



Refineries

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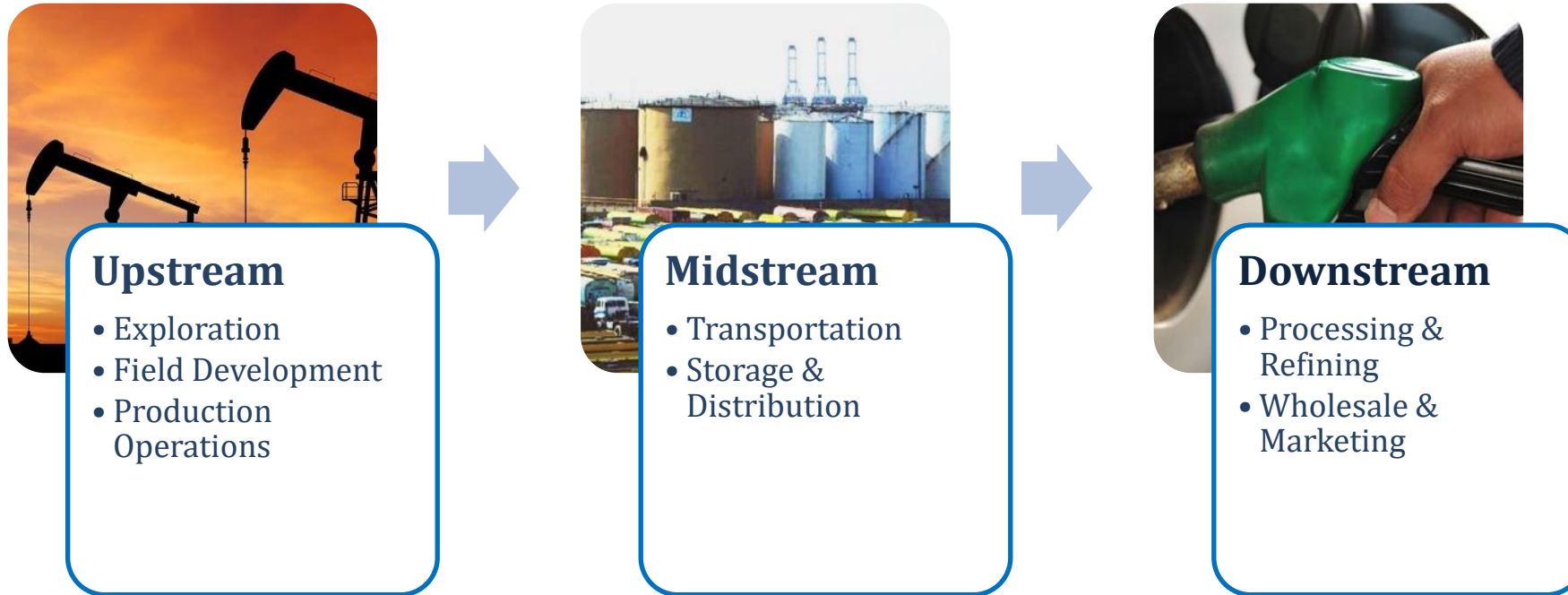


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Refineries

Introduction | Industry Segmentation



This Sector Study examines the downstream refining segment of the oil industry, covering key market participants involved in crude oil processing and the production of refined petroleum products. Refineries form a critical component of the petroleum value chain, converting crude oil into POL products and facilitating the flow of supply from upstream producers to downstream distribution channels and end-use sectors.

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Oil Value Chain

Crude oil is a mixture of hydrocarbons in the liquid phase in natural underground reservoirs and remains liquid at atmospheric pressure after passing through surface separating facilities.



Crude oil is extracted and transported across the globe to be converted into oil derivatives. Exploration, extraction and production of crude oil takes in the upstream.



Refineries break crude oil down into its various components, which are then selectively reconfigured into new products. All refineries have three basic steps: Separation, Conversion, and Treatment.



POL products include MOGAS, distillates such as HSD fuel and heating oil, jet fuel, petrochemical feed stocks, waxes, lubricating oils, and asphalt. They are marketed, distributed and retailed at downstream sector through oil marketing companies and dealers.

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Refinery Configuration

- There are ~3 broad refinery configuration types, classified by processing complexity and the range of crude oil qualities they can efficiently process, ranging from hydro skimming refineries to conversion/cracking and deep conversion (coking) configurations.

Hydro Skimming

In addition to the distilleries, these include hydrotreating, catalytic reforming and blending infrastructure. These can handle crude oil with low to medium API gravity and Sulphur content (Light Sweet to Medium Sour). With additional infrastructure, they can reform naphtha to MOGAS up to specific octanes and desulphurize light products such as MOGAS and HSD to meet regulatory requirements.

Conversion/ Cracking

In addition to all the Hydro skimming infrastructure, these include facilities for hydro and/or catalytic cracking. These processes allow heavy fractions such as gas oil to be converted into lighter refinery streams, yielding MOGAS, jet fuel and other petrochemical feedstocks.

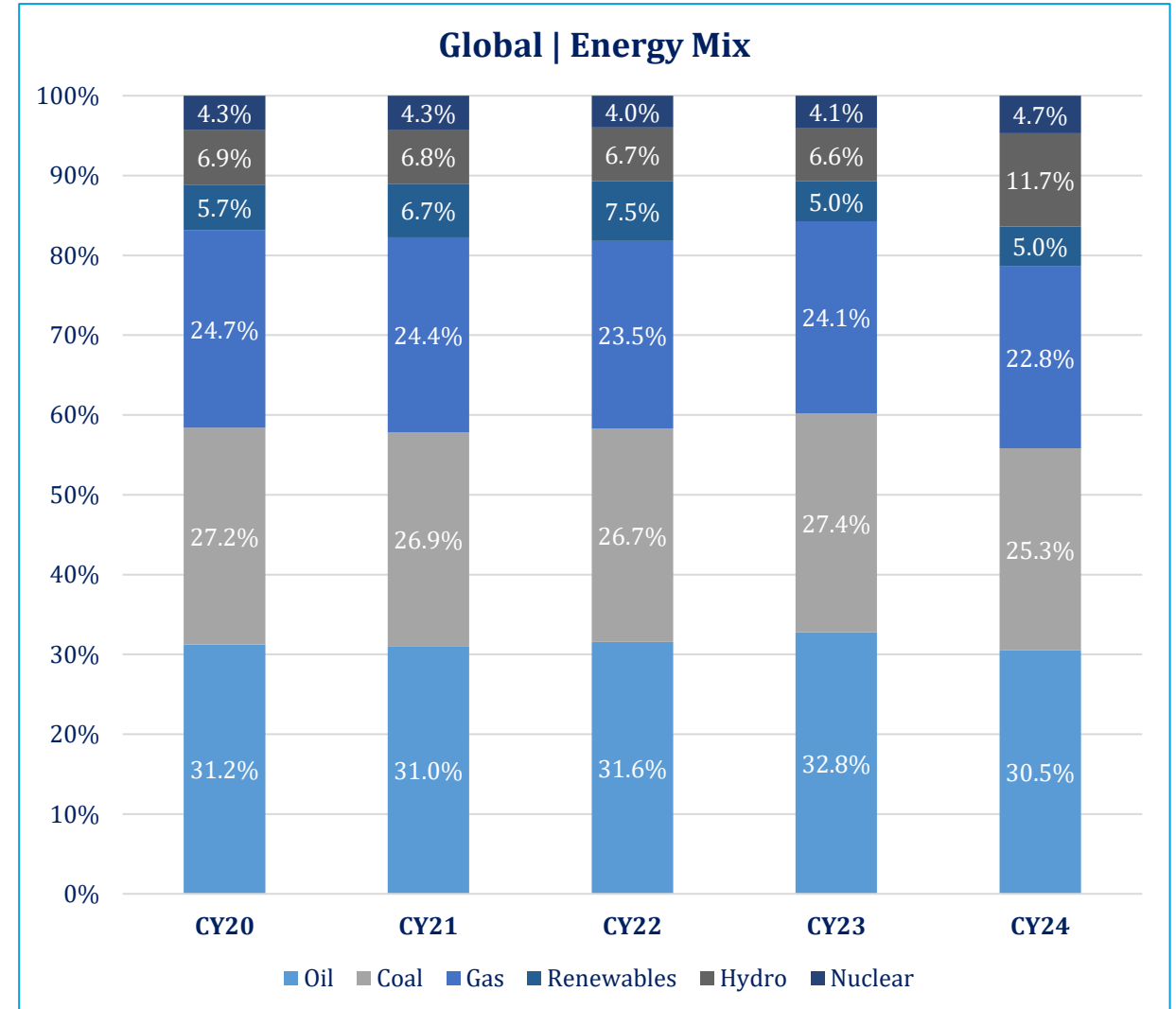
Deep Conversion/ Coking

These are a special class of refineries that can convert the heaviest fraction i.e. residual oil into lighter streams which can then further be processed into lighter petroleum products. These refineries can handle with economic viability; all classes of crude oil (Light Sweet to Heavy Sour).

Refineries

Global | Energy Mix

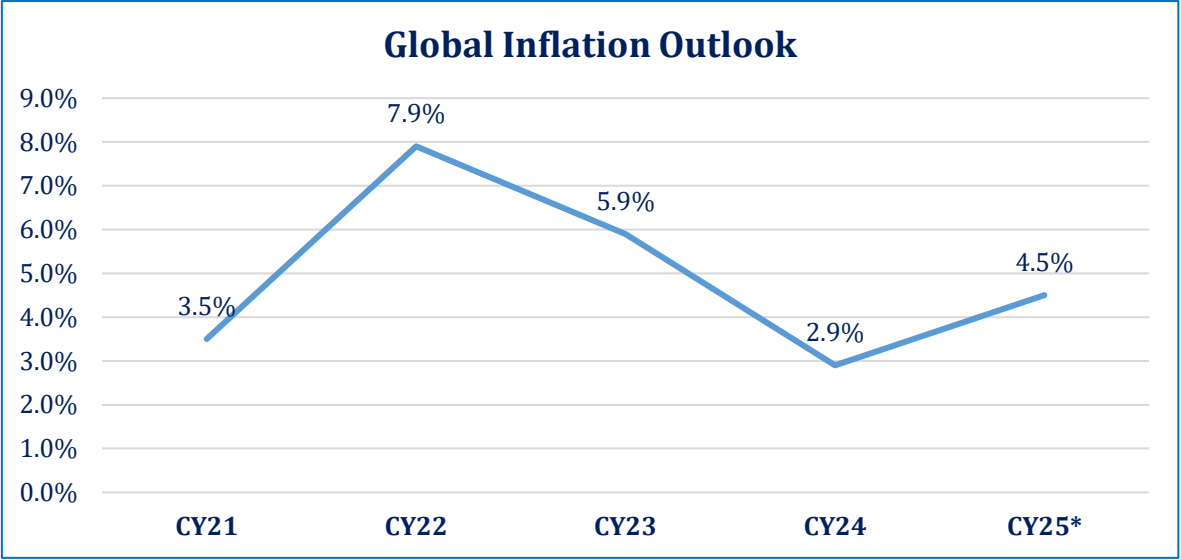
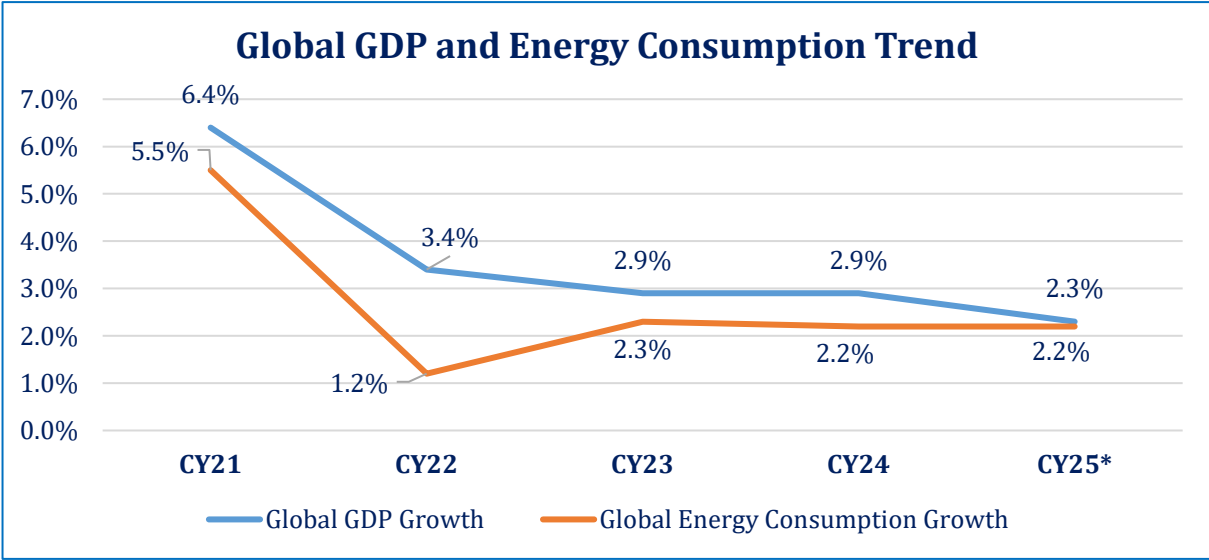
- The global energy mix, over the last 5 years (CY20-24), has been dominated by fossil fuels, with oil being the major contributor. It is followed by coal and gas. These comprised the lion's share in the global energy mix at ~78.6% in CY24 (CY23: ~84.3%).
- Oil demand is expected to peak by CY30 with natural gas and oil forecasted to remain a core part of the global energy mix beyond CY50. Post CY30, a gradual but continuous decline in oil demand is envisaged driven by factors such as improved engine efficiency, continued electrification of road transportation, and international efforts for environmental sustainability.
- LNG imports are expected to contribute to the growing use of natural gas in developing economies, accounting for ~65-75% of the increase in Asia by CY40. Power and industrial sectors are considered to be major users of gas in this region.
- Global energy demand is projected to continue rising through CY50, underpinned by population growth, improving living standards, and accelerating industrialization in emerging markets such as India, ASEAN, and Africa. While demand in developed economies is expected to remain relatively flat, new consumption drivers including electrification, data centers, and industrial expansion will support incremental growth. Electrification is likely to reshape the demand profile, shifting consumption toward power, even as efficiency gains partially offset growth. The ability to meet rising demand sustainably will depend on timely investments in renewables, grids, and firm low-carbon capacity amid affordability and supply-chain constraints.



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Global | Outlook

- Global GDP growth** remained broadly stable at ~2.9% in CY24 and is projected to decelerate to ~2.3% in CY25. United States output growth is estimated at ~2.8% in CY24, moderating significantly to ~1.4% in CY25 amid weakening external conditions and unprecedented trade frictions. China's economy is expected to expand by ~5.0% in CY24 before easing to ~4.5% in CY25, with further decline to around ~4.2% anticipated as heightened trade barriers and a softer global environment weigh on economic activities. India continues to demonstrate strong momentum, with GDP growth of ~6.5% in CY24 and a projected ~6.3% in CY25. Pakistan's GDP growth was estimated at ~3.2% in CY24, with the World Bank forecasting a moderation to ~2.7% in CY25.
- Global energy consumption** continues to exhibit a strong linkage with macroeconomic performance. Historically, energy demand accelerates alongside economic expansion, particularly in industry and mobility driven sectors. For CY25, global energy consumption growth is projected to remain near ~2.2%, broadly aligned with the softer GDP outlook. The uncertainty due to conflicts and trade wars are affecting energy demand.
- Global Headline Inflation** is projected to rise to approximately~4.5%, reflecting renewed commodity price pressures. This development may delay the pace of monetary easing in advanced economies.



*Projected. **Note:** Energy consumption forecast for CY24 is latest available.

Refineries

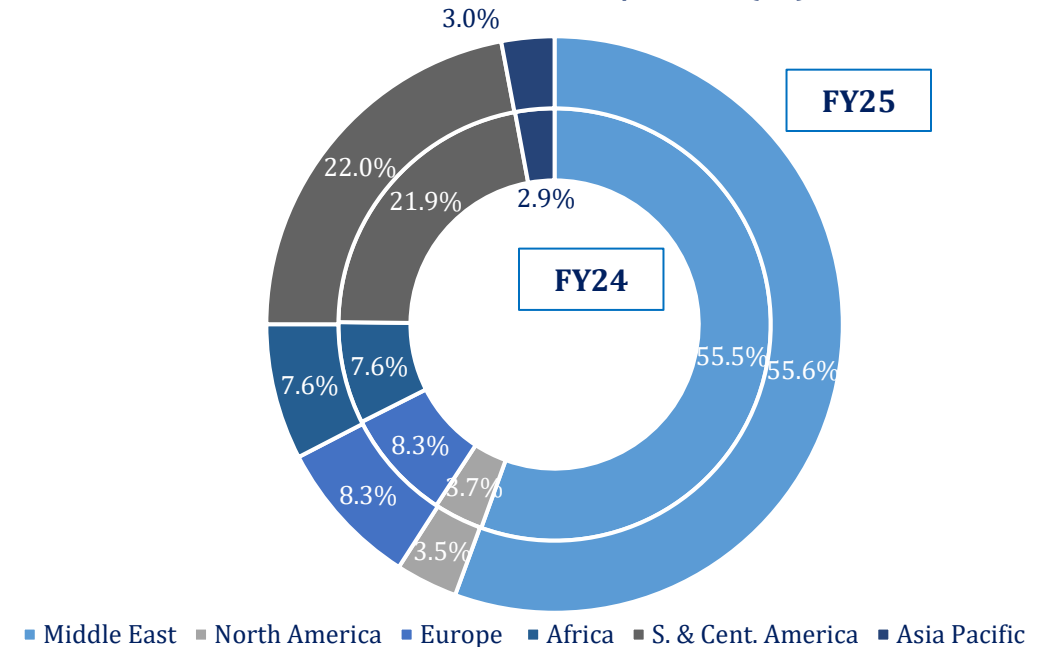
Global | Crude Oil Reserves

- During CY24, global crude oil reserves stood at ~1,567bln barrels or ~213,094mln MT (CY23: ~1,565bln barrels or 212,776mln MT). The largest reserves were registered in the Middle East (CY24:~55.6%; CY23: ~55.5%).
- A further breakdown of the Middle Eastern countries reveals that Saudi Arabia has ~17.1% of the global reserves in CY24 (CY23: ~17.0%), while Iran comprised ~13.3% of the share (CY23: ~13.3%).
- South & Central American countries together accounted for ~21.9% (CY24: ~21.9%) of the total crude reserves in CY24. Meanwhile, Venezuela alone had ~19.3% (CY23: ~19.3%) of the global crude reserves.
- Russia's crude oil reserves formed ~8.4% (CY23: ~8.3%) of the world total in CY23. Africa accounted for ~8.4% (CY24: ~8.3%) of the world's total crude oil reserves during the year.

Global Crude Oil Reserves (mln MT)

Time Period	CY20	CY21	CY22	CY23	CY24
World Total	209,931	211,968	212,618	212,776	213,094

Global Crude Reserves | Share (%)



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Global | Crude Oil Supply and Demand

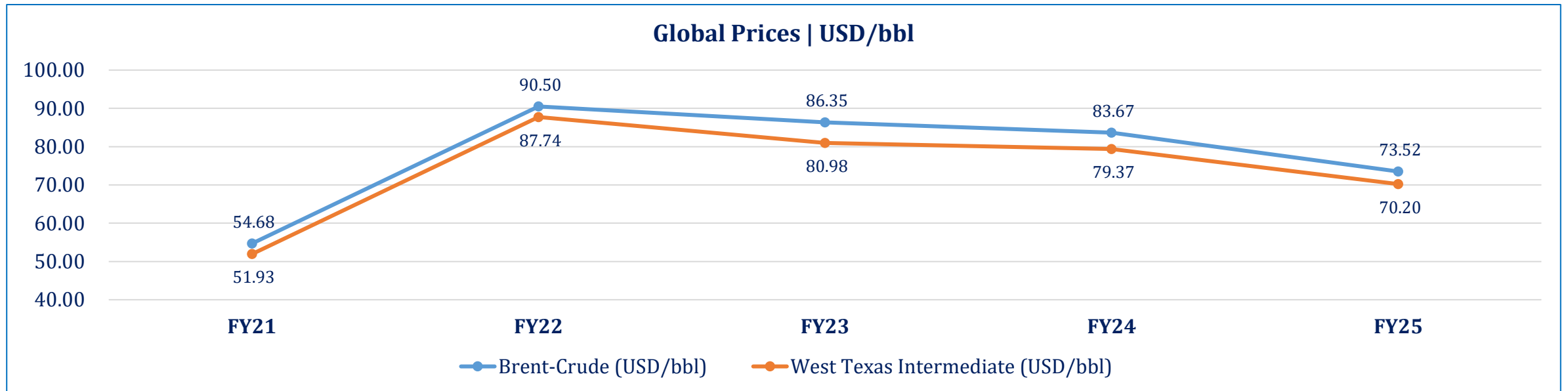
- In CY24, global crude oil production, as a share of total available reserves, stood at ~1.7% (CY23: ~1.7%). Saudi Arabia accounted for ~12.3% of the world crude produced (CY23: ~13.1%), clocking in at ~444.53mln MT (or ~8.95mbpd) (CY23: ~476.9mln MT or ~9.61mbpd).
- Meanwhile, the USA produced ~18.2% of the global crude oil (CY23: ~17.6%), with a ~2.1% YoY increase to ~655.6mln MT or ~13.2mbpd (CY23: ~12.9mbpd or ~642.7mln MT). Overall, the Middle East and North America comprised ~31.8% and ~22.1% of the global crude oil production in CY24, respectively (CY23: ~32.5%, and ~21.6%, respectively).
- The global crude consumption was up ~2.5% YoY in CY24, clocking in at ~3,481mln MT (CY23: ~3,457mln MT). North America formed ~35.6% of the global crude consumption, recording ~1,242mln MT.
- China was the highest consumer in Asia Pacific, making up ~8.0% of the global crude consumption at ~109.0mln MT. Meanwhile, the USA was the biggest consumer globally, forming ~6.0% of the global crude oil consumption, recording ~90.9mln MT.

Crude Oil Extraction (mln MT/year)						Crude Oil Consumption (mln MT)					
Region	CY20	CY21	CY22	CY23	CY24	Period	CY20	CY21	CY22	CY23	CY24
Total Extraction	3,417	3,447	3,620	3,641	3,603	Crude Consumption	3,121	3,307	3,415	3,457	3,481
Middle East	1,095	1,104	1,244	1,183	1,144	Asia Pacific	355	364	364	361	359
North Americas	704	703	737	785	795	North America	1,106	1,196	1,231	1,244	1,242
Europe	614	621	620	613	590	Europe	619	652	675	670	673
Others	429	426	421	424	419	Middle East	371	388	413	430	441
Latin America	275	277	299	330	348	S. & Cent. America	294	311	320	333	336
Africa	291	308	292	301	303	Russia	169	180	187	191	198
Asia Pacific	8	7	6	5	5	Africa	208	215	224	227	231

Refineries

Global | Prices

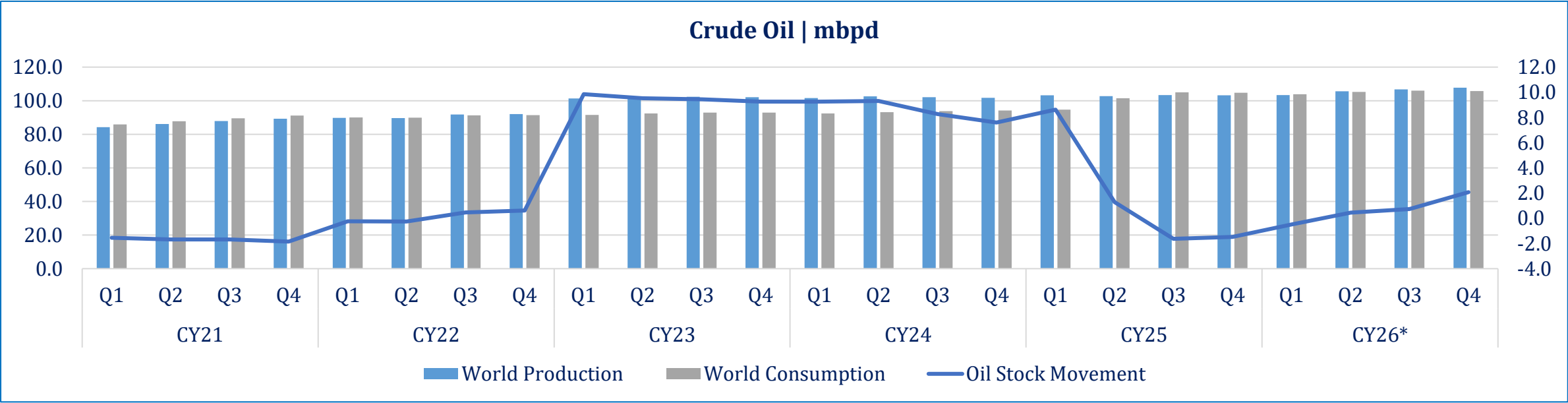
- Global POL product prices (MOGAS and HSD) move in tandem with the global crude oil prices. Global crude benchmarks, Brent and WTI, have retraced from their FY22 highs USD~90.5/bbl (Brent) and USD~87.74/bbl (WTI) to USD~73.5/bbl and USD~70.2/bbl, respectively, in FY25. The crude oil prices softened further to USD~60 /bbl in November 2025. Oil prices are expected to remain range bound (USD~55-65/bbl) barring unforeseen events.
- Despite several conflicts globally, most notably Russai-Ukraine war, oil prices have softened as no serious supply side disruptions were witnessed. Heavy tariffs or boycott of Russian oil could disrupt supplies but that has not materialized with other oil producing countries ready to pick the load.
- Global demand growth is projected to soften in line with weaker macroeconomic conditions in China, the US, and Europe. Agencies (IEA/OPEC) maintain that oil demand growth in CY25 will decelerate, reducing upward pressure on prices despite constrained OPEC+ output.



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Global | Crude Stock Analysis

- Global crude oil inventories are a function of crude oil production and consumption levels for a given period. A positive inventory drawdown indicates greater production than consumption, whereas a negative drawdown indicates the opposite.
- In CY25, average global crude production rose ~1.0% to ~103.2mbpd (CY24: ~102.0), while average crude consumption was recorded at ~101.4.0mbpd, up ~8.7% YoY. leading to an average drawdown of ~1.2mbpd. Stock levels generally rise due to lack of demand or oversupply, and thus is followed by a price reduction.
- For CY26, average crude oil consumption and production is forecast at ~105.9mbpd and ~105.2mbpd, respectively, while average drawdown is bbl. expected to record at ~0.7mbpd.
- The graph shows a sharp drawdown in oil stocks during CY24 and early CY25, followed by a gradual rebuild starting mid-CY25 and continuing into CY26. This forecasted recovery is primarily driven by non-OPEC supply growth outpacing consumption, especially from the U.S. shale sector, Brazil, and Guyana.

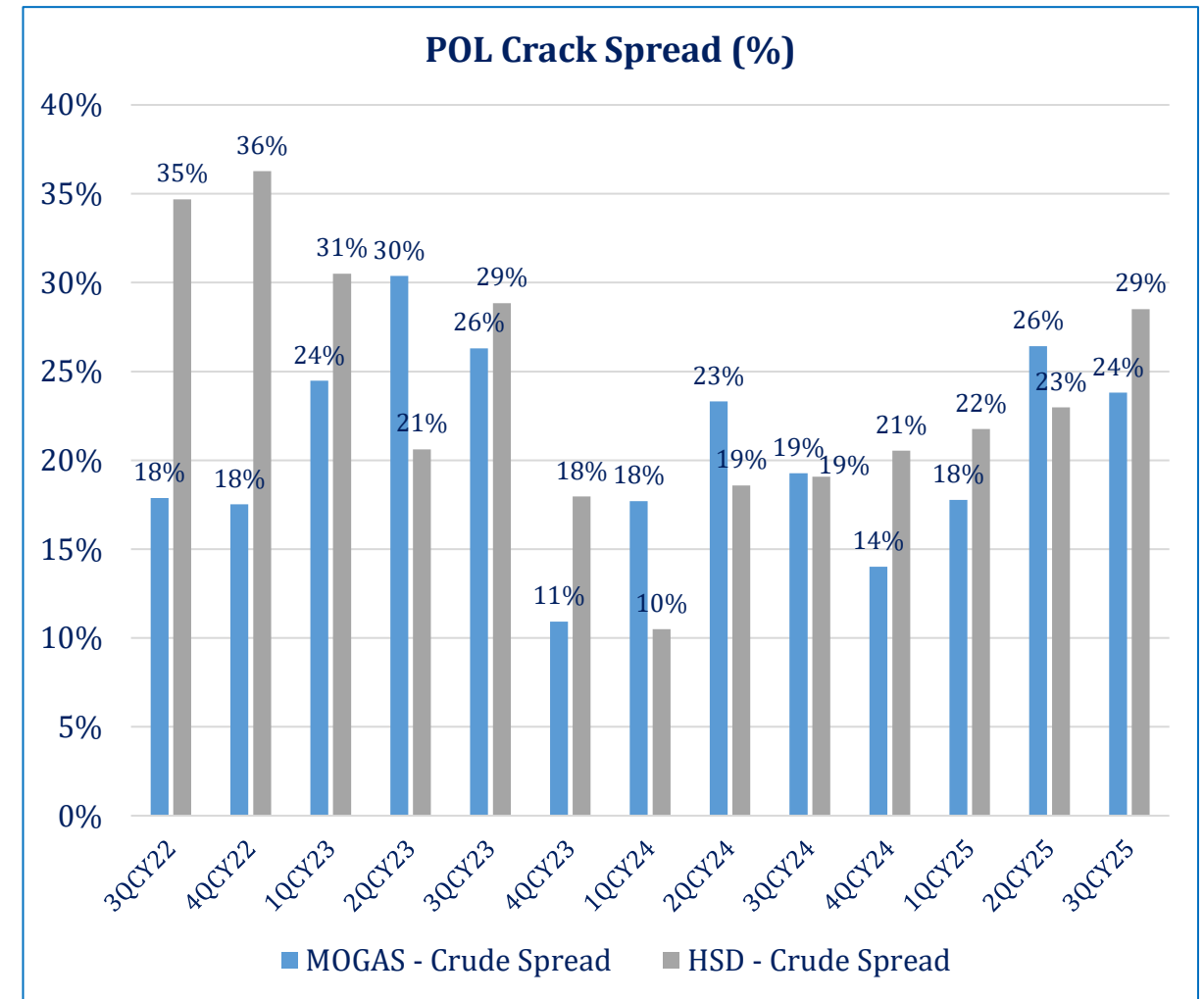


Note: mbpd stands for mln barrels per day. *Forecast.

Refineries

Global | POL Crack Spreads

- Refined POL products trade at a premium above crude oil prices. This spread between prices is referred to as 'Crack Spread' and is indicative of mid-stream costs and profitability margins. Meanwhile, prices of crude oil and POL products are subject to their respective supply and demand dynamics, as well as regulatory, environmental, and economic factors.
- Refined POL product spreads continued to fluctuate over the assessment period, shaped by evolving supply-demand dynamics across global fuel markets. During CY24, MOGAS spreads averaged around ~18.5%, softening from the highs of CY23 as global refinery runs increased and inventories normalized. HSD spreads moderated more sharply to an average of ~17.3% during CY24.
- In CY25, both MOGAS and Diesel crack spreads have increased. MOGAS spreads rose steadily from ~18.0% in 1QCY25 to ~24.0% in 3QCY25. Diesel spreads also improved from ~22.0% in 1QCY25 to ~29.0% in 3QCY25 in the following quarters. HSD crack spreads increased due to supply-side tightening in distillates, driven by geopolitical disruptions to Russian diesel production and exports, which reduced availability and supported diesel pricing. Overall, margins are recovering after the softness seen in early CY24.



Refineries

Global | Crude Oil Trade

- Global Crude trade remained almost stable increasing by ~0.2% YoY to ~2.3bln MT in CY24. Saudi Arabia has a ~13.2% share in total global exports amounting to ~300.3mln MT in CY24. Meanwhile, top three importing countries namely China, Europe, and the US cumulatively accounted for ~62.6% of the global imports.

Country	Exports mln MT		Share, Global Exports (%)	YoY Δ
	CY23	CY24		
Saudi Arabia	330.6	300.3	13.2%	-9.2%
Russia	227.7	224.6	9.9%	-1.4%
Canada	168.8	177.2	7.8%	5.0%
US	202.6	204	9.0%	0.7%
Iraq	172.1	167	7.3%	-3.0%
UAE	131.6	134.9	5.9%	2.5%
ROW	1,035.5	1,066.3	46.9%	3.0%
World	2,268.9	2,274.3	100.0%	0.2%

Country	Imports mln MT		Share, Global Imports (%)	YoY Δ
	CY23	CY24		
China	561.1	549.6	24.2%	-2.0%
Europe	555.0	550.3	24.2%	-0.8%
US	321.6	327.0	14.4%	1.7%
Asia Pacific	281.0	271.0	11.9%	-3.6%
India	232.0	238.0	10.5%	2.6%
Japan	126.4	115.2	5.1%	-8.9%
ROW	191.8	223.2	9.8%	16.4%
World	2,268.9	2,274.3	100.0%	0.2%

* Includes Asia pacific regions except China

Refineries

Global | POL Products Trade

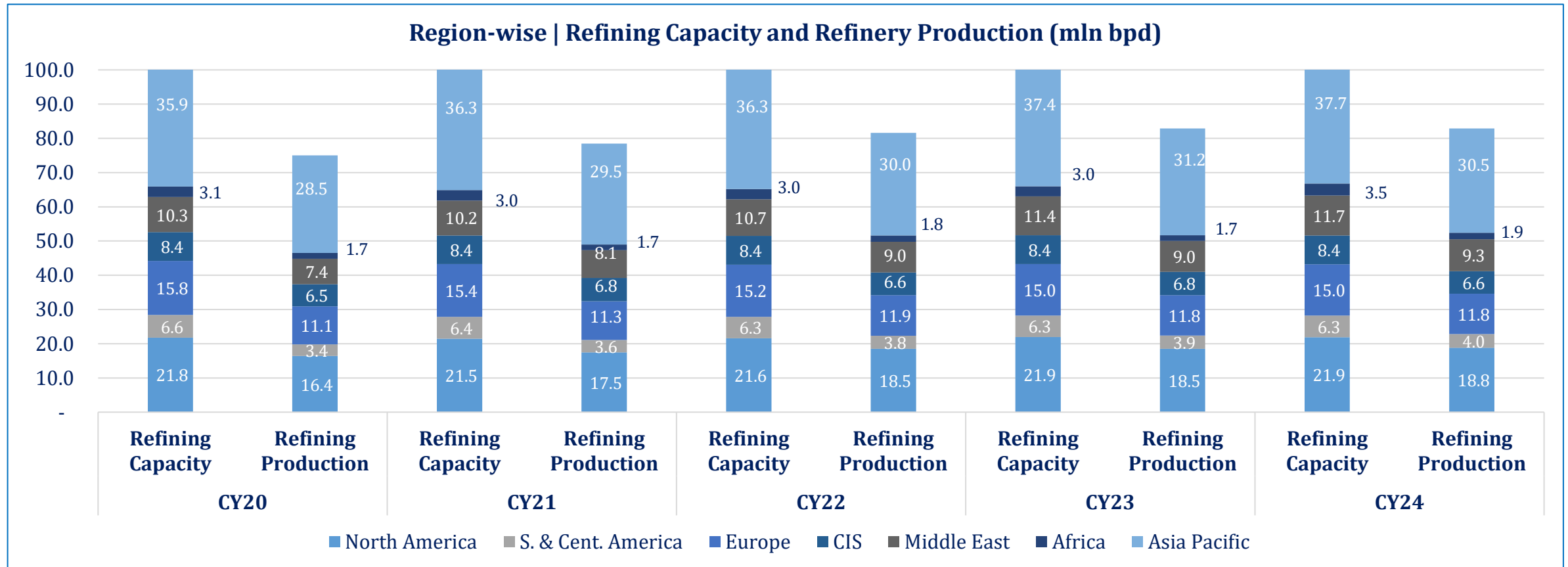
- Global POL trade grew by ~0.6% YoY in CY24, driven primarily by the United States and Europe, which together account for over ~47.2% of global supply. Exports decline from Russia and Netherland (~7.1% and ~1.4% YoY decrease respectively) reflect sanctions and weaker refinery economics, reshaping global trade flows. Overall, export patterns indicate rising regional fragmentation and continued sensitivity to geopolitical developments, with implications for supply stability and global pricing.
- The top three importers comprised ~40.6% of the total POL products imported (CY23: ~39.9%). During the year, China's imports rose ~5.8% YoY, while US imports declined by ~10.1% YoY, mainly due to higher domestic production, creating excess surplus in the country which led to reduced reliance on foreign energy for the period.

Country	Exports mln MT		Share, Global Exports (%)	YoY Δ	Country	Imports Mn MT		Share, Global Imports (%)	YoY Δ
	CY23	CY24				CY23	CY24		
Europe	344.2	348.8	24.2%	1.3%	Europe	366.2	377.4	26.2%	3.1%
United States	305.4	330.0	22.9%	8.1%	China	103.3	109.3	7.6%	5.8%
Russia	114.1	106.0	7.4%	-7.1%	Singapore	100.9	98.3	6.8%	-2.6%
Netherlands	107.1	105.6	7.3%	-1.4%	United States	101.1	90.9	6.3%	-10.1%
Singapore	79.7	80.2	5.6%	0.6%	Netherlands	81.1	85.4	5.9%	5.3%
Saudi Arabia	63.2	64.1	4.5%	1.4%	India	55.9	60.3	4.2%	7.8%
ROW	415.8	404.0	28.1%	-2.8%	ROW	621.0	617.2	42.9%	-0.6%
World	1,429.5	1,438.7	100.0%	0.6%	World	1,429.5	1,438.7	100.0%	0.6%

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Global | Refining Capacity & Production

- Asia-Pacific accounts for the largest share of global refining capacity, estimated at ~37.7mln bpd in CY24, and consequently leads global refinery throughput and production. In contrast, North America demonstrates the highest refining efficiency, supported by advanced process technologies, higher complexity configurations, and optimized operating practices across its refinery network.



Refineries

Global | Top 10 Refineries

Global Refining Capacity CY24				
Sr.	Refinery Name	Facility Owner Company	Country/ Region	Capacity ('000' bpd)
1	Aramco Refinery	Saudi Aramco	KSA	4,100*
2	Jamnagar Refinery	Reliance Industries Limited	India	1,240
3	Paraguana Refinery Complex	PDVSA	Venezuela	940
4	SK Energy Co. Ltd. Ulsan Refinery	SK Energy	South Korea	850
5	Ruwais Refinery	ADNOC Refining	UAE	817
6	GS Caltex Yeosu Refinery	GS Caltex	South Korea	730
7	S-OIL Onsen Refinery	S-OIL	South Korea	670
8	Singapore ExxonMobil	ExxonMobil	USA	605
9	Port Arthur Refinery	Motiva Enterprises	USA	600
10	Baytown Refinery	Exxon Mobil	USA	560
11	Others	-	Rest of the World	92,688
12	Total	-	World	103,800*

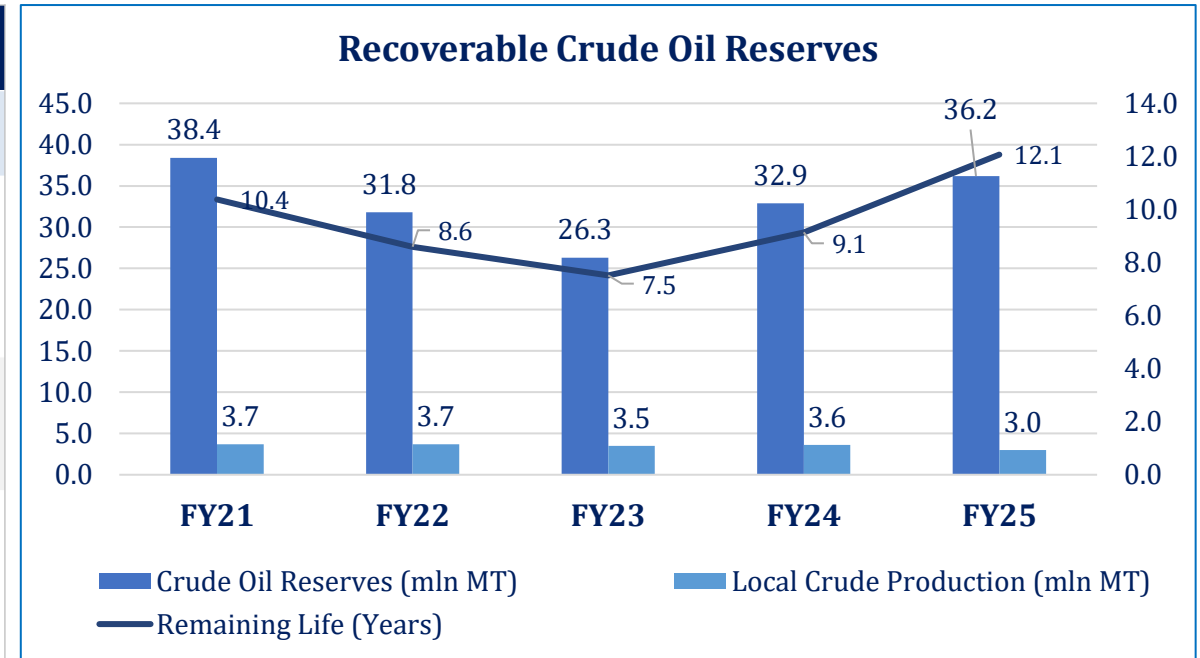
*Data is cumulative of all Aramco refineries

Refineries

Local | Crude Oil Reserves

- Pakistan's recoverable crude oil reserves are estimated at ~36.2mln MT as at End-Jun'25 (SPLY: ~32.9mln MT). Reserves rose due to increase in reserve size of major oil fields coupled with the inclusion of new reserves, particularly in Sindh and KPK.
- OGDCL holds the largest crude oil reserves base, accounting for ~49.0% of Pakistan's total reserves in FY25 (FY24: ~51%).
- While total crude oil reserves rose by ~10.0% YoY in FY25, crude oil production reduced by ~16.7% YoY. The decline in oil production is attributed to natural depletion of mature reserves which has outpaced the exploration and development of new reserves

Recoverable 2P Crude Oil Reserves & Extraction					
Period	FY21	FY22	FY23	FY24	FY25
Crude Oil Reserves (mln MT)	38.4	31.8	26.3	32.9	36.2
Local Crude Production (mln MT)	3.7	3.5	3.5	3.6	3.0
Remaining Life (Years)	10	9	8	9	12



Refineries

Local | Players

- **Crude Oil:** Pakistan majorly relies on imports to meet its crude oil demand. Total crude oil imports during FY25 amounted to ~9.3mln MT (FY24: 8.4mln MT) and comprised ~72.1% of total crude consumption during the year. The remaining demand is met through local production. Crude imports during 3MFY26 stood at ~ 2.5mln MT.
- **Petroleum Products:** During FY25, ~10.4mln MT of POL products were supplied through local refineries, while imported POL products amounted to ~7.8mln MT. However, efficient capacity utilization can reduce reliance on imported POL products. Pakistan's POL products supply is largely driven by the following key Sector players:



Incorporated in 1960



Incorporated in 1974



Incorporated in 1963



Incorporated in 1978



Incorporated in 1995

Refineries

Local | Industry Snapshot

- The Sector's revenue during FY25 registered a ~8.4% YoY decline from PKR~2,381bln in FY24 to PKR~2,181bln in FY25. This decline is attributed to globally declining petroleum prices since prices in Pakistan are determined at global parity.
- During 1QFY26, the revenue declined by ~1.5% YoY to PKR~526bln. With global crude prices expected to decline in FY26 as well amidst oversupply, the Sector's revenue is likely to remain relatively low.
- The total refining capacity of Pakistan is currently at ~20.0mln MT per annum, and annual average capacity utilization is ~63.0%. Local refineries supplied ~56.5% of the refined petroleum products in FY25 as production expanded to ~10.2mln MT (FY24: ~10.1mln MT).

Overview	FY21	FY22	FY23	FY24	FY25
Total Revenue (PKR bln)	829	1,666	2,080	2,381	2,181
Total Revenue Growth (YoY%)	13.1%	98.5%	24.9%	14.5%	-8.4%
Sector Players	5				
Total Refining Capacity (mln MT)	20	20	20	20	20
Avg. Capacity Utilization	63.0%	59.0%	56.0%	60.0%	63.0%
Structure	Oligopoly				
Regulator	OGRA				
Association	OCAC				

Note: Revenue figures are based on 5 PACRA-rated/ listed Sector players*
*prorated **latest available data is as of FY24

Refineries

Local | Industry Snapshot

Upstream	FY21	FY22	FY23	FY24	FY25
Est. Local Crude Production	3.7	3.7	3.5	3.6	3.0*
Imported Crude (mln MT)	8.8	9.3	7.9	8.4	9.3
Crude Condensate Exports (mln MT)	0.3	0.4	0.3	0.3	0.3
Crude Supply (mln MT)	12.2	12.6	11.1	11.7	12.1
Major Players	6				
Structure	Oligopoly				
Regulator	Ministry of Energy (Petroleum Division)				
Association	OCAC				

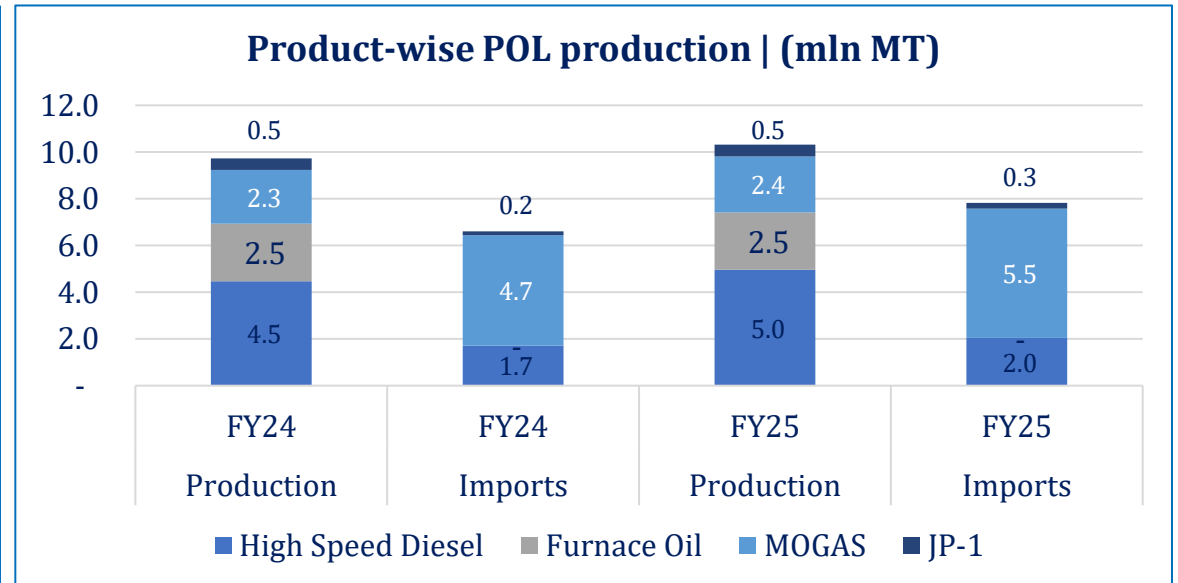
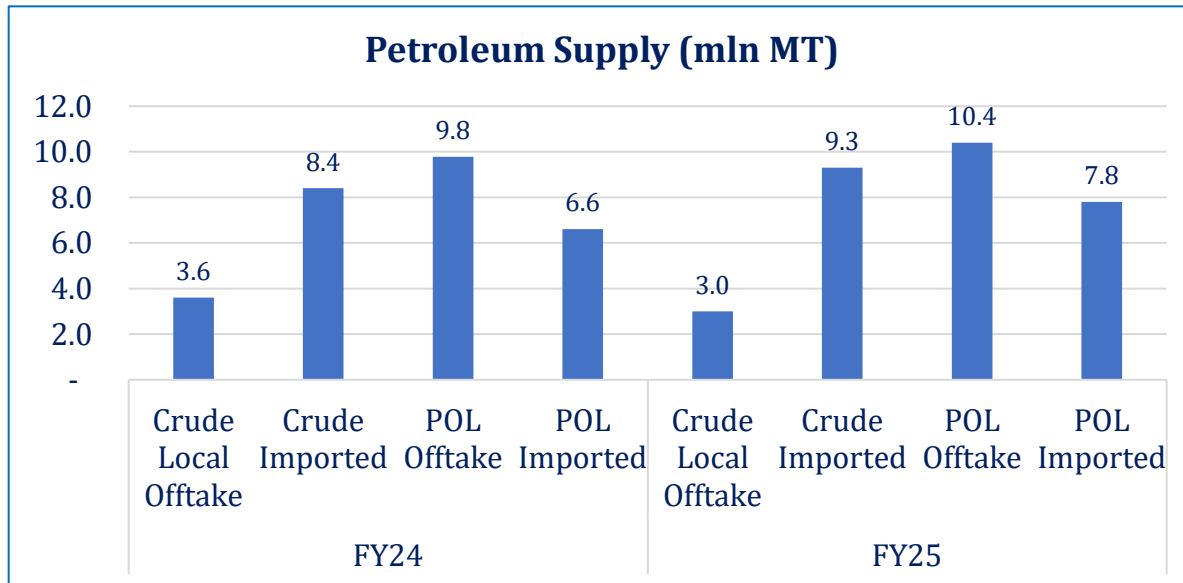
Downstream	FY21	FY22	FY23	FY24	FY25
Local POL Production (mln MT)	10.3	10.3	9	10.1	10.5
POL Imports (mln MT)	10.1	13.1	8.2	6.6	7.8
POL Exports (mln MT)	0.1	0	0.3	1	1.4
POL Storage (mln MT)	4.6	4.8	4.7	5.7	-**
POL Consumption (mln MT)	20.4	23.4	17.2	16.7	18
Refinery Offtake/ Crude Supply (mln MT)	12.2	12.6	11.1	11.7	
Refinery Production (mln MT)	11.6	11.7	10.2	11.3	11.7
Regulator	OGRA				

* Storage data available till FY24.

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Local | Supply

- In FY25, local crude oil offtake declined to ~3.6mln MT from ~3.0mln MT in FY24. Meanwhile, ~9.3mln MT of crude oil was imported (FY24: ~8.4mln MT), marking an increase of ~12.7% YoY.
- Local POL production increased to ~10.4mln MT in FY25 from ~9.8mln MT in FY24, primarily driven by ~11.1% YoY increase in HSD production. HSD production accounted for ~47.0% of total POL production (FY24: ~45.9%). The production levels of MOGAS, Furnace Oil, and JP-1 almost remained the same.
- Total POL imports expanded to ~7.8mln MT in FY25 (FY24: ~6.6mln MT), exhibiting a ~18.1% YoY increase. MOGAS imports comprised ~70.5% of the total POL products imported (FY24: ~71.2%), and increased by ~17.0% YoY to 5.5mln MT in FY25. HSD imports made up ~25.6% (FY24: ~25.8%) and remained stable at ~2.0mln MT (FY24: ~1.7mln MT). JP-1 formed the remaining ~3.8% share in POL imports amounting to ~0.3mln MT (FY24: ~0.2mln MT).

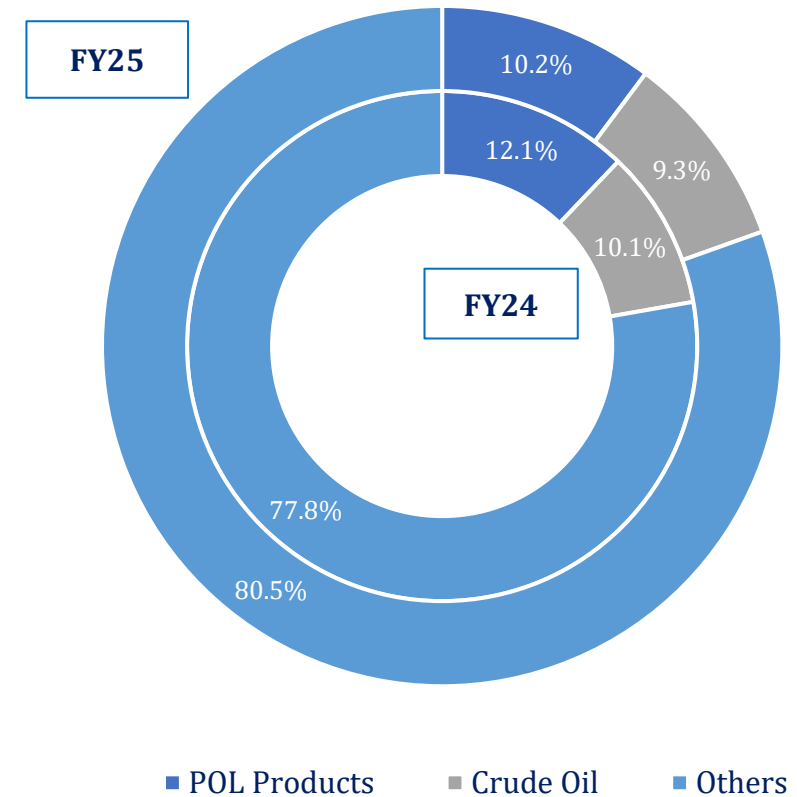


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Local | Imports

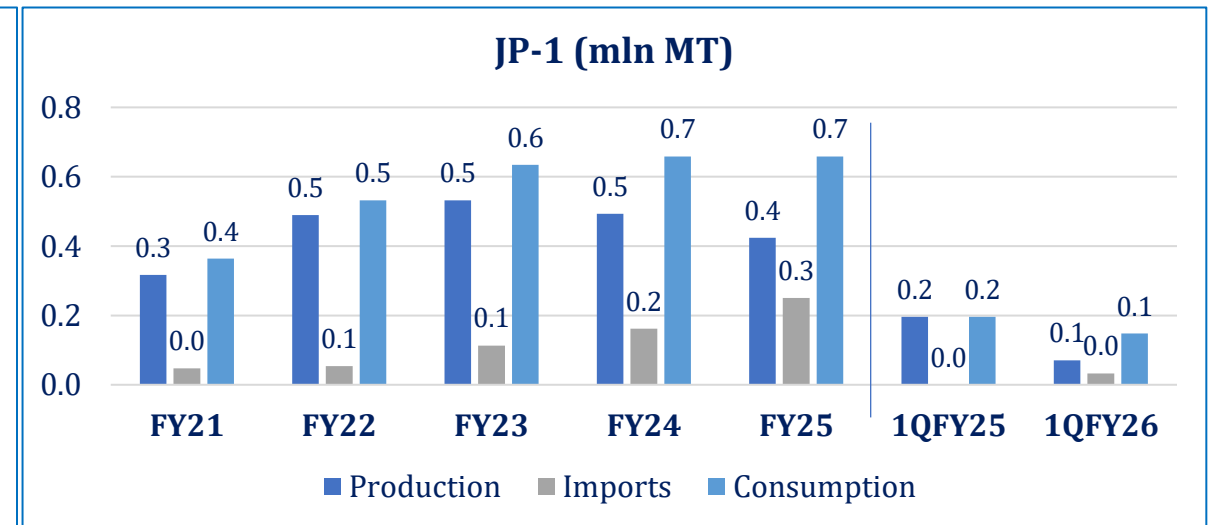
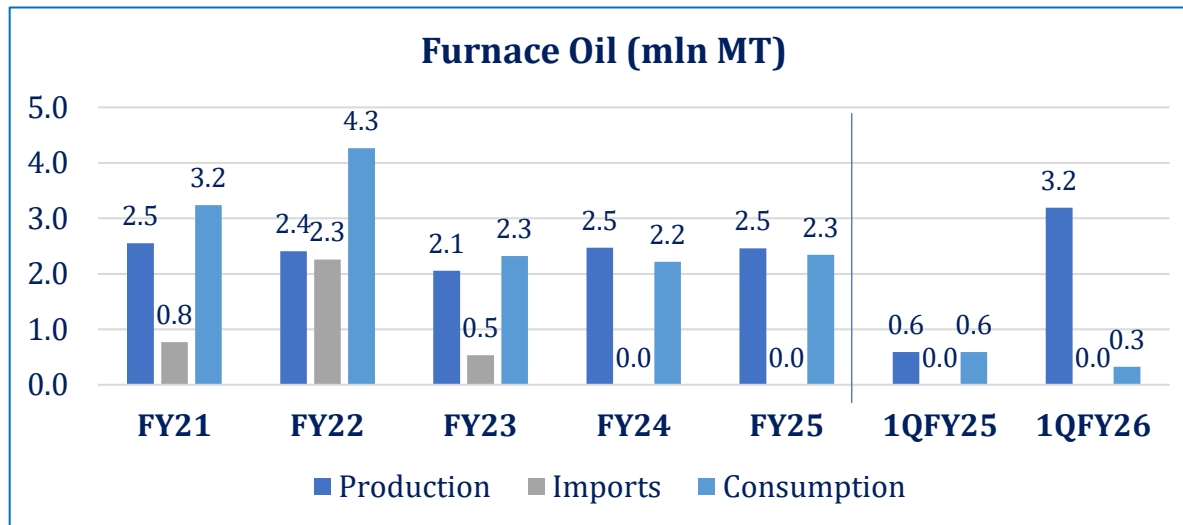
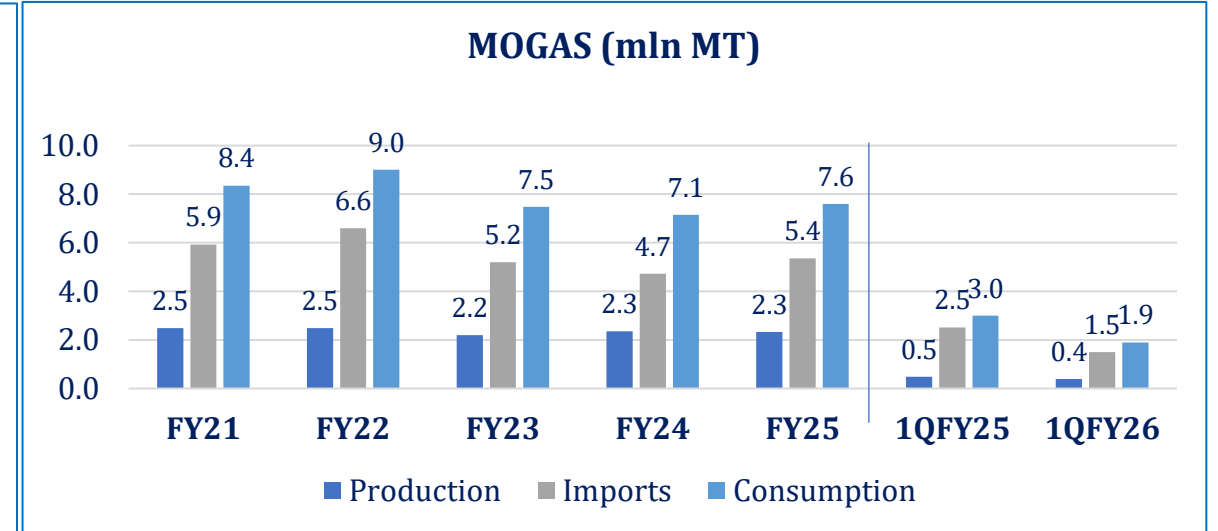
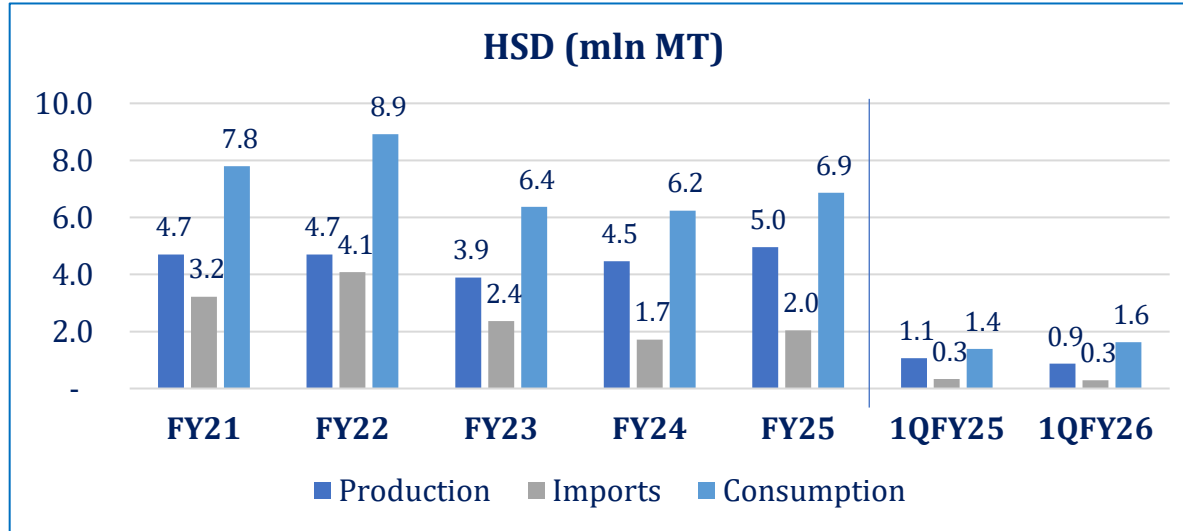
- Pakistan significantly relies on imports to meet the demand for its crude oil and POL products. During FY21–FY25, Pakistan imported an annual average of ~9.1mln MT of POL products and ~8.7mln MT of crude oil.
- Both POL and crude oil imports peaked in FY22 before declining, with only a modest rebound in FY25. Crude imports, after dipping to ~7.8mln MT in FY23, recovered sharply in FY24, and reached a new high in FY25 to ~9.3mln MT. Meanwhile, POL imports increased to ~7.8mln MT in FY25 (FY24: ~6.6mln MT).
- In value terms, Pakistan's total imports inched up to USD~58.4bln in FY25, from USD~54.8bln in FY24. Crude oil imports remained broadly unchanged at USD~5.4bln in FY25 as compared to USD~5.5bln in FY24. Meanwhile, POL products imports reduced by ~10.3% YoY to USD~6.0bln (FY24: USD~6.6bln) mainly due to lower international prices for crude oil and POL products.
- POL and crude oil imports formed ~19.5% of the Country's total import bill (FY24: ~22.2%). Collectively, crude oil and POL products import bill reduced to USD~11.4bln (FY24: USD~12.6bln). The average Brent crude price also declined from USD ~74.0/bbl in FY24 to USD ~67.0/bbl in FY25, reflecting a drop of ~10.4%.

POL Products & Crude Oil Imports (%)



Refineries

Local | Product-wise Supply



Refineries

Demand | Product-wise POL Consumption

- Overall consumption of POL comprised ~86.7% white oils and ~13.3% black oils. The three major products, i.e., HSD, MOGAS, and RFO cumulatively accounted for ~93.4% of the total POL products consumption in the country during FY25 (FY24: ~92.8%).
- During FY25, the consumption of MOGAS increased to ~7.6mln MT, an increase of ~7.0% YoY. HSD's consumption increased by ~11.3% YoY, to ~6.9mln MT and RFO ~9.1% YoY to ~2.4mln MT.
- Reduction in MOGAS and HSD prices, curtailment of smuggled POL products from Iran, and a surge in automobile sales collectively contributed to increased POL consumption.
- The overall POL consumption increased by ~8.4% YoY to ~18.1mln MT in FY25 from ~16.7mln MT in FY24. It is a modest recovery but still remains below the five-year average of ~19.1mln MT.
- During 2MFY26, ~2.7mln MT of POL products were consumed. By the end of FY26, total consumption is projected to reach around ~16.2mln MT.

POL Consumption (mln MT)					
Period	FY21	FY22	FY23	FY24	FY25
White Oils	16.8	18.8	14.8	15.7	15.7
MOGAS	8.4	9.0	7.5	7.1	7.6
HSD	7.8	8.9	6.4	6.2	6.9
JP-1/ JP-8	0.4	0.7	0.8	0.7	0.7
Others*	0.2	0.2	0.1	0.3	0.5
Black Oils	3.3	4.3	2.3	2.2	2.4
RFO*	3.3	4.3	2.3	2.2	2.4
Total	20.1	23.1	17.1	16.7	18.1

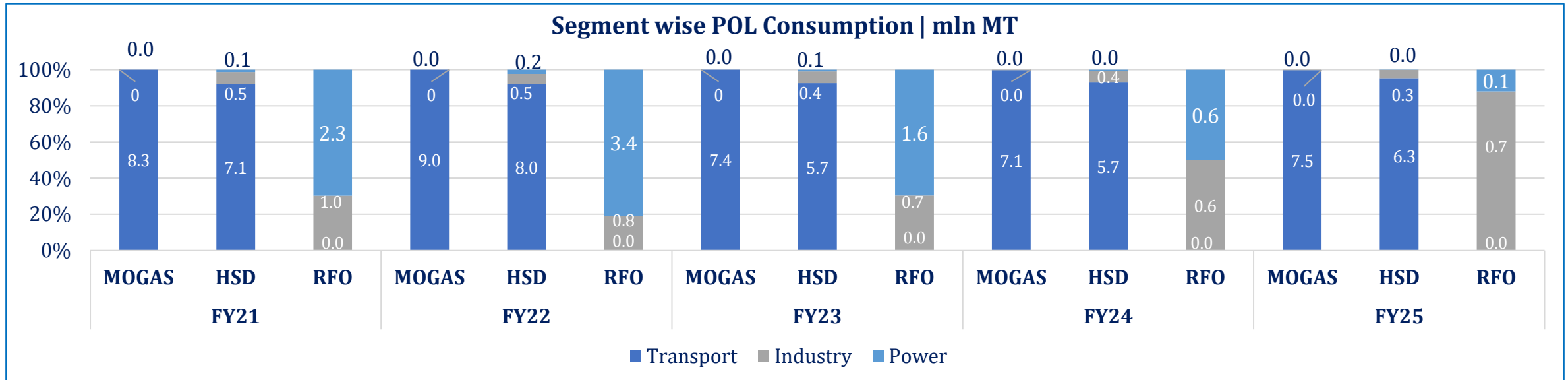
POL Consumption (mln MT)					
Period	FY21	FY22	FY23	FY24	FY25
White Oils	83.6%	81.4%	86.5%	94.0%	86.7%
MOGAS	41.8%	39.0%	43.9%	42.5%	42.0%
HSD	38.8%	38.5%	37.4%	37.1%	38.1%
JP-1/ JP-8	2.0%	3.0%	4.7%	4.2%	3.9%
Others*	1.0%	0.9%	0.6%	1.8%	2.8%
Black Oils	16.4%	18.6%	13.5%	13.2%	13.3%
RFO	16.4%	18.6%	13.5%	13.2%	13.3%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

*RFO consumption figures include exports.

Refineries

Demand | Segment-wise POL Consumption

- Major demand drivers for POL products include the transport, industry, and power sectors of the country.
- Transport is the biggest fuel-consuming sector in Pakistan, using approximately ~14.5mln MT or ~89.7% of energy products. This comprises 55.5% of MOGAS, with the remaining usage accounted for by HSD and RFO.
- The industrial sector's total consumption was dominated by RFO 64.2% (FY24: ~58.8%) and HSD at around 32.5% (FY24: ~39.2%). About ~2.1% of MOGAS was also used by the sector during FY25.
- On the other hand, the power sector's POL consumption (comprising HSD and RFO) declined by ~75.6% YoY (FY24: down by ~64.7% YoY) to ~0.147mln MT, due to a shift from FO to cheaper and more environmentally friendly alternatives.
- In FY25, the power sector's POL consumption remained dominated by RFO at ~93.5% (FY24: ~93.8%), with HSD accounting for the remaining ~6.4% (FY24: ~6.2%).
- Agriculture is another important sector in the country. It primarily uses different varieties of diesel, mainly HSD and LDO (Light Diesel Oil).



Refineries

Capacity Utilization

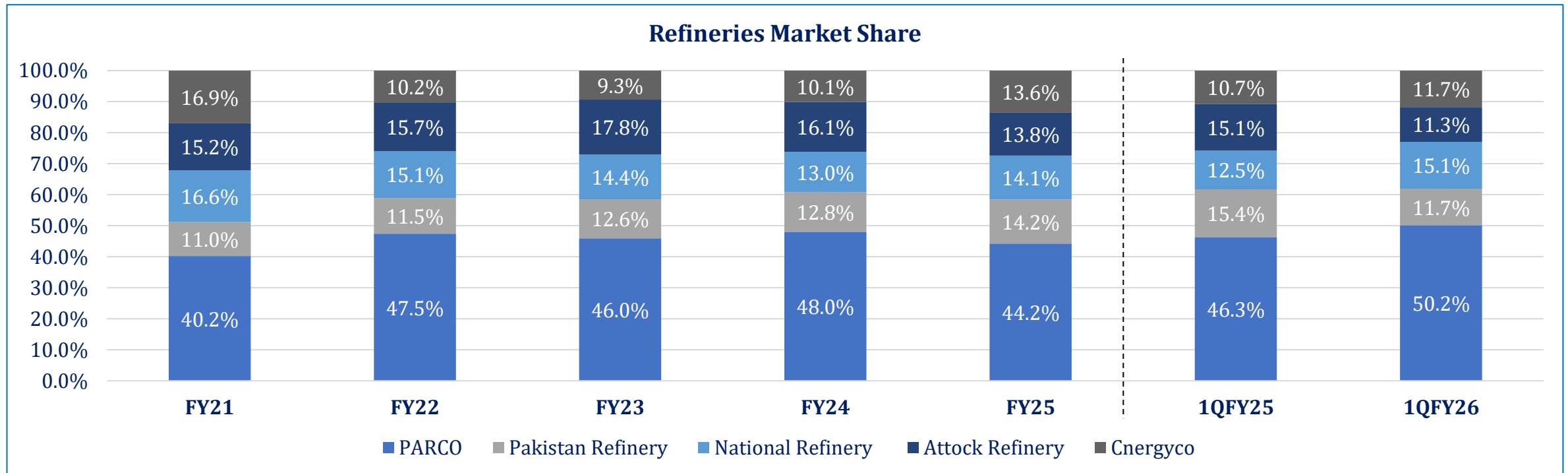
- Pakistan’s total refining capacity was recorded at ~20mln MT p.a. during FY25 but performance across refineries remain uneven. Cnergyico, despite having the largest refining capacity of ~7mln, utilizes only ~23% of it. PARCO’s has the second largest refining capacity of ~6mln MT and consistently delivered the highest utilization rates. During FY25, PARCO’s utilization capacity remained almost stable at ~86%, above the five-year average of ~83%.

Period	FY21		FY22		FY23		FY24		FY25	
Refineries	Capacity (mlnMT)	Utilization (%)	Capacity (mlnMT)	Utilization (%)	Capacity (mlnMT)	Utilization (%)	Capacity (mlnMT)	Utilization (%)	Capacity (mlnMT)	Utilization (%)
Cnergyico (formerly Byco)	7	26	7	16	7	12	7	16	7	23
PARCO	5	88	5	75	5	78	6	88	6	86
NRL	3	63	3	62	3	51	3	51	3	56
ATRL	2	77	2	79	2	78	2	76	2	69
PRL	2	61	2	63	2	63	2	70	2	80
Total	20	63	20	59	20	56	20	60	20	63

Refineries

Market Share

- PARCO, being the most advanced refinery in the country, comprised the highest market share of ~44.2% in FY25 in terms of total revenue (FY24: ~48.0%). PARCO's production, and, in turn its market share, decreased slightly due to schedule down time for maintenance during FY25. ATRL and PARCO operate in the North, while remaining refineries are concentrated in the South, mainly in Karachi near the port.
- Attock Refinery Limited (ARL) is the only refinery that is almost entirely dependent on domestically produced crude oil, sourcing ~100% of its feedstock from local fields. In contrast, all other refineries in Pakistan rely predominantly on imported crude to meet their processing requirements.



Refineries

Local | Fuel Retail Prices

- In FY25, OMC margins remained broadly steady, averaging PKR ~7.87/liter for MOGAS (FY24: PKR ~7.34/liter) and PKR ~7.89/liter for HSD (FY24: PKR ~7.42/liter). As a proportion of average retail prices, OMC margins for both MOGAS and HSD increased to around 3.0% in FY25, compared to ~2.6% in FY24, reflecting a slight improvement in margin retention year-on-year.
- Petroleum levy rates as of Dec'25 are PKR ~78.01/liter for MOGAS and PKR ~75.41/liter for HSD, with future changes tied to IMF conditions under the EFF, subject to IMF Board approval.
- IFEM varies by product due to differences in transport logistics and end-use: MOGAS is mainly used in private and light commercial transport, while HSD serves commercial transport, industrial operations, and agriculture.
- An increase in margins of PKR~1.22 per liter for OMCs and PKR~1.34 per liter for petroleum dealers on HSD and MOGAS has been approved to account for rising operating costs and the growing need for automation. The adjustment will be implemented in two phases: the first instalment will take effect immediately with OGRA's upcoming price revision, while the second instalment will be released on June 1, 2026, subject to a review of the digitization milestones achieved across the petroleum supply chain.

MOGAS - Average Retail Price/Liter Composition					
Price Components	FY21	FY22	FY23	FY24	FY25
Cost of Supply	62.43	134.58	185.74	200.59	169.06
IFEM Margin	3.59	3.98	3.13	5.57	6.64
OMC Margin	2.86	3.37	4.82	7.36	7.87
Dealer Commission	3.76	4.43	6.83	8.24	8.64
Petroleum Levy	18.74	5.18	42.87	59.17	63.00
Sales Tax	15.54	4.25	0.0	0.0	0.0
PDC	0.00	-7.82	0.00	0.00	0.00
Max Ex-Depot Sales Price	106.92	146.89	243.39	280.89	255.58

HSD - Average Retail Price/Liter Composition					
Price Components	FY21	FY22	FY23	FY24	FY25
Cost of Supply	26.19	20.26	40.58	174.95	257.53
IFEM Margin	0.93	1.29	-3.62	1.82	3.78
OMC Margin	2.86	3.34	4.83	7.42	7.89
Dealer Commission	3.17	3.73	6.63	8.24	8.61
Petroleum Levy	20.16	5.47	29.13	57.17	65.23
Sales Tax	108.71	88.57	0.0	0.0	0.0
PDC	0.0	-7.59	0.0	0.0	0.0
Max Ex-Depot Sales Price	109.64	145.75	255.44	286.38	260.86

Refineries

Local | Pricing Mechanism

- The pricing structure of POL products (MOGAS & HSD) is a computation of six different price components (discussed in the previous slide) embedded in a price formula. Since Sep'20, the pricing mechanism has been shifted from a monthly basis to a fortnightly basis and the price benchmark based on PSO's oil imports has been shifted to Platt's Index. This development is expected to shield the Industry from Inventory losses.
- **Ex-Refinery Price:** The refinery output price for finished inventories of POL products, including HSD and MOGAS. It is a variable based on global prices, refinery costs, and margins
- **Petroleum Levy (PL) & Carbon Levy (CL):** PL is a variable development tax imposed by the GoP, subject to variations on the GoP's disposal. For FY26, a maximum PL has been set at PKR~90/liter for all petroleum products. Moreover, as per the Finance Act 2025, a Carbon Levy amounting to PKR~2.5/liter will be imposed on MOGAS, HSD, and RFO.
- **In-Land Freight Equalization Margin (IFEM):** The element of pricing structure that allows pricing of POL products to remain at par across the country. A freight pool managed by OGRA is developed to keep the prices equalized countrywide.
- **Distribution Margin (OMCs):** Fixed commission per liter earned by the OMCs upon sales of HSD and MOGAS to industrial and retail clients. At present, it is fixed at PKR ~7.87/liter by OGRA, and has been revised to PKR ~8.48/liter under the latest ECC decision, with a further increase to approximately PKR ~9.09/liter planned. The margin increase will be implemented in two phases: an immediate uplift with the next price revision, and a second equivalent increase from June 1, 2026, contingent on digitalization of sales and stock networks and real-time connectivity with relevant government bodies.
- **Dealer's Commission:** Fixed commission per liter earned by the dealer or petrol pump owner. At present, it is PKR ~8.64/liter for MOGAS and HSD. Under the recent ECC decision the said commission is being raised to PKR ~9.31/liter, with a second similar increase to follow by June 1, 2026, subject to completion of required digitalization measures.

Refineries

Greenfield Refinery Policy

- There have been numerous developments towards the “New Refinery Policy”, aimed at resolving the prevailing shortcomings in refining capabilities (cracking and coking) of market players.
- As per the latest development, the Government is more inclined toward incentivizing greenfield refineries rather than existing refineries.
- Following are the salient features of the Greenfield Policy -
 - Duty protection for refineries with production capacity exceeding ~300,000 bpd in the form of ~7.5% import duty on MS and HSD of all grades for ~25 years from commissioning. For refineries with production capacity of less than ~300,000 bpd, a ~7.5% import duty for ~10 years from commissioning.
 - New refineries get broad exemptions: no customs duties, levies, surcharges, withholding taxes, GST or other ad-valorem taxes on import of refinery equipment or materials needed for setup, without any precondition of certification by the engineering board.
 - New projects may be declared under a “Special Economic Zone” or as a “Qualified Investment” under relevant foreign-investment law — thereby qualifying for further applicable incentives under those regimes.
 - Only “deep-conversion” oil-refinery projects qualify — basic/simple “hydro skimming” or low-conversion refineries are not for the incentives; a new refinery project must achieve “financial close” within 5 years of the policy’s notification.

Refineries

Brownfield Refinery Policy

- Brownfield Policy has been formulated to provide incentives and tariff protection to the existing refineries to upgrade their plants to produce increased quantity of cleaner fuels (Euro V Fuels- Motor Spirit and Diesel) and reduce the production of less environmentally-friendly fuels such as Furnace Oil (FO). The policy was initially issued in Aug'23 and was further amended in Feb'24.
- The maximum time stipulated for the upgradation of plants from hydro-skimming into deep conversion is 6 years, after which, the refineries will not be allowed to produce products not meeting Euro-V specifications. The Policy also aims to achieve energy security and reduce dependence on imports of refined products. Following are the salient features of the upcoming refinery policy –
 - For an existing refinery to be eligible for the fiscal incentives provided in the Brownfield Policy, it shall have to execute a legally binding Upgrade Agreement with OGRA within 2 months after the notification of this Policy (i.e., August 11, 2023). There will be a minimum customs duty of 10% on Motor Gasoline and High-Speed Diesel imported for a period of 7 years from the date of notification of this Policy. Any customs duty above ~10% will be reimbursed to the refineries through IFEM (Inland Freight Equalization Margin). OGRA will monitor the progress of the upgrade Projects . Failure to meet the timelines committed in the Upgrade Agreement will result in a default notice by OGRA to the respective refinery.
 - The respective refinery and OGRA will open a joint Escrow Account (special reserve account) within 2 months after the notification of this policy in the National Bank of Pakistan. The refineries will transfer any incremental revenue (net of taxes) based on the revised tariff structure to the special reserve account. Additionally, refineries will submit a bank guarantee of PKR~1bln to OGRA.
 - The Escrow Account can only be used for the capital expenditure required on the upgradation of the plant (and no other purpose) and as follows:
 - i. To buy used Plant & Machinery, allowed withdrawal of up to ~24.5% of the total upgradation cost.
 - ii. To buy new Plant & Machinery, allowed withdrawal of up to ~27.5% of the total upgradation cost.

Refineries

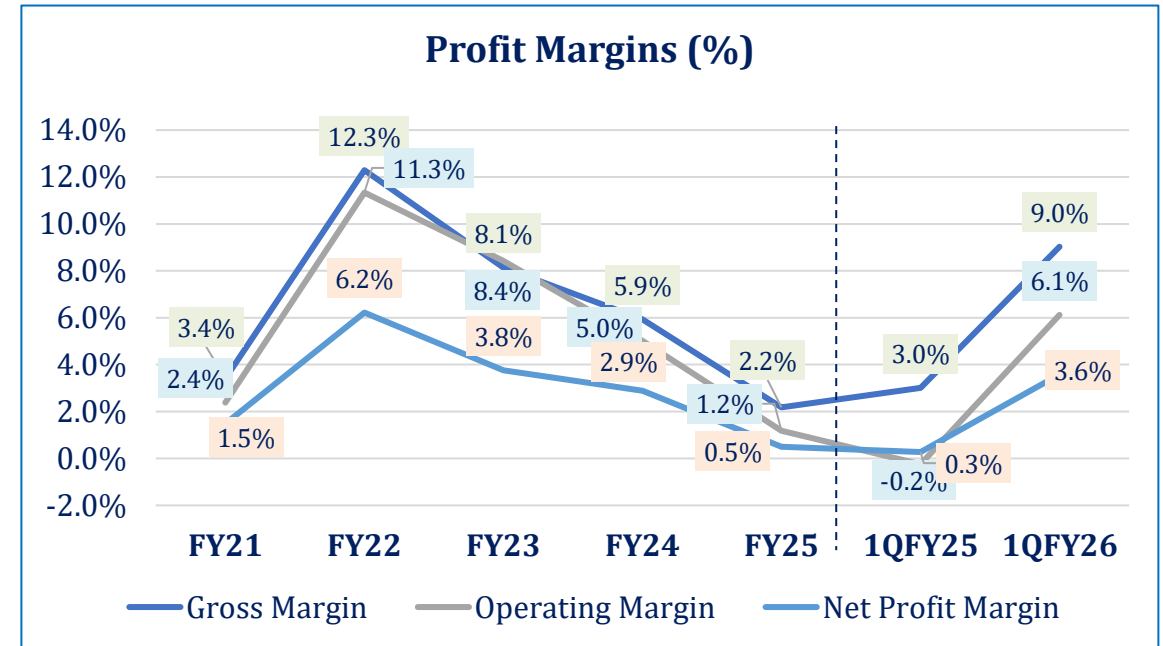
Refinery Policy Current Status

- During CY23, the Government of Pakistan introduced a new oil refining policy under the brownfield refinery policy to boost the production of Euro-V grade fuels.
- The policy states that refineries will aim to increase Euro-V grade petrol production by approximately ~99% and Euro-V grade HSD by approximately 47%, while simultaneously reducing the production of fuel oil by around 78%.
- Moreover, refineries will now be allowed to retain some of the duties instead of passing them on to the government. These withheld duties will enable refineries to upgrade themselves.
- The duty relaxations include an additional ~2.5% relief on HSD (in addition to the current ~7.5%) and 10% on petrol in the form of a deemed duty for six years. This duty must be submitted to an escrow account maintained by OGRA until the refinery collects ~25% of its upgrade costs.
- The government has been urging local refineries to upgrade their plants to minimize the production of furnace oil. However, this will require a capital investment of around USD~6bln.
- Only Pakistan Refinery Limited and National Refinery Limited registered under the policy and signed the upgrade agreement with OGRA. However, change in fiscal policy environment under the Finance Act 2024, which exempted POL products from sales tax, has imposed financial strain on the refining sector. This has jeopardized the capital- intensive upgrading projects planned under the Brownfield policy.
- As of December 2025, the Brownfield Refinery Policy remains effectively on hold. Only Pakistan Refinery Limited has signed up, while other refineries have delayed investments due to tax-policy uncertainty and IMF objections on sales-tax exemptions. The government is drafting a revised policy to revive the \$6 billion upgrade program, but no breakthrough has been achieved yet.

Refineries

Business Risk | Margins

- The Sector's sales revenue declined by ~8.4% YoY from PKR~2,381.3bln in FY24 to PKR~2,182.2bln in FY25. Declining global oil prices lowered revenue and smuggling of petroleum products from Iran led to a reduction in the sales volume. Low international prices led to narrowing refining spreads in FY25. The Sector's margins peaked in FY22 and followed a downward trajectory thereafter, reducing to five years low of ~2.2% in FY25. Gross profit during the same declined by ~66.3% YoY to PKR~47.6bln (FY24: PKR~141.2bln) The margins improved in 1QFY26 with gross profit rebounding to PKR~47.5bln (SPLY: PKR~16.2bln), as refining spreads began to widen.
- Moreover, PARCO underwent a nearly 40-day shutdown in FY25 to carry out essential maintenance. This interruption significantly impacted the Sector's profit margins, as PARCO accounts for the ~44.2% of Pakistan's POL product supply.
- Operating profit margins reduced from ~5.0% in FY24 to ~1.2% in FY25 and net profit margins reduced from ~2.9% in FY24 to ~0.5% in FY25. While operating expenses increased by ~7.3% YoY in FY25, mainly lower gross profit margins translated into lower operating profit margins. The operating profit reduced by ~78.3% YoY to PKR~25.9bln in FY25 from PKR~119.4bln in FY24. Net profitability of the Sector also declined substantially by ~84.2% YoY to PKR~10.8bln in FY25 from PKR~68.7bln in FY24 despite lower taxation. This overall decline in profitability is attributed primarily to the ripple down effect of lower gross margins.
- Gross refining margin (GRM) is an important indicator of the operational efficiency of a refinery. It is the difference between the total revenue generated from the sale of refined products and the cost of crude incurred. A higher GRM reflects that a refinery can add more value from each barrel of crude oil processed. Local gross refining margins (GRMs) in FY25 fell to USD~5.78/barrel from USD~8.27/barrel in FY24, amid volatile crude oil market, geopolitical tensions, and shifting supply-demand dynamics.



Refineries

Business Risk | Petroleum Storage

- In FY24, the gross national petroleum storage capacity declined by ~3.5% YoY to ~3.9mln MT from ~4.03mln MT in FY23. The decrease in storage capacity was due to the reduction in storage capacity of OMCs at ports to ~1,1mln MT in FY24 (FY23: ~1.2mlnMT)

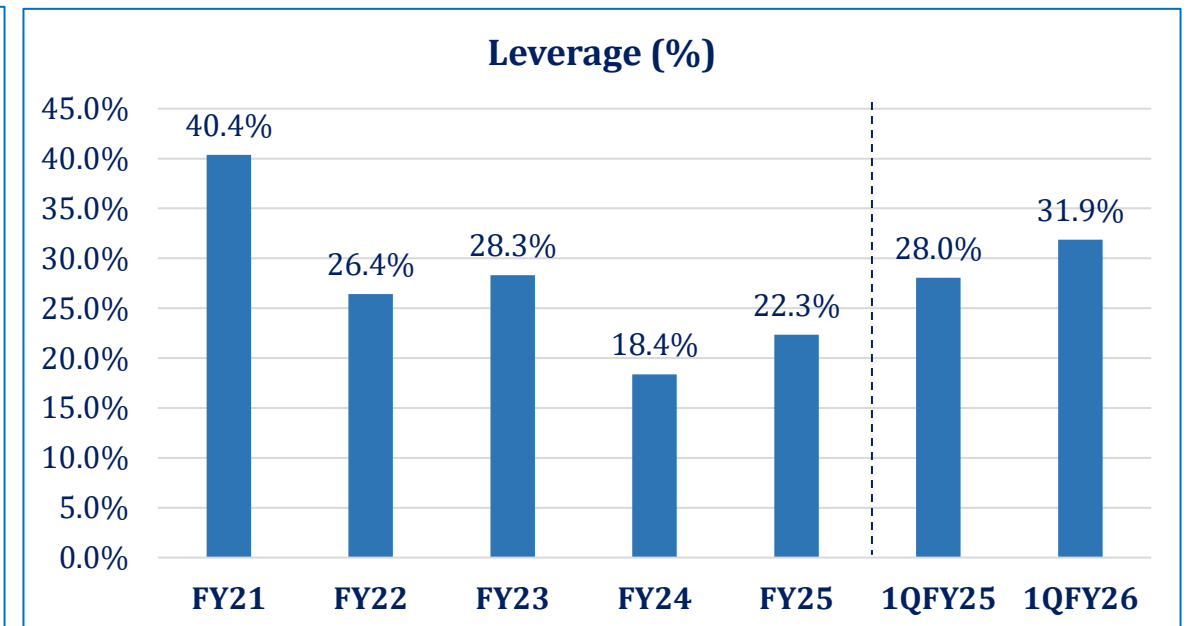
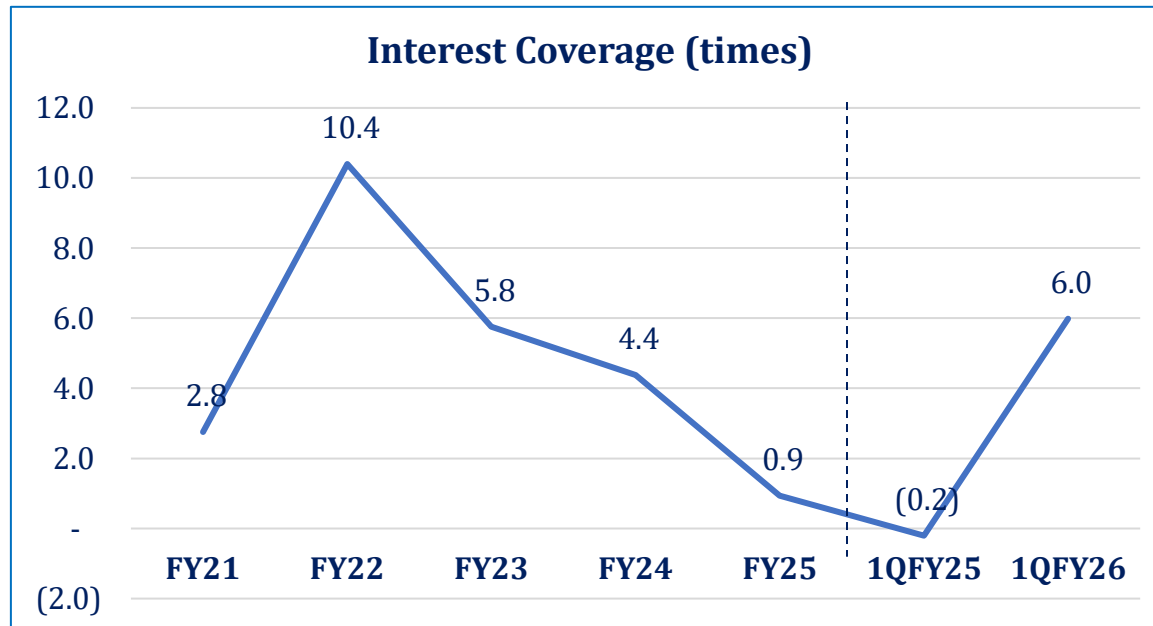
Gross National Petroleum Storage Capacity (000 MT) – FY24*

	OMCs Port Installations	OMCs Up Country	ATRL	Cnergyico	NRL	PRL	PARCO	Total OMCs	Total Refineries	Total Country
Crude	0	0	93	128	155	137	213	0	726	726
HSD	335	723	20	62	51	18	55	1,058	206	1,264
MS	428	534	28	33	14	15	25	962	115	1,077
FO	306	88	49	36	51	37	56	394	229	623
Jet Fuel	15	8	14	1	7	4	19	23	44	67
Kerosene	2	10	6	1	4	3	6	12	21	33
Naphtha	0	0	12	0	25	15	0	0	52	52
Others	29	9	0	0	0	0	10	38	12	50
Total	1,115	1,372	222	262	309	228	384	2,487	1,405	3,892

Refineries

Financial Risk | Coverage & Leverage

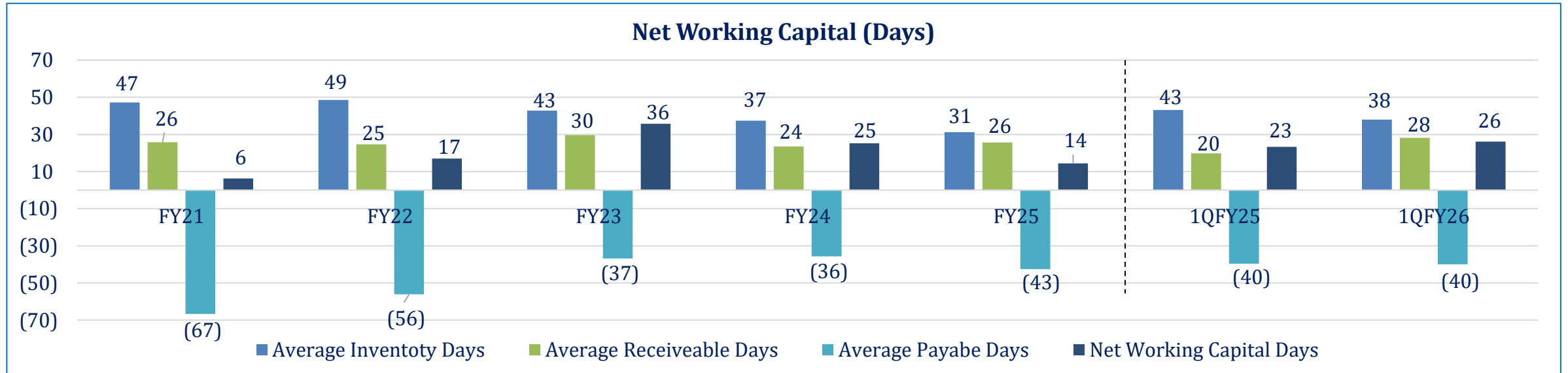
- Interest coverage declined to ~1x in FY25 from ~4.5x in FY24. While finance costs were broadly stable, rising by only ~0.9% YoY, cash-flow generation weakened as lower gross margins translated into reduced operating profitability. The pressure on operational cash inflows limited the Sector's ability to comfortably service interest obligations.
- The Sector is moderately leveraged and funded through a mix of internal resources and external borrowings. The Sector's borrowings comprise a higher proportion of short-term borrowings compared to long-term borrowings. In FY25, both short-term and long-term borrowings of the Sector increased by ~31.2% YoY and ~116.8% YoY, respectively. Meanwhile, the equity base reduced by ~1.5% YoY to PKR~530bln (FY24: PKR~539bln). The leverage of the Sector remains moderate and increased to ~22.3% in FY25 from ~18.4% in FY24. Over 1QFY26, the leverage increased to ~31.9% YoY (SPLY: ~28.0% YoY) as both short-term and long-term borrowings increased by ~14.9% and ~31.6% YoY respectively.



Refineries

Financial Risk | Working Capital

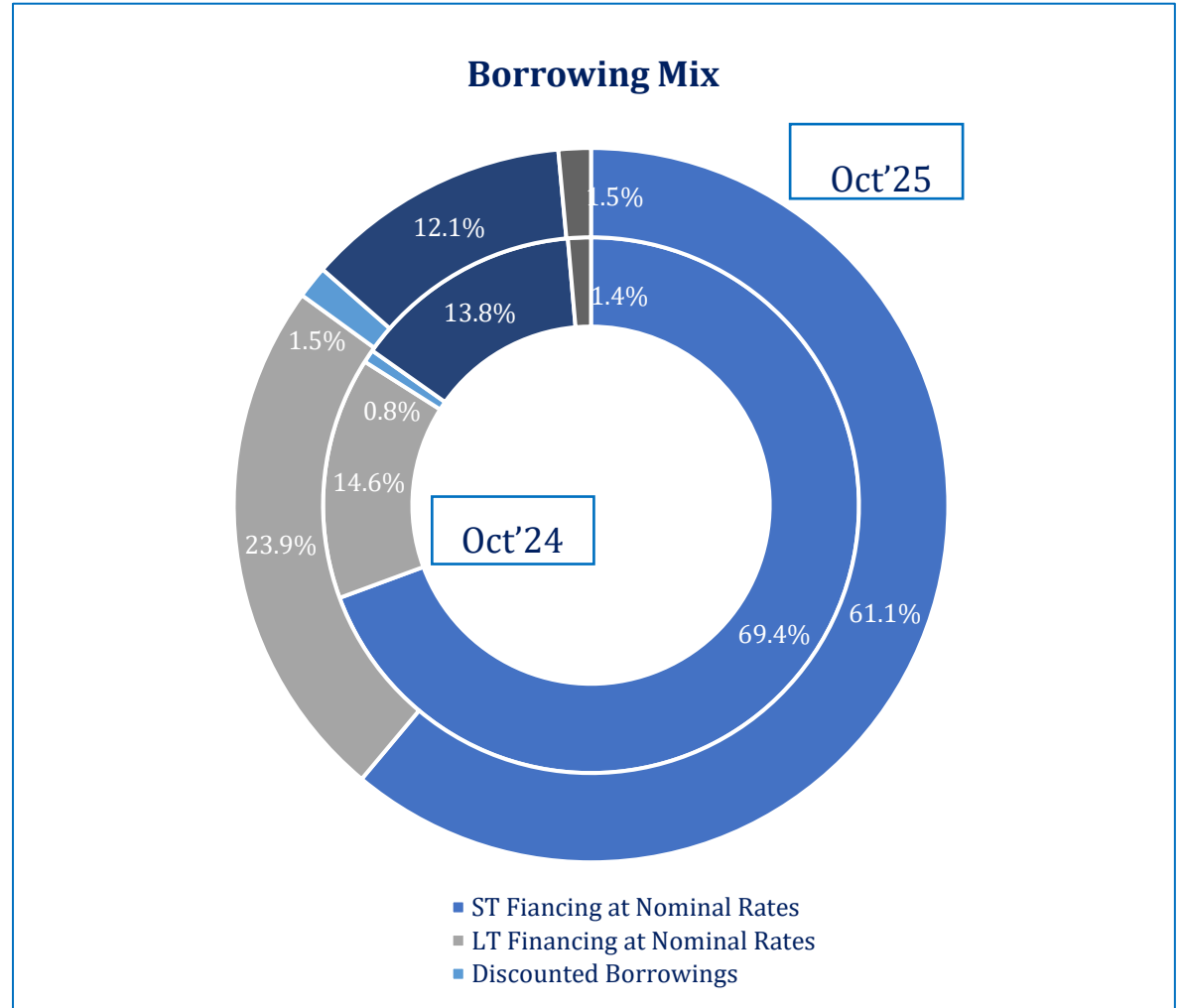
- The working capital cycle is important as the Sector predominantly relies on internal cash flows to fund both the acquisition of crude oil inventory and outstanding payables. Overall, the sector maintained a stable and healthy working capital position in FY25 ensuring smooth day-to-day operations.
- In FY25, the Sector's net working capital days reduced to ~14 days from ~25 days in FY24. Average Inventory days reduced marginally to ~31 days and average receivable days remained almost unchanged at ~26 days. Average payable days, however, increased by ~19.4% YoY to ~43 days (FY24: ~36 days).
- A similar trend was seen during 1QFY26, wherein the net working capital days of the Sector remained stable at ~26 days (SPLY: ~23 days). Average payable days remained unchanged at ~40 day, meanwhile average receivable days increased to ~28 days and average inventory days decreased by ~5 days to ~38 days.



Refineries

Financial Risk | Borrowing Mix

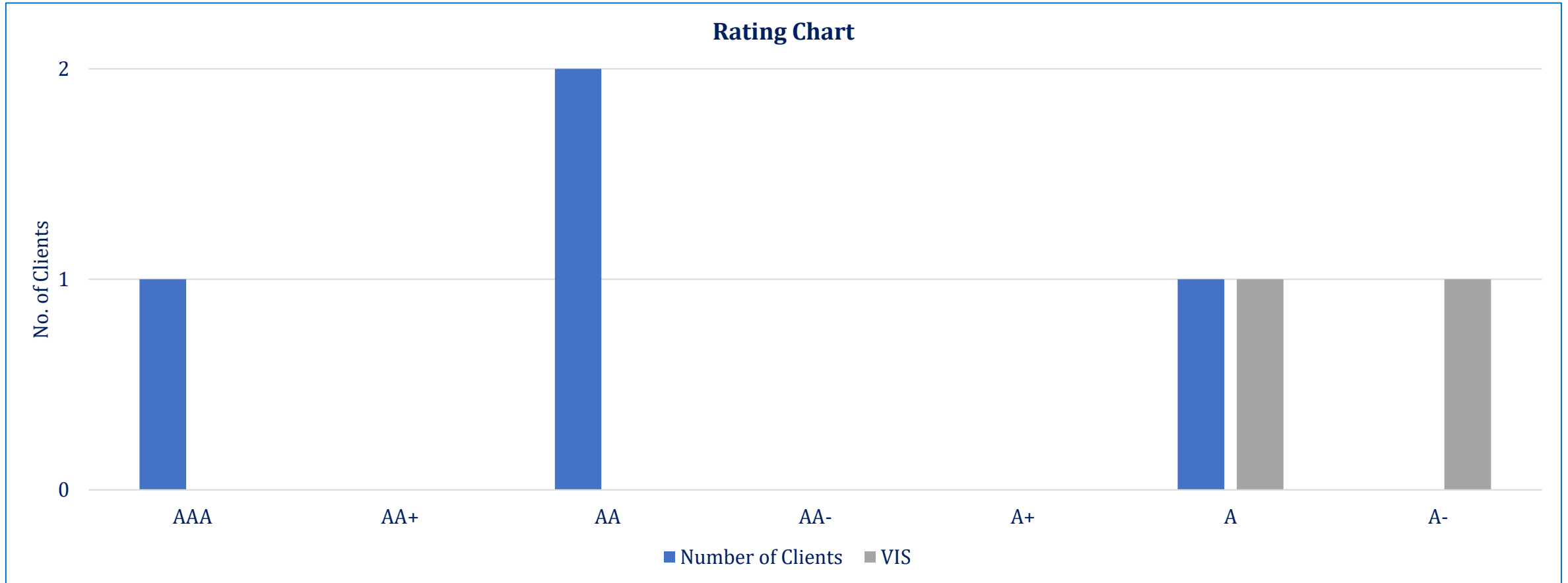
- As per SBP's data, the Sector's borrowings increased to PKR~170.8bln in Oct'25 (Oct'24: PKR~156.8bln), up ~8.9% YoY.
- Total short-term borrowings used for financing working capital made up ~61.1% (Oct'24: ~69.4%) of the total borrowings as at Oct'25 amounting to PKR~104.3bln, while the remaining ~38.9% (Oct'24: ~30.6%) accounted for the long-term borrowings, discounted finance, and import finance.
- In Oct'25, import finance reduced to PKR~20.1bln (Oct'24: PKR~21.2bln) whereas long term financing increased to PKR~40.8bln (Oct'24: PKR~22.9bln).



Refineries

Rating Curve

- PACRA rates ~4 players in the Sector, all listed on PSX, with a rating bandwidth from A to AAA.



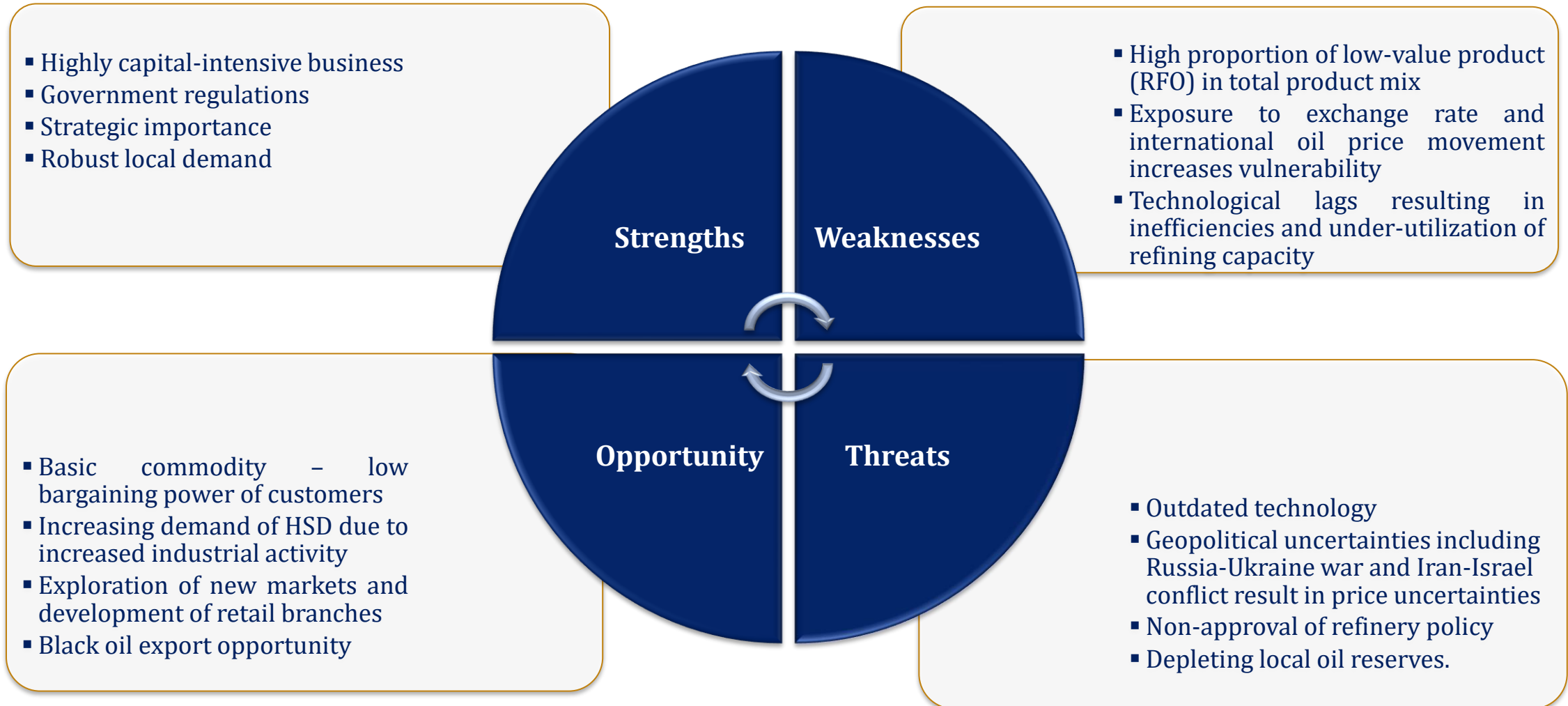
Refineries

Duty Structure

HS Code	Description	Custom Duty		Additional Custom Duty		Regulatory Duty		Total	
		FY25	FY26	FY25	FY26	FY25	FY26	FY25	FY26
2710.1210	Motor Spirit (MOGAS)	0%	0%	2%	0%	10%	10%	12%	10%
2710.1931	High Speed Diesel (HSD)	11%	10%	2%	0%	0%	0%	13%	10%
2710.1921	Light Diesel Oil (LDO)	3%	0%	2%	0%	0%	0%	5%	0%
2710.1941	Furnace Oil (FO)	11%	5%	2%	2%	0%	0%	13%	7%

Refineries

SWOT



Refineries

Outlook: Stable

- Pakistan's economy grew by ~2.7% in FY25 and is projected to post ~3.2% growth in FY26 (SBP forecast). This is expected to support a modest recovery in domestic POL demand and underpin operating throughput for local refineries.
- During FY25 the total consumption of POL products stood at ~18.1mln MT (FY24: ~16.8mln MT). Power sector consumption of POL products declined sharply by ~76% in FY25 YoY, falling from ~0.6mln MT in FY24 to ~0.15mln MT, reflecting a shift in the generation mix toward hydropower, nuclear energy, coal, and imported LNG, thereby reducing reliance on FO. The agriculture sector also saw a moderation in consumption, declining from ~14.5mln MT to ~13.1mln MT (~9.6% YoY), driven by improved mechanization efficiencies and slightly weaker seasonal demand.
- The country's transport segment continued to represent a substantial share in POL product consumption. Standalone consumption reached ~14.5mln MT (FY24: ~13.3mln MT), reflecting a ~9.0% YoY increase. This is on the back of strong automotive sales in CY25, underscoring the potential for elevated consumption in the segment and supporting increased demand and throughput opportunities for refineries.
- A key change in the FY25 Finance Bill was the removal of GST on major petroleum products. While aimed at providing consumer relief, this also eliminated input tax adjustment for refineries, creating financial strain across the Sector.
- The Sector's FO throughput remained broadly stable in FY25 at ~2.46mln MT (FY23: ~2.47mln MT). HOBC throughput recorded the largest increase, rising ~84.2% YoY to ~0.14mln MT in FY25 from ~0.08mln MT in FY24. HSD production dominated and grew 10.9% YoY to ~4.96mln MT from ~4.47mln MT. In contrast, MOGAS (excluding HOBC) throughput was marginally lower, declining to ~2.33mln MT in FY25 from ~2.35mln MT in FY24. Collectively, HSD and MOGAS accounted for ~93.7% of total Sector production in FY25 (FY24: ~92.9%).
- FO, however, continues to drag Sector performance, as structural declines in domestic FO demand have led to persistent inventory build-ups and periodic production slowdowns across refineries. Consequently, FO remains a major bottleneck for the Sector, contributing to margin compression and suboptimal capacity utilization.
- Refinery capacity utilization trends in FY25 were mixed compared to FY24. While aggregate utilization improved to ~63% in FY25 from ~60% in FY24, certain refineries experienced lower utilization levels. In particular, PARCO's utilization moderated to ~86% from ~88%, while ATRL recorded a more pronounced decline to ~69% from ~76%. These declines were offset by improved utilization at Cnergyico, NRL, and PRL, resulting in a net improvement at the Sector level despite continued underutilization at select facilities.
- Although local POL product production in FY25 increased by ~4.6% YoY, revenue per MT of refined products decreased by ~12.4% YoY. This divergence highlights growing margin pressures for the Sector amid changing domestic demand dynamics due to advent of EV in the market. Going forward, the Sector's performance will hinge on the timely implementation of policy reforms, particularly those aimed at supporting upgrade initiatives and stabilizing refinery economics. A sustained recovery in product spreads and improved utilization rates will be critical for strengthening the Sector's earnings trajectory.

Refineries

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- State Bank of Pakistan (SBP)
- Pakistan Stock Exchange (PSX)
- Oil Companies Advisory Council
- Oil & Gas Regulatory Authority
- World Bank
- IMF
- BP STATS
- JP Morgan
- EIA
- IEA
- S&P Global
- OPEC
- Financial Statements
- PACRA Database

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