5%	12%	-1%	-8%	1,327	1,355	-2%	1,368	-26%	1,381
PS GPPS (SE Asia) CFR	1,270	0%	4%	11%	-1%	-11%	1,200	1,246	-4%	1,247	-20%	1,260
<b>Related stocks</b>	IRPC (-)											
PVC (SE Asia) CFR	860	-1%	-4%	10%	0%	-1%	860	825	4%	861	-31%	853
<b>Related stocks</b>	SCC (-)	PTTGC (-)										
<b>Spread</b>												
Ethylene - naphtha	202	35%	2%	-11%	-33%	-18%	173	275	-37%	223	-26%	222
Propylene - naphtha	107	13%	-41%	-50%	-61%	-56%	154	256	-40%	217	-10%	212
HDPE - naphtha	347	7%	-4%	-22%	-19%	-11%	361	436	-17%	390	-5%	377
LDPE - naphtha	357	7%	-2%	-11%	-22%	-36%	343	437	-21%	409	-42%	428
LDPE - Ethylene	155	-16%	-6%	-11%	0%	-51%	170	162	5%	186	-54%	206
LLDPE - naphtha	317	8%	-8%	-25%	-18%	-21%	337	408	-17%	371	-15%	366
PP - naphtha	287	9%	-5%	-21%	-20%	-28%	295	393	-25%	349	-13%	337
PX - naphtha	477	1%	-4%	-9%	6%	-4%	490	484	1%	458	-4%	461
BZ - naphtha	277	7%	14%	24%	-10%	20%	256	270	-5%	255	-8%	229
MEG - Ethylene	-81	n.a.	n.a.	n.a.	n.a.	n.a.	-29	-44	n.a.	-40	n.a.	-48
PTA - PX	29	13%	-25%	-59%	-70%	-71%	46	84	-45%	65	81%	63
PET spread	72	5%	13%	-26%	-27%	-59%	66	117	-44%	97	-52%	92
ABS spread	826	0%	2%	-2%	-2%	-20%	816	863	-5%	847	-29%	876
PS spread	233	-2%	-7%	-29%	0%	-50%	239	306	-22%	277	-24%	303
PVC - ethylene	418	-4%	-14%	27%	9%	2%	453	354	28%	420	-16%	418

Source: Industry data, Bloomberg Finance L.P. and InnovestX Research

### Valuation summary

	Rating	Price (Bt)	TP (Bt)	ETR (%)	P/E (x)	P/BV (x)	23F	24F	23F	24F
GGC	Underperform	11.0	12.2	12.7	33.4	18.8	1.1	1.0		
IVL	Outperform	25.0	44.0	78.4	15.2	7.0	0.7	0.7		
PTTGC	Neutral	32.5	50.0	53.8	n.m.	9.2	0.5	0.5		
<b>Average</b>					<b>24.3</b>	<b>11.6</b>	<b>0.8</b>	<b>0.7</b>		

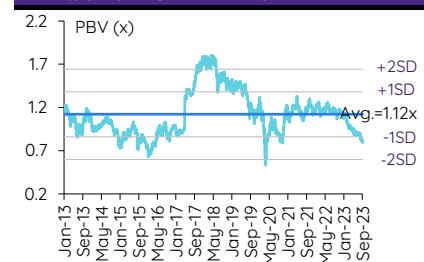
Source: InnovestX Research

### Price performance

	Absolute			Relative to SET		
(%)	1M	3M	12M	1M	3M	12M
GGC	(3.5)	(8.3)	(31.3)	3.3	(4.0)	(25.0)
IVL	(13.8)	(27.5)	(36.3)	(7.8)	(24.1)	(30.6)
PTTGC	(11.0)	(15.0)	(22.2)	(4.7)	(11.0)	(15.1)

Source: SET and InnovestX Research

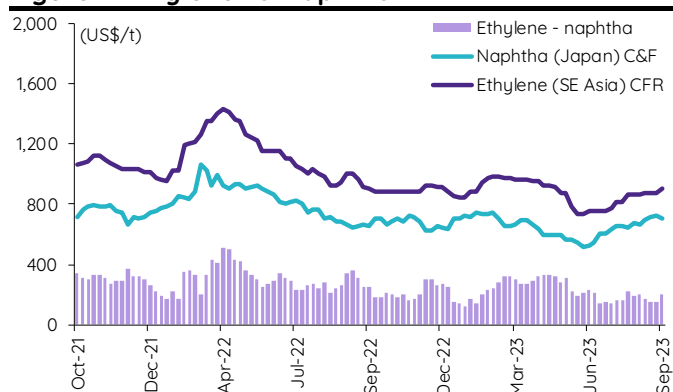
### PBV band - SETPETRO



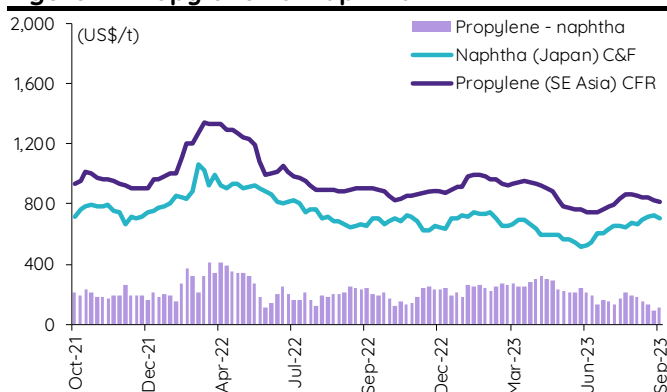
Source: SET, InnovestX Research

### Analyst

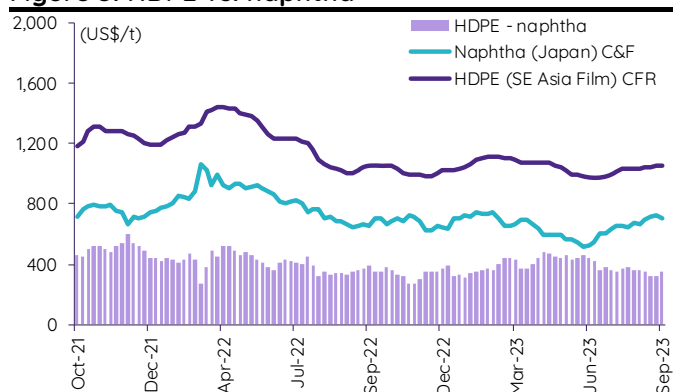
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**Figure 1: Ethylene vs. naphtha**

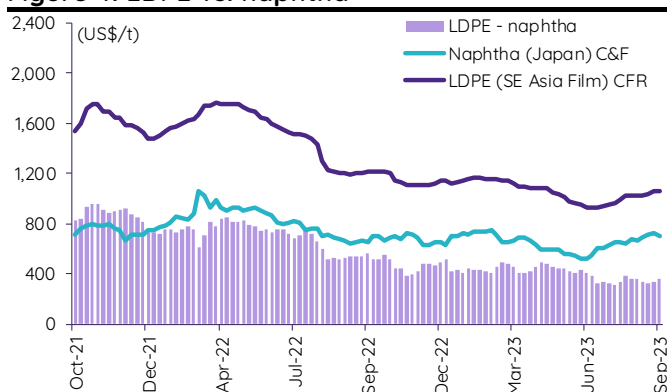
Source: Industry data, Bloomberg Finance L.P. and InnovestX Research

**Figure 2: Propylene vs. naphtha**

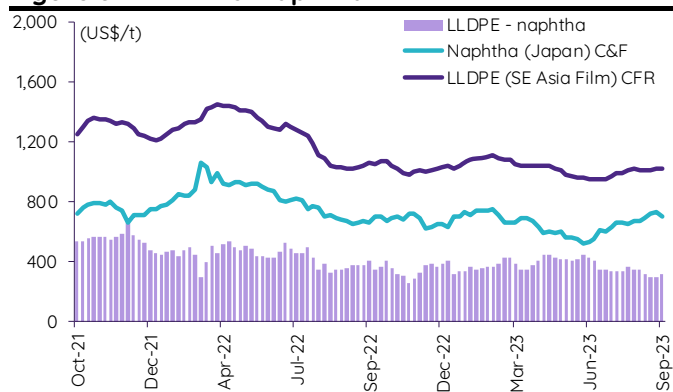
Source: Industry data, Bloomberg Finance L.P. and InnovestX Research

**Figure 3: HDPE vs. naphtha**

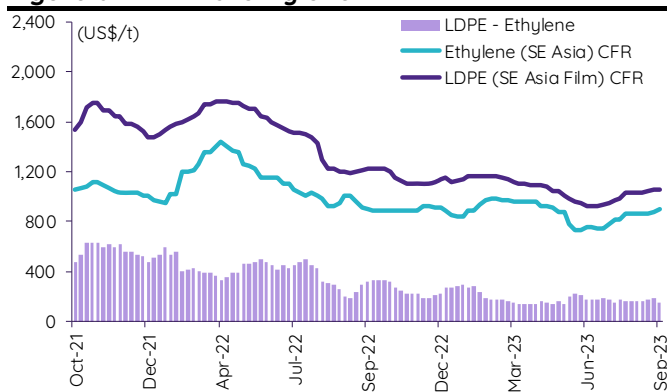
Source: Industry data, Bloomberg Finance L.P. and InnovestX Research

**Figure 4: LDPE vs. naphtha**

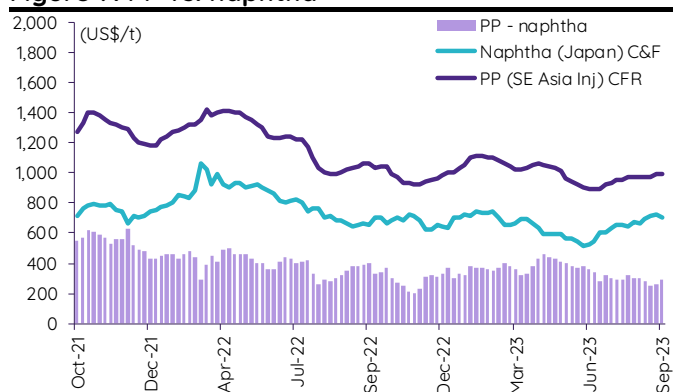
Source: Industry data, Bloomberg Finance L.P. and InnovestX Research

**Figure 5: LLDPE vs. naphtha**

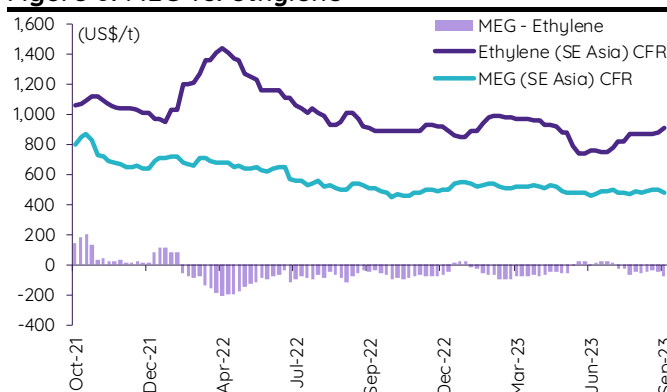
Source: Industry data, Bloomberg Finance L.P. and InnovestX Research

**Figure 6: LDPE vs. ethylene**

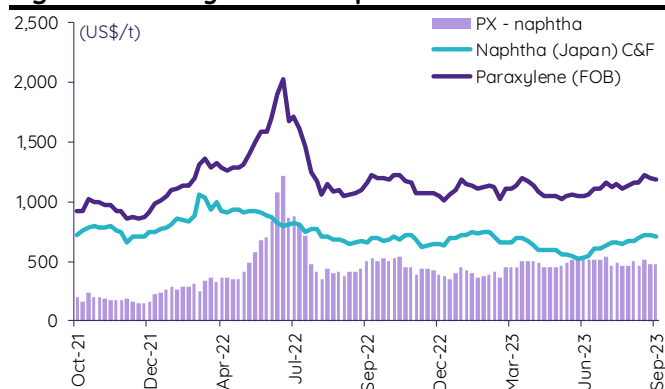
Source: Industry data, Bloomberg Finance L.P. and InnovestX Research

**Figure 7: PP vs. naphtha**

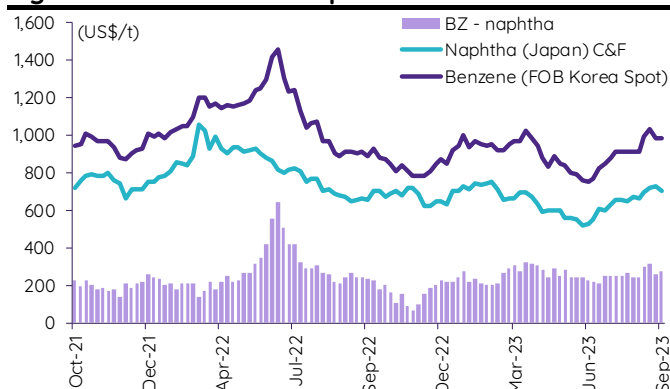
Source: Industry data, Bloomberg Finance L.P. and InnovestX Research

**Figure 8: MEG vs. ethylene**

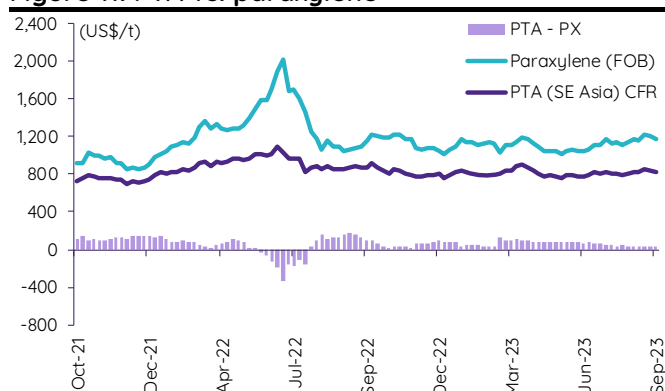
Source: Industry data, Bloomberg Finance L.P. and InnovestX Research

**Figure 9: Paraxylene vs. naphtha**

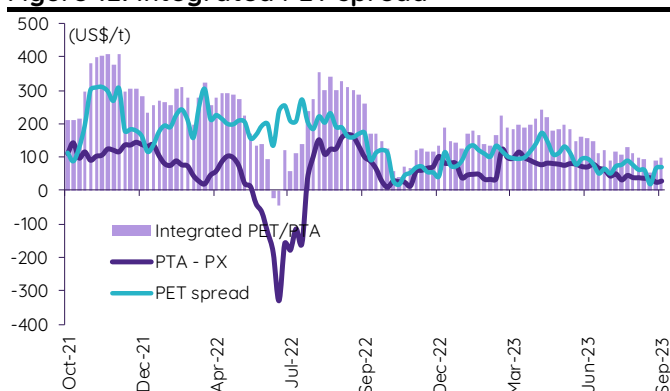
Source: Industry data, Bloomberg Finance L.P. and InnovestX Research

**Figure 10: Benzene vs. naphtha**

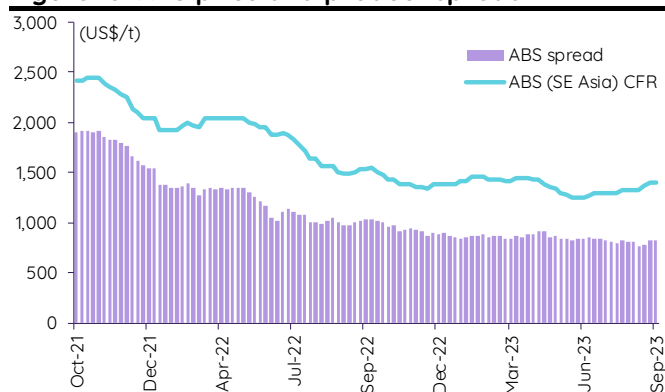
Source: Industry data, Bloomberg Finance L.P. and InnovestX Research

**Figure 11: PTA vs. paraxylene**

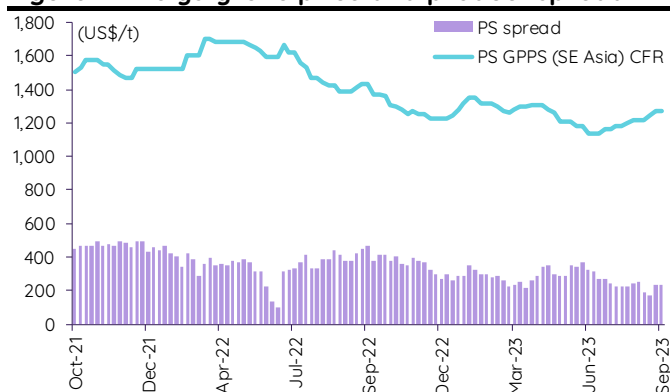
Source: Industry data, Bloomberg Finance L.P. and InnovestX Research

**Figure 12: Integrated PET spread**

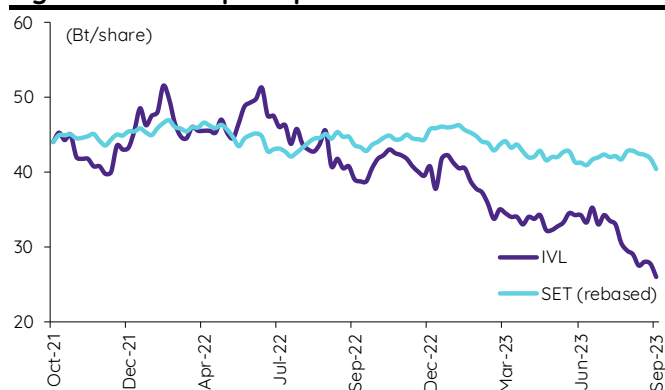
Source: Industry data, Bloomberg Finance L.P. and InnovestX Research

**Figure 13: ABS price and product spread**

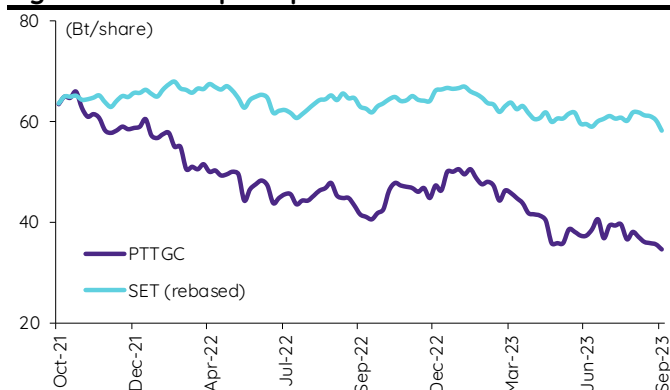
Source: Industry data, Bloomberg Finance L.P. and InnovestX Research

**Figure 14: Polystyrene price and product spread**

Source: Industry data, Bloomberg Finance L.P. and InnovestX Research

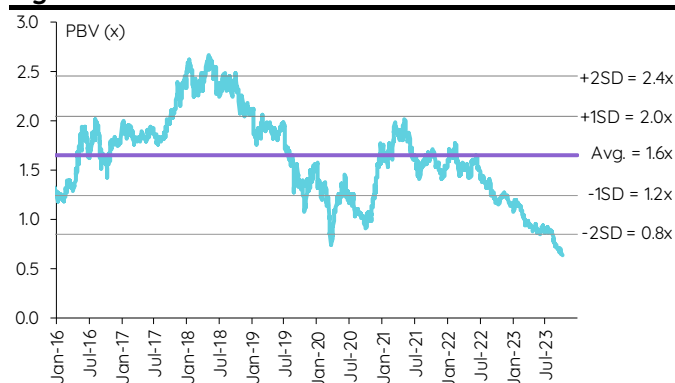
**Figure 15: Share price performance - IVL**

Source: Bloomberg Finance L.P. and InnovestX Research

**Figure 16: Share price performance - PTTGC**

Source: Bloomberg Finance L.P. and InnovestX Research

Figure 17: PBV band - IVL



Source: InnovestX Research

Figure 18: PBV band - PTTGC



Source: InnovestX Research

Figure 19: Product spread - heat map

Product	1Q19	2Q19	3Q19	4Q19	1Q20	2Q20	3Q20	4Q20	1Q21	2Q21	3Q21	4Q21	1Q22	2Q22	3Q22	4Q22	1Q23	2Q23	3Q23	Product
HDPE	565	523	475	327	362	497	518	607	583	576	462	505	421	445	368	336	373	436	361	HDPE
LDPE	536	506	483	380	430	577	601	831	968	917	740	880	741	782	600	472	446	437	343	LDPE
LLDPE	513	467	427	302	357	485	471	565	581	583	510	557	445	477	389	344	369	408	337	LLDPE
PP	581	582	553	455	464	560	525	653	754	695	547	550	428	432	352	291	359	393	295	PP
PX	507	372	291	242	294	196	122	149	226	312	274	179	286	635	501	468	401	484	490	PX
BZ	70	73	182	126	170	100	31	107	188	352	324	198	200	357	272	157	238	270	256	BZ
PS	552	546	447	362	372	459	411	574	511	498	450	472	395	305	392	365	285	306	239	PS
ABS	1,122	1,130	960	944	976	992	1,222	1,571	1,925	1,976	1,760	1,785	1,366	1,231	1,024	945	863	863	816	ABS
PET	143	154	118	101	146	175	129	132	145	149	118	217	203	201	200	69	109	117	66	PET
Int PET	277	317	279	191	198	279	213	208	241	224	209	321	269	172	257	113	166	190	106	Int PET
PVC	348	338	445	447	454	445	465	543	619	710	548	629	472	579	446	412	453	354	453	PVC

Source: InnovestX Research

Figure 20: Valuation summary (price as of Oct 3, 2023)

	Rating	Price Target		ETR (%)	P/E (x)			EPS growth (%)			P/BV (x)			ROE (%)			Div. Yield (%)			EV/EBITDA (x)		
		(Bt/Sh)	(Bt/Sh)		22A	23F	24F	22A	23F	24F	22A	23F	24F	22A	23F	24F	22A	23F	24F	22A	23F	24F
GGC	Underperform	11.00	12.2	12.7	11.2	33.4	18.8	30	(66)	78	1.1	1.1	1.0	10	3	6	4.5	1.8	2.8	5.4	8.1	5.6
IVL	Outperform	25.00	44.0	78.4	3.6	15.2	7.0	44	(76)	118	0.8	0.7	0.7	22	5	10	6.4	2.4	4.4	4.3	6.5	4.5
PTTGC	Neutral	32.50	50.0	53.8	10.6	n.m.	9.2	(57)	n.m.	n.m.	0.5	0.5	0.5	4	(2)	5	3.1	0.0	5.5	8.4	11.2	6.6
<b>Average</b>					<b>8.5</b>	<b>24.3</b>	<b>11.6</b>	<b>6</b>	<b>(71)</b>	<b>98</b>	<b>0.8</b>	<b>0.8</b>	<b>0.7</b>	<b>12</b>	<b>2</b>	<b>7</b>	<b>4.7</b>	<b>1.4</b>	<b>4.2</b>	<b>6.1</b>	<b>8.6</b>	<b>5.5</b>

Source: InnovestX Research

Figure 21: Regional peer comparison

Company	PE (x)			EPS Growth (%)			PBV (x)			ROE (%)			Div. Yield (%)			EV/EBITDA (x)		
	23F	24F	25F	23F	24F	25F	23F	24F	25F	23F	24F	25F	23F	24F	25F	23F	24F	25F
Sinopec Shanghai Petrochem	46.3	24.2	19.0	125.3	91.0	27.3	1.2	1.2	0.8	3.2	4.7	5.1	n.a.	1.8	2.5	17.7	8.1	6.4
China Petroleum & Chemical	9.4	8.8	8.4	17.3	7.5	4.9	0.9	0.9	0.8	9.3	9.7	9.9	7.3	6.9	7.0	5.0	4.4	4.2
PetroChina Co Ltd	6.2	6.3	6.8	3.2	(2.6)	(6.2)	0.7	0.6	0.6	11.0	9.7	8.6	7.8	7.6	7.4	3.7	3.7	3.8
Reliance Industries Ltd	n.m.	18.7	16.7	n.m.	n.m.	11.6	1.8	1.7	1.6	8.7	9.2	9.5	0.4	0.4	0.5	n.a.	n.a.	n.a.
Mitsui Chemicals Inc	9.4	8.1	7.0	(12.6)	16.2	16.5	0.9	0.8	0.8	10.2	10.5	11.1	3.5	3.8	4.2	6.7	6.2	5.5
Asahi Kasei Corp	27.2	11.7	10.3	266.7	131.9	14.0	0.7	0.7	0.7	5.2	6.4	7.1	3.9	4.0	4.1	7.2	6.5	6.0
Sumitomo Chemical Co Ltd	n.m.	14.0	7.7	(120.9)	579.5	81.4	0.6	0.6	0.5	n.m.	3.5	6.9	3.4	3.4	4.1	15.6	10.5	7.4
Lotte Chemical Corp	30.5	10.0	7.7	149.2	204.7	30.7	0.4	0.4	n.a.	1.3	3.7	4.8	2.3	2.8	3.2	10.5	6.2	5.2
Far Eastern New Century Corp	18.4	15.9	14.1	(4.0)	16.0	12.4	0.7	0.7	0.7	3.7	4.4	5.2	4.0	5.0	5.9	10.8	10.2	9.7
Formosa Chemicals & Fibre	64.4	29.5	32.9	(24.8)	118.2	(10.2)	1.1	1.0	1.1	1.2	3.3	5.1	1.1	2.7	3.8	25.9	16.9	12.2
Formosa Plastics Corp	54.0	28.1	n.m.	(74.2)	92.2	n.m.	1.5	1.4	1.3	3.3	6.7	11.1	2.1	3.6	6.1	27.7	18.0	12.7
Nan Ya Plastics Corp	23.6	18.3	18.1	(31.2)	28.9	1.0	1.4	1.4	n.a.	3.0	7.6	9.2	1.8	4.1	5.4	18.9	12.3	9.4
Formosa Petrochemical Corp	38.2	26.0	24.9	37.2	47.1	4.4	2.3	2.2	2.2	6.7	8.8	10.3	2.2	2.6	3.8	19.2	14.5	12.4
Petronas Chemicals Group Bhd	19.8	15.0	12.7	(55.3)	32.0	18.5	1.4	1.3	1.3	7.0	9.0	10.2	2.6	3.7	4.3	10.8	8.9	7.8
Indorama Ventures PCL	15.9	8.3	6.2	(70.8)	91.4	33.8	0.7	0.7	0.6	4.7	8.0	10.6	2.3	3.6	4.8	8.7	7.2	6.2
IRPC PCL	20.0	11.2	8.5	147.6	79.0	30.7	0.5	0.5	0.5	1.9	4.6	6.9	3.3	4.6	6.3	9.0	7.0	5.8
PTT Global Chemical PCL	23.9	10.3	8.7	170.2	132.3	18.1	0.6	0.5	0.5	5.9	4.6	5.9	7.3	4.3	5.9	10.8	8.4	7.5
Global Green Chemicals	20.4	15.8	12.7	(41.9)	28.7	24.2	1.1	1.0	1.0	5.2	6.6	7.7	3.1	3.6	3.9	8.8	7.9	6.8
Alpek SA de CV	9.5	6.3	7.0	(76.5)	50.6	(9.6)	0.7	0.6	0.6	6.0	10.3	10.7	8.8	7.0	7.3	5.2	4.4	4.4
Eastman Chemical Co	11.4	9.1	7.8	1.6	26.0	16.0	1.6	1.5	1.4	14.8	17.1	18.0	4.2	4.4	4.6	8.4	7.4	6.9
<b>Average</b>	<b>24.9</b>	<b>14.8</b>	<b>12.5</b>	<b>21.4</b>	<b>93.2</b>	<b>16.8</b>	<b>1.0</b>	<b>1.0</b>	<b>0.9</b>	<b>5.9</b>	<b>7.4</b>	<b>8.7</b>	<b>3.8</b>	<b>4.0</b>	<b>4.8</b>	<b>12.1</b>	<b>8.9</b>	<b>7.4</b>

Source: Bloomberg Finance L.P., InnovestX Research

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## CG Rating 2022 Companies with CG Rating

### Companies with Excellent CG Scoring

AAV, ADVANC, AF, AH, AIRA, AJ, AKP, AKR, ALLA, ALT, AMA, AMARIN, AMATA, AMATAV, ANAN, AOT, AP, APURE, ARIP, ASP, ASW, AUCTION, AWC, AYUD, BAFS, BAM, BANPU, BAY, BBIK, BBL, BCP, BCPG, BDMS, BEM, BEYOND, BGC, BGRIM, BIZ, BKI, BOL, BPP, BRR, BTS, BTW, BWG, CENTEL, CFRESH, CGH, CHEWA, CHO, CIMBT, CK, CKP, CM, CNT, COLOR, COM7, COMAN, COTTO, CPALL, CPAXT, CPF, CPI, CPN, CRC, CSS, DDD, DELTA, DEMCO, DOHOME, DRT, DTAC, DUSIT, EA, EASTW, ECF, ECL, EE, EGCO, EPG, ETC, ETE, FN, FNS, FPI, FPT, FSMART, FVC, GC, GEL, GFPT, GGC, GLAND, GLOBAL, GPI, GPSC, GRAMMY, GULF, GUNKUL, HANA, HARN, HENG, HMPRO, ICC, ICHI, III, ILINK, ILM, IND, INTUCH, IP, IRC, IRPC, ITTEL, IVL, JTS, JWD, K, KBANK, KCE, KEX, KGI, KKP, KSL, KTB, KTC, LALIN, LANNA, LHFG, LIT, LOXLEY, LPN, LRH, LST, MACO, MAJOR, MALEE, MBK, MC, MCOT, METCO, MFEC, MINT, MONO, MOONG, MSC, MST, MTC, MVP, NCL, NEP, NER, NKI, NOBLE, NSI, NVD, NYT, OISHI, OR, ORI, OSP, OTO, PAP, PCSGH, PDG, PDJ, PG, PHOL, PLANB, PLANET, PLAT, PORT, PPS, PR9, PREB, PRG, PRM, PSH, PSL, PTG, PTT, PTTEP, PTTGC, PYLON, Q-CON, QH, QTC, RATCH, RBF, RS, S, S&J, SAAM, SABINA, SAMART, SAMTEL, SAT, SC, SCB, SCC, SCCC, SCG, SCGP, SCM, SCN, SDC, SEAFCO, SEAOL, SE-ED, SELIC, SENA, SENX, SGF, SHR, SICT, SIRI, SIS, SITHAI, SMPK, SNC, SONIC, SORKON, SPALI, SPI, SPRC, SPVI, SSC, SSSC, SST, STA, STEC, STGT, STI, SUN, SUSCO, SUTHA, SVI, SYMC, SYNTAC, TACC, TASCO, TCAP, TEAMG, TFMAMA, THANA, THANI, THCOM, THG, THIP, THRE, THREL, TIPCO, TISCO, TK, TKN, TKS, TKT, TMILL, TMT, TNDT, TNITY, TOA, TOP, TPBI, TQM, TRC, TRUE, TSC, TSR, TSTE, TSTH, TTA, TTB, TTCL, TTW, TU, TVDH, TVI, TVO, TWPC, U, UAC, UBIS, UPOIC, UV, VCOM, VGI, VIH, WACOAL, WAVE, WHA, WHAUP, WICE, WINNER, XPG, ZEN

### Companies with Very Good CG Scoring

2S, 7UP, ABICO, ABM, ACE, ACG, ADB, ADD, AEONTS, AGE, AHC, AIE, AIT, ALUCON, AMANAH, AMR, APCO, APCS, AQUA, ARIN, ARROW, AS, ASAP, ASEFA, ASIA, ASIAN, ASIMAR, ASK, ASN, ATP30, B, BA, BC, BCH, BE8, BEC, SCAP, BH, BIG, BJC, BJCHI, BLA, BR, BRI, BROOK, BSM, BYD, CBG, CEN, CHARAN, CHAYO, CHG, CHOTI, CHOW, CI, CIG, CITY, CIVIL, CMC, CPL, CPW, CRANE, CRD, CSC, CSP, CV, CWT, DCC, DHOUSE, DITTO, DMT, DOD, DPAINT, DV8, EASON, EFORL, ERW, ESSO, ESTAR, FE, FLOYD, FORTH, FSS, FTE, GBX, GCAP, GENCO, GJS, GTB, GYT, HEALTH, HPT, HTC, HUMAN, HYDRO, ICN, IFS, IIG, IMH, INET, INGRS, INSET, INSURE, IRCP, IT, ITD, J, JAS, JCK, JCKH, JMT, JR, KBS, KCAR, KIAT, KISS, KK, KOOL, KTIS, KUMWEL, KUN, KWC, KWM, L&E, LDC, LEO, LH, LHK, M, MATCH, MBAX, MEGA, META, MFC, MGT, MICRO, MILL, MITSIB, MK, MODERN, MTI, NBC, NCAP, NCH, NDR, NETBAY, NEX, NINE, NATION, NNCL, NOVA, NPK, NRF, NTV, NUSA, NWR, OCC, OGC, ONEE, PACO, PATO, PB, PICO, PIMO, PIN, PJW, PL, PLE, PM, PMTA, PPP, PPPM, PRAPAT, PRECHA, PRIME, PRIN, PRINC, PROEN, PROS, PROUD, PSG, PSTC, PT, PTC, QLT, RCL, RICHY, RJH, ROJNA, RPC, RT, RWI, S11, SA, SABUY, SAK, SALEE, SAMCO, SANKO, SAPPE, SAWAD, SCI, SCP, SE, SECURE, SFLEX, SFP, SFT, SGP, SIAM, SINGER, SKE, SKN, SKR, SKY, SLP, SMART, SMD, SMIT, SMT, SNNP, SNP, SO, SPA, SPD, SPCG, SR, SRICHA, SSF, SSP, STANLY, STC, STPI, SUC, SVOA, SVT, SWC, SYNEX, TAE, TAKUNI, TCC, TCMC, TFG, TFI, TFM, TGH, TIDLOR, TIGER, TIPH, TITLE, TM, TMC, TMD, TMI, TNL, TNP, TNR, TOG, TPA, TPCB, TPCS, TPIPL, TPIPP, TPLAS, TPS, TQR, TRITN, TRT, TRU, TRV, TSE, TVT, TWP, UBE, UEC, UKEM, UMI, UOBKH, UP, UPF, UTP, VIBHA, VL, VPO, VRANDA, WGE, WIKI, WIN, WINMED, WORK, WP, XO, YUASA, ZIGA

### Companies with Good CG Scoring

A, A5, AI, ALL, ALPHAX, AMC, APP, AQ, AU, B52, BEAUTY, BGT, BLAND, BM, BROCK, BSBM, BTNC, CAZ, CCP, CGD, CMAN, CMO, CMR, CPANEL, CPT, CSR, CTW, D, DCON, EKH, EMC, EP, EVER, F&D, FMT, GIFT, GLOCON, GLORY, GREEN, GSC, HL, HTECH, IHL, INOX, JAK, JMART, JSP, JUBILE, KASET, KCM, KWI, KYE, LEE, LPH, MATI, M-CHAI, MCS, MDX, MENA, MJD, MORE, MUD, NC, NEWS, NFC, NSL, NV, PAF, PEACE, PF, PK, PPM, PRAKIT, PTL, RAM, ROCK, RP, RPH, RSP, SIMAT, SISB, SK, SOLAR, SPACK, SPG, SQ, STARK, STECH, SUPER, SVH, PTECH, TC, TCCC, TCJ, TEAM, THE, THMUI, TKC, TNH, TNPC, TOPP, TPCH, TPOLY, TRUBB, TTI, TYCN, UMS, UNIQ, UPA, UREKA, VARO, W, WFX, WPH, YGG, ZAA

### Corporate Governance Report

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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. InnovestX Securities Company Limited does not conform nor certify the accuracy of such survey result.

To recognize well performers, the list of companies attaining "Good", "Very Good" and "Excellent" levels of recognition (Not including listed companies qualified in the "no announcement of the results" clause from 1 January 2021 to 27 October 2022) is publicized.

\* บริษัทหรือกรรมการหรือผู้บริหารของบริษัทที่มีส่วนดำเนินการกำกับดูแลกิจการ เช่น การกระทำผิดเกี่ยวกับหลักทรัพย์ การทุจริต คอร์รัปชัน เป็นต้น ซึ่งการใช้ข้อมูล CGR ควรระมัดระวังข้อมูลที่เกี่ยวข้องประกอบด้วย

### Anti-corruption Progress Indicator

#### Certified (ได้รับการรับรอง)

2S, 7UP, AAI, ADVANC, AF, AH, AI, AIE, AIRA, AJ, AKP, AMA, AMANAH, AMATA, AMATAV, AP, APCS, AS, ASIAN, ASK, ASP, AWC, AYUD, B, BAFS, BAM, BANPU, BAY, BBL, BCH, BCP, BCPG, BE8, BEC, BEYOND, BGC, BGRIM, BKI, BLA, BPP, BROOK, BRR, BSBM, BTS, BWG, CEN, CENTEL, CFRESH, CGH, CHEWA, CHOTI, CHOW, CIG, CIMBT, CM, CMC, COM7, COTTO, CPALL, CPAXT, CPF, CPI, CPL, CPN, CPW, CRC, CSC, DCC, DELTA, DEMCO, DIMET, DRT, DUSIT, EA, EASTW, ECF, EGCO, EP, EPG, ERW, ESTAR, ETC, ETE, FNS, FPI, FPT, FSMART, FTE, GBX, GC, GCAP, GEL, GFPT, GGC, GJS, GPI, GPSC, GSTEEL, GULF, GUNKUL, HANA, HARN, HENG, HMPRO, HTC, ICC, ICHI, IFS, III, ILINK, ILM, INET, INOX, INSURE, INTUCH, IRPC, ITTEL, IVL, JAS, JKN, JR, JTS, KASET, KBANK, KBS, KCAR, KCC, KCE, KGEN, KGI, KKP, KSL, KTB, KTC, L&E, LANNA, LHFG, LHK, LPN, LRH, M, MAJOR, MALEE, MATCH, MBAX, MBK, MC, MCOT, META, MFC, MFEC, MILL, MINT, MONO, MOONG, MSC, MST, MTC, MTI, NATION, NCAP, NEP, NKI, NOBLE, NOK, NRF, NWR, OCC, OGC, OR, ORI, PAP, PATO, PB, PCSGH, PDG, PDJ, PG, PHOL, PIMO, PK, PL, PLANB, PLANET, PLAT, PM, PPP, PPPM, PPS, PR9, PREB, PRG, PRINC, PRM, PROS, PSH, PSL, PSTC, PT, PTECH, PTG, PTT, PTTEP, PTTGC, PYLON, Q-CON, QH, QLT, QTC, RABBIT, RATCH, RML, RS, RWI, S&J, SAAM, SABINA, SAK, SAPPE, SAT, SC, SCC, SCCC, SCG, SCGP, SCM, SCN, SEAOL, SE-ED, SELIC, SENA, SGC, SGP, SINGER, SIRI, SITHAI, SKR, SMIT, SMK, SMPC, SNC, SNP, SORKON, SPACK, SPALI, SPC, SPI, SPRC, SRICHA, SSF, SSP, SSSC, SST, STA, STGT, STOWER, SUSCO, SVI, SYMC, SYNTAC, TAE, TAKUNI, TASCO, TCAP, TCMC, TFG, TFI, TFMAMA, TGH, THANI, THCOM, THIP, THRE, THREL, TIDLOR, TIPCO, TISCO, TKS, TKT, TMD, TMILL, TMT, TNITY, TNL, TNP, TNR, TOG, TOP, TOPP, TPA, TPCS, TRT, TRU, TSC, TSI, TSTE, TSTH, TTA, TTB, TTCL, TU, TVDH, TVO, TWPC, UBE, UBIS, UEC, UKEM, UOBKH, UV, VCOM, VGI, VIH, WACOAL, WHA, WHAUP, WICE, WIKI, XO, YUASA, ZEN, ZIGA

#### Declared (ประกาศเจตนารมณ์)

ACE, ADB, ASW, BBGI, BRI, BTG, BYD, CAZ, CBG, CI, CV, DEXON, DMT, DOHOME, EKH, EVER, GLOBAL, GREEN, ICN, ITC, J, JMART, JMT, LEO, LH, MEGA, MENA, MITSIB, MODERN, NER, OSP, OTO, POLY, PQS, PRIME, PROEN, PRTR, RBF, RT, SA, SANKO, SENX, SFLEX, SIS, SKE, SM, SUPER, SVOA, SVT, TBN, TEGH, TGE, TIPH, TKN, TPLAS, TQM, TRUE, VARO, VIBHA, W, WIN, WPH, XPG

#### N/A

24CS, 3K-BAT, A, A5, AAV, ABM, ACAP, ACC, ACG, ADD, AEONTS, AFC, AGE, AHC, AIT, AJA, AKR, AKS, ALL, ALLA, ALPHAX, ALT, ALUCON, AMAR, AMARIN, AMC, AMR, ANAN, AOT, APCO, APEX, APP, APURE, AQUA, ARIN, ARIP, ARROW, ASAP, ASEFA, ASIA, ASIMAR, ASN, ATP30, AU, AUCTION, AURA, B52, BA, BBIK, BC, BCT, BDMS, BEAUTY, BEM, BGT, BH, BIG, BIOTEC, BIS, BIZ, BJC, BJCHI, BKD, BLAND, BLC, BLESS, BLISS, BM, BOL, BR, BROCK, BSM, BTNC, BTW, BUI, BVG, CCET, CCP, CEYE, CGD, CH, CHARAN, CHASE, CHAYO, CHG, CHIC, CHO, CITY, CIVIL, CK, CKP, CMAN, CMO, CMR, CNT, COCOCO, COLOR, COMAN, CPANEL, CPH, CPR, CPT, CRANE, CRD, CSP, CSR, CSS, CTW, CWT, D, DCON, DDD, DHOUSE, DITTO, DOD, DPAINT, DTCENT, DTCI, DV8, EASON, ECL, EE, EFORL, EMC, ESSO, F&D, FANCY, FE, FLOYD, FMT, FN, FORTH, FSX, FTI, FVC, GABLE, GENCO, GFC, GIFT, GL, GLAND, GLOCON, GLORY, GRAMMY, GRAND, GSC, GTB, GTV, GYT, HEALTH, HFT, HL, HPT, HTECH, HUMAN, HYDRO, I2, IFEC, IHL, IIG, IMH, IND, INGRS, INSET, IP, IRC, IRCP, IT, ITD, ITNS, ITTHI, JAK, JCK, JCKH, JCT, JDF, JPARK, JSP, JUBILE, K, KAMART, KC, KCG, KCM, KDH, KEX, KIAT, KISS, KJL, KK, KKC, KLINIQ, KOOL, KTIS, KTM, KUMWEL, KUN, KWC, KWI, KWM, KYE, LALIN, LDC, LEE, LIT, LOXLEY, LPH, LST, MACO, MANRIN, MASTER, MATI, MAX, M-CHAI, MCS, MDX, MEB, METCO, MGC, MGT, MICRO, MIDA, MJD, MK, ML, MORE, MOSHI, MTW, MUD, MVP, NC, NCH, NCL, NDR, NETBAY, NEW, NEWS, NEX, NFC, NNCL, NOVA, NPK, NSL, NTSC, NTV, NUSA, NV, NVD, NYT, OHTL, ONEE, PACE, PACO, PAF, PCC, PEACE, PERM, PF, PHG, PICO, PIN, PJW, PLE, PLT, PLUS, PMTA, POLAR, POMPUI, PORT, POST, PPM, PRAKIT, PRAPAT, PRECHA, PRI, PRIN, PRO, PROUD, PSG, PSP, PTC, PTL, RAM, RCL, READY, RICHY, RJH, ROCK, ROH, ROJNA, RP, RPC, RPH, RSP, S, S11, SABUY, SAF, SAFARI, SALEE, SAM, SAMART, SAMCO, SAMTEL, SAUCE, SAV, SAWAD, SAWANG, SBNEXT, SCAP, SCB, SCI, SCP, SDC, SE, SEAFCO, SECURE, SFT, SGF, SHANG, SHR, SIAM, SICT, SIMAT, SINO, SISB, SJWD, SK, SKN, SKY, SLM, SLP, SMART, SMD, SMT, SNNP, SO, SOLAR, SONIC, SPA, SPCG, SPG, SPVI, SQ, SR, SSC, SSS, STANLY, STARK, STC, STEC, STECH, STHAI, STI, STP, STPI, SUC, SUN, SUTHA, SVR, SWC, SYNEX, TACC, TAPAC, TC, TCC, TCJ, TCOAT, TEAM, TEAMG, TEKA, TFM, TGPRO, TH, THAI, THANA, THE, THG, THL, THMUI, TIGER, TITLE, TK, TKC, TLI, TM, TMC, TMI, TMW, TNDT, TNH, TNPC, TOA, TPAC, TPBI, TPCH, TPIPL, TPIPP, TPL, TPOLY, TPP, TPS, TQR, TR, TRC, TRITN, TRUBB, TRV, TSE, TTI, TTT, TTW, TURTLE, TVH, TVT, TWP, TWZ, TYCN, UAC, UBA, UMI, UMS, UNIQ, UP, UPF, UPOIC, UREKA, UTP, UVAN, VL, VNG, VPO, VRANDA, WARRIX, WAVE, WFX, WGE, WINMED, WINNER, WORK, WORLD, WP, YGG, YONG, ZAA

### Explanations

Companies participating in Thailand's Private Sector Collective Action Coalition Against Corruption programme (Thai CAC) under Thai Institute of Directors (as of July 25, 2023) are categorised into: companies that have declared their intention to join CAC, and companies certified by CAC.