Wed, Feb 7, 2024

Bt815mn

# Petrochemicals

SET Petro Index Close: 6/2/2024 Bloomberg ticker: SETPETRO 687.37 +5.33 / +0.78%



## Spread widened by lower naphtha cost

A 7% WoW fall in naphtha cost widened product spread 6-22% WoW, led by LDPE, where price was also driven by concern about supply disruption caused by the Red Sea crisis and unplanned outage in the US. This may be short-term catalysts for spread; our longer-term view is cautious as the negative impact of demand-supply imbalance will hurt product spread. Volatile oil price and uncertain global GDP outlook on disruption to trade flow from geopolitics remains the primary risk and may turn investors away despite undemanding valuation.

**Average PE/PP spread up WoW to above cash cost.** Average PE/PP spread rose 17% WoW to a 4-month high of US\$370/t, slightly above 12MMA of US\$364/t, on a 7% WoW drop in naphtha cost. This was led by LDPE spread (+22% WoW), which rose to an 8-month high of US\$448/t, well above 12MMA of US\$397/t, on a 3% WoW rise in price against no change in prices for other PE and PP products, on bullish factors of supply disruptions arising from the Red Sea crisis and unplanned outages in the US due to cold temperatures (*Polymerupdate*). Average PE/PP spread is now slightly above cash cost of US\$350/t but capacity rationalization means it is unlikely to stay high.

**Benzene spread widened to 20-month high.** Despite a 1% WoW slip in benzene price, spread over naphtha shot up 15% WoW to a 20-month high of US\$343/t, far above 12MMA of US\$256/t. We believe this reflects short-term concerns about the cold snap that will continue to support benzene price in the near term; China demand remains high due to higher downstream capacity, prompting buyers to secure Asian cargoes for benzene. PX spread edged up only 1% WoW to US\$433/t (vs. 12MMA of US\$453/t) as buyers negotiated PX price down 2% WoW to align with lower oil price. Lower downstream PTA demand due to plant maintenance in Feb-Mar in China continued to keep PX spread down. Downstream producers began to reduce production towards Chinese New Year which led to lower PX uptake. Lower feedstock for PX due to higher demand for gasoline blending could restrain PX supply.

**Integrated PET spread back up above US\$100.** Integrated PET spread rose 16% WoW to US\$103/t but is still below 12MMA of US\$138/t. Lower PX and PTA price, tracking lower oil price, was the factor lifting spread, while PET bottle chip price has been steady at US\$920/t since the beginning of the year. PET resin producers are expected to see stronger demand after Chinese New Year, as the market moves into the pre-season; downside risk to product margins is expected to be limited. Beyond Chinese New Year, any resolution to the Red Sea situation and lowering of global freight rates would strengthen demand for restocking to ensure supply security *(Czapp)*, especially for beverage producers in Europe, the most affected by the Red Sea crisis.

#### Valuation summary Ratina Price TP ETR P/E (x) P/BV (x) (Bt) (Bt) (%) 23F 24F 23F Underperform 18.0 n.m. 15.6 1.0 0.9 24.9 35.0 41.8 51.9 10.9 0.8 IVL Neutral PTTGC Neutral 34.3 50.0 47.4 n.m. 11.5 0.5 0.5 Average 51.9 12.7 0.7 Source: InnovestX Research Price performance Absolute Relative to SET 1M 12M 3M 12M (%) 3M 1M GGC (0.6) (1.6) (39.9)2.6 0.7 (27.0)IVI (10.1) (5.8) (40.2) (7.2) (3.5) (27.4) PTTGC (30.8) (5.1) (15.9) (8.1) (8.7) (6.5)Source: SET and InnovestX Research PBV band - SETPETRO 2.2 PBV (x) 1.7 +2SD +1SD 1.2 ∕g.=1.11x -1SD 0.7 -25D 0.2 ΝM Jan-Jun-Jun-Jun-Sep-Feb-Nov-Aug-Oct Jan lay-JuL Apr Jan

Source: SET, InnovestX Research

#### Analyst

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#### Key product prices and spread

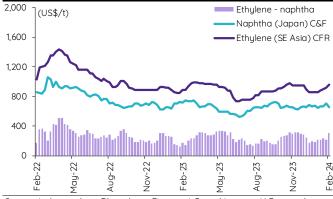
(US\$/t)	Current	-1W	-1M	-3M	-6M	-12M	1Q24	4Q23	QoQ%	2024	YoY%	12MMA
	2-Feb-24	70/		404	40/		QTD	(57	407	YTD	504	(50
Naphtha (Japan) C&F	652	-7%	2%	-1%	-1%	-9%	663	657	1%	663	-5%	652
Ethylene (SE Asia) CFR	955	4%	12%	1%	17%	8%	899	919	-2%	899	4%	888
Propylene (SE Asia) CFR	1,000	0%	18%	25%	27%	2%	934	806	16%	934	2%	855
HDPE (SE Asia Film) CFR	1,020	0%	3%	2%	1%	-4%	1,008	1,001	1%	1,008	-3%	1,030
LDPE (SE Asia Film) CFR	1,100	3%	7%	9%	13%	-5%	1,060	1,019	4%	1,060	-7%	1,044
LLDPE (SE Asia Film) CFR	990	-1%	-1%	2%	0%	-8%	998	975	2%	998	-5%	1,008
PP (SE Asia Inj) CFR	980	0%	3%	3%	3%	-11%	966	947	2%	966	-7%	983
Related stocks	PTTGC (=)	SCC (+)	IRPC (+)									
Paraxylene (FOB)	1,085	-2%	0%	-1%	-4%	-5%	1,095	1,083	1%	1,095	0%	1,105
Benzene (FOB Korea Spot)	995	-1%	11%	9%	9%	6%	958	894	7%	958	3%	905
Related stocks	PTTGC (+)	TOP (+)										
MEG (SE Asia) CFR	565	0%	4%	18%	18%	6%	551	493	12%	551	3%	502
PTA (SE Asia) CFR	780	-3%	0%	-3%	-3%	-4%	786	776	1%	786	-2%	800
PET Bottle (NE Asia) FOB	920	0%	0%	3%	-1%	-9%	920	904	2%	920	-5%	947
Related stocks	PTTGC (-)	IVL (+)										
ABS (SE Asia) CFR	1,320	0%	3%	-4%	2%	-6%	1,304	1,331	-2%	1,304	-7%	1,352
PS GPPS (SE Asia) CFR	1,250	0%	4%	-2%	6%	-7%	1,232	1,254	-2%	1,232	-4%	1,246
Related stocks	IRPC (-)											
PVC (SE Asia) CFR	790	0%	5%	3%	-5%	-12%	766	786	-3%	766	-14%	833
Related stocks	SCC (-)	PTTGC (-)										
Spread												
Ethylene - naphtha	303	42%	40%	3%	92%	78%	236	263	-10%	236	41%	237
Propylene - naphtha	348	17%	69%	143%	161%	31%	271	150	81%	271	24%	203
HDPE - naphtha	368	16%	5%	7%	4%	7%	345	344	0%	345	2%	379
LDPE - naphtha	448	22%	15%	27%	43%	1%	397	363	9%	397	-11%	392
LDPE - Ethylene	145	-6%	-17%	142%	-6%	-47%	161	100	61%	161	-42%	156
LLDPE - naphtha	338	13%	-6%	8%	1%	-8%	335	319	5%	335	-5%	357
PP - naphtha	328	18%	5%	12%	12%	-15%	303	290	4%	303	-11%	332
PX - naphtha	433	6%	-4%	-1%	-8%	1%	432	426	1%	432	7%	453
BZ - naphtha	343	15%	31%	35%	35%	56%	295	238	24%	295	26%	254
MEG - Ethylene	-27	n.a.	n.a.	n.a.	n.a.	n.a.	-6	-76	n.a.	-6	n.a.	-49
PTA - PX	53	-6%	7%	-20%	4%	11%	52	50	4%	52	-22%	60
PET spread	57	43%	-11%	47%	-23%	-55%	57	69	-18%	57	-42%	88
ABS spread	729	-1%	-3%	-12%	-10%	-15%	739	804	-8%	739	-14%	827
PS spread	187	-4%	-22%	-32%	-17%	-47%	214	281	-24%	214	-28%	273
PVC - ethylene	286	-4%	3%	-5%	-36%	-40%	279	315	-11%	279	-41%	379

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

Note: The impact on related stocks is based on WoW change

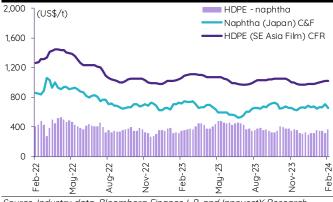


#### Figure 1: Ethylene vs. naphtha



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

### Figure 3: HDPE vs. naphtha



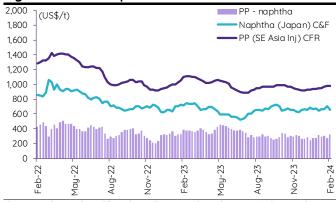
Source: Industry data, Bloomberg Finance L.P. and InnovestX Research

### Figure 5: LLDPE vs. naphtha



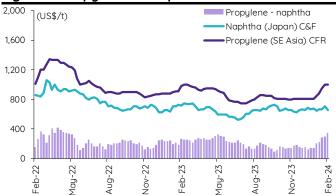
Source: Industry data, Bloomberg Finance L.P. and InnovestX Research

### Figure 7: PP vs. naphtha



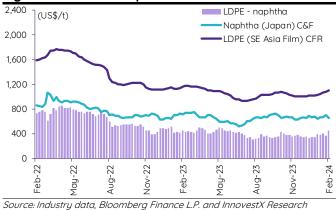
Source: Industry data, Bloomberg Finance L.P. and InnovestX Research

#### Figure 2: Propylene vs. naphtha

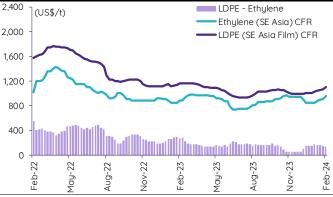


Source: Industry data, Bloomberg Finance L.P. and InnovestX Research

### Figure 4: LDPE vs. naphtha

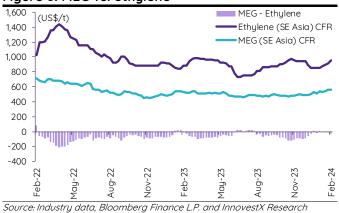


## Figure 6: LDPE vs. ethylene



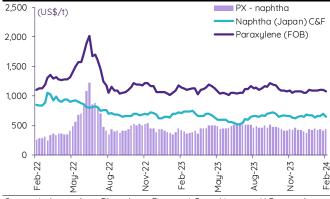
Source: Industry data, Bloomberg Finance L.P. and InnovestX Research

#### Figure 8: MEG vs. ethylene





#### Figure 9: Paraxylene vs. naphtha



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

### Figure 11: PTA vs. paraxylene

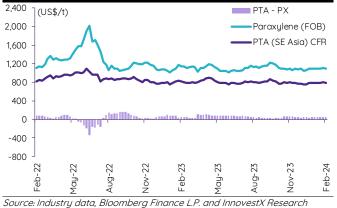
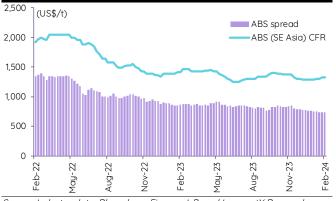
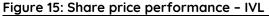
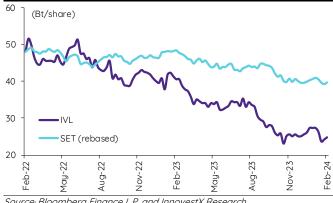


Figure 13: ABS price and product spread



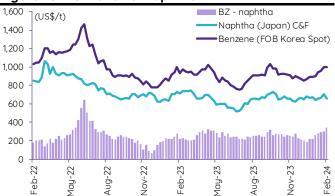
Source: Industry data, Bloomberg Finance L.P. and InnovestX Research





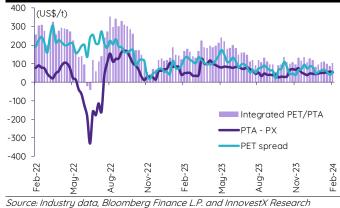
Source: Bloomberg Finance L.P. and InnovestX Research

#### Figure 10: Benzene vs. naphtha

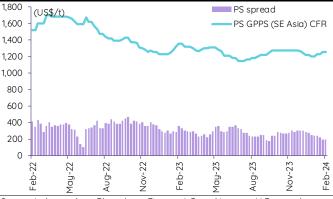




#### Figure 12: Integrated PET spread

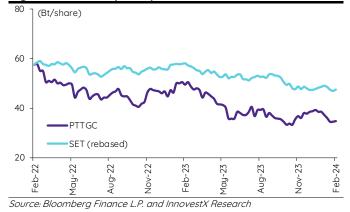


### Figure 14: Polystyrene price and product spread



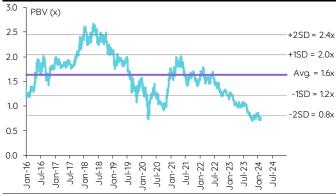
Source: Industry data, Bloomberg Finance L.P. and InnovestX Research

Figure 16: Share price performance - PTTGC





### Figure 17: PBV band - IVL



### Figure 18: PBV band - PTTGC



Source: InnovestX Research

## Figure 19: Product spread - heat map

Product	1Q20	2Q20	3Q20	4Q20	1Q21	2Q21	3Q21	4Q21	1Q22	2Q22	3Q22	4Q22	1Q23	2Q23	3Q23	4Q23	1Q24	Product
HDPE	362	497	518	607	583	576	462	505	421	445	368	336	373	436	361	344	345	HDPE
LDPE	430	577	601	831	968	917	740	880	741	782	600	472	446	437	343	363	397	LDPE
LLDPE	357	485	471	565	581	583	510	557	445	477	389	344	369	408	337	319	335	LLDPE
PP	464	560	525	653	754	695	547	550	428	432	352	291	359	393	295	290	303	PP
PX	294	196	122	149	226	312	274	179	286	635	501	468	401	484	490	426	432	PX
ΒZ	170	100	31	107	188	352	324	198	200	357	272	157	238	270	256	238	295	ΒZ
PS	372	459	411	574	511	498	450	472	395	305	392	365	285	306	239	281	214	PS
ABS	976	992	1,222	1,571	1,925	1,976	1,760	1,785	1,366	1,231	1,024	945	863	863	816	804	739	ABS
PET	146	175	129	132	145	149	118	217	203	201	200	69	109	117	66	69	57	PET
Int PET	198	279	213	208	241	224	209	321	269	172	257	113	166	190	106	112	81	Int PET
PVC	454	445	465	543	619	710	548	629	472	579	446	412	453	354	453	315	279	PVC

Source: InnovestX Research

### Figure 20: Valuation summary (price as of Feb 6, 2024)

			<b>J</b> (1		,												
	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 2	24F	22A 23F 24F	22A	23F	24F	22A	23F	24F
GGC	Underperform	8.90	10.5	18.0	9.1 n.m. 15.6	30	n.m.	n.m.	0.9 1.0	0.9	10 (3) 6	5.6	0.0	3.3	4.2	18.1	5.0
IVL	Neutral	24.90	35.0	41.8	3.6 51.9 10.9	44	(93)	377	0.8 0.8	0.7	22 1 7	6.4	1.2	2.8	4.3	7.2	5.1
PTTGC	Neutral	34.25	50.0	47.4	11.2 n.m. 11.5	(57)	n.m.	n.m.	0.5 0.5	0.5	4 (2) 4	2.9	1.5	4.4	8.6	11.4	7.1
Average					8.0 51.9 12.7	6	(93)	377	0.7 0.7	0.7	12 (1) 6	5.0	0.9	3.5	5.7	12.2	5.7

Source: InnovestX Research

### Figure 21: Regional peer comparison

Company	PE (x)		EPS Growth (%)			PBV (x)			R	DE (%)		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	107.5	23.5	14.1	109.1	358.3	66.4	1.0	1.0	1.0	0.9	4.5	6.4	n.a	1.9	4.8	10.0	6.2	4.9
China Petroleum & Chemical	10.1	9.1	8.6	7.5	11.5	6.2	0.9	0.8	0.8	8.8	9.5	9.5	6.5	6.6	6.6	4.9	4.6	4.3
PetroChina Co Ltd	5.8	5.8	6.3	10.2	(0.6)	(6.7)	0.7	0.6	0.6	11.6	10.5	9.1	8.5	8.1	7.6	3.7	3.7	3.7
Reliance Industries Ltd	n.m.	24.1	21.5	n.m.	n.m.	12.3	2.3	2.2	2.0	8.7	9.3	9.7	0.3	0.3	0.4	14.1	12.5	11.2
Mitsui Chemicals Inc	11.2	9.5	8.0	(16.6)	17.9	19.0	1.0	0.9	0.8	9.9	10.8	11.6	3.1	3.4	3.6	7.2	6.6	5.8
Asahi Kasei Corp	31.7	13.6	11.9	273.5	133.7	13.7	0.9	0.9	0.8	5.3	6.4	7.0	3.2	3.3	3.4	7.8	7.0	6.4
Sumitomo Chemical Co Ltd	n.m	30.4	7.2	(276.3)	120.1	321.1	0.5	0.5	0.4	n.m.	1.8	6.3	4.3	4.1	4.6	67.4	28.2	8.0
Lotte Chemical Corp	535.4	18.1	9.0	(86.3)	2,861.9	101.4	0.4	0.4	n.a.	(0.1)	1.9	4.0	1.6	2.3	3.0	14.5	8.3	6.3
Far Eastern New Century Corp	19.8	18.5	14.8	(5.0)	7.1	25.2	0.7	0.7	0.7	3.8	4.1	4.9	3.8	4.5	4.8	11.3	10.5	10.0
Formosa Chemicals & Fibre	36.1	25.5	20.8	25.4	41.6	22.7	1.0	1.0	1.0	3.1	2.7	4.3	2.1	2.7	3.6	21.8	17.6	13.8
Formosa Plastics Corp	38.5	26.3	18.4	(66.9)	46.6	42.9	1.3	1.3	1.2	3.7	5.1	7.4	2.0	3.0	3.9	35.0	22.6	16.5
Nan Ya Plastics Corp	29.6	21.3	14.4	(49.1)	38.8	47.9	1.3	1.2	1.1	2.8	5.9	8.2	1.6	3.4	5.0	22.9	13.2	10.5
Formosa Petrochemical Corp	30.8	26.0	20.9	59.9	18.6	24.3	2.1	1.9	2.0	7.5	7.9	9.4	2.4	2.8	3.7	19.2	14.0	12.3
Petronas Chemicals Group Bhd	25.8	17.4	14.2	(67.0)	48.7	22.2	1.3	1.3	1.2	5.7	7.8	8.9	2.5	3.2	3.8	11.3	9.5	8.3
Indorama Ventures PCL	44.7	14.5	10.3	(89.7)	207.9	41.1	0.8	0.7	0.7	1.6	4.7	7.3	1.7	2.4	3.8	9.6	8.1	7.2
IRPC PCL	n.m	16.5	7.3	66.2	269.0	125.0	0.5	0.5	0.5	(1.8)	2.5	5.0	1.1	2.3	3.7	11.4	7.9	6.4
PTT Global Chemical PCL	n.m	20.0	12.9	60.2	321.5	54.6	0.6	0.5	0.5	5.9	3.0	5.3	6.9	3.0	4.7	10.9	9.3	8.3
Global Green Chemicals	356.0	12.9	11.6	(97.3)	2,660.0	11.6	0.9	0.8	0.8	(0.0)	6.9	7.1	1.1	3.3	4.4	11.3	6.2	5.9
Alpek SA de CV	19.7	6.6	7.4	(91.0)	197.1	(10.5)	0.6	0.5	0.5	3.6	5.0	7.4	12.8	8.2	8.8	4.4	4.3	4.3
Eastman Chemical Co	13.4	10.9	9.4	(4.2)	22.8	16.0	1.8	1.7	1.5	13.9	15.5	16.4	3.8	4.0	4.2	9.1	8.2	7.5
Average	82.3	17.5	12.4	(12.5)	388.6	47.8	1.0	1.0	1.0	5.0	6.3	7.8	3.7	3.6	4.4	15.4	10.4	8.1

Source: Bloomberg Finance L.P., InnovestX Research



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#### CG Rating 2023 Companies with CG Rating

#### Companies with Excellent CG Scoring

7UP, AAV, ABM, ACE, ACG, ADB, ADD, ADVANC, AEONTS, AF, AGE, AH, AHC, AIRA, AIT, AJ, AKP, AKR, ALLA, ALT, AMA, AMARIN, AMATA, AMATAV, ANAN, AOT, AP, APCO, APCS, ARIP, ARROW, ASEFA, ASK, ASP, ASW, ATP30, AUCT, AWC, AYUD, B, BA, BAFS, BAM, BANPU, BAY, BBGI, BBIK, BBL, BC, BCH, BCP, BCPG, BDMS, BEC, BEM, BEYOND, BGC, BGRIM, BH, BIZ, BJC, BJCH, BKI, BLA, BOL, BPP, BRI, BROOK, BRR, BTS, BTW, BWG, BYD, CBG, CENTEL, CFRESH, CHASE, CHEWA, CHG, CHOW, CIMBT, CIVIL, CK, CKP, CM, CNT, COLOR, COMT, COTTO, CPALL, CPAXT, CPF, CPI, CPI, CPN, CPW, CRC, CRD, CSC, CSS, CV, DCC, DDD, DELTA, DEMCO, DMT, DOHOME, DRT, DUSIT, EA, EASTW, ECF, ECL, EE, EGCO, FPG, ERW, ETC, IETE, FE, FLOYD, FN, FPI, FTS, SFVC, GBX, GC, GCAP, GENCO, GFPT, GGC, GLAND, GLOBAL, GPSC, GRAMMY, GULF, GUNKUL, HANA, HARN, HENG, HMPRO, HPT, HTC, ICC, ICHI, ICN, III, ILINK, ILM, IMH, IND, INET, INTUCH, IP, IRC, IRPC, ITC, ITEL, IVL, JAS, JTS, KBANK, KCC, KCE, KEX, KKP, KSL, KTB, KTC, KTMS, KUMWEL, KUN, LALIN, LANNA, LH, LHFG, LIT, LOXLEY, LPN, LRH, LST, M, MAJOR, MALEE, MATCH, MBK, MC, M-CHAI, MCOT, MEGA, MFC, MFEC, MILL, MINT, MONO, MOONG, MSC, MST, MTC, MTI, NC, NCH, NCH, NDR, NER, NKI, NOBLE, NRF, NTV, NVD, NWR, NYT, OCC, OISHI<sup>1</sup>, ONEE, OR, ORI, OSP, OTO, PAP, PATO, PB, PCSGH, PDG, PDI, PG, PHOL, PIMO, PJW, PLANB, PLAT, PLUS, PM, POLY, PORT, PPP, PPS, PR9, PRG, PRINC, PRM, PRTR, PSL, PT, PTC, CTT, PTTEP, PTTGC, Q-CON, QH, QTC, RATCH, RBF, RPH, RS, RT, S, S&J, SA, SABINA, SAK, SAMART, SAMTEL, SAPPE, SAT, SBNEXT, SC, SCB, SCC, SCCC, SCG, SCGP, SCM, SDC, SEAFCO, SEAOIL, SECURE, SELIC, SENA, SENX, SFP<sup>2</sup>, SFT, SGC, SGF, SGP, SHR, SICT, SIRI, SIS, SITHAI, SJWD, SKR, SM, SMPC, SMT, SNC, SNNP, SNP, SO, SPALI, SPC, SPC, SPI, SPRC, SR, SSC, STA, STC, STEG, STGT, STI, SUC, SUN, SUSCO, SUTHA, SVI, SVT, SYMC, SYNEX, SYNEX, SYNEX, SNT, SNC, SNNP, SNP, SO, SPALI, SPC, SPCG, SPI, SPRC, SR, SSC, SSF, SSSC, STA, STC, STEG, STGT, STI, SUC, SUN, SUSCO, SUTHA, SVI, SVT, SYMC, SYNEX, TATC, TAE, TCAP, TCMC, TEAMG, TEGH, TFG, TFMAMA, TGE, TGH, THANA, THANI, THANI, THOT, TNIT, TNIT, TN

#### Companies with Very Good CG Scoring

2S, A5, AAI, AIE, ALUCON, AMR, APURE, ARIN, AS, ASIA, ASIAN, ASIMAR, ASN, AURA, BR, BSBM, BTG, CEN, CGH, CH, CHIC, CI, CIG, CMC, COMAN, CSP, DOD, DPAINT, DV8, EFORL, EKH, ESSO, ESTAR, EVER, FORTH, FSMART, FTI, GEL, GPI, HEALTH, HUMAN, IFS, INSET, IT, J, JCKH, JDF, JKN, JMART, JUBILE, K, KCAR, KGI, KIAT, KISS, KK, KTIS, KWC, KWM, LDC, LEO, LHK, MACO, METCO, MICRO, MK, MVP, NCAP, NOVA, NTSC, PACO, PIN, PQS, PREB, PRI, PRIME, PROEN, PROS, PROUD, PSTC, PTECH, PYLON, RCL, SALEE, SANKO, SCI, SCN, SE, SE-ED, SFLEX, SINGER, SKN, SONIC, SORKON, SPVI, SSP, SST, STANLY, STP, SUPER, SVOA, SWC, TCC, TEKA, TFM, TMILL, TNP, TPLAS, TPOLY, TRC, TRU, TRUBB, TSE, VRANDA, WAVE, WFX, WIIK, WIN, WP, XO

#### Companies with Good CG Scoring

24CS, AMANAH, AMARC, AMC, APP, ASAP, BCT, BE8, BIG, BIOTEC, BLESS, BSM, BVG, CAZ, CCET, CHARAN, CHAYO, CHOTI, CITY, CMAN, CMR, CRANE, CWT, DHOUSE, DTCENT, EASON, FNS, FTE, GIFT, GJS, GTB, GTV, GYT, HL, HTECH, HYDRO, IIG, INGRS, INSURE, IRCP, ITD, ITNS, JCK, JMT, JR, JSP, KBS, KGEN, KJL, L&E, LEE, MASTER, MBAX, MEB, MENA, META, MGT, MITSIB, MJD, MOSHI, MUD, NATION, NNCL, NPK, NSL, NV, OGC, PAF, PCC, PEACE, PICO, PK, PL, PLANET, PLE, PMTA, PPM, PRAKIT, PRAPAT, PRECHA, PRIN, PSG, RABBIT, READY, RJH, RSP, RWI, S11, SAAM, SAF, SAMCO, SAWAD, SCAP, SCP, SIAM, SKE, SKY, SMART, SMD, SMIT, SOLAR, SPA, STECH, STPI, SVR, TC, TCCC<sup>3</sup>, TEAM, TFI, TIGER, TITLE, TKC, TMI, TNH, TPA, TPAC, TRITN, UBA, UMI, UMS, UTP, VARO, VPO, W, WARRIX, WORK, WPH, YONG, ZIGA

#### 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 2022 to 31 October 2023) is publicized.

<sup>1</sup>OISHI was voluntarily delisted from the Stock Exchange of Thailand, effectively on September 6, 2023

<sup>2</sup>SFP was voluntarily delisted from the Stock Exchange of Thailand, effectively on July 19, 2023

<sup>3</sup>TCCC was voluntarily delisted from the Stock Exchange of Thailand effectively on August 25, 2023

#### Anti-corruption Progress Indicator

#### Certified (ได้รับการรับรอง)

25, 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, BBGI, 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, CPALL, CPAXT, CPF, CPI, CPL, CPN, CPW, CRC, CSC, DCC, DELTA, DEMCO, DIMET, DOHOME, DRT, DUSIT, EA, EASTW, ECF, EGCO, EP, EPG, ERW, ESTAR, ETC, ETE, FNS, FPI, FPT, FSMART, FTE, GBX, GC, GCAP, GEL, GPT, GGC, GJS, GPI, GPSC, GSTEEL, GULF, GUNKUL, HANA, HARN, HENG, HMPRO, HTC, ICC, ICHI, IFS, III, ILINI, INIL, INOX, INSURE, INTUCH, IRPC, ITEL, IVL, JAS, JKN, JR, JTS, KASET, KBANK, KBS, KCAR, KCC, KCE, KGEN, KGI, KKP, KSL, KTB, KTC, L&E, LANNA, LHFG, LHK, LPN, LRH, MAJAP, MALEE, MATCH, MBAX, MBK, MC, MCOT, META, MFC, MFEC, MILL, MINT, MONO, MOONG, MSC, MST, MTC, MTI, NATION, NCAP, NEP, NKI, NOBLE, 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, 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, SCN, SEAOLL, SE-ED, SELIC, SENA, SGC, SGP, SIRI, SITHAI, SKR, SMIT, SMK, SMPC, SNC, SNP, SORKON, SPACK, SPALL, SPC, SPI, SPRC, SRICHA, SSF, SSP, SSSC, SST, STA, STGT, STOWER, SUSCO, SVI, SYNCC, SYNTEC, TAE, TAKUNI, TASCO, TCAP, TCMC, TFG, TFI, TFMAMA, TGE, TGH, THANI, THCOM, THIP, THRE, THREL, TIDLOR, TIPCO, TISCO, TKS, TKT, TMD, TMILL, TMT, TNITY, TNL, TNP, TNR, TOG, TOP, TOPP, TPA, TCS, TRT, TRU, TSC, TST, TSTH, TTA, TTB, TTCL, TU, TVDH, TVO, TWPC, UBE, UBIS, UEC, UKEM, UOBKH, UV, VCOM, VGI, VIH, WACOAL, WHA, WHAUP, WICE, WIIK, XO, YUASA, ZEN, ZIGA

#### Declared (ประกาศเจตนารมณ์)

ACE, ADB, ALT, AMC, ASW, BLAND, BTG, BYD, CAZ, CBG, CV, DEXON, DMT, EKH, FSX, GLOBAL, GREEN, ICN, IHL, ITC, J, JMART, JMT, LEO, LH, MENA, MITSIB, MODERN, NER, NEX, OSP, OTO, PLUS, POLY, PQS, PRIME, PROEN, PRTR, RBF, RT, SA, SANKO, SCB, SENX, SFLEX, SIS, SKE, SM, SVOA, TBN, TEGH, TIPH, TKN, TPAC, TPLAS, TQM, TRUE, W, WPH, XPG

#### N/A

24CS, 3K-BAT, A, A5, AAV, ABM, ACAP, ACC, ACG, ADD, ADVICE, AEONTS, AFC, AGE, AHC, AIT, AJA, AKR, AKS, ALL, ALLA, ALPHAX, ALUCON, AMARC, AMARIN, AMR, ANAN, ANI, AOT, APCO, APEX, APP, APURE, AQUA, ARIN, ARP, ARROW, ASAP, ASEFA, ASIA, ASIMAR, ASN, ATP30, AU, AUCT, AURA, B52, BA, BBIK, BC, BCT, BDMS, BEAUTY, BEM, BGT, BH, BIG, BIOTEC, BIS, BIZ, B, C, D, CHI, BKD, BLC, BLESS, BLISS, BU, BOL, BR, BRI, BROCK, BSM, BSRC, BTNC, BTW, BUI, BVG, CCET, CCP, CCPC, CCP, CGP, CH, CHARAN, CHAYO, CHG, CHIC, CHO, CI, CITY, CIVIL, CK, CKP, CMAN, CMO, CMR, CNT, COCOCO, COLOR, COMAN, CPANEL, CPH, CPR, CPT, CRANE, CSP, CSS, CTW, CWT, D, DCON, DDD, DHOUSE, DITTO, DOD, DPAINT, DTCINT, DTCI, DV8, EASON, ECL, EE, EFORL, EMC, ETL, EVER, F&D, FANCY, FE, FLOYD, FMT, FN, FORTH, FTI, FVC, GABLE, GENCO, GFC, GIFT, GL, GLAND, GLOCON, GLORY, GRAMMY, GRAND, GSC, GTB, GTV, GYT, HEALTH, HFT, HL, HPT, HTECH, HUMAN, HYDRO, 12, IFEC, 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, KTMS, KUMWEL, KUN, KWC, KWI, KWH, KYE, LALIN, LDC, LEE, LIT, LOXLEY, LPH, LST, MANRIN, MASTER, MATI, MCA, M-CHAI, MCS, MDX, MEB, MEGA, METCO, MGC, MGI, MICRO, MIDA, MJD, MK, ML, MORE, MOSHI, MTW, MUD, MVP, NAM, NC, NCH, NCL, NDR, NETBAY, NEW, NEWS, NFC, NNCL, NOK, NOVA, NPK, NSL, NTSC, NTV, NUSA, NV, NVD, NYT, OHTL, ONEE, ORN, PACE, PACO, PAF, PCC, PEACE, PERM, PF, PHG, PICO, PIN, PJW, PLE, PLT, PMTA, POLAR, POMPUI, PORT, POST, PPM, PRAKIT, PRAPAT, PRECHA, PRI, PRIN, PRO, PROUD, PSG, PSP, PTC, PTL, RAM, RCL, READY, RICHY, RJH, ROCK, ROCTEC, ROH, ROJNA, RP, RPC, RPH, RSP, S, S11, SABUY, SAF, SAFARI, SAFE, SALEE, SALEE, SAM, SAMART, SAMCO, SAMTEL, SAUCE, SAV, SAWANG, SBNEXT, SCAP, SCGD, SCI, SCL, SCP, SDC, SE, SEAFCO, SECURE, SFT, SGF, SHANG, SHR, SIAM, SICT, SIMAT, SINGER, SINO, SISB, SJWD, SK, SKN, SKY, SWA, SWANG, SBNEXT, SCAP, SCGD, SCI, SCL, SCP, SDC, SP, SPT, SO, SSTANLY, STARNY, STARLY, STARKY, SWY, SWY, SYOEX, TACC, TAN, TAPA

#### Explanations

Companies participating in Thailand's Private Sector Collective Action Coalition Against Corruption programme (Thai CAC) under Thai Institute of Directors (as of November 1, 2023) are categorised into: companies that have declared their intention to join CAC, and companies certified by CAC.