



IRPC Public Company Limited

Management Discussion and Analysis

Operating Results for Year 2022 and the Fourth Quarter of 2022



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Management Discussion and Analysis (MD&A)

IRPC Public Company Limited and its subsidiaries

Operating Results for Year 2022 and the Fourth Quarter of 2022

Executive Summary

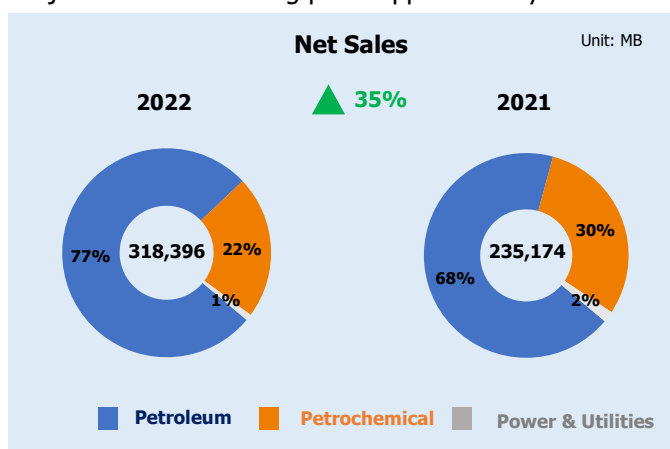
	Unit	Quarter			Change		Year		YoY
		4Q22	3Q22	4Q21	QoQ	YoY	2022	2021	
Crude Intake	Million bbl	10.97	17.40	18.23	(37%)	(40%)	63.86	70.19	(9%)
Sales ^[1]	Million Baht	57,007	89,410	72,445	(36%)	(21%)	324,800	255,115	27%
Net Sales ^[2]	Million Baht	55,081	87,312	67,840	(37%)	(19%)	318,396	235,174	35%
Market GIM	Million Baht	2,609	4,485	6,680	(42%)	(61%)	23,761	29,588	(20%)
	USD/bbl ^[3]	6.50	7.05	10.92	(8%)	(40%)	10.57	13.12	(19%)
Accounting GIM	Million Baht	(4,207)	465	6,947	N.A.	(161%)	17,413	40,692	(57%)
	USD/bbl	(10.50)	0.73	11.36	N.A.	(192%)	7.75	18.04	(57%)
EBITDA	Million Baht	(7,836)	(2,798)	3,094	(180%)	(353%)	3,987	26,961	(85%)
Net Profit	Million Baht	(7,149)	(2,549)	2,194	(180%)	(426%)	(4,364)	14,505	(130%)

Note: ^[1] **Sales** include (1) Petroleum Sales (2) Petrochemical Sales (3) Power and Utilities Sales
(4) Sales of tank farm and port service, etc

^[2] **Net Sales** include (1) Petroleum Sales (excluding excise tax) (2) Petrochemical Sales (3) Power and Utilities Sales

^[3] **Market GIM per bbl** : [(Market GIM / Crude Intake)/Exchange Rate]

The operating results in 2022 compared to those in 2021: In 2022, the Company registered net sales of Baht 318,396 million increasing by 35% from that in 2021. This attributed to a 43% increase in average selling prices following higher crude oil price while an 8% decrease in sales volume. The average crude intake was 175,000 barrels per day, down by 9% because of the planned major turnaround taking place approximately 1 month in 4Q22.



The Market Gross Integrated Margin (Market GIM) was Baht 23,761 million (USD 10.57 per barrel) declining by 20% following a drop in petrochemical products spreads as well as an increase in crude premium versus a significant rise in petroleum products spreads especially Diesel and Gasoline spreads.

The crude oil price in 2022 had extremely increased from USD 69.24 per barrel in 2021 to USD 96.34 per barrel in 2022. This was due to the conflict between Russia and Ukraine while recession

concerns following inflation issues rising up around the world pressured the crude oil price at the end of the year. This led to the net inventory loss of Baht 6,348 million or USD 2.82 per barrel including the stock gain of Baht 4,384 million versus Net Realizable Value (NRV) of Baht 2,347 million and realized loss on oil hedging of Baht 8,385 million compared to the net inventory gain of Baht 11,104 million or USD 4.92 per barrel. Therefore, the Accounting Gross Integrated Margin (Accounting GIM) was Baht 17,413 million or USD 7.75 per barrel decreasing by Baht 23,279 million or USD 10.29 per barrel. The operating expenses were Baht 12,813 million decreasing by 6%. These resulted in the earnings before interest, tax, depreciation and amortization (EBITDA) of Baht 3,987 million decreasing by Baht 22,974 million or 85% from that in 2021.

The Company recorded the depreciation expenses amounting to Baht 8,059 million, which declined by 6%. The net financial cost was Baht 1,836 million increasing by 8% due to higher interest rate. There was an unrealized gain on oil hedging of Baht 28 million, down by 91%. In addition, there was a gain on investments of Baht 289 million that declined by 60%. However, the Company recorded a gain on financial derivatives amounting to Baht 238 million compared to a loss on financial derivatives amounting to Baht 302 million in 2021. Furthermore, there was a loss on foreign exchange from US Dollar - Borrowings of Baht 171 million decreasing by 64% because Thai Baht was weaker less than that in 2021. The Company had outstanding USD debt of 100 million at the end of 2022. The Company had the corporate income tax benefit amounting to Baht 1,142 million versus the corporate income tax amounting to Baht 2,351 million because of the declining operating results. All previously mentioned resulted in the net loss of Baht 4,364 million compared to the net profit of Baht 14,505 million in the previous year.

The operating results in the fourth quarter of 2022 (4Q22) compared to those in the third quarter of 2022 (3Q22): In 4Q22, the Company reported net sales of Baht 55,081 million decreasing by Baht 32,231 million or 37% from that in 3Q22 due to the Company's major turnaround taking place around 1 month resulting in lower utilization rate. Meanwhile, the Company secured the inventory to sell during the planned turnaround period, which made the decrease of sales volume less than that of production volume. The dropped net sales attributed to a 31% decrease in sales volume as well as a 6% decrease in average selling prices following lower crude oil price. The average crude intake was 119,000 barrels per day, which dropped by 37%. The Market GIM was Baht 2,609 million (USD 6.50 per barrel) decreasing by 42%, mainly from the changed product yield following the planned major turnaround.

In 4Q22, the Company recorded net inventory loss of Baht 6,816 million or USD 17.00 per barrel including the stock loss of Baht 3,826 million, NRV of Baht 1,905 million and realized loss on oil hedging of Baht 1,085 million. The loss increased by 70% resulting in the loss on Accounting GIM of Baht 4,207 million or USD 10.50 per barrel compared to Accounting GIM of Baht 465 million in 3Q22. Meanwhile, the operating expenses were Baht 3,593 million increasing by 16%. As a result, the Company reported the loss on EBITDA amounted to Baht 7,836 million rising by 180%.

The Company recorded the depreciation expenses amounting to Baht 2,022 million being close to that in the previous quarter. The net financial cost was Baht 515 million, which rose by 4%. The unrealized gain on oil hedging amounted to Baht 849 million declining by 65%. In addition, there was a loss on investments of Baht 86 million versus a gain on investment of Baht 67 million in 3Q22. Meanwhile, there was a gain on foreign exchange from US Dollar – borrowings of Baht 402 million compared with a loss on foreign exchange from US Dollar – borrowings of Baht 312 million in 3Q22 owing to the Thai Baht appreciation. The Company had outstanding USD debt of 100 million at the end of 4Q22. Moreover, a gain on financial derivatives was Baht 281 million versus a loss on financial derivatives of Baht 81 million in 3Q22. Furthermore, the Company had a corporate income tax benefit of Baht 1,752 million that increased by 167% mainly because of the decreasing operating results. All previously mentioned resulted in the net loss of Baht 7,149 million, which rose by 180%.

The operating results in the fourth quarter of 2022 (4Q22) compared to those in the fourth quarter of 2021 (4Q21): The Company's net sales was down by Baht 12,759 million or 19% attributing to a 33% drop in sales volume versus a 14% increase in average selling prices following the higher crude oil price. The average crude intake was 119,000 barrels per day decreasing by 40%. The Market GIM decreased by Baht 4,071 million or 61%, mainly from a drop in petrochemical products spreads as well as the significant rise in crude premium. There was the net inventory loss of Baht 6,816 million in 4Q22 compared with the net inventory gain of Baht 267 million in 4Q21. These led to the loss on Accounting GIM of Baht 4,207 million compared to Accounting GIM of Baht 6,947 million in 4Q21. Meanwhile, the operating expenses reduced by Baht 77 million. Therefore, the loss on EBITDA was Baht 7,836 million compared with EBITDA of Baht 3,094 million in 4Q21.

The Company recorded a decrease in the depreciation by Baht 46 million. Gain on financial derivatives increased by Baht 174 million or 163%. Furthermore, there was a rise in the gain on foreign exchange from US Dollar – borrowings of Baht 332 million or 474% because the Thai Baht was stronger than that in 4Q21. However, there was a rise in the net financial cost of Baht 113 million or 28%. Also, unrealized gain on oil hedging declined by Baht 677 million and the loss on investments of Baht 86 million versus gain on investment of Baht 215 million in 4Q21. Meanwhile, the Company recorded a corporate income tax benefit of Baht 1,752 million against a corporate income tax of Baht 319 million in 4Q21. These resulted in the net loss of Baht 7,149 million versus the net profit of Baht 2,194 million in 4Q21.

Key incidents in 2022

- **The issuance of debentures**

On 20 May 2022, the Company has completed fund raising from the issuance of unsubordinated and unsecured debentures with debenture holder representative in 6 tranches in the total amount of Baht 12,000 million including;

Tranche 1: The debenture is offered to Individual Investors in the amount of Baht 6,000 million with tenor of 5 years. The debenture has a fixed coupon rate of 3.10% per annum.

Tranche 2 - 4: The debentures are offered to the Institutional Investors and/ or High Net Worth Investors in the amount of Baht 4,250 million with tenor of 4 - 12 years. The debentures have a fixed coupon rate of 3.03% - 4.86% per annum.

Digital Debenture: The debenture is offered to Individual Investors in the amount of Baht 1,000 million with tenor of 5 years. The debenture has a fixed coupon rate of 3.10% per annum.

Green Debenture: The debenture is offered to the Institutional Investors and/ or High Net Worth Investors in the amount of Baht 750 million with tenor of 7 years. The debenture has a fixed coupon rate of 4.17% per annum.

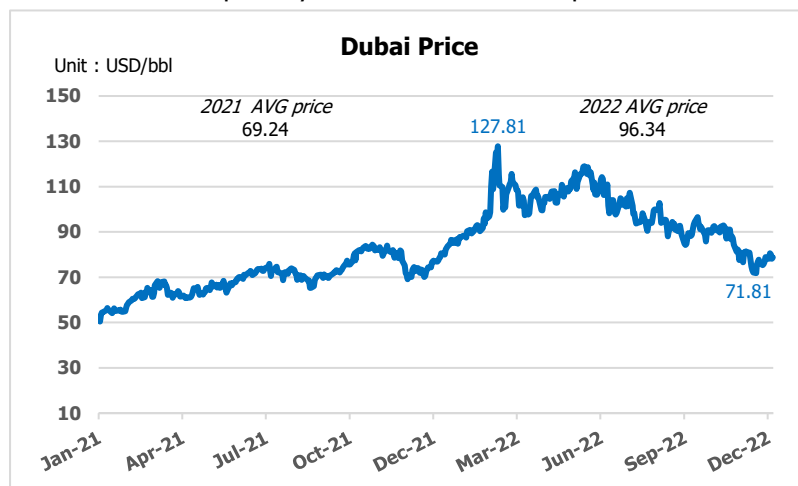
Operating Performance

1. Operating Performance by Business Units

1.1 Petroleum business unit

1.1.1 Petroleum Market Overview

Crude oil situation in 2022: The global oil consumption was 100.5 million barrels per day rising by 2.1 million barrels per day from 2021 oil consumption of 98.4 million barrels per day. The Dubai price in



2022 moved between USD 71.81 per barrel and USD 127.81 per barrel, with an average of USD 96.34 per barrel that surged by USD 27.10 per barrel from USD 69.24 per barrel in 2021. The Dubai price fluctuated throughout the year. In early 2022, the Dubai price gradually rose aligning with the growing oil demand

recovering from COVID-19 and then significantly boosted in late February owing to the conflict between Russia and Ukraine. Such conflict incentivized the market to predict that Russia's crude oil and natural gas exports would be sanctioned by European countries and the U.S., thus the escalated crude oil price. Nevertheless, the crude oil price progressively declined in 2H22 because of recession concerns being in accordance with inflation and economic issues rising up around the world. This entailed The Federal Reserve (FED)'s benchmark interest rate increases, which occurred 4 times during 2H22 and raised the benchmark interest rate from 1.50 – 1.75% in 1H22 to 4.25 – 4.50%. Plus, the U.S. released around 200 million barrels of their Strategic Petroleum Reserve (SPR) to the market sinking the SPR inventory to a 40-year low of about 380 million barrels. In addition, the widespread COVID-19 outbreak in China in 4Q22 was another key aspect pulling the crude oil price down in late 2022.

Crude oil situation in the fourth quarter of 2022 (4Q22): The global oil consumption was 102.4 million barrels per day increasing by 0.9 million barrels per day from that in 3Q22 thanks to the overall transportation demand recovery from COVID-19 and gas-to-oil switching according to high natural gas price. The Dubai price in 4Q22 moved between USD 71.81 per barrel and USD 96.54 per barrel, with an average of USD 84.85 per barrel being down by USD 12.03 per barrel, QoQ, owing to recession concerns being in accordance with inflation and economic issues rising up around the world. This encompassed FED's benchmark interest rate increases, which occurred in November and December at 0.75% and 0.50% respectively, hence the benchmark interest rate escalation from 3.00 – 3.25% to 4.25 – 4.50%. China's Zero-COVID policy was another key aspect curbing some oil consumption and affecting the crude oil price.

In 2022, net sales of Petroleum businesses increased by 52% from that last year thanks to a 58% rise in average selling prices following the hiked crude oil price versus a 6% drop in sales volume.

In 2022, net sales of Petroleum businesses were Baht 243,953 million increasing by Baht 83,327 million or 52% from that in 2021. This was mainly because of a 58% rise in the average selling prices following the hiked crude oil price versus a 6% drop in sales volume, from 60.10 to 56.73 million barrels. The drop in the sales volume was mainly from Diesel and Naphtha. The proportion of domestic and export

of Petroleum products in 2022 was 64:36 and most of the exported products were shipped to Singapore, Cambodia and Laos respectively.

In 4Q22, net sales of Petroleum businesses were Baht 41,352 million decreasing by Baht 26,993 million or 39% from that in 3Q22. This was mainly because of a 32% downturn in sales volume, from 15.33 to 10.43 million barrels due to major turnaround, along with a 7% decline in average selling prices following the softened crude oil price.

By comparing YoY, the net sales of Petroleum businesses slumped by Baht 7,305 million or 15%, mainly from a 33% decrease in sales volume because of major turnaround, while average selling prices moved up by 18% following the crude oil price increase.

The proportion of domestic and export of Petroleum products in 4Q22 was 59:41 and most of the exported products were shipped to Singapore, Cambodia and Laos respectively.

1.1.4 Crude Price and Petroleum Products Spread

	Quarter			% Change		Year		YoY
	4Q22	3Q22	4Q21	QoQ	YoY	2022	2021	
Dubai Crude Oil (USD/bbl)	84.85	96.88	78.35	(12%)	8%	96.34	69.24	39%
Petroleum (USD/bbl)								
Naphtha – Dubai	(14.6)	(23.4)	3.6	38%	(506%)	(13.2)	1.4	N.A.
ULG95 – Dubai	9.4	13.2	15.5	(29%)	(39%)	18.8	11.1	69%
Gas Oil 0.05%S - Dubai	39.3	35.2	11.4	12%	245%	34.3	6.7	412%
FO 180 3.5%S - Dubai	(22.5)	(22.3)	(6.9)	(1%)	(226%)	(14.1)	(4.9)	(188%)
Lube Base Oil (USD/MT)								
500SN - FO 180 3.5%S	780	798	671	(2%)	16%	678	845	(20%)
150BS - FO 180 3.5%S	891	901	1,087	(1%)	(18%)	837	1,234	(32%)
Asphalt - FO 180 3.5%S	146	94	(29)	55%	603%	16	(11)	245%

The spread between Petroleum products and raw material

The spread between Petroleum products and Dubai

- **Naphtha Spread - Lower:** Naphtha - Dubai spread in 2022 was USD -13.2 per barrel decreasing by USD 14.6 per barrel from USD 1.4 per barrel in 2021. This was because China's Zero-COVID policy and real estate crisis hampered economic activities affecting petrochemical demand, hence lower demand for Naphtha, a raw material for petrochemical products.

Naphtha - Dubai spread in 4Q22 was USD -14.6 per barrel enhancing by 38% from USD -23.4 per barrel in 3Q22. This was owing to rapidly declined crude oil price. In the meantime, Naphtha demand was still pressured by China's Zero-COVID policy. By comparing with 4Q21 of USD 3.6 per barrel, the spread declined by USD 18.2 per barrel.

- **ULG95 Spread - Higher:** ULG95 - Dubai spread in 2022 was USD 18.8 per barrel increasing by 69% from USD 11.1 per barrel in 2021. The product and crude oil prices fluctuated due to the Russia-Ukraine conflict. Concurrently, Gasoline demand was supported by lockdown eases in several countries throughout the world, while China's Zero-COVID policy and recession concerns curbed some Gasoline demand in 2H22.

ULG95 - Dubai spread in 4Q22 was USD 9.4 per barrel being down by 29% from USD 13.2 per barrel in 3Q22 as Gasoline demand softened seasonally and China's Zero-COVID policy dampened demand. On the contrary, Gasoline supply increased as Naphtha spread was low, thus more Naphtha blending activities in Gasoline production. By comparing with 4Q21 of USD 15.5 per barrel, the spread dropped by 39%.

- **Gas Oil Spread - Higher:** Gas Oil - Dubai spread in 2022 was USD 34.3 per barrel increasing by 412% from USD 6.7 per barrel in 2021 due to the Russia-Ukraine conflict leading to an energy shortage crisis in Europe, the world's largest net Diesel importer. Diesel spread was all-time high at USD 55.2 per barrel in June.

Gas Oil - Dubai spread in 4Q22 was USD 39.3 per barrel rising by 12% from USD 35.2 per barrel in 3Q22 thanks to seasonally higher Diesel demand. Still, some Diesel demand was impeded by China's export quota issuance in late September as well as warmer-than-typical winter climate during October and November. By comparing with 4Q21 of USD 11.4 per barrel, the spread rose by 245%.

- **Fuel Oil Spread - Lower:** High Sulphur Fuel Oil (HSFO) - Dubai spread in 2022 was USD -14.1 per barrel declining by 188% from USD -4.9 per barrel in 2021 owing to the U.S.' sanction on Russia. Plus, HSFO supply increased following higher Refinery utilization rates aligning with rising Diesel spread.

HSFO - Dubai spread in 4Q22 was USD -22.5 per barrel being approximate to that in 3Q22. There were more Russian HSFO inflows to Asia due to the U.S.' sanction on Russia. Nevertheless, HSFO demand for marine transportation was stagnant because of high freights; besides, softened Gasoline

spread limited HSFO demand for converting to Gasoline. By comparing with 4Q21 of USD -6.9 per barrel, the spread decreased by 226%.

The spread between Lube Base Oil products and Fuel Oil

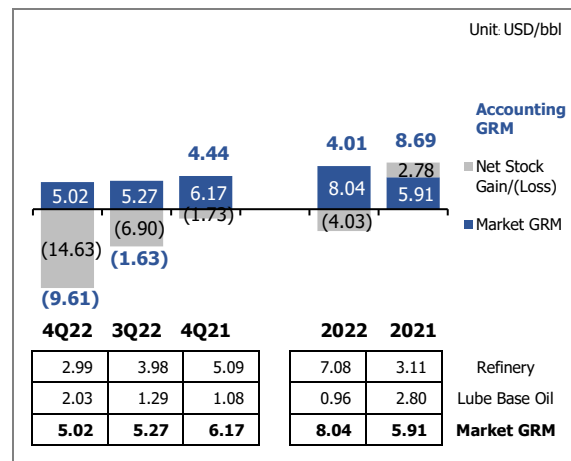
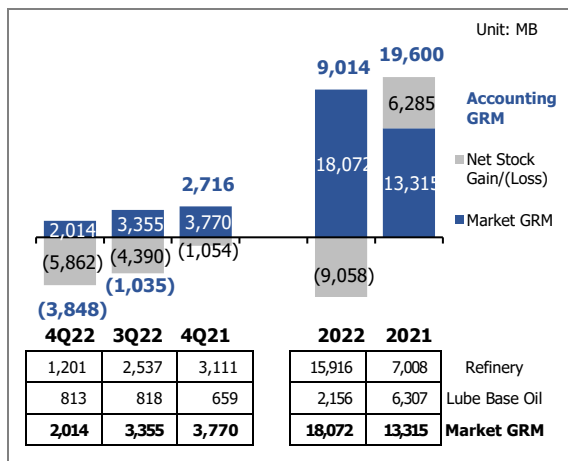
- 500SN Spread - Lower:** 500SN - Fuel Oil spread in 2022 was USD 678 per ton reducing by 20% from USD 845 per ton in 2021 owing to sluggish Lube Base Oil price while Fuel Oil price had small improvement. Overall, Lube Base Oil demand in 2022 was stagnant.

500SN - Fuel Oil spread in 4Q22 was USD 780 per ton being down by 2% from USD 798 per ton in 3Q22 as Lube Base Oil demand was weak even if there were several maintenance shutdowns in 4Q22, thus approximate spread by considering QoQ. On the other hand, by comparing with 4Q21 of USD 671 per ton, the spread was up by 16%.

- Asphalt Spread - Higher:** Asphalt - Fuel Oil spread in 2022 was USD 16 per ton increasing by 245% from USD -11 per ton in 2021 as price movement of Asphalt was noticed slower than that of Fuel Oil. Still, Asphalt demand was sluggish at a low level, partially owing to budget allocation focusing more on solving economic issues, thus lower budget for infrastructure improvement. China's Zero-COVID policy curbed some Asphalt demand as well

Asphalt - Fuel Oil spread in 4Q22 was USD 146 per ton increasing by 55% from USD 94 per ton in 3Q22 as Fuel Oil price slumped fast aligning with crude oil price, while Asphalt price dropped at a slower pace. Asphalt demand in many parts across Asia was dampened by monsoons and floods. By comparing with 4Q21 of USD -29 per ton, the spread rose by 603%.

1.1.5 Gross Refining Margin





In 2022, Market GRM was Baht 18,072 million or USD 8.04 per barrel increasing by Baht 4,757 million or USD 2.13 per barrel, YoY, mainly owing to rising Diesel and Gasoline spreads.



The Accounting Gross Refining Margin (Accounting GRM) equaling Baht 9,014 million or USD 4.01 per barrel dropping by Baht 10,586 million or USD 4.68 per barrel, YoY.

The Gross Refining Margin (Market GRM) in 2022 was Baht 18,072 million or USD 8.04 per barrel increasing by Baht 4,757 million or USD 2.13 per barrel, YoY, mainly owing to rising Diesel and Gasoline spreads. The Company obtained a net inventory loss of Baht 9,058 million or USD 4.03 per barrel comprising of a stock gain of Baht 811 million versus a loss on realized

In 4Q22, the Market GRM was Baht 2,014 million or USD 5.02 per barrel decreasing by Baht 1,341 million or USD 0.25 per barrel, QoQ, and by Baht 1,756 million or USD 1.15 per barrel, YoY, mainly due to changed production yield following major turnaround.

In 4Q22, there was a net inventory loss equaling Baht 5,862 million or USD 14.63 per barrel comprising of a stock loss of Baht 3,289 million, an NRV of Baht 1,488 million and a realized oil hedging loss of Baht 1,085 million. This entailed the loss of Accounting GRM equaling Baht 3,848 million or USD 9.61 per barrel. The loss was up by Baht 2,813 million or USD 7.98 per barrel, QoQ, while compared to the Accounting GRM of Baht 2,716 million or USD 4.44 per barrel in 4Q21.

1.2 Petrochemical business unit

1.2.1 Petrochemical Market Overview

Petrochemical market situation in 2022: The overall demand for petrochemical products declined compared to that in the previous year due to several factors starting with the prolonged Russia-Ukraine conflict, which caused escalated food and energy costs leading to a rise in global inflation. This incentivized several central banks to implement strict monetary policies and raise interest rates to all-time highs, particularly in the U.S., E.U., and England, which caused a slowdown in global GDP growth as well as dampened consumer purchasing power and more-cautious spending. In addition, the strictly China's Zero-COVID policy that curbed several major cities' transportation in April encompassed declined demand for end products and dropped prices in China, which also pushed the prices in Southeast Asia down.

In terms of supply, several manufacturers reduced operating rates to maintain profit margins as the cost of production hiked according to escalating energy and raw materials prices, along with a slowdown in purchase orders as most manufacturers were unable to pass on higher costs to end customers. Additionally, new capacity was delayed more than previously planned because

manufacturers want to wait and see whether the economic situation is stable enough for starting production.

Petrochemical market situation in the fourth quarter of 2022 (4Q22): Overall demand for Polyolefins products remained sluggish due to the unrecovered demand for end products. Such stagnant situation was because China persisted Zero-COVID policy and declared lockdowns in several important cities altering the level of industrial production and demand for end products. Plus, the rising global inflation rates incentivized several central banks to impose strict monetary policies and raise interest rates reducing consumer purchasing power while the supply was sufficient although some producers cut their production to serve the demand efficiently in order to maintain their profits. In the meantime, market sentiment is anticipated to brighten thanks to China's reopening and easing COVID-19 measures in early January and the improvement is predicted to be seen after the Lunar New Year festival ends.

For Styrenics products market situation, demand for end products remained sluggish, especially in electrical appliances and electronics industries. This was because of the global inflation rise impeding consumer spending and worker strikes in various industries for claiming higher wages, particularly in electronics industry causing certain part of the manufacturing sector to halt their production affecting consumer demand. Meanwhile, downstream producers' inventories remained high, hence deferred orders to control the inventory levels before the year end.

1.2.2 Petrochemical Capacity

Products	Quarter			% Change		Year		YoY
	4Q22	3Q22	4Q21	QoQ	YoY	2022	2021	
Utilization Rate								
Olefins Group	74%	92%	96%	(18%)	(22%)	86%	95%	(9%)
Aromatics and Styrenics Group	54%	85%	98%	(31%)	(44%)	86%	99%	(13%)

In 2022, the utilization rate of Olefins group was 86% declining by 9% from that in 2021 of 95%. In addition, the utilization rate of Aromatics and Styrenics group was 86% being down by 13% from that last year due to production adjustment aligning with the Company's major turnaround and market conditions.

In 4Q22, the utilization rate of Olefins group was 74% decreasing by 18%, QoQ, and by 22%, YoY. The utilization rate of Aromatics and Styrenics group in 4Q22 was 54% decreasing by 31%, QoQ, and by 44%, YoY, because of production adjustment aligning with the Company's major turnaround and market conditions.

1.2.3 Petrochemical Sales

Products	Sales Volume (KMT)					Sales Value (MB)				
	Quarter			Year		Quarter			Year	
	4Q22	3Q22	4Q21	2022	2021	4Q22	3Q22	4Q21	2022	2021
Olefins Group	223	247	256	1,001	1,062	8,635	10,334	10,708	42,448	42,011
Aromatics and Styrenics Group	87	162	170	600	727	4,113	7,529	7,605	27,954	29,078
Total	310	409	426	1,601	1,789	12,748	17,863	18,313	70,402	71,089

Remark : Included sales of Trading business (iPolymer) and New S-Curve business (Rakpasak)



Net sales of Petrochemical businesses in 2022, slightly decreased by 1% from that last year due to an 11% decrease in sales volume versus a 10% rise in average selling prices.



Net sales of Petrochemical businesses in 2022 were Baht 70,402 million, slightly decreased by Baht 687 million or 1% from that last year. This was mainly because sales volume decreased by 188,000 tons or 11%, while average selling prices increased by 10%. The lower sales volume was mainly from PP in Olefins group and Mixed Xylene in Aromatics group. The proportion of domestic and export of Petrochemical products in 2022

was 62:38 and most of the exported products were shipped to Singapore, Hong Kong and Indonesia respectively.

In 4Q22, the net sales of Petrochemical businesses amounted to Baht 12,748 million dropping by Baht 5,115 million or 29%, QoQ. This was mainly due to a 24% decrease in sales volume equaling 99,000 tons and a 5% drop in average selling prices. The declined sales volume was mainly from Mixed Xylene in Aromatics group and PP in Olefins group. By comparing YoY, the net sales of Petrochemical businesses were down by Baht 5,565 million or 30% due to a 27% decline in sales volume equaling 116,000 tons and a 3% reduction in average selling prices. The decreased sales volume was mainly from PP in Olefins group and Mixed Xylene in Aromatics group.

The proportion of domestic and export of Petrochemical products in 4Q22 was 71:29 and most of the exported products were shipped to Singapore, Hong Kong and India respectively.

1.2.4 The spread between key petrochemical products and raw material

Average price (USD/MT)	Quarter			% Change		Year		YoY
	4Q22	3Q22	4Q21	QoQ	YoY	2022	2021	
Naphtha	673	714	745	(6%)	(10%)	785	646	22%
Olefins								
HDPE - Naphtha	442	421	563	5%	(21%)	457	641	(29%)
PP - Naphtha	322	367	558	(12%)	(42%)	407	655	(38%)
Aromatics								
BZ - Naphtha	152	266	200	(43%)	(24%)	246	268	(8%)
TOL - Naphtha	188	256	43	(27%)	337%	175	83	111%
MX - Naphtha	241	290	28	(17%)	761%	239	104	130%
Styrenics								
ABS - Naphtha	695	799	1,462	(13%)	(52%)	901	1,713	(47%)
PS (GPPS) - Naphtha	607	738	867	(18%)	(30%)	731	955	(23%)

The spread between petrochemical products and raw material

The spread between Polyolefins group and Naphtha

- **HDPE Spread - Lower:** HDPE - Naphtha spread in 2022 was USD 457 per ton decreasing by 29% from that in 2021 of USD 641 per ton as demand was still weak due to China's lockdown measures, which hampered the construction industry as well as several pipeline projects. Meanwhile, some producers reduced production capacity to preserve profit levels.

HDPE - Naphtha spread in 4Q22 was USD 442 per ton increasing by 5% when compared to USD 421 per ton in 3Q22. This was because market expected demand recovery after China prepared to announce the reopening early next year. However, overall demand in this quarter remained sluggish due to a slowdown in downstream demand, especially from large construction projects resulting from high inflation and rising interest rates. When compared with 4Q21 of USD 563 per ton, the spread decreased by 21%

- **PP Spread - Lower:** PP - Naphtha spread in 2022 was USD 407 per ton decreasing by 38% from that in 2021 of USD 655 per ton owing to concerns about the world economy leading to the softer demand for end products. In addition, raising interest rates and strict financial measures of banks in major markets such as Vietnam and Indonesia restrained consumer purchasing power. Moreover, China's Zero-COVID policy caused the demand in China to remain weak, while many producers reduced their production rates to keep up with the dwindling market demand.

PP - Naphtha spread in 4Q22 was USD 322 per ton decreasing by 12% when compared to USD 367 per ton in 3Q22. This was owing to the global economic slowdown causing the demand for end products to decrease despite a manufacturing season for serving consumption during the New Year

Festival. In addition, the Chinese government's persisting Zero-COVID policy, along with the policy rate hike and stringent credit measures in many countries resulted in the continually stagnant demand for end products. When compared with 4Q21 of USD 558 per ton, the spread decreased by 42%.

The spread between Aromatics group and Naphtha

- **TOL and MX Spread - Higher:** In 2022, Toluene - Naphtha spread and Mixed Xylene - Naphtha spread were USD 175 per ton and USD 239 per ton respectively rising by 111% and 130% when compared with those in 2021. This was mainly caused by improving PX market sentiments, which resulted in the increasing demand for Toluene and Mixed Xylene, the major raw materials being used in PX production.

In 4Q22, Toluene - Naphtha spread and Mixed Xylene - Naphtha spread were USD 188 per ton and USD 241 per ton respectively, down by 27% and 17% accordingly when compared with those in 3Q22. This was due to stagnant demand while supply increased as India announced a limit on imports and encouraged domestic consumption. In addition, declined Gasoline spread and lower PX production constrained Toluene and Mixed Xylene demand for conversion to Gasoline and PX. When compared with 4Q21, Toluene - Naphtha spread increased by 337% and Mixed Xylene - Naphtha spread increased by 761%.

The spread between Polystyrenics group and Naphtha

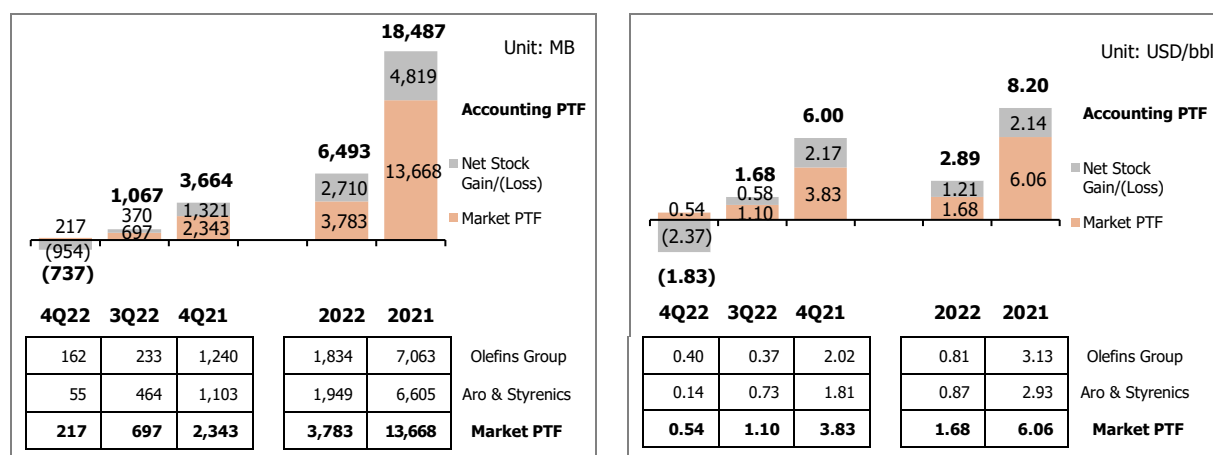
- **ABS Spread - Lower:** ABS - Naphtha spread in 2022 was USD 901 per ton decreasing by 47% when compared to USD 1,713 per ton in 2021. This was because the ABS market situation weakened from that last year when the ABS market situation was outstanding. This year, consumer demand was limited by rising inflation rates affecting end demand for durable goods including electrical and electronic appliances. Additionally, China's Zero-COVID policies led to periodic lockdowns in many major cities resulting in both labor shortages and strikes, particularly in the electronic industry, which interrupted some production.

ABS - Naphtha spread was USD 695 per ton in 4Q22, down by 13% when compared to USD 799 per ton in 3Q22. Demand did not recover seasonally caused by a rise in global inflation leading end customers to delay the order. Besides, Chinese government's Zero-COVID policy and worker protests in the electronics sector disrupted production. Meanwhile, Asian producers continued to reduce production due to dropped production margins as rising costs. When compared with 4Q21 of USD 1,462 per ton, the spread decreased by 52%.

- **PS Spread - Lower:** PS - Naphtha spread in 2022 was USD 731 per ton decreasing by 23% when compared to USD 955 per ton in 2021. PS demand weakened because of rising inflation and COVID-19 epidemic situation in China. Plus, most end consumers preferred to reduce inventories towards the end of the year. Apart from that, PS supply was operated at a low level to meet market demand, especially in China where domestic demand was sluggish and obtained narrower margins.

PS – Naphtha spread in 4Q22 was USD 607 per ton decreasing by 18% when compared to 3Q22 of USD 738 per ton owing to concerns over the sluggish global economy dumping demand for electrical and electronic products. Furthermore, some end-product manufacturers had high inventory levels and intended to release some inventories at the end of the year, thus a narrower spread. When compared with 4Q21 of USD 867 per ton, the spread decreased by 30%.

1.2.5 Product to Feed Margin (Product to Feed : PTF)*



Remark : * Included Trading business (iPolymer) and New S-Curve business (Rakpasak)

In 2022, the Market PTF was Baht 3,783 million being down by Baht 9,885 million, YoY, as most Petrochemical products spreads decreased.

The Market Product to Feed Margin (Market PTF) in 2022 was Baht 3,783 million or USD 1.68 per barrel declining by Baht 9,885 million or USD 4.38 per barrel from that last year. This was mainly because most Petrochemical products spreads were down, especially those in Styrenics and Olefins groups, due to weakened overall economic situations being resulted from the

Russia-Ukraine conflict, along with China's Zero-COVID policy. The Company obtained the net inventory gain of Baht 2,710 million or USD 1.21 per barrel comprising of a stock gain of Baht 3,573 million against an NRV of Baht 863 million. The aforementioned figures led to the Accounting Product to Feed Margin (Accounting PTF) equaling Baht 6,493 million or USD 2.89 per barrel decreasing by Baht 11,994 million or USD 5.31 per barrel from that in the previous year.

In 4Q22, the Market PTF was Baht 217 million or USD 0.54 per barrel being down by Baht 480 million or USD 0.56 per barrel from that in the prior quarter. Also, by comparing with 4Q21, the Market PTF decreased by Baht 2,126 million or USD 3.29 per barrel. This was mainly because most Petrochemical products spreads dropped following recession concerns and lockdowns in several parts of China.

In 4Q22, the Company recorded the net inventory loss of the Petrochemical businesses of Baht 954 million or USD 2.37 per barrel comprising of a stock loss of Baht 537 million and an NRV of Baht 417 million. Hence, the Company obtained a loss on the Accounting PTF equaling Baht 737 million or USD 1.83 per barrel compared to the Accounting PTF of Baht 1,067 million or USD 1.68 per barrel in 3Q22 and the Accounting PTF of Baht 3,664 million or USD 6.00 per barrel in 4Q21.

1.3 Power Plant and Utility business units

Capacity and Sales

	Quarter			% Change		Year		YoY
	4Q22	3Q22	4Q21	QoQ	YoY	2022	2021	
Utilization Rate								
Electricity	47%	67%	74%	(20%)	(27%)	62%	75%	(13%)
Steam	45%	59%	58%	(14%)	(13%)	57%	61%	(4%)
Sales (Baht million)								
Electricity	575	605	499	(5%)	15%	2,208	2,032	9%
Steam	352	438	314	(20%)	12%	1,590	1,107	44%
Others	54	61	57	(11%)	(5%)	243	320	(24%)
Total	981	1,104	870	(11%)	13%	4,041	3,459	17%

Utilization rates of Electricity and Steam In 2022, the utilization rate of Electricity was 62% decreasing by 13% from that in 2021 of 75% whereas the utilization rate of Steam was 57% in 2022 reducing by 4% from that last year.

In 4Q22, the utilization rate of Electricity was 47% decelerating by 20%, QoQ, and by 27%, YoY. The utilization rate of Steam in 4Q22 was 45%, down by 14%, QoQ, and by 13%, YoY, owing to utilization adjustment aligning with major turnaround.

The net sales of Power and Utility businesses In 2022, the Company recorded the net sales of Power and Utility businesses equaling Baht 4,041 million, up by Baht 582 million or 17% compared with that in 2021 of Baht 3,459 million thanks to improving average selling prices of Electricity and Steam.

In 4Q22, the net sales of Power and Utility businesses were Baht 981 million dropping by 11%, QoQ, mainly from declined sales volumes of Electricity and Steam. On the contrary, by comparing YoY, the net sales hiked by 13%, mainly from higher average selling prices of Electricity and Steam.

2. Total Operating Performance

Total Operating Performance of IRPC and its subsidiaries for year 2022 and 4Q22 are as follows;

	Unit : Million Baht					Unit : USD per barrel				
	Quarter			Year		Quarter			Year	
	4Q22	3Q22	4Q21	2022	2021	4Q22	3Q22	4Q21	2022	2021
Average FX (THB/USD)	36.55	36.58	33.55	35.23	32.15					
Total Crude Intake (Mbbbl)	10.97	17.40	18.23	63.86	70.19					
Average Crude (USD/bbl) ⁽¹⁾	90.40	106.59	81.36	104.67	72.43					
Sales ⁽²⁾	57,007	89,410	72,445	324,800	255,115	142.18	140.47	118.45	144.37	113.05
Net Sales ⁽³⁾	55,081	87,312	67,840	318,396	235,174	137.38	137.18	110.92	141.52	104.22
Variable Cost (Raw Material - Market Price)	(52,472)	(82,827)	(61,160)	(294,635)	(205,586)	(130.88)	(130.13)	(100.00)	(130.95)	(91.10)
Market GIM	2,609	4,485	6,680	23,761	29,588	6.50	7.05	10.92	10.57	13.12
Stock Gain (Loss)	(3,826)	(2,163)	2,122	4,384	13,112	(9.54)	(3.40)	3.47	1.95	5.81
Net Realizable Value (NRV)	(1,905)	(496)	(54)	(2,347)	(54)	(4.75)	(0.78)	(0.09)	(1.04)	(0.02)
Realized Gain (Loss) on Oil Hedging	(1,085)	(1,361)	(1,801)	(8,385)	(1,954)	(2.71)	(2.14)	(2.94)	(3.73)	(0.87)
Net Inventory Gain (Loss)	(6,816)	(4,020)	267	(6,348)	11,104	(17.00)	(6.32)	0.44	(2.82)	4.92
(Accounting GIM)	(4,207)	465	6,947	17,413	40,692	(10.50)	0.73	11.36	7.75	18.04
Other Incomes ⁽⁴⁾	316	303	401	1,351	1,968	0.79	0.48	0.66	0.60	0.87
Selling Expenses	(352)	(481)	(584)	(1,964)	(2,105)	(0.88)	(0.76)	(0.95)	(0.87)	(0.93)
Accounting GIM and Other Incomes	(4,243)	287	6,764	16,800	40,555	(10.59)	0.45	11.07	7.48	17.98
OPEX	(3,593)	(3,085)	(3,670)	(12,813)	(13,594)	(8.96)	(4.85)	(6.00)	(5.70)	(6.03)
EBITDA	(7,836)	(2,798)	3,094	3,987	26,961	(19.55)	(4.40)	5.07	1.78	11.95
Depreciation	(2,022)	(2,014)	(2,068)	(8,059)	(8,587)	(5.04)	(3.16)	(3.38)	(3.58)	(3.81)
EBIT	(9,858)	(4,812)	1,026	(4,072)	18,374	(24.59)	(7.56)	1.69	(1.80)	8.14
Net Financial Cost	(515)	(496)	(402)	(1,836)	(1,699)	(1.28)	(0.78)	(0.66)	(0.82)	(0.75)
Gain (Loss) on Financial Derivatives	281	(81)	107	238	(302)	0.70	(0.13)	0.17	0.11	(0.13)
Gain (Loss) on Foreign Exchange from Borrowing	402	(312)	70	(171)	(474)	1.00	(0.49)	0.11	(0.08)	(0.21)
Unrealized Gain (Loss) on Oil Hedging	849	2,426	1,526	28	313	2.12	3.81	2.50	0.01	0.14
Gain (Loss) on Impairment and Disposal of Fixed Assets	21	-	(27)	20	(46)	0.05	-	(0.04)	0.01	(0.02)
Gain (Loss) on Investment	(86)	67	215	289	719	(0.21)	0.11	0.35	0.13	0.32
Other Expenses	3	6	-	2	(1)	0.01	0.01	-	0.00	(0.00)
Net Profit (Loss) before Income Tax	(8,903)	(3,203)	2,515	(5,502)	16,884	(22.20)	(5.03)	4.12	(2.44)	7.49
Income Tax	1,752	655	(319)	1,142	(2,351)	4.37	1.03	(0.52)	0.51	(1.04)
Gain (Loss) on non-controlling interests	2	(1)	(2)	(4)	(28)	-	-	-	-	(0.01)
Net Profit (Loss)	(7,149)	(2,549)	2,194	(4,364)	14,505	(17.83)	(4.00)	3.60	(1.93)	6.44
Earning per share (EPS) (Baht/Share)	(0.35)	(0.12)	0.11	(0.21)	0.71					

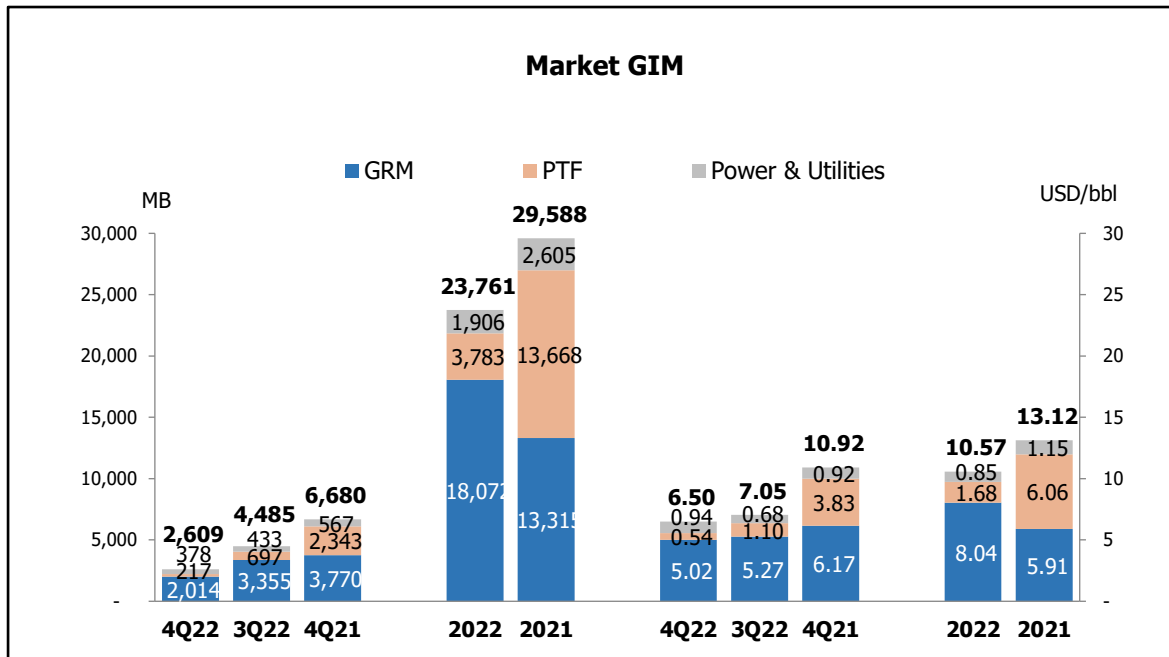
Note : ⁽¹⁾ Average market prices of crude used in the production process

⁽²⁾ Sales include (1) Petroleum Sales (2) Petrochemical Sales (3) Power and Utilities Sales (4) Sales of tank farm and port service, etc.

⁽³⁾ Net Sales include (1) Petroleum Sales (excluding excise tax) (2) Petrochemical Sales (3) Power and Utilities Sales

⁽⁴⁾ Other Incomes include land, tank farm and port service etc.

2.1 Market Gross Integrated Margin (Market GIM)

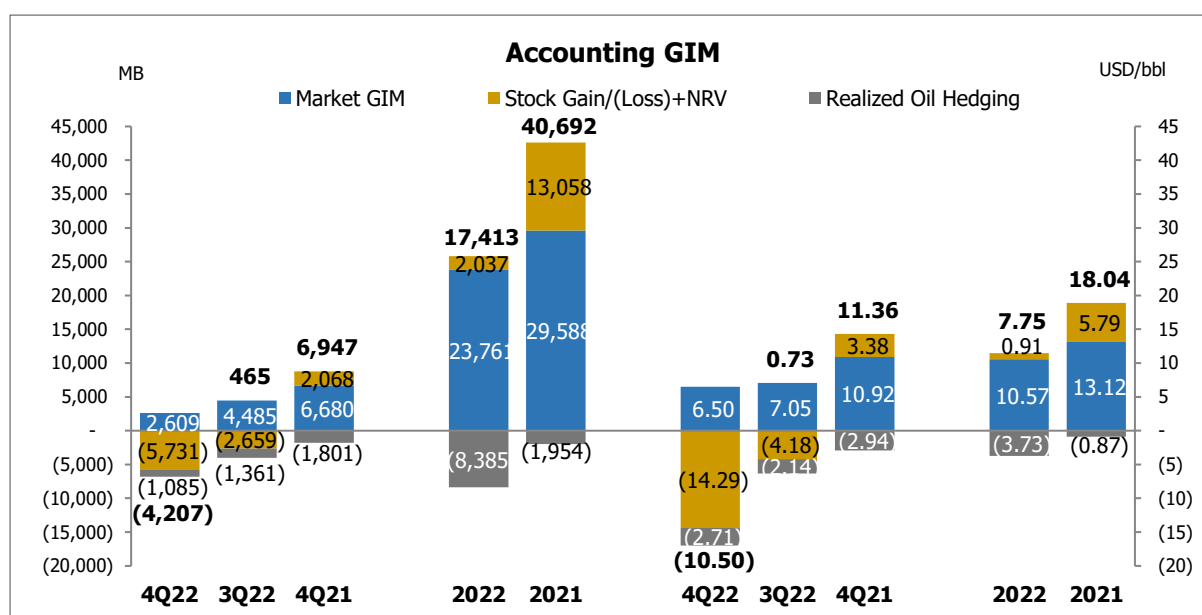


The Market Gross Integrated Margin (Market GIM) in 2022 was Baht 23,761 million or USD 10.57 per barrel moving down by Baht 5,827 million or USD 2.55 per barrel from that last year. This was mainly from lessened spreads of most Petrochemical products, especially those in Olefins and Styrenics groups, due to recession concerns curbing the demand. Also, crude premium escalated by USD 5.14 per barrel whereas Petroleum products spreads boosted significantly.

In 4Q22, the Market GIM was Baht 2,609 million or USD 6.50 per barrel dwindling by Baht 1,876 million or USD 0.55 per barrel, QoQ, mainly from diminished Petrochemical products spreads following weakened demand due to China's Zero-COVID policy and recession concerns. In addition, the Company's production yield was adjusted following major turnaround, while crude premium slumped by USD 0.55 per barrel.

By comparing with 4Q21 of Baht 6,680 million or USD 10.92 per barrel, the Market GIM declined by Baht 4,071 million or USD 4.42 per barrel, mainly owing to softened Petrochemical products spreads, along with higher crude premium of USD 6.15 per barrel.

2.2 Accounting Gross Integrated Margin (Accounting GIM)



The Accounting Gross Integrated Margin (Accounting GIM) in 2022 was Baht 17,413 million or USD 7.75 per barrel being down by Baht 23,279 million or USD 10.29 per barrel from that last year as the Market GIM dropped by Baht 5,827 million or USD 2.55 per barrel. In addition, the Company obtained the net inventory loss of Baht 6,348 million or USD 2.82 per barrel compared to the net inventory gain of Baht 11,104 million or USD 4.92 per barrel in 2021. The net inventory loss in 2022 comprised of a stock gain amounting to Baht 4,384 million or USD 1.95 per barrel, a Net Realizable Value (NRV) of Baht 2,347 million or USD 1.04 per barrel and a realized oil hedging loss of Baht 8,385 million or USD 3.73 per barrel.

In 4Q22, the Company recorded a loss on Accounting GIM of Baht 4,207 million or USD 10.50 per barrel compared to the Accounting GIM of Baht 465 million or USD 0.73 per barrel in the prior quarter. This was mainly because of a drop in the Market GIM amounting to Baht 1,876 million or USD 0.55 per barrel and an increased net inventory loss by Baht 2,796 million or USD 10.68 per barrel. Meanwhile, a net inventory loss of Baht 6,816 million or USD 17.00 per barrel in 4Q22 was attributed to a stock loss equaling Baht 3,826 million or USD 9.54 per barrel, an NRV amounting to Baht 1,905 million or USD 4.75 per barrel and a realized oil hedging loss of Baht 1,085 million or USD 2.71 per barrel.

By comparing the 4Q22 Accounting GIM loss with the 4Q21 Accounting GIM of Baht 6,947 million or USD 11.36 per barrel, this was because the Market GIM declined by Baht 4,071 million or USD 4.42 per barrel. In addition, there was a net inventory loss of Baht 6,816 million or USD 17.00 per barrel in 4Q22 against a net inventory gain of Baht 267 million or USD 0.44 per barrel in 4Q21.

2.3 Other Incomes

Other incomes consist of port and tank farm services and other services. In 2022, the Company had other incomes of Baht 1,351 million decreasing by Baht 617 million from that in the previous year. In 4Q22, the Company had other incomes of Baht 316 million being up by Baht 13 million, QoQ, while being down by Baht 85 million, YoY as incomes from port and tank farm services softened.

2.4 Operating Expenses

In 2022, the Company had operating expenses of Baht 12,813 million decreasing by Baht 781 million from that in the prior year, mainly from employee expenses. In 4Q22, the Company had operating expenses of Baht 3,593 million rising by Baht 508 million, QoQ, mainly from employee expenses, while declining by Baht 77 million, YoY, mainly from donation expenses.

The research and development (R&D) expenses for enhancing the Company's competitiveness in 2022 were Baht 320 million. Such expenses comprised of expenses for internal and external R&D, salaries of staffs in the R&D department and costs of utilities supporting R&D activities amounting to Baht 222 million along with expenses for R&D equipment amounting to Baht 98 million.

2.5 Depreciation

In 2022, the depreciation was Baht 8,059 million decreasing by Baht 528 million from that in the prior year, mainly from fully depreciated assets. In 4Q22, the depreciation was Baht 2,022 million being up by Baht 8 million, QoQ, as the depreciation being used for major turnaround was recorded as amortized assets. Meanwhile, the depreciation was down by Baht 46 million, YoY.

2.6 Net Financial Cost

In 2022, the net financial cost was Baht 1,836 million enhancing by Baht 137 million from that last year. In 4Q22, the net financial cost was Baht 515 million rising by Baht 19 million, QoQ, and by Baht 113 million, YoY, mainly due to increasing interest rates.

2.7 Gain (Loss) on Financial Derivatives

In 2022, there was a gain on financial derivatives amounting to Baht 238 million, mainly from a gain on Cross Currency Swap (CCS) of Baht 23 million and a gain on Interest Rate Swap (IRS) of Baht 214 million compared to a loss on financial derivatives of Baht 302 million in 2021.

In 4Q22, there was a gain on financial derivatives amounting to Baht 281 million, mainly from a gain on Cross Currency Swap (CCS) of Baht 327 million, compared to a loss on financial derivatives of Baht 81 million in 3Q22. By comparing YoY, the gain increased by Baht 174 million.

2.8 Gain (Loss) on Foreign Exchange from Borrowing

In 2022, the Company recorded a loss on foreign exchange (FX) from U.S. dollar-borrowings of Baht 171 million. The loss declined by Baht 303 million, YoY, as Thai Baht was less depreciated. The

FX moved from 33.59 Baht per USD at the end of 2021 to 34.73 Baht per USD at the end of 2022. In any case, the Company had long-term liabilities in USD amounting to USD 100 million at the end of 2022.

In 4Q22, the Company recorded a gain on FX from U.S. dollar-borrowings of Baht 402 million compared to a loss of Baht 312 million in the previous quarter thanks to relatively appreciated Thai Baht. The FX moved from 38.07 Baht per USD at the end of 3Q22 to 34.73 Baht per USD at the end of 4Q22. Also, by comparing YoY, the gain rose by Baht 332 million owing to relatively appreciated Thai Baht.

2.9 Unrealized Gain (Loss) on Oil Hedging

In 2022, the Company recorded an unrealized gain on oil hedging of Baht 28 million decelerating by Baht 285 million from that in the previous year.

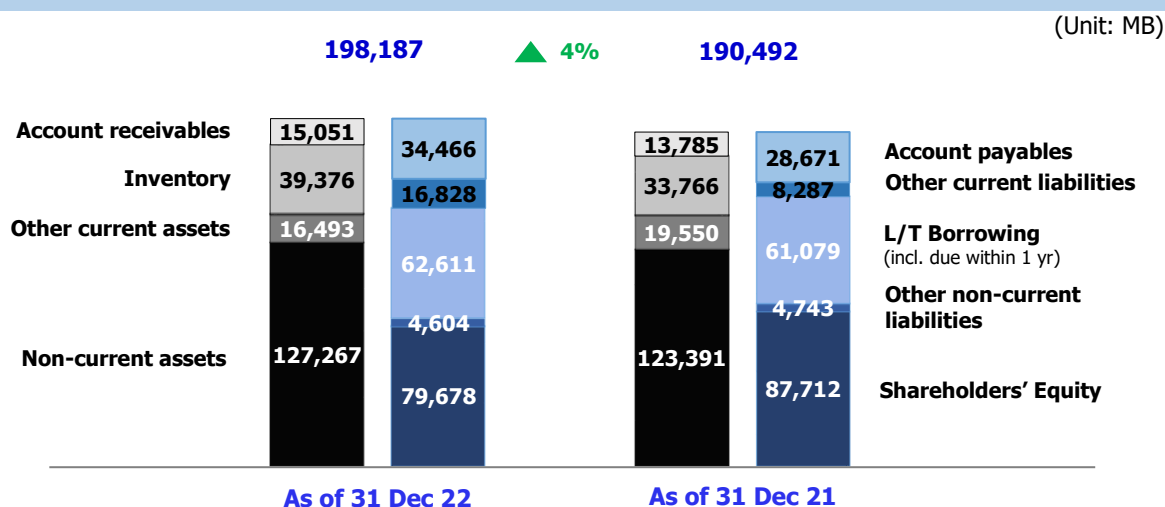
In 4Q22, the Company recorded an unrealized gain on oil hedging of Baht 849 million decreasing by Baht 1,577 million, QoQ, and by Baht 677 million, YoY.

2.10 Gain (Loss) on Investments

In 2022, the Company recorded a gain on investments of Baht 289 million decreasing by Baht 430 million from that in the previous year. In 4Q22, there was a loss on investments of Baht 86 million compared to gains of Baht 67 million in 3Q22 and Baht 215 million in 4Q21, mainly from lower profit sharing from investments in associates and joint ventures.

2.11 Corporate Income Tax

In 2022, the Company recorded a corporate income tax benefit of Baht 1,142 million while recorded a corporate income tax of Baht 2,351 million last year. In 4Q22, the Company recorded a corporate income tax benefit of Baht 1,752 million rising by Baht 1,097 million, QoQ, while compared to a corporate income tax of Baht 319 million in 4Q21. This was due to the lessened performance.

Financial Positions as of 31 December 2022

Assets

As of December 31, 2022, the Company had total assets of Baht 198,187 million increasing by Baht 7,695 million or 4% from that on December 31, 2021. It was due to the following reasons:

- **Trade receivables:** increased by Baht 1,266 million or 9% from that at the end of 2021, mainly due to a rise in average selling prices following the hiked crude oil price. The Company's credit term policy is about 7 - 120 days and most customers made payment on schedule. As of December 31, 2022, there were trade receivables being overdue of over 3 months amounting to Baht 25 million, which incorporated in the Company's provision for doubtful debt of Baht 25 million. The average collection period for 2022 was 16 days decreasing by 1 day from that at the end of 2021.

Trade receivables by payment period are as follows;

(Unit : MB)	2022			2021		
	Related parties	Other parties	Total	Related parties	Other parties	Total
Current	7,884	6,761	14,645	4,911	7,533	12,444
Overdue	239	192	431	36	1,335	1,371
- less than 3 months	239	167	406	22	1,303	1,325
- over 3 months but less than 12 months	-	1	1	14	4	18
- over 12 months	-	24	24	-	28	28
Total	8,123	6,953	15,076	4,947	8,868	13,815
<u>Less</u> Allowance for doubtful accounts	-	(25)	(25)	-	(30)	(30)
Total Account Receivables	8,123	6,928	15,051	4,947	8,838	13,785

- **Inventory:** increased by Baht 5,610 million or 17% from that at the end of 2021, mainly due to a 7% increase in the crude oil price and products prices following market situations as well as

a 5% increase in inventory volume. The average inventory period was 42 days decreasing by 2 days from that at the end of 2021.

- **Other current assets:** decreased by Baht 3,057 million or 16% from that at the end of 2021. This was mainly attributed to a drop in cash and cash equivalents by Baht 8,006 million and a decrease in other receivables amounts due from related parties by Baht 1,640 million. Meanwhile, there was an increase in other receivables by Baht 3,902 million, an increase in prepaid corporate income tax by Baht 1,843 million and an increase in refundable value-added tax by Baht 859 million.

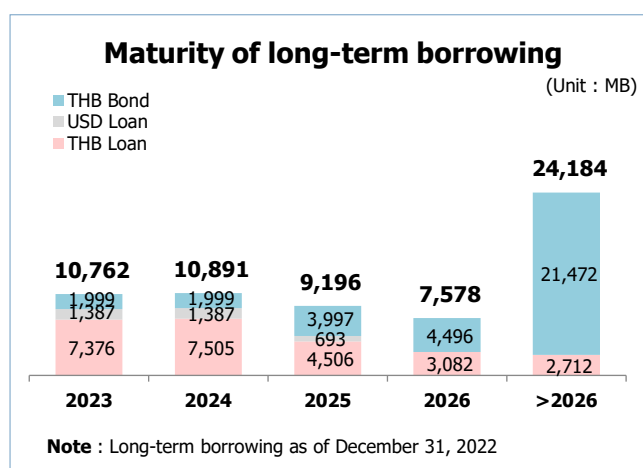
- **Non-current assets:** increased by Baht 3,876 million or 3% from that at the end of 2021, mainly due to a rise in fixed assets and investment properties of Baht 2,300 million. Most of which increased due to an increase in the major turnaround expense. Moreover, there was a rise in deferred tax assets by Baht 1,173 million.

Liabilities

As of December 31, 2022, the Company had total liabilities of Baht 118,509 million increasing by Baht 15,729 million or 15% from what was stated as of December 31, 2021. It was due to the following reasons:

- **Trade payables:** increased by Baht 5,795 million or 20% compared to that at the end of 2021. It was mainly due to an increase in crude oil price following the market situations. The average payment period was 37 days decreasing by 5 days from that at the end of 2021.

- **Other current liabilities:** increased by Baht 8,541 million or 103% compared to that at the end of 2021, mainly due to a rise in short – term borrowing from financial institutions by Baht 9,000 million and a rise in other payables by Baht 1,005 million. While a drop in advance receipts for goods by Baht 665 million and a decrease in accrued bonus expenses by Baht 611 million.



- **Long - term borrowing including current portion within one year:** increased by Baht 1,532 million compared to that at the end of 2021, mainly due to the issuance of unsubordinated and unsecured debentures in the amount of Baht 12,000 million and loss on foreign exchange of Baht 170 million, while the repayment of borrowing and debentures of Baht 10,650 million.

The details of long-term borrowings are shown below;

(Unit: MB)

	Dec 31, 2022	Dec 31, 2021	Change
Thai Baht Bonds	33,963	23,972	9,991
USD Loan	3,467	4,688	(1,221)
Thai Baht Loan	25,181	32,419	(7,238)
Total Long-term Borrowing	62,611	61,079	1,532
less current portion of long-term borrowing	(10,762)	(10,585)	(177)
Net Outstanding Long-term Borrowing	51,849	50,494	1,355

Note : As of December 31, 2022, the Company had Cross Currency Swap (CCS) in a total amount of USD 110 million.

Shareholders' Equity

As of December 31, 2022, shareholders' equity amounted to Baht 79,678 million, which decreased from what was stated as of December 31, 2021 by Baht 8,034 million or 9%. This was mainly from the net loss amounting to Baht 4,364 million and dividend paid by Baht 3,674 million.

Statement of Cash Flow

(Unit : MB)

		Jan – Dec 22	Jan – Dec 21
1	EBITDA	3,987	26,961
2	Change in operating assets and liabilities	(7,699)	(15,619)
3	Net cash flows from (used in) operating activities	(3,712)	11,342
4	Net cash flows from (used in) investing activities	(8,931)	(2,853)
5	Net cash flows from (used in) financing activities	4,637	(6,104)
6	Net increase (decrease)	(8,006)	2,385
7	Cash at beginning	11,236	8,851
8	Cash at ending	3,230	11,236

As of December 31, 2022, the ending cash was Baht 3,230 million. Net cash flow decreased by Baht 8,006 million, which was mainly contributed from the following items:

- **Net cash outflow from operating activities:** of Baht 3,712 million. The cash outflow was mainly from an increase in inventory of Baht 8,009 million, an increase in other receivables of Baht 3,902 million, a payment for net corporate income tax of Baht 2,495 million and an increase in trade receivables of Baht 1,300 million. Nevertheless, the cash inflow was mainly from EBITDA of Baht 3,987 million, an increase in trade payables of Baht 5,802 million and a drop in other receivables from related parties of Baht 1,628 million.

- **Net cash outflow from investing activities:** of Baht 8,931 million, mainly from investment in Ultra Clean Fuel Project (UCF), disbursement for the completion of the expansion and efficiency improvement projects and the capitalized major turnaround expenses.

- **Net cash inflow from financing activities:** of Baht 4,637 million, mainly from the issuance of debentures amounting to Baht 11,982 million and the short – term borrowing from financial institutions of Baht 9,000 million. Nevertheless, the cash outflow mainly comprised of long-term loans repayment of Baht 10,650 million, dividend payment of Baht 3,674 million and interest payment of Baht 1,923 million.

Key Financial Ratios

	Unit	Quarter			Year	
		4Q22	3Q22	4Q21	2022	2021
Profitability Ratios						
EBITDA Margin	%	(13.75)	(3.13)	4.27	1.23	10.57
Net Profit Margin	%	(12.54)	(2.85)	3.03	(1.34)	5.69
Earnings per share	Baht/share	(0.35)	(0.12)	0.11	(0.21)	0.71
Return on Equity*	%	(5.23)	4.27	17.79	(5.23)	17.79
Liquidity Ratios						
Current Ratio	time	1.14	1.46	1.41	1.14	1.41
Quick Ratio	time	0.29	0.36	0.53	0.29	0.53
Financial Policy Ratios						
Net Interest bearing Debt to Equity	time	0.86	0.72	0.57	0.86	0.57
Net Interest bearing Debt to EBITDA*	time	14.89	3.57	1.92	14.89	1.92

Note: * Annualized

Liquidity and Capital Structure

In 2022, current ratio was 1.14 times decreasing by 0.27 times compared with that in 2021 of 1.41 times. This was mainly owing to a rise in the short – term borrowing from financial institutions. Thus, the Company has sufficient liquidity for its operations. At the end of 2022, net interest bearing debt to equity ratio was 0.86 times increasing by 0.29 times from that in 2021 of 0.57 times. This was mainly due to a rise in the short – term borrowing from financial institutions and a decline in shareholders' equity from lower retained earning. The Company could complete all payments on due date and comply with all of the Financial Covenants.

In 4Q22, current ratio was 1.14 times decreasing by 0.32 times compared with that in 3Q22 of 1.46 times. This was mainly owing to a drop in inventories as well as a rise in the short – term borrowing from financial institutions. Thus, the Company has sufficient liquidity for its operations. At the end of 4Q22, net interest bearing debt to equity ratio was 0.86 times increasing by 0.14 times from that in 3Q22 of 0.72 times. This was mainly due to a rise in the short – term borrowing from financial institutions and a decline in shareholders' equity from lower retained earning. The Company could complete all payments on due date and comply with all of the Financial Covenants.

Note:

Account Receivable Turnover	=	Sales / Average Account Receivable before Doubtful Account
Collection Period	=	365 / Account Receivable Turnover
Inventory Turnover	=	Cost of Goods Sold / Average Inventory
Inventory Period	=	365 / Inventory Turnover
Account Payable Turnover	=	Cost of Goods Sold / Average Account Payable
Payment Period	=	365 / Account Payable Turnover
EBITDA Margin	=	EBITDA / Revenue from Sales
Profit Margin	=	Net Profit (Owner of the Parent) / Revenue from Sales
Return on Equity	=	Net Profit (Owner of the Parent) / Average Shareholders' Equity (Owner of the Parent)
Current Ratio	=	Current Assets / Current Liabilities
Quick Ratio	=	(Cash + Marketable Securities + Account Receivable) / Current Liabilities
Net Interest Bearing Debt to Equity	=	(Interest Bearing Debt – Cash) / Total Equity
Net Interest Bearing Debt to EBITDA	=	Average (Interest Bearing Debt – Cash) / EBITDA

Other Factors Influencing Financial Performance

2023 Business Outlook

1. Petroleum Business

2023 Crude oil outlook: The global oil demand forecast is approximately 103 million barrels per day being approximate to the pre-COVID-19 demand level. Such demand forecast increases by about 2 million barrels per day from 101 million barrels per day in 2022 thanks to eases of COVID-19-related restrictions in several countries. China also eased the restrictions and reopened their country in early 2023, which is predicted to escalate oil demand significantly since China is the world's largest net oil importer. Nevertheless, factors that need to be monitored in terms of impacts on oil demand include inflation issues arising across the world popping up recession concerns, the Russia-Ukraine conflict's situations and sanctions of U.S. and European countries on Russia. Crude oil production in 2023 is seen to improve by around 2 million barrels per day to 103 million barrels per day balancing with the demand. Most of the production tends to be contributed by U.S. producers accounting for around 1.3 million barrels per day. Meanwhile, it is foreseen that such production will have a tight outlook as most U.S. producers focus on capturing profits, hence slowly accelerating production, while OPEC and allies agree to decrease their production by 2 million barrels per day every month until end 2023 to uphold the crude oil price being dimmed by recession concerns. Moreover, the U.S.' crude oil inventory was at a low level due to SPR release in 2022 leading to supply insecurity in case some significantly supply disruptions occur. The aforementioned outlook entails Dubai crude oil price forecast at USD 85-95 per barrel slumping from the 2022 average price of USD 96 per barrel.

2. Petrochemical Business

2023 Petrochemical outlook: Market demand is expected to grow by 1.5-2.0% in 2023, especially demand from China that will start to recover from the ease of COVID-19 control measures and various economic stimulus measures including government investment and incentives for enhanced domestic spending, along with Chinese government's reopening policy being seen to benefit businesses in the service sector, mainly those related to tourism. In the meantime, the demand remains under pressure from various factors. One of the factors include inflation that is predicted to persist at a high level tending to limit consumer spending or motivate consumers to be more cautious on spending possibly resulting in declined end product demand in certain industries. Soaring production costs due to probably high crude oil and energy prices relating to the prevailing Russia-Ukraine conflict, along with sanctions imposed by the U.S. and European Union on Russia and the increase in financial costs from rising interest rates are prone to pressure the demand as well, even though the interest rate increase has decelerated. On the supply side, petrochemical products supply in Asia-Pacific region is seen to rise continuously, particularly in China, Indonesia, Malaysia, and Thailand. This is partially due to postponed start-up plans from 2022; besides, demand for imported petrochemical products from China tends to decline continually because of policies to boost domestic production capacity. Such aspects may lead to an oversupply in the region and heighten market competition.

Moreover, the industry also need to adapt itself for facing upcoming trade restrictions on climate change that many countries have to set targets to reduce emissions of carbon dioxide and other greenhouse gases from energy and industrial sectors. The U.S. and European Union will begin imposing restrictions on the import of high-emission products including petrochemical products and others in the production chain. This requires operators in the petrochemical industry to adjust their operations to comply with such requirements.

Investment Projects

1. Investment Project Progress

1.1 The Ultra Clean Fuel Project (UCF): The objective of the UCF Project is to increase Refinery plant's efficiency and upgrade Diesel quality to meet the Euro 5 (Euro V) standard in accordance with the Ministry of Energy's policy determining that starting from 1 January 2024, Diesel distribution must meet Euro 5 standard. Under the Euro 5 standard, the permitted sulfur level will decline to 10 parts per million (PPM) from 50 PPM under Euro 4. The project will increase the Company's competitiveness through the rising demand for Low Sulfur Diesel in domestic market and ASEAN Economic Community (AEC). The UCF project is able to reinforce competitiveness of the Company involving Diesel as a main product; besides, the project is environmentally friendly and in line with the Company's Eco Factory policy. Currently, the project is under a construction process and has been planned to commercial operate within 1Q24. Once the project is completed, the Company's capacity will be able to convert entire high-sulfur Diesel to low-sulfur Diesel following Euro 5 standards.

1.2 The Floating Solar Power Plant Project (8.5 megawatts): The project will generate electricity from solar energy for internal consumption. The pontoon material is developed by the Research & Development (R&D) on specialty High Density Polyethylene (HDPE). This project is also using the water surface of the Company's reservoirs and is able to reduce greenhouse gas (CO2 Emission) by about 5,000 tons per year. Currently, the project is under procurement. It will be able to supply electricity in 4Q23.

2. Investment Plan

The Board of Directors has approved the company's five-year (Year 2023-2027) investment plan in an aggregate amount of Baht 36,456 million. The details are as follow:

(Unit : Million Baht)

Investment Projects	2023	2024	2025	2026	2027	Total
(1) Ultra Clean Fuel Project (UCF)	4,090	2,649	-	-	-	6,739
(2) Strengthen Project	754	308	-	-	-	1,062
(3) Plant Improvement Projects & Turnaround	2,404	1,606	1,225	1,692	2,705	9,632
(4) Strategic Projects	3,151	8,489	7,375	8	-	19,023
Total	10,399	13,052	8,600	1,700	2,705	36,456

The investment projects are the investment plan which will encourage the Company's business growth where the major investment contributes to strategic and value added projects.

Sustainable Framework

Year 2022 is another year of the success in sustainability for the Company. IRPC has maintained a membership of the Dow Jones Sustainability Indices (DJSI), the world's most trusted index for success of sustainable organizations, for 9 consecutive years in the Oil & Gas Refining and Marketing industry. The Company was also awarded the SET Sustainability Awards of Honor for Year 2022 as IRPC in one of listed companies conducting businesses in accordance with sustainable development guidelines. Furthermore, the Company has been considered as one of sustainable listed companies in the Thailand Sustainability Investment (THSI) for 8 consecutive years and has been a large corporation receiving the Human Rights Awards for 4 consecutive years. These successes reflect IRPC's earnestness to drive a sustainable organization by adopting human centric principles in every dimension, not only for enhancing business and financial opportunities but also for contributing shared values to the low carbon society and reducing environmental impacts. Plus, the human centric principles is able to support the United Nations' Sustainable Development Goals.

According to the Company's 2022 strategy preparation, IRPC has uplifted the sustainable framework to one of key drivers supporting the Company's growth to ensure continuity and efficiency of sustainability management that is valued as a crucial foundation driving the Company to achieve its new vision and mission as well as to build trust amongst entire stakeholders. The Company's 2022 strategy includes strategic objectives being divided into 3 groups as follows:

1) Climate Change Strategy "Low Carbon Plus" The Company creates a low carbon economy through environmentally friendly production processes and development of products and services along with reduction of greenhouse gas emissions. The Company has set a target of 20% greenhouse gas emissions reduction by 2030. Such target was set in consideration of the country and industrial intentions to reduce greenhouse gas emissions, technological potential and the ability to invest in greenhouse gas emissions reduction. In addition, the Company has also set the targets of Carbon Neutrality by 2050 as well as the Net Zero Emission by 2060 to be in line with the Company's business plan as well as in line with PTT Group's greenhouse gas emission reduction targets.

2) Circular Economy Strategy "Living Plus" through innovation for the most efficient resource utilization involving turning waste into value. The Company has set a short-term target to maintain Zero waste to landfill. Furthermore, the Company has also set a long-term target to create value from waste both Post-Industrial Recycled (PIR) and Post-Consumer Recycled (PCR) more than 95% by 2040.

3) Creating Social Value Strategy "Recognition Plus" This objective creates a positive impact on health and well-being of the society through hygiene-focused products being safe for consumers and environment. The main goals are to promote well-being of the community, ensures equal opportunity for everyone to access to good-quality education covering all knowledge fields and

promotes lifelong learning opportunities. The Company has applied the “KPMG’s True Value Assessment” to measure the social value being generated by the Company’s activities. Furthermore, the Company conducted a Social Return Assessment (SROI) being used for decision making on implementation of future social projects in order to ensure that IRPC’s ongoing projects can create value for the community and the society, along with sustainable business growth.