

Financial Analysis of Listed E&P companies of Pakistan



By

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BUSINESS PROJECT ACCEPTANCE CERTIFICATE

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Abstract

The Purpose of this project is to understand the Oil & Gas Sector of Pakistan. This includes the three major industries of this sector: Upstream which has E & P companies, Mid-stream which has refineries and distribution industries and Downstream which includes the oil marketing companies. All these industries are being regulated through government institutions i.e., Petroleum Division under the secretary petroleum.

The Project focuses on the Exploration and Production industry of Pakistan which includes OGDCL, PPL, MPCL and POL. These companies are listed companies of Pakistan and major contributor in the stock market of Oil and Gas sector. OGDCL and PPL are majorly state own companies while MPCL and POL are private equity holder companies. These companies explore hydrocarbons from government allotted exploration blocks under the approval of Director General Petroleum Concession (DGPC). The Exploration activities includes seismic survey, drilling, Production and transportation to the refinery or mid-stream industry. All these activities involve approval from regulator at different levels.

The market performance and financial performance of the listed companies have been evaluated which clearly shows OGDCL is the leading company followed by PPL, MPCL and POL. The analysis provides the performance of E & P sector of Pakistan in comparison of international leading E & P companies. Where learning curve can be drawn to learn the financial strategies from global E &P global leaders in terms of debt financing. However, international companies are more effected by global events as compared to Pakistani E & P companies.

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Chapter 1: Oil & Gas Sector of Pakistan

1.1 Introduction:

The oil and gas industry of Pakistan is a major contributor to the country's economy and national income. Pakistan is home to a variety of oil and gas resources, including significant reserves of natural gas, crude oil, and coalbed methane. The country's oil and gas industry is largely dominated by the state-run Pakistan Petroleum Limited (PPL) and Oil and Gas Development Company (OGDC). Other major companies in the sector include Pakistan State Oil (PSO), Pakistan Oilfields (POL), and Mari Petroleum. Pakistan's oil and gas industry is regulated by the Ministry of Petroleum and Natural Resources (MPNR). The ministry is responsible for the exploration, production, storage, pricing, and distribution of petroleum products in the country. It also has the authority to grant licenses to oil and gas companies. Pakistan's oil and gas sector has seen significant growth in recent years.

The Oil and gas industry is classified in three main segments which includes upstream, the business of oil and gas exploration and production, mid-stream; transportation and storage and downstream segment; which includes refining and marketing.

The oil & Gas sector is under the ministry of energy in Pakistan. The ministry has two division and regulatory bodies; Petroleum Division, which is responsible for the exploration and production activities in Pakistan. Power

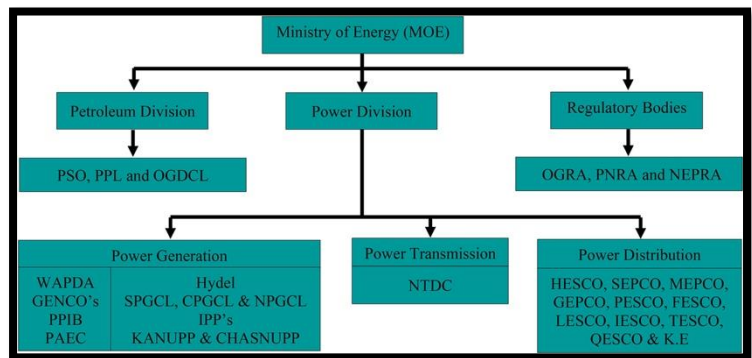


Figure 1-1 Hierarchy of Ministry of Energy

Division which is responsible for power generation and supply i.e., electricity throughout the country. Regulatory bodies are responsible for the foster competition, increase private investment, and implementation of policies.

Oil and Gas industry comes under the Petroleum Division which is run by a secretary petroleum division with additional secretaries.

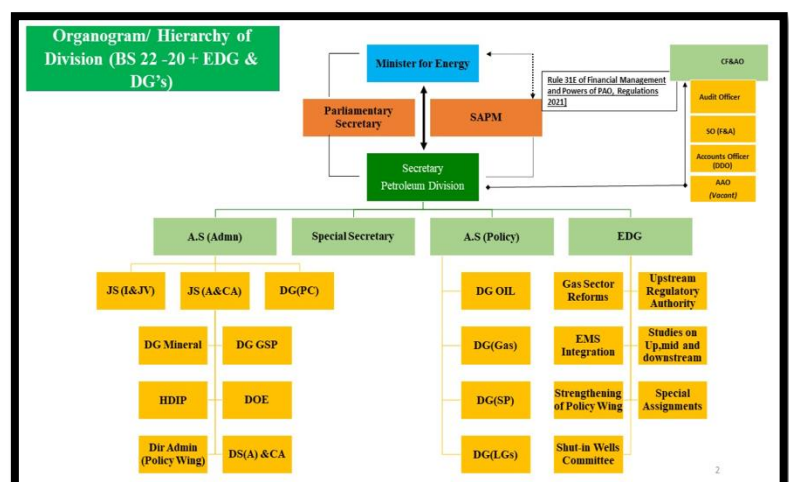


Figure 1-2 Hierarchy of Petroleum Division

DGPC is one of the six

Directorate Generals of the Ministry of Petroleum and Natural Resources. It functions as

the regulatory authority for all upstream E&P activities in Pakistan. The main DGPC functions are as follows:

1. Grant of petroleum rights; specifically, reconnaissance permits, exploration licenses, mining and development and production leases.
2. Regulation of activities and operations of exploration and production and services companies.

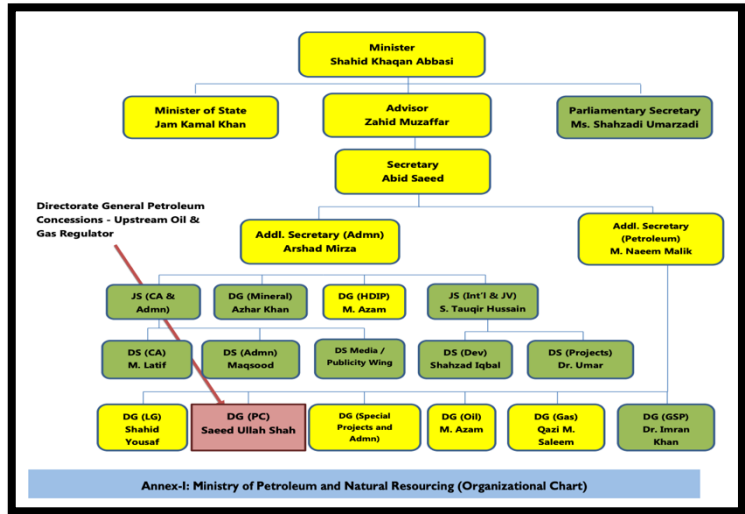


Figure 1-3 Hierarchy of Ministry of petroleum with name

3. Evaluation of and approval of the economics of petroleum arrangements, fiscal packages, analysis of oil and gas fiscal regimes, formulation of policies to attract investment in this sector and implementation of Petroleum E&P Policies, Rules and Model Petroleum Concessions and Production Sharing Agreements.
4. Management of petroleum exploration, development, and production operations in accordance with good international oil field practices, applicable rules and Concession and Production Sharing Agreements.
5. Approval of commercial discoveries, development plans, area relinquishments, extensions, renewals, assignments, and transfer of work commitments.
6. Monitoring and regulation of all exploration and production activities through daily, weekly, and monthly reports and field visits (geological, geophysical, drilling, production, reservoir etc.)

The administration Deputy Secretary is look after the matters related to OGDCL, PARCO and PSO the state own Oil & Gas companies through respective section officers.

OGRA stands for Oil and Gas Regulatory Authority. It is an independent regulatory body set up in 2002 by the Government of Pakistan to regulate and monitor the activities of the oil and gas industry in the country. OGRA's main responsibilities include:

1. Setting standards for the quality and safety of oil and gas products.

2. Ensuring that the prices of oil and gas products are reasonable and fair to consumers.
3. Setting safety and environmental standards and ensuring that they are met.
4. Licensing and registering oil and gas companies and their activities.
5. Monitoring the activities of oil and gas companies in Pakistan.
6. Investigating and resolving complaints about oil and gas companies.
7. Regulating the production, distribution and sale of oil and gas products.
8. Developing and enforcing regulations on oil and gas infrastructure.
9. Issuing permits for oil and gas exploration and production activities.
10. Regulating the transportation of oil and gas products.

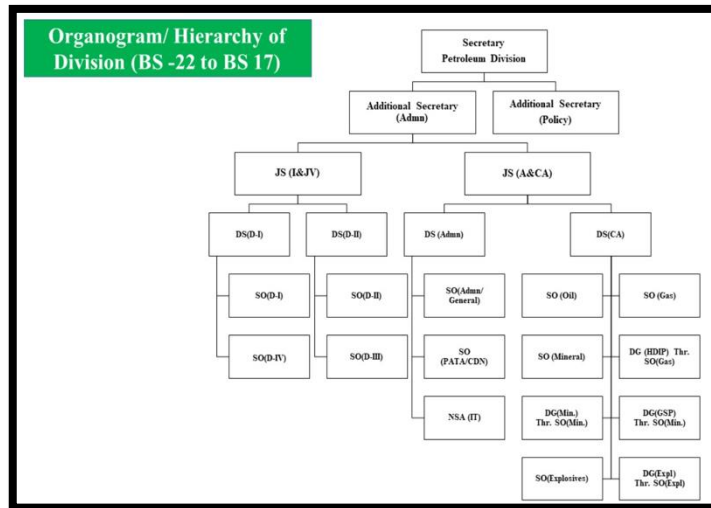


Figure 1-4 Hierarchy of secretaries

1.2 Oil & Gas Industry segments in Pakistan:

The upstream industry in Pakistan includes a variety of activities related to the exploration, development, and production of oil and gas. These activities involve a wide range of companies, from multinationals to small independent operators. Upstream industry includes

E & P companies and services industries. E & P companies are PPL, OGDCL, Mari Petroleum, POL, OPL, MOL and ENI and Services companies are Schlumberger, Weatherford, Halliburton, Eastern Testing and Sprint Oil and Gas services.

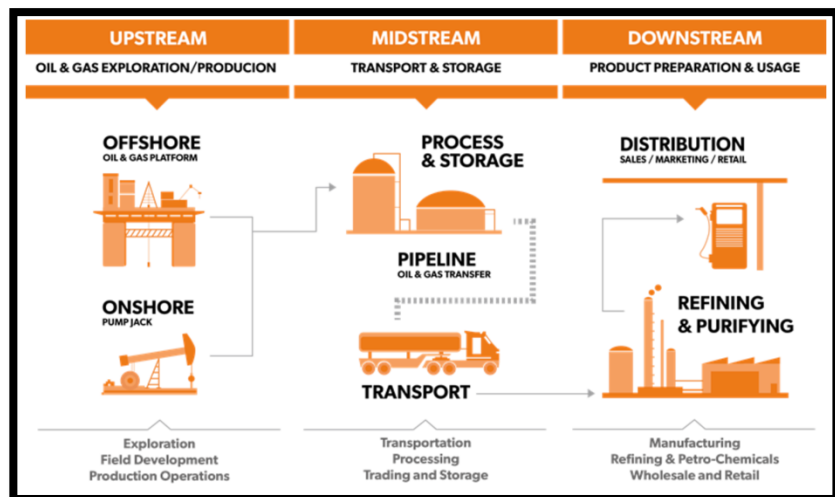


Figure 1-5 Classification of Oil & Gas Sector

The Upstream Oil and Gas sector is led by Oil and Gas Development Corporation Limited (OGDCL), Pakistan Petroleum Limited (PPL) and Pakistan Oilfields Limited (POL), state-owned companies listed on the Pakistan Stock Exchange. Although Pakistan's upstream

sector is unable to entice international companies despite an attractive return on equity, domestic exploration companies have expressed intentions to expand their upstream operations. To attract attention to the upstream sector, government is working on implementing a new petroleum policy which would offer more incentives for foreign exploration and production (E&P) companies. In addition, the new policy would lessen approval/licenses stages required before exploring a block. The new draft of petroleum policy will also address security concerns of E&P companies working in various parts of the country.

Mid-stream industry includes refineries and transportation companies. In Pakistan, mid-stream industry includes PARCO refinery, Attack refinery where the crude oil is processed and sent to marketing companies. The transportation companies are SNGL & SSGCL which has gas pipeline network throughout Pakistan for distribution of gas from remote field location.

Down-stream industry of Pakistan includes marketing companies of Oil and Gas i.e, TOTAL, PARCO, PSO, SHELL, HASCOL and other private investors etc.

Pakistan's midstream and downstream sectors offer business opportunities for the private sector. Pakistan's total refining capacity is approximately 400,000 barrels per day or about 19 million ton per year of crude oil, however, they supply 11.6 million tons per annum. This is against the current demand of 20 million ton per year. This gap will widen in the future due to a minimum five percent demand growth per year. To meet the growing demand of petroleum oil and lubricant products, Pakistan has announced new refinery projects in addition to the expansion of existing refineries.

Pakistan continues to import LNG. In February 2016, Pakistan signed a 15-year deal to purchase natural gas from Qatar to supply the Engro Elengy terminal. In addition to the agreement with Qatar, Pakistan utilizes other procurement streams to meet its demand, such as spot purchasing and term procurement for a specific period. The demand for LNG has grown from 4.5 million tons per year to 30 million due to the shift from oil-based to gas-fired power plants. To handle its growing demand, Pakistan plans to increase its capacity to handle more LNG imports by setting up as many as four more LNG terminals including FSRU units and additional infrastructure including a new jetty and pipelines in southern Pakistan.¹

¹ <https://www.trade.gov/energy-resource-guide-pakistan-oil-and-gas> - :-:text=Pakistan's total refining capacity is,20 million ton per year.

1.3 Supply and demand of Oil & Gas in Pakistan:

1.3.1 Historical trends:

POL: POL products have been a major source of energy for the economic sector and power generation companies, thereby covering a major portion of the energy mix. Currently, the use of POL products is reduced to 22 percent of the energy mix from the highest ever value of 35 percent in the year 2006. The country's primary energy demand for oil (crude and POL products) is met through imports; less than one-fourth of the demand is met by local supplies. This fostered dependency on expensive imported oil put considerable strain on Pakistan's economy by increasing import bills.

Supply	2006	2010	2015	2020
Indigenous crude processed	2,839,085	2,976,660	3,884,022	3,101,679
Imported crude processed	8,511,595	6,890,993	8,257,484	6,977,760
Total crude processed	11,350,680	9,867,653	12,141,506	10,079,439
Import of POL products	6,009,401	11,178,100	13,347,000	7,539,358
Primary supply	17,360,081	21,045,753	25,488,506	17,618,797

Table 1-1 Historical supply of crude POL products

Pakistan, in line with the rest of the world, has largely been dependent on the consumption of POL products by the transportation sector. The two highly consumed POL products—namely motor spirit and high-speed diesel (HSD)—are the primary energy providers for the transportation sector. As a general trend, HSD, FO, and kerosene oil were used as alternative fuels by the industrial sector. However, because of the significant transportation cost associated with the oil supply and difficult handling needs, consumption of POL products has shown a fluctuating trend within the industrial sector

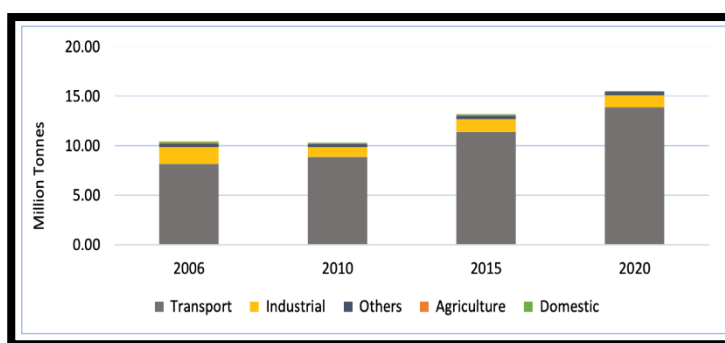


Figure 1-6 Consumption classification of POL products

Historically, thermal power generation has been dominated mainly by FO-based power plants. Intending to find a more environmentally friendly solution, the GoP in recent years decided to reduce FO consumption in the power sector by adding other energy sources. This exercise has resulted in a sharp decline in oil consumption from 2015 to 2020 in the power generation sector. The major

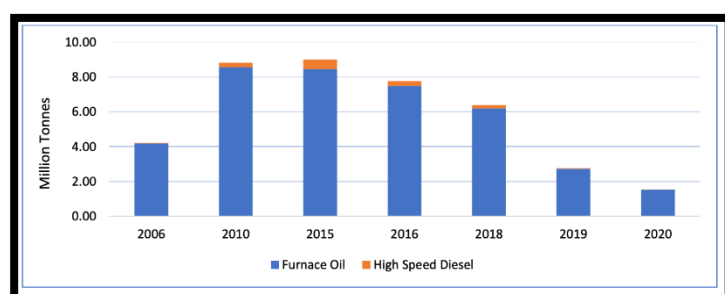


Figure 1-7 Historical Consumption of Furnace oil and HSD

change occurred because FO-based power generation in the country was retired.

Gas: Pakistan has mainly relied on gas as a primary energy source. Natural gas was stood up as the leading energy source to meet the energy demand in different sectors. Ever since, the discovery of the Sui gas field in Baluchistan in early 1950, natural gas has been depleting fast. The government has imported LNG over the last 10 years to keep up with the growing demand for gas in different sectors. Natural gas and imported LNG now contribute more than a 40 percent share to the current energy mix of the country. The historical pattern for indigenous gas production and imported LNG as a primary energy supply is reflected in Table.

Supply	2006	2010	2015	2020
Natural gas production	1,400,026	1,482,847	1,465,760	1,316,635
Imported LNG	-	-	20,192	355,577
Primary supply	1,400,026	1,482,847	1,485,952	1,672,212

Table 1-2 Historical Supply of Gas

Past trends show that the industrial sector consumes the most gas. Since the decline in gas reserves, the government has prioritized the domestic sector over industry in recent years. With the substitution of natural gas for cooking and heating, its use significantly increased when replacing kerosene oil in the domestic sector. The aggressive demand for Compressed Natural Gas (CNG) in the transportation sector, coupled with declining gas reserves, created a deficiency in natural gas supply to other sectors. Therefore, the GoP reviewed and revised the natural gas allocation policy and consequently, the consumption of CNG declined in the transportation sector. The use of natural gas in the commercial sector continued to increase until the GoP changed its natural gas supply priorities; as a result, LPG started to replace natural gas.

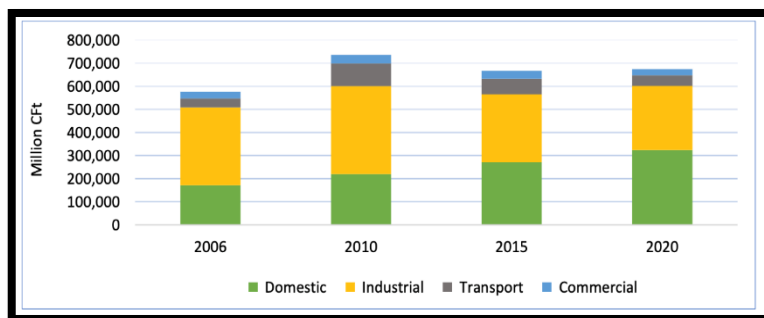


Figure 1-8 Consumption distribution of Gas

Historically, gas was the primary source for thermal power generation, but due to the decline in gas reserves in the last decade, its contribution to power generation has declined significantly. However, recently, the government decided to add LNG as a gas resource for power generation.

Gas being a country's leading energy source contributes to its use in almost all sectors, including the fertilizer industry as a feedstock (non-energy) and as a fuel. The use of gas as a

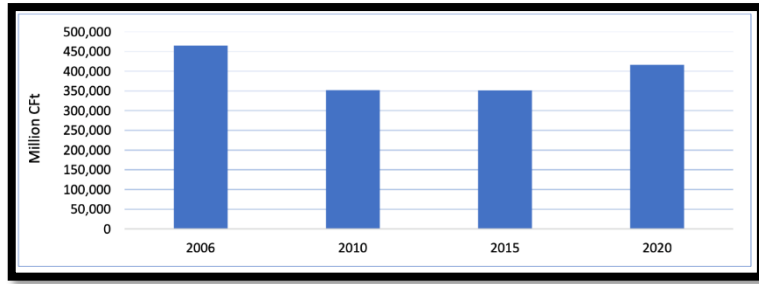


Figure 1-9 Historical consumption of Gas

non-energy source is increasing due to the increased demand for feedstocks and the increasing use of fertilizer inputs in the agriculture sector.

Source	2006	2010	2015	2020
Fertilizer (as feedstock)	155,259	175,631	170,266	213,176
Fertilizer (as fuel use)	42,918	44,481	59,459	74,589

Table 1-3 Historical Consumption of Gas

LPG: Currently, there are 11 LPG producers with 216 marketing companies. In addition, significant investment has been made in the LPG supply and distribution infrastructure. Due to growing pressure from different sectors, the production of LPG and its importation has witnessed significant growth. Apart from supplying the country's domestic needs, it is important to meet the country's other growing demands.

Supply	2006	2010	2015	2020
Field	344,875	298,457	276,891	603,510
Refineries	212,974	186,658	191,664	158,400
Local production	557,849	485,115	468,555	761,910
Import	24,779	67,721	145,634	344,639
Primary supply	582,628	552,837	614,189	1,106,549

Table 1-4 Historical Supply of LPG

LPG represents a substitute for natural gas that is consumed primarily in the domestic sector for cooking and heating purposes. The use of natural gas in the commercial sector increased until natural gas supply priorities were changed by the government; as a result, LPG started to replace natural gas because of the ease of portability that it offers to consumers and its

competitive pricing compared to natural gas. As a result, an increase in LPG consumption has been observed in the domestic and commercial sectors since 2015. Spikes in LPG

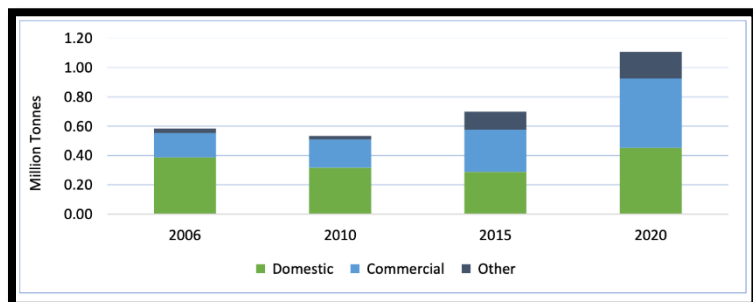


Figure 1-10 Consumption distribution of LPG

use by the commercial and domestic sectors have also been witnessed due to natural gas supply and distribution disruptions. Hence, LPG has become the second most used cooking fuel in both rural and urban households. Surprisingly, LPG consumption in other economic sectors (commercial transport such as auto-rickshaws, etc.) has increased aggressively from minimal to becoming the third most highly consumed fuel.

1.3.2 Forecasted trends:

OIL: The forecasting results are produced based on the historical baseline trends of the oil supply and consumption in the country. Like the historical trends, oil and POL products will constitute a major part of the energy mix for serving the sectoral demand. Because transport is a major sector in oil and POL products consumption, its demand will be met by local production and imports. The demand for the transport sector, coupled with the recent industrial growth, demographic changes, and economic progress, will increase the overall consumption from 17.03 million tonnes in 2020 to 24.15 million tonnes by 2030. The demand for motor spirit and HSD is expected to reach a level of 20.8 million by 2030, compared to 13.86 million tonnes in 2020.

During the last 5 years, the production of oil has sharply declined in the upstream oil sector. Historical trends show a decline in the local oil production from 94,493 BBL/day in 2015 to 76,739 BBL/day in 2020, until and unless any major oil sources are discovered. With a similar trend, the future projections show a further decline in oil production from 62,663 BBL/day by 2025 to 51,029 BBL/day by 2030.

Oil demand in the country is driven by two sectors, the economic sector, and the power sector. The power sector demands major contributions from FO, which is already in the process of being phased out by 2030. The oil

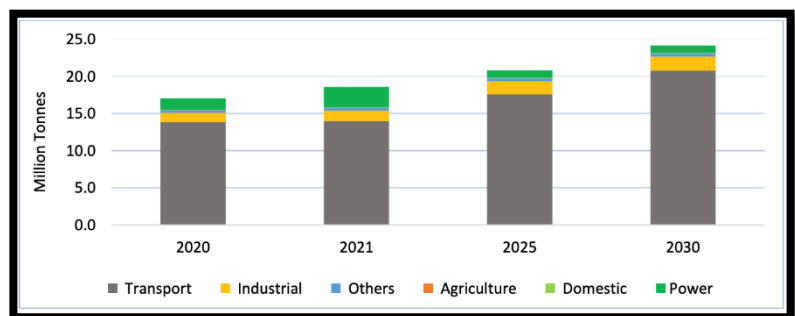


Figure 1-11 Forecasted consumption distribution of OIL

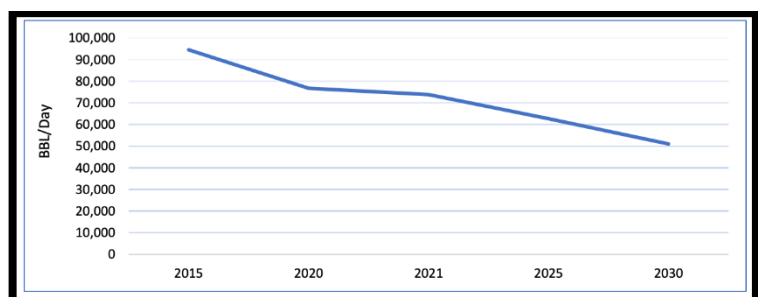


Figure 1-12 Forecasted Local Production of oil

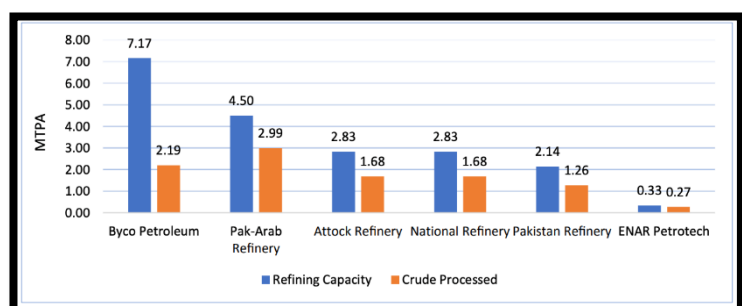


Figure 1-13 Crude oil refining capacities of local refineries

consumption analysis shows that economic sector demand is largely concentrated on

transportation fuels including motor spirit and HSD (70 percent of the economic sector demand).

The current oil demand in the country is 17 MT per Anum. Imports (crude oil and refined products) meet 82 percent of the total demand. The existing oil-refining capacity stands at 19.4 mtpa. On the other hand, the current crude processing capacity in the country stands at 10.08 mtpa, which is roughly half of the total refining capacity. Individual refinery analysis shows Byco Petroleum is using only 31 percent of its refining capacity. This underutilization has significantly reduced the overall crude processing in the country. Byco Refinery has announced plans to upgrade its old hydro skimming process to a deep conversion refinery, which will enable it to produce more diesel and gasoline by 2024. 9 With the Byco upgrade, the operational refining capacity will increase from 10.08 mtpa to 13.98 mtpa by 2024 With the implementation of the Refinery Policy of Pakistan 2021, the government intends to double the country's refining capacity, according to the available demand forecasts. The

anticipated upgrade of the refineries in Pakistan will increase the production of motor spirit and HSD. Owing to reduced future consumption of FO, refineries will use processes like deep conversion to maximize motor spirit and HSD, thereby shifting the production of FO to products that are more compliant with Euro Standards.

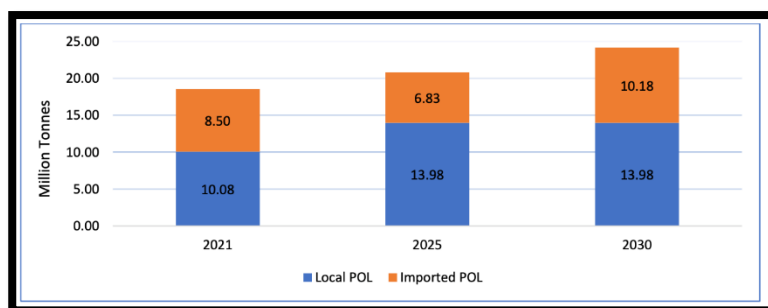


Figure 1-14 Forecasted Local and Imported oil consumption

Oil Refining	2020	2021	2025	2030
Attock Refinery	1,682,628	1,682,628	1,682,628	1,682,628
Byco Petroleum Pakistan	2,193,258	2,193,258	6,094,500	6,094,500
ENAR Petrotech	267,688	267,688	267,688	267,688
National Refinery	1,676,532	1,676,532	1,676,532	1,676,532
Pak-Arab Refinery	2,994,908	2,994,908	2,994,908	2,994,908
Pakistan Refinery	1,264,425	1,264,425	1,264,425	1,264,425
Crude Oil Processed	10,079,439	10,079,439	13,980,681	13,980,681
<i>Local Crude</i>	<i>3,101,679</i>	<i>2,889,721</i>	<i>2,451,889</i>	<i>1,996,673</i>
<i>Imported Crude</i>	<i>6,977,760</i>	<i>7,189,718</i>	<i>11,528,792</i>	<i>11,984,008</i>
Total Crude Processed	10,079,439	10,079,439	13,980,681	13,980,681

Table 1-5 Forecasted refining capacity of refineries

Owing to a limited upstream exploration of oil, Pakistan is expected to keep importing the major share of oil in the coming years. However, considering the planned expansion of its refining capacity, the country's demand for imported POL products will decline by 20 percent

whereas imported crude oil demand will surpass 60 percent by 2030. Consequently, the country will import more crude oil than it will import POL products.

Supply	2020	2021	2025	2030
Indigenous crude processed	3,101,679	2,889,721	2,451,889	1,996,673
Imported crude processed	6,977,760	7,189,718	11,528,792	11,984,008
HSD import	2,484,442	2,799,501	2,251,053	3,353,537
Motor spirit import	4,839,745	5,453,487	4,385,098	6,532,761
Import of other POL products	215,171	242,457	194,958	290,441
Total oil & POL import	14,517,118	15,685,164	18,359,901	22,160,748
Primary supply	17,618,797	18,574,885	20,811,790	24,157,420

Table 1-6 Forecasted supply of Crude oil products

Despite the planned expansion of local refining capacity, local crude oil processing has been estimated to diminish by more than 30 percent by 2030 compared to 2020; whereas the import of crude oil has been estimated to increase by more than 60 percent by 2030. As a result, the share of local POL products processed through local refineries will be boosted enormously, while the share of imported POL products will diminish significantly by 2025. However, imported POL will again increase by up to 10.18 million tonnes in 2030 because there is no planned expansion of refining capacity over the period.

Gas: Like past trends, forecasting indicates that domestic use will be the top-consuming sector based on population and urban growth. Because natural gas production is

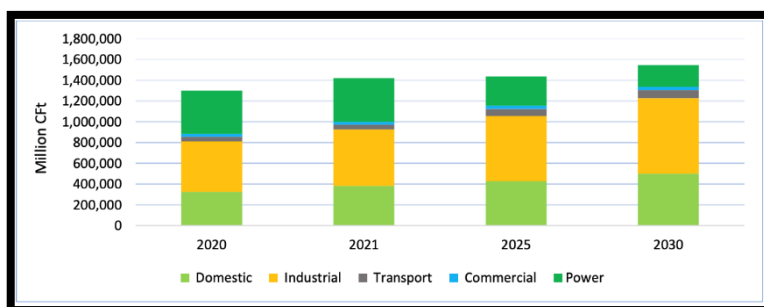


Figure 1-15 Forecasted consumption distribution of Gas

on the decline, more imported LNG will be required soon to meet the demand of the domestic sector.

Based on industrial growth and the government's policy tilt toward promoting overall exports, the industrial share along with fertilizers (feedstocks) may increase sharply in the future and it will constitute the highest share of gas consumption. Previously, the gas consumption for power generation remained around 400 billion CFt per annum, however, due to depletion in reserves, its share will come down to 200 billion CFt per annum by 2030.

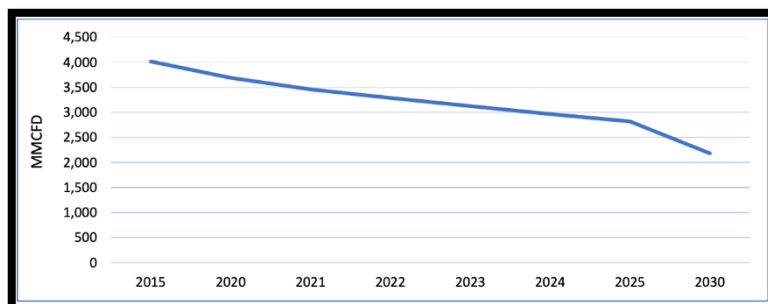


Figure 1-16 Forecasted Local Production of Gas

During the past 5 years, natural gas production kept depleting at the rate of negative 5 percent ACGR. Natural gas production has declined from 4,016 MMCFD in 2015 to 3,689 MMCFD in 2020. Assuming this trend continues, the future projections show a further decline in gas production from 2,819 MMCFD by 2025 to 2,181 by 2030.

The fast depletion of local natural gas resources is affecting the energy balance for natural gas in the country. It is estimated that natural gas demand in the country will increase from 3,563 MMCFD in 2020 to 4,237 MMCFD by 2030. Net supply will reduce to 2,102 MMCFD by 2025 and to 1,627 MMCFD by 2030. The decline in gas production is a serious issue that requires serious planning effort to meet the future demand in the sector. To make up for gas shortages, importation of LNG will be required to meet the future demand (see Table 9).

Supply	2020	2021	2025	2030
Net Supply	982,089	942,156	767,392	593,793
Imported LNG	318,241	477,776	669,670	952,680
Primary supply	1,300,330	1,419,931	1,437,062	1,546,473

Table 1-7 Forecasted supply of LNG

The LNG shortages are expected to remain throughout the year (after a few years) and unless significant new gas reserves are exploited or gas importation options are implemented, as planned, the shortages will worsen over time. Seasonal consumption variation in winter will be seen in the future as well, and to mitigate the winter hike challenge LNG importation will vary

with seasonal variation in the gas consumption. To meet the demand shortfall, almost three times more LNG will need to be acquired by 2030 compared to current

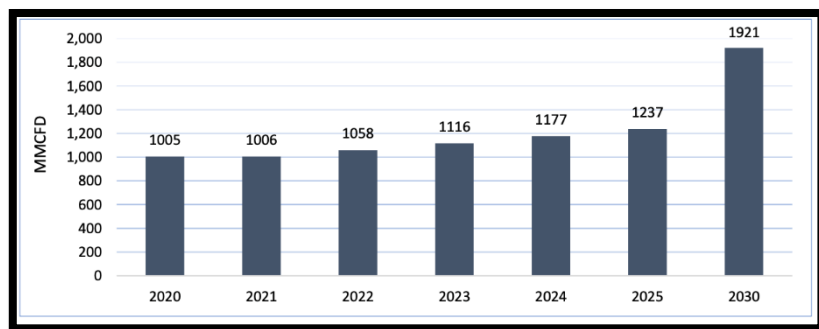


Figure 1-17 Forecasted consumption of Gas

importation quantities in the country. Currently, only two LNG terminals exist to manage the imports and they have a total capacity of about 1,200–1,400 MMCFD. Therefore, because of the sharp projected increase in LNG imports, the country will need additional LNG terminals to meet the import requirement of 1,900 MMCFD by 2030.

LPG: Despite an increase in the price of LPG, the consumption of LPG is predicted to increase within the domestic, commercial, and transport (2–3 wheelers transport) sectors. The LPG demand will increase by 50 percent to 1.68 million tonnes by 2030 compared to 1.10 million tonnes in 2020. Based on its ease of portability and comparative price relative to that of natural gas, the commercial sector is also preferring LPG, thereby becoming the largest LPG consumer of the sectors.

The future primary energy supply for LPG, as presented in Table 11, indicates that the local share of gas through fields and refineries will decline because of depleting oil and gas reserves. LPG

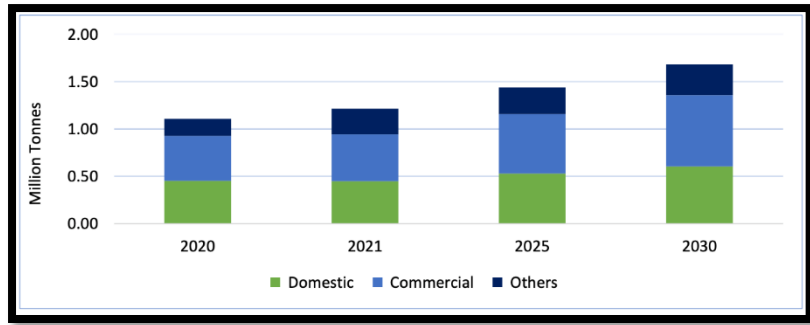


Figure 1-18 Forecasted consumption distribution of LPG

supply channels should be improved by LPG marketing companies managing outlets better, especially in remote areas. To meet future demand, Pakistan also needs to import LPG to balance its future consumption needs. Currently, major imports of LPG come from Iran through the Taftan border land route and the Arabian Sea.

Supply	2020	2021	2025	2030
Field	603,510	573,335	466,985	361,344
Refineries	158,400	152,475	130,909	108,189
Local supply	761,910	725,809	597,894	469,533
Import	344,160	487,844	839,671	1,211,268
Primary supply	1,106,070	1,213,653	1,437,565	1,680,801

Table 1-8 Forecasted Supply of LPG

1.3.3 Recommendation:

Upgrade refineries. To meet the growing demand for POL in the country and to reduce the import of expensive refined POL products, the upgrading/expansion of oil refineries is necessary.

- Conduct a national oil logistics and infrastructure study. The country lives on operational stocks, which fall to critically low levels from time to time. A national oil logistics and infrastructure study should be conducted to pinpoint bottlenecks and to identify long-term solutions refining plans and the growth in demand.
- Improve and expand oil transportation capabilities. About 60 percent of oil consumption is in the northern part of the country, and it is currently being served by transportation via road and railways mode. The country has only one white oil pipeline facility with a capacity of 8 mtpa. In addition, the transportation of POL products by road leads to highway congestion. To meet the future oil demand, there is a dire need to expand the pipeline capacity and improve the railway network.

Outlook for Natural Gas, Including LNG This chapter discusses the outlook of natural gas and LNG as energy sources in Pakistan. It gives an overview of the historical primary supply and consumption patterns. The forecasting results (2021-2030) have been discussed to better analyse the future demand trends. The chapter then discusses the upstream natural gas production in the country and the present status of the LNG import infrastructure.

Finally, some recommendations have been presented to improve the supply of natural gas and LNG in the country.

Manage the growing demand. About 1,211 gas based CPPs are operational and consume 415 MMCFD of gas, including LNG. There is a dire need to provide electricity to CPPs from the national grid, which is currently producing electricity from natural gas. This will ease the burden on gas supply toward the domestic sector and will help manage the growing demand for natural gas. To manage the growing demand, the grid connectivity and reliability must be improved.

- Optimize LNG costs. LNG may be provided at its imported cost, which is still a cheaper substitute for natural gas than LPG. Its availability needs to be ensured within the domestic sector to meet growing demand in the future. The GOP must resolve the issue with provinces in accordance with Article 151 of the constitution.
- Improve and expand the number of LNG terminals. Currently, there are only two LNG terminals with a combined capacity of about 1,200–1,400 MMCFD. Given the projected sharp increase in LNG imports, the country will need additional LNG terminals to meet the import requirement of 1,921 MMCFD by 2030.
- Import gas from neighbouring countries. It is also important to concentrate on importing gas from neighbouring countries such as Tajikistan, Iran, Russia, etc. Pakistan had already backed out of a joint gas pipeline deal with Iran due to the threat of U.S. sanctions. Pakistan needs to expedite the Turkmenistan-Afghanistan-Pakistan-India Gas Pipeline Project. In addition, there is a need to explore other options for imported gas pipeline projects to meet the country's demand by 2030.
- Construct a north-south gas pipeline. Because the major load requirement of gas is from the north part of the country, especially during the winter, there is a need to construct a north-south pipeline to transfer the imported LNG from the southern port to the country up north.²

² https://www.pc.gov.pk/uploads/report/IEP_Outlook_Final.pdf

Chapter 2: Exploration and Production in Pakistan

2.1 Introduction:

Exploration and production are carried out under the regulations of Government of Pakistan which is implemented by DGPC. The Policies, Acts, ordinance, and regulations are listed below:

1. Petroleum Policy 2012
2. The Petroleum Act 1934
3. The Petroleum Products (development surcharge) Ordinance, 1961
4. E & P rules 2013

All the guidelines are derived from the above policies and regulation for E & P companies. The Petroleum Policy 2012 define the details of the exploration process.

2.1.1 Exploration zones of Pakistan:

For the purposes of petroleum licensing, Pakistan will be divided into four onshore and one offshore Zones, based on risk and investment requirements.

Zone I(F)*: Frontier Basins [Kharan, Pishin and the areas merged into Khyber Pakhtunkhwa (previously FATA) and Southern Baluchistan (Makran) and Potwar Basins.

Zone II: Kirthar, East Baluchistan, Punjab platform and Suleman Basins

Zone III. Lower Indus Basin

Zone-O includes offshore areas of Pakistan

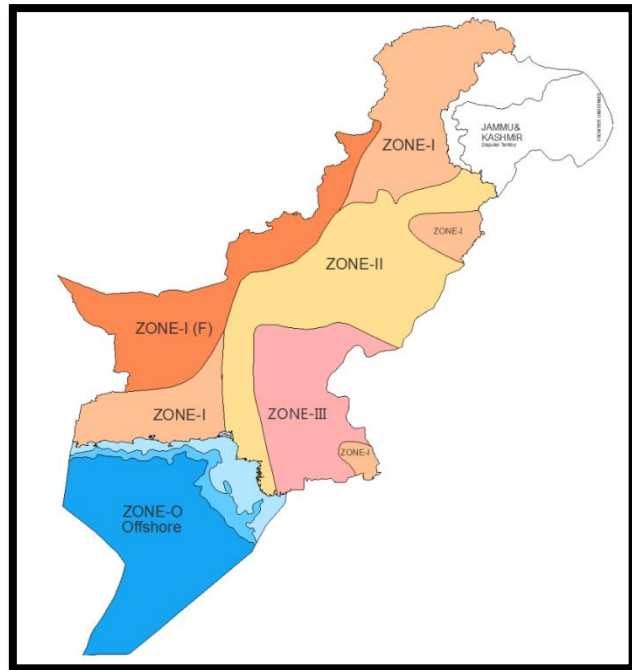


Figure 2-1 Zonal classification of Exploration areas of Pakistan

All the zones are divided based upon the risk factors in these areas, so the hydrocarbon price is different in these areas due to different tax percentages in these areas i.e., Royalty, Income tax and Windfall levy.

2.1.2 Types of Exploration and Production Rights:

Four different types of E&P rights will be available, as outlined in the table below:

Sr #	Name	Petroleum Right Granted	Term	Maximum Acreage
1.	Reconnaissance Permit	Non-exclusive right for geophysical, geochemical & geological operations, including the drilling of stratigraphic wells. No rights to negotiate or convert into onshore Licence or offshore PSA	1-year initial term with possible renewal of 1 year.	Unlimited in open areas.
2.	Petroleum Exploration Licence – Onshore	Exclusive right for exploration, including drilling and production testing, on terms specified in the licence, Rules and related agreement.	Five years initial term (Phase-I of 3 years and Phase-II of 2 years) plus two renewals of one year each. For appraisal operations, a separate application can be made under the Rules allowing a maximum period of appraisal renewal for one year. Plus, a possible additional five years retention period ¹ for gas market.	Maximum 2,500 km ² with subsequent progressive area relinquishment of 30% of the original area after Phase-I of initial term, 20% of the remaining area after Phase-II of the initial term and 10% of the remaining area on or before the start of second one-year renewal
	Development and Production Lease	Exclusive right to develop and produce hydrocarbons from within a designated portion of a Petroleum and Exploration Licence, issued when conditions laid down in the Rules are satisfied.	Up to 25 years with a possibility of a renewal for five years.	Maximum acreage retained under development and production lease as defined in the Rules.
3.	Petroleum Exploration Licence – Offshore Shallow Water	Exclusive right for exploration, including drilling and production testing, on terms specified in the licence, Rules, and related PSA	Five years initial term (Phase-I of 3 years and Phase-II of 2 years) plus two renewals of one year each. For appraisal operations, a separate application can be made under the Rules allowing a maximum period of appraisal renewal for one year. Plus, a possible	Maximum 2,500 km ² with subsequent progressive area relinquishment of 30% of the original area after Phase-I of initial term, 20% of the remaining area after Phase-II of the initial term and 10% of the remaining area on or before the start

			additional five years retention period ¹ for gas market.	of second one-year renewal
	Development and Production Lease	Exclusive right to develop and produce hydrocarbons from within a designated portion of a Petroleum and Exploration Licence, issued when conditions laid down in the Rules are satisfied.	Up to 25 years with a possibility of a renewal for five years.	Maximum acreage retained for development and production as defined in the Rules.
4.	Petroleum Exploration Licence – Offshore Deepwater and Ultra Deep Water	Exclusive right and PSA for exploration, including drilling and production testing, on terms specified in the licence, Rules, and related PSA	Five years initial term (Phase-I of 3 years and Phase-II of 2 years) plus two renewals of one year each. For appraisal operations, a separate application can be made under the Rules allowing a maximum period of appraisal renewal for one year. Plus, a possible additional five years retention period ¹ for gas market.	Maximum 2,500 km ² with subsequent progressive area relinquishment of 30% of the original area after Phase-I of initial term, 20% of the remaining area after Phase-II of the initial term and 10% of the remaining area on or before the start of second one-year renewal
	Development and Production Lease	Exclusive right to develop and produce hydrocarbons from within a designated portion of a Petroleum and Exploration Licence, issued when conditions laid down in the Rules are satisfied.	Up to 25 years with a possibility of a renewal for five years.	Maximum acreage retained for development and production as defined in the Rules.

2.2 Procedure for the Granting E & P Rights:

Onshore and Offshore E&P rights will be awarded via three distinct procedures:

1. The granting of Petroleum Exploration Licences for entering PCA or PSA in relation to onshore and offshore blocks offered through competitive bidding as per procedure laid down herein below.
2. The granting of Petroleum Exploration Licences for entering PCA or PSA in relation to onshore and offshore blocks without competitive bidding to Strategic Partner Companies on Government-to-Government basis.

3. The granting of non-exclusive Reconnaissance Permits for undertaking studies and multiclient surveys after direct negotiation.

2.2.1 Invitation to Bid:

1. DGPC will issue an Invitation to Bid as per the format at Annexure 6, in national newspapers, the MPNR website.
2. An Invitation to Bid will remain valid for at least 60 days and all companies providing the requisite information would be eligible to contest Invitation to Bid.
3. It is a pre-requisite that the standard Model Petroleum Concessions Agreement and Model Production Sharing Agreement are followed by all companies participating in Invitation to Bid.
4. Upon a written request of an interested company, DGPC will make every effort to provide bid documents within 15 days of the request, which will include but not be limited to copies of: (a) the Policy; (b) the applicable Rules; (c) Model Petroleum Concessions Agreement and Model Production Sharing Agreement, whichever is applicable; and (d) information which is available or can be purchased.
5. Bids will be invited based on criteria of the highest work programme determined based on Work Units above as set-out in Annexure 5 and the minimum threshold indicated in PCA.
6. Any company can submit a bid for any block included in Invitation to Bid in accordance with the Policy/Rules.
7. All Bids will be opened publicly in the presence of authorized representatives of the bidders should they chose to be present.
8. DGPC will ensure that the conditions and requirements concerning the exercise or termination of the Invitation to Bid are established and made available to interested companies along with the bid documents. Furthermore, any changes made to the conditions and requirements during the bid procedure are to be notified to all interested companies immediately by means of bulletins posted to the website and through registered mail to the companies buying bid documents.

2.3 Oil and Gas Pricing:

Crude oil: The Producer Policy Price for crude oil delivered at the nearest refinery gate shall be equal to C&F price of a comparable crude oil or a basket of Arabian/Persian Gulf crude oils (Reference Crude or RC) plus or minus a quality differential between the RC and the local crude oil. No other adjustment or discount will apply other than Windfall Levy. C&F price will be arrived at based on FOB price of imported crude oils into Pakistan plus freight on AFRA, which is deemed chartered rate.

Gas Pricing: The price for Associated or Non-Associated Gas will be indexed to the C&F price of a basket of Arabian/Persian crude oil import in Pakistan during the first six months

period of the seven months period immediately preceding the relevant price notification period (import Basket) as published in an internationally recognized publication acceptable to the parties for various zones is illustrated at annexure 7 to 12. C&F Price will be arrived at based on FOB price of imported crude oils into Pakistan plus freight on AFRA, which is deemed chartered rates. The RCP ceiling of USD 110/barrel would be reviewed after every five years or as and when the pricing dynamics significantly change in the international market, as provided in the applicable rules.³

2.4 E & P Companies in Pakistan:

There are many E&P companies working in Pakistan for exploration projects. There are two types of companies as given below:

1. Operated companies
2. Non-Operator companies

Some of the companies execute activities using their own resources and some company only have joint ventures with operator companies (non-operator companies). In Pakistan, E&P sector has local as well as multinational companies which bring technology and investment in Pakistan from their parent country.

These E & P companies take parts in the bidding of exploration blocks identified by DGPC. The companies submit the technical and commercial bids against each exploration block. After the competitive bidding, the company with the highest bid is awarded with the exploration block. After acquiring the block, the company must follow the deadline defined in the prevailing petroleum policy to expedite the exploration activities.

The list of E & P companies is given below:

³ <https://petroleum.gov.pk/SiteImage/Misc/files/Petroleum-Policy-2012---Amended-Jan-2020.pdf>

S.No.	Operators	S.No.	Non Operators
	(Foreign)		(Foreign)
1.	China ZhenHua Oil Co. Ltd.	1.	Al-Haj Pakistan Exploration Limited
2.	Eni Pakistan Ltd.	2.	Al-Haj Pakistan Kadanwari Limited
3.	Heritage Oil & Gas Limited	3.	Al-Haj Pakistan Kirthar B.V
4.	Hycarbex American Energy Inc.	4.	Asia Resources Oil Limited
5.	Kirthar Pakistan B.V.	5.	Bow Energy Resources (Pakistan) SRL.
6.	MOL Pakistan Oil & Gas Co. B.V.	6.	Eni AEP Limited
7.	Orient Pakistan Inc.	7.	Eni Pakistan (M) Ltd.
8.	Orient Petroleum Pty Limited	8.	Frontier Holdings Limited
9.	Polish Oil & Gas Company	9.	Gulf Petroleum Exploration Pakistan Ltd.
10.	Spud Energy Pty Limited	10.	IPR TransOil Corporation
11.	Tallahassee Resources Inc.	11.	Kuwait Energy Pakistan Limited
12.	United Energy Pakistan	12.	PKP Exploration Limited
13.	UEP Alpha	13.	PKP Exploration 2 Limited
14.	UEP Beta GmbH.	14.	PKP Kadanwari Limited
	(Local)	15.	PKP Kirthar B.V
1.	AL-Haj Enterprises Private Limited	16.	PPL Europe E &P Limited
2.	Dewan Petroleum (Pvt) Limited	17.	Pyramid Energy International Inc
3.	Khyber Pakhtunkhwa Oil & Gas Company Limited	18.	Rally Energy Safed Koh Ltd.
4.	Mari Petroleum Company Limited	19.	Sprint Energy (Private) Limited
5.	New Horizon Exploration & Production Ltd.	20.	The Attock Oil Company
6.	Oil & Gas Development Company Limited		(Local)
7.	Pakistan Oilfields Limited	1.	Balochistan Energy Company Limited
8.	Pakistan Petroleum Limited	2.	Government Holdings (Private) Limited
9.	Petroleum Exploration (Pvt) Limited	3.	Sindh Energy Holding Company (Pvt.) Ltd.
10.	Zaver Petroleum Corporation Limited	4.	Saif Energy Limited
		5.	Trakker Energy (Private) Limited

Figure 2-2 Operator and Non Operator E & P companies in Pakistan

The above-mentioned companies are working in the exploration areas of the country.

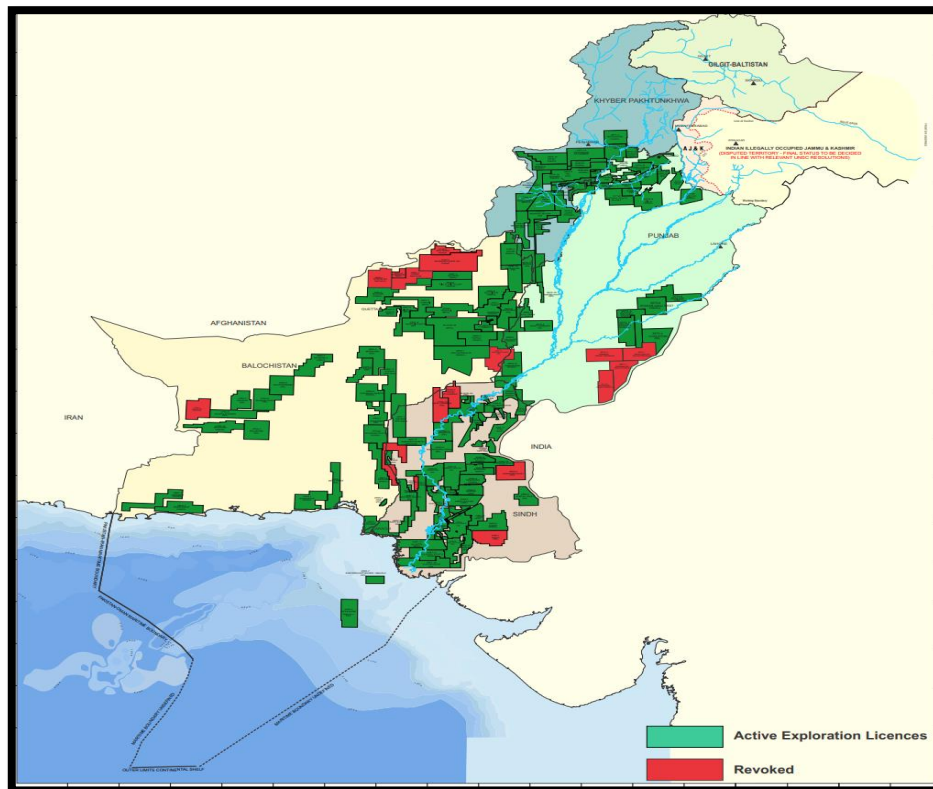


Figure 2-3 Pakistan Areas under exploration

2.4.1 E & P companies Areas under Exploration:

The Exploration areas are shared among E & P companies of Pakistan, The leading company in terms of exploration area according to 2022 data is OGDCL followed by PPL, MPCL, PEL and Dewan.

It is evident from the data that only local companies are investing more in future exploration of Pakistan however, multinational companies like ENI, MOL, UEPL are reluctant for further investment in Pakistan due to economic and political situation of Pakistan.

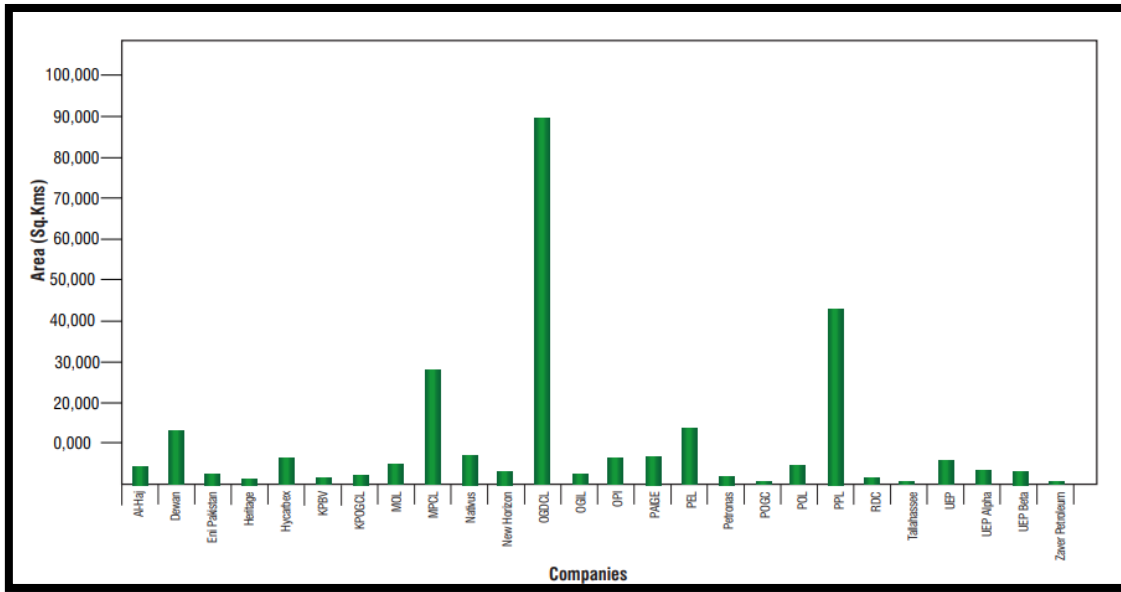


Figure 2-5 E & P companies areas occupied for exploration

From the viewpoint of provision share, it is obvious that the exploration activities are focus on Baluchistan as there is untapped areas due to security reason over the past years. This focus will give infrastructure and job opportunities for Baluchistan.

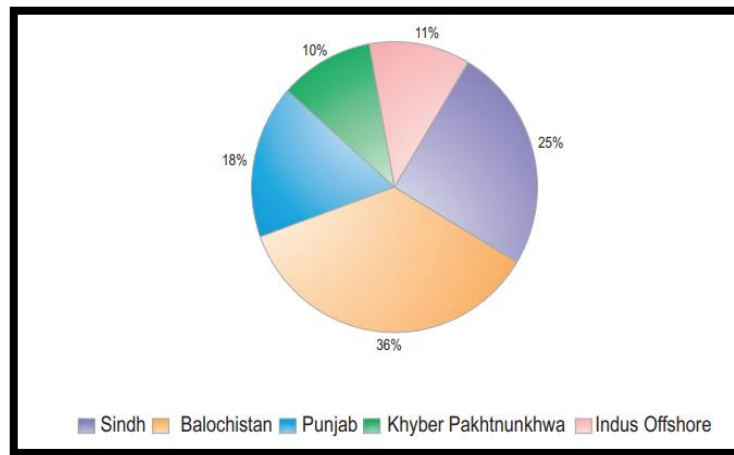


Figure 2-4 Provincial exploration activities distribution

2.4.2 E & P companies Areas under D & P lease:

The Mining/ D&P lease data is also shown below which explain the production sites available in Pakistan where these companies are working currently, and exploration blocks are under production.

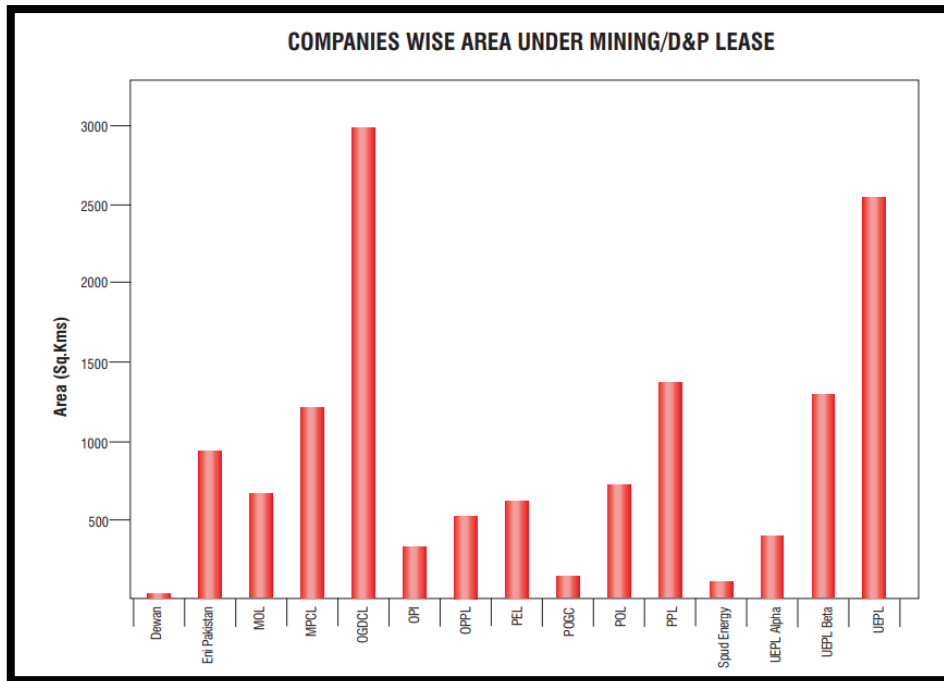


Figure 2-6 Areas Under D & PL of E & P companies in Paksitan

It is obvious from the data that OGDCL holds highest area under D&P lease which mean its production would be maximum due to large area followed by UEPL, PPL, MPCL and ENI Pakistan. This is also evident that Local and Multination companies both has done huge investment in Pakistan for exploration and producing hydrocarbons.

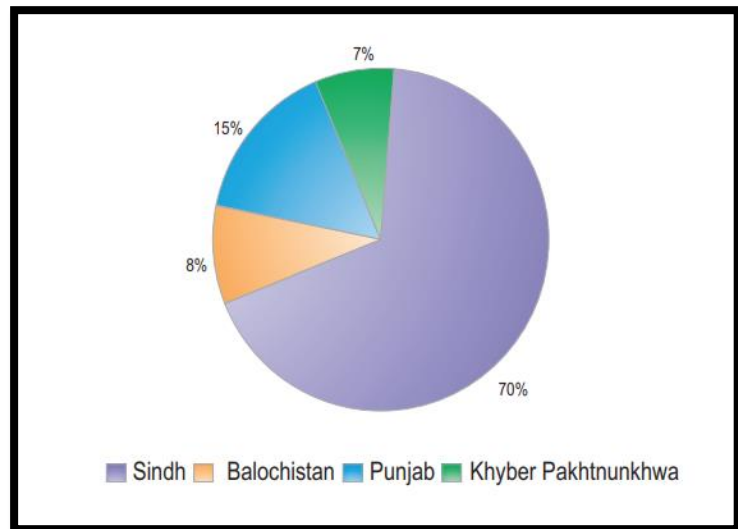


Figure 2-7 Provincial distribution of D & P L activites

From the analysis of province wise data of D & P lease, it is obvious that maximum production is being achieved from the Sindh with percentage share of 70% followed by Panjab (15%) and Baluchistan. The exploration activities were restricted in Baluchistan in the past However, government has turned its focus towards the exploration activates in the Baluchistan and the exploration area wise Baluchistan is in the leading role with 36% area under exploration in all over Pakistan.

2.4.3 E & P companies Hydrocarbon Production:

The above data is also verified if we analyse the data for oil & Gas Production share of these companies.

Outlook of oil production during FY 2021-22 is shown and OGDCL is the largest producer with 47.26% of total oil production followed by MOL, PPL and UEPL.

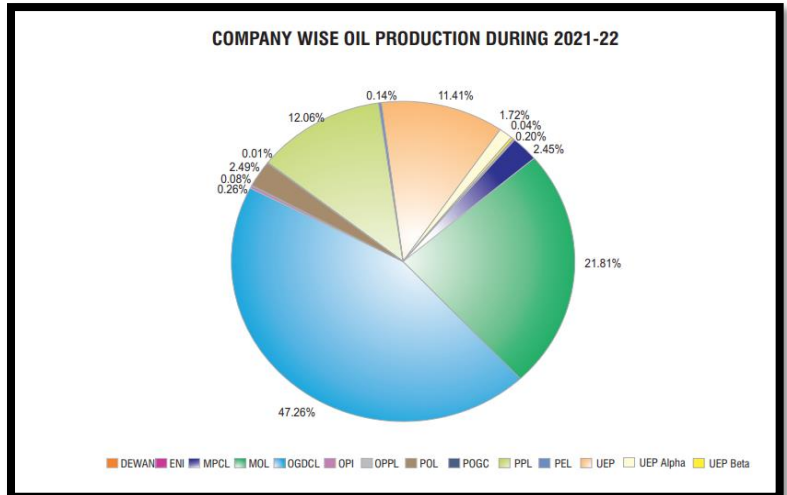


Figure 2-8 Company wise Oil production share

Outlook of Gas production during FY 2021-22 is shown and OGDCL is the largest producer with 29.30% of total oil production followed by MPCL, PPL and UEPL. The gas produced is consumed in domestic and industrial utilization.

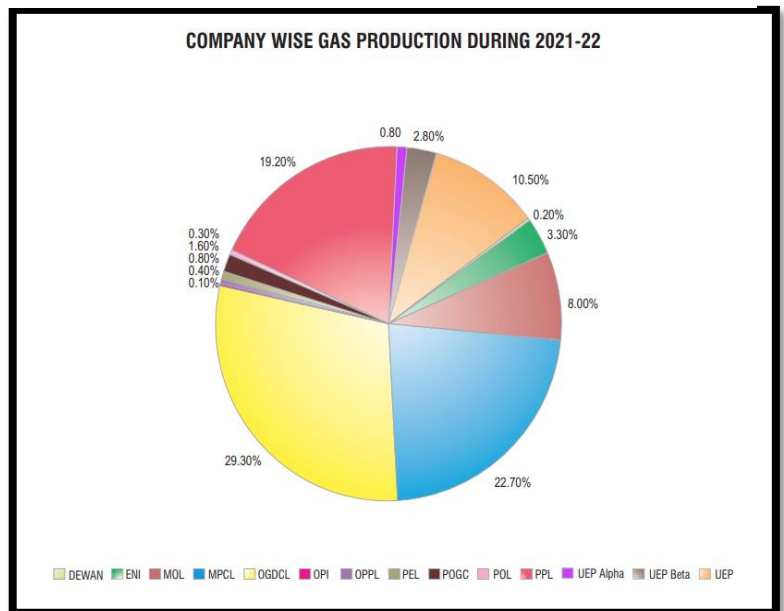


Figure 2-9 Company wise gas production share

Outlook of LPG production during FY 2021-22 is shown and OGDCL is the largest producer with 37.30% of total oil production followed by MPCL, PPL and UEPL. LPG is distributed through distribution companies to industry.

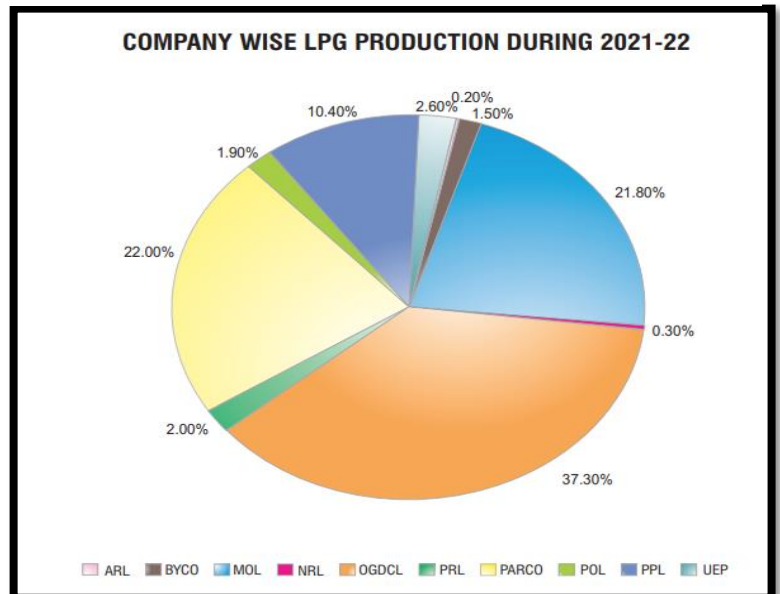


Figure 2-10 Company wise LPG production share

2.5 Exploration Process

After the initial exploration and data analysis provided by DGPC lease is acquired by the E & P company and further detailed activities are initiated.

2.5.1 Geophysical Surveys:

With initial exploration and lease acquisition completed, the company can begin more advanced phases of exploration. The company can begin immediately or may postpone additional exploration to check additional information and data or wait in "frontier areas" to see what oil and gas activity develops. In some situations, on-going activities within the company may take priority over new exploration projects.

Once the time is right, the company will begin further geophysical exploration to obtain more reliable information.

Substructures of the earth are studied to localize areas where accumulations of oil and gas might occur.

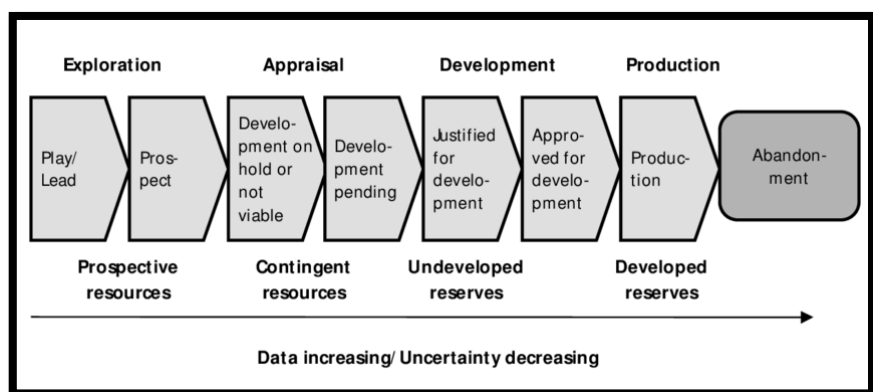


Figure 2-11 Exploration process

Seismic Exploration

The seismograph provides the only direct way of acquiring subsurface structural information without drilling a well. Shock waves, generated at or near the earth's surface, penetrate the earth's crust and reflect to the surface from the subsurface rock layers. The reflected signals are recorded, and a record obtained from which the depth of various underground formations can be measured. Ideally, such information will reveal patterns of rock formations such as faults, anticlines, and folds where oil and gas deposits have a good chance of being found. Sophisticated 3-D seismic, which requires a more intensive use of the surface, can even identify the possible presence of hydrocarbons.

Seismic shock waves may be generated by 1) detonating explosives at the bottom of shot holes 4 to 5 inches wide and drilled 25 to 200 feet in depth depending on conditions or 2) "thumper" trucks that create sound waves by pounding a steel plate against the land surface. For conventional seismic surveys, a single line of shot points and a parallel or perpendicular line of geophones (listening and recording devices) are used. The number of shot points and geophones used per mile varies with the type of geophysical information desired. In 3-D seismic surveys, a grid of shot points and a perpendicular grid of geophones

are used to gather more detailed geophysical information. After the information is gathered, a hole plugging, and clean-up crew finishes the operation.

2.5.2 Drilling:

Even though leases have been transacted and geophysical studies have been analyzed, other factors will be considered by the oil company in deciding whether to drill in search of oil. First, it may cost several million of dollars to drill even a dry hole. Second, if timing is not right or drilling equipment is not available, the venture may be postponed or even cancelled. Finally, there are non-financial considerations such as potential impact on the environment.

As with the exploration process, state law requires the company, before drilling is started, to notify the surface owner in writing that drilling is about to start.. This requirement is identical to what is required before the company explored the land, that is, the notice must outline the plan of work and include the Industrial Commission's form advising the surface owners of their legal rights and options.

A survey team is an essential part of the pre-drilling preparation stage. They survey the site and stake out where the drilling will take place. They also map out the location of routes to insure access to drilling locations for all necessary heavy equipment, supplies, and power.

Once the surveyors have completed their assignments and the surface owner has been notified, work-crews come in with earth-moving equipment to build access roads, level the location, and dig pits, trenches, and "the cellar" for the rig which will house some of the drilling equipment. When completed, the drilling rig and related equipment and supplies can be moved onto the drilling location so drilling operations may begin.

2.5.3 Well Production:

A decision on whether a well is productive or non-productive is made when drilling reaches the pre-calculated producing zones. If oil or gas does not come to the surface in the drilling mud, tests can be taken to pinpoint the petroleum containing-formations. Two types of tests normally used are the drill stem test and well logging.

A mineral lease obligates the oil company to operate the well and produce the oil if enough is found. The issue becomes whether a well is producing enough to warrant operation. If the exploration yields a dry-hole or if it yields considerable oil, the answer is clear as to whether the well will be operated. It is the marginal producing well where this becomes an issue. The price of oil also can impact the decision; a marginal well may not warrant operation if the price of oil is low, but it may be economical to operate if the price is high. Thus, the determination of whether a well warrants production can change with a rise or fall in the market price of oil. It is not just a matter of the quantity produced; it also is a matter of the cost of operating relative to the value of the oil produced. Mineral owners will want to address this issue of operation as part of mineral lease.

Many wells flow naturally because of subsurface pressures. In these cases, a production device with gauges and control valves, known as a "Christmas tree", is installed on the well head. On nonflowing wells, pumps must be installed.

Once production has begun, the well's productivity is gauged, which allows hourly and daily readings on the volumes of oil and gas being produced. These readings are not only important in calculating royalties, they also are important in calculating the life of a well and in prescribing what maintenance must be done to assure optimal productivity.

2.5.4 Abandonment:

After the wells are produced commercial, the production of wells starts to reduce and reach to the level where companies cannot produce these wells economically viable way. Then all the wells and field are plugged with cement which is called abandonment phase as per procedure defined by DGPC.

Chapter 3: Financial Analysis of Listed E&P Companies

3.1 Introduction:

Financial analysis is the process of evaluating businesses, projects, budgets, and other finance-related transactions to determine their performance and suitability. Typically, financial analysis is used to analyse whether an entity is stable, solvent, liquid, or profitable enough to warrant a monetary investment

The financial analysis of the listed E&P companies of Pakistan will be done by measuring their financial performance by considering the financial statements of these companies, such as their balance sheet, income statement, and cash flow statements. The financial analysis will also include, calculating the financial ratios, such as the debt-to-equity ratio, the return on assets, and the return on equity, level of liquidity, profitability, and solvency. The financial analysis will also include capitalization of these companies and their market share in the industry.

For the sake of study following listed companies will be considered due to availability of public data.

1. OGDCL
2. PPL
3. Mari Petroleum
4. POL

Financial analysis of these companies will also be compared with global leaders in E & P companies for analyse the trends and impact of global factors influence on these companies.

3.2 Market Analysis:

Stock analysis refers to the method that an investor or trader uses to evaluate and investigate a particular trading instrument, investment sector, or the stock market. Stock analysis is also called equity analysis or market analysis. Investors or traders make buying or selling decisions based on stock analysis information.

This study will include the analysis of share price of listed Pakistan E & P companies and their comparison with the international companies to analyse the impact of global events on the market value of the companies

Pakistan's financial system, including the equity market has undergone profound developments over the last 30 years. Notably, Pakistan's financial system went through liberalization and deregulation during the 90s with major policy actions by the government. Specifically, a monetary policy with less government interference was undertaken and foreign investors were permitted to buy securities of listed firms leading to the establishment

of efficient capital markets. In 2016, in a bid to attract more investors, especially foreign investors, the three stock exchanges of the country, Karachi Stock Exchange, Lahore Stock Exchange and Islamabad Stock Exchange merged to form PSX. In 2019, foreign investment in Pakistan's equity amounted to \$4.13 billion (increasing by 221% over the past decade) and represented 8.2% of market capitalization.⁴

Oil and Gas sector is a stable stock sector in Pakistan stock exchange. If we compare the share price of all the companies, there is only little growth in the share price of these companies as per market growth. However, only Mari Petroleum share price is increasing which is not following the sector growth trend. However, the no of shares out are highest for OGDCL, PPL, POL and followed by Mari Petroleum.

The drop in share price was observed in 2019 due to covid-19 but the impact is not as visible as in international market due to

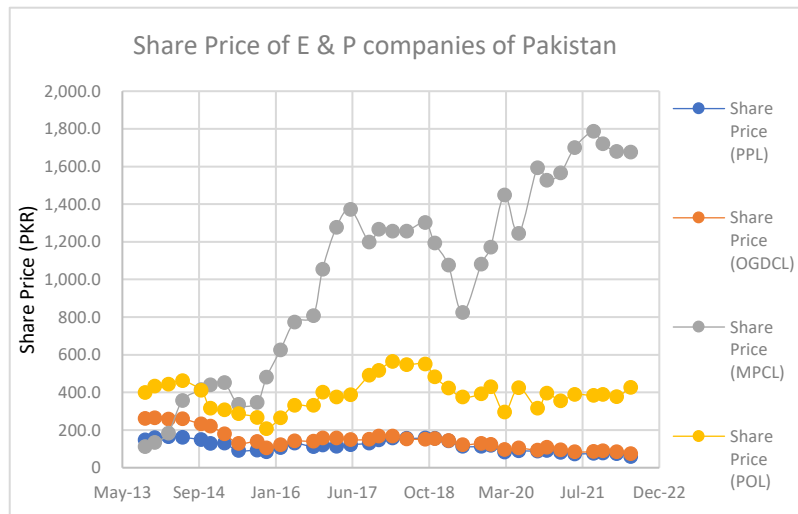


Figure 3-1 Share price of E & P companies of Pakistan

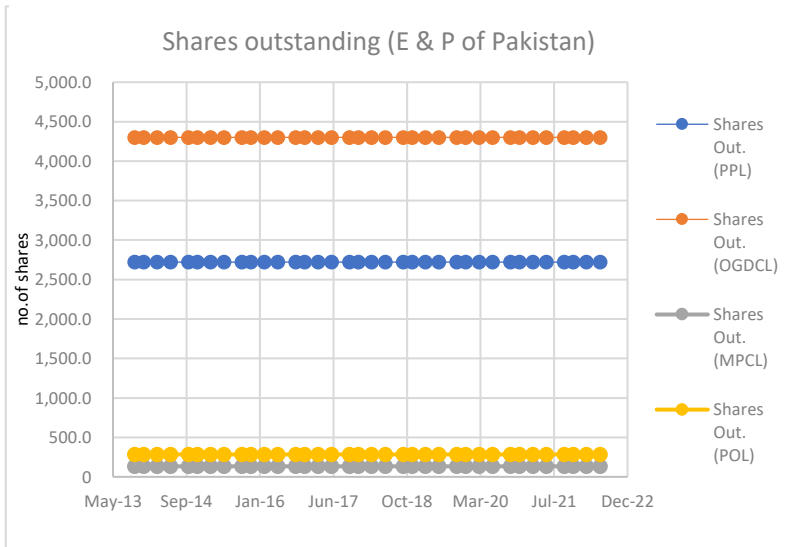


Figure 3-3 Shares Outstanding (E & P companies of Pakistan)

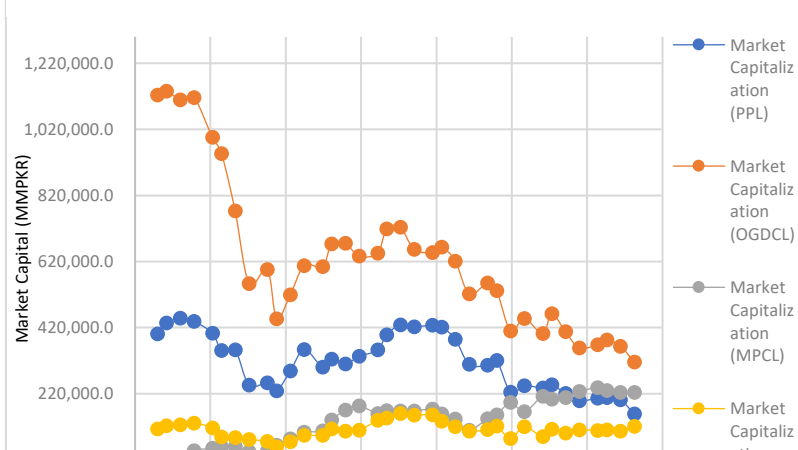


Figure 3-2 Market capitalisation of Pakistani E & P companies

⁴[https://www.datarails.com/5-key-financial-](https://www.datarails.com/5-key-financial-ratios/#:~:text=What%20are%20financial%20ratios%3F,%2C%20profitability%2C%20and%20financial%20health.)

[ratios/#:~:text=What%20are%20financial%20ratios%3F,%2C%20profitability%2C%20and%20financial%20health.](https://www.datarails.com/5-key-financial-ratios/#:~:text=What%20are%20financial%20ratios%3F,%2C%20profitability%2C%20and%20financial%20health.)

the factor that Pakistan market is not as efficient as international market.

Based upon the shares price and shares outstanding OGDCL has highest market capitalization in this sector. Mari petroleum has higher market capitalization as compared to PPL and POL even though PPL has more outstanding shares. This is due to the exceptionally high share price of Mari Petroleum since 2021.

If we compare the share price values of international companies, the market price is affected by the global events. The share price dropped to almost zero during 2019 due to the epidemic of COVID-19 when consumption of crude price dropped significantly and is jumped in 2022 due to the Ukrain-Russia War due to escalation of crude price.

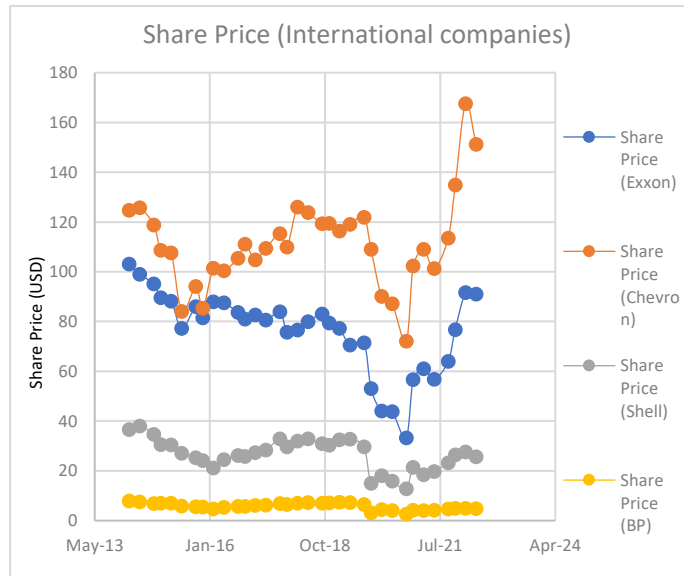


Figure 3-4 Share price of international companies

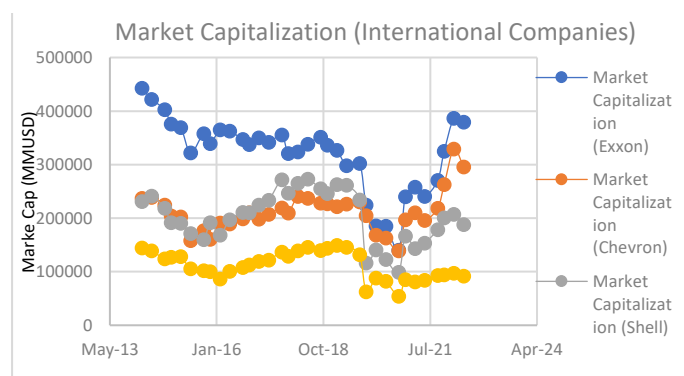


Figure 3-5 Market capitalisation of international companies

3.3 Income statement & Balance Sheet analysis:

The income statement is a financial statement that summarizes the revenues, costs, and expenses incurred during a specific period, usually a fiscal quarter or year. The income statement is one of the most important financial statements for businesses, as it provides a comprehensive overview of the company's financial performance. The income statement includes revenue from the sale of goods and services, as well as expenses from operations, such as cost of goods sold, selling and administrative expenses, and interest expenses. The net income or loss for the period is calculated by subtracting total expenses from total revenues. The income statement can be used to assess the financial health of a company, compare its performance against competitors, and make decisions about investments.

A **Balance sheet** is a financial statement that summarizes a company's assets, liabilities, and shareholders' equity at a specific point in time. These three balance sheet segments give investors an idea as to what the company owns and owes, as well as the amount invested by the shareholders.

A **cash statement** is a financial document that provides a summary of all cash inflows and outflows from a business or individual over a given period. It is usually used to track the cash flow of a business or individual and can be used to help make financial decisions and understand the financial health of the business. The cash statement typically includes information about cash transactions, bank deposits, and withdrawals, capital investments, loans, and other sources and uses of cash.

Diluted earnings per share (EPS) is a financial measure calculated by dividing a company's total earnings by the number of shares outstanding after considering the effects of all dilutive securities. Dilutive securities are convertible securities, such as options, warrants, and convertible bonds, that can be converted into common stock. Therefore, diluted EPS considers the potential impact of all dilutive securities on the company's earnings.

All the companies balance sheets, income statements and cash statements are analysed and compared to draw conclusions and compared with international companies.

The Total Revenue, Gross profit, and Net profit of OGDCL is highest among all followed by PPL, Mari Petroleum and POL and follows same trend. However, earning per share of Mari Petroleum is highest among all followed by POL, OGDCL and PPL in reverse order of revenue and profit. The trend is same as impacted by COVID-19 & Ukrain- Russian war.

The Earnings Per Share (EPS) of a company is a measure of how much of its profits each share of its stock is entitled to. In the case of comparison, the difference in their EPS is likely due to several factors, such as the size of the company, the industry it operates in, the amount of debt it carries, and the number of shares

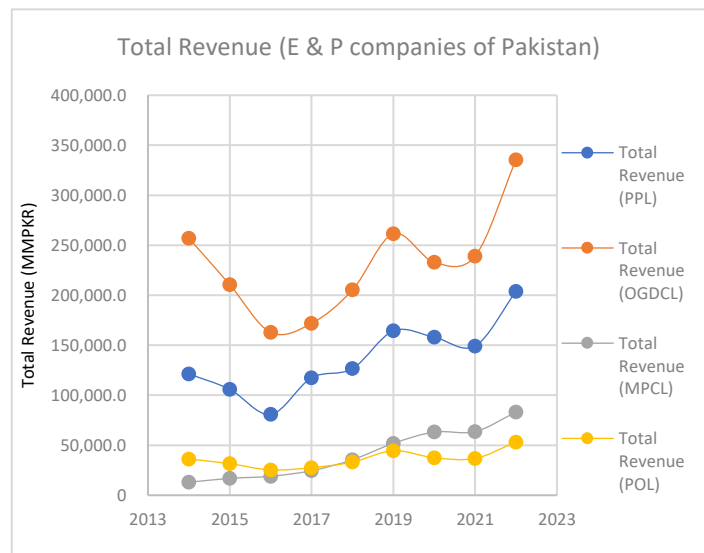


Figure 3-6 Total Revenues of Pakistan E & P companies

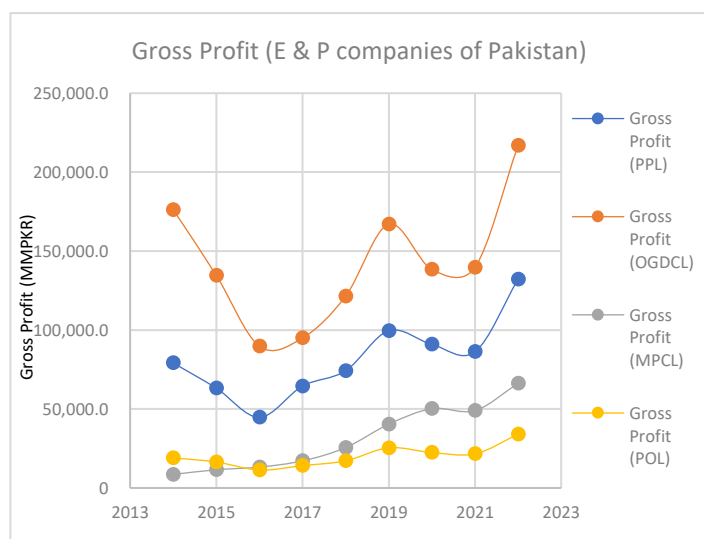


Figure 3-7 Gross Profit of Pakistan E & P companies

outstanding. For example, if POL & Mari is a larger company than PPL & OGDCL, it may be able to generate more profits and thus have a higher EPS. Finally, if POL & Mari has fewer shares outstanding than PPL & OGDCL, each share will be entitled to a larger portion of the company's profits and thus have a higher EPS.

Mari Petroleum Company Limited (Mari) is one of the largest oil and gas exploration and production companies in Pakistan. The company has consistently delivered strong earnings growth and maintains a healthy balance sheet. Its strong operational performance, diversified portfolio and prudent financial management have resulted in a high earning per share. Additionally, the company has a low debt-to-equity ratio, which indicates that it can sustain its current dividend payout. The company has also benefited from the Government of Pakistan's recent policy reforms that have allowed private companies to explore and produce oil and gas. This has enabled Mari to gain access to more attractive opportunities and has increased its earning potential.

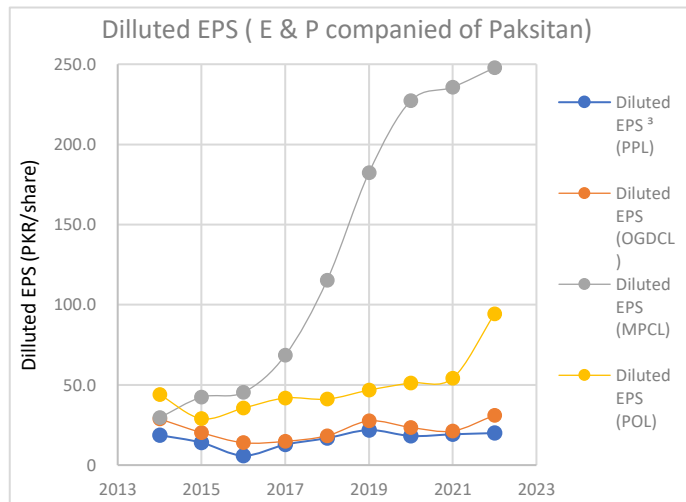


Figure 3-9 Dilluted EPS of Pakistan E & P companies

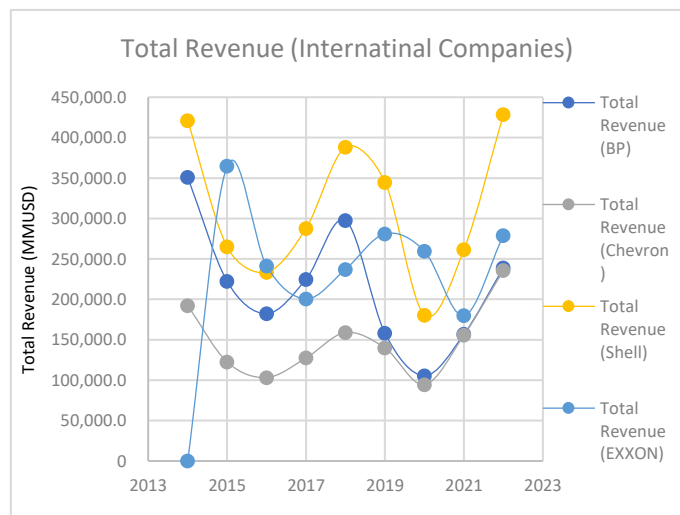
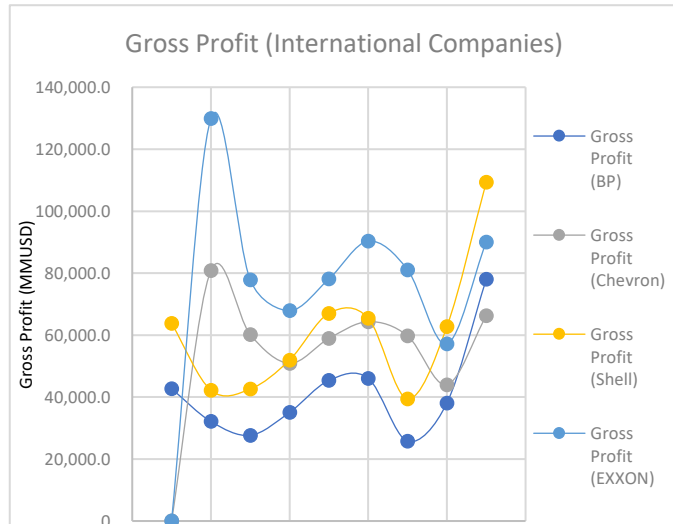


Figure 3-8 Total Revenue of Internatinal Companies

If we compare the financial statements of international companies, revenues are not stable but depended upon global incidents as the revenues are going down in 2019-2020 due to impact of COVID-19 and up in 2022 due to Ukrain-Russia War. All the British and American companies are following the same trend because these companies are global exporters and revenues are impacted greatly due to global incidents.



If we compare the EPS of international compaies, the impact of COVID-19 was so high that Dilluted EPS was observed even below zero. This means companies earnings dropped to zero but still some expenses were incurred due to the ongoing activities and fixed contracts. But this kind of behaviour was not observed in Pakistan because

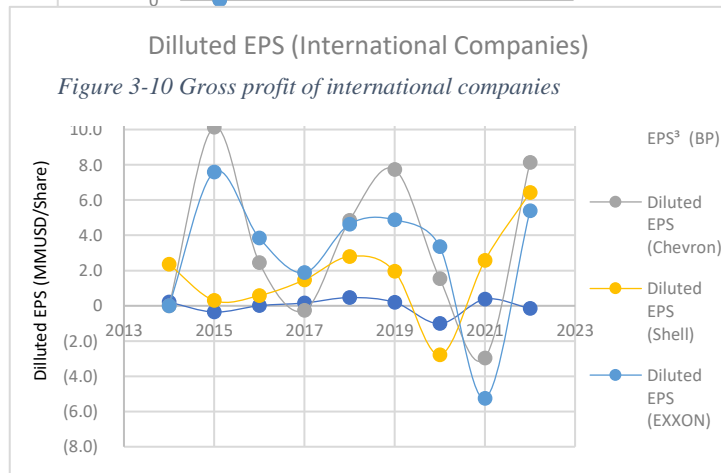


Figure 3-11 Dilluted EPS of international companies

Pakistani companies are not exporters of oil and gas and these companies still getting some revenues due to local consumptions of hydrocarbons.

This behaviour is actual behaviour as all the major companies are observing same kind of fluctuations, but this kind of behaviour is not observed in Pakistani companies.

3.4 Financial ratios:

Financial ratios are basic calculations using quantitative data from a company's financial statements. They are used to get insights and important information on the company's performance, profitability, and financial health. Common financial ratios come from a company's balance sheet, income statement, and cash flow statement. Businesses use financial ratios to determine liquidity, debt concentration, growth, profitability, and market value. Financial ratios are sometimes referred to as accounting ratios or finance ratios. These ratios are important for assessing how a company generates revenue and profits using business expenses and assets in each period. Internal and external stakeholders use financial ratios for competitor analysis, market valuation, benchmarking, and performance management.

Financial planning and analysis professionals calculate financial ratios for the following reasons for internal reasons.

- To measure return on capital investments
- To calculate profit margins
- To assess a company's efficiency and how costs are allocated
- To determine how much debt is used to finance operations
- To identify trends in profitability
- To manage working capital and short-term funding requirements
- To identify operating bottlenecks and assess inventory management systems
- To measure a company's ability to settle debt and liabilities

External stakeholders use financial ratios to:

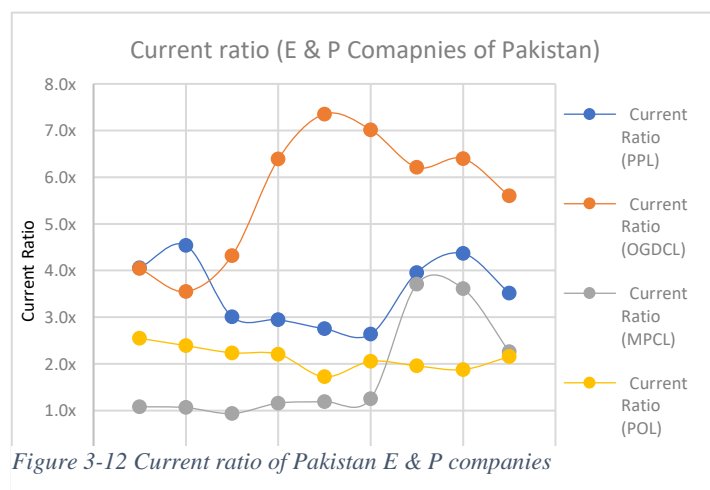
- Carry out competitor analysis
- Determine whether to finance a company in the form of debt
- Assess how profitable a company is
- Determine whether to provide equity financing or buy shares in the company
- Calculate tax liabilities
- Measure a company's market value
- Calculate return on shareholders' equity
- Perform market analysis

3.4.1 Liquidity ratios

Companies use liquidity ratios to measure working capital performance – the money available to meet your current, short-term obligations.

Simply put, companies need liquidity to pay their bills. Liquidity ratios measure a company's capacity to meet its short-term obligations and are a vital indicator of its financial health. Liquidity is different from solvency, which measures a company's ability to pay all its debts. In the sporting world, Italian football club Lazio faces a now-infamous liquidity ratio preventing it from signing new players. Italian clubs are required to communicate their liquidity indicator to the football authorities twice a year. This indicator cannot be any lower than a certain threshold set by the football authorities.

Current ratio: The current ratio measures how a business's current



assets, such as cash, cash equivalents, accounts receivable, and inventories, are used to settle current liabilities such as accounts payable.

Quick ratio (Acid-test ratio): Also known as the acid-test ratio, the quick ratio measures how a business's more liquid assets, such as cash, cash equivalents, and accounts receivable can cover current liabilities. This ratio excludes inventories from current assets. A quick ratio of 1 is considered the industry average. A quick ratio below 1 show that a company may not be able to meet its current obligations because it has insufficient assets to be liquidated.

If we compare the liquidity ratios and current ratios of E & P companies, OGDCL has the highest values of current and quick ratios followed by PPL, Mari Petroleum and POL. Which means OGDCL currents assets are being used in a best way to meet its short-term liabilities followed by PPL, MPCL and POL. The same trend is followed if we compare the liquid assets availability in these companies.

The current ratios have been increased after 2019 and now observed again a drop towards 2022.

If we compare the current ratios and quick ratios, these companies have higher ratios as compared to Pakistani companies because they have more liquid asset.

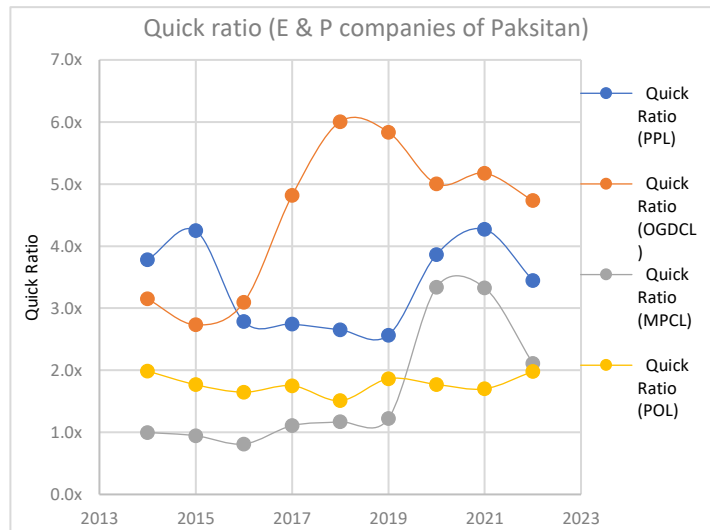


Figure 3-14 Quick ratio of Pakistan E & P companies

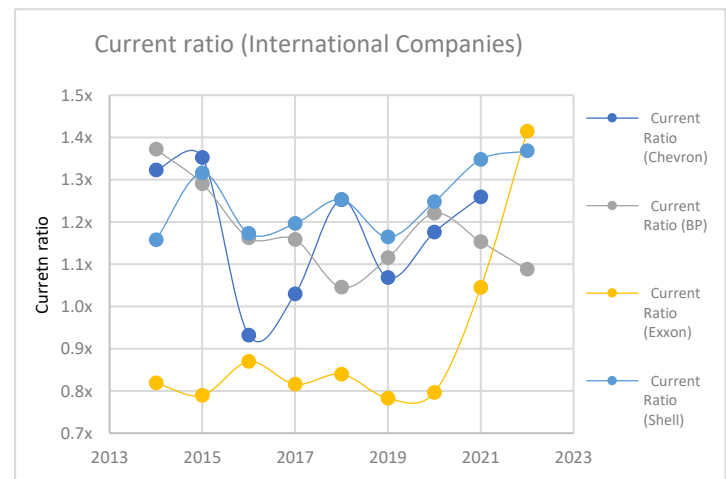


Figure 3-13 Current ratio of international companies

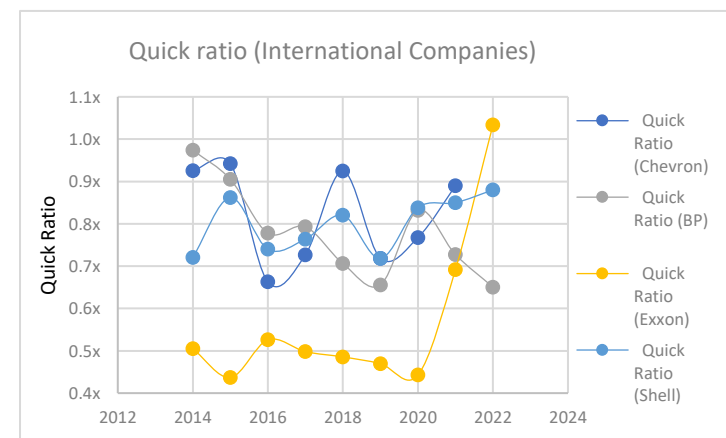


Figure 3-15 Quick ratio of international companies

3.4.2 Leverage ratios

Companies often use short and long-term debt to finance business operations. Leverage ratios measure how much debt a company has.

Debt ratio: The debt ratio measures the proportion of debt a company has to its total assets. A high debt ratio indicates that a company is highly leveraged.

Debt to equity ratio: The debt-to-equity ratio measures a company's debt liability compared to shareholders' equity. This ratio is important for investors because debt obligations often have a higher priority if a company goes bankrupt.

If we compare the company's debt to equity ratio all the companies have very marginal debt to equity ratios.

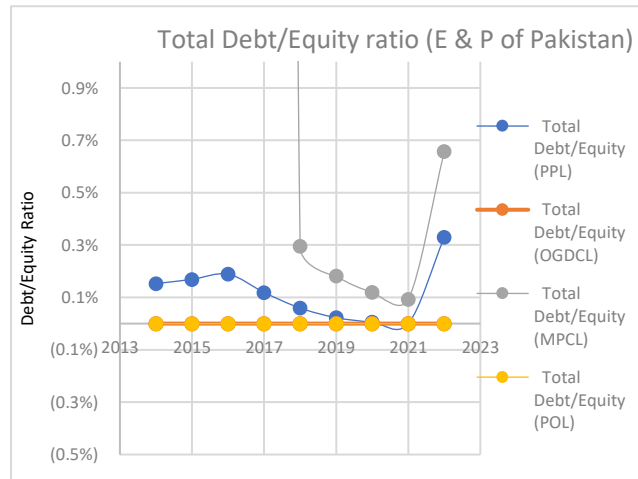


Figure 3-16 Debt-Equity ratio of Pakistan E & P companies

If we compare the debt/equity & debt/capital ratio of Pakistani companies MPCL has highest value of these ratios followed by PPL. Meanwhile OGDCL and POL does not have any debt.

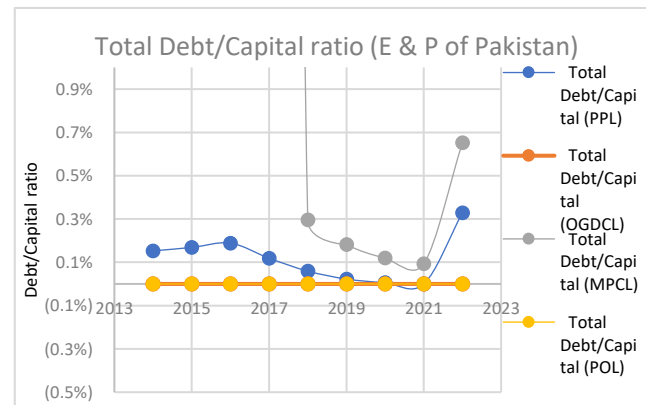


Figure 3-19 Debt-Capital ratio of Pakistan E & P companies

Conversely, international companies have more debt/capital & debt/equity ratios which means international companies heavily rely on debts because debts have more leverage as compared to capital and equity. It is concluded that internationally debt financing is encouraged. Debt financing is generally viewed as a better option than equity financing because it allows a business to obtain the needed funds without giving up any ownership or control. Additionally, debt financing often offers more favourable terms, such

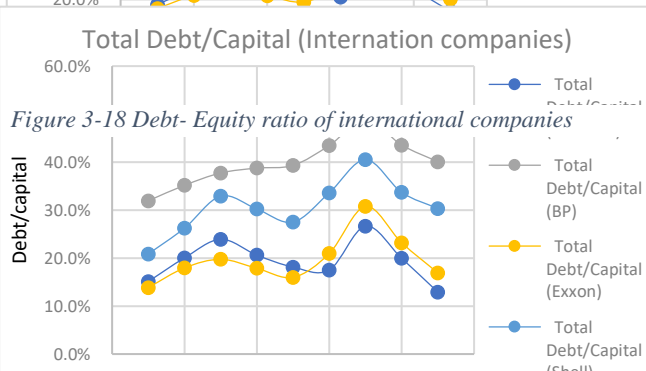
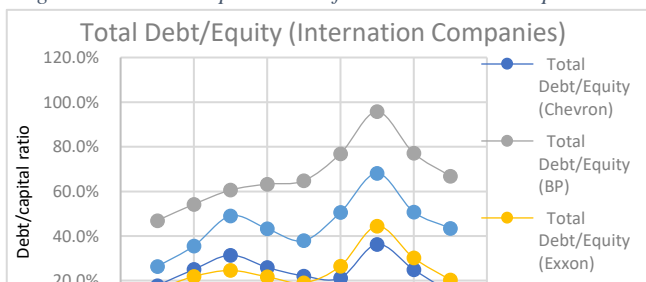


Figure 3-18 Debt- Equity ratio of international companies

Figure 3-17 Debt-Capital ratio of international companies

as lower interest rates and longer repayment periods, than equity financing. Furthermore, debt financing does not have any dilutive effects on existing shareholders, meaning that the company can raise money without impacting existing owners. Finally, debt financing is often more tax efficient than equity financing, as the interest payments may be tax deductible. In Pakistan companies are reluctant for debt financing due to high interest rates.

3.4.3 Efficiency ratios

Efficiency ratios show how effectively a company uses working capital to generate sales. For instance an analyst reported that Seattle-based bank Washington Federal's company's efficiency ratio was 58.65%, down from 59.02% recorded a year ago. A fall in efficiency ratio indicates improved profitability. There are several ways to analyse efficiency ratios:

Asset turnover ratio: Companies use assets to generate sales. The asset turnover ratio measures how much net sales are made from average assets.

Inventory turnover: For companies in the manufacturing and production industries with high inventory levels, inventory turnover is an important ratio that measures how often inventory is used and replaced for operations.

If we compare asset turnover ratios

3.4.4 Profitability ratios

A business's profit is calculated as net sales less expenses. Profitability ratios measure how a company generates profits using available resources over a given period. Higher ratio results are often more favourable, but these ratios provide much more information when compared to results of similar companies, the company's own historical performance, or the industry average. Some of the most common profitability ratios are:

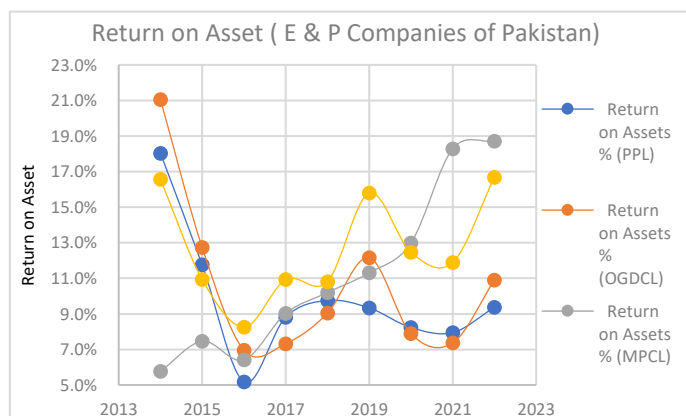


Figure 3-20 Return on Asset of Pakistan E & P companies

Gross margin: The gross margin ratio measures how much profit a business makes after the cost of goods and services compared to net sales. Comparing companies can be illustrative – such as finding that Home Depot has a 33.6% gross profit margin versus Walmart’s 25.1%.

Operating margin: The operating margin measures how much profit a company generates from net sales after accounting for the cost of goods sold and operating expenses.

Return on assets (ROA): Companies use the return on assets ratio to determine how much profits they generate from total assets or resources, including current and noncurrent assets.

Return on equity (ROE): Shareholders’ equity is capital investments. The return on equity measures how much profit a business generates from shareholders’ equity. For instance a company with a declining ROE could be seen as having more risk than a company in the same industry with an increasing ROI.

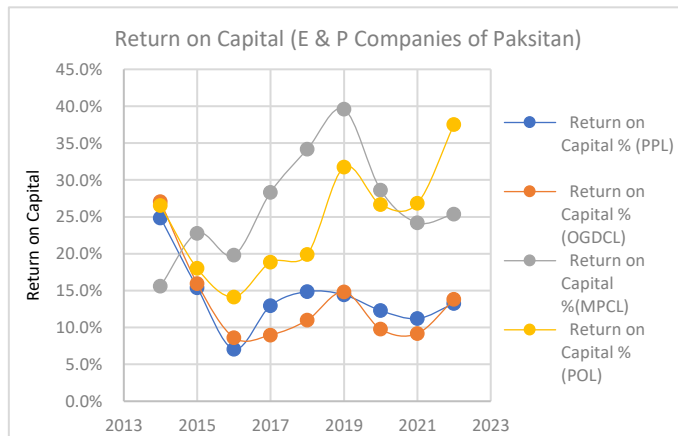


Figure 3-21 Return on capital of Pakistan E & P companies

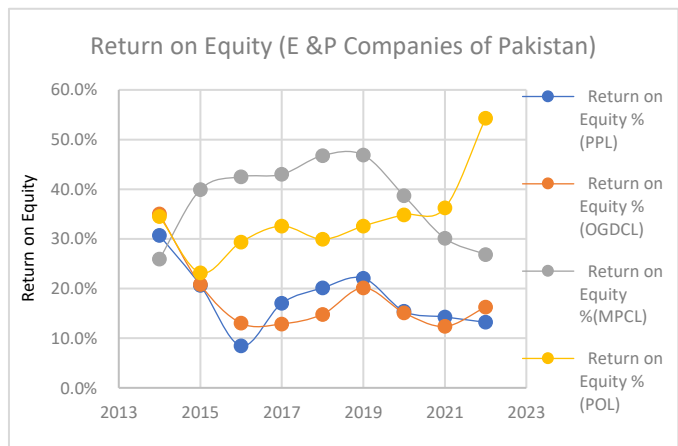


Figure 3-22 Return on Equity of Pakistan E & P companies

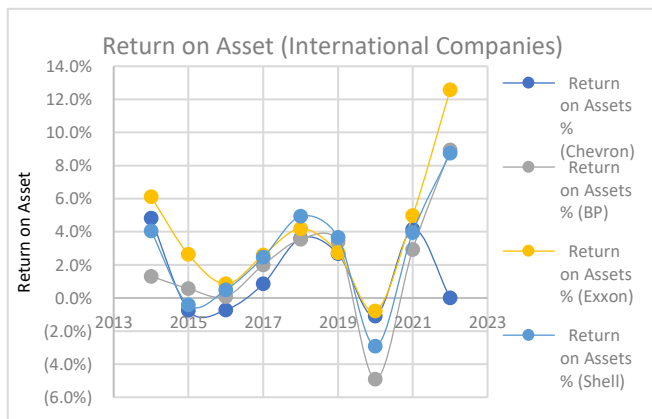


Figure 3-23 Return on Asset of international companies

If we compare profitability ratios of E & P companies of Pakistan MPCL & POL has more profitability ratios as compared to PPL and OGDCL.

If we compare profitability ratios of international companies, they are more affected by global events i.e. COVID-19 & Ukrain- Russian war as compare to Pakistani companies but the profitability ratios are in the same range.

During, COVID-19 the profitability of international companies was negative but following the same trend. But Pakistani companies does not follow the same trend due to global events.

3.4.5 Market Value ratios

Market value ratios are used to measure how valuable a company is.

These ratios are usually used by external stakeholders such as investors or market analysts but can also be used by internal management to monitor value per company share.

Earnings per share ratio (EPS): The earnings per share ratio, also known as EPS, shows how much profit is attributable to each company share.

Price earnings ratio (P/E): The PE ratio is a key investor ratio that measures how valuable a company is relative to its book value earnings per share.

Book value per share ratio: A company's common equity is what common shareholders own after all liabilities and preference shares have been settled from total assets.

The book value per share measures the value per share for common equity owners based on the balance sheet value of assets less liabilities and preference shares.

3.5 Conclusions:

Following conclusion have been drawn after comparing E & P companies' financial data with international companies:

1. MPCL share price is continuously increasing as compared to other E & P companies of Pakistan and international companies. The share price of the company may be

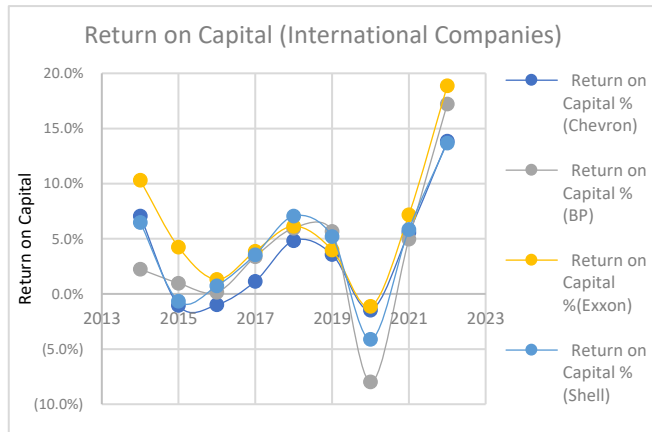


Figure 3-24 Return on Capital of international companies

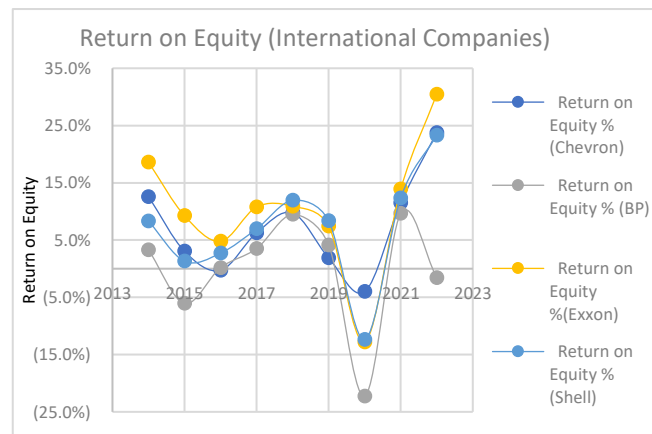


Figure 3-25 Return on Equity of international companies

overvalued or exceptionally good performance of the company which is not supported by the efficiency ratios of the company.

2. Pakistani E & P companies are reluctant to debt financing due to high rate of interest. However, international companies prefer debt financing due to low interest rates in USA and UK.
3. Pakistani E & P sector is very stable as compared to international E & P sector which is heavily impacted by global events like COVID-19 and Ukraine-Russia War. So the investment in Pakistan E & P companies is less risky as compare to international companies.
4. Efficiency ratios of Pakistan E & P companies is same as international E & P companies.
5. OGDCL is the major E &P company of the sector in terms of market share followed by PPL, MPCL and POL.

3.6 References:

1. [https://www.trade.gov/energy-resource-guide-pakistan-oil-and-gas -#:~:text=Pakistan's total refining capacity is,20 million ton per year.](https://www.trade.gov/energy-resource-guide-pakistan-oil-and-gas-#:~:text=Pakistan's total refining capacity is,20 million ton per year.)
2. https://www.pc.gov.pk/uploads/report/IEP_Outlook_Final.pdf
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4. <https://www.datarails.com/5-key-financial-ratios/#:~:text=What%20are%20financial%20ratios%3F,%2C%20profitability%2C%20and%20financial%20health.>
5. <https://simplywall.st/markets/pk/energy/oil-gas>

3.7 Annexure-A: Key Financials of E & P companies

Key Financials of Pakistani E & P companies (MMPKR)										
Year	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Years	12 months	12 months	12 months	12 months	12 months	12 months	12 months	12 months	12 months	12 months
	Jun-30-2014A	Jun-30-2015A	Jun-30-2016A	Jun-30-2017A	Jun-30-2018A	Jun-30-2019A	Jun-30-2020A	Jun-30-2021A	Jun-30-2022A	Sep-30-2022A
Pakistan Petroleum Limited										
Total Revenue (PPL)	121,339.4	105,940.6	80,809.0	117,428.8	126,621.2	164,366.0	157,999.5	149,278.6	203,810.8	233,034.8
Gross Profit (PPL)	79,165.4	63,182.0	44,745.2	64,550.8	74,244.9	99,600.6	90,946.6	86,293.5	132,192.7	154,092.2
Net Income (PPL)	50,857.5	38,207.5	16,065.0	34,699.1	45,825.8	59,459.4	49,424.6	52,283.2	54,352.7	63,822.9
Diluted EPS ³ (PPL)	18.69	14.04	5.9	12.75	16.84	21.85	18.16	19.21	19.98	23.46
Oil & Gas Development company										
Total Revenue (OGDCL)	257,014.3	210,624.9	162,866.6	171,829.4	205,335.0	261,481.2	232,925.2	239,103.6	335,463.7	369,945.4
Gross Profit (OGDCL)	176,209.9	134,578.0	89,776.1	95,004.2	121,479.7	167,061.6	138,376.7	139,746.2	216,915.6	245,811.7
Net Income (OGDCL)	123,914.6	87,249.0	59,970.8	63,803.4	78,736.3	118,385.8	100,937.9	91,534.4	133,783.7	153,456.9
Diluted EPS (OGDCL)	28.81	20.29	13.94	14.83	18.31	27.53	23.47	21.28	31.11	35.68
Mari Petroleum Company Limited										
Total Revenue (MPCL)	12,955.9	16,857.0	18,962.7	24,592.0	35,495.5	51,873.5	63,220.8	63,703.1	83,134.6	99,423.1
Gross Profit (MPCL)	8,604.1	11,528.4	13,241.4	17,187.9	25,575.7	40,415.4	50,233.3	49,017.9	66,252.9	80,382.1
Net Income (MPCL)	3,943.3	5,650.3	6,051.5	9,136.2	15,374.3	24,327.1	30,312.9	31,444.9	33,063.0	40,355.0
Diluted EPS (MPCL)	29.56	42.36	45.36	68.49	115.25	182.36	227.23	235.71	247.84	302.5
Pakistan Oilfields Limited										
Total Revenue (POL)	36,280.1	31,594.7	25,291.6	27,628.2	33,149.2	44,529.7	37,450.5	36,843.9	53,250.7	58,247.3
Gross Profit (POL)	19,096.8	16,439.5	11,358.4	14,163.8	17,194.7	25,433.9	22,428.2	21,642.7	34,010.1	38,485.4
Net Income (POL)	12,506.0	8,220.3	10,088.2	11,882.1	11,679.3	13,276.8	14,541.6	15,395.1	26,763.0	30,520.4
Diluted EPS (POL)	44.06	28.96	35.54	41.86	41.15	46.77	51.23	54.24	94.28	107.51

Key Financials International E & P companies (MM USD)										
	12 months	12 months	12 months	12 months	12 months	12 months	12 months	12 months	12 months	12 months†
	Dec-31-2014A	Dec-31-2015A	Dec-31-2016A	Dec-31-2017A	Dec-31-2018A	Dec-31-2019A	Dec-31-2020A	Dec-31-2021A	Dec-31-2022A	Dec-31-2023E
British Petroleum (USD)										
Total Revenue (BP)	351,195.0	222,243.0	182,325.0	224,831.0	297,533.0	158,109.0	105,672.0	156,786.0	239,067.0	213,474.62
Gross Profit (BP)	42,694.0	32,122.0	27,669.0	35,054.3	45,364.0	46,031.0	25,751.0	38,090.0	78,007.6	-
Net Income (BP)	1,556.3	(6,481.9)	115.0	3,195.7	9,383.0	4,026.0	(20,305.0)	7,565.0	(2,794.9)	15,496.92
Diluted EPS ³ (BP)	0.2	(0.35)	0.01	0.16	0.47	0.2	(1.01)	0.37	(0.15)	0.89
Chevron Corporation (USD)										
Total Revenue (Chevron)	192,308.0	122,566.0	103,310.0	127,485.0	158,902.0	139,865.0	94,471.0	155,606.0	235,717.0	214,965.72
Gross Profit (Chevron)	80,823.0	60,174.0	50,894.0	58,909.0	64,324.0	59,752.0	43,983.0	66,234.0	90,301.0	-
Net Income (Chevron)	19,241.0	4,587.0	(497.0)	9,195.0	14,824.0	2,924.0	(5,543.0)	15,625.0	35,465.0	28,680.78
Diluted EPS (Chevron)	10.14	2.45	(0.27)	4.85	7.74	1.54	(2.96)	8.14	18.28	15.31
Exxon Mobil Corporation (USD)										
Total Revenue (EXXON)	364,763.0	241,406.0	200,628.0	237,162.0	281,060.0	259,497.0	179,784.0	278,981.0	402,217.0	381,037.75
Gross Profit (EXXON)	129,907.0	77,801.0	67,869.0	78,109.0	90,308.0	81,066.0	57,157.0	90,045.0	130,649.0	-
Net Income (EXXON)	32,520.0	16,150.0	7,840.0	19,710.0	20,840.0	14,340.0	(22,440.0)	23,040.0	55,740.0	43,278.53
Diluted EPS (EXXON)	7.59	3.85	1.88	4.63	4.88	3.36	(5.25)	5.39	13.26	10.94
Shell (USD)										
Total Revenue (Shell)	421,105.0	264,960.0	233,591.0	287,769.3	388,379.0	344,877.0	180,543.0	261,504.0	428,521.3	277,042.6
Gross Profit (Shell)	63,789.0	42,221.0	42,583.0	51,937.8	67,010.0	65,456.0	39,449.0	62,770.0	109,354.9	-
Net Income (Shell)	14,874.0	1,939.0	4,575.0	12,236.7	23,352.0	15,842.0	(21,680.0)	20,101.0	47,546.9	26,429.38
Diluted EPS (Shell)	2.36	0.3	0.58	1.47	2.8	1.95	(2.79)	2.57	6.42	4.02

3.8 Annexure-B: Historical Capitalization

Historical Capitalization of Pakistani E & P companies																					
Year	Oct-13	Dec-13	Mar-14	Oct-14	Mar-15	Oct-15	Mar-16	Oct-16	Mar-17	Oct-17	Mar-18	Oct-18	Mar-19	Oct-19	Mar-20	Oct-20	Mar-21	Oct-21	Mar-22	Jun-22	
Balance Sheet as of:																					
Pricing as of*	Oct-30-2013	Dec-31-2013	Mar-31-2014	Sep-30-2014	Mar-31-2015	Sep-30-2015	Mar-31-2016	Sep-30-2016	Mar-31-2017	Sep-30-2017	Mar-31-2018	Sep-30-2018	Mar-31-2019	Sep-30-2019	Mar-31-2020	Sep-30-2020	Mar-31-2021	Sep-30-2021	Mar-31-2022	Jun-30-2022	
Currency	PKR	PKR	PKR	PKR	PKR	PKR	PKR	PKR	PKR	PKR	PKR	PKR	PKR	PKR	PKR	PKR	PKR	PKR	PKR	PKR	PKR
Pakistan Petroleum Limited																					
Share Price (PKR)	147.46	159.51	164.86	148.11	129.72	92.97	105.93	110.5	113.82	129.45	157.48	157.09	141.38	112.49	82.51	87.31	81.17	75.99	73.88	58.3	
Shares Out. (PKR)	2,721.0	2,721.0	2,721.0	2,721.0	2,721.0	2,721.0	2,721.0	2,721.0	2,721.0	2,721.0	2,721.0	2,721.0	2,721.0	2,721.0	2,721.0	2,721.0	2,721.0	2,721.0	2,721.0	2,721.0	
Market Capitalization (PKR)	401,243.8	434,033.8	448,565.3	402,998.9	352,976.5	252,971.3	288,225.6	300,667.2	309,697.6	352,227.6	428,493.6	427,441.3	384,676.8	306,081.6	224,507.0	237,568.0	220,861.3	206,766.7	201,025.4	158,632.7	
Oil & Gas Development company Limited																					
Share Price (OGDCL)	261.36	264.0	258.0	231.55	179.79	138.62	120.75	140.66	157.0	150.11	168.27	150.47	144.4	129.01	95.27	93.43	94.71	85.55	84.56	73.33	
Shares Out. (OGDCL)	4,300.9	4,300.9	4,300.9	4,300.9	4,300.9	4,300.9	4,300.9	4,300.9	4,300.9	4,300.9	4,300.9	4,300.9	4,300.9	4,300.9	4,300.9	4,300.9	4,300.9	4,300.9	4,300.9	4,300.9	
Market Capitalization (OGDCL)	1,124,090.6	1,135,445.1	1,109,639.5	995,880.0	773,263.9	596,194.7	519,337.1	604,968.6	675,245.8	645,612.4	723,777.2	647,160.7	621,054.1	554,862.8	409,749.4	401,835.7	407,340.9	367,944.4	363,666.5	315,387.1	
Marl Petroleum Company Limited																					
Share Price (MPCO)	111.16	133.95	182.29	413.36	452.04	346.17	624.95	807.02	1,276.75	1,198.35	1,256.2	1,300.93	1,075.58	1,080.81	1,448.71	1,592.77	1,564.57	1,786.3	1,679.92	1,675.12	
Shares Out. (MPCO)	133.4	133.4	133.4	133.4	133.4	133.4	133.4	133.4	133.4	133.4	133.4	133.4	133.4	133.4	133.4	133.4	133.4	133.4	133.4	133.4	
Market Capitalization (MPCO)	14,828.6	17,868.8	24,317.5	55,142.6	60,203.4	46,180.4	83,369.9	107,699.1	170,321.9	159,862.9	167,580.0	173,547.0	143,489.3	144,162.8	193,281.9	212,479.5	206,777.5	236,296.9	224,109.3	223,465.2	
Pakistan Oilfield Limited																					
Share Price (POL)	398.36	432.09	442.4	410.0	307.44	265.81	263.72	330.42	375.5	490.0	564.48	550.01	423.0	391.51	295.56	315.65	355.06	383.0	376.46	426.1	
Shares Out. (POL)	283.9	283.9	283.9	283.9	283.9	283.9	283.9	283.9	283.9	283.9	283.9	283.9	283.9	283.9	283.9	283.9	283.9	283.9	283.9	283.9	
Market Capitalization (POL)	113,076.0	122,651.4	125,577.5	116,380.6	87,268.9	75,451.1	74,859.7	93,792.8	106,587.6	139,089.0	160,231.5	156,123.1	120,070.7	111,132.1	83,898.2	89,598.9	100,785.6	108,716.5	106,860.1	120,950.7	
Chevron (USD)																					
Share Price (BP)	7.83	6.81	7.02	6.81	7.02	5.6	4.64	5.7	6.08	6.9	6.98	6.96	7.4	6.52	4.4	2.67	4.0	4.67	4.99	4.86	
Shares Out. (BP)	18,417.1	18,243.8	18,256.3	18,243.8	18,256.3	18,238.0	18,630.0	18,902.9	19,655.4	19,793.1	19,943.0	20,053.4	20,185.5	20,186.7	20,125.1	20,266.6	20,265.4	19,913.5	19,433.6	18,938.9	
Market Capitalization (BP)	144,239.5	124,250.4	128,172.3	102,203.9	86,465.6	107,939.1	119,652.4	136,542.8	139,546.7	149,443.4	131,666.1	88,502.9	54,161.3	81,032.2	93,012.5	96,998.0	92,841.6				
Exxon Mobile (USD)																					
Share Price (Exxon)	\$103.11	\$95.07	\$88.19	\$88.19	\$86.98	\$87.94	\$83.66	\$82.7	\$83.87	\$76.54	\$83.03	\$77.29	\$71.49	\$43.99	\$33.23	\$60.97	\$63.93	\$91.7	\$91.02		
Shares Out. (Exxon)	4,294.4	4,189.5	4,162.9	4,162.9	4,150.2	4,150.2	4,146.7	4,237.0	4,237.1	4,233.8	4,231.1	4,231.1	4,228.2	4,228.2	4,228.2	4,233.6	4,212.5	4,167.6			
Market Capitalization (Exxon)	442,793.0	402,576.6	369,471.1	357,929.5	364,972.1	346,912.4	350,999.9	355,366.1	324,057.7	351,533.0	327,021.2	302,481.8	185,999.0	140,504.2	258,115.9	270,651.9	386,290.2	379,338.3			
Shell (USD)																					
Share Price (Shell)	36.58	34.72	30.37	25.24	21.12	26.11	27.38	32.91	31.89	30.9	32.49	29.57	18.09	12.73	18.48	23.2	27.63	25.59			
Shares Out. (Shell)	6,323.4	6,297.4	6,282.0	6,346.4	6,368.3	6,368.3	6,368.3	6,368.3	6,368.3	6,368.3	6,368.3	6,368.3	6,368.3	6,368.3	6,368.3	6,368.3	6,368.3	6,368.3	6,368.3	6,368.3	
Market Capitalization (Shell)	231,293.7	218,616.0	190,794.4	160,231.3	168,681.3	211,041.5	224,332.8	271,871.0	285,129.7	254,946.4	262,824.8	234,088.5	140,633.3	96,988.2	143,547.5	178,468.1	207,305.3	187,933.7			

3.9 Annexure-B: Financial Ratios of E & P companies

Ratios of Pakistan E & P companies									
Years	2014	2015	2016	2017	2018	2019	2020	2021	2022
For the Fiscal Period Ending	12 months	12 months	12 months	12 months	12 months	12 months	12 months	12 months	12 months
	Jun-30-2014	Jun-30-2015	Jun-30-2016	Jun-30-2017	Jun-30-2018	Jun-30-2019	Jun-30-2020	Jun-30-2021	Jun-30-2022
Pakistan Petroleum Limited									
Return on Assets % (PPL)	18.0%	11.8%	5.2%	8.8%	9.8%	9.3%	8.2%	7.9%	9.4%
Return on Capital % (PPL)	24.9%	15.4%	7.1%	13.0%	14.9%	14.4%	12.3%	11.2%	13.3%
Return on Equity % (PPL)	30.7%	20.7%	8.4%	17.0%	20.1%	22.1%	15.4%	14.3%	13.2%
Current Ratio (PPL)	4.1x	4.5x	3.0x	2.9x	2.8x	2.6x	4.0x	4.4x	3.5x
Quick Ratio (PPL)	3.8x	4.2x	2.8x	2.7x	2.7x	2.6x	3.9x	4.3x	3.4x
Total Debt/Equity (PPL)	0.2%	0.2%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.3%
Total Debt/Capital (PPL)	0.2%	0.2%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.3%
Total Liabilities/Total Assets. (PPL)	24.4%	23.2%	29.9%	33.9%	35.0%	35.5%	30.7%	27.6%	30.9%
Oil and Gas Development Company Limited									
Return on Assets % (OGDCL)	21.0%	12.7%	7.0%	7.3%	9.0%	12.2%	7.9%	7.4%	10.9%
Return on Capital % (OGDCL)	27.1%	16.0%	8.6%	9.0%	11.0%	14.8%	9.8%	9.2%	13.8%
Return on Equity % (OGDCL)	35.0%	20.8%	13.0%	12.9%	14.8%	20.1%	15.1%	12.4%	16.3%
Current Ratio (OGDCL)	4.0x	3.6x	4.3x	6.4x	7.4x	7.0x	6.2x	6.4x	5.6x
Quick Ratio (OGDCL)	3.1x	2.7x	3.1x	4.8x	6.0x	5.8x	5.0x	5.2x	4.7x
Total Debt/Equity (OGDCL)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Debt/Capital (OGDCL)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Liabilities/Total Assets (OGDCL)	20.3%	20.1%	18.8%	18.2%	17.4%	18.4%	20.1%	19.5%	22.5%
Mari Petroleum									
Return on Assets % (MPCL)	5.8%	7.5%	6.4%	9.0%	10.2%	11.3%	13.0%	18.3%	18.7%
Return on Capital % (MPCL)	15.6%	22.8%	19.8%	28.3%	34.2%	39.6%	28.6%	24.2%	25.4%
Return on Equity % (MPCL)	26.0%	39.9%	42.5%	43.0%	46.8%	46.9%	38.7%	30.1%	26.8%
Current Ratio (MPCL)	1.1x	1.1x	0.9x	1.2x	1.2x	1.3x	3.7x	3.6x	2.3x
Quick Ratio (MPCL)	1.0x	0.9x	0.8x	1.1x	1.2x	1.2x	3.3x	3.3x	2.1x
Total Debt/Equity (MPCL)	10.2%	95.0%	6.8%	20.1%	0.3%	0.2%	0.1%	0.1%	0.7%
Total Debt/Capital (MPCL)	9.2%	48.7%	6.4%	16.7%	0.3%	0.2%	0.1%	0.1%	0.7%
Total Liabilities/Total Assets (MPCL)	71.7%	82.5%	71.5%	72.7%	72.1%	71.1%	26.2%	23.2%	29.3%
Pakistan Oilfield Limited									
Return on Assets % (POL)	16.6%	10.9%	8.3%	10.9%	10.8%	15.8%	12.5%	11.9%	16.7%
Return on Capital % (POL)	26.6%	18.0%	14.1%	18.9%	19.9%	31.7%	26.7%	26.8%	37.5%
Return on Equity % (POL)	34.5%	23.2%	29.4%	32.6%	29.9%	32.6%	34.9%	36.2%	54.3%
Current Ratio (POL)	2.5x	2.4x	2.2x	2.2x	1.7x	2.1x	2.0x	1.9x	2.2x
Quick Ratio (POL)	2.0x	1.8x	1.6x	1.8x	1.5x	1.9x	1.8x	1.7x	2.0x
Total Debt/Equity (POL)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Debt/Capital (POL)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Liabilities/Total Assets (POL)	38.1%	40.6%	42.6%	41.6%	49.1%	51.3%	55.0%	56.3%	55.0%

Ratios of International E & P companies									
Years	2014	2015	2016	2017	2018	2019	2020	2021	2022
For the Fiscal Period Ending	12 months	12 months	12 months	12 months	12 months	12 months	12 months	12 months	12 months
	Jun-30-2014	Jun-30-2015	Jun-30-2016	Jun-30-2017	Jun-30-2018	Jun-30-2019	Jun-30-2020	Jun-30-2021	Jun-30-2022
BP									
Return on Assets % (BP)	1.3%	0.6%	0.1%	2.0%	3.5%	3.4%	(4.9%)	2.9%	8.9%
Return on Capital % (BP)	2.2%	1.0%	0.2%	3.4%	6.0%	5.7%	(8.0%)	5.0%	17.2%
Return on Equity % (BP)	3.3%	(6.1%)	0.2%	3.5%	9.5%	4.1%	(22.3%)	9.6%	(1.6%)
Current Ratio (BP)	1.4x	1.3x	1.2x	1.2x	1.0x	1.1x	1.2x	1.2x	1.1x
Quick Ratio (BP)	1.0x	0.9x	0.8x	0.8x	0.7x	0.7x	0.8x	0.7x	0.7x
Total Debt/Equity (BP)	46.9%	54.2%	60.6%	63.3%	64.8%	76.9%	95.7%	77.2%	66.9%
Total Debt/Capital (BP)	31.9%	35.2%	37.7%	38.8%	39.3%	43.5%	48.9%	43.6%	40.1%
Total Liabilities/Total Assets (BP)	60.4%	62.4%	63.2%	63.7%	64.0%	65.9%	68.0%	68.5%	71.2%
Chevron									
Return on Assets % (Chevron)	4.8%	(0.7%)	(0.7%)	0.9%	3.6%	2.7%	(1.1%)	4.1%	NA
Return on Capital % (Chevron)	7.1%	(1.0%)	(1.0%)	1.1%	4.8%	3.6%	(1.5%)	5.6%	13.8%
Return on Equity % (Chevron)	12.6%	3.0%	(0.3%)	6.3%	9.7%	1.9%	(4.0%)	11.5%	23.8%
Current Ratio (Chevron)	1.3x	1.4x	0.9x	1.0x	1.3x	1.1x	1.2x	1.3x	
Quick Ratio (Chevron)	0.9x	0.9x	0.7x	0.7x	0.9x	0.7x	0.8x	0.9x	
Total Debt/Equity (Chevron)	17.8%	25.1%	31.4%	26.0%	22.1%	21.3%	36.3%	24.9%	14.8%
Total Debt/Capital (Chevron)	15.1%	20.0%	23.9%	20.6%	18.1%	17.5%	26.6%	19.9%	12.9%
Total Liabilities/Total Assets (Chevron)	41.3%	41.8%	43.6%	41.2%	38.7%	38.8%	44.6%	41.6%	NA
Exxon Mobile									
Return on Assets % (Exxon)	6.1%	2.6%	0.8%	2.6%	4.2%	2.7%	(0.8%)	5.0%	12.6%
Return on Capital % (Exxon)	10.3%	4.2%	1.3%	3.9%	6.1%	4.0%	(1.1%)	7.2%	18.9%
Return on Equity % (Exxon)	18.6%	9.2%	4.8%	10.8%	10.9%	7.4%	(12.8%)	13.9%	30.5%
Current Ratio (Exxon)	0.8x	0.8x	0.9x	0.8x	0.8x	0.8x	0.8x	1.0x	1.4x
Quick Ratio (Exxon)	0.5x	0.4x	0.5x	0.5x	0.5x	0.5x	0.4x	0.7x	1.0x
Total Debt/Equity (Exxon)	16.1%	21.9%	24.6%	21.8%	19.0%	26.5%	44.4%	30.2%	20.3%
Total Debt/Capital (Exxon)	13.9%	18.0%	19.7%	17.9%	16.0%	21.0%	30.8%	23.2%	16.9%
Total Liabilities/Total Assets (Exxon)	48.2%	47.5%	47.4%	44.2%	42.7%	45.1%	50.7%	48.2%	45.1%
Shell									
Return on Assets % (Shell)	4.1%	(0.4%)	0.5%	2.5%	4.9%	3.7%	(2.9%)	4.0%	8.7%
Return on Capital % (Shell)	6.5%	(0.7%)	0.7%	3.6%	7.1%	5.2%	(4.1%)	5.8%	13.7%
Return on Equity % (Shell)	8.3%	1.3%	2.7%	7.0%	11.9%	8.4%	(12.3%)	12.4%	23.3%
Current Ratio (Shell)	1.2x	1.3x	1.2x	1.2x	1.3x	1.2x	1.2x	1.3x	1.4x
Quick Ratio (Shell)	0.7x	0.9x	0.7x	0.8x	0.8x	0.7x	0.8x	0.8x	0.9x
Total Debt/Equity (Shell)	26.4%	35.6%	49.1%	43.3%	37.9%	50.6%	68.1%	50.8%	43.5%
Total Debt/Capital (Shell)	20.9%	26.2%	32.9%	30.2%	27.5%	33.6%	40.5%	33.7%	30.3%
Total Liabilities/Total Assets (Shell)	51.1%	51.8%	54.2%	51.4%	49.3%	52.9%	58.2%	56.6%	56.5%