SECTOR STUDY . JULY 2024

Together. Creating Value.

Distribution | Gas

Research Team

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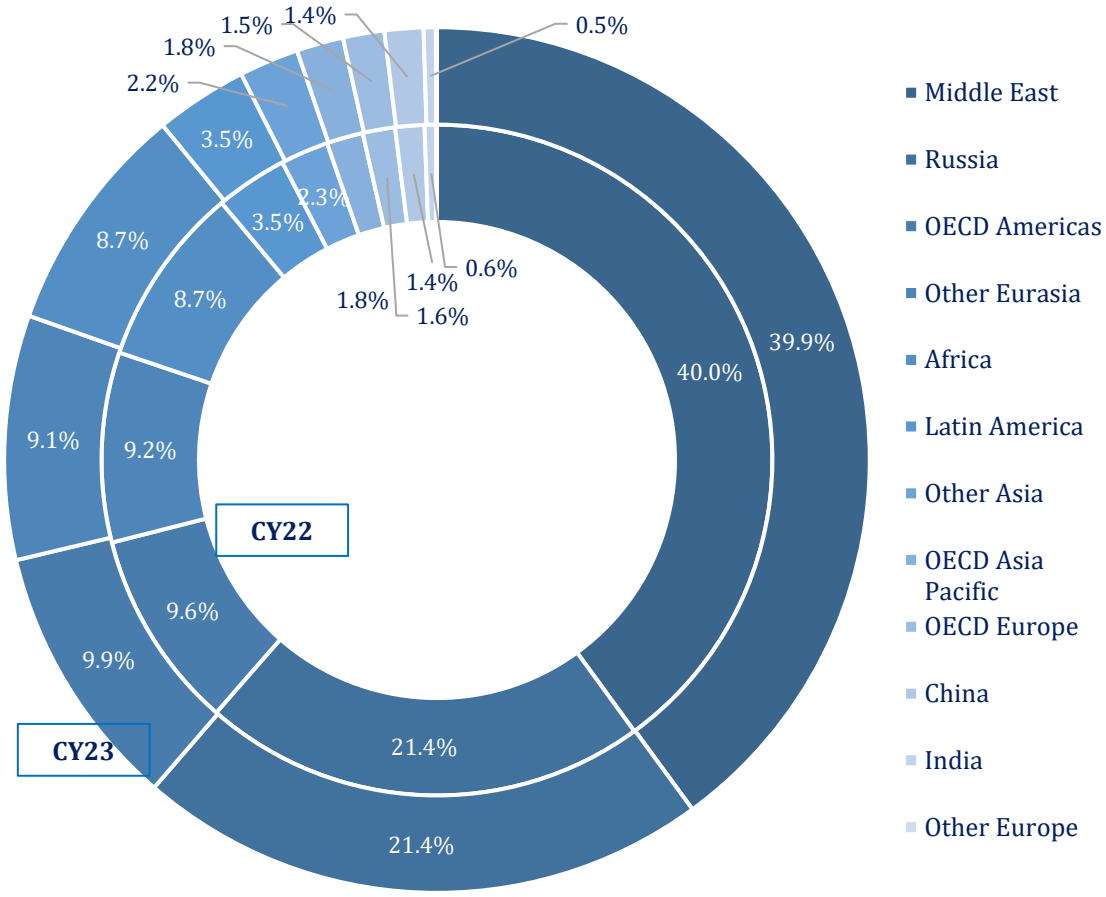
Global | Natural Gas Reserves

- Proven reserves are estimates of the volume of oil and natural gas which geographical and engineering data demonstrate to be economically viable to be extracted from known reservoirs under existing operating and economic conditions.
- On a global level, total proven natural gas reserves amounted to ~206,430bcm (CY22: ~205,900bcm), a YoY increase of ~0.3%.
- The Middle East (including Iran, Qatar and Saudi Arabia among others) made up for the largest share of natural gas reserves (~39.9%), with levels recording at ~82,460bcm in CY23.
- Meanwhile, Russia accounted for ~21.4% of the total natural gas reserves, with ~44,150bcm reserves recorded as of CY23.
- Africa, China and India accounted for ~8.7%, ~1.4% and ~0.5% of the global natural gas reserves, with ~17,890bcm, ~2,990bcm, and ~940bcm reserves, respectively, as of CY23.

For the purpose of ease, this sector study has been divided into three broad segments; LNG, LPG and Terminal Handling (particularly for Pakistan).

Global | Proven Natural Gas Reserves (%)



Note: *bcm stands for billion cubic meters.*

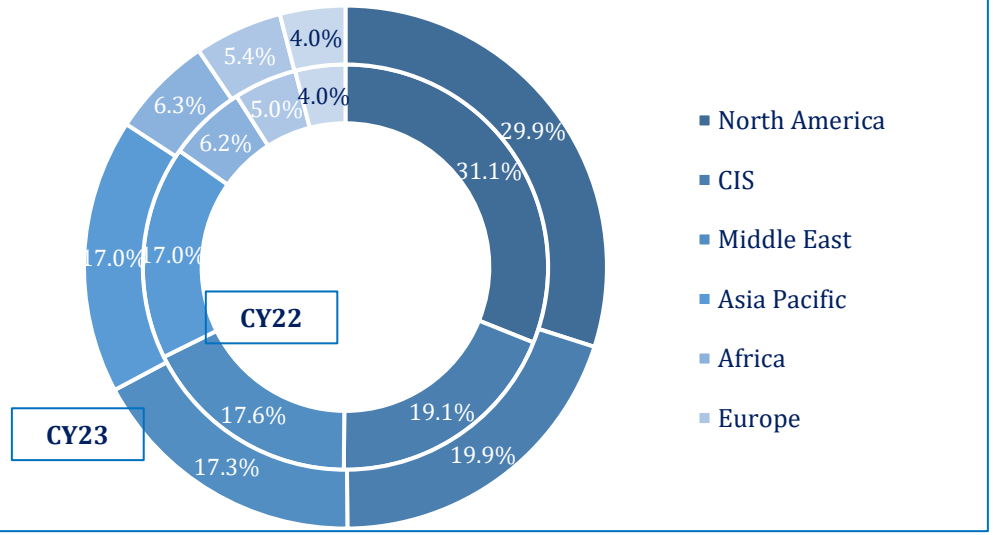
Source: OECD

Distribution | Gas

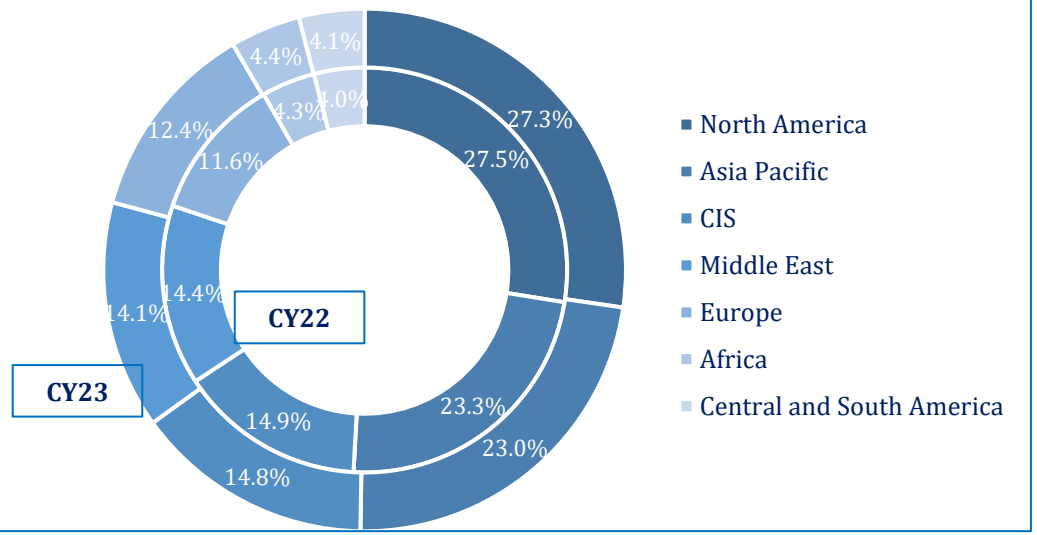
Global | Production & Consumption

- Global gas production registered an increase of ~0.3% YoY in CY23 (SPLY: ~0.1%), recording at ~4,059bcm. Russia's gas production declined by ~7.2% YoY, mainly a consequence of political decision to cut the pipeline supplies to the EU. Meanwhile, global gas demand was up ~0.04% YoY (SPLY: ~0.4% YoY decline), recording at ~4,010bcm, despite ~6.9% YoY fall in demand in Europe. This was due to ~1.6% YoY higher consumption in Asia Pacific (China and India recorded growth in natural gas consumption of ~7.2% and ~7.5% YoY, respectively).
- India's ~7.5% YoY increase in natural gas consumption was driven by higher gas use in industry and stronger gas burn in the power sector amid the development of its national pipeline grid and city gas infrastructure. For China, city gas and power generation were the primary drivers of natural gas consumption growth, with the commercial sector, transportation and heating demand expected to significantly contribute to the demand for city-gas.
- During CY23, the USA alone accounted for ~25.5% of the global gas production and ~22.1% of the global gas consumption, while registering ~4.2% and ~0.8% YoY increase, respectively. The country's gas consumption is growing rapidly since power plants are now increasingly using natural gas as both a replacement for coal-fired power and a backup for new renewable capacity.

Global | Natural Gas Production (%)



Global | Natural Gas Consumption (%)

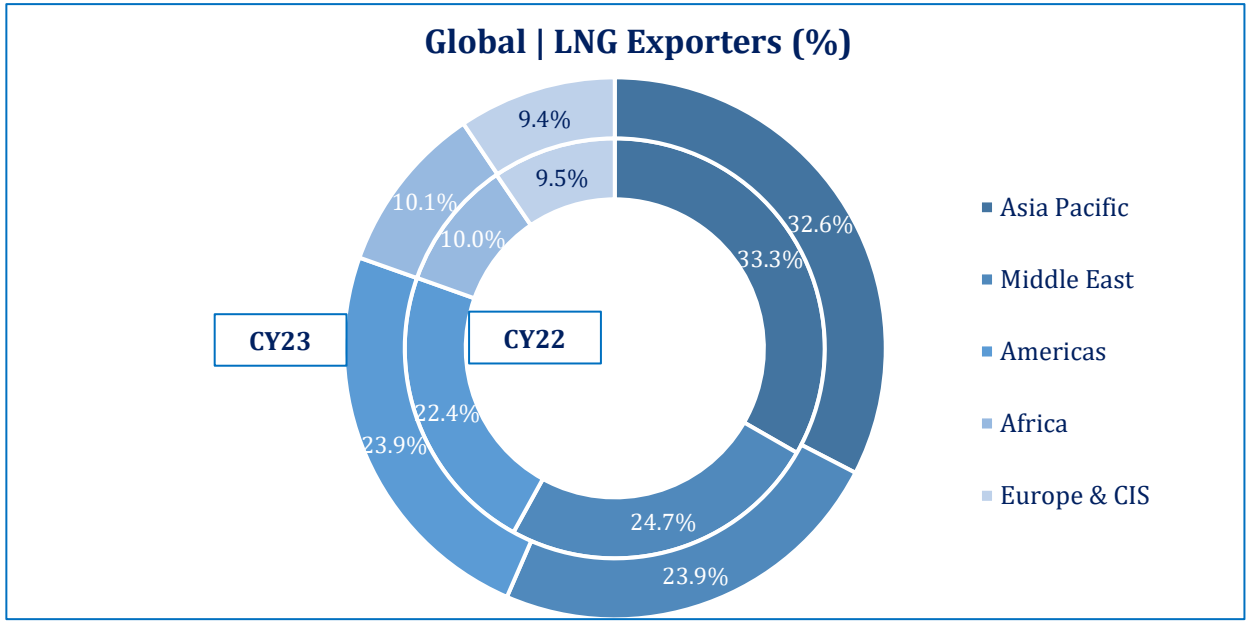


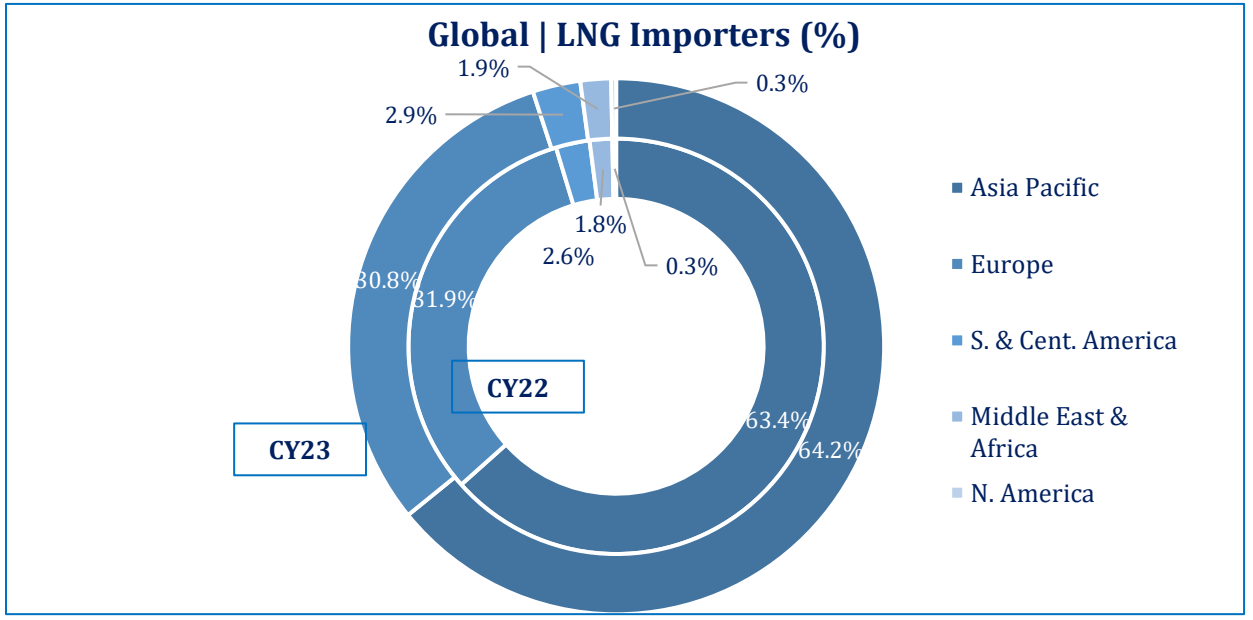
Source: BP

Distribution | Gas

Global | LNG Trade

- Over the period from CY13-CY23, the global LNG trade increased by ~5.3% YoY. During CY23, LNG exports stood at ~549.2bcm, up ~1.8% YoY. Asia Pacific remained the largest exporter of LNG with a share of ~32.6% during the year, followed by the Middle East and Americas with a share of ~23.9% each during the year (SPLY: ~24.7%, ~22.4%, respectively). Country-wise, however, the U.S. surpassed Qatar and Australia as the top exporting country, with LNG exports up ~9.5% YoY, recording at ~114.4bcm. Cumulatively, the U.S., Australia and Qatar made up ~60.1% of global LNG exports (SPLY: ~59.8%).
- Meanwhile, LNG imports stood at ~548.7bcm (CY22: ~539.3bcm), up by ~1.7% YoY. Asia Pacific is also the largest importer of LNG with a ~64.2% global share during CY23 (CY22: ~63.4%). LNG global demand increased mainly on account of China and India, which recorded ~12.4% and ~9.1% YoY increase in LNG imports, respectively. China overtook Japan to become the largest importer of LNG, forming ~17.9% of the total LNG imports (SPLY: ~16.1%), and recording ~12.4% YoY increase. Europe increased its imports from the U.S. by ~6.0% YoY whilst its LNG imports from the Russian Federation remained relatively stable at ~19.0bcm.



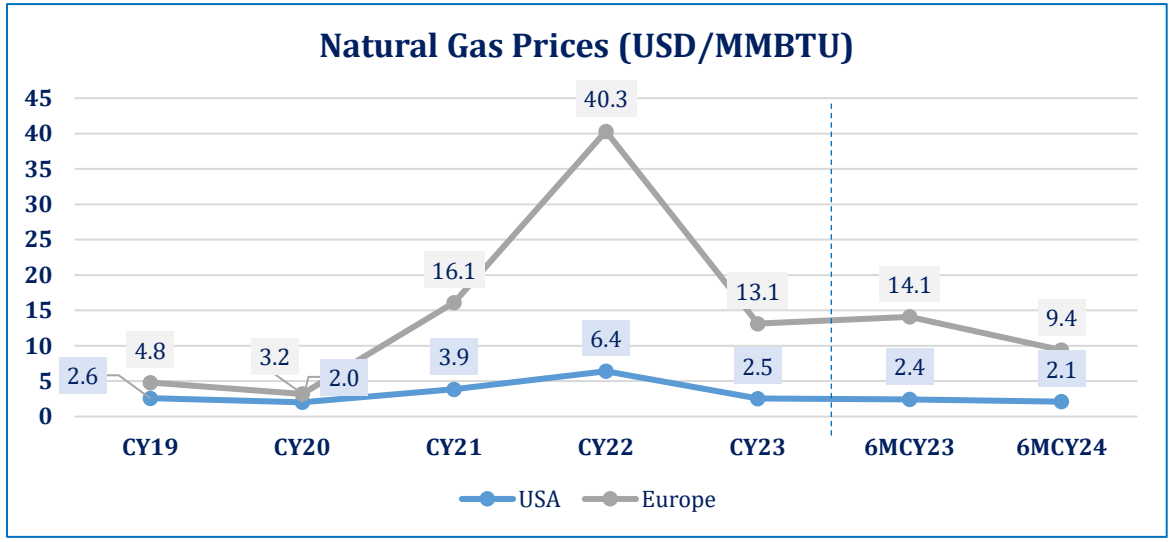


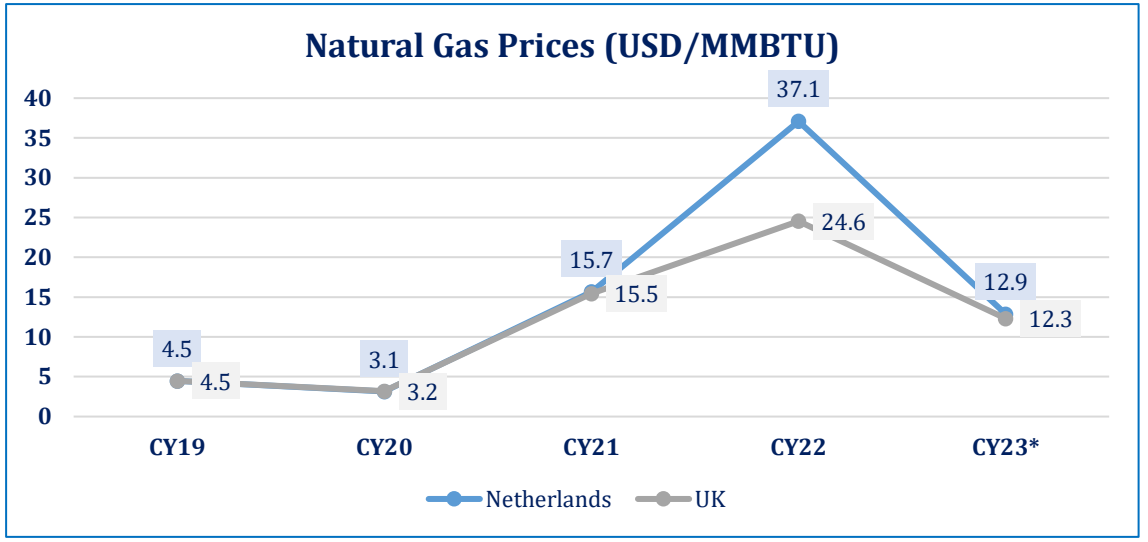
***Note**: Americas include: Canada, Mexico and USA.*

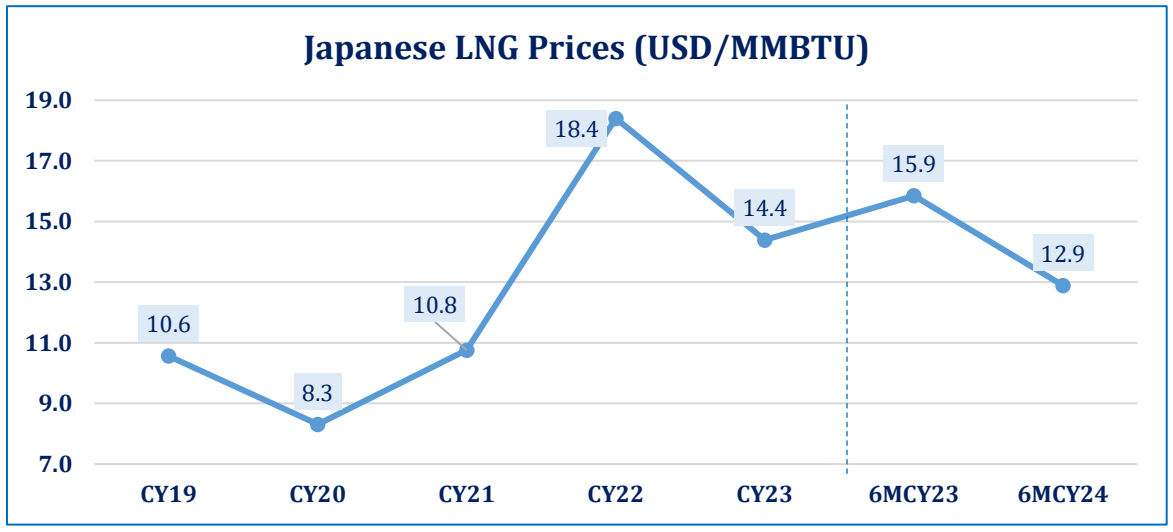
Source: BP

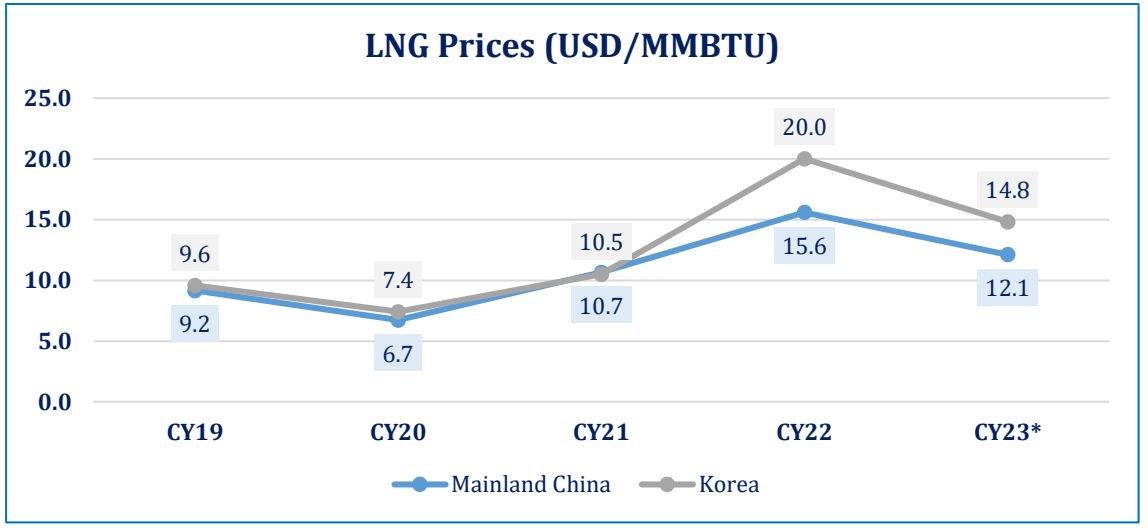
Distribution | Gas

Global | Prices









***Note**: Data is latest available.*

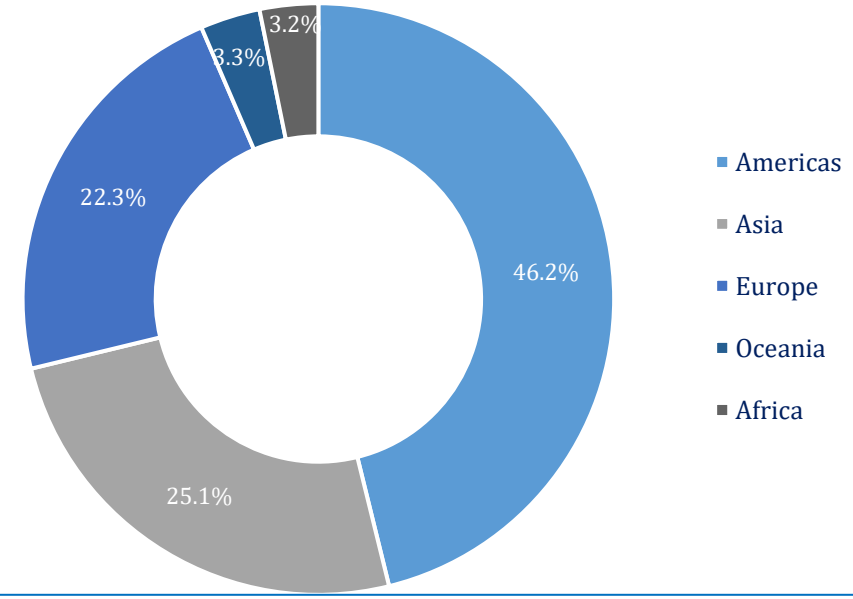
Source: BP, WB

Distribution | Gas

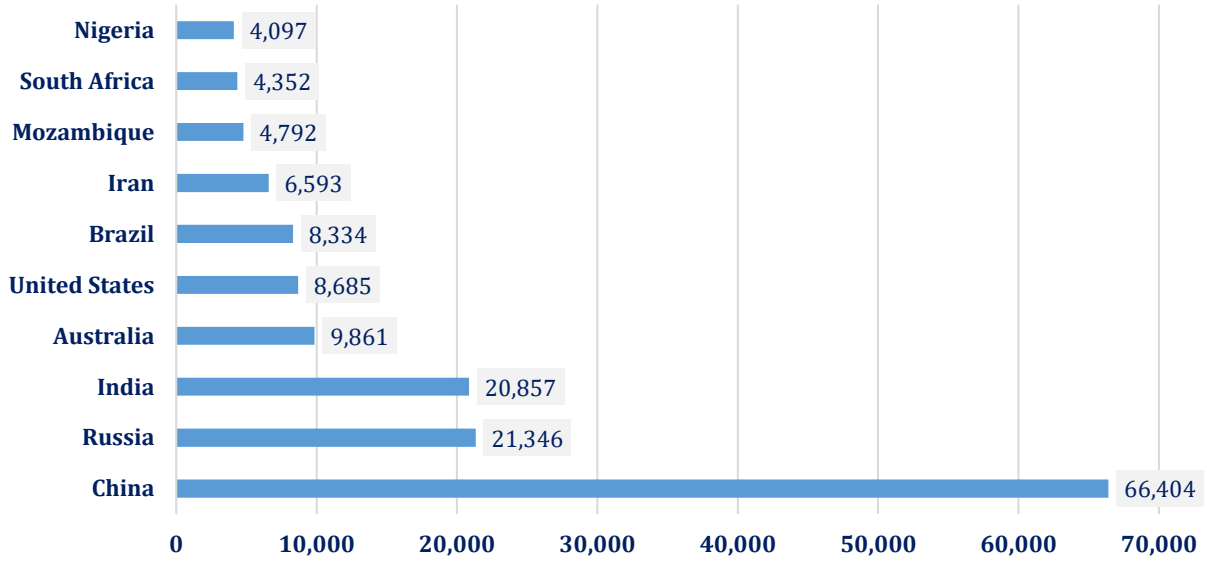
Global | Pipelines Network

- The total length of the operating global gas transmission pipeline network was recorded at ~1,000,294Km during CY23 with USA and Asia having the most extensive pipeline networks.
- Regionally, the Americas made up for the longest gas transmission pipeline network of ~461,688Km, followed by Asia (~250,659Km) and Europe (~223,190Km) during the year.
- Global In-Progress gas pipeline network (proposed and under construction) stood at ~228,700Km in CY23. Asia is the leader in pipeline construction with China and India being responsible for ~65.4% of the global gas pipeline construction. India being responsible for ~21.9% of the global gas pipeline construction during CY23. Pakistan's operating gas transmission pipeline network is ~13,989Km long while ~3,893Km of pipelines are in development as of CY23.

Global | Region-wise Gas Pipelines (Km) | CY23



In-Progress Gas Pipelines (Km) | Top 10 Countries (CY23)



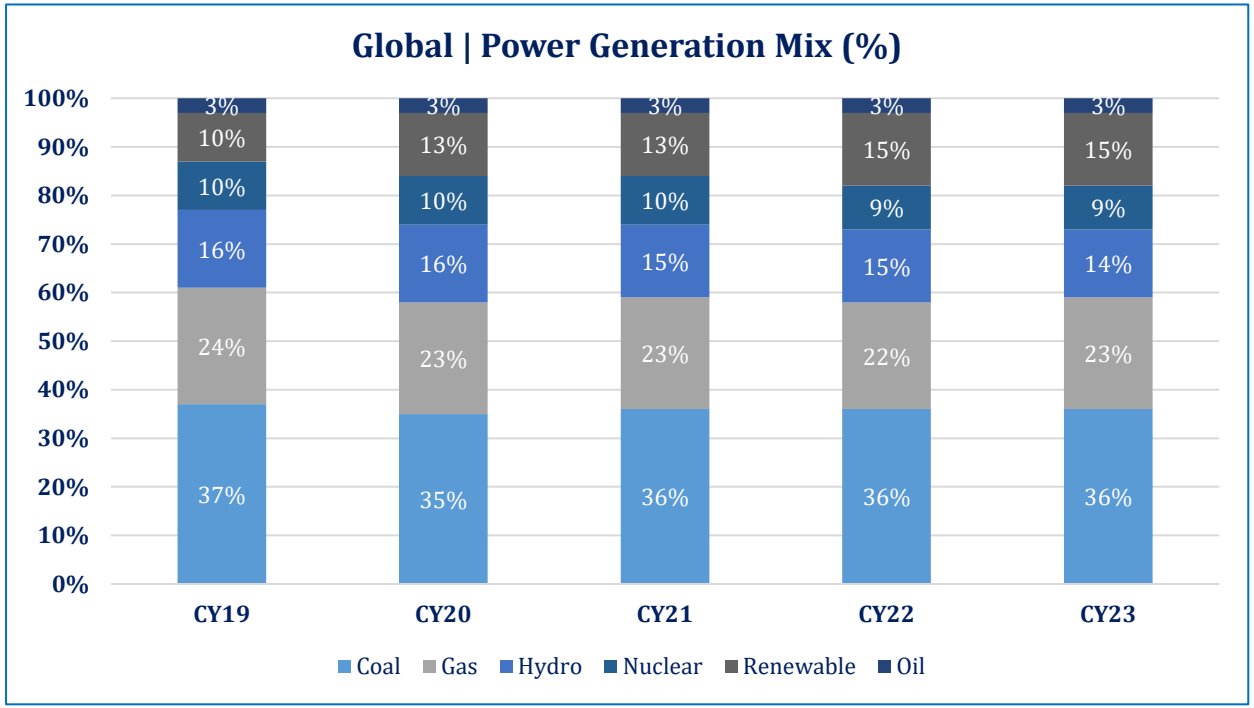
Note: *Americas include, Latin America & Caribbean, Northern America.*

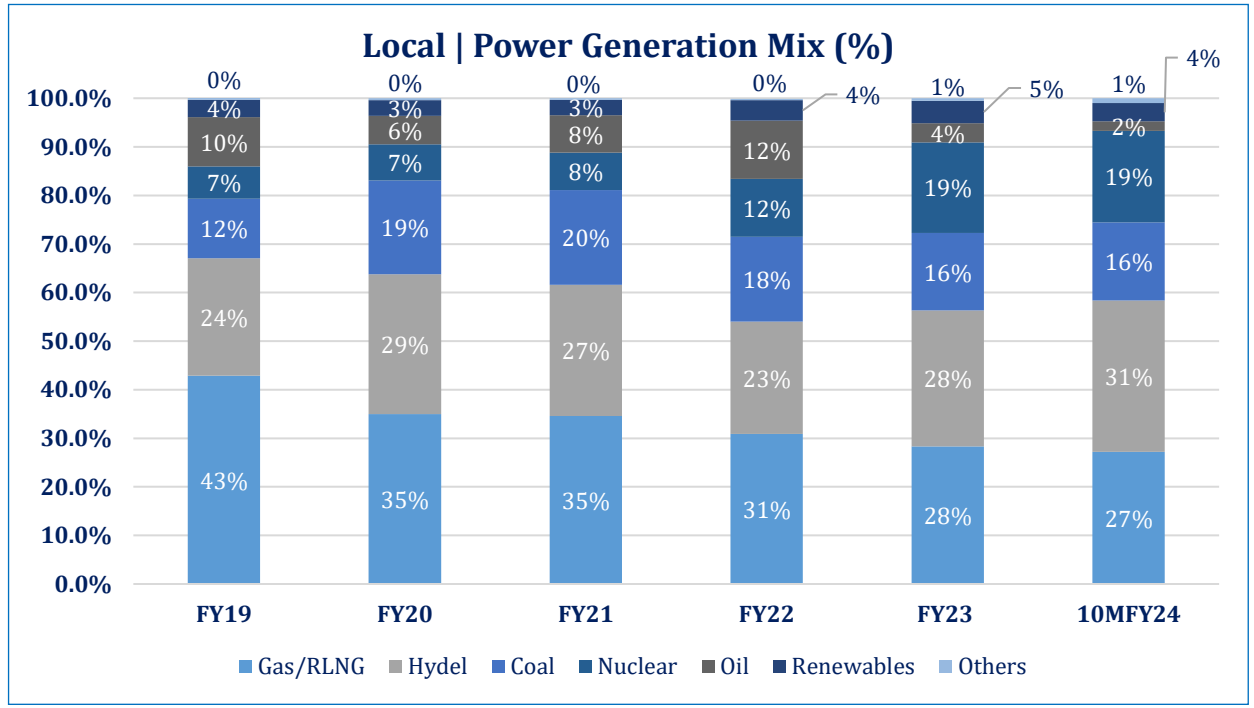
Source: GGIT

Distribution | Gas

Global | Power Generation Mix

- Globally, coal remained the leading source of power generation in CY23 with a share of ~36% followed by gas (~23%) and hydro (~16%). For Pakistan, the share of gas/RLNG as the primary source of power generation declined from ~42.9% in FY19 to ~28.3% during FY23, while recording further lower at ~27.2% during 10MFY24.
- The global power demand is projected to grow across all sectors and rapid growth is expected in the renewables over the next decades with solar and wind power projected to make up ~70.0% of the global installed capacity by CY50. During CY19-CY23, the share of renewables in global power generation increased from ~10.0% to ~15.0%.
- Additionally, Pakistan aims to cut its greenhouse gas emissions by ~50.0% by CY30, with the expansion of clean energy being essential to reaching this goal. To this end, the share of renewables in power generation has increased from ~3.6% to ~4.6% during FY19-23.



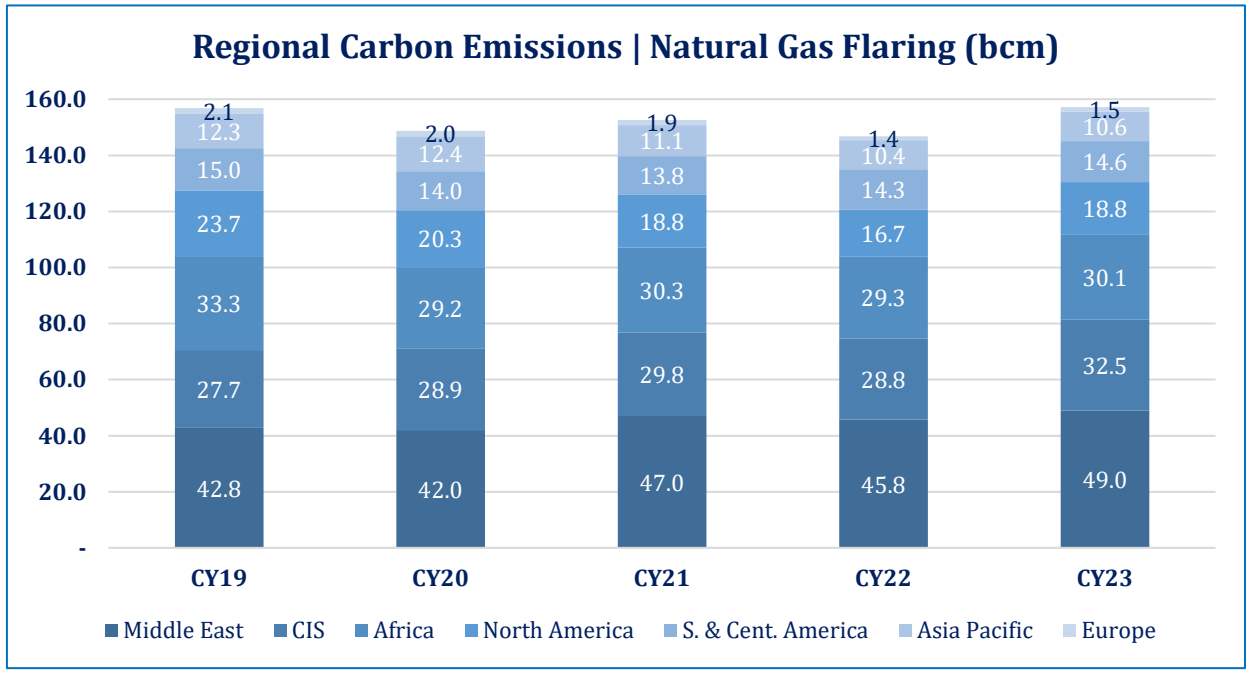


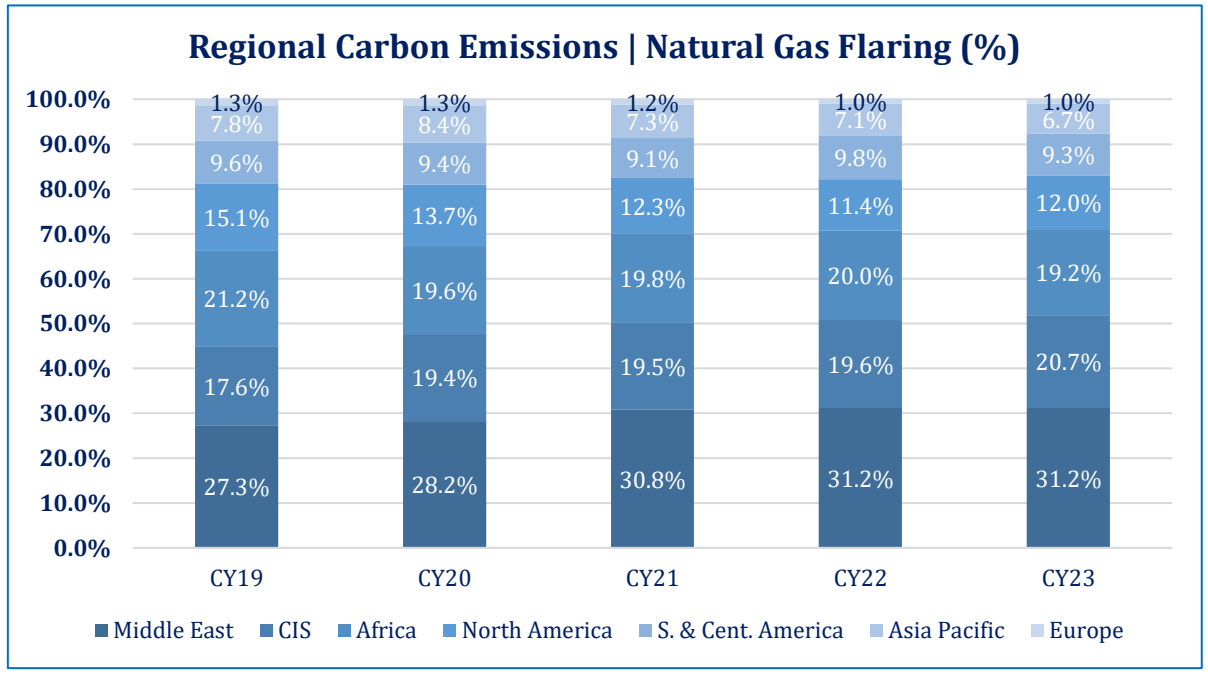
Source: BP, GECF, SBP

Distribution | Gas

Global | Carbon Emissions

- Gas flaring is the burning of the natural gas associated with oil extraction and results from a range of issues, including market and economic constraints and lack of appropriate regulation and political will. Flaring and venting are a waste of a valuable natural resource that should either be used for productive purposes, such as generating power, or conserved.
- Carbon emissions from natural gas flaring amounted to ~157.1bcm in CY23, up ~7.0% YoY (SPLY: ~146.8bcm), whilst also recording a 10-year CAGR (CY13-23) of ~0.6%. Region-wise, the Middle East remained the highest emitter of carbon dioxide emissions from natural gas flaring, with emissions amounting to ~49.0bcm during the year (~31.3% share in global emissions).
- On a country level, Russia remained the largest emitter of these emissions (~18.% of global emissions), followed by Iran (~13.6%) and Iraq (~10.1%) in CY23.





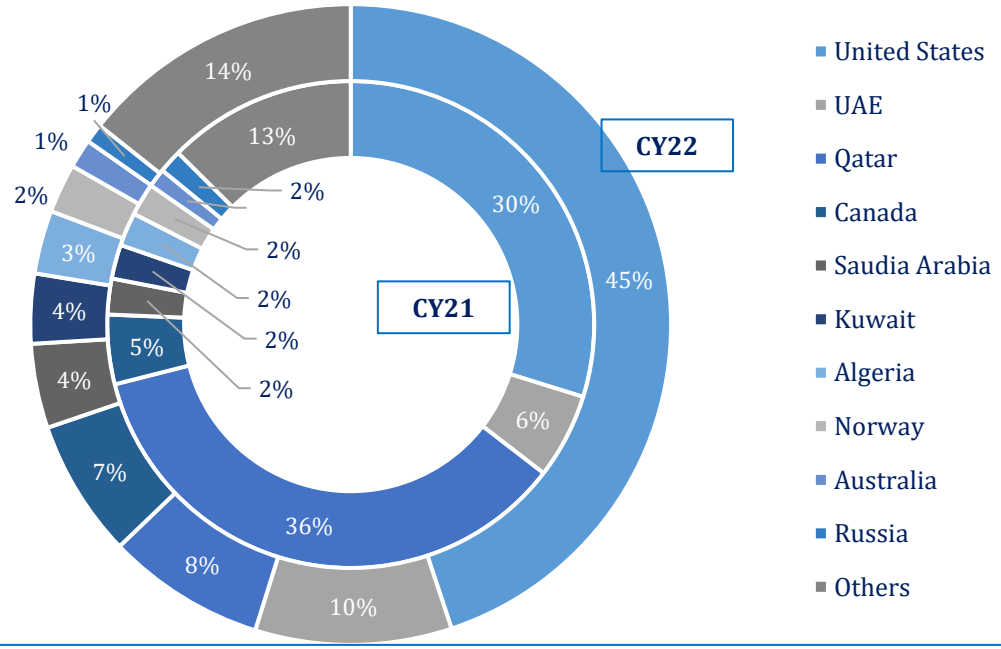
Source: WB, BP

Distribution | Gas

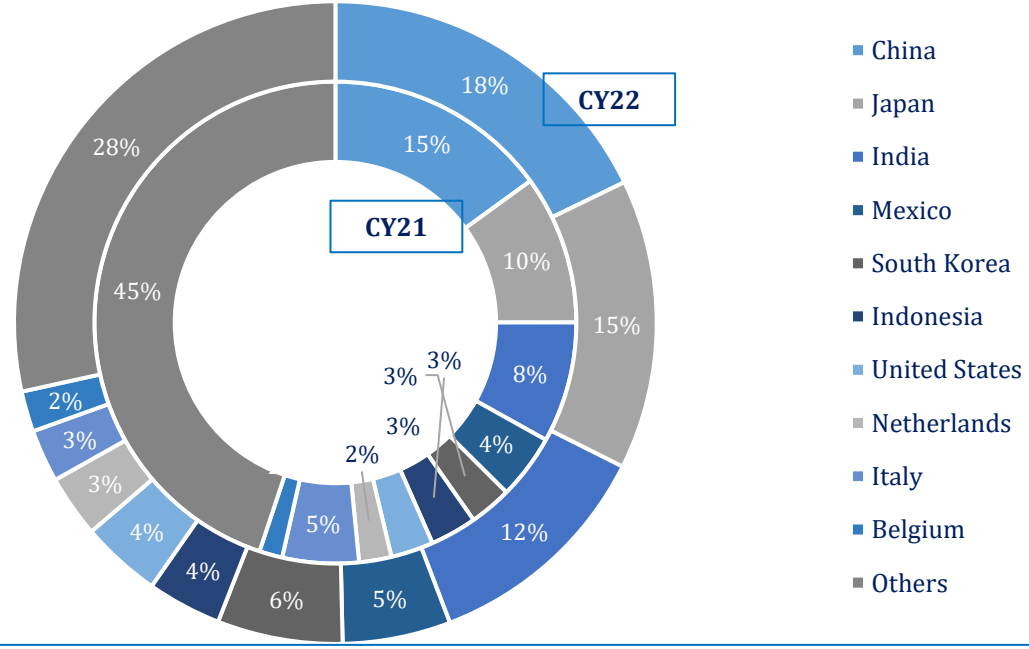
Global | LPG Trade

- During CY22, LPG global trade was recorded at USD~57.3bln (CY21: USD~69.7bln), a decline of ~17.7% YoY owing to geopolitical risks and a shift in weather patterns. In CY22, top five (05) exporters of LPG were the USA (USD~25.7bln), UAE (USD~5.7bln), Qatar (USD~4.6bln), Canada (USD~4.0bln), and Saudi Arabia (USD~2.4bln).
- Top importers of LPG during CY22 included China (USD~10.2bln), Japan (USD~8.3bln), India (USD~6.8bln), South Korea (USD~3.6bln), and Mexico (USD~3.1bln). Where top five exporters formed ~84.0% share in global LPG exports during CY23 (SPLY: ~90.0%), top five importing countries formed ~79.0% share in commodity's global imports (SPLY: ~83.0%).

Global | LPG Exporters (%)



Global | LPG Importers (%)



Note: *Data is latest available.*

Source: OEC

Distribution | Gas

Global | Outlook

- Natural gas prices in importing countries in Europe and Asia are likely to remain increasingly volatile and in relatively higher ranges over the next few years, as Europe's drive to reduce reliance on Russian imports keeps global gas markets tight during a relatively barren period for large new gas export projects.
- In CY23, on average, natural gas prices in Europe and Asia fell by ~30.0% from their record highs in CY22, averaging at USD~13.0/MMBTU, whereas, the US Henry Hub prices exhibited ~60.0% YoY decline to average USD~2.5/MMBTU across the year, back to their pre-COVID level.
- In the STEPS scenario, global natural gas demand is forecast to rise at an average rate of ~0.4% per year between CY21-CY30, well below the ~2.2% average rate of growth during CY10-CY21. Gas demand is expected to reach ~4,400bcm by CY30, maintaining the status quo by CY50. However, in the NZE scenario, by CY50, natural gas demand is forecast to fall further and faster, declining to ~3,300bcm by CY30 and ~1,200bcm by CY50. This is due to the growing policy support and incentives for clean energy and efficiency, resulting in lower natural gas' market share across sectors such as industry and power. In the USA, the Inflation Reduction Act (IRA) provides significant tax incentives and other forms of support to renewables, nuclear and biogases sources. In the European Union, the full implementation of Fit for 55 and additional ambitions in the RePowerEU communication implies ~20.0% lower gas demand by CY30.
- Meanwhile, affordability concerns in some parts of Asia, particularly Pakistan and Bangladesh, alongside maturing domestic production and persistent hurdles to building import infrastructure in Southeast Asia, are likely to dampen the momentum behind gas demand.
- Nonetheless, the total investment requirement in natural gas supply and transport for the remaining decade is forecast at USD~280bln per year, on average, in the STEPS scenarios, whereas, in the NZE scenario, USD~200bln is required to maintain output at existing levels.
- Moreover, there is a need to reduce the emissions intensity of gas supply by reducing flaring and methane leaks. More than ~260bcm of natural gas is wasted each year this way, therefore, with the right set of policies, ~200bcm of additional gas could be available in the global market. Accordingly, investment amounting to USD~100bln is required by CY30 to deploy all methane abatement measures in the oil and gas sector.

***Note**: The Stated Policies Scenario (**STEPS**) shows the trajectory implied by today's policy settings. The Net Zero Emissions by 2050 Scenario (**NZE**) maps out a way to achieve a 1.5 °C stabilization in the rise in global average temperatures*

Source: IEA, BP

Natural Gas

Distribution | Gas

Local | Snapshot

- Natural gas is a fossil fuel energy source, comprising methane, in large part, as well as trace amounts of natural gas liquids and non-hydrocarbon gases. Its uses comprise commercial, power and industrial consumption, among others. and is also used as pipeline, lease and vehicle fuel.
- In FY23, local gas consumption was recorded at ~29.4mln MT, registering a decline of ~8.7% YoY. Local production during the year dipped by ~3.9% YoY, whereas RLNG imports, down ~15.2% YoY, stood at ~8.3mln MT. Therefore, total supply of gas stood at ~36.8mln MT, down ~6.7% YoY.
- Total supply during 9MFY24 was recorded at ~20.8mln MT, registering a decline of ~1.4% YoY. Of this, local production formed ~78.3% (SPLY: ~78.7%), while the share of RLNG imports stood at ~21.7% (SPLY: ~21.3%) during the year. During the period, indigenous gas contributed ~9.3% (SPLY: ~11.6%) to the country's power generation mix.
- Pakistan's reliance on imported Re-gasified Liquified Natural Gas (RLNG) has traced an increasing trend over the recent years. During 9MFY24, RLNG imports rose ~15.0% YoY to ~6.9mln MT.
- During 9MFY24, the two gas utility companies (SNGPL & SSGCL) had laid a ~156Km gas transmission network, including ~3,614Km mains and ~76Km services lines.
- Unlike the transmission system that carries large volumes of natural gas at high pressures, the distribution system winds through cities and other areas of demand at low pressure.

Particulars	FY22	FY23	9MFY23	9MFY24
Local Consumption (mln MT)	**32.2**	**29.4**	**21.1**	**20.8**
Natural Gas	24.2*	22.1*	17.0	16.3
RLNG	8.0*	7.3*	4.1	4.5
Local Production | Natural Gas (mln MT)	**29.7**	**28.5**	**21.6**	**20.8**
RLNG Imported (mln MT)	**9.7**	**8.3**	**6.0**	**6.9**
Floating Storage and Re-gasification Unit (FSRU) (No.)	2			
Capacity FSRUs (mln MT)	10.5			
Transmission Lines (Km)	13,513	13,775		13,989
Distribution Lines (Km)	41,231	41,352		41,463
Mains (Km)	155,679	157,395		161,806
Total Number of Connections (mln No.)	10.7			10.8
Structure	Oligopolistic			
Regulator	OGRA			

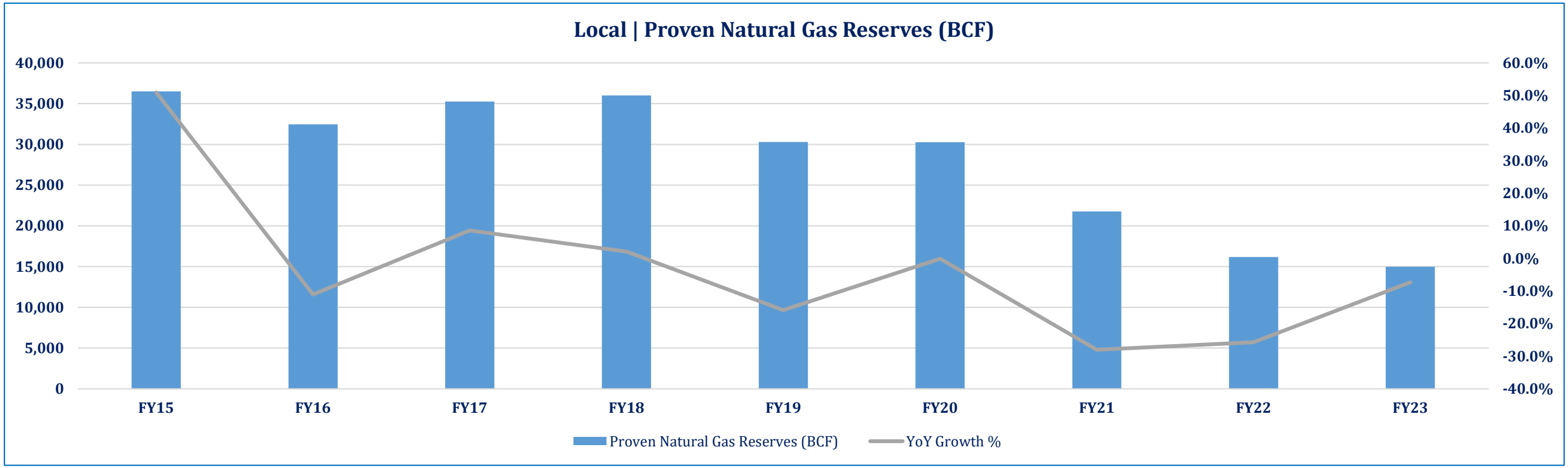
***Note**: Conversion Factor of ~1BCF (billion cubic feet) = 0.024mln MTOE (mln MT oil equivalent). *Estimated using ~75:25 ratio in supply mix.*

Source: PBS, SSGC, SNGP, BP,PES, EIA

Distribution | Gas

Local | Natural Gas Reserves

- Pakistan's proven natural gas reserves have been on a decline owing to lack of substantial discoveries. From FY15-23, natural gas reserves of the country have declined at a CAGR of ~8.5%. During FY23, the country's proven natural gas reserves stood at ~14,981bcf down by ~7.3% YoY.
- Four new gas condensate discoveries were made by OGCDL during 9MFY24 with a combined daily production potential of ~28MMCF of gas (SPLY: three discoveries). Additionally, eight (~08) wells were spud (SPLY: ~04 wells) which included three (~03) exploratory wells. Avg RRR



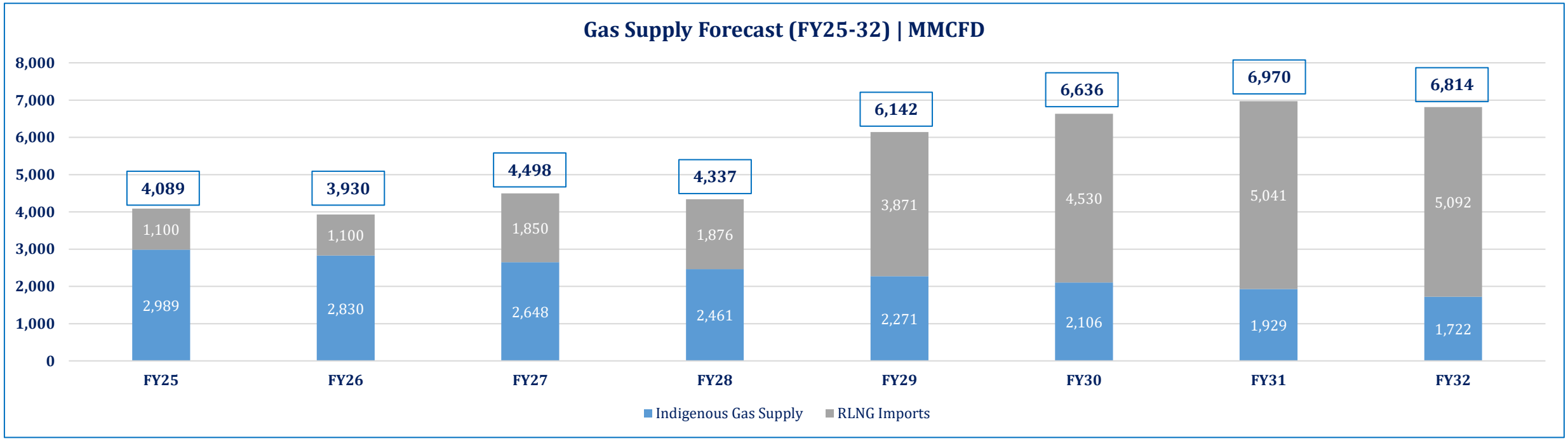
***Note**: Data estimated using OGDCL's share in recoverable natural gas reserves. BCF stands for billion cubic feet.*

Source: EYB, OGDCL

Distribution | Gas

Local | Demand-Supply Forecast

- As domestic natural gas production continues to decline, Pakistan's domestic gas demand-supply gap is expected to widen in the coming years. Therefore, there is a need to accelerate domestic E&P activities and/or increase imported gas to meet the country's gas demand.
- In volumetric terms during FY23, LNG imports into the country declined by ~91.7% YoY, while in value terms, LNG imports increased by ~3.8% YoY depicting the impact of PKR devaluation of ~39.0% against USD while in FY24, imports bill pertaining to LNG increased by ~4.8% and stood at USD~3,945mln (SPLY: USD~3,763mln).
- Pakistan's local gas production is forecast to decline to ~2,989MMCFD by FY25 and further to ~1,722MMCFD by FY32. Simultaneously, the overall demand for the commodity is expected to increase to ~5,057MMCFD by FY25 and ~5,710MMCFD by FY32. While in FY23, the share of indigenous gas and imported RLNG in overall supply mix stood at ~75:25, this trend is forecast to reverse by FY32 to ~25:75.



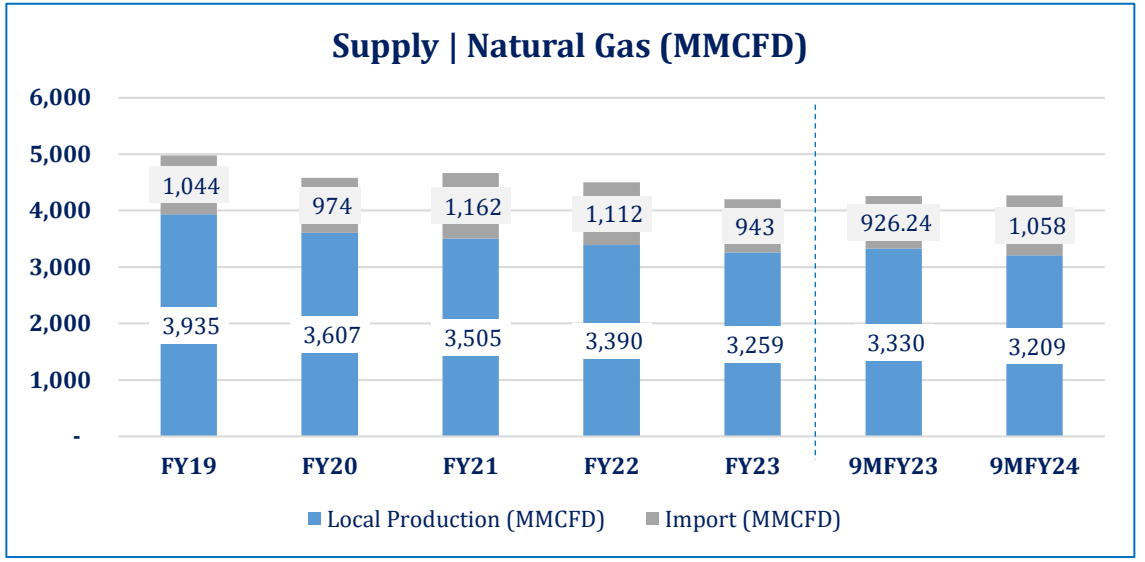
***Note**: MMCFD stands for million cubic feet per day. FY25 onwards data pertains to OGRA Industry Report FY22.*

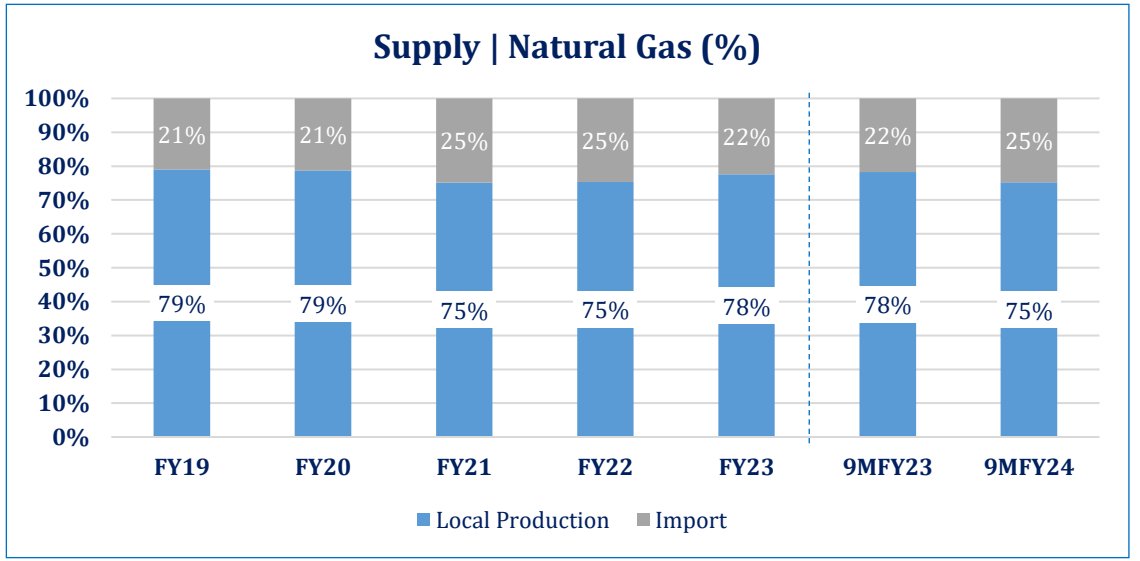
Source: PES, OGRA Petroleum Industry Report

Distribution | Gas

Local | Supply

- The overall supply of natural gas was recorded at ~36.8mln MT in FY23, down ~6.7% YoY. Of this, the share of imported gas in the country's total gas supply declined from ~25.0% in FY22 to ~22.0% in FY23., owing to slow economic activity. In volumetric terms, imports were down ~15.2% YoY to record at ~8.3mln MT. However, during 9MFY24, imports' share increased to ~25.0% (SPLY: ~22.0%). RNNG imports recorded ~14.3% YoY increase during the period.
- In FY23, local production dipped ~3.9% YoY, whereas in 9MFY24, this continued to trace downward trajectory i.e., growth of ~(3.7%) YoY.
- The country made the first (in over a year) spot purchase in Oct'23 from trading house Vitol, on the back of softening global prices, while two (~02) more were made in Dec'23.
- Pakistan LNG Limited (PLL) (state-owned) entered into a 15-year contract with ENI in May'17 for import of one (~01) LNG cargo on a monthly basis. Pakistan Pakistan State Oil (PSO), meanwhile, imports LNG via spot purchases, long-term agreement GG2 with Qatar, and term agreements through tendering process (the latter pertains to PLL as well).
- Two operational LNG terminals with licenses granted in CY16 and CY18, respectively, include Engro Elengy Terminal Limited (EETL) and Pakistan GasPort Consortium Limited (PGPCL). Moreover, licenses were granted in Apr'21 to Tabeer Energy Private Limited (TEPL) and Energas Terminal Private Limited (ETPL) for developing LNG terminals at Port Qasim, Karachi, while an extension in the validity been granted by OGRA till CY25.





Source: GECF, PES

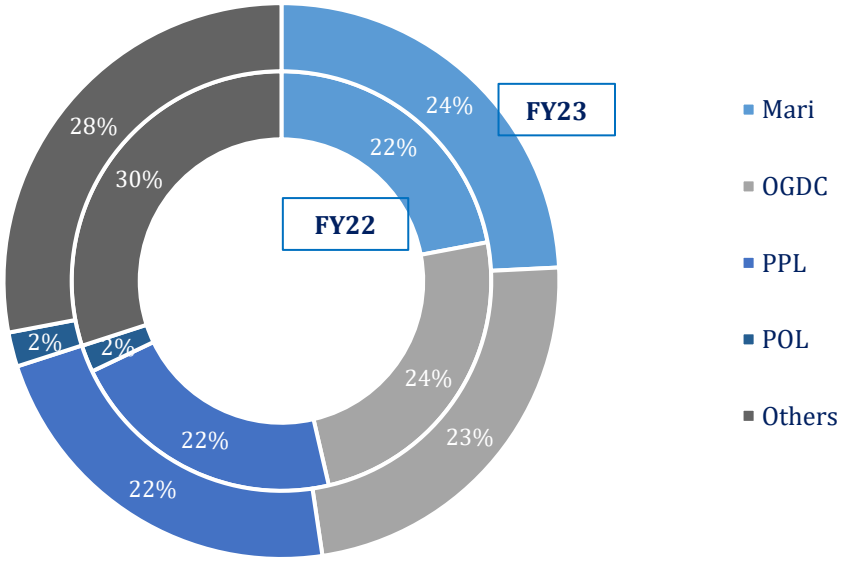
Distribution | Gas

Local | Production

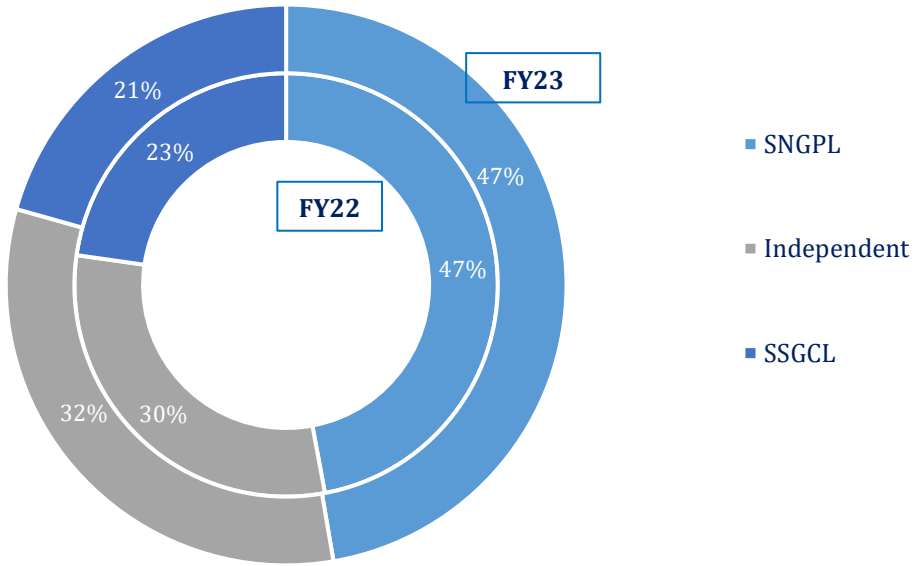
- The country's natural gas reserves stood at ~14,981bcf during FY23, down by ~7.3% YoY. Moreover, production during the year was recorded at ~3,259MMCFD, a decline of ~3.9% YoY. The Oil and Gas Development Company (OGDC) was the largest gas producer in the country during FY22 with a share in total gas production of ~24.0%, followed by Mari Petroleum with a share of ~22.0%. However, during FY23, Mari Petroleum took the lead with ~24.0% share in the total gas production, followed by OGDCL and Pakistan Petroleum Limited (PPL) with shares of ~23.0% and ~22.0%, respectively.

- The two Government-owned gas utilities, SNGPL and SSGC, make up for a significant combined share of ~79% (FY22: ~77.0%) in total gas supply across the country. Meanwhile, Independent system comprises consumers having direct arrangements with gas producing companies since they receive natural gas through dedicated pipelines or through virtual networks including containers.

Local | Company-wise Production (%)



Share in Gas Supply (%)



***Note**: Company-wise Production shares have been estimated using total gas production as stated in PES and same data as stated in respective financials. Conversion factors used, as stated by BP.*

Source: OGRA, Company Financials

Distribution | Gas

Local | Supply | LNG Operators

- According to LNG Policy 2011, the license for LNG related activities can be classified into the following categories:
- Integrated Project Structure: in which the LNG developer is supposed to purchase LNG supplies, transport them to its LNG import terminal (where receiving, storage and re-gasification facilities exists) and also supply RLNG to the domestic market and/or for its own use.
- Unbundled Project Structure: in which the LNG buyer, would directly import the LNG under a LNG Sale and Purchase Agreement (SPA).
- As of Dec'23, the detail of import licenses issued by OGRA for LNG-related activities to privately owned entities are as follows:

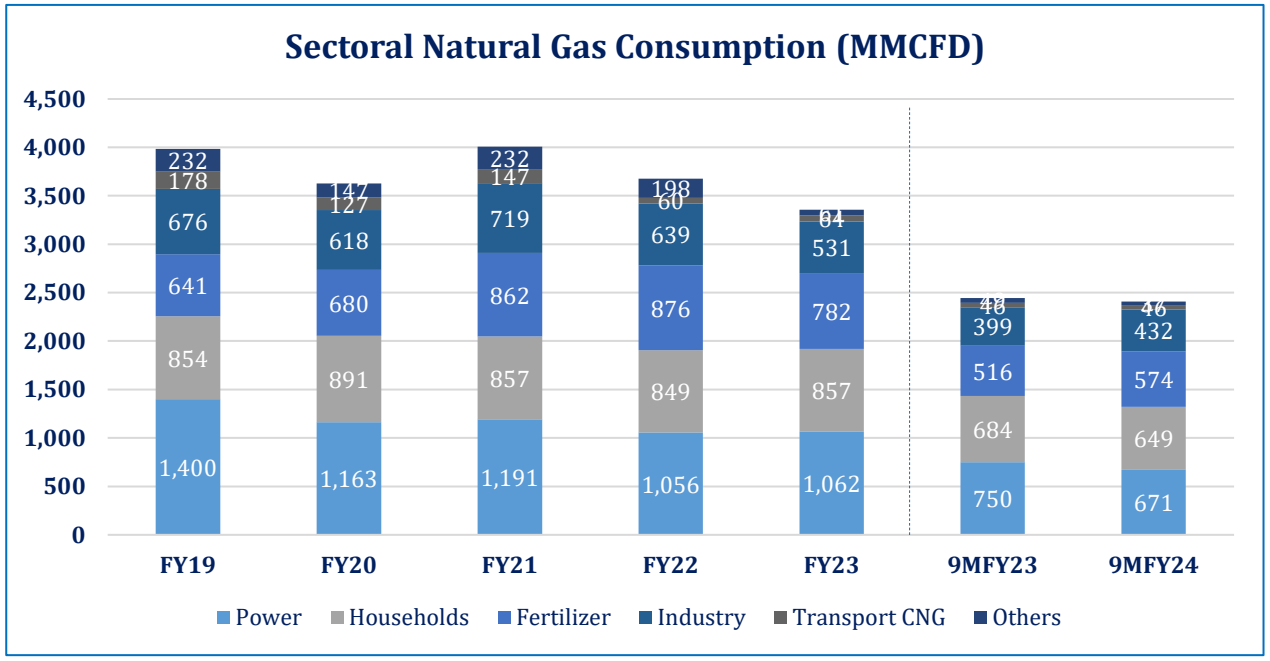
Name of Developer	Type of License Issued	License Issuance Date
Engro Elengy Terminal Limited (EETL)	Unbundled Project Structure **Operation License** of LNG Receiving Terminal at Port Qasim, Karachi. Regasification Capacity: 600-690 MMCFD	March 18, 2016
PGP Consortium Limited (PGPCL)	Unbundled Project Structure **Operation License** of LNG Receiving Terminal at Port Qasim, Karachi. Regasification Capacity: 600-750 MMCFD	April 03, 2018
Tabeer Energy (Private) Limited (TEPL)	Integrated Project Structure **Construction License**	April 28, 2021
Energas Terminal (Pvt.) Limited (ETPL)	Integrated Project Structure **Construction License**	April 28, 2021
Pakistan GasPort Limited (PGPL)	Integrated Project Structure (Provisional License for LNG Receiving Terminal)	June 25, 2018
LNG Easy Private Limited (LNGe)	Integrated Project Structure (LNG Virtual Pipeline Projects -Provisional Licenses)	Jul 27, 2023
LNGFlex Limited	Integrated Project Structure (LNG Virtual Pipeline Projects -Provisional Licenses)	March 10, 2024
Cygnus Energy Private Limited (CEPL)	Integrated Project Structure (LNG Virtual Pipeline Projects -Provisional Licenses)	March 27, 2024
Gwadar GasPort Private Limited (GGPL)	Integrated Project Structure (LNG Virtual Pipeline Projects -Provisional Licenses)	May 16, 2022 (Applied for extension)

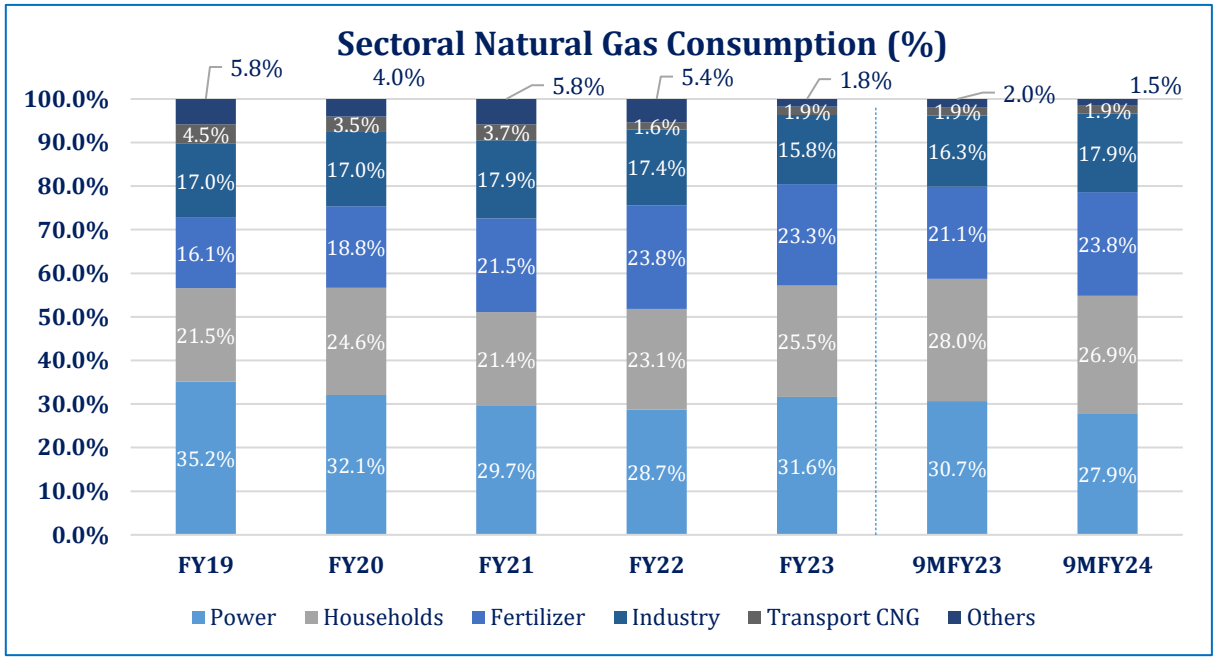
Source: OGRA

Distribution | Gas

Local | Demand

- The overall gas consumption declined by ~8.7% YoY during FY23, recording at ~3,357MMCFD. The Power sector made up for ~31.6% of total natural gas consumed during the year, while Households and Fertilizers accounted for ~25.5% and ~23.3%, respectively. Moreover, these recorded ~0.5% YoY increase, ~1.0% YoY increase and ~10.7% YoY decline, respectively.
- Household consumers use expensive LPG during curtailed gas supplies (by national gas utility corporations), to fulfil their energy needs. Fertilizer sector's dependence on natural gas is significantly high as it is a key input feedstock making it difficult to switch to other forms of energy. In 9MFY24, total gas consumption stood at ~2,407MMCFD, down ~1.5% YoY. The Power, Households and Fertilizers segments, respectively, recorded ~11.0% YoY lower, ~5.0% YoY lower and ~11.0% YoY higher consumption during the year.
- Driven by its higher use in the industry, power generation, residential and road transport segments, the demand for natural gas is forecast to reach ~5,901MMCFD by CY25.



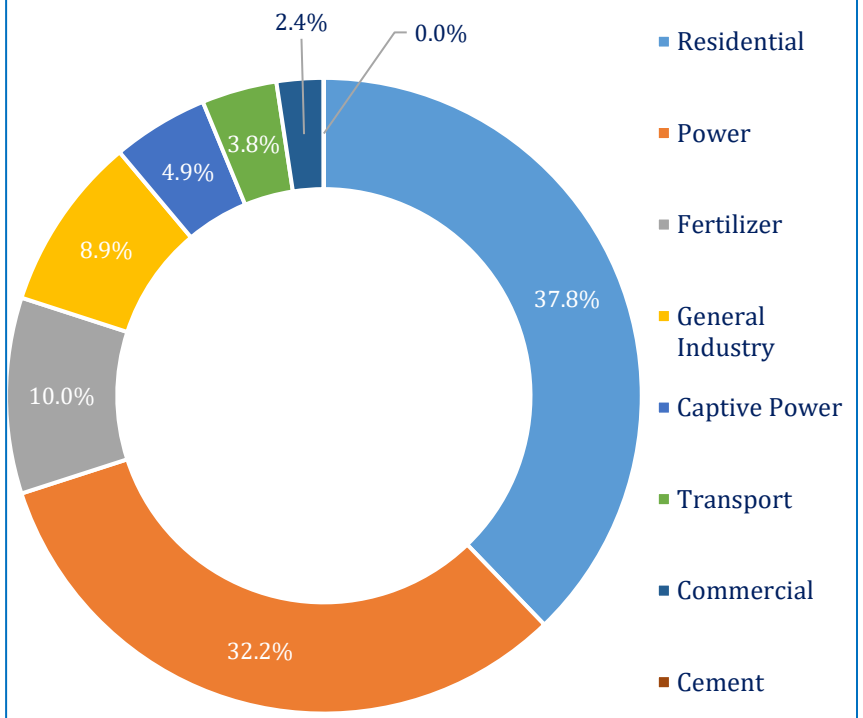


Source: GECF, PES

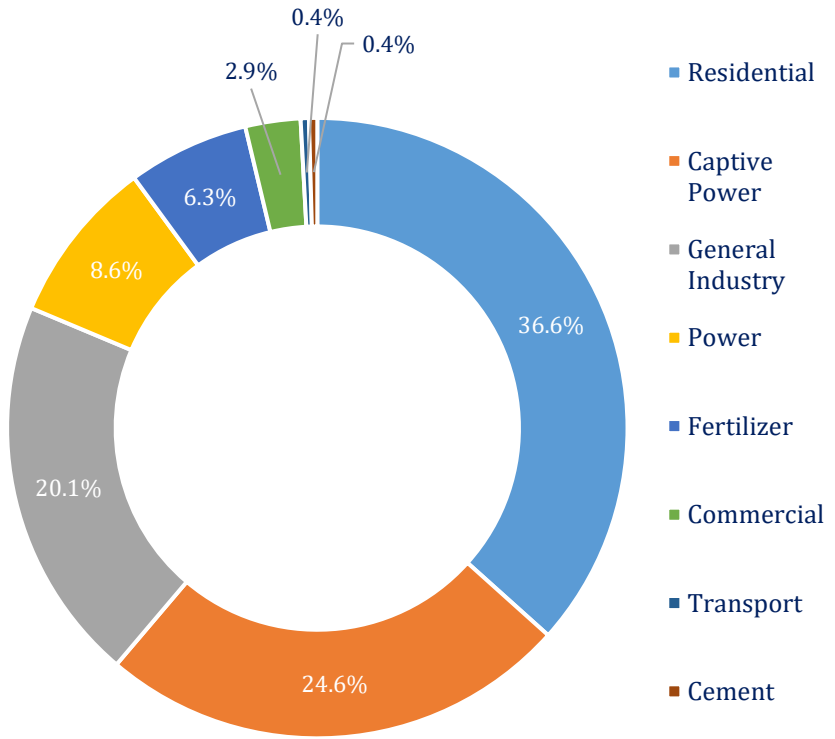
Distribution | Gas

Local | Demand

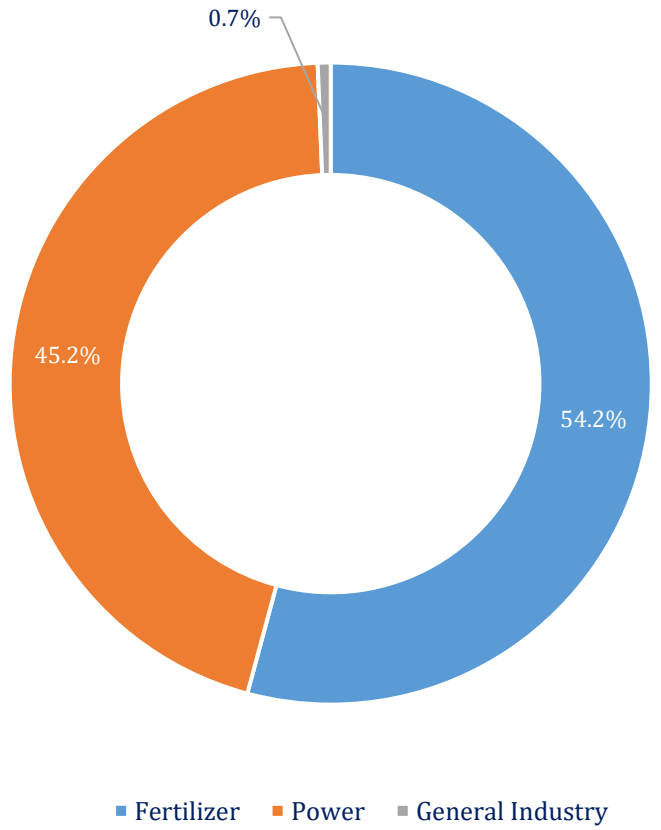
SNGPL Consumers (%) | FY23



SSGCL Consumers (%) | FY23



Independent System Consumers (%) | FY23



Source: OGRA

Distribution | Gas

Local | Business Risk | UFG

- UFG (Unaccounted For Gas) implies gas loss which is contingent upon occurrence of various technical factors when gas flows from the fields to the end consumers.
- It is calculated as the difference between metered gas volume injected into the transmission and distribution network (Point of Dispatch/Delivery) and the metered gas delivered to the end-consumers (Consumer Meter Station) during a financial year. A two-component formula for calculating UFG allowance being used is as under:

UFG Allowance = Gas Received x (Rate1+ Rate2 x β)

Sr.	Particulars	SSGCL	SNGPL
1.	Average UFG Allowance (%)	6.07%	6.98%
2.	Adjustment / Differential of UFG	0.78%	0.11%
3.	UFG Benchmark (1+2)	6.85%	7.10%

- **Rate1**= Benchmark fixed rate based on prevalent conditions/infrastructure in the areas of the operation of the Sui companies and same is fixed at 5% for the next five years. The fixed rate also includes allowance for transmission losses which is calculated up to maximum 0.5%.
- **Rate 2** is the allowance for local challenging conditions as compared to the world at large. Allowance for these challenging conditions is fixed at a maximum of 2.6%.
- **β** = Performance factor (Key Monitoring Indicators - KMIs) - In order to ensure appropriate and serious efforts are directed towards reducing UFG over the agreed term of five (5) years, the local challenging conditions component has been linked to the achievement of KMIs by each gas utility company.

- During 9MFY23, SNGPL reported UFG losses amounting to ~19,979MMCF (~7.48%), as against ~21,244MMCF (~7.79%) recorded during SPLY, marking ~6.0% YoY decline. Meanwhile, during 6MFY23, SSCGL reported UFG losses in Balochistan ~12.1BCF (~60.4%), against ~10.36BCF (~45.5%) during SPLY.
- Pursuant to UFG determination by OGRA for each year any percentage/value of UFG above the fixed benchmark treated as disallowance and deducted from the revenue of the gas utility companies.

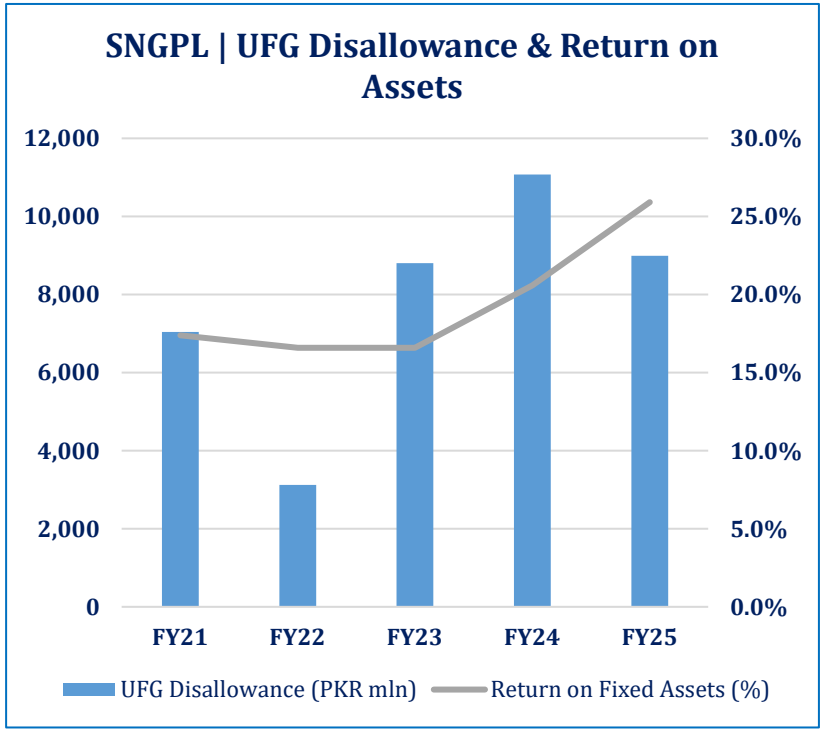
***Note**: Data is latest available.*

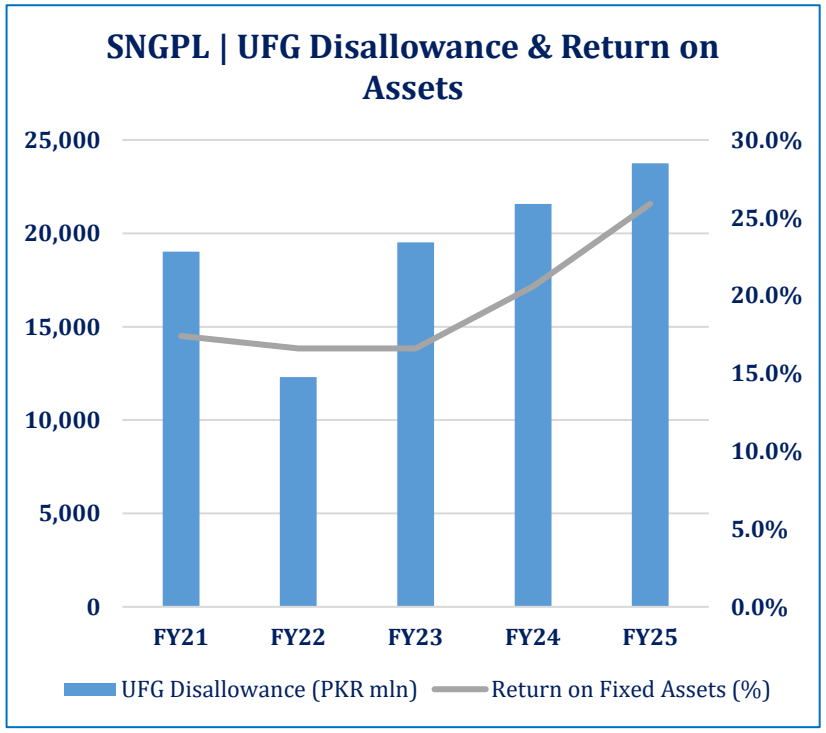
Source: OGRA, Petroleum Division, SNGPL, SSGCL

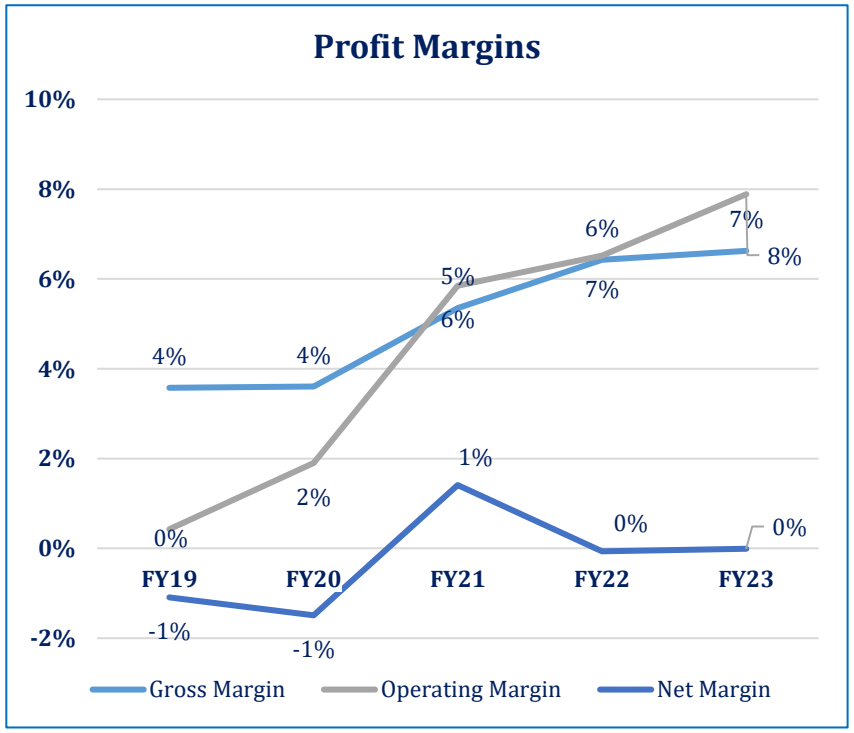
Distribution | Gas

Local | Business Risk

- 'Unaccounted-for Gas' (UFG) is a contributor to the financial losses to gas utility companies which, in simpler terms, can be defined as the difference between the purchase and sale of gas. Broadly, all UFG volumes can be classified into three major categories i.e. theft, leakages, and measurement errors.
- With respect to the segment's gross and operating margins, these remained rangebound during FY23, with average gross and operating profit margins recording at ~7.0% (FY22: ~6.0%) and ~8.0% (FY22: ~7.0%), respectively. The increase in gross margin came despite ~9.0% increase in the cost of sales.
- Whereas the average net margins came in at ~-0.01% (SPLY: ~-0.06%). The dip in net margins is reflective of ~81.8% YoY higher finance costs due to SBP's hawkish monetary policy stance (interest rates ~22.0%).







***Note**: The first two charts pertains to Determination of Estimated Revenue Requirement as originally published by OGRA. Margins are representative of 02 gas utility companies. Margins is reflective of ~2 PACRA-rated/ Listed sector players in FY23*

Source: OGRA, Company Financials, PACRA Database

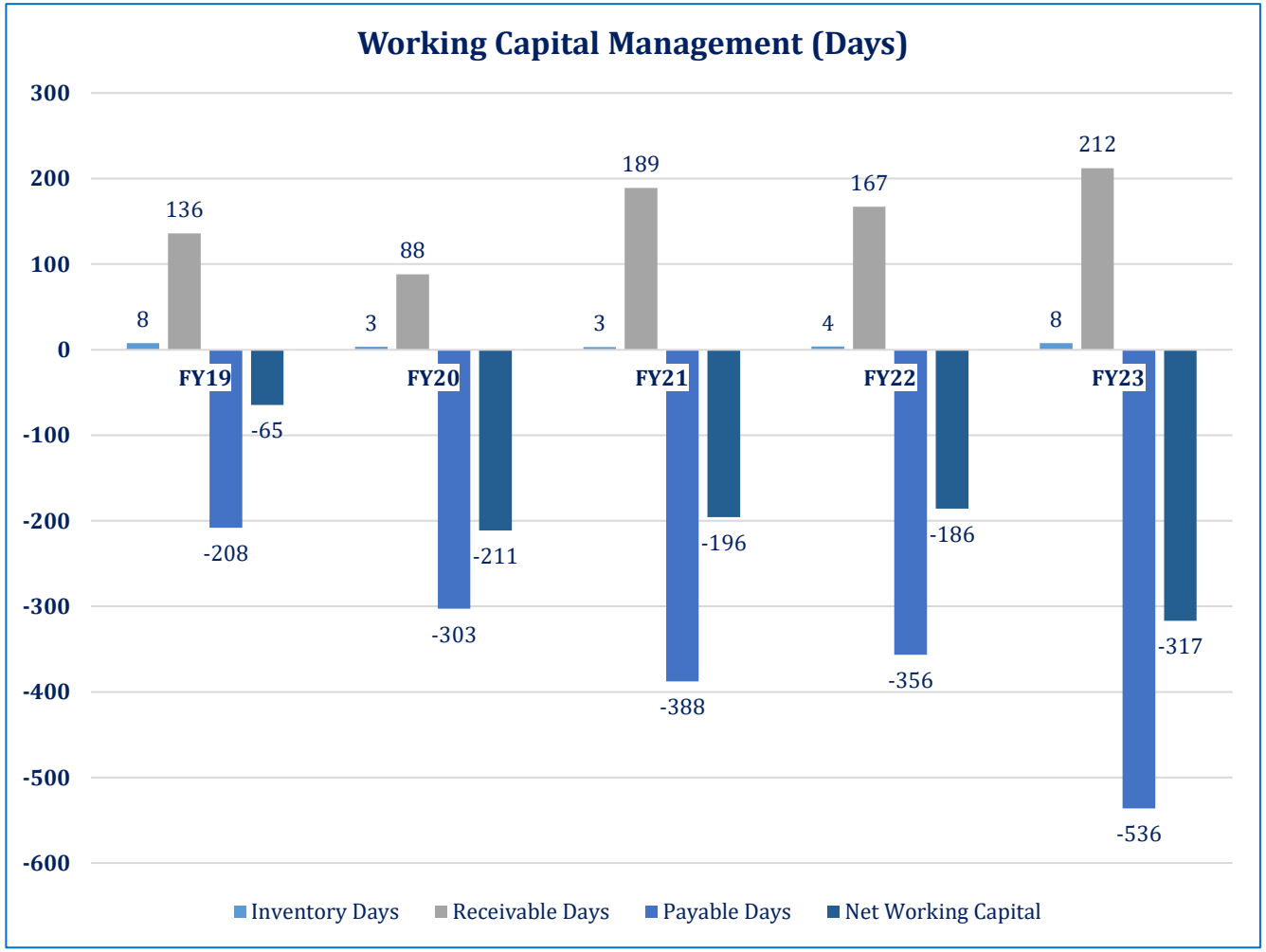
Distribution | Gas

Financial Risk | Working Capital Management

- During FY23, the average receivable days of the sector increased by ~45 days to stand at ~212 days (FY22: ~167 days). Tariff adjustments have considerably accumulated in the indigenous gas and RLNG segments and are to be recoverable from the government. Recoverability depends on the government increasing gas prices, providing subsidy or employing another mechanisms.

- Meanwhile, average payable days outstanding increased by ~180 days from ~356 days in FY22 to ~536 days in FY23. This increase is on account of failing to keep up with timely payments to the creditors.

- Overall, during FY23, the cash conversion cycle has stood at ~-317 days (FY22: ~-186 days).



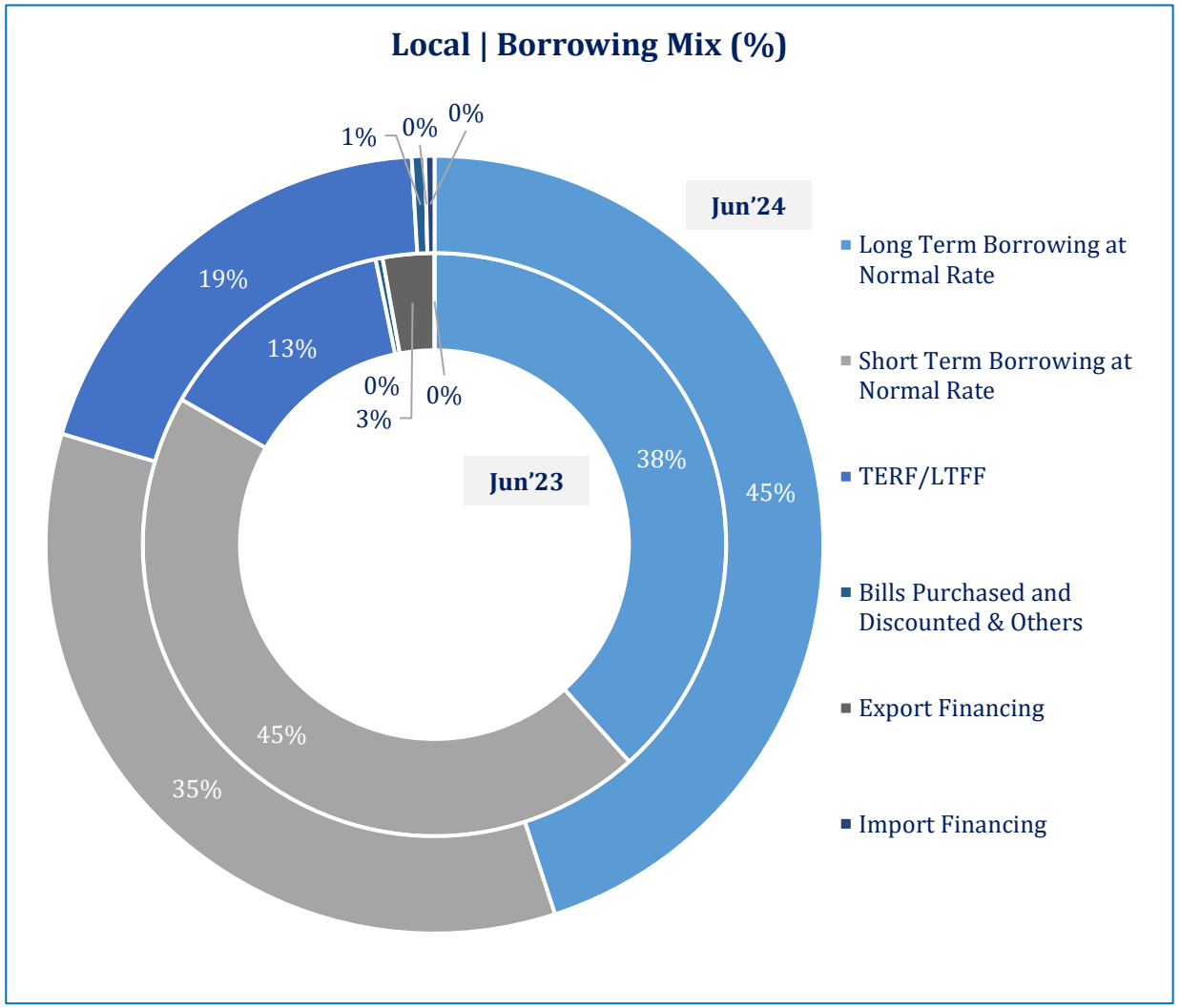
***Note**: Data is reflective of ~2 PACRA-rated/ Listed sector players in FY23*

Source: Company Financials, PACRA Database

Distribution | Gas

Financial Risk | Borrowing Mix

- Total borrowings of the segment, as at End-Jun'24, stood at PKR~9.2bln (End-Jun'23: PKR~10.5bln), down ~12.9% YoY.
- Long-term borrowings at normal rates formed ~45.0% of total borrowings during the period (End-Jun'23: ~38.0%) and stood at PKR~4.1bln (End-Jun'23: PKR~4.0bln), up ~2.1% YoY.
- Short-term borrowings at normal rates, as at End-Jun'24, made up ~35.0% of the total borrowings (End-Jun'23: ~45.0%) and decreased by ~32.9% YoY to clock in at PKR~3.2bln (End-Jun'23: PKR~4.7bln).
- Meanwhile, long term discounted borrowings (LTFF) represented ~20.0% of total borrowings (End-Jun'23: ~13.0% of total borrowings) and stood at PKR~1.8bln as at End-Jun'24 (End-Jun'23: PKR~1.4bln).



***Note**: Data pertains to SBP Classification of "Manufacture of gas; distribution of gaseous fuels through mains"*

Source: SBP

Distribution | Gas

Local | Natural Gas Pricing

- Based on the Revenue Requirement of the Gas Companies, OGRA determines the prescribed price (i.e. price to be retained by the companies) for each category of consumers.

- The Government fixes consumer gas prices and as a matter of policy, maintains them at a uniform level throughout the country. Therefore, the cost of supplying gas to customers at various locations is not accounted for and, regardless of the difference in cost due to location, all consumers within the same category pay a uniform price.

- The consumer price of natural gas in Pakistan comprises the following:
  a. The prescribed price for the gas companies and;
  b. OGRA fixes the 'prescribed price' for the gas utilities after conducting public hearings where stakeholders express their views. Also, a thorough analysis is carried out in terms of prudence and rationale for revenue and capital expenditures.

- The prescribed price includes the following elements:
  - Producer gas prices, which are linked with international prices of crude oil and HSFO
  - Transmission and distribution costs
  - Depreciation expense
  - Return to SNGPL and SSGCL
  - Allowed UFG losses

Source: OGRA

Distribution | Gas

Local | Natural Gas Pricing

- On average, the GoP raised gas tariffs in Feb'24 by ~24.0% YoY, under the IMF 09-month Stand-By Agreement during FY23. As of Jul'24, the IMF has, subject to the Board approval, agreed to enter 37-month USD~7.0bln Extended Fund Facility with Pakistan.
- Among other benchmarks set, in order to curtail further circular debt accumulation (covered later), gas tariffs are required to be revised further up by Jun'24, while protecting vulnerable households, whereas tariff determinations and notifications are announced within the required 40-day window.
- Also on the cards is also fully implementing a weighted average cost of gas (WACOG) across Pakistan, which would introduce a uniform gas price while helping to ensure cost recovery.

Consumers	Jan'23	Nov'23	Feb'24
Domestic (Protected)			
Up to 0.25hm^3 /mo	121	121	200
Up to 0.5hm^3 /mo	150	150	250
Up to 0.6hm^3 /mo	200	200	300
Up to 0.9hm^3 /mo	250	250	350
Domestic (Non-Protected)			
Up to 0.25hm^3 /mo	200	300	500
Up to 0.6hm^3 /mo	300	600	850
Up to 1hm^3 /mo	400	1,000	1,250
Up to 1.5hm^3 /mo	600	1,200	1,450
Up to 2hm^3 per mo	800	1,600	1,900
Up to 3hm^3 /mo	1,100	3,000	3,300
Up to 4hm^3 /mo	2,000	3,500	3,800
Above 4hm^3 /mo	3,100	4,000	4,200

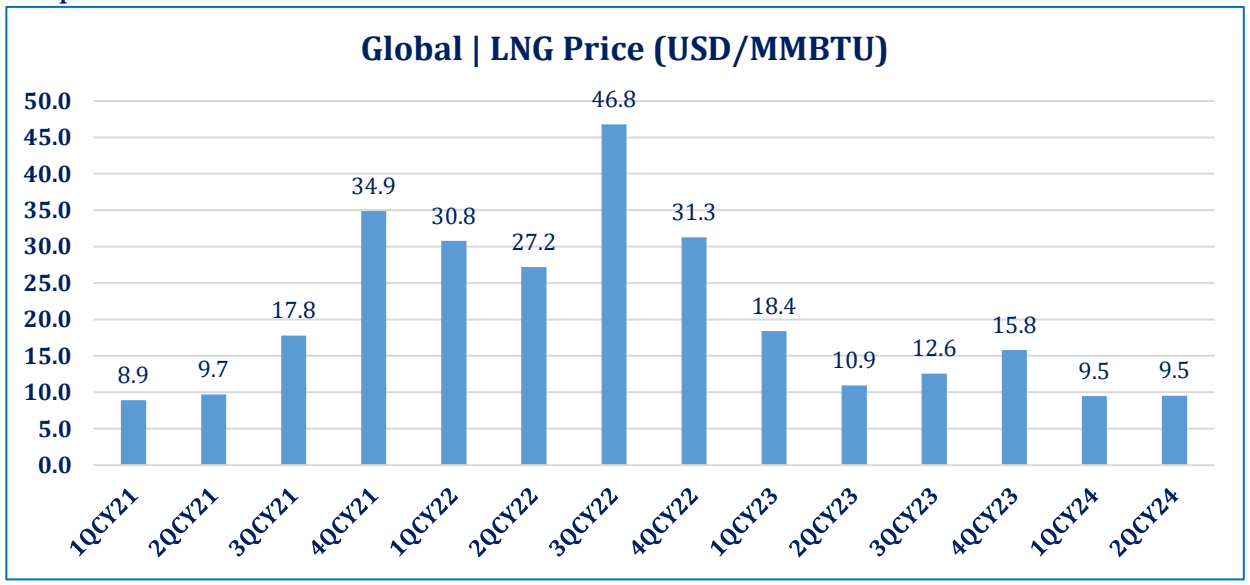
Consumers	Jan'23	Nov'23	Oct'23	Feb'24	Jul'24
Fertilizer Company (Feed Stock)	510	580	580	1,597	
Fertilizer Company (Fuel Stock)	1,500	1,580	1,580	1,597	
Export-Oriented (General Industry & Captive)	1,100	2,400	2,400	2,750	2,750
Power Stations and IPPs	1,050	1,050	1,050	1,050	1,050
General Industry	1,200	2,500	2,500	2,150	3,000
Cement Factories	1,500	4,400	4,400	4,400	4,400
Commercial & Ice Factories	1,650	3,900	3,900	3,900	3,900
CNG	1,805	3,600	3,600	3,750	3,750

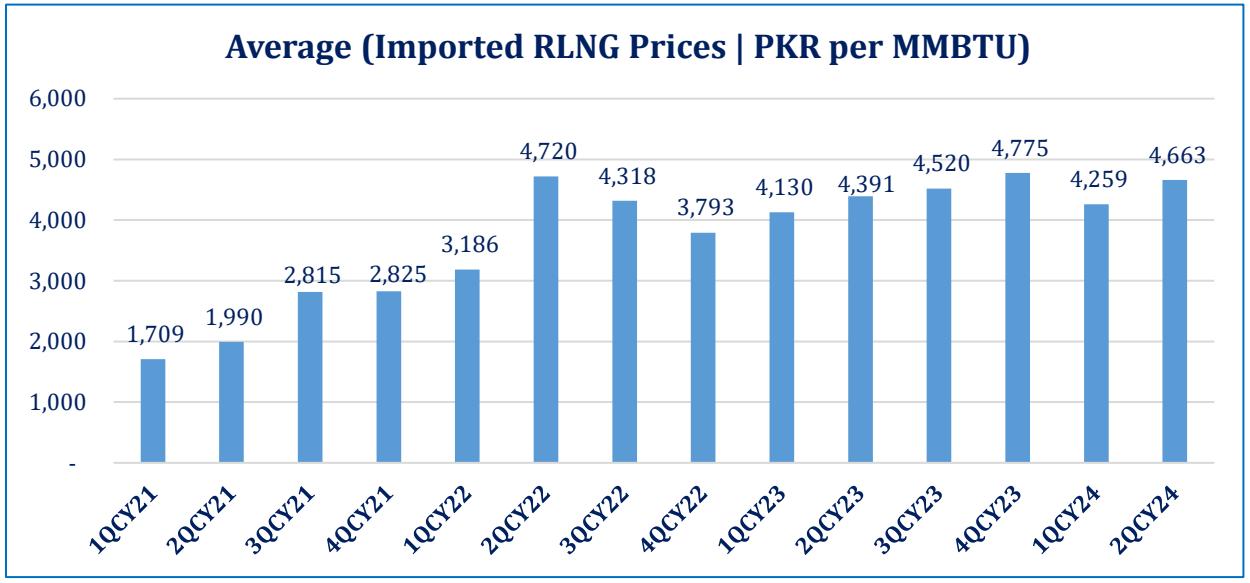
Source: IMF, OGRA

Distribution | Gas

Local | RLNG Pricing

- Pakistan's imported RLNG prices, on average, increased ~137.2% YoY during 2QCY22 due to non-availability of the commodity in the wake of Russia-Ukraine conflict. However, imported RLNG price picked up pace and continued to increase during CY23 and was recorded at an average price of PKR~4,775/MMBTU during 4QCY23. However, during 1QCY24, in order to provide economic relief to the consumers OGRA reduced RLNG prices that on average were recorded at PKR~4,259/MMBTU).
- Rising geopolitical tensions due to Russia-Ukraine conflict disrupted the global LNG markets during CY22, leading Europe to purchase unprecedented quantities of LNG and driving prices to their highest levels ever (3QCY22: USD~46.8/MMBTU). However, in CY23, the global LNG market saw prices lower as compared to the historic highs of CY22. By 4QCY23, global LNG prices had dropped to USD~15.8/MMBTU.
- Despite new contracts, RLNG demand in CY24 is still not expected to surpass levels prior to the Russian-Ukraine invasion. This likely implies that China will have a growing surplus of LNG to resell to other markets hence creating price uncertainty. Additionally, new sales and purchase agreements in Bangladesh and India are not expected to start until CY26, which further introduces uncertainty into short-term forecasts of rapid demand growth and price.





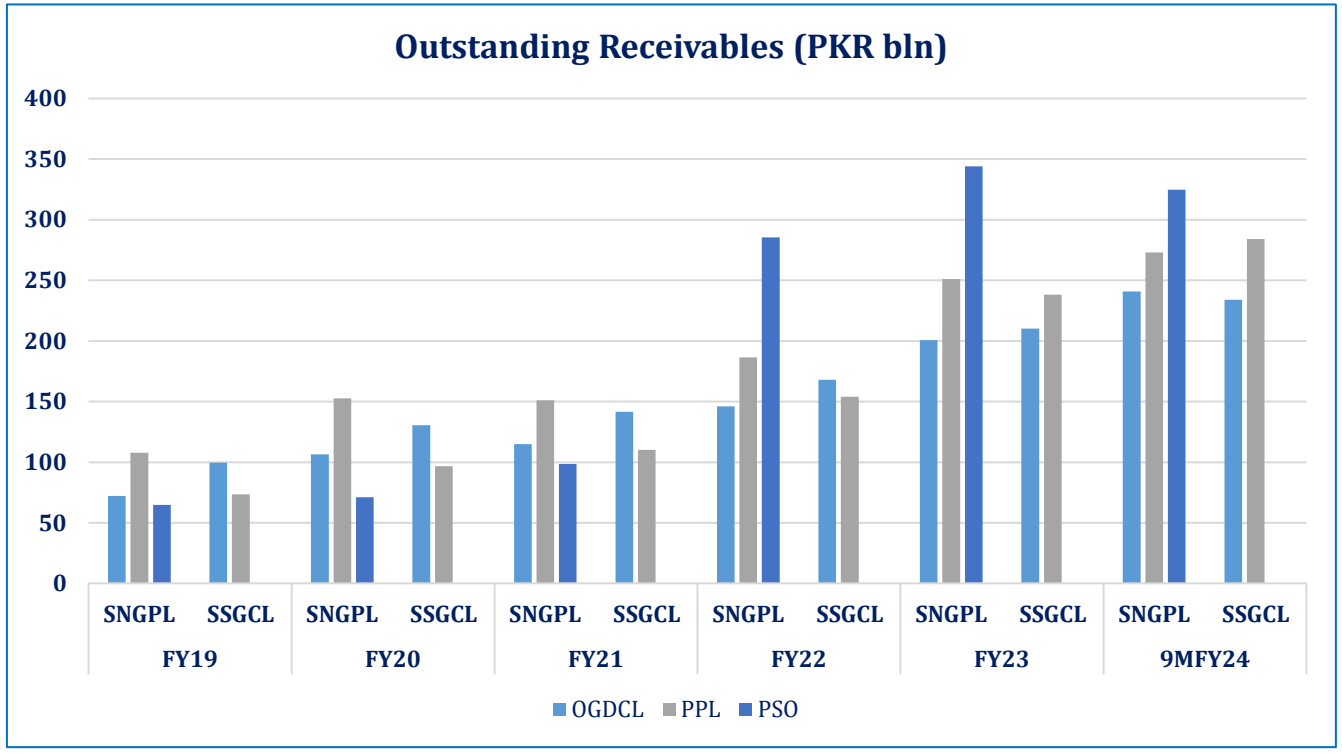
***Note**: Imported RLNG Prices have been computed using average USD/PKR rate for the period, while Global prices are reflective of LNG Japan/Korea Marker Platts Futures.*

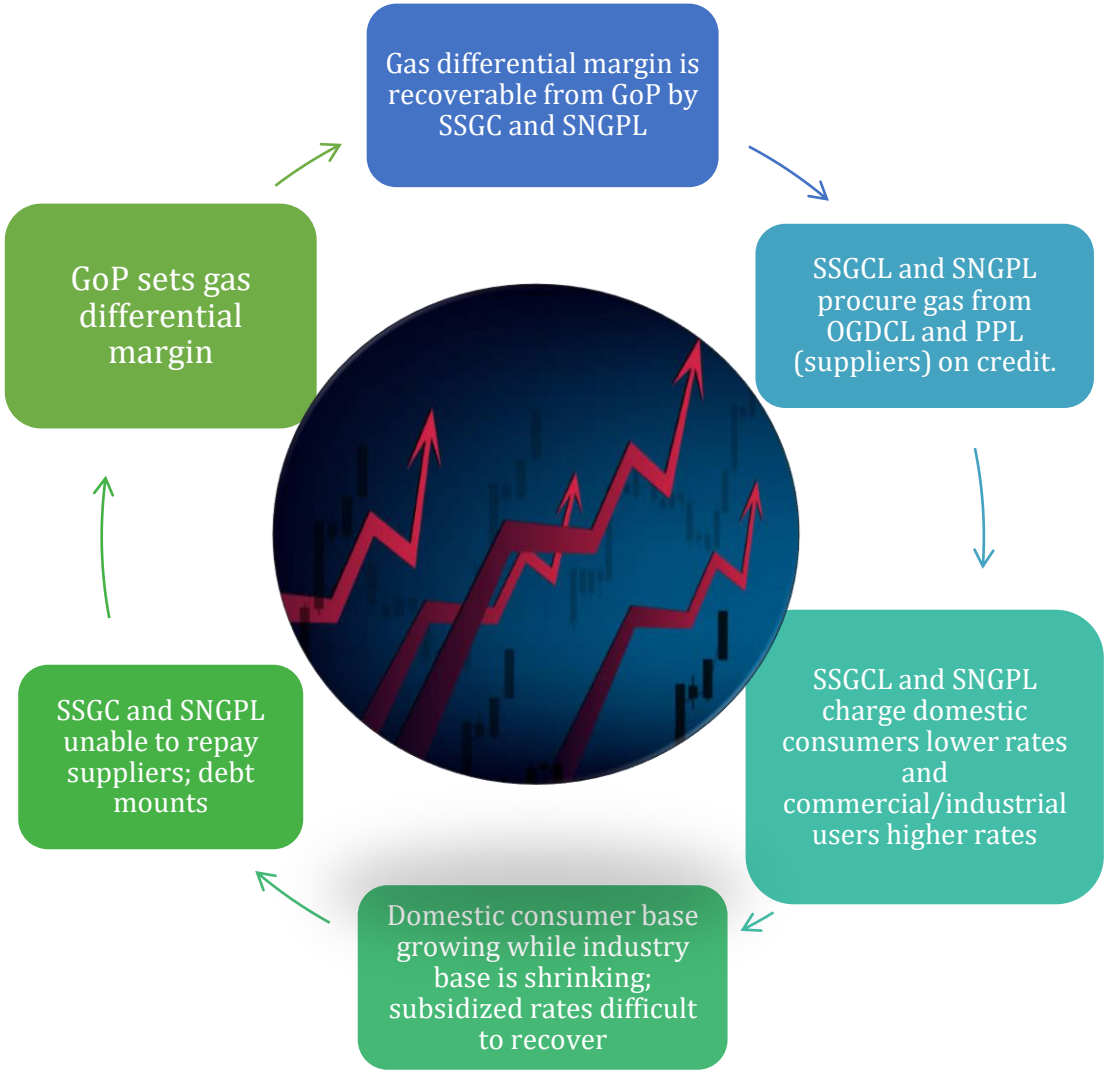
Source: OGRA, SBP, PACRA Database

Distribution | Gas

Financial Risk | Circular Debt

- As of Jan'24, gas circular debt stood at PKR~2,866bln (~2.7% of GDP) compared to PKR~2,391bln in Jun'23.
- During FY23, cumulative outstanding receivables of OGDCL, PSO and PPL from SNGPL and SSGCL amounted to PKR~1,244bln, an increase of ~32.4% YoY. During 9MFY24, these stood at PKR~1,356bln.





Source: IMF, WB, Company Financials

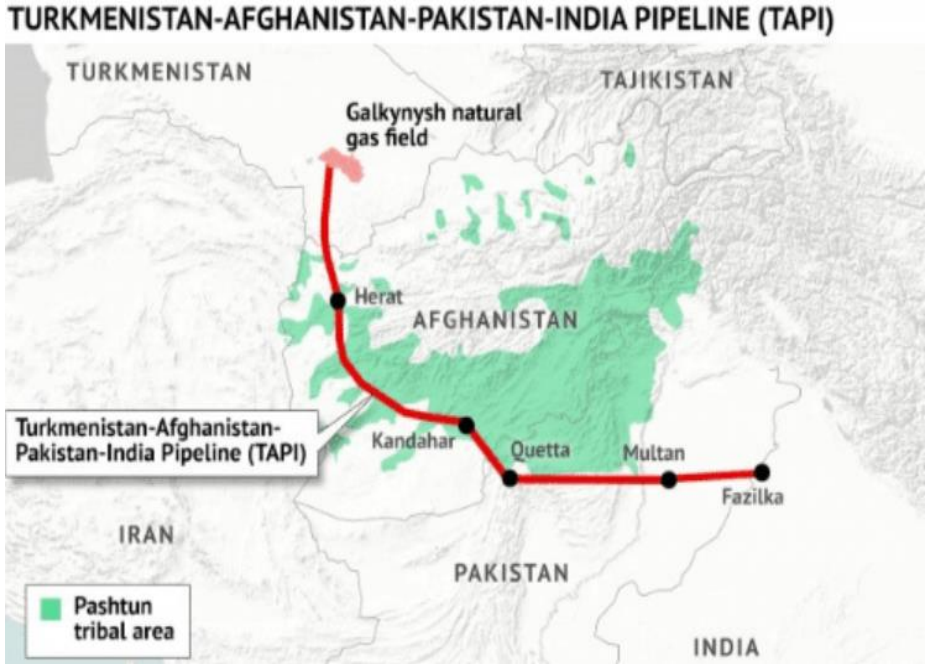
Distribution | Gas

Recent Developments | Gas Pipelines

- The Turkmenistan-Afghanistan-Pakistan-India Natural Gas Pipeline (**TAPI**) Project aims to export up to ~33bcm (or ~3.2bcfd, on average) of natural gas per annum through a proposed ~1,849Km pipeline from Turkmenistan to Afghanistan, Pakistan and India. Pakistan's offtake under the project will amount to ~1.3bcfd.

- As of Jun'23, Turkmenistan and Pakistan signed a Joint Implementation Plan (JIP) to accelerate work on the TAPI Gas Pipeline project. Moreover, as of Jul'24, Construction and Transmission Licenses have been issued to ISGS by Oil and Gas Regulatory Authority (OGRA).

- As of Jun'24, officials from both Pakistan and Turkmenistan emphasized the project's strategic importance in enhancing regional connectivity, promoting economic growth, and meeting the energy demands of participating nations.



- As of Feb'24, the CCoE has approved the recommendations of the Ministerial Oversight Committee for the Iran-Pakistan (**IP**) Project constituted in Sep'23 whereby it was recommended to start work on the ~80Km segment of the pipeline inside Pakistan i.e. from Pakistan-Iran border up till Gwadar in the first phase (total length of the pipeline is recorded at ~781Km). The Project will be executed by Inter State Gas Systems (Pvt) Ltd. and will be funded through Gas Infrastructure Development Cess.

- Furthermore, Transmission License has also been issued by Oil and Gas Regulatory Authority (OGRA) for implementation of the Project. Pipeline's capacity is recorded at ~750mmcfd (or ~1.0bcfd).

Source: WB, ISGS, Lotus Arise, Petroleum Division

Distribution | Gas

Terminal Handling | Overview

- Currently, only two LNG terminals exist to manage the imports and they have a total capacity of ~1,200-1,400MMCFD. Engro Elengy Terminal (Pvt.) Ltd. (EETL) set up Pakistan's first LNG Terminal at Port Qasim. has the capacity for regasification of up to a peak of ~690MMCFD (guaranteed capacity: ~630MMSCFD & uncontracted capacity: 0MMSCFD) or ~4.5mln MT of LNG per year and terminal capacity utilization ranges between ~580-630MMSCFD.

- The facility consists of an LNG jetty including a ~6Km high-pressure gas pipeline which is connected to the grid of EETPL's sole customer, SSGCL, the government-owned gas utility company of Pakistan. EETPL holds a 15-year Floating Storage and Regasification Unit (FSRU) time charter.

- In FY23, the terminal handled ~73 vessels and delivered ~215bcf re-gasified LNG to the SSGC network, accounting for ~13-15% of the total gas supply in Pakistan, with an availability factor of ~97.1% (SPLY: ~74 vessels; ~219bcf re-gasified LNG to the SSGC network, accounting for ~13-15% of the total gas supply in Pakistan, with an availability factor of ~97.6%).

- As of Dec'23, EETL catered ~50% Pakistan`s LNG imports and regasification capacity.

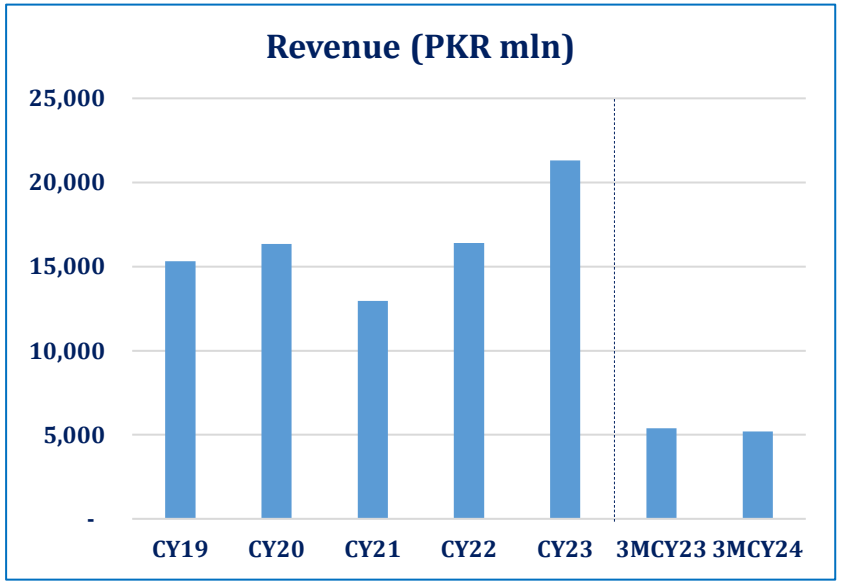
- Pakistan GasPort Consortium Limited (PGPC), the wholly-owned subsidiary of Pakistan GasPort Limited (PGPL), owns and operates the ~750MMCFD LNG import terminal at Port Qasim, Karachi. It provides LNG storage and regasification services to state-owned Pakistan LNG Limited (PLL) of up to ~600MMCFD for ~15 years at an availability of ~96.0% and at a levelized tariff of USD~0.4177/MMBTU.

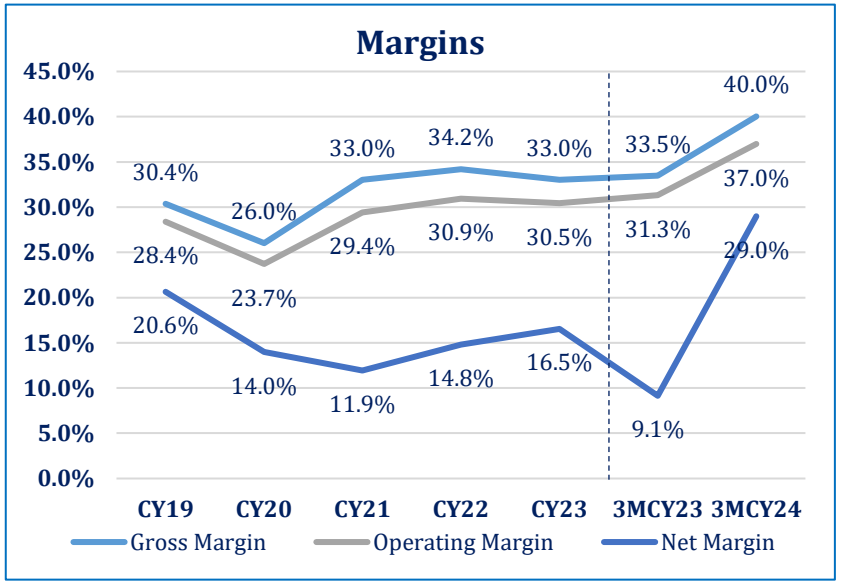
Source: IEP Outlook, 2024-35, Engro Elengy, PGPCL

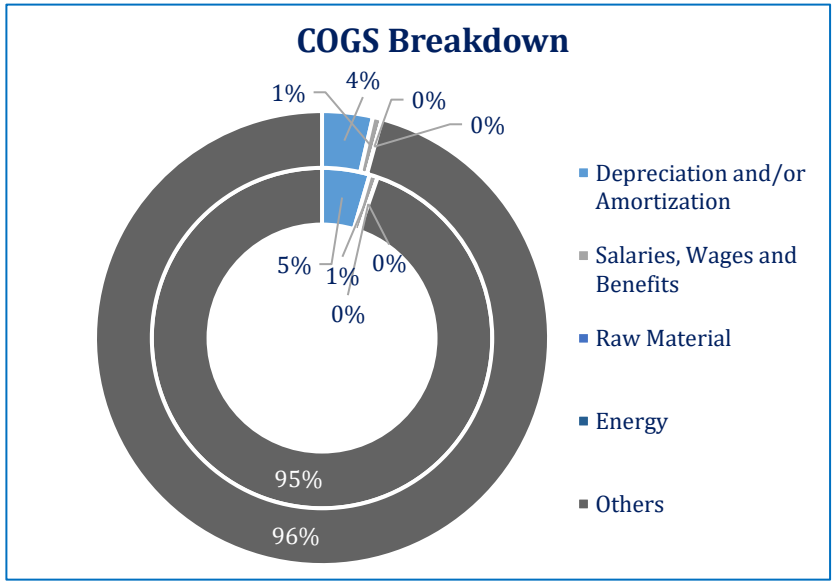
Distribution | Gas

Business Risk | Terminal Handling

- Depleting indigenous gas reserves and a transition towards cleaner and cheaper power generation have been the major factors driving the country towards adding LNG to its energy mix. Over the past few years, the government has established the basic LNG infrastructure, which has helped bridge the gas supply-demand shortfall, and lately, there has been some progress toward private sector participation in LNG import and so in order to meet the growing energy needs of the country, LNG terminals are established for the purpose of storage and re-gasification of imported LNG.
- During CY23, the segment's revenue rose by ~29.9% YoY (CY22: ~26.6% YoY) and registered at PKR~21,310mln, primarily owing to PKR depreciation (~39.0%) against the USD. Revenue stream of the segment player largely comprises capacity payments, tolling charges and flexibility charges.
- During CY23, gross margin remained rangebound. The gross profit margins declined to ~33.0% during CY23 (CY22: ~34.2%). The operating margins also remained in the range of ~30.0% to ~31.0% between CY22 and CY23. However, net margins increased from ~14.8% in CY22 to ~16.5% in CY23, primarily due to an increase in non-operating income. During 3MCY24, the gross, operating and net margins were recorded at ~40.0% (3MCY23: ~33.5%), ~37.0% (3MCY23: ~31.3%) and ~29.0% (3MCY23: ~9.1%), respectively, reflecting improvement. The considerable increase in net margin came on the back of ~92.0% decline in finance costs.







***Note**: Data is reflective of ~1 PACRA-rated/Listed sector player.*

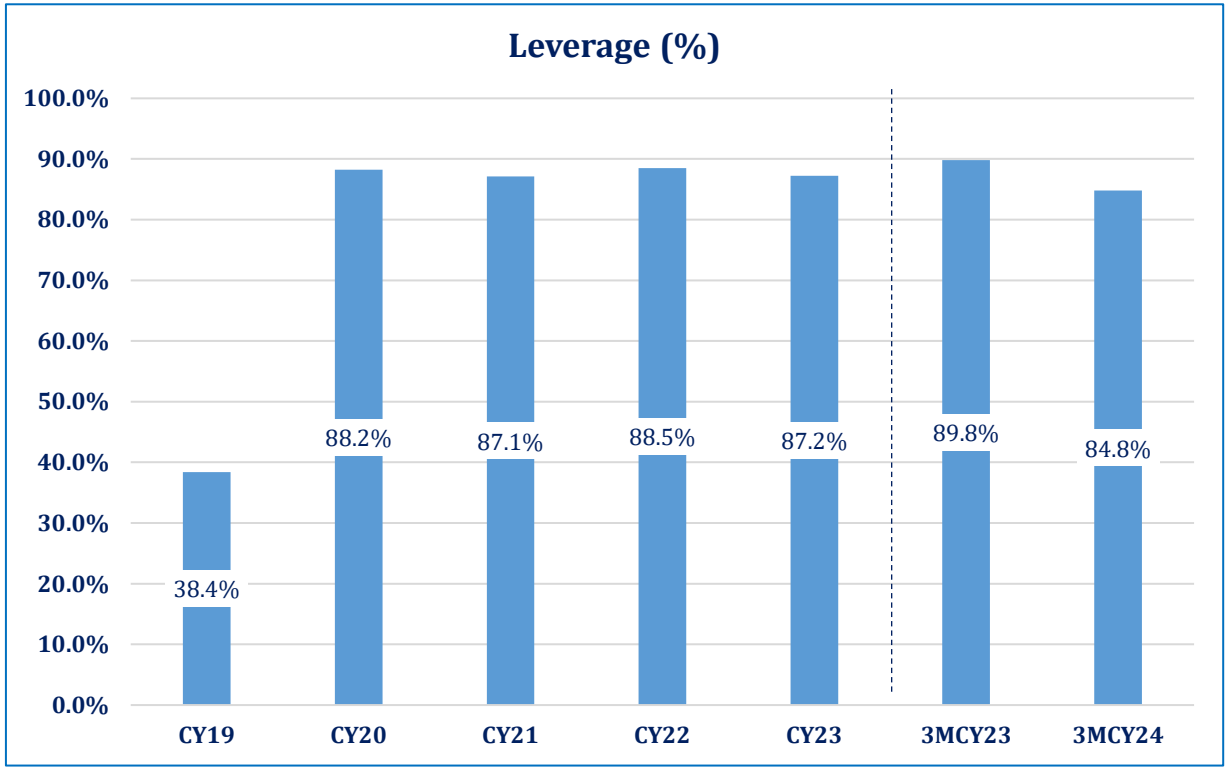
Source: PACRA Database

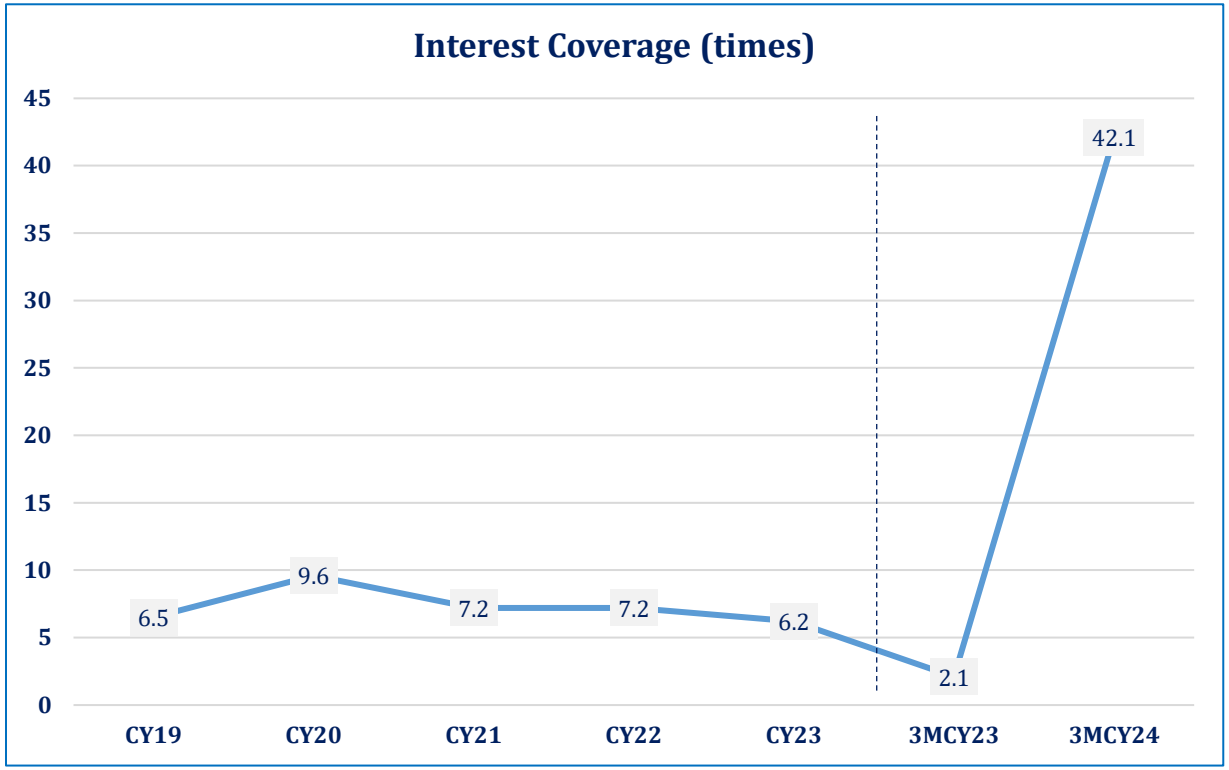
Distribution | Gas

Financial Risk | Terminal Handling

- The segment's leverage decreased to ~87.2% in CY23 from ~88.5% in CY22. Meanwhile, the overall borrowings were down by ~15.0% YoY during the same period. During 3MCY24, average leverage further declined to ~84.8%, due to the ~15.0% decrease in borrowings.

- Interest coverage declined from ~7.2x in CY22 to ~6.2x in CY23 and then sharply increased to ~42.1x in 3MCY24 due to ~14.0% increase in operating profit and ~93.0% decrease in finance cost.





***Note**: Data is reflective of ~1 PACRA-rated/ Listed sector player.*

Source: PACRA Database

Distribution | Gas

Local | Gas Regulatory Framework

The regulatory functions of natural gas sector were transferred to OGRA on March 28, 2002 with the objective to break the public sector monopoly and open natural gas transmission and distribution to private sector to promote and enhance competition in the midstream and downstream oil and gas sectors. OGRA has been performing the following functions pertaining to the natural gas sector: -

- Grant of licenses for the regulated gas sector.
- Formulation of rules, regulations and procedures for the conduct of licensees.
- Determination of Revenue Requirement of SNGPL & SSGCL.
- Monitoring and enforcement of rules, regulations and applicable license conditions.
- Processing of cases regarding Gas Pipeline Capacity Allocation and related Gas Transportation Agreements.
- Licensing of low pressure (flare) gas.
- Licensing for transmission, distribution and sale of Natural Gas.
- Approval of Gas Sale Agreements (GSAs) for supply of gas between the Gas Producers and Gas Companies/Consumers.
- Handling cases related to Natural Gas Infrastructure Development Projects.
- Conducting UFG Study of Gas Sector.
- Attending court cases pertaining to the regulated gas sector, formulation of rules and procedures for the conduct of licenses.
- Liaison with International Organizations/Donors, e.g. World Bank, USAID, regarding Gas Sector Reforms.

Source: OGRA

Local | Tight Gas Policy 2024

- Tight Gas (Exploration & Production) Policy, 2011 was the first initiative to encourage upstream petroleum industry to invest in the exploration and production of tight gas. The document served as a comprehensive policy framework to promote and incentivize exploration and production of unconventional sources of hydrocarbons against the backdrop of growing population and economic expansion.
- **Definition**
  - Tight Gas is defined as a natural gas that cannot flow naturally at commercial rates with conventional methods despite having hydrocarbon reserves.
  - Extraction thus requires advanced technologies for its exploitation/production such as high-performance perforation, hydraulic fracturing, horizontal wells, slanted/deviated wells, multilateral wells &/or infill drilling or combination of these technologies or any new technology.
  - Moreover, it has an estimated value of effective permeability calculated using geometric mean of less than "~1.0 milli Darcy (mD)."
- The CY24 Policy has been designed to incentivize local and foreign E&P companies to invest in the unconventional hydrocarbons and is aimed at enabling the oil & gas industry to invest in unconventional ventures, mitigate demand-supply gap and provide a fair pricing regime compatible with market realities.
- **Objectives**
  - Incentivize Oil and Gas industry to invest in the exploration of unconventional/Tight gas resources that are not being produced due to non-commerciality.
  - Provide a Policy regime for transparent, effective, and efficient processing of regulatory approvals.
  - Address commercial viability issues of existing Tight Gas reservoirs.
  - To open new frontiers for exploration of Tight Gas which would help increase the exploration activities in the country.
  - Enhance indigenous production of hydrocarbons.
  - Minimize reliance on imported fuels and regenerate additional revenues for GoP.

Source: Petroleum Division

Liquified Petroleum Gas

Distribution | Gas

Local | Introduction

- LPG is essential in Pakistan's energy mix as it provides a cleaner alternative to biomass-based sources, especially in locations where natural gas is unavailable. With domestic natural gas declining at CAGR of ~8-10%, the use of LPG is rapidly growing, with its share in energy mix at ~1.5% as of Jul'24. Pakistan imports ~55.0% of LPG to meet local supply while remaining ~45.0% is locally produced (covered later).

- SSGC LPG Limited (SLL) is a fully integrated LPG marketing and distribution Company capable of giving customers reliable and economic supply of product. Company's supply chain extends from allocation from local producers and a fully owned import terminal at Port Qasim to supply consumer retail packs of LPG.

- The terminal has a ~3.5Km pipelines and a jetty capable of handling vessels up to ~15,000DWT. The bulk storage capacity is of ~6,500MT. The drought at the jetty has been increased to ~10.5 meters to accommodate larger vessels for supply to the Synthetic Natural Gas (SNG) or Air Mix Plants projects. The standard Terminal Tariff is USD~32/1,000Kg (or ~1.0 MT) as of FY24.

- The only state of the art Terminal and Storage facility for bulk liquid chemicals and LPG in Pakistan is one of the ~67 terminals of Vopak in ~25 countries where capacity recorded, as of Jul'24, is ~34.7mln CBM around the world. A breakthrough in chemical and LPG storage, Engro Vopak Terminal Limited, is a joint venture of Royal Vopak of The Netherlands and Engro Corporation Limited.

- Vopak's total LPG storage capacity now stands at 75,000DWT while the storage capacity of the terminal operation is ~82,400 CBM, as of FY24. During 9MFY24, an investment amounting to PKR~6.6bln has been made in country's LPG infrastructure (SPLY: PKR~2.8bln).

Source: OGRA, SSGCLPG, EVTL

Distribution | Gas

Local | Overview

- LPG is transported through Road Bowsers from Terminals, Refineries and Fields to Storage & Filling Plants wherein it is stored.
- At the Storage & Filling Plants, LPG is filled in domestic & commercial cylinders.
- Filled Cylinders are shifted/ transported to the distributor shops from where the LPG cylinders are sold. Filling of LPG from cylinder to cylinder at the distributor premises of LPG marketing companies or at any other unauthorized place/ shop is not allowed as it falls under illegal decanting.

LPG | Storage Capacity (As of Jul'24)			
Sr.	**Province**	**No. of Plants**	**Storage Capacity (MT)**
1	**Punjab**	243	41,500
2	**Sindh**	31	8,800
3	**KP**	51	4,200
4	**Balochistan**	21	1,400
5	**AJK**	09	670
6	**Gilgit Baltistan**	03	250
7	**ICT**	01	60
Total | Provinces		**359**	**56,880**
1	**SSGC LPG Terminal**	01	6,530
2	**EVTL Terminal**	01	6,500
3	**Al-Qasim Terminal**	01	90
Total | Terminals		**03**	**13,120**
Total | LPG Marketing Companies (No.)		**~321**	
Total | Authorized Distributors (No.)		**~6,000**	

Source: OGRA

Distribution | Gas

Local | LPG Licenses

- OGRA has simplified the procedure for granting LPG licenses, and the same is granted on a fast-track basis once the requirements are met.
- During 9MFY24, ~36 permits for the operation of LPG storage & filling plants, ~33 licenses for the construction of LPG storage & filling plants, ~02 operational licenses for LPG air mix plant, and ~08 licenses for road bowsers for transportation of LPG were issued.
- OGRA has also issued ~04 permits for the construction of LPG auto refueling stations during the same period.
- As of Jun'24, there are a total of ~79 companies with valid OGRA-approved licenses pertaining to the construction of LPG storage & filling plants.

LPG Transportation (Road Bowsers)			
Sr.	**Company Name**	**License Issuance Date**	**License Valid Till**
1.	**B.B.N Energy (Pvt.) Ltd.**	6-Dec-23	5-Dec-38
2.	**PARCO Pearl Gas (Pvt.) Ltd.***	9-Oct-23	8-Oct-38
		5-Jan-24	4-Jan-39
4.	**Shaheen Energy (Pvt.) Ltd.**	17-Jul-23	16-Jul-38
5.	**Burshane LPG (Pak.) Ltd.**	19-Jul-23	18-Jul-38
		18-Sep-23	17-Sep-38
7.	**Al-Mubarak International (SMC Pvt.) Ltd.**	12-Jan-24	11-Jan-39

- During this time period, the total number of LPG marketing companies stood at ~317, while that of authorized LPG distributors stood at ~5,827 (as of May'24). Meanwhile, as of Feb'24, total number of licenses issued for transportation of LPG through road bowsers were recorded at ~24. The latter includes Havelet Gas, PARCO Pearl Gas (Pvt.) Ltd., SSGC LPG (Pvt.) Ltd., Al-Qasim Gas (Pvt.) Ltd. and Burshane LPG (Pak.) Ltd., among others.

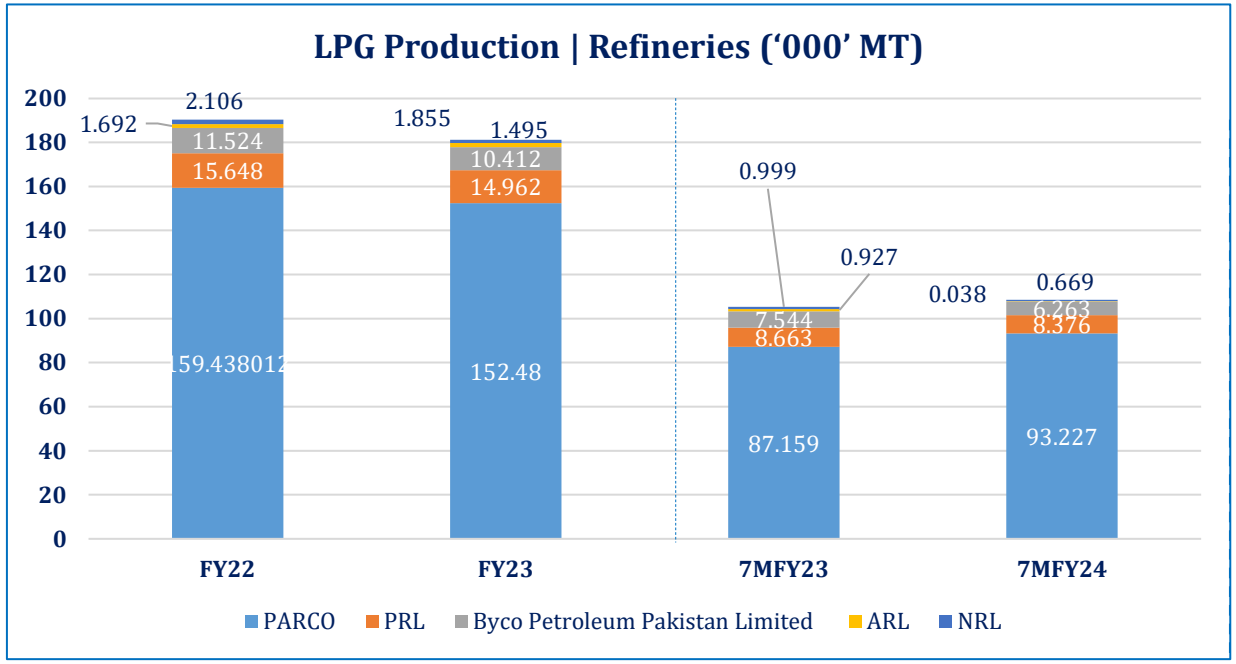
Source: PES, OGRA

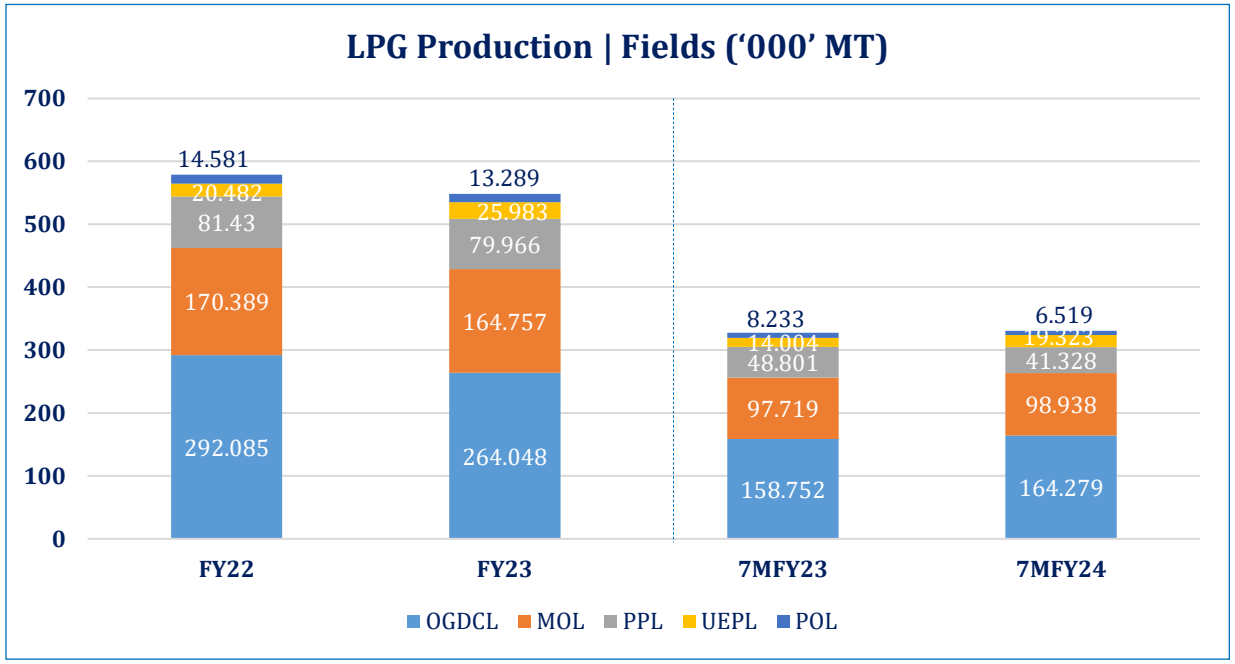
Distribution | Gas

Local | Supply | LPG Extraction & Processing

- In FY23, the total LPG extracted/ processed was recorded at ~729,247MT down ~5.2% YoY (FY22: ~769,375MT). Of the total, ~75.2% was extracted from natural gas fields while the remaining ~24.8% was produced in refineries. LPG production from refineries recorded ~4.8% YoY decline, while that from the fields declined by ~5.3% YoY during FY23.

- In 7MFY24, total LPG extracted/processed was recorded at ~438,960MT up ~1.4% YoY (SPLY: ~432,801MT). Of the total, ~75.0% was extracted from natural gas fields while the remaining ~25.0% was produced in refineries. During the time period, LPG production from refineries recorded ~3.1% YoY increase, while LPG production from fields grew by ~0.9% YoY.



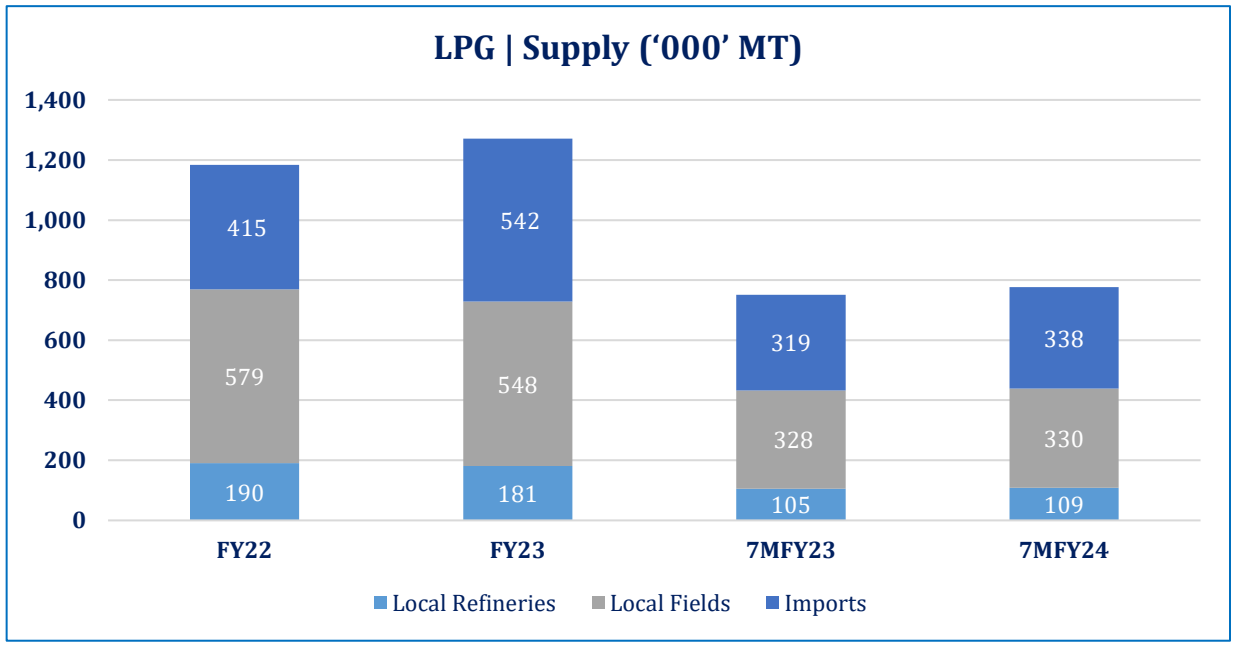


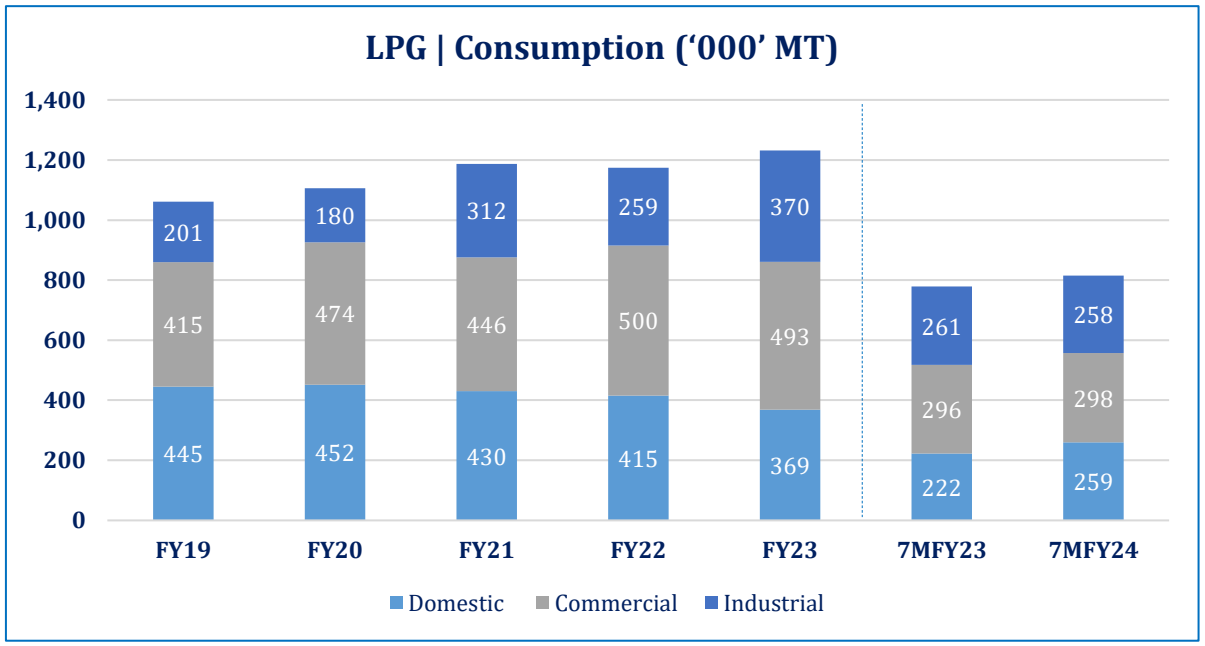
Source: OGRA

Distribution | Gas

Local | Production & Consumption

- In FY23, the overall LPG supply, comprising local production and imports, was recorded at ~1.3mln MT, recording ~7.3% increase YoY. While local production formed ~57.3% of the total supply during the year, imports comprised ~42.7% of total LPG supply (SPLY: ~65.0% and ~35.0%, respectively). In 7MFY24, LPG supply registered ~3.3% YoY increase, recording at ~0.8mln MT, with local production and imports comprising ~56.5% and ~43.5%, respectively (SPLY: ~57.6% and ~42.4%, respectively).
- With respect to LPG consumption, country's total demand stood at ~1,232MT, up ~4.9% YoY. During FY19-23, domestic, commercial and industrial consumers formed ~37.0%, ~40.0% and ~23.0% shares, respectively, while in FY23, these made up ~30.0%, ~40.0% and ~30.0%, respectively, in total LPG consumption. In 7MFY24, in line with historical trend, commercial segment remained the highest LPG consumer, forming ~36.6% of total consumption. Bulk of LPG is being consumed by the masses that cannot afford to buy domestic ~11.8Kg cylinders and they purchase ~1-2Kg of LPG in sub-standard/ poor quality cylinders.





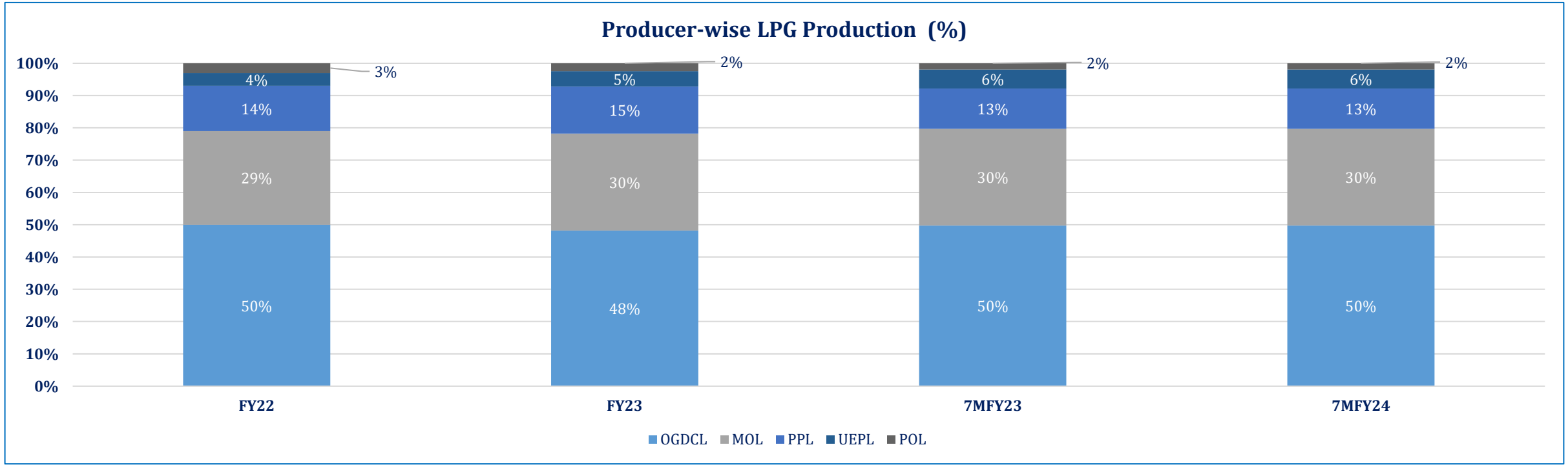
Source: OGRA, Company Financials

Distribution | Gas

Local | LPG Local Player-wise Supply

- OGDCL holds the largest share in the indigenous LPG production segment making it the market leader in exploration and production activity (~50.0% share in local LPG production as of End-Jan'24). As of Dec'23, the company's exploration acreage stood at ~91,781 sq. km, representing ~38.0% share in Pakistan's area under exploration.

- In terms of production, OGDCL contributed to ~46.0%, 29.0% and 36.0% of country's total crude oil, natural gas and LPG production, respectively during FY23 and ~46.0%, 28.0% and 37.0% of country's total crude oil, natural gas and LPG production, respectively during 6MFY24.

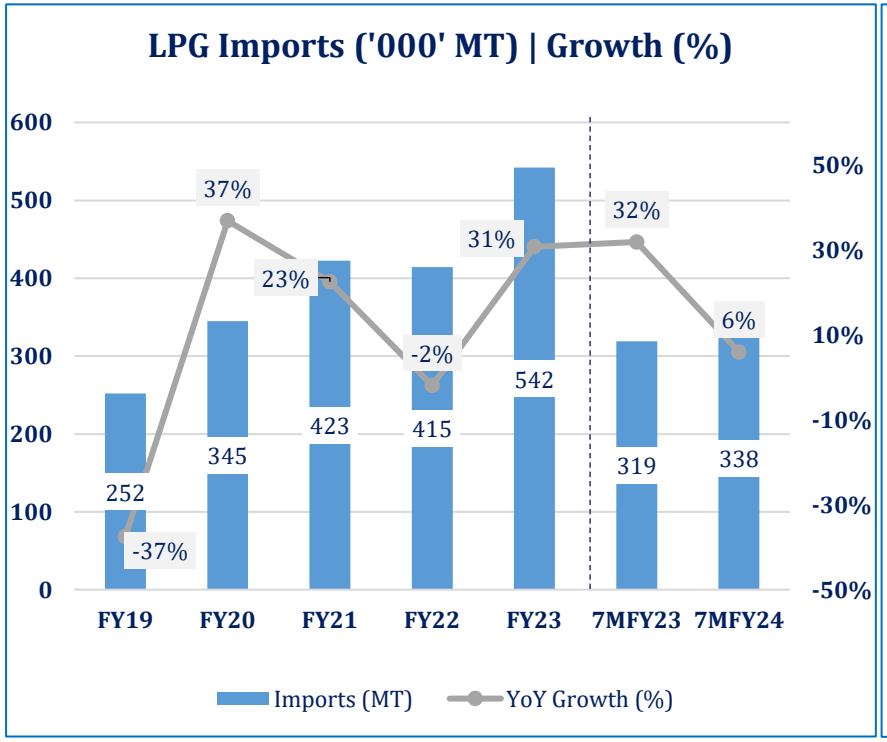


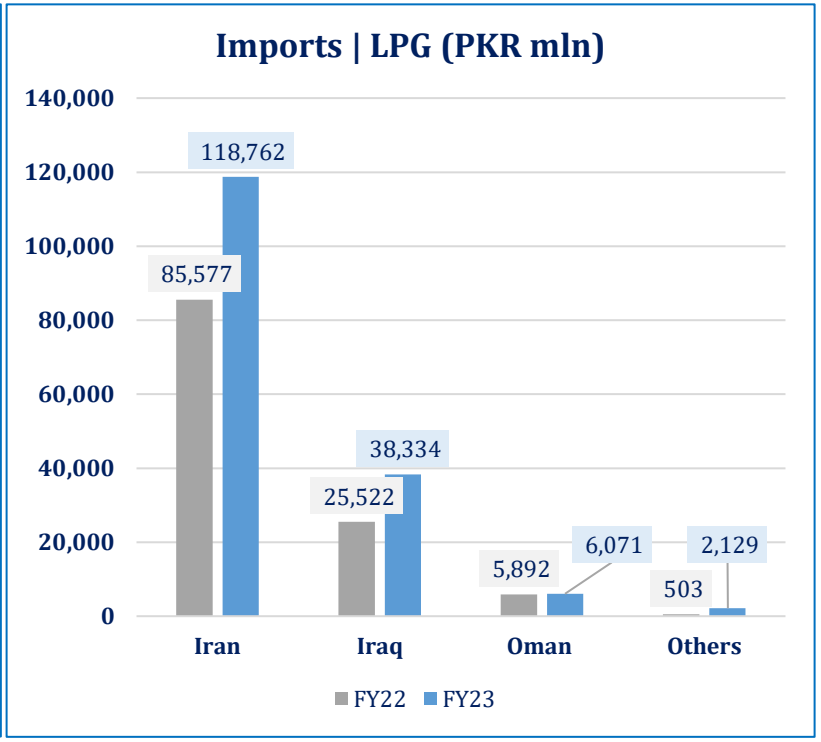
Source: OGRA, OGDCL

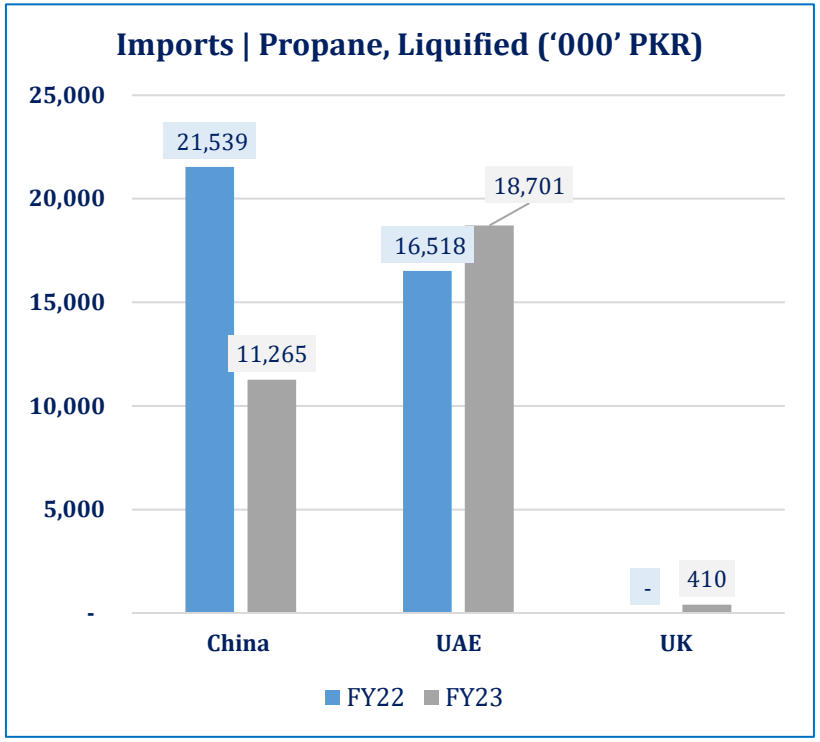
Distribution | Gas

Local | LPG Imports

- Pakistan significantly relies on imported LPG. During FY23, LPG imports clocked in at ~542,134MT (FY22: ~414,530MT), up ~30.8% YoY. LPG imports during 7MFY24 increased by ~6.0% YoY from ~318,839MT in 7MFY23 to ~337,897MT.
- During FY23, ~1.1mln MT of LPG liquified were imported into Pakistan (FY22: ~0.9mln MT, up ~22.9% YoY. In terms of value, LPG is majorly imported from Iran and constituted ~71.8% of the total LPG imports during FY23.
- Meanwhile, liquified propane is imported from China, UAE and UK and formed ~37.0%, ~61.6% and ~1.4% of the import bill pertaining to liquified propane in FY23.







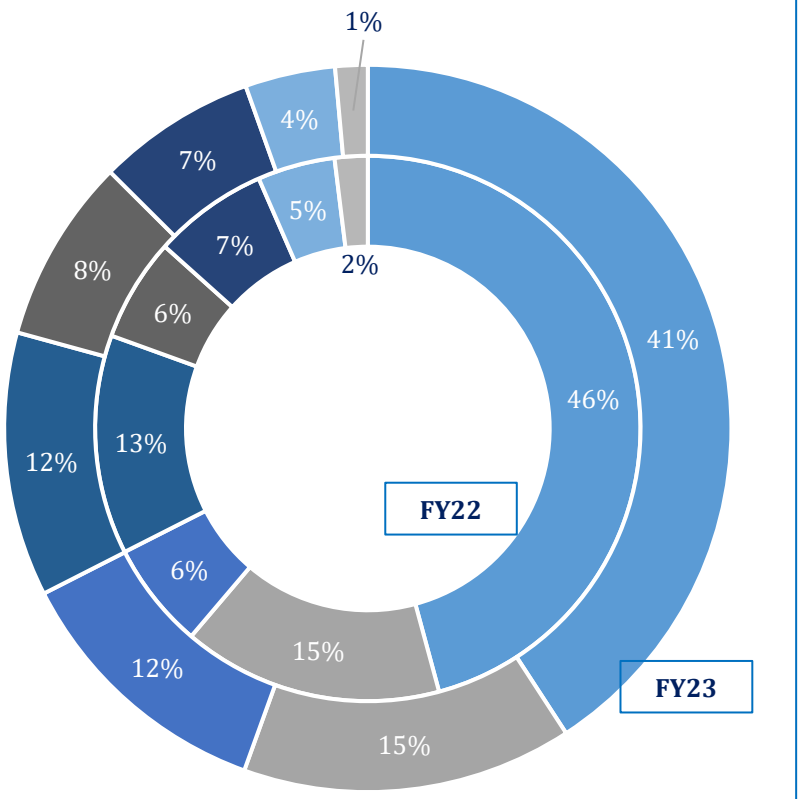
***Note**: Data pertains to HS Codes 2711.1200 and 2711.1910 for Propane and LPG, respectively, and is representative of latest figures available. LPG imports in MT have been taken from OGRA.*

Source: PES, PBS

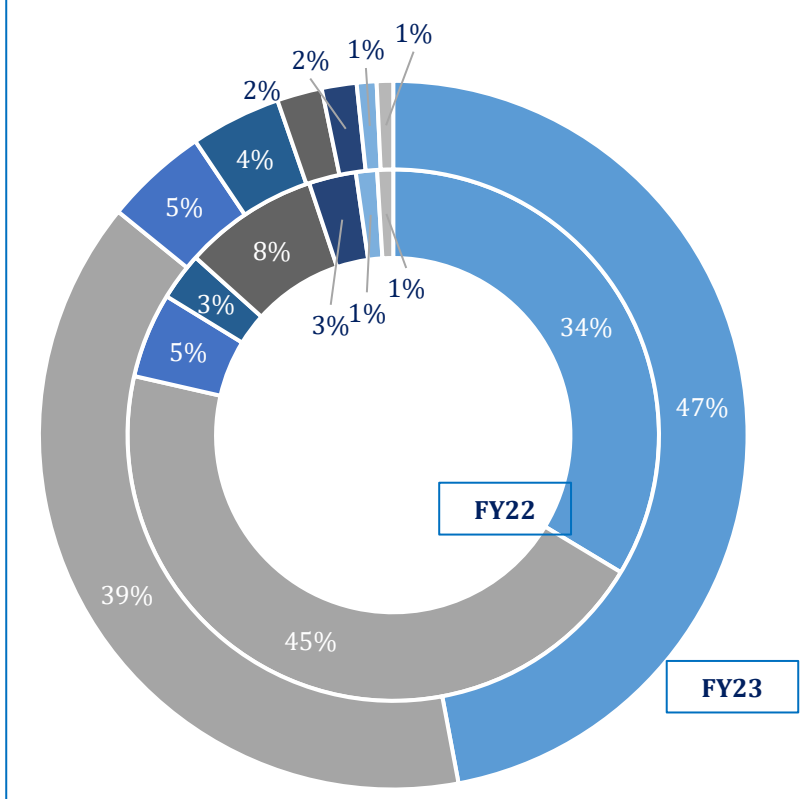
Distribution | Gas

Business Risk | Province-wise LPG Consumption

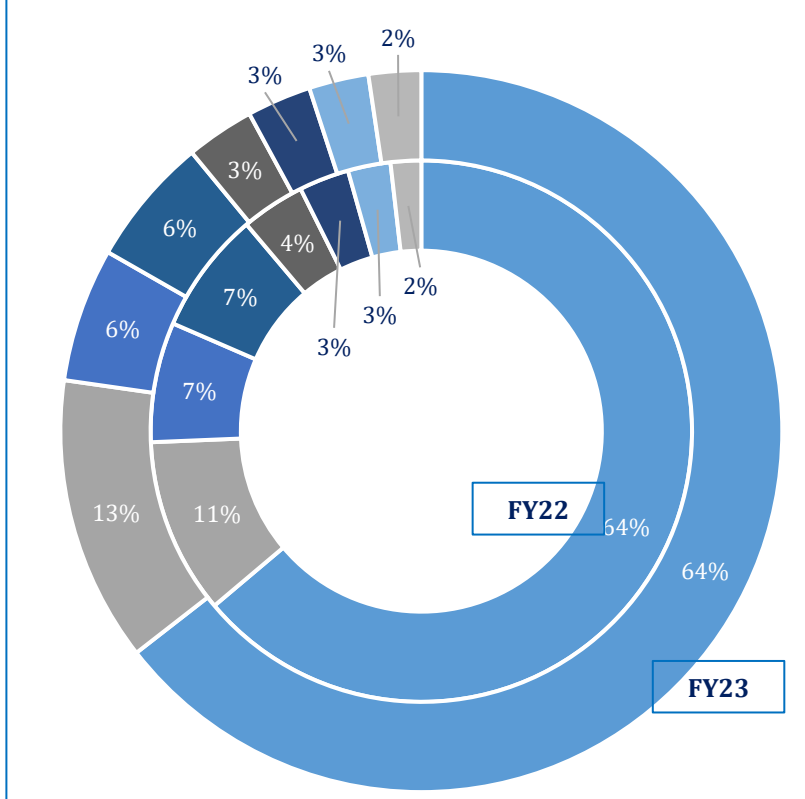
Domestic Consumption (%)



Industrial Consumption (%)



Commercial Consumption (%)



Source: OGRA

Distribution | Gas

Local | LPG Pricing

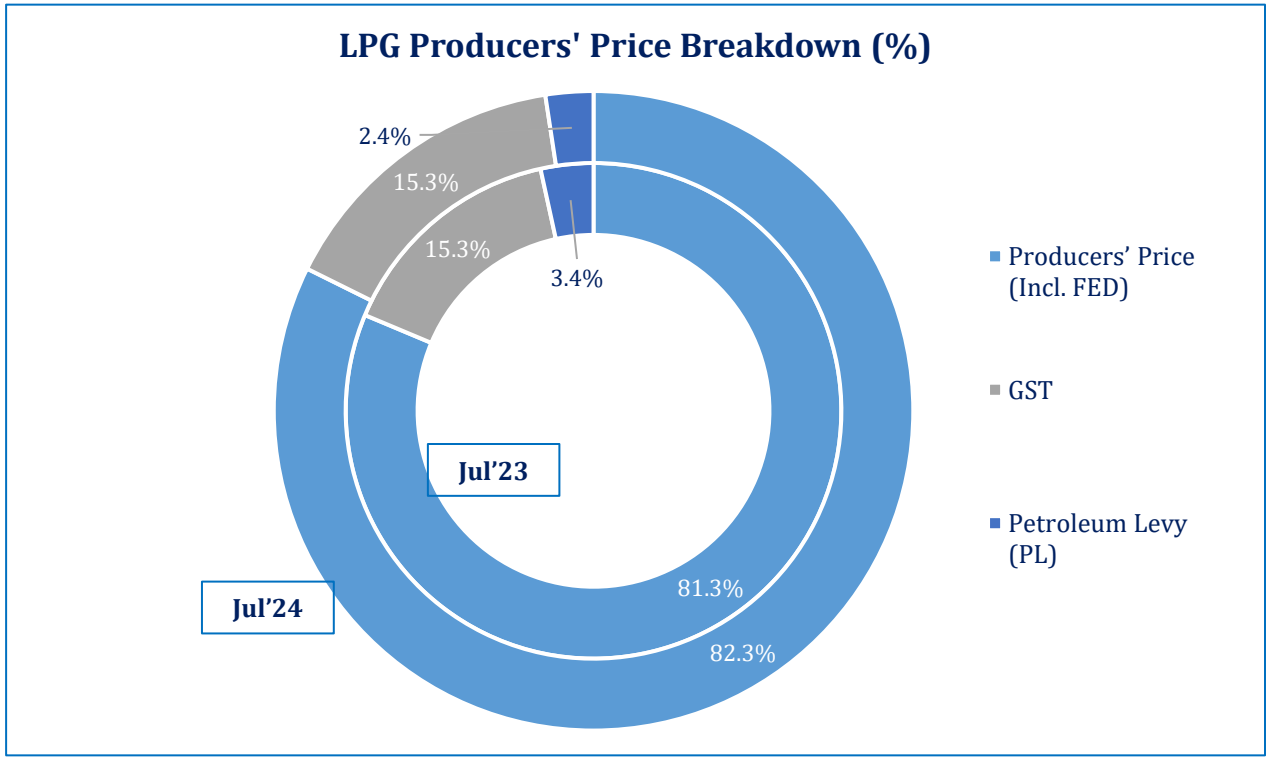
- The LPG Policy 2016 fixes the maximum LPG price at all levels of the supply chain.
- However, producers, marketing companies and distributors may sell below the maximum price determined from time to time.
- The price breakdown depicted is effective as of Jul'24.

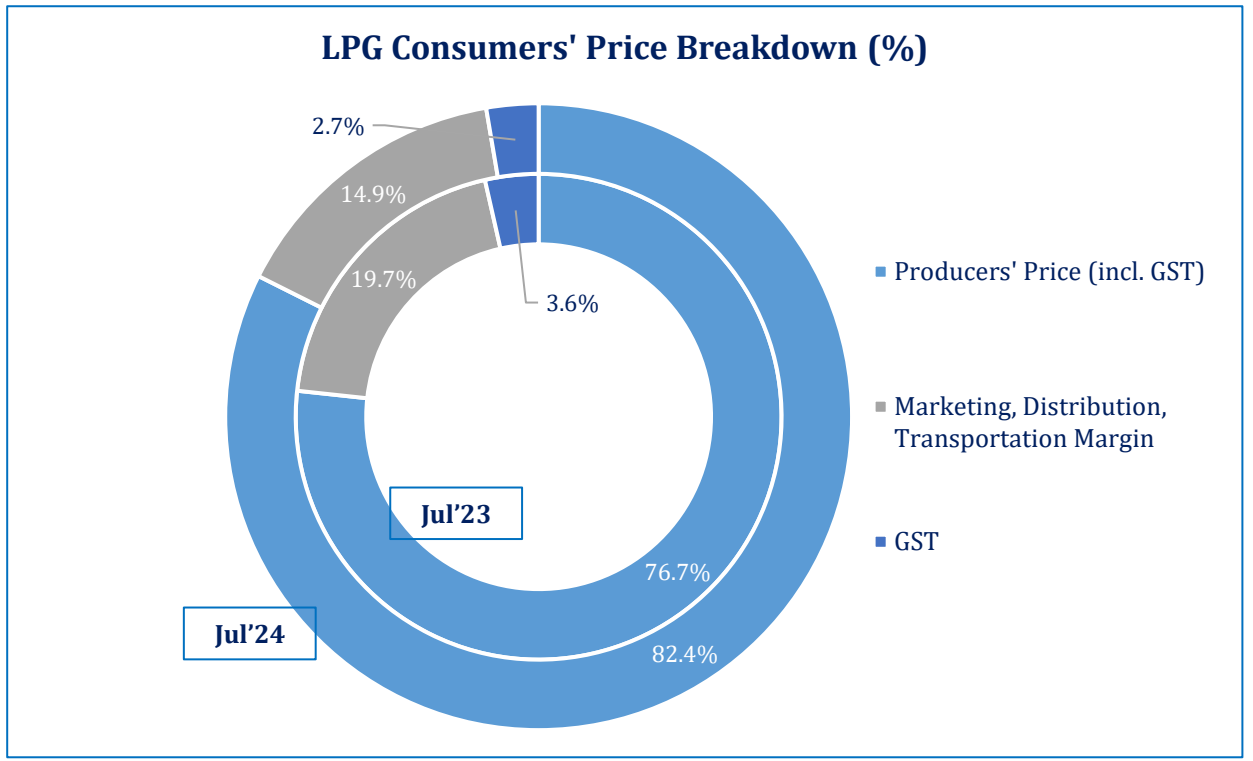
Indigenous LPG Price | Jul'24	PKR/MT	PKR/11.8KG
(A) LPG PRODUCER PRICE		
i. Producers' Price (including Excise Duty of PKR~85/MT) (Excluding Petroleum Levy) [Propane (40%), Butane (60%)]	152,243.9	1,879.1
ii. Petroleum Levy	4,669.0	55.1
iii. [i+ii]	163,912.9	1934.2
iv. 18% GST of (iii)	29,504.3	348.2
v. Maximum Producer Price with GST [iii+iv]	**193,417.3**	**2,282.3**
(B) LPG CONSUMER PRICE		
i. Producer's Price (inclusive of GST)	193,417.3	2,282.3
ii. Breakup of Marketing, Distribution and Transportation margin *Marketing*: PKR~17,000/MT; *Distribution*: PKR~10,000/MT; *Transportation*: PKR~8,000/MT	35,000	413.0
iii. 18% GST of (ii)	6,300	74.3
iv. Maximum LPG Consumer Price [i+ii+iii]	234,717.3	2,769.7
v. Maximum LPG Consumer Price	**PKR/KG**	**234.7**

Source: OGRA

Distribution | Gas

Local | LPG Pricing





- The maximum LPG prices (consumer and producer) are regulated at all levels of the supply chain. Distributors have the liberty to sell below this maximum fixed price from time to time.

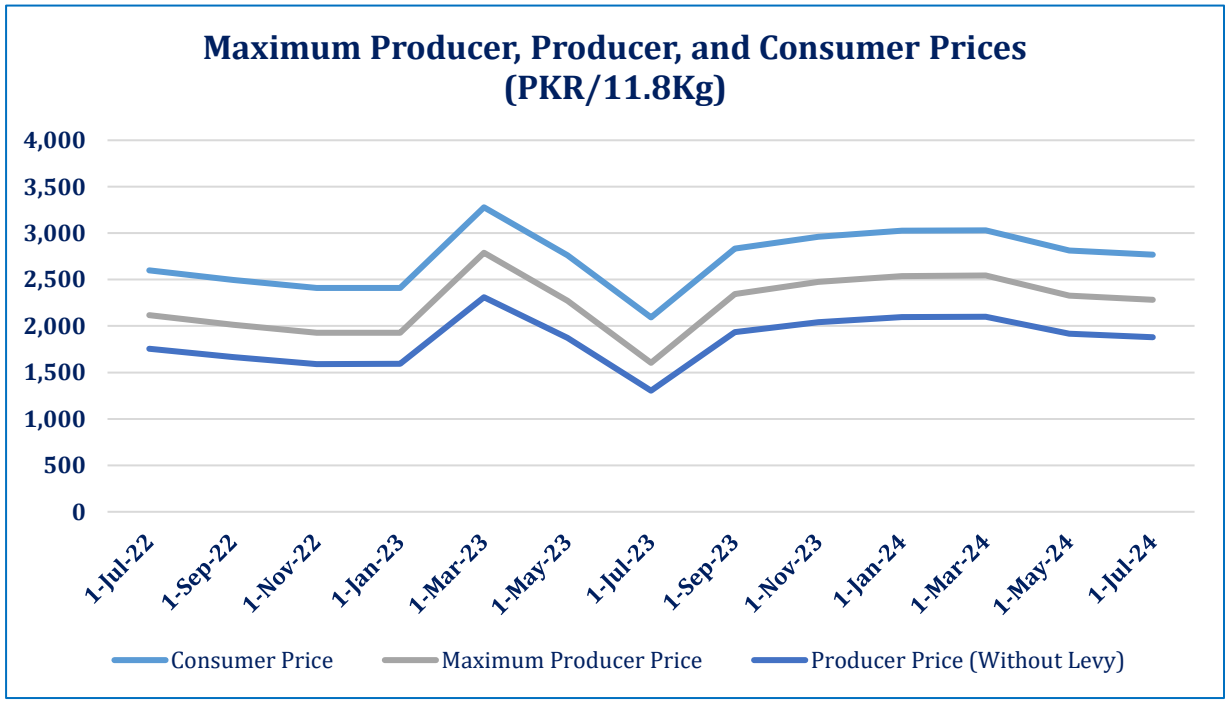
- Producers' price, inclusive of federal excise duty, comprises the largest chunk of both the producer and consumer notified prices which underscores the fact that LPG marketing and distribution companies have limited flexibility in price-setting/adjustments. In addition, the government retains the authority to intervene in case there is a significant deviation from the above pricing.

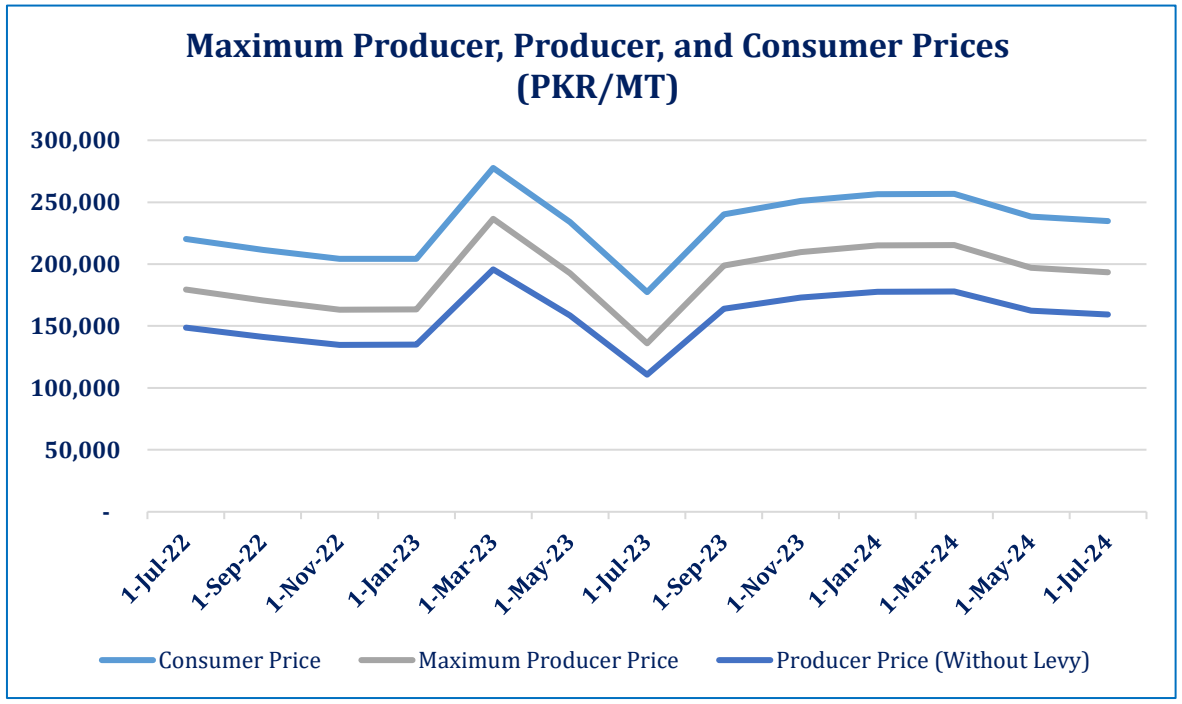
Source: OGRA

Distribution | Gas

Business Risk | LPG Pricing Trend

- OGRA typically announces LPG prices on a monthly basis. LPG is typically sold domestically in cylinder sizes of ~4Kg, ~6Kg, and ~11.8Kg. LPG is sold commercially in cylinder sizes of ~45kg and industrially in MTs. The two graphs depict the LPG pricing trends as set by OGRA.
- LPG prices for ~11.8kg cylinder touched their highest level in Mar'23, with the maximum producer price at PKR~2,790/11.8Kg and consumer price at PKR~3,278/11.8Kg, a rise of ~36.0% when compared with Jan'23. This came on the back of ~25.3% PKR depreciation against the USD between Jan-Mar'23 and inflation recording at ~35.4% during Mar'23 (Jan'23: ~27.6%).
- However, prices dipped in Jul'23 to record at PKR~1,605/11.8Kg and PKR~2,092/11.8Kg for maximum producer and consumer prices, respectively, whereas as of Jul'24, these stood at PKR~2,282/11.8Kg and PKR~2,770/11.8Kg, respectively.





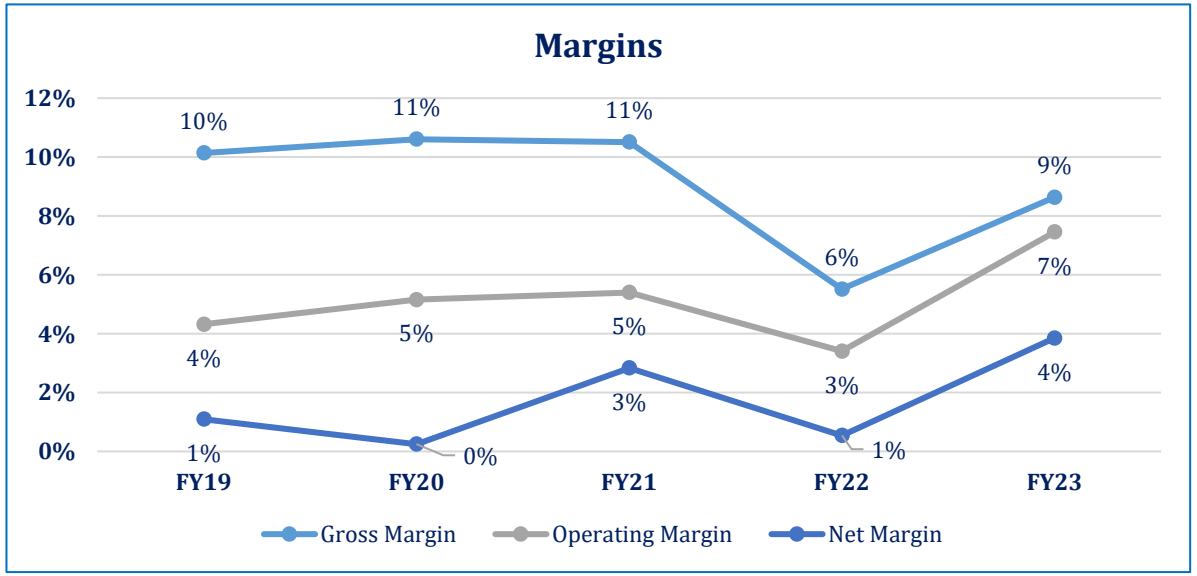
Source: OGRA

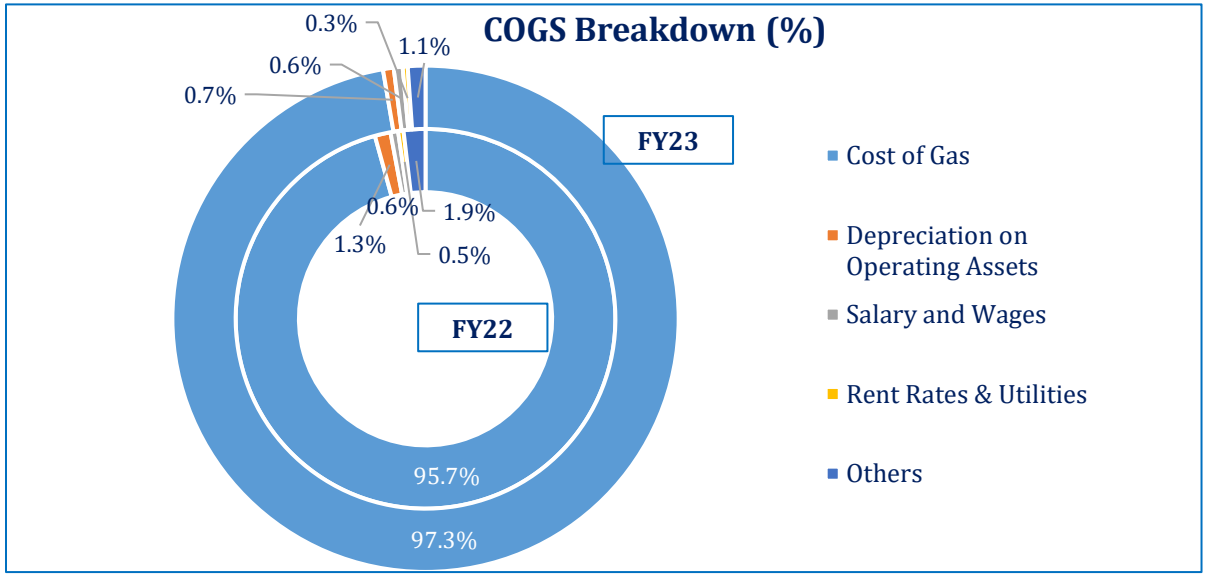
Distribution | Gas

Business Risk | Importers and Distributors

- Cost of gas (raw material) comprises the largest portion of importers'/traders' direct costs (FY23: ~97.3%, FY22: ~95.7%) followed by depreciation on operating assets (FY23: ~0.7%, FY22: ~1.3%)). This indicates exposure to exchange rate risk on the cost front while regulatory oversight on the prices leaves a little room for the importers to adjust prices and maintain margins. The sector, therefore, records thin margins tricking down from the gross profit level.

- During FY23, although the average COGS increased by ~89.0%, a simultaneous increase in revenues by ~95.0% contributed positively to the gross profit that increased by ~89.0%. Resultantly, average gross margins from ~6.0% in FY22 to ~9.0% in FY23. Average operating margin during FY23 was recorded at ~7.0% (FY22: ~3.0%) due to ~327.0% increase in the operating profit. Similarly, average net profit margin rose from ~1.0% in FY22 to ~4.0% FY23, due to a decline in finance costs of ~45.0%. Segment's borrowings were down ~13.9% YoY during the time period.





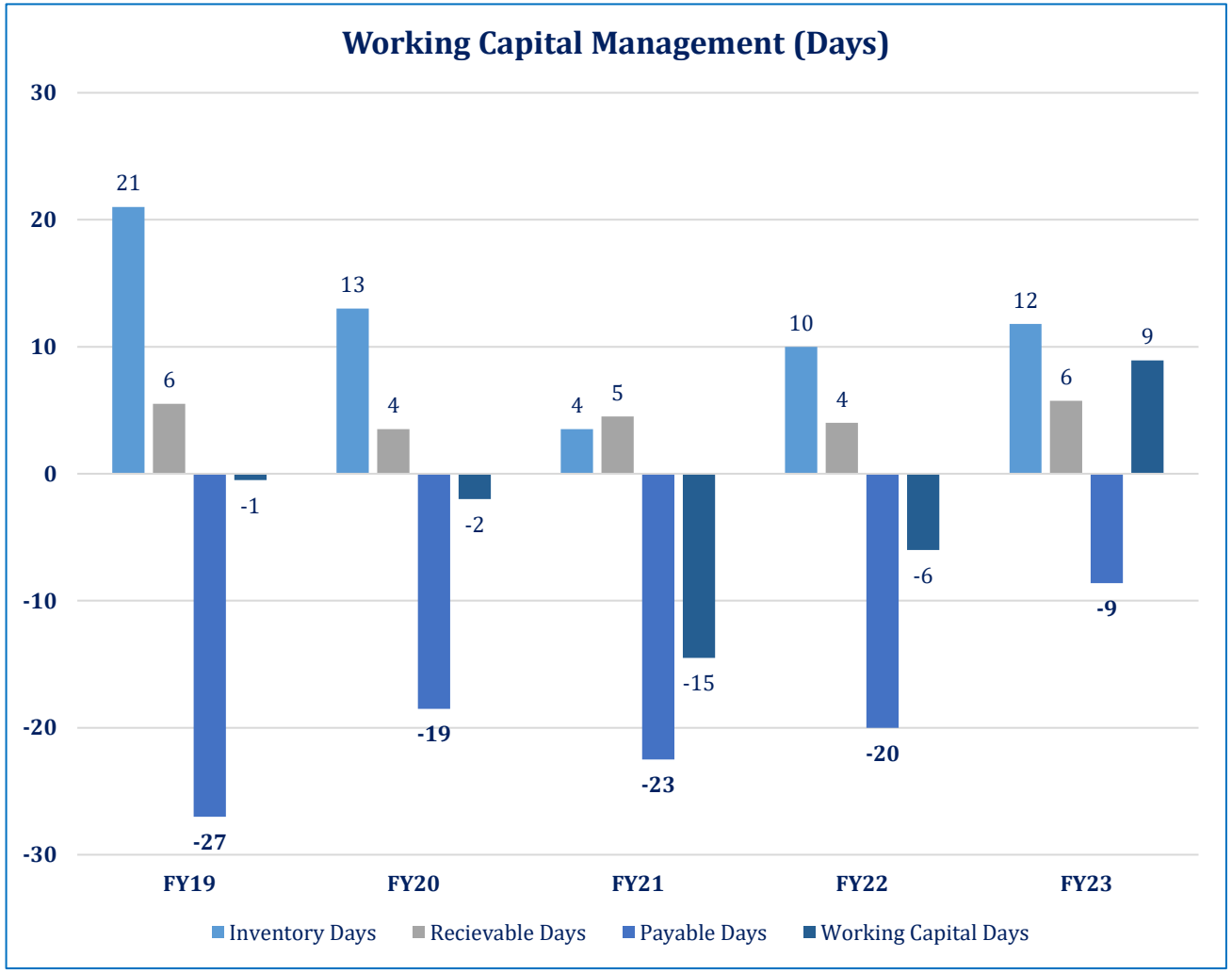
***Note**: Data is reflective of ~2 PACRA-rated/ Listed sector players in FY23*

Source: Company Financials

Distribution | Gas

Financial Risk | Working Capital Management

- The sector has historically (FY19-22) maintained a negative cash conversion cycle.
- However, in FY23, the average cash conversion cycle increased to ~9 days compared to ~-6 days during the previous year.
- The change came on the back of increase in average inventory days from ~10 days in FY22 to ~12 days, while the average receivable days decreased to ~6 days when compared with ~4 days in FY22.
- On the other hand, average payable days clocked in at ~9 days, compared to ~20 days in the previous year.



***Note**: Data is reflective of ~2 PACRA-rated/ Listed sector players in FY23*

Source: PACRA Database

Local | LPG Regulatory Framework

- OGRA is empowered to regulate the LPG sector under the OGRA Ordinance, 2002, and LPG (Production & Distribution) Rules, 2001 w.e.f. May 15, 2003. The LPG (Production and Distribution) Policy, 2016 developed by OGRA regulates the local LPG industry..

Production and Distribution for E&P Companies

- Public Sector E&P Companies shall directly or through other companies exercise their right to set up LPG extraction facilities at gas fields where LPG can be commercially extracted in accordance with the development plan approved by the Government.
- Public Sector E&P Companies and Refineries shall give preference in sale of LPG to Gas Utility Companies for supply to LPG Air-Mix Plants. In case Gas Utility companies are unable to lift LPG, the LPG would be disposed of in a transparent manner through a competitive bid process to the licensed LPG marketing companies on terms and conditions to be settled between the Buyer and Seller.

Import and Export of LPG

- Any party with an authorized license will be granted the right to import LPG into Pakistan.
- Any surplus of LPG can be exported after meeting local industry demand.
- The Federal Government, OGRA, and key stakeholder will determine the quantity of LPG to be imported to meet any gap between demand and supply; this quantity will be imported by Public Sector companies.
- Levy on LPG or Gas Infrastructure Development Cess (GIDC) may be utilized to subsidize the LPG imported by Public Sector companies for bringing the prices equal to local LPG prices for domestic sector supplies.

Pricing

- OGRA regulates and notifies the prices for indigenous LPG (including all margins)
- The government currently charges PKR~57.7 for a 11.8kg cylinder and may charge this levy from time to time.

Source: OGRA

Distribution | Gas

Local | LPG Regulatory Framework | Marketing & Distribution

- OGRA will issue a Provisional Licenses for an initial period of two years for LPG Marketing to technically and financially sound applicants for construction of works commensurate to their work program. The work program will ensure that adequate storage, cylinders and logistics infrastructure is constructed within this timeframe in line with the marketing plan of the company; this license will be converted to a period of fifteen years on completion of works.

- To ensure safety throughout the LPG supply chain i.e. LPG Extraction Plants, LPG Storage Tanks, LPG Transporters and Distribution Outlets, the Licensees will meet the minimum safety standards.

- Decanting of LPG from cylinder to cylinder is prohibited and cross filling of other LPG marketing companies' cylinder is also prohibited LPG except under hospitality arrangement with prior information in writing to OGRA.

- OGRA will publish a list of authorized manufacturers for all LPG equipment including LPG refueling stations, conversion kits, fuel tanks, cylinders, storage tanks etc. duly approved and certified by HDIP or any other party authorized by OGRA. The equipment manufactured by the authorized manufacturers will be verified and monitored for conformance to the international standards.

- OGRA shall obtain list of all existing LPG Distributors from LPG Marketing Companies and register them within 90 days of the date of issuance of this Policy.

- OGRA will charge a reasonable fee from each LPG Distributor not exceeding Rs. 10,000/- for registration. For all future Distributors, the Marketing Companies shall within 7 working days of the appointment of a Distributor notify OGRA which, in turn, will register these distributors within 90 days.

- Licensed LPG Marketing Companies would remain responsible for observance of all safety codes and standards at their Distributors' premises as well as implementation of LPG sale price.

Source: OGRA

Local | LPG Regulatory Framework | Draft LPG Policy 2024

- In view of the evolving market dynamics, shortcomings were identified in the existing LPG Policy, 2016 and regulatory framework and the Ministry of Energy has proposed a Draft LPG Policy 2024. The policy is aimed at promoting domestic production including its import and marketing.

- Salient Features of the Draft LPG Policy 2024 are as follows:-

  - Enhance Domestic LPG Production: 10-year tax holiday for new LPG production, zero petroleum levy, and 5% GST instead of 18%.
  - Enhance Infrastructure and Stocks: Zero import duties and taxes on imported plants/machineries/equipment's as per SRO. 678(I)/2004-FBR.
  - Market Liberalization and Competitiveness: Deregulation of LPG pricing.
  - Making SOEs Competitive: SOEs to be facilitated for partial exemption from PPRA Rules, 2004.
  - Improving Governance: Improving safety, quality of the product, and equipment by defining standards and ensuring the prevention of unfair market practices like price-setting and cartelization.
  - Digitization: Digitization, integration, and automation of LPG supply chain data by updating web-based database of the entire LPG sector.
  - LPG subsidy for Off-grid Consumers: Providing LPG at subsidized rates to households prioritized by the government based on socio-economic considerations to create equality between the grid connected and off-grid consumers.

Source: OGRA

Distribution | Gas

Local | Duty Structure

- Special tax provisions apply to the exploration and production of natural gas, pipeline operations of production and extraction companies, manufacture and sale of liquified petroleum gas or compressed natural gas.
- In addition, the petroleum development levy and gas infrastructure development Cess (GIDC) for FY25 has been set at (FY24: PKR~869bln and PKR~40bln, respectively) in the FY25 Budget, petroleum levy on LPG is budgeted at PKR~3.5bln (FY24: PKR~12bln).

Particulars	Category	FY23	FY24
Natural Gas (Gaseous State)	Federal Excise Duty	PKR 0.18 /1 Tariff Unit	PKR 0.18 /1 Tariff Unit
	Custom Duty	0%	0%
RLNG	Custom Duty	11%	11%
	Sales Tax	18%	18%
	Federal Excise Duty	PKR 10/1 Tariff Unit	PKR 10/1 Tariff Unit
	Additional Custom Duty	2%	2%
LPG	Custom Duty	0%	0%
	FED	60.0/100,000 Tariff Unit	60.0/100,000 Tariff Unit
Butane	Custom Duty	0%	0%
	FED	17.18/ 100 Tariff Unit	17.18/ 100 Tariff Unit
Propane	Custom Duty	0%	0%
	FED	17.18/ 100 Tariff Unit	17.18/ 100 Tariff Unit

Source: FBR

Distribution | Gas

Local | SWOT Analysis

Strengths

- Natural Gas is a clean, safe, efficient and environmentally friendly fuel
- There are few players operating in the sector
- Demand for gas is continually rising
- Capital intensive sector – Low entry barriers
- Stringent regulatory approvals required to enter the market
- Indigenous production; low cost

Weaknesses

- Structural reforms requiring huge investments
- Greater reliance on imports
- Rising demand supply gap
- Limited regassification capacity at import stage

Threats

- Rising circular debt
- Increased exposure to exchange rate risk due to rising reliance on imports; dwindling forex reserves
- Increase in gas theft, transmission and distribution losses
- Declining local natural gas reserves
- Russian-Ukraine conflict increasing the competitiveness of LNG imports

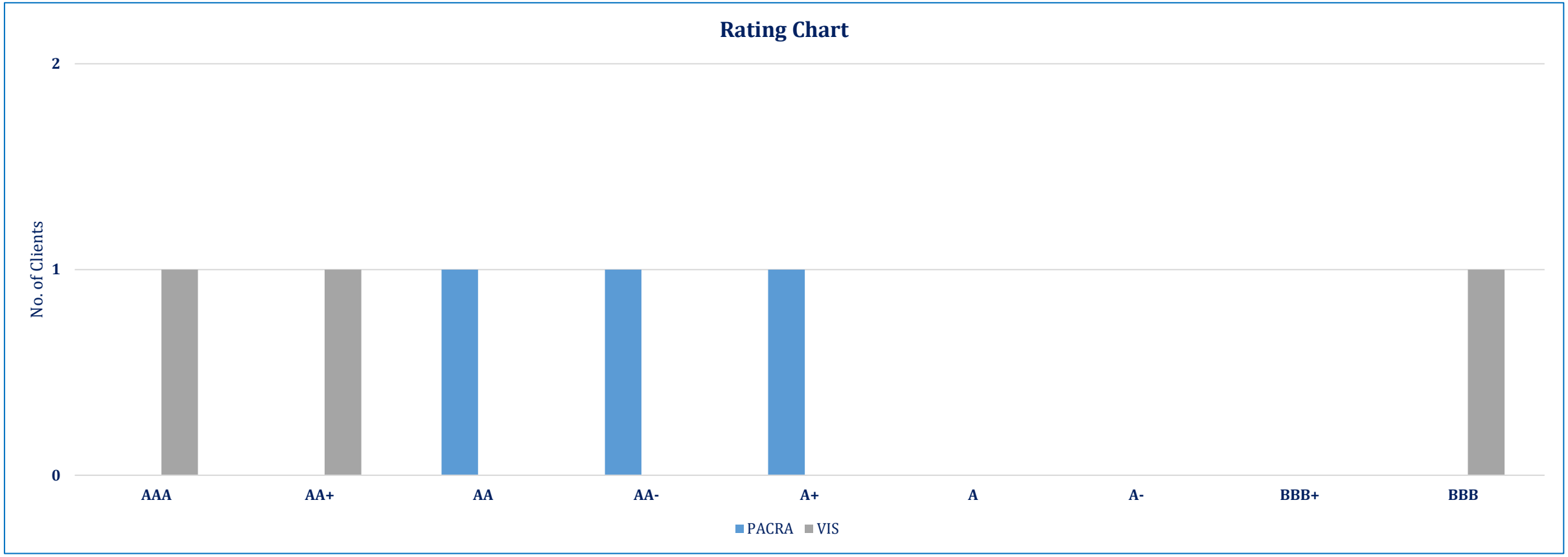
Opportunities

- Upcoming supply side projects to facilitate imports and reduce demand supply gap
- Rising demand
- Long-term import contracts at favourable rates
- Increase in exploration activities

Distribution | Gas

Local | Rating Curve

- PACRA rates four players in the gas distribution sector – one is natural gas & RLNG distribution company; one is a LPG marketing company; while one is an LNG importer. The rating scale used below is from AAA to BBB.



Source: PACRA Database

Distribution | Gas

Outlook: Negative

- In FY24, Pakistan's GDP (nominal) stood at PKR~106.0trn, increasing, in real terms, by ~2.8% YoY. Industrial activities in FY23 held ~21.7% share in the GDP while the manufacturing activities made up ~65.0% of the value addition. In 3QFY24, Pakistan's GDP (nominal) stood at PKR~25.4trn, rising in real terms by ~2.1% YoY, thus signaling a moderate improvement in economic activity as compared to SPLY.
- Large Scale Manufacturing (LSM) in Pakistan is essential for the economic growth considering its linkages with other sectors, as it represented ~75.6% value of manufacturing activities in FY23. The LSM fell by ~10.3% in FY23 (FY22: ~11.7%), however, it increased by ~0.99% YoY in 11MFY24 period.
- During CY23, global proven natural gas reserves amounted to ~206,430bcm (CY22: ~205,900bcm), a YoY increase of ~0.3%. While Pakistan's natural gas reserves stood at ~14,981bcf down by ~7.3% YoY.
- In FY23, local gas consumption was recorded at ~29.4mln MT, registering a decline of ~8.7% YoY. Local production during the year dipped by ~3.9% YoY, whereas RLNG imports, down ~15.2% YoY, stood at ~8.3mln MT. Therefore, total supply of gas stood at ~36.8mln MT, down ~6.7% YoY. Total supply during 9MFY24 was recorded at ~20.8mln MT, registering a decline of ~1.4% YoY. Of this, local production formed ~78.3% (SPLY: ~78.7%), while the share of RLNG imports stood at ~21.7% (SPLY: ~21.3%) during the year.
- **Natural Gas:** The average net margins for the sector came in at ~-0.01% (SPLY: ~-0.06%) during FY23. The dip in net margins was reflective of ~81.8% YoY higher finance costs due to SBP's hawkish monetary policy stance (interest rates ~22.0%). Sector's borrowings, as at End-Jun'24, stood at PKR~9.2bln, down ~12.9% YoY.
- **LNG:** During CY23, gross margin remained rangebound. The gross profit margins declined to ~33.0% during CY23 (CY22: ~34.2%). The operating margins also remained in the range of ~30.0% to ~31.0% between CY22 and CY23. However, net margins increased from ~14.8% in CY22 to ~16.5% in CY23, primarily due to an increase in non-operating income. During 3MCY24, the gross, operating and net margins were recorded at ~40.0% (3MCY23: ~33.5%), ~37.0% (3MCY23: ~31.3%) and ~29.0% (3MCY23: ~9.1%), respectively. In CY23, the global LNG prices were lower as compared to the historic highs of CY22. By 4QCY23, global LNG prices had dropped to USD~15.8/MMBTU.
- **LPG:** During FY23, although the average COGS increased by ~89.0%, a simultaneous increase in revenues by ~95.0% contributed positively to the gross profit that increased by ~89.0%. Resultantly, average gross margins from ~6.0% in FY22 to ~9.0% in FY23. Average operating margin during FY23 was recorded at ~7.0% (FY22: ~3.0%) due to ~327.0% increase in the operating profit. Similarly, average net profit margin rose from ~1.0% in FY22 to ~4.0% FY23, due to a decline in finance costs of ~45.0%. Segment's borrowings were down ~13.9% YoY during the time period.
- Sector's circular debt reached a staggering PKR~2,866bln (~2.7% of GDP) compared to PKR~2,391bln in Jun'23. On average, the GoP raised gas tariffs in Feb'24 by ~24.0% YoY, under the IMF 09-month Stand-By Agreement during FY23, with further tariff hikes expected in FY25 in order to curtail circular debt. Additionally, with rapidly depleting natural gas resource and growing demand in households, fertilizers and power sectors, there is a need to reduce dependence on RLNG imports and simultaneously to improve exploration and production activities.

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