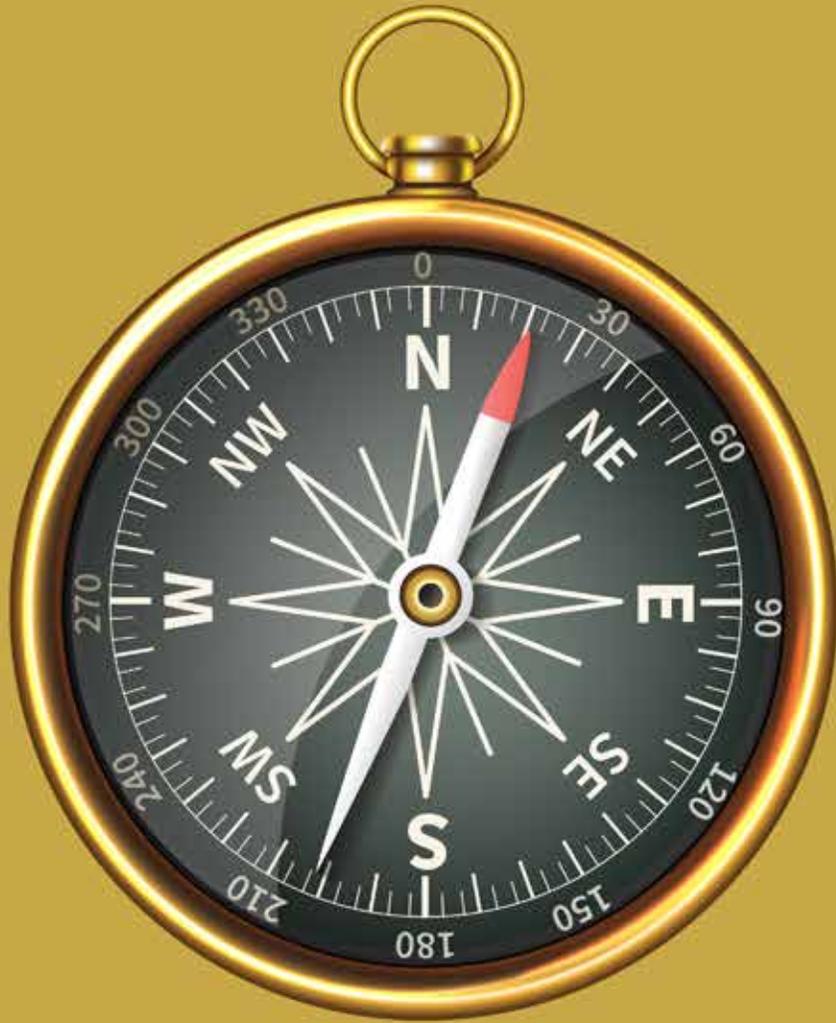


STATE OF THE REGULATED PETROLEUM INDUSTRY 2017-18



Oil & Gas Regulatory Authority
Government of Pakistan





THEME



OGRA being the primary regulator of the mid and downstream petroleum industry regulate the strategic and critical aspects of the oil & gas sector. To steer the momentum of the industry in the right “DIRECTION” is embedded in the preamble of the OGRA Ordinance, giving a clear vision to all the stakeholders is highly essential in creating enabling environment of fair play and sustainable growth. Therefore, “DIRECTION” is always crucial in regulatory environment.





“Safeguarding public interest through efficient and effective regulation in the midstream and downstream petroleum sector.”



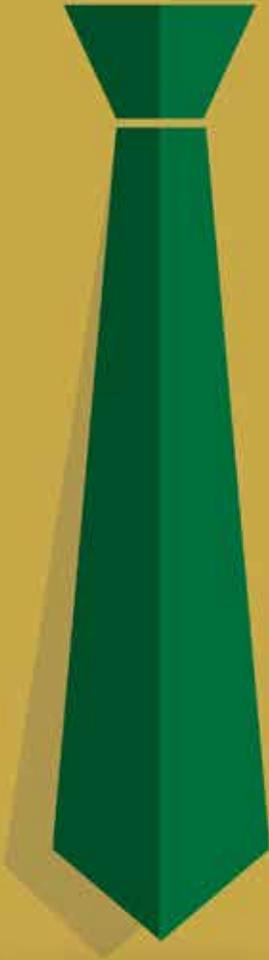




CONTENTS



Executive Summary	14
Natural Gas	20
LPG, LNG & CNG	60
Oil	70
Appendices	80
Abbreviations & Acronyms	92





EXECUTIVE SUMMARY



1. Executive Summary

“State of the Regulated Petroleum Industry” Report for fiscal year 2017-18 is presented by Oil & Gas Regulatory Authority (OGRA) in pursuance of Section 20 (1) (b) of the OGRA Ordinance, 2002.

OGRA was established under the OGRA Ordinance in March, 2002 with expressed objectives of fostering competition, increasing private investment and ownership in midstream and downstream petroleum sector and protecting the public interest through effective and efficient regulation.

1.1 Natural Gas

Natural gas is a major contributing fuel in country’s energy mix. Its share in the primary energy mix is around 48 percent. The country has a huge network of gas pipelines providing natural gas to domestic, industrial, commercial and transport sectors. There is a significant rise in demand and consumption of gas by residential / domestic consumers owing to price differential vis-a-vis other competing fuels, i.e. Liquefied Petroleum Gas (LPG), fire wood and coal.

Federal Government has initiated various measures to bridge the gap between demand and supply which includes incentives for local gas production, import of natural gas in the form of Liquefied Natural Gas (LNG) and cross-country pipelines from Iran and Turkmenistan. Construction of two LNG handling terminals (each having re-gasification capacity of 650 MMCFD) at Karachi Port are major milestones achieved to mitigate gas shortage in the country. The share of Re-gasified LNG, in the overall gas supply has increased to 23% in FY 2017-18

The gas utility companies expanded transmission and distribution network to cater for consumer demand for natural gas. SNGPL and SSGCL extended their transmission network by 342 Km and 57 Km and added 11,693 Km and 689 Km in their distribution network respectively during fiscal year 2017-18.

The gas utility companies have added 678,872 new consumers to their network during FY 2017-18. The total gas consumers were more than 9.2 million by the end of FY 2017-18. There were 6.3 million and 2.9 million consumers on SNGPL and SSGCL network respectively.

Power sector was the main consumer of natural gas during FY 2017-18, consuming 37 percent followed by domestic sector 20 percent, fertilizer 17 percent, captive power 10 percent, industrial sector 9 percent, transport 5 percent, and commercial sector having 2 percent share. The Province-wise gas consumption reveals that Punjab share was the highest with 50 percent, followed by Sindh 39 percent, Khyber Pakhtunkhwa 9 percent and Balochistan 2 percent during the year under review.

Natural gas supplies during the year was 4,357 MMCFD. Sindh supplied 50 percent to the total gas supplies, whereas Khyber Pakhtunkhwa, Balochistan and Punjab supplied 12, 11 and 4 percent respectively. The remaining 23 percent of gas was imported in the form LNG.

Due to rising demand from various sectors particularly power, domestic, fertilizer, captive power and industry the supplies are not sufficient enough to cater this demand. The demand-supply gap during FY 2017-18 was 1,447 MMCFD, this gap is expected to rise to 3,720 MMCFD by FY 2019-20.

1.2 LPG

LPG accounts for about 1.3% of the total primary energy supply in the Country. This low share of LPG in the total energy mix is mainly due to supply constraints and the higher price of LPG in relation to competing fuels like natural gas and wood etc. The current size of LPG market is around

1,280,550 MT/Annum. LPG consumption has increased by 5.88 % compared to last fiscal year. LPG Consumption during FY 2017-18, stood at around 3,508 tons per day.

Local Production caters around 58 percent of LPG consumption whereas the rest is imported. Refineries, gas producing fields and imports are three main sources of LPG supply in the Country. 402,685 M.Tons of LPG has been imported during FY 2017-18.

Gas producing fields supplied around 48 percent of LPG and refineries 18 percent of total LPG supply and the remaining 34 percent were imported during FY 2017-18. Out of total LPG production (fields and refineries), private sector share in the production was 57 percent whereas 43 percent was produced by public sector companies.

As of June 30, 2018, there are 12 LPG producers, 168 LPG marketing companies operating in the country, having more than 5,000 authorized distributors. Further, there are 18 operational LPG auto refueling stations within the country.

1.3 OIL

The consumption of petroleum products during FY 2017-18 decreased to 24.6 million tons (including energy and non-energy) as compared to 26.0 million tons of the last year showing a decline of 5.3 percent. The negative growth came from power sector which witnessed a decline in Fuel Oil (FO) consumption to 23 percent due to alternate fuel availability (i.e. LNG) in the said sector.

Moreover, Kerosene and Aviation Fuels also observed minor decrease in consumption by around 5.5 and 1 percent respectively. Whereas a significant growth of 11.5 percent in Motor Spirit (MS) consumption was observed in FY 2017-18 as compared to previous year. The aforesaid increase may be attributed to increased demand in transport sector probably due to growing number of vehicles especially motor bikes in the last few years. During FY 2017-18, contrary to Motor Spirit (MS), High Speed Diesel (HSD) remained steady with negligible growth of 0.4 percent.

The market share of Oil Marketing Companies (OMCs) witnessed a shift in the ranking of main players as compared to previous year. PSO was the leading player with the share of around 50 percent losing almost 5 percent of its market share to other competitors compared to last year. Shell also shed its market share by 2 percent from 9 to 7 percent. The main beneficiary was Hascol increasing its market share from 8 percent to 12 percent and APL slightly improved its share from 8 to 9 percent during the year under review. After the merger of Total Parco Marketing Limited (TPML) into Total Parco Pakistan Limited (TPPL), TPPL has expanded its share from 4 percent to around 9 percent in total sale of energy products.

During FY 2017-18, the production of refineries witnessed a growth of 13 percent as compared to last year. The production remained at 13.63 million tons (energy & non-energy products) as compared to 12.07 million tons in FY 2016-17. Byco's production showed a significant growth of 113.5% due to operation of 2nd oil refinery. As usual, PARCO had the major share in production at 33 percent followed by BPPL with 19 percent and National Refinery Limited (NRL) share remained at 17 percent of the total production.

The demand for HSD, MS and FO was mostly met through imports as domestic production was not enough to meet the country's requirement. Around 71 percent of MS, 42 percent of High Speed Diesel (HSD) and 56 percent of FO demand was met through import of finished POL products.

مقابلے میں ایل پی جی کی کھپت میں 5.88 فیصد اضافہ ہوا ہے۔ مالی سال ۱۸-۲۰۱۷ کے دوران ایل پی جی کی کھپت 3,508 ٹن یومیہ رہی۔

مقامی سطح پر پیداوار ایل پی جی کھپت کا 58 فیصد ہے جب کہ بقایا درآمد کی جاتی ہے۔ ملک میں ایل پی جی کی رسد کے بنیادی ذرائع میں سے ریفا سٹریز، گیس پیدا کرنے والے فیلڈز اور درآمدات شامل ہیں۔ مالی سال ۱۸-۲۰۱۷ کے دوران 402,685 میٹرک ٹن ایل پی جی درآمد کی گئی۔

مالی سال ۱۸-۲۰۱۷ کے دوران گیس پیدا کرنے والے فیلڈز نے ایل پی جی کا 48 فیصد مہیا کیا۔ ریفا سٹریز نے ٹوٹل ایل پی جی رسد کا 18 فیصد اور بقایا 34 فیصد ایل پی جی درآمد کی گئی۔ ایل پی جی کی کل پیداوار (فیلڈز اور ریفا سٹریز) میں سے پرائیویٹ سیکٹر کا پیداوار میں حصہ 57 فیصد تھا جب کہ 43 فیصد پیداوار پبلک سیکٹر کمپنیوں کی جانب سے تھی۔

۳۰ جون ۲۰۱۸ تک ملک میں 12 ایل پی جی پیداواری کمپنیاں اور 168 ایل پی جی مارکیٹنگ کمپنیاں کام کر رہی ہیں جن کے 5,000 سے زائد مجاز تقسیم کنندہ ہیں۔ مزید براں ملک میں 18 آپریشنل ایل پی جی آٹوریٹو فوئلنگ سٹیشنز کام کر رہے ہیں۔

1.3 تیل

مالی سال 18-2017 کے دوران گزشتہ سال کے مقابلے میں پٹرولیم مصنوعات کی کھپت کم ہو کر 24.6 ملین ٹن (بشمول توانائی اور غیر توانائی مصنوعات) رہی، بالمقابل پچھلے سال کے 26 ملین ٹن کے جس سے تنزیلی کی شرح 5.3 فیصد نکلتی ہے۔ اس منفی رجحان کی وجہ پاور سیکٹر ہے جس میں فیول آئل (FO) کی کھپت میں 23 فیصد کمی ہوئی۔ جس کی وجہ مذکورہ سیکٹر میں متبادل ایندھن ایل این جی کی دستیابی ہے۔

مزید برآں مٹی کے تیل اور جہاز کے ایندھن کی کھپت میں بھی معمولی کمی دیکھنے میں آئی جو کہ بالترتیب 5.5 اور 1 فیصد رہی۔ مالی سال ۱۸-۲۰۱۷ میں پچھلے سال کے مقابلے میں پٹرول کی کھپت میں 11.5 فیصد اہم بڑھوتری دیکھنے میں آئی۔ اس اضافے کا سبب ٹرانسپورٹ سیکٹر میں بڑھتی ہوئی طلب ہے جس کی بنیادی وجہ غالباً گاڑیوں کی بڑھتی ہوئی تعداد ہے خصوصاً طور پر پچھلے سالوں میں موٹر سائیکل کی تعداد میں اضافہ ہے۔ مالی سال ۱۸-۲۰۱۷ کے دوران، پٹرول کے برعکس ڈیزل اپنی جگہ پر مستحکم رہا اور 0.4 فیصد برائے نام اضافہ دیکھنے میں آیا۔

پچھلے سال کے مقابلے میں آئل مارکیٹنگ کمپنیز (OMCs) کے مارکیٹ شیئر کے حوالے سے نمایاں شراکت داروں کی ریٹنگ میں تبدیلی دیکھنے میں آئی۔ گزشتہ سال کے مقابلے میں پی ایس او (PSO) 50 فیصد حصے کے ساتھ نمایاں شراکت دار تھا اور اس کی اپنی مارکیٹ شیئر کا تقریباً 5 فیصد حصہ دیگر حریف شراکت داروں میں تقسیم ہو گیا۔ شیل (Shell) نے بھی 9 فیصد سے 7 فیصد پر آ کر اپنی مارکیٹ شیئر کا 2 فیصد حصہ گنوا لیا۔ زیر جائزہ سال میں مرکزی استفادہ کرنے والی کمپنی ہاسکول (Hascal) رہی جس کا مارکیٹ شیئر 8 فیصد سے بڑھ کر 12 فیصد تک پہنچ گیا اور اے پی ایل (APL) نے اپنے شیئر میں 8 سے 9 فیصد پر جا کر معمولی اضافہ کیا۔ ٹوٹل پارکو مارکیٹنگ لمیٹڈ (TPML) کے ٹوٹل پارکو پاکستان لمیٹڈ (TPPL) میں انضمام کے بعد TPPL نے توانائی مصنوعات کی ٹوٹل فروخت میں اپنے شیئر کو 4 فیصد سے بڑھا کر 9 فیصد تک پہنچا دیا ہے۔

مالی سال ۱۸-۲۰۱۷ کے دوران گزشتہ سال کے مقابلے میں ریفا سٹریز کی پیداوار میں 13 فیصد تک اضافہ دیکھنے میں آیا۔ مالی سال ۱۷-۲۰۱۶ میں 12.07 ملین ٹن کے مقابلے میں پیداوار 13.63 ملین ٹن (توانائی اور غیر توانائی مصنوعات) رہی۔ بانیکو کی پیداوار میں 113.5 فیصد خاطر خواہ اضافہ دیکھنے میں آیا۔ جس کی وجہ اس کی دوسری ریفا سٹری کا آپریشنل ہونا تھا۔ معمول کے مطابق PARCO کا پیداوار میں 33 فیصد کے ساتھ اہم شیئر دیکھنے میں آیا جس کے بعد BBPL 19 فیصد کے ساتھ اور نیشنل ریفا سٹری لمیٹڈ (NRL) ٹوٹل پیداوار میں 17 فیصد شیئر کے ساتھ مستحکم رہا۔

ڈیزل، پٹرول اور فرنس آئل کی طلب زیادہ تر درآمدات کے ذریعے پوری ہوئی کیونکہ ملکی پیداوار ضروریات کو پورا کرنے کیلئے ناکافی تھیں۔ پٹرول کا تقریباً 71 فیصد، ڈیزل کا 42 فیصد اور فرنس آئل کی طلب کا 56 فیصد POL کی تیار مصنوعات کی درآمد کے ذریعے پورا کیا گیا۔

1. ایگزیکٹو سمری

”سٹیٹ آف دی ریگولیٹڈ پٹرولیم انڈسٹری“ رپورٹ برائے مالی سال ۱۸-۲۰۱۷ اوگرا آرڈیننس، 2002 کے سیکشن (b)(1) 20 کی بیرونی میں آئل اینڈ گیس ریگولیٹری اتھارٹی پیش کر رہی ہے۔ اوگرا کا مارچ 2002 میں اوگرا آرڈیننس کے تحت قیام عمل میں آیا، جس کے مقاصد میں مقابلے کے رجحان کو پروان چڑھانا، ڈسٹریبیوٹرز اور ڈاؤن سٹریم پٹرولیم سیکٹر میں نجی سرمایہ کاری اور ملکیت کو فروغ دینا اور مؤثر اور کارگر ضابطوں کی فراہمی سے عوامی مفاد کا تحفظ شامل ہے۔

1.1 قدرتی گیس

قدرتی گیس ملک کے مختلف توانائی کے ذرائع میں سے ایک بڑا حصہ رکھنے والا ایندھن ہے۔ اس کا مختلف توانائی کے ذرائع میں حصہ ۴۸ فیصد ہے۔ ملک میں گھر، بلو، صنعتی، کمرشل اور ٹرانسپورٹ کے شعبوں کو قدرتی گیس فراہم کرنے والی گیس پائپ لائنز کا ایک بہت وسیع نیٹ ورک موجود ہے۔ دیگر مسابقتی ایندھن جیسا کہ لیکو فائڈ پٹرولیم گیس (LPG)، ایندھن کی لکٹری اور کولے کے مقابلے میں قیمت میں زیادہ فرق ہونے کی وجہ سے رہائشی / گھریلو صارفین کی جانب سے گیس کی طلب اور استعمال میں خاطر خواہ اضافہ ہوا ہے۔

وفاقی حکومت نے طلب اور رسد کے اس بڑھتے ہوئے خلا کو پُر کرنے کیلئے مختلف اقدامات کئے ہیں جس میں ملک میں گیس کی پیداوار، لیکو فائڈ نیچرل گیس کی شکل میں قدرتی گیس کی درآمد اور ایران، ترکمانستان اور پاکستان کے مابین پائپ لائنز کی تنصیب شامل ہیں۔ کراچی پورٹ پر دو لیکو فائڈ نیچرل گیس کے ٹرمینلز (فی ٹرینل 650 MMCFD) کی تعمیر ملک میں گیس کی قلت کو دور کرنے کیلئے اہم سنگ میل میں سے ایک ہے۔ مالی سال ۱۸-۲۰۱۷ میں مجموعی گیس کی رسد میں ریگولیشنڈ ایل این جی کا حصہ ۲۳ فیصد ہو گیا ہے۔

صارفین کی جانب سے قدرتی گیس کی بڑھتی ہوئی طلب کو پورا کرنے کیلئے گیس یوٹیلیٹی کمپنیوں نے اپنے ترسیل اور تقسیم کے نیٹ ورک کو بڑھایا ہے۔ مالی سال ۱۸-۲۰۱۷ میں ایس این جی پی ایل اور ایس ایس جی سی ایل نے اپنے ترسیلی نیٹ ورک کو بالترتیب 342 کلو میٹر اور 57 کلو میٹر بڑھا یا اور اپنے تقسیمی نیٹ ورک میں 11,693 کلو میٹر اور 689 کلو میٹر بالترتیب اضافہ کیا ہے۔

مالی سال ۱۸-۲۰۱۷ میں گیس یوٹیلیٹی کمپنیوں نے اپنے نیٹ ورک میں 678,872 نئے صارفین شامل کئے ہیں۔ مالی سال ۱۸-۲۰۱۷ کے اختتام پر کل گیس صارفین کی تعداد 9.2 ملین سے زیادہ تھی۔ SNGPL اور SSGCL کے نیٹ ورک پر بالترتیب 6.3 ملین اور 2.9 ملین صارفین موجود تھے۔

مالی سال ۱۸-۲۰۱۷ میں پاور سیکٹر قدرتی گیس کا مرکزی صارف تھا جس کے تحت اس نے 37 فیصد، گھریلو سیکٹر نے 20 فیصد، کھاد کے سیکٹر نے 17 فیصد، کپچو پاور نے 10 فیصد، صنعتی سیکٹر نے 9 فیصد، ٹرانسپورٹ نے 5 فیصد اور کمرشل سیکٹر نے 2 فیصد حصہ استعمال کیا۔ صوبائی حوالے سے اگر دیکھا جائے تو زیر جائزہ سال میں پنجاب کا حصہ 50 فیصد کے حساب سے سب سے زیادہ تھا، اس کے بعد سندھ کا 39 فیصد، خیبر پختونخوا کا 9 فیصد اور بلوچستان کا 2 فیصد حصہ رہا۔

سال کے دوران قدرتی گیس کی سپلائی 4,357 MMCFD رہی۔ سندھ نے ٹوٹل گیس سپلائی میں 50 فیصد سپلائی کیا جب کہ خیبر پختونخوا، بلوچستان اور پنجاب نے بالترتیب 12، 11 اور 4 فیصد سپلائی کی۔ بقایا 23 فیصد گیس ایل این جی کی صورت میں درآمد کی گئی۔

پاور، گھریلو، کھاد، کپچو پاور اور انڈسٹریل شعبے کی بڑھتی ہوئی طلب کی وجہ سے یہ رسد موجودہ طلب کی کو پورا کرنے کیلئے کافی نہیں ہے۔ سال ۱۸-۲۰۱۷ میں طلب اور رسد کا خلا 1,447 MMCFD تھا جب کہ مالی سال ۲۰-۲۰۱۹ میں یہ خلا 3,720 MMCFD تک پہنچ جانے کی توقع ہے۔

1.2 ایل پی جی

ایل پی جی ملک کی کل بنیادی توانائی کی رسد کا تقریباً 1.3 فیصد بنتی ہے۔ مجموعی توانائی میں ایل پی جی کے کم حصہ کی بنیادی وجہ رسد کا کم ہونا ہے اور مسابقتی ایندھن جیسا کہ قدرتی گیس اور لکٹری وغیرہ کے مقابلے میں ایل پی جی کی زیادہ قیمت ہے۔ ایل پی جی منڈی کا موجودہ حجم 1,280,550 میٹرک ٹن سالانہ ہے۔ گزشتہ مالی سال کے







2. Natural Gas Sector

Natural gas is a major contributing fuel in country's energy mix. The country has a huge network of gas pipelines providing natural gas to domestic, industrial, commercial and transport sectors. The use of natural gas as a fuel of choice has also contributed in controlling environmental degradation. There is a significant rise in demand and consumption of gas by residential / domestic consumers owing to price differential vis-a-vis other competing fuels, i.e. LPG, fire wood and coal. On average, during the last 5 years, more than 0.3 million consumers were added/ connected to gas network, annually by the Gas Utility Companies. The positive growth of sectors, such as power, commercial, residential and fertilizer has resulted in natural gas availability constraint. The increase in demand of natural gas will amplify further in the coming years. The GoP has initiated various measures to bridge the gap between demand and supply which includes the incentivizing of local gas production, import of natural gas in the form of Liquefied Natural Gas (LNG) and cross-country pipelines from Iran and Turkmenistan. Developments of two LNG Handling Terminals (each having re-gasification capacity of 650 MMCFD) at Karachi Port are major milestones achieved to mitigate gas shortage in the Country. During FY 2017-18, total supply of natural gas in the country, including imported RLNG has reached 4,357 MMCFD.

2.1 Regulatory Regime Overview

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

- Grant of licences for regulated gas sector.
- Formulation of rules, regulations and procedures for the conduct of licensees.
- Determination of Revenue Requirement Petitions of SNGPL & SSGCL.
- Monitoring and enforcement of rules, regulations and applicable licence conditions.
- Resolution of disputes and complaints lodged by the consumers against licensees or between a licensee and another licensee in the natural gas sector.
- Pipeline capacity allocation.
- Licensing of low pressure (flare) gas.
- Licensing for transmission, distribution and sale of RLNG.

Appendix-I shows the number of licences issued by OGRA to the companies pertaining to regulated gas sector.

2.2 Profile of Licensees

2.2.1 Sui Southern Gas Company Limited (SSGCL)

SSGC's story began in 1954 when engineers and technicians of Sui Gas Transmission Company pioneered the construction of Asia's first 16 inch diameter, 558 Km long pipeline. The pipeline was part of a grand vision to harness natural gas discovered in Sui, Balochistan and transport it all the way to feed the budding industrial hub of Karachi. Sixty three years later, SSGC is a pulsating energy power house, engaged in transmission and distribution of gas to 2,913,124 domestic, commercial and industrial customers located in its franchise areas of Sindh and Balochistan. The Company provides clean and affordable fuel to 2,886,222 domestic, 22,695 commercial and 4,207 industrial customers.

A downstream company, SSGC purchases natural gas from more than 30 gas fields, operated by

upstream local and multinational exploration and production companies. The transmission and distribution network stretches across 4,030 Km and 46,212 Km, respectively. The core business includes transmission, distribution and sale of natural gas, design and construction of transmission and distribution projects and more recently the transmission of Re-gasified LNG.

Among the non-core businesses are the sale of Liquefied Petroleum Gas (LPG), Natural Gas Liquid and Condensate and manufacturing of domestic gas meters. The Company also runs a subsidiary company by the name of SSGC-LPG (Pvt.) Ltd. which is engaged in the marketing and distribution of LPG across the country. Since 1975, SSGC has been productively running Pakistan's only meter manufacturing plant that meets the needs of all its domestic customers.

The Company is managed by an autonomous Board of Directors for policy matters and overall control, with a Managing Director managing day to day affairs.

SSGC is served by several nerve centers or Headquarters, strategically located in different locations of Sindh and Balochistan. These Headquarters ensure optimum gas transmission and compression, from the fields to customers in the respective regions.

As one of the key stakeholders in the LNG project, the Company recently completed an ambitious infrastructure for transmitting re-gasified LNG (RLNG) to the consumers, as a part of the Government of Pakistan's objective of bridging demand-supply gap of natural gas. The Company's scope of responsibility includes transmitting, through a dedicated 42 inch diameter, 342 Km pipeline, a volume of 1,200 MMCFD capacity fuel to consumption nodes that require it most. The construction project, being pursued is the biggest has ever been undertaken in recent years.

The Company, under the directives of Government of Pakistan is installing LPG-Air Mix Plants or Synthetic Natural Gas Plants in those towns of Balochistan and Sindh which are far off from the distribution grid, thus providing the consumers with an alternative source of energy. So far, LPG-Air Mix plants have been set up in Gwadar, Noshki and Surab in Balochistan and in Kot Ghulam Mohammad in Sindh. On the directives of the Government of Pakistan, the Company is in the process of installing 33 more LPG-Air Mix plants in Sindh and Balochistan.

Table 2.1: Pattern of Shareholding in SSGCL as of June 30, 2018.

Sr.No.	Categories of Shareholders	Percentage Shareholding
1.	President of Pakistan	53.18
2.	Individuals	8.66
3.	Investment Companies	0.31
4.	Insurance Companies	8.89
5.	Joint Stock Companies	2.14
6.	Financial Institutions	6.36



2.2.2 Sui Northern Gas Pipelines Limited (SNGPL)

Sui Northern Gas Pipelines Limited (SNGPL) was incorporated as a Private Limited Company in 1963 and converted into a public limited company in January 1964 under the Companies Act 1913, now Companies Ordinance 1984, and is listed at Pakistan Stock Exchange.

It is the largest integrated Gas Company serving more than 6 million consumers in North Central Pakistan through an extensive network in Punjab, Khyber Pakhtunkhwa and Azad Jammu & Kashmir and is certified against ISO 14001:2004 & OHSAS 18001:2007 Standards. The Company has over 54 years of experience in operation and maintenance of high-pressure gas transmission and distribution systems. It has also expanded its activities as Engineering, Procurement and Construction (EPC) Contractor to undertake the planning, designing and construction of pipelines, both for itself and other organizations.

SNGPL's transmission system extends from Sui in Balochistan to Peshawar in Khyber Pakhtunkhwa comprising 9,317 Km of transmission system. The distribution activities covering more than 4,300 towns and adjoining villages in Punjab and Khyber Pakhtunkhwa are organized through 15 Regional Offices. Distribution system consists of 122,376 Km of pipeline network.

Table 2.2: Pattern of Shareholding in SNGPL as of June 30, 2018

Sr.No.	Categories of Shareholders	Percentage Shareholding
1.	The President of Islamic Republic of Pakistan	31.68
2.	SNGPL Employees Empowerment Trust	4.32
3.	Individuals	14.60
4.	Insurance Companies	10.38
5.	Joint Stock Companies	2.01
6.	Financial Institutions	7.80
7.	Modaraba Companies	0.02
8.	Foreign Companies	5.39
9.	All Others	3.05
	Total	100.00

(Source: SNGPL)

2.2.3 Mari Petroleum Company Limited (MPCL)

Mari Petroleum is an integrated exploration and production company, currently managing and operating Pakistan's largest gas reservoir at Mari Gas Field, Daharki, Sindh. With 18% market share, Mari Petroleum is the second largest gas producer in the Country with cumulative daily production of 100,000 barrels of oil equivalent.

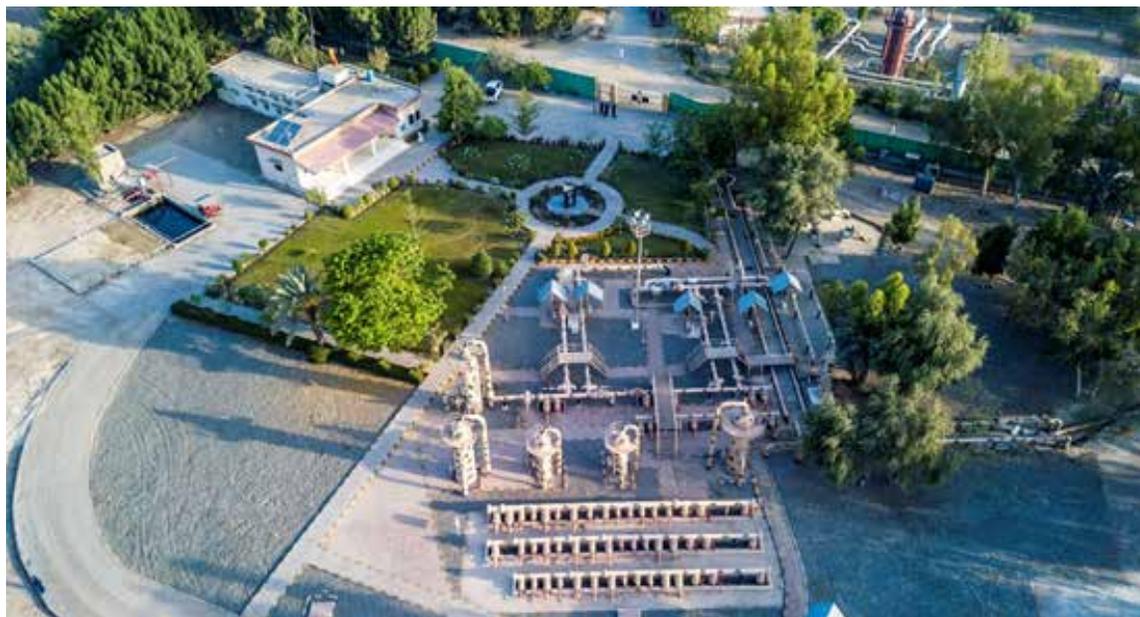
The exploration and production assets are spread across all the four provinces of Pakistan. The Company enjoys the highest exploration success rate of 70%, much higher than industry average of 33% (national) and 14% (international). At the same time, it is the most cost efficient E&P Company in the Country with lowest operational cost of only 10% of the gross sales.

The Company plays a pivotal role in ensuring food security of Pakistan as around 80% urea production in the Country is based on MPCL supplied gas. It also supplies gas for power generation and domestic consumers.

To its credit, Mari Petroleum has the unique record of maintaining uninterrupted gas supply to its customers from Mari Field for the last fifty years without availing even the permitted outages.

Mari Petroleum is an ISO certified Company for Quality, Environment, Information Security, and Occupational Health & Safety and has achieved advanced level in ISO Certification for Social Responsibility. MPCL has emerged as a blue-chip company at the stock exchange. During the last two years, the

Company also won a number of awards from various independent bodies not only for its financial and operational performance and reporting but also for its management, HR, HSE, and CSR practices.



Mari Gas Field Daharki, Sindh

Principle Business Activities

MPCL is primarily an exploration and production company in the upstream segment of the petroleum industry. Its principle business activities include oil and gas exploration, drilling, field development, production and distribution of hydrocarbons (including natural gas, crude oil, condensate and LPG) as well as provision of E&P related services on commercial basis.

Major Brands, Products and Services

MPCL is a major producer of natural gas. It also produces crude oil, condensate and LPG. All products of the Company are generic and are supplied to midstream and downstream customers without any specific brand name. The Company also provides 2D/3D seismic data acquisition, seismic data processing, drilling rigs and allied services.

Major Customers/Markets

The gas produced by the Company is supplied to fertilizer manufacturers, power generation and gas distribution companies, while crude oil and condensate are supplied to the refineries for further processing. The Company only caters to local customers with no activity in the export market.

Ownership, Operating Structure and Relationship with Group Companies

Mari Petroleum is a Public Limited Company operating in the private sector. The management of the Company is vested in Fauji Foundation. The Company is listed on Pakistan Stock Exchange with current market capitalization of around Rs. 170 billion. Major shareholders of the Company include Fauji Foundation (40%), Government of Pakistan (18.39%), OGDCL (20%), and General Public (21.61%). All Fauji Foundation group companies as well as OGDCL are the associated companies of MPCL.

Future Plans

MPCL has positioned itself for sustainable growth in the coming years. The Company has acquired new exploration acreages as well as additional working interests in different blocks. Other high reward exploration acreages both locally and internationally are also being evaluated to expand the existing exploration portfolio to pursue aggressive exploration and drilling for achieving a higher reserves replenishment ratio and consequently sustaining production, revenues and returns in the long-term.

The Company has planned to drill 10 Exploratory, 02 Appraisal and 18 Development Wells (HRL formation in Mari D&P Lease area) during FY 2018-19.

The MPCL is also constantly looking for avenues to hedge itself from the oil price risk that faces the E&P sector as a whole. It is exploring avenues in the energy sector that can add value to the bottom line during the low oil price regimes. The Company is at advanced stages of diversifying into low BTU gas-based power generation, manufacturing of carbon dioxide from the produced gas into marketable food grade liquid carbon dioxide. It has also started looking into potential opportunities of diversifying into mid and downstream petroleum sectors of refineries, pipelines and retail outlets etc.

The feasibility study of the power project is progressing and the Company aims to get the requisite regulatory approvals during the coming year. Timely completion of the power project would provide a much needed diversified income stream to the Company.

Table 2.3: Pattern of Shareholding in MPCL as of June 30, 2018

Sr.No.	Categories of Shareholders	Percentage Shareholding
1.	Government of Pakistan (GoP)	18.39
2.	Fauji Foundation	40.00
3.	OGDCL	20.00
4.	Banks, Financial Institutions, Insurance Companies & Non-Banking Financial Institutions	4.50
5.	Local Individuals	16.00
	Total	100.00

[Source: MPCL]

The segregation of the regulated gas sold by MPCL during FY 2017-18 is given in **Table 2.4** below:

Table 2.4: Regulated Gas Sold by MPCL to its Customers during FY 2017-18

Name of Customers (MPCL Operated Fields)	Province	Volume (MMSCF)	Volume (MMSCFD)
Engro Fertilizer Limited (Plant I & II) Mari Field	Sindh	50,699.08	138.90
Engro Fertilizer Limited (SML/SUL/ PKL Formation) Mari Field	Sindh	4,398.00	12.05
Fauji Fertilizer Limited (Plant I & II) Mari Field	Punjab	61,745.00	169.16
Fauji Fertilizer Limited (Plant III) Mari Field	Sindh	31,659.00	86.74
Fatima Fertilizer Company Limited Mari Field	Punjab	37,979.83	104.05
Water & Power Development Authority (WAPDA) Mari Field	Sindh	35,870.29	98.27
Foundation Power Company Daharki Limited (FPCDL) Mari Field	Sindh	20,338.71	55.72
Sui Southern Gas Company Limited (SSGCL) Mari Field	Sindh	363.74	1.00
Sui Southern Gas Company Limited (SSGCL) Zarghun South Field (JV with SPUD, GHPL & PKP)	Balochistan	5,655.49	15.49
Sui Southern Gas Company Limited (SSGCL) Sujawal Field	Sindh	8,011.39	21.94
Sui Northern Gas Pipeline Limited (SNGPL) Koonj 1A-Sukkur Block	Sindh	254.23	0.69
Sui Northern Gas Pipeline Limited (SNGPL) Kalabagh-1A Karak Block (JV with MOL)	Punjab	1,888.36	5.17
Halini- Karak Block (JV with MOL)	Sindh	542.47	1.49
Total		259,405.58	710.68

(Source: MPCL)

2.2.4 Pakistan Petroleum Limited (PPL)

PPL holds a licence from OGRA for sale of natural gas to Central Power Generation Company Limited (CPGCL) and WAPDA from Kandhkot Gas Field.

PPL has been a frontline player in the energy sector since the mid-1950s. PPL today contributes some 20 percent of the country's total natural gas supplies besides producing Crude Oil, Natural Gas Liquid and Liquefied Petroleum Gas.

The Company's history can be traced back to the establishment of a Public Limited Company in June 1950, with major shareholding by Burmah Oil Company (BOC) of the United Kingdom for exploration, prospecting, development and production of oil and natural gas resources. In September 1997, BOC disinvested from the Exploration and Production (E&P) sector worldwide and sold its equity in PPL to the Government of Pakistan. Subsequently, the government reduced its holding through an initial public offer in June 2004, which was further decreased with the initiation of the Benazir Employees Stock Option Scheme (BESOS) in August 2009 when PPL employees were allotted 12 percent shares from the government's equity. Currently, the company's shareholding is divided between the government, which owns about 67 percent, PPL Employees Empowerment Trust that has approximately 7 percent — being shares transferred to employees under BESOS — and other investors, who hold nearly 25 percent.



Purification Plant, Sui Gas Field, Balochistan

PPL currently operates ten (10) producing fields across the country at Sui, Adhi, Kandhkot, Chachar, Mazarani, Adam, Adam West and Shahdadpur and Kabir X-1 EWT. In addition, the Company holds working interest in nineteen (19) partner-operated producing fields, including Qadirpur, the country's second largest gas field.

During FY 2017-18, PPL spent around Rs. 1,171 million on CSR initiatives, with major spending for projects in Balochistan and Sindh.

Table 2.5: Pattern of Shareholding in PPL as of June 30, 2018

Sr.No.	Categories of Shareholders	Percentage Shareholding
1.	Government of Pakistan (GoP)	67.51
2.	PPL Employees Empowerment Trust	7.35
3.	Others	25.14
	Total	100.00

[Source: PPL]

The segregation of the regulated gas sold by PPL during FY 2017-18 is given in **Table 2.6** below:

Table 2.6: Regulated Gas Sold from PPL's Gas Fields during FY 2017-18

Name of Purchaser and Field	Province	Volume (MMCFD)
SSGCL - Sui	Balochistan	106.00
SNGPL - Sui	Balochistan	232.00
GENCO - Kandhkot	Sindh	151.00
SSGCL - Kandhkot	Sindh	2.00
SNGPL - Kandhkot	Sindh	51.00
SNGPL - Adhi (PPL 39%)	Punjab	25.00
SSGCL - Adam West (Hala) (PPL 65%)	Sindh	8.00
SNGPL - Chachar (PPL 75%)	Sindh	2.00
SSGCL - Adam (Hala) (PPL 65%)	Sindh	2.00
SSGCL - Mazarani (PPL 87.50%)	Sindh	4.00
SSGCL - Gambat South (PPL 65%)	Sindh	27.00
EGAS - Gambat South (PPL 65%)	Sindh	0.30
Total		610.30

[Source: PPL]

2.2.5 Oil & Gas Development Company Limited (OGDCL)

Oil & Gas Development Company Limited (OGDCL) is the largest Exploration & Production (E&P) Company in Pakistan, listed on Pakistan Stock Exchange and London Stock Exchange.

OGDCL was initially created under an Ordinance in 1961, as a Public-Sector Corporation and was converted from a statutory Corporation into a Public Limited Company w.e.f. October 23, 1997. Currently Government of Pakistan is holding 74.97% of total equity in the Company. OGDCL is responsible to plan, promote, organize and implement programmes for the exploration and development of oil and gas resources.

Exploration

As of June 30, 2018, OGDCL's concession portfolio constituted forty eight (48) owned and operated joint venture exploration licences along with holding working interest in five (5) blocks operated by other E&P companies. Having spread across all four (4) provinces of the Country, the Company's exploratory licences covered an area of 91,933 Sq.Km representing the largest exploration acreage held by any E&P Company in Pakistan.



Wells

OGDCL, during FY 2017-18, spudded twenty (20) wells including twelve (12) exploratory/appraisal wells and eight (8) development wells.

Discoveries

OGDCL, based on aggressive exploratory efforts to discover new hydrocarbon reserves, made four (4) new oil and gas discoveries, having expected cumulative daily production of 47 MMCFD of gas and 749 barrels of oil.

Production

During FY 2017-18, OGDCL's net production stood at 41,278 bpd of oil, 1,022 MMCFD of natural gas, 690 tons per day of LPG and 58 tons per day of sulphur.

On the financial front, OGDCL has reset the business strategy and is endeavoring to maintain a conservative financial framework and concentrate on a rigorous approach regarding capital allocation and cost control with the aim to carry out exploration, development and production operations competitively and meet future business challenges ahead.

OGDCL's pattern of shareholding (as of June 30, 2018) is shown in **Table 2.7** and details of regulated gas sold during FY 2017-18 are shown in **Table 2.8**.

Table 2.7: Pattern of Shareholding as of June 30, 2018

Sr.No.	Categories of Shareholders	Percentage Shareholding
1.	Government of Pakistan	67.48
2.	OGDCL Employees Empowerment Trust	10.05
3.	Privatization Commission of Pakistan	7.50
4.	Public Sector Companies & Corporations	0.42
5.	Banks, Financial Institutions, etc.	1.61
6.	Mutual Funds	2.77
7.	Foreign Investors	8.03
8.	General Public (Local)	1.14
9.	Others	1.00
	Total	100.00

(Source: OGDCL)

Table 2.8: Regulated Gas Sold to Customers by OGDCL during FY 2017-18

Name of Customers	Province	Volume (MMCFD)
SNGPL	Khyber Pakhtunkhwa, Sindh, Punjab and Balochistan	411.00
SSGCL	Sindh	228.40
Engro Fertilizer Ltd.	Sindh	10.00
Uch Power Ltd.	Balochistan	309.00
Fauji Kabirwala Power Company Ltd.	Punjab	8.00
Total		967.00

[Source: OGDCL]

2.2.6 Fauji Fertilizer Company Limited (FFCL)

Fauji Fertilizer Company Limited (FFCL) is the largest urea manufacturer of the country was incorporated in 1978 as a joint venture between Fauji Foundation and Haldor Topsoe A/S of Denmark. The Company is operating three world class urea plants with an aggregate design capacity of over 2 million metric tonnes per annum.

The FFCL's Marketing Group, the largest marketing network in the country, with more than 50% market share, markets nearly 3.5 million metric tons of fertilizer per annum.

FFCL holds 49.88% stake in FFBL and 6.79% stakes in Fauji Cement. Besides it holds 43.14% stakes in Askari Bank Ltd. and 12.5% stakes in Pakistan Maroc Phosphore SA (PMP) in Morocco.

FFCL has also pioneered a landmark Project of developing and operating grid connected Wind Power Plants in Pakistan in phases with a view to enhance Country's energy security. The company is listed on Pakistan Stock Exchange and is amongst the country's largest corporate entities.

Table 2.9: Detail of Regulated Gas Purchased by FFCL from Suppliers during FY 2017-18

Sr.No.	Name of Supplier and Field	Province	Volume (MMCFD)
1.	Mari Petroleum Company Ltd. (Mari Gas Field)	Sindh	256.00
Total			256.00

[Source: Fauji Fertilizer Company Limited]

2.2.7 Fatima Fertilizer Company Limited

Fatima Fertilizer Company Limited was incorporated in Pakistan on December 24, 2003 as a non-listed public company under the Companies Ordinance, 1984. The certificate of commencement of business was obtained on March 30, 2004. The main object of the Company is the production and sale of chemical fertilizers and its by-products. The Company is a fully integrated fertilizer complex of Urea, Calcium Ammonium Nitrate (CAN), and Nitro Phosphate (NP) plants with off sites and utilities. The plant is located at Mukhtar Garh, Sadiqabad, Rahim Yar Khan.

During FY 2017-18, the Company achieved the highest ever sales volume of 1,477,174 MT. Breakup of production is Urea: 474,094 MT, CAN: 444,753 MT and NAP: 372,876 MT.

The pattern of shareholding of FFCL is shown below in **Table 2.10**. Details of regulated gas purchased from suppliers by FFCL, during FY 2017-18 is shown in **Table 2.11**.

Table 2.10: Pattern of Shareholding in FFCL as of June 30, 2018

Sr.No.	Categories of Shareholders	Percentage Shareholding
1.	Directors and Family Members	42.45
2.	Associated Companies	44.07
3.	Public Sector Companies and Corporations	0.36
4.	Foreign Companies	0.84
5.	General Public (Local)	3.07
6.	General Public (Foreign)	0.11
7.	Banks / Mutual Funds / DFI / NBFI / Pension Funds	5.25
8.	Others	3.85
	Total	100.00

[Source: Fatima Fertilizer Company Limited]

Table 2.11: Detail of Regulated Gas Purchased by Fatima Fertilizer Company Limited from Suppliers during FY 2017-18

Name of Supplier and Field	Province	Volume (MMCFD)
Mari Gas Field (MPCL)	Punjab	104

Source: Fatima Fertilizer Company Limited

2.2.8 Foundation Power Company (Daharki) Limited (FPCDL)

Foundation Power Company Daharki Limited (FPCDL) is subsidiary of Fauji Foundation, which registered itself for 175 MW Gas Based Power Plant at Daharki, Sindh in April 2004 with Private Power & Infrastructure Board (PPIB). The Company was incorporated on November 10, 2005 with the title of Foundation Power Company Daharki Limited (FPCDL) under Companies' Ordinance, 1984.

FPCDL power plant is one of the pioneer projects of Independent Power Producers in Pakistan. The principle activities of the Company are to own, operate and maintain gas-based power plant with the net capacity of 180 MW (gross capacity 202 MW). The combination of power plant includes, Gas Turbine & Generator (GTG), Heat Recovery Steam Generator (HRSG) and Steam Turbine & Generator (STG). The Fuel Source is Mari Deep Well No. 6, having low BTU gas with no domestic and very low industrial use.

Table 2.12: Pattern of Shareholding in FPCDL as of June 30, 2018

Sr.No.	Categories of Shareholders	Percentage Shareholding
1.	Daharki Power Holdings Limited	99.99
2.	Mr. Qaiser Javed	0.005
3.	Fauji Foundation	0.005
	Total	100.00

(Source: FPCDL)

Table 2.13: Detail of Regulated Gas Purchased from Suppliers during FY 2017-18

Name of Supplier and Field	Province	Volume (MMCFD)
Mari Gas Field (MPCL)	Sindh	56

(Source: FPCDL)

2.2.9 Central Power Generation Company Limited (CPGCL)

Central Power Generation Company Limited (CPGCL) is a Public Limited Company with its registered office at WAPDA House, Lahore. The Company was incorporated in 1998, got certificate of commencement of business in 1998 and started commercial operations in March, 1999.

The Company owns, operates and maintains three Thermal Generation Power Houses with its total installed capacity of 2,502.94 MW. These three (03) Power Plants are located at Guddu, Quetta and Sukkur. The installed capacity of these individual Power Plants is TPS (Guddu): 2,402 MW, TPS (Quetta): 50.94 MW, TPS (Sukkur): 50 MW and Total: 2,502 MW.

Table 2.14: Pattern of Shareholding in CPGCL as of June 30, 2018



Table 2.15: Detail of Regulated Gas Purchased from Suppliers during FY 2017-18

Name of Supplier and Field	Province	Volume (MMCF)
PPL (Kandhkot Gas Field)	Sindh	148.00
SNGPL (Kandhkot Gas Field)	Sindh	54.00
MPCL (Mari Shallow Field)	Sindh	98.00
Total		300.00

[Source: CPGCL]

2.2.10 Gas Transmission & Distribution Infrastructure

The licensed gas companies submit their Revenue Requirement Petitions to OGRA, and subsequently, on the basis of determinations done by OGRA, the Gas Companies carry out extensions to their gas network which enables them to provide gas facility to residential, commercial and industrial consumers.

SNGPL Transmission Infrastructure

SNGPL has undertaken an extension of 342 Km in its transmission network during FY 2017-18. The major segments of SNGPL transmission network along with their current capacity utilization are listed in **Table 2.16**. The total transmission network of SNGPL (as of June 30, 2018) is shown in **Table 2.17**.

Table 2.16: SNGPL's Capacity Utilization of Transmission System

Transmission Network Segment	Available Capacity (as of June 30, 2017)	Utilization %age	Available Capacity (as of June 30, 2018)	Utilization %age
Sui - Bhong	480	86	480	70
Sawan - Qadirpur	1,510	44	1,510	75
Qadirpur - Bhong	1,860	49	1,860	75
Bhong - AC4 (*)	1,680	77	2,070	80
AC4 - AV22 (*)	1,630	77	2,000	81
AV22 - Kot Addu (**)	350	83	400	81
Dhodak - Kot Addu	70	17	70	19
AV22 - Multan (*)	1,430	82	1,800	75
Multan - AV29 (*)	1,350	82	1,750	81
AV29 - Sahiwal - Lahore (*)	700	74	950	76
AV29 - Faisalabad	770	84	770	89
Faisalabad - Lahore	500	75	500	64
Faisalabad - Galli Jagir	350	31	350	33
Wah - Nowshera	110	191	110	178
Wah - Abbottabad	94	70	94	77
Gurguri - Kohat - Ismailkot	315	109	315	108
FC1 (Dhullian) - C6 (Galli Jagir)	314	22	314	26
Nowshera - Mardan	75	101	75	109
Mardan - Mangora	30	127	30	140

(Source: SNGPL)

(*) Capacity of the segments increased after commissioning of new pipelines under LNG project.

(**) Capacity of the segment increased after commissioning of 16" dia 5.41 miles pipeline from MP 37.88 ~ MP 43.29.

Table 2.17: Details of SNGPL Transmission Network as of June 30, 2018

Region	Diameter (Inch)													Grand Total (Km)
	3"	4"	6"	8"	10"	12"	16"	18"	20"	24"	30"	36"	42"	
Punjab	0.24	4.43	140.7	1,710.93	509.17	322.48	1,210.14	725.94	59.35	947.46	789.09	849.09	17.13	7,286.15
Khyber Pakhtunkhwa	--	--	57.79	689.59	133	160.18	139.66	--	--	148.02	--	--	--	1,328.24
Others	--	2.41	--	17.35	5.5	4.5	55.79	11.25	37.8	239.76	86.73	54.95	186.64	702.68
Total	0.24	6.84	198.49	2,417.87	647.67	487.16	1,405.59	737.19	97.15	1,335.24	875.82	904.04	203.77	9,317.17

[Source: SNGPL]

Compression Facilities in SNGPL's Transmission System

SNGPL has 69 compression units with a total capacity of 226,200 brake horse power (bhp).

Table 2.18: Compressor Stations in SNGPL Transmission System as of 30 June, 2018

Compressor Station/ Location	Number of Units		Total Installed Power (bhp)	
	30-06-2017	30-06-2018	30-06-2017	30-06-2018
AC-0 (Sui)	4	4	11,000	11,000
AC-IX (S) (Bhong) Distt R.Y.Khan	7	7	35,040	35,040
AC-IX (Q) (Bhong) Distt R.Y.Khan	5	5	24,920	24,920
*AC-IX (LNG) (Bhong) Distt R.Y.Khan	4	4	17,400	17,400
AC-4 (Uch Sharif) Distt Bahawalpur	8	10	39,020	47,020
AC-6 (Multan)	9	9	40,620	40,620
AC-8 (Faisalabad)	6	6	20,200	20,200
BC-1 (Manawala)	7	7	7,000	7,000
CC-1 (HaranPur) Distt Jehlum	6	4	12,000	4,000
CC-3 (Gali Jagir) Distt Attock	6	6	12,000	12,000
FC-1 (Dhulian)	7	7	7,000	7,000
Total	69	69	226,200	226,200

[Source: SNGPL]

* 2 Nos. Centaur T-4000 has been relocated from CC-1 to AC-4 B under LNG Project

SSGCL Transmission infrastructure

The details of SSGCL transmission network and its compressor stations are given as under:-

Table 2.19: SSGCL Transmission Network Commissioned during FY 2017-18

Sr.No.	Segment	Dia	Length
		(Inch)	(Km)
Sindh			
1.	Loop Line from HQ-Shikarpur to MVA Jacobabad	24	34
2.	Re-routine Quetta Pipeline Project	12	23
		Sub-Total	57
Balochistan / Any other			
----	----	----	0
		Total	57

Table 2.20: SSGCL's Capacity Utilization of Transmission Network

Transmission Network Segment	Available Capacity (as of June 30, 2017)	Utilization %age	Available Capacity (as of June 30, 2018)	Utilization %age
16" dia. Indus Left Bank Pipeline (ILBP) Nawabshah-Karachi Terminal	80	-	80	-
24"/20" dia. Kadanwari Pipeline Kadanwari -Malir-Karachi	180	-	180	-
20"/18" dia. Indus Right Bank Pipeline (IRBP) Dadu-Malir-Karachi	400	-	400	-
12"/18"/20" dia. Quetta Pipeline Jacobabad Quetta	90	-	90	-
18" dia. 18 Km Abbe-gum to Mach Loopline	7	-	7	-
18"x31 Km Dingra-Sibi, 18"x15 Km Mach-Kolpur Loopline	10	-	10	-
24"x30 Km Loopline from Gokart to Abbegum	6	-	6	-

Transmission Network Segment	Available Capacity (as of June 30, 2017)	Utilization %age	Available Capacity (as of June 30, 2018)	Utilization %age
18" dia. Badin Pipeline Badin-Hyderabad	200	-	200	-
24" dia.x116 Km loopline from Sindh University to FJFC offtake	60	-	60	-
24" dia.15 Km Masu-HQ3	40	-	40	-
24" dia.x84 Km HQ2-Tando Adam	85	-	85	-
24" dia.x34 Km Loopline from Tando Adam to Masu	23	-	23	-
24" dia.x200 Km Bajara-Karachi Loopline	240	-	240	-
18" x 18 Km loopline (Dhadar to Gokart)	36	-	36	-
12" x 23 Km re-routing 24" x 34 Km Shikarpur to Jacobabad Loop line	-	-	32	-
12"x60 Km HQ-Quetta - Zargun Line	25	-	25	-
Total Capacities for SSGC (A)	1,482	91	1,514	81
Transmission Network Contracted for Transporting 3rd Party Gas.	-	-	-	-
18" dia. Pirkoh Pipeline (OGDC) Pesh Bogi-Pirkoh.	35	-	35	-
16" dia.ILBP (SNGPL) Hassan -Sui	30	-	30	-
20" dia.IRBP (Reverse Flow to SNGPL) Dadu-Sui	170	-	170	-
16" ILBP reverse flow providing regulation between 20" dia.IRBP & 16" dia ILBP at RSI	10	-	10	-
Total Contracted Network (B)	245	100*	245	100*
RLNG-2 Pipeline (C)	1,200	-	1,200	49
SSGC Total Available Transmission Network Capacity (A+B+C)	2,927	-	2,959	-

[Source: SSGCL]

Notes:

- In order to calculate % age of capacity utilization, offtake date 27-06-2018 is considered.
- Utilization % age of each pipeline segments could not be calculated due to integrated transmission network and connection of more than one gas fields and gas sales meter station at a single line.
- At present, upto 1200 MMCFD RLNG is being transported at Pakland through 42"x17 Km (CTS BQ- Pakland) Pipeline.
- Transported gas volumes are being utilized between SSGCL and SNGPL.
- Indigenous gas volumes are being swapped in lieu of RLNG volumes utilized by SSGCL.

Table 2.21: Compressor Stations in SSGCL Transmission System as of June 30, 2018

Compressor Station/ Location	Size and Number of Units		Total Installed Power (bhp)	
	30-06-2017	30-06-2018	30-06-2017	30-06-2018
Shikarpur	120 MMCFD per unit	120 MMCFD per unit	11,600	11,600
	2 Units installed	2 Units installed		
Hyderabad	120 MMCFD per unit	120 MMCFD per unit	17,400	17,400
	3 Units installed	3 Units installed		
Sibi	60 MMCFD per unit	60 MMCFD per unit	9,400	9,400
	2 Units installed	2 Units installed		
HQ-2	120 MMCFD per unit	120 MMCFD per unit	11,600	11,600
	2 Units installed	2 Units installed	-	
	200 MMCFD per unit	200 MMCFD per unit	46,800	46,800
	6 Units installed	6 Units installed	-	-
Total			96,800	96,800

(Source: SSGCL)

Table 2.22: Details of SSGCL Transmission Network as of June 30, 2018

Diameter (inch)	6"	12"	16"	18"	20"	24"	30"	42"	Grand Total (Km)
Lenght (Km)	36	545	558	970	844	721	9	347	4,030

(Source: SSGCL)

2.2.11 Independent System Infrastructure

A number of natural gas customers (fertilizer plants, power plants etc.) in the country are supplied with gas through independent/ dedicated pipelines. Details of such pipelines connecting the gas fields to their respective consumers are given in **Table 2.23** below:

Table 2.23: Independent System Infrastructure

Pipeline Operator	Segment	Diameter (Inch)	Length (Km)
FFCL	Mari to Fauji Fertilizer 1	16	48
FFCL	Mari to Fauji Fertilizer 2	14	48
FFCL	Mari to Fauji Fertilizer Mirpur Mathelo	16	15
ECPL	Mari to Engro Chemicals	10, 12	9,9
CPGCL	Mari to Guddu Thermal Power Station	20	60
CPGCL	Kandhkot to Guddu Thermal Power Station	16	50
CPGCL (WAPDA)	SNGPL's Compression Station at Sui Field to Guddu Thermal Power station	16	56
OGDCL	Uch Field to Uch Power Plant	26	47
OGDCL	Nandpur Pinjpir to FKPCCL	12	16
Tullow	Sara/Suri Field to CPGCL Pipeline near Mari Well No.6	8	33
FFCL	Mari to Fatima Fertilizer	20	47
FPCDL	Mari to Foundation Power Company Ltd (Dhariki)	20	15
ETPL	ETPL Jetty to SSGCL's tie in point at SMS Pakland.	24 & 42	6 & 18
EFL	Reti Maru (OGDCL) Field to Engro's Battery Limits at Dharki	10	26
FOTCO	For transmission of RLNG from Pakistan Gas Port Consortium Ltd. (PGPCL) Terminal to SSGC's tie in point located at Port Qasim, Karachi.	30	13.3

2.2.12 SNGPL and SSGCL Distribution Mains and Service Lines

The Gas Companies are involved in supplying of gas to distant localities / customers, wherever it is economically viable and technically feasible. In FY 2017-18 an addition of 11,693 Km was made by the SNGPL, and 689 Km by SSGCL in their respective distribution network. Region-wise and diameter-wise breakdown of SNGPL and SSGCL distribution networks, as of June 30, 2018, are shown in following Tables:

Table 2.24: SNGPL's Cumulative Length of Major Distribution Network as of June 30, 2018

Punjab														
Region	3/4"	1"	1-1/4"	1-1/2"	2"	4"	6"	8"	10"	12"	16"	18"	24"	Total (Km)
Islamabad	2,006	2,575	1,699	8	1,855	1,123	439	119	43	10	24	2	20	9,924
Rawalpindi	2,048	1,811	1,579	0	2,294	1,067	388	176	54	45	34	0	0	9,495
Bahawalpur	953	1,356	881	0	1,141	622	210	121	60	39	0	0	0	5,384
Gujrat	869	692	1,125	0	1,002	640	267	211	8	0	0	0	0	4,813
Sahiwal	957	1,037	1,696	0	1,128	549	314	178	48	0	0	0	0	5,906
Sheikhupura	1,281	530	788	0	721	660	269	232	40	18	11	5	0	4,556
Sargodha	1,213	501	2,090	0	1,240	975	70	0	0	0	0	0	0	6,090
Faisalabad	2,490	3,933	941	0	1,757	1,167	869	464	44	36	26	0	0	11,727
Lahore	3,680	7,519	1,671	12	3,672	1,194	526	136	48	145	175	28	31	18,837
Multan	2,210	959	2,612	0	3,741	2,633	646	230	65	69	12	0	0	13,176
Gujranwala	2,612	2,764	2,283	0	3,092	2,044	838	394	25	4	28	6	0	14,090
Sub-Total, Punjab	20,318	23,676	17,366	20	21,645	12,674	4,836	2,260	435	366	310	41	51	103,998
Khyber Pakhtunkhwa														
Peshawar	2,849	3,123	1,545	0	3,337	2,086	918	364	204	38	47	8	0	14,520
Abbottabad	691	1,132	555	0	844	400	128	82	0	22	4	0	0	3,857
Sub-Total, Khyber Pakhtunkhwa	3,540	4,255	2,101	0	4,181	2,487	1,046	447	204	60	50	7.8	0	183,77
Total Distribution Network	23,858	27,931	19,467	20	25,826	15,161	5,882	2,707	638	426	360	49.1	51	122,376

(Source: SNGPL)

Table 2.25: SSGCL – Cumulative Length of Distribution Network as of June 30, 2018

Region	Cumulative Distribution Network (Km)									
	Sindh									
	1"-2"	3"	4"	6"	8"	10"	12"	16"	Others	Total (Km)
Sindh (Interior)	9,200	15	3,644	1,839	506	33	57	17	6,704	22,014
Karachi	5,148	-	812	482	617	15	181	100	8,852	16,206
Sub-total	14,348	15	4,456	2,321	1,123	48	238	117	15,556	38,222
Balochistan										
Balochistan	3,389	38	1,217	393	488	6	48	92	2,319	7,990
Grand Total	17,737	53	5,673	2,714	1,611	54	286	209	17,875	46,212

Table 2.26: Distribution Network - Polythene Pipe

Region	Sindh					
	20mm	40mm	63mm	125mm	180mm	Total (Km)
Sindh (Interior)	581	883	803	241	12	2,519
Karachi	696	1,031	1,616	424	238	4,005
Sub-Total (Sindh)	1,277	1,914	2,419	664	250	6,524
Balochistan						
Balochistan	156	33	389	95	6	679
Grand Total	1,433	1,947	2,808	759	256	7,203

[Source: SSGCL]

2.2.13 Customer Addition to Gas Network

The total number of new gas consumers added during FY 2017-18 is shown in **Table 2.27** and cumulative number of consumers (country-wide), as of June 30, 2018, is shown in **Table 2.28**.

Table 2.27: Number of Consumers Added / (Disconnected) during FY 2017-18

Sector	SNGPL			SSGCL				Total Country
	Punjab, ISB & AJK	Khyber Pakhtunkhwa	Total (SNGPL)	Sindh Interior	Karachi	Balochistan	Total (SSGCL)	
Domestic	515,016	87,041	602,057	19,984	47,558	6,469	74,011	676,068
Commercial	2,407	339	2,746	(35)	(88)	54	(69)	2,677
Industrial	109	7	116	6	6	(1)	11	217
Total	517,532	87,387	604,919	19,955	47,476	6,522	73,953	678,872

(Source: SNGPL & SSGCL)

Table 2.28: Number of Consumers (Cumulative) as of June 30, 2018.

Sector	SNGPL			SSGCL				Total Country
	Punjab	Khyber Pakhtunkhwa	Total (SNGPL)	Sindh Interior	Karachi	Balochistan	Total (SSGCL)	
Domestic	5,460,534	812,838	6,273,372	813,107	1,807,559	265,556	2,886,222	9,159,594
Commercial	51,724	9,607	61,331	4,171	15,810	2,714	22,695	84,026
Industrial	5,978	827	6,805	646	3,503	58	4,207	11,012
Total	5,518,236	823,272	6,341,508	817,924	1,826,872	268,328	2,913,124	9,254,632

(Source: SNGPL & SSGCL)

2.2.14 Natural Gas Consumption and Production

Gas Consumption

The consumers of natural gas are categorized into three basic categories namely, the residential, commercial and industrial. The industrial sector also includes power, cement, general industry, fertilizer and transport sectors. The demand of gas increases considerably during the winter season. Consequently, the Gas Utility Companies, in accordance with the priorities set by the GoP, curtail gas supply to different sectors. The residential (domestic) sector remains at the top priority of the Gas Companies for maintaining gas supply, as per the GoP's Natural Gas Load Management Policy. During FY 2017-18, power sector consumed the highest volume, i.e. 1,470 MMCFD while the residential sector consumed about 779 MMCFD of natural gas. Sectoral gas consumption, as provided by Gas Companies (viz SNGPL, SSGCL, E&P Companies and Bulk Gas Consumer Companies), is given in **Table 2.29**, which is based on the Country's gas consumption, net of own use and losses, of SNGPL, SSGCL and Independent Systems. The consumption trend has been shown in **Fig 2.1**. Province-wise gas consumption (for SNGPL and SSGCL system) is given in **Table 2.30**, showing that Punjab and Sindh remained the major consumers with consumption share of around 50% and 39%, respectively.

Table 2.29: Sector-wise Gas Consumption for FY 2017-18

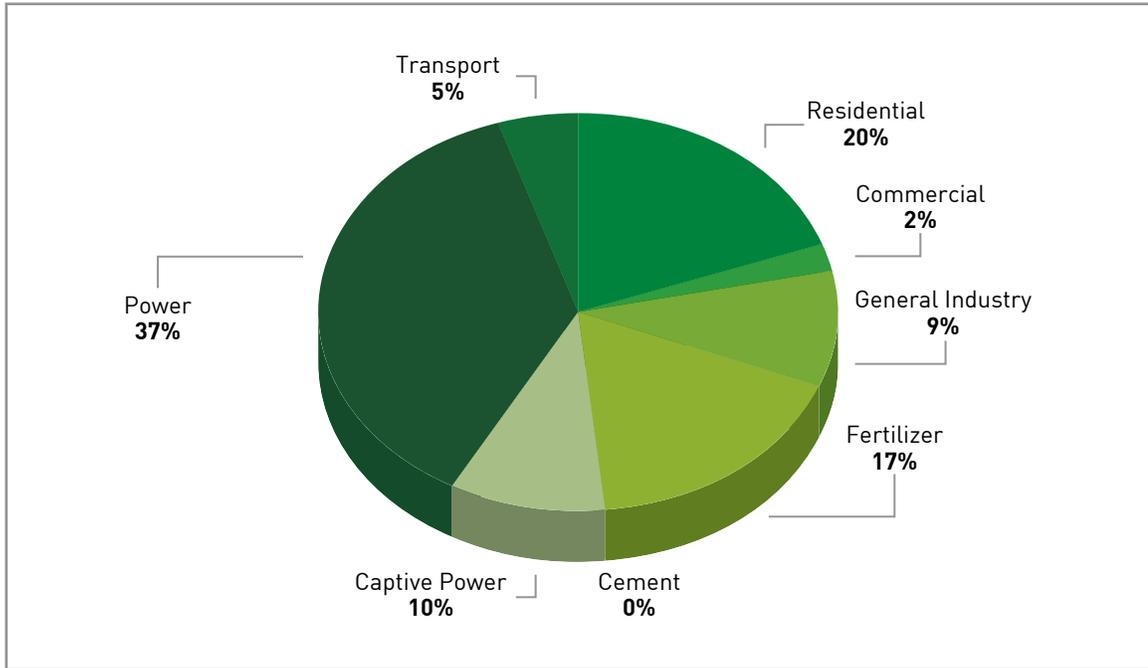
(MMCFD)

Sector	SNGPL System	SSGCL System	Independent System	Total Country	Percentage Share (Net of own use & losses)
Residential	507	272	0	779	20
Commercial	60	28	0	88	2
General Industry	210	163	0	373	9
Fertilizer	114	52	521	687	17
Cement	1	1	0	2	0
Captive Power	169	211	0	380	10
Power	650	197	623	1,470	37
Transport	126	67	0	193	5
Sub-total	1,837	991	1,144	3,972	100
Own use	18	11	0	29	-
UFG, T&D and Other Losses	160	196	0	356	-
Grand Total	2,016	1,198	1,144	4,357	-

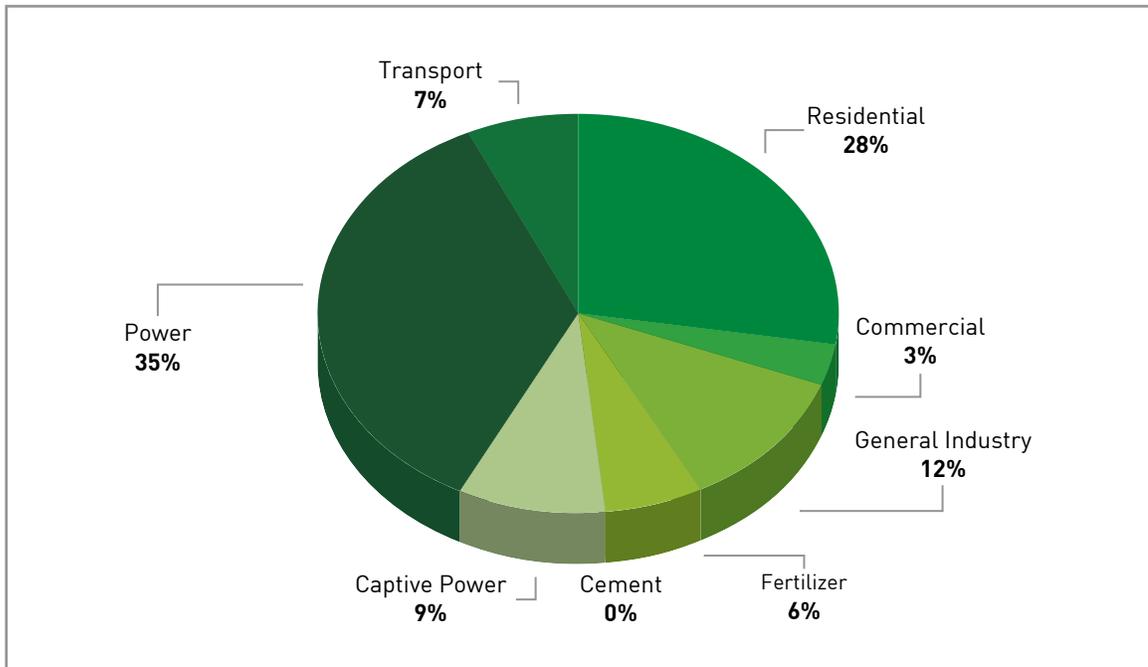
Source: SNGPL SSGCL and Independent systems.

Fig 2.1: Country's Sectoral Gas Consumption for FY 2017-18

Country-wide Sectoral Share in Gas Consumption



Sector-wise Gas Consumption on SNGPL System



Sector-Wise Gas Consumption on SSGCL System

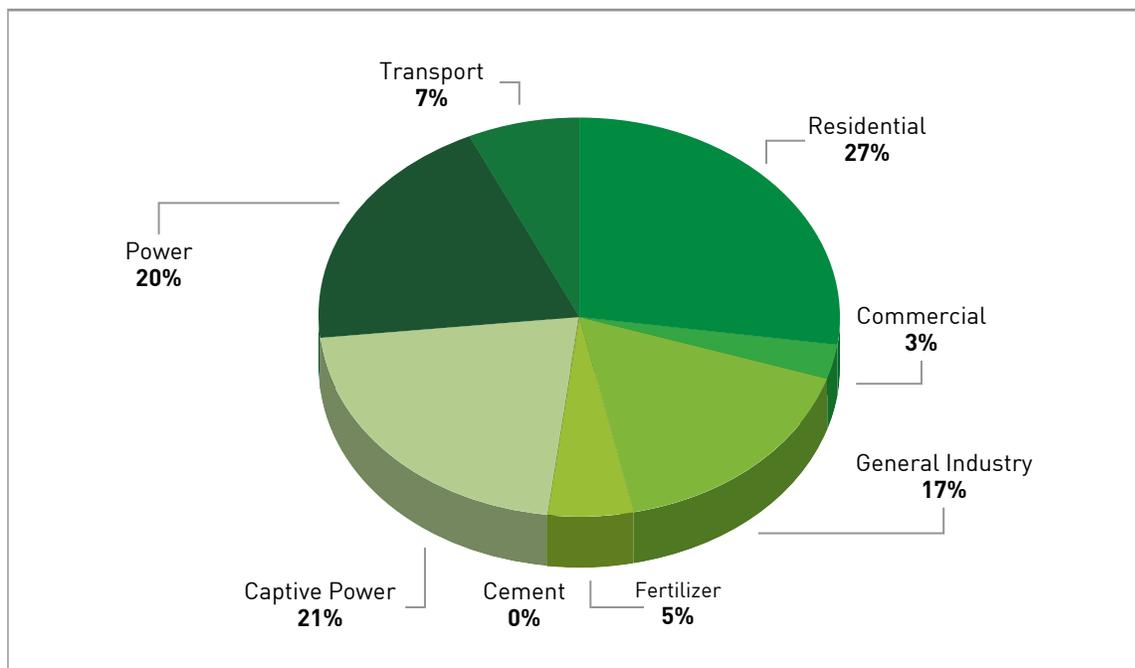
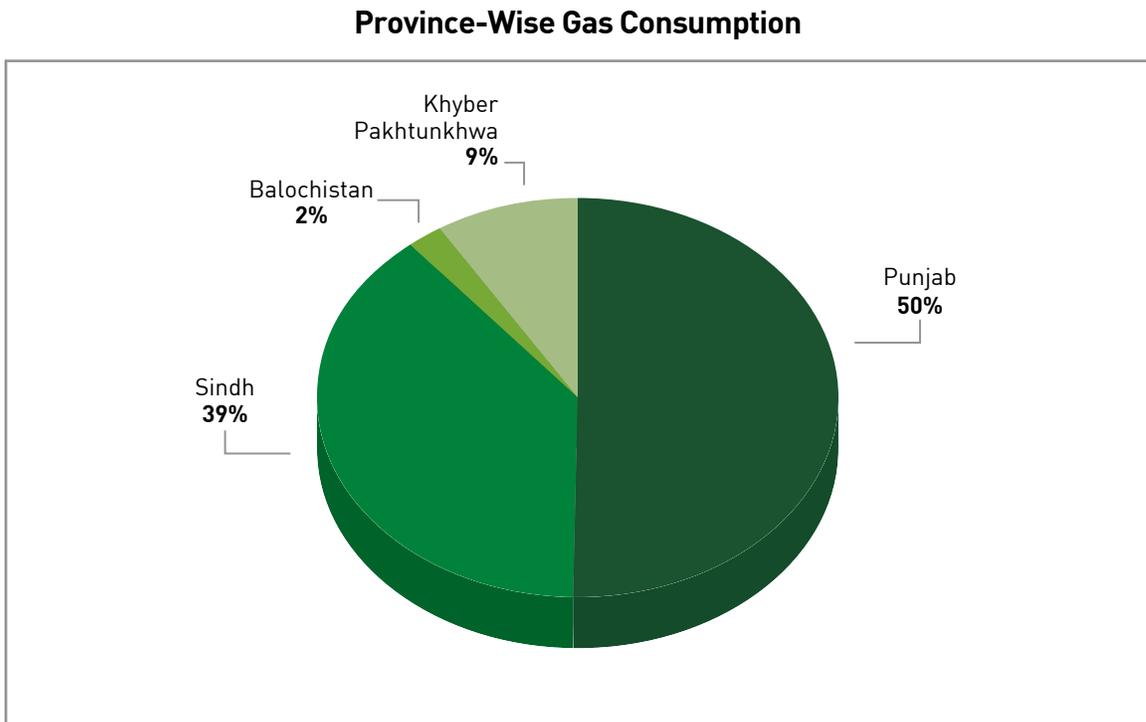


Table 2.30: Province-wise Gas Consumption during FY 2017-18 (SNGPL & SSGCL Systems only)

Province	Consumption (MMCFD)		Percentage Share (%)	
	FY 2016-17	FY 2017-18	FY 2016-17	FY 2017-18
Punjab	1,372	1,515	47	50
Sindh	1,262	1,163	43	39
Balochistan	69	64	2	2
Khyber Pakhtunkhwa	212	265	7	9
Total	2,915	3,007	100	100

Source: SNGPL & SSGCL

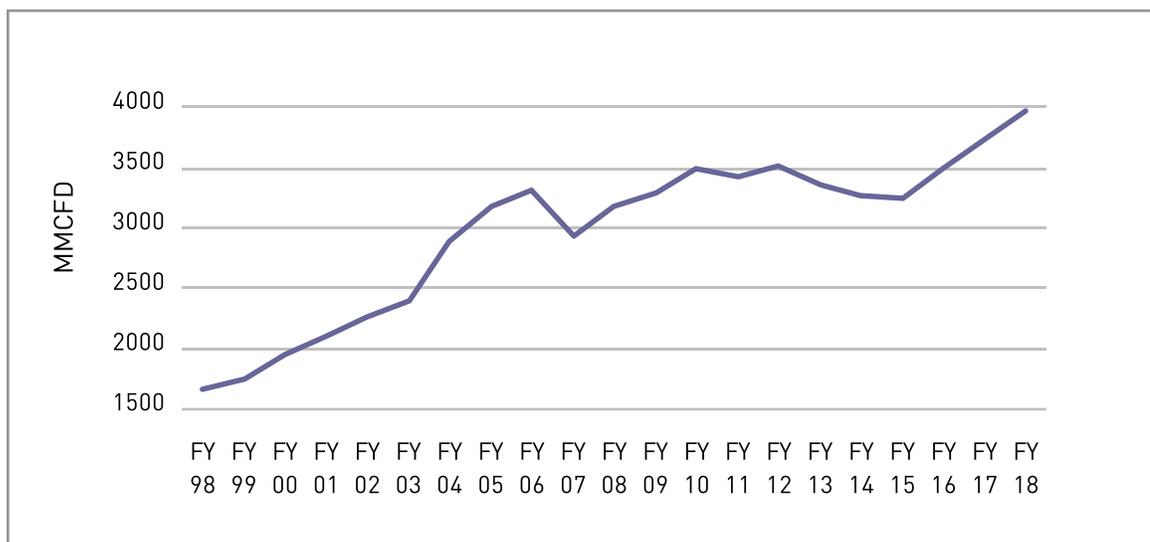
Fig 2.2: Province-wise Gas Consumption for FY 2017-18 (SNGPL, SSGCL Systems only)



Sectoral Gas Consumption – Trend

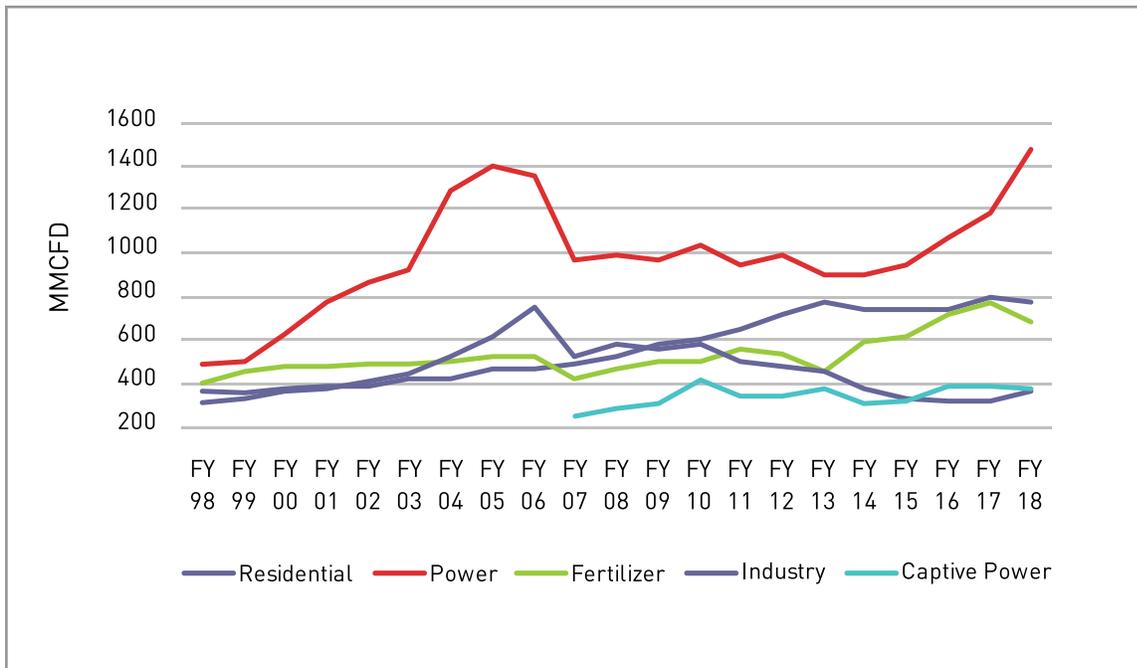
Natural gas demand in the country has been increasing day by day. Some 20 years back, in 1997-98, overall consumption of natural gas in the country was around 1,700 MMCFD whereas the same has increased to 3,972 MMCFD in FY 2017-18. Natural gas consumption trend and its sector-wise growth from 1997-98 to 2017-18 are shown in graphical form as under:

Gas Consumption Trend

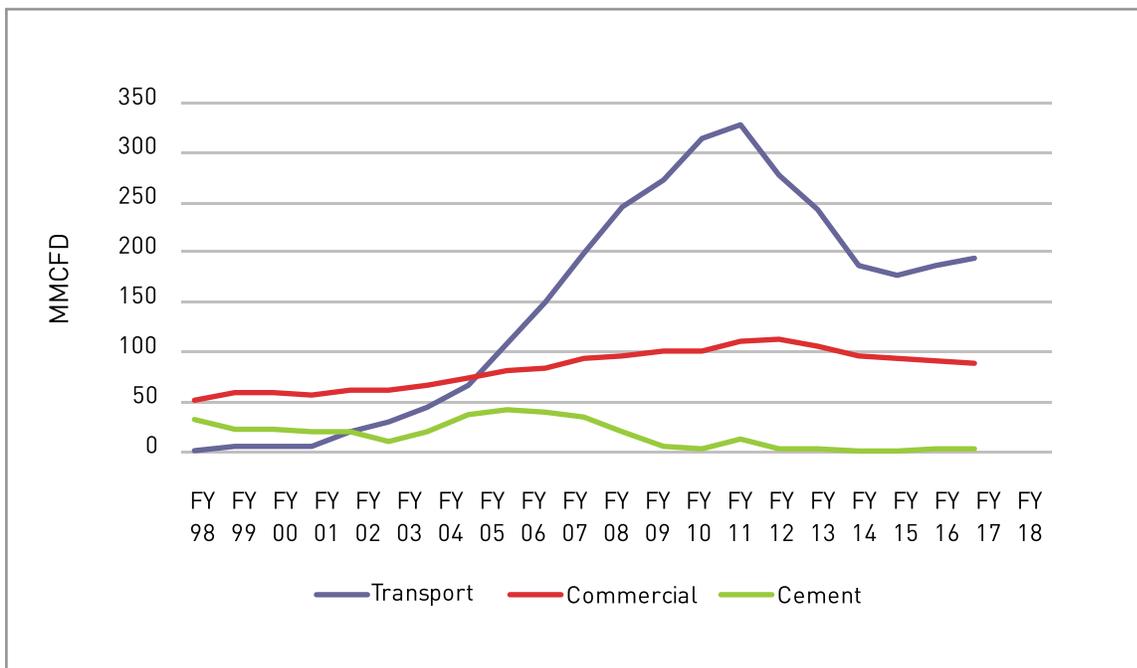


Source: For FY 1997-98 TO 2004-05 Pakistan Economic Survey.
For FY 2005-06 onwards OGRA's Annual Report

Sector-Wise Gas Consumption



Sector-Wise Gas Consumption



2.2.15 Gas Supplies

The natural gas is produced from the gas fields located across the country. The natural gas supply in the country has reached to 4,357 MMCFD. The major gas fields of the country include Sui, Uch, Qadirpur, Sawan, Zamzama, Badin, Bhit, Kandhkot, Mari and Manzalai. In addition, Pakistan is importing the LNG since 2015, whereby the RLNG has contributed significantly in mitigating the natural gas shortage in the country. In this regard, the data related to imports and province-wise natural gas supplies to the Gas Utility Companies, including RLNG share, is shown in **Fig 2.3**. The field-wise natural gas and RLNG supplies to SNGPL, SSGCL and Independent systems are given in **Table 2.31**.

Sindh stood as the major supplier with a contribution in gas supply of around 50% while Balochistan, Khyber Pakhtunkhwa and Punjab followed with shares of 11%, 12% and 4% respectively. While the share of RLNG, in the overall gas supply, has increased to 23%. (**Fig 2.4**)

Fig 2.3: Province-wise Gas and Imported RLNG Supplies to Gas Utility Companies

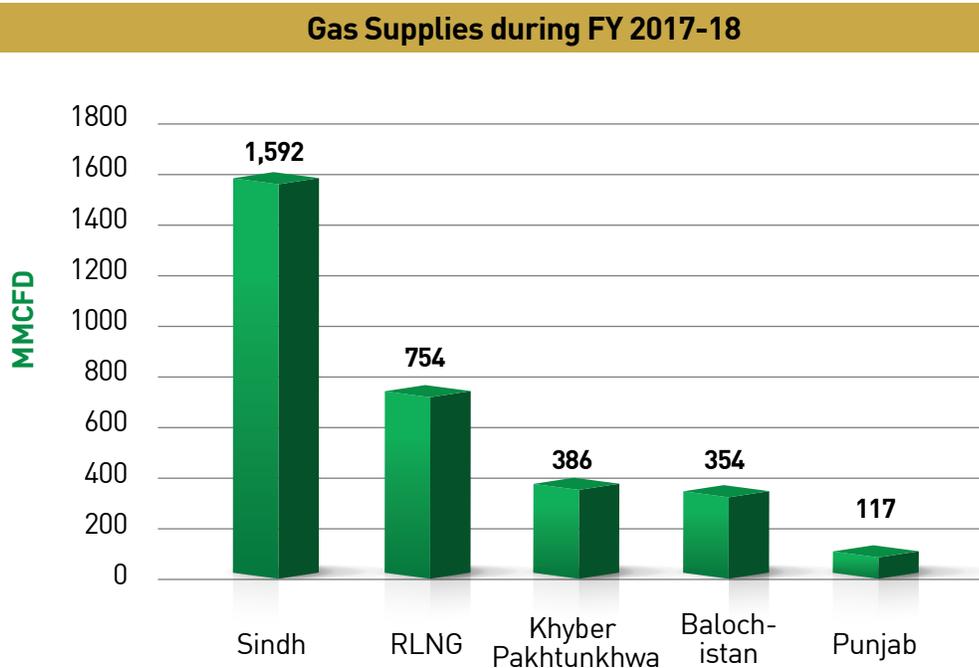
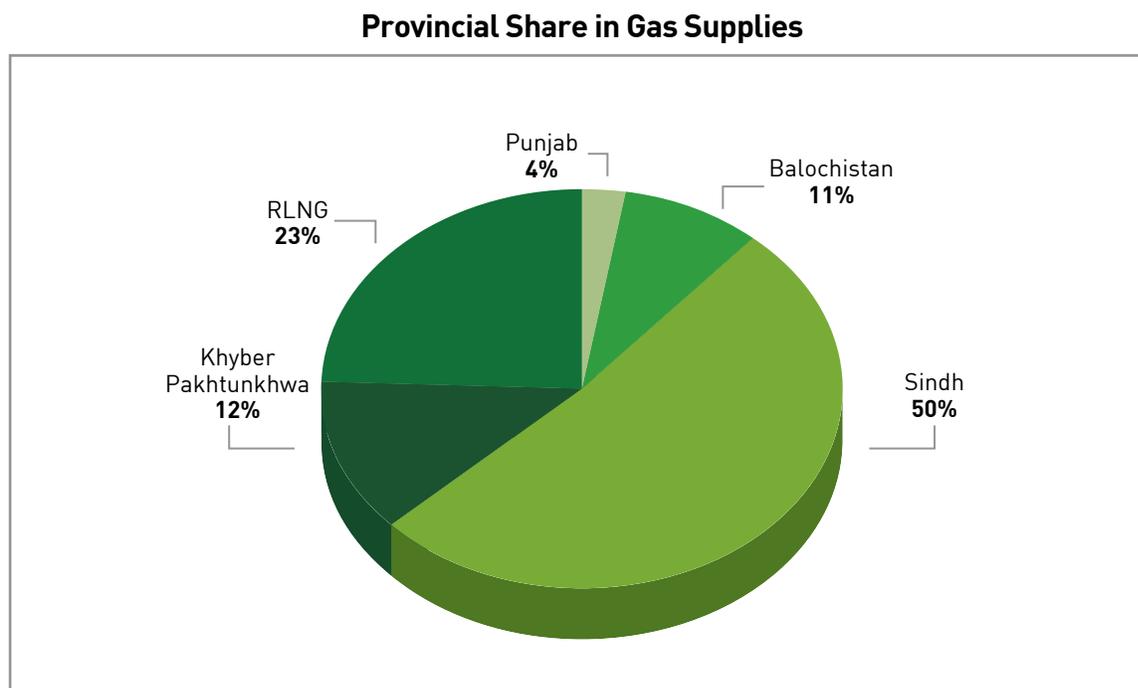


Fig 2.4: Provincial Share of Gas Supplies (Indigenous and Imported RLNG) to Gas Utilities Companies for FY 2017-18



Province-wise Gas Production and Consumption (2017-18)

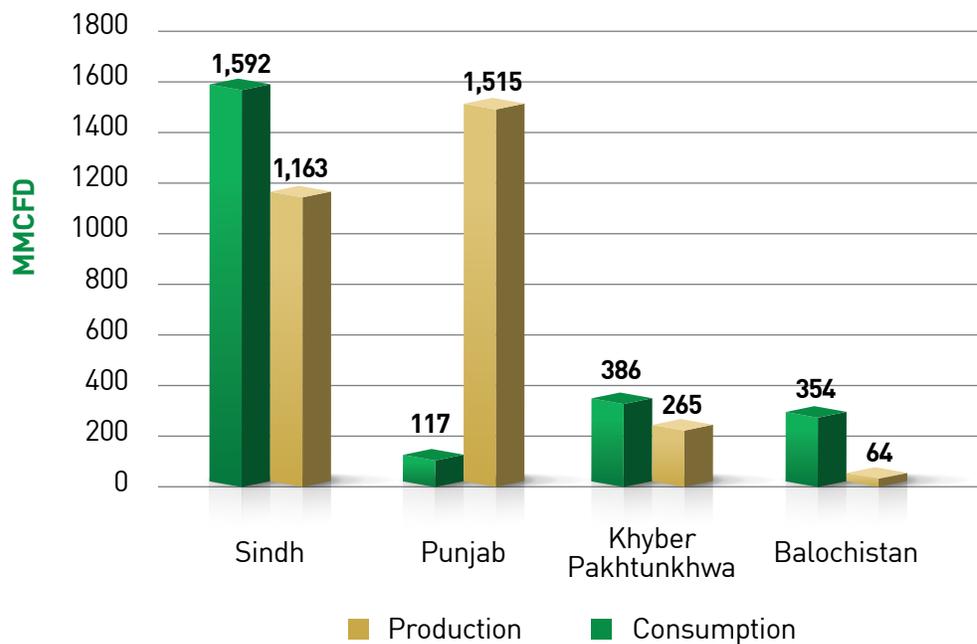


Table 2.31: Field-wise Natural Gas and Imported RLNG Supplies to SNGPL, SSGCL and Independent System

SNGPL						
Gas Field	Calorific Value (Btu/scf)	2016-17		Calorific Value (Btu/scf)	2017-18	
		(MMcfd)	(BBtu/d)		(MMcfd)	(BBtu/d)
Balochistan						
Loti	845	19	16	842	16	13
Pirkoh	845	3	2	842	1	1
Sui	958	267	256	958	232	222
Sub-total, Balochistan	--	289	274	--	248	236
Sindh						
Badar	575	17	10	575	17	10
Chachar	786	3	2	771	3	2
Hasan.B-22	681	10	7	683	9	6
Kandhkot	828	83	69	826	51	42
Qadirpur (Proc)	878	219	192	878	198	174
Qadirpur (Raw)	839	38	32	823	29	24
Qadirpur (Perm)	683	56	38	685	53	36
Sawan	1,011	22	22	1,001	10	10
Tajjal	1,011	2	2	1,001	2	2
Zamzama (SNGPL)	799	48	39	797	29	23
Koonj	865	1	1	863	1	1
Mari Engro	724	85	62	724	84	61
Latif	1,011	23	23	1,002	15	15
Sub-total, Sindh	---	607	498	---	500	406

Punjab						
Adhi	1,091	57	62	1,077	63	68
Dakhni	1,060	21	22	1,060	19	20
Dhodak	1,139	1	1	1,143	1	1
Dhullian	1,070	2	2	1,065	2	2
Meyal	1,059	0	0	1,028	0	0
Pariwali	1,070	4	4	1,065	3	3
Pindori	1,129	0	0	1,137	0	0
Ratana	1,131	0	0	1,123	0	0
Ratana Meyal	1,069	5	5	1,065	4	5
Sadkal	1,183	1	1	1,177	1	1
Salsabeel	987	8	8	992	7	6
Salsabeel Chiltan	868	0	0	867	0	0
Soghari	1,061	8	8	1,060	7	7
Kalabagh	1,108	0	0	1,112	5	6
Jhandial	-	-	-	1,063	5	6
Sub-total, Punjab	---	107	114	---	177	125
Khyber Pakhtunkhwa						
Chanda	1,151	2	3	1,159	3	3
Makori	1,034	1	1	1,035	1	1
Makori East	1,039	73	76	1,035	68	71
Manzalai	1,047	34	36	1,059	28	30
Mela	1,163	7	8	1,165	6	7
Mamikhel	1,055	25	27	1,059	22	23
Maramazai	1,039	119	124	1,048	128	134
Nashpa	1,165	87	101	1,122	78	88

Mardankhel	1,055	23	25	1,059	36	38
Tolanj	-	-	-	1,006	5	5
Tolanj West	-	-	-	1,006	6	6
Makori Deep	-	-	-	1,036	5	5
Sub-total, Khyber Pakhtunkhwa	---	373	400	---	386	411
LNG	----	492	503	---	754	759
Net Line Pack - System	---	(2)	(2)	---	5	4
Net Line Pack - RLNG	---	---	---	---	6	7
Total Country (A)	---	1,865	1,788	---	2,016	1,947

SSGCL

Gas Field	Calorific Value (Btu/scf)	2016-17		Calorific Value (Btu/scf)	2017-18	
		(MMcfd)	(BBtu/d)		(MMcfd)	(BBtu/d)
Balochistan						
Sui	956	105.6	101.0	959	106.2	101.8
Sub-total, Balochistan	956	106	101	-	106	101.8
Sindh						
Kandhkot	828	1.5	1.3	822	1.5	1.2
Mazarani	1,012	4.0	4.1	1,017	4.3	4.4
Badin	1,090	36.1	39.4	1,105	40.4	44.6
Bhit	950	193.0	183.4	944	168.1	158.7
Kadanwari	994	26.8	26.6	998	21.6	21.6
Miano	994	65.2	64.8	997	39.4	39.3
Sawan	1,008	31.3	31.5	1,001	32.5	32.5
Zamzama	799	48.2	38.5	797	29.3	23.3
Khipro/Mirpur Khas	997	383.2	381.9	1,003	366.3	367.5

TAY / Dars		4.8	4.9	1,029	67.3	69.2
Hundi Sari	908	1.1	1.0	985	2.5	2.5
Mari	729	1.0	0.7	732	1.0	0.7
Bobbi	1,112	3.7	4.2	1,109	3.9	4.3
Hassan /SNGPL Towns (Ghotki Rustam, Sher Ali, Ubaro, Chouniko)	871	4.7	4.1	1,000	13.0	13.0
Adam-X	1,039	15.3	15.9	1,042	15.6	16.3
Pakhro/Noorai Jagir	1,129	0.1	0.1	1,068	0.4	0.4
Latif	1,007	22.9	23.1	1,002	14.8	14.8
Pashaki deep & Kunnar deep	1,061	117.9	125.0	50	116.0	5.8
Sujawal/Sujjal	1,056	23.5	24.8	1,059	19.4	20.6
Sinjhoru	1,032	29.4	30.3	1,016	31.0	31.5
Nur Bagla field	1,104	3.6	4.0	2	1.8	1.9
Kirther (Rehman) EWT	836	9.1	7.6	846	17.6	14.9
Maher/Mubarak Block	1,085	12.0	13.0	1,084	9.4	10.2
Rizq - EWT	-	7.4	6.8	925	12.6	11.7
Jakhro Dachrapur/ Gopang	1,104	3.1	3.4	1,071	4.6	4.9
Zargoan	955	11.5	11.0	952	15.5	14.8
Gambat	953	34.9	33.2	946	42.2	39.9
Sub-total, Sindh	990	1,095.2	1,084.5	889	1,092.0	970.5
Total Sindh & Balochistan (B)	987	1,200.8	1,185.5	895	1,198.2	1,072.4

Independent System

Producer/Field	2016-17 (MMCFD)	2017-18 (MMCFD)
Mari Petroleum Ltd. (Mari Gas Field, Sindh)	633	665
OGDCL (Uch Gas Field, Balochistan)	316	309
OGDCL (Nandpur Gas Field, Punjab)	10.2	8
OGDCL (Guddu Block, Sindh)	--	10
PPL (Kandhkot, Sindh)	96	151
Total (Independent System) (C)	1,065	1,143
Total Country-Wide Supplies (A+B+C)	4,131	4,357

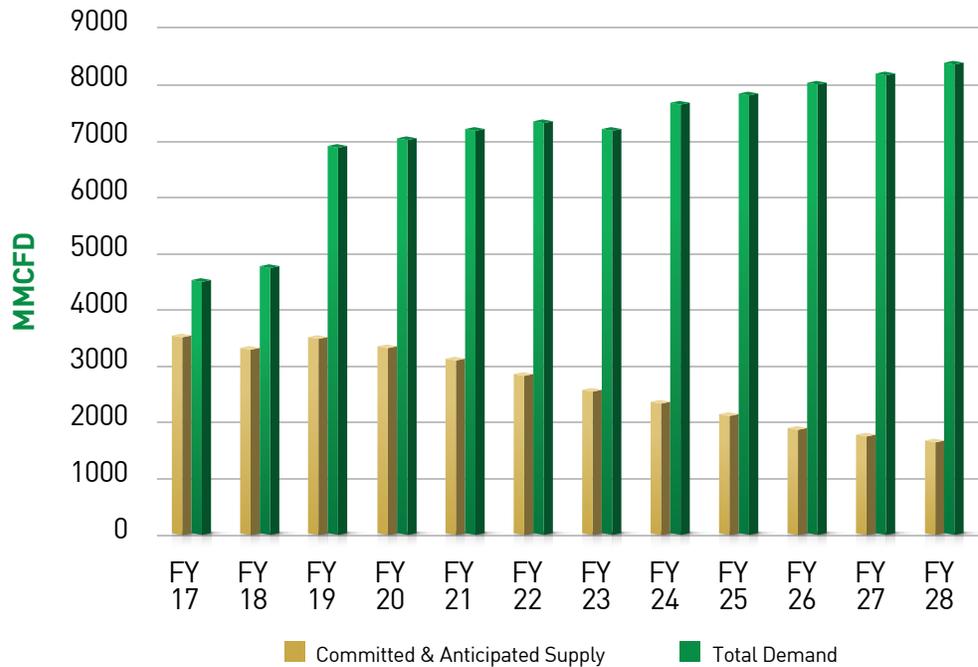
Source: SNGPL, SSGCL, Mari Petroleum Company Ltd, OGDCL, PPL

2.2.16 Future Outlook for the Natural Gas Sector (Demand and Supply Scenario)

Demand Forecast

Both the Gas Utility Companies have added around 0.7 million domestic, commercial and industrial consumers, in their respective systems, during fiscal year 2017-18. Consumer addition is increasing the gap between demand and supplies, day by day. Especially in winter, the gas demand further increases and as a result the GoP is being forced to curtail supplies to various sectors. Demand - Supply scenario of natural gas (indigenous sources) for the next ten (10) years is given in **Appendix-II**. The same is shown graphically in **Fig 2.5**.

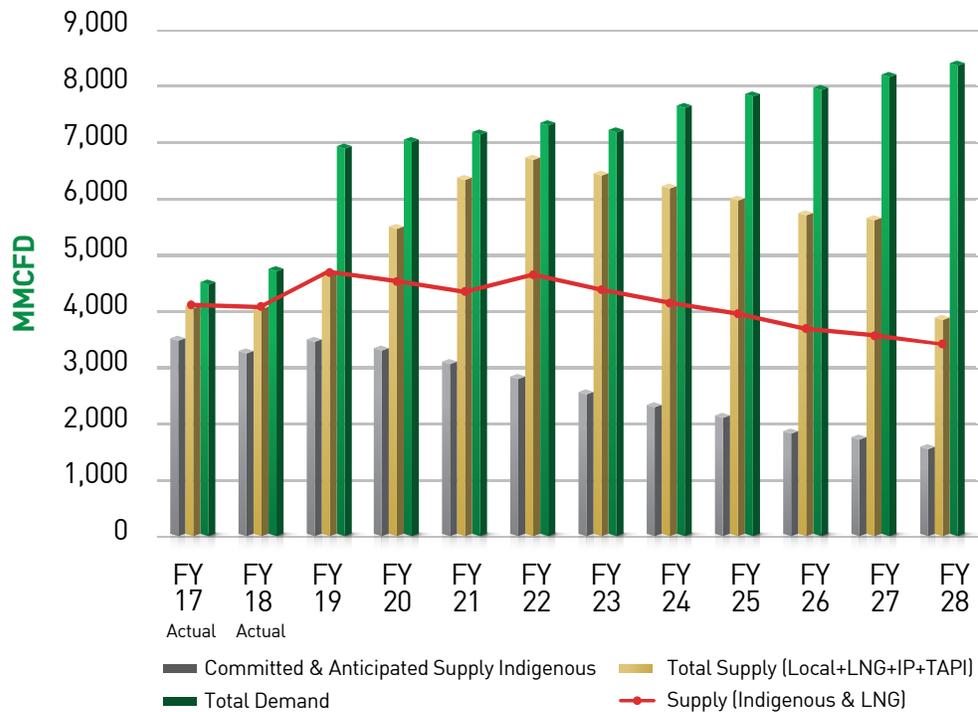
Fig 2.5: Demand and Supply of Natural Gas (Indigenous Supply Scenario)



Source: SNGPL, SSGCL, Independent systems (Central Power Generation Company Limited, Fauji Fertilizer company Limited, Uch Power, Fauji Kabirwala Power Company Limited, Fatima Fertilizer Company Limited, Foundation Power Company Limited)

The gap between the demand of natural gas and supplies (indigenous, imported natural gas and LNG) is given in **Appendix-III** and shown in graphical form in **Fig 2.6**.

Fig 2.6: Gas Demand and Supply Forecast (Indigenous & Imported Supplies Scenario)



Possible Measures to Bridge the Gap

As evident from the aforesaid statistics and data, Pakistan is facing shortage of gas supply which will further increase in future. The gap between the supply and demand is expected to increase to the tune of 4,600 MMCFD in FY 2022-23 and 6,700 MMCFD by the FY 2027-28 without the imported gas. The possible gap can be bridged through enhancement in indigenous gas exploration & production through incentivizing this sector, import of interstate natural gas (through development of cross-country gas pipelines) and increased import of LNG.

Consumer Gas Pricing

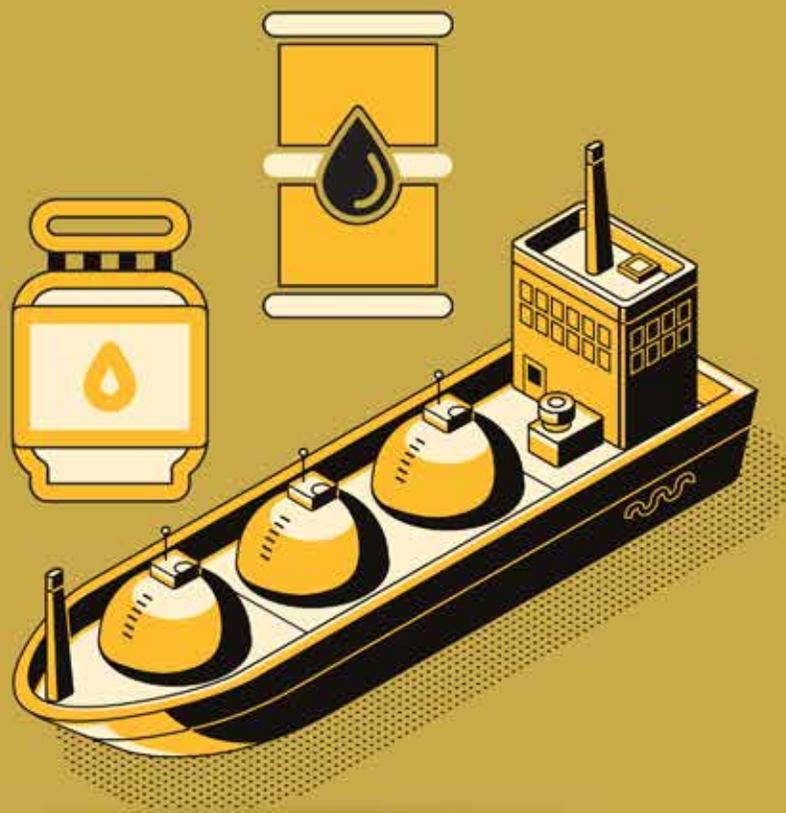
Based on the Revenue Requirement of the gas companies, OGRA determines the prescribed price (i.e. price to be retained by the companies) for each category of consumers. The two gas utilities, SNGPL and SSGCL, supplying gas to consumers in their operational areas. The Government fixes consumer gas prices and as a matter of policy, maintains them at a uniform level throughout the country. Therefore, the cost of supplying gas to customers at various locations is not accounted for and, regardless of the difference in cost due to location, all consumers within the same category pay a uniform price. Gas tariffs for various consumer segments for FY 2017-18 are given in **Appendix-IV**. The consumer price of natural gas in Pakistan comprises (a) the prescribed price for the gas companies and (b) Gas Development Surcharge (GDS). OGRA fixes the 'prescribed price' for the gas utilities after conducting public hearings where stakeholders express their views. Also, a thorough analysis is carried out in terms of prudence and rationale for revenue and capital expenditures.

The prescribed price includes the following elements:

- Producer gas prices, which are linked with international prices of crude oil and HSFO
- Transmission and distribution costs
- Depreciation
- Return to SNGPL and SSGCL (17.43% on net operating fixed assets)

The prescribed price is designed to enable the two T&D companies to achieve fixed returns on assets and difference between consumer tariffs and prescribed prices is reflected in the GDS account. OGRA had introduced incentive oriented efficiency benchmarks for Unaccounted for Gas and Human Resource Cost, after due consultation with all concerned to curtail the gas utilities' uneconomical costs and to benefit the natural gas consumers. These measures have salutary effect on the performance of the utilities.

OGRA advises the revenue requirement of each utility and the prescribed prices to the Federal Government. The Government then determines the consumer prices for various categories of the consumers, after adding or subtracting GDS to the prescribed prices, and advises the same to OGRA for notification in the Official Gazette of Pakistan.





3. Liquefied Petroleum Gas

3.1 Overview

Local Production meets around 58 percent of LPG consumption whereas the rest is imported. Refineries, gas producing fields and imports are three main sources of LPG supply in the Country. LPG is gradually becoming popular domestic fuel among people who live in far-flung areas and where the natural gas infrastructure does not exist. In the current energy scenario, LPG is the most viable alternative in winters to cater for the demand supply gap of natural gas network. LPG is rapidly becoming significant component of energy mix since the same provides a cleaner alternative in comparison to biomass and dung especially in those locations where natural gas network is not available.

Currently, LPG accounts for about 1.3% of the total primary energy supply in the country. This low share of LPG in the total energy mix is mainly due to supply constraints and the higher price of LPG in relation to competing fuels like natural gas and wood etc.

The current size of LPG market is around 1,280,550 MT/Annum. It is primarily meant to supply for the domestic fuel requirement especially in natural gas starved areas and in peak shaving times in the urban territories. The use of LPG as domestic fuel shall deter deforestation in hilly areas and shall provide a comparatively healthier and hygienically safe alternative to the common citizens. GoP has taken a policy decision to allow use of LPG in the automotive sector to share the burden with conventional auto fuels. Subsequently, OGRA has laid down an elaborated regulatory framework for supply of LPG to the vehicles.



View of a LPG Plant

In Pakistan, a vast majority of poor people are relying on conventional fuels like coal, firewood, kerosene and biomass etc. with biomass playing main role among all conventional energy supply sources. For convenience, cleanliness, and public health, natural gas and LPG are by far the preferred fuels, followed by kerosene, which is a close substitute of LPG.

LPG consumption has increased and around 402,685 M.Tons has been imported during FY 2017-18. Enhanced supply of LPG through additional local production as well as import of LPG is key to bridge the gap between demand and supply and to stabilize the LPG consumer prices especially during the winter season.

OGRA has simplified LPG licensing procedures, thereby strengthening the supply infrastructure and promoting an environment conducive to investment and competition.

The regulatory issue confronting OGRA is to prevent illegal decanting of LPG, cross filing and shifting of LPG from one vessel/ bowzer to another without adequate safety measures. OGRA on regular basis directs LPG companies to exercise adequate control to ensure complete and comprehensive safe practices throughout the LPG supply chain i.e. from LPG producers to marketing companies and authorized distributors to the end consumers. Appropriate stern action against defaulting companies is also initiated by OGRA wherever nonconformance is observed.

As of June 30, 2018, there were 12 LPG producers, 168 LPG marketing companies operating in the country, having more than 5,000 authorized distributors. Further, there were 18 operational LPG auto refueling stations within the country.

Moreover, from 2008 onwards, OGRA started registration of LPG equipment manufacturing companies for the purpose to eradicate substandard manufacturing, sale and use of LPG equipment. So far, OGRA has pre-qualified 52 LPG equipment manufacturing companies as authorized manufacturer of LPG equipment.

3.2 LPG Consumption

LPG Consumption during FY 2017-18, stood at around 3,508 tons per day. **Table 3.1** gives a regional/sectoral consumption summary of LPG for FY 2017-18 in the country. LPG consumption has increased by 5.88 % compared to last fiscal year.

Table 3.1: LPG Regional/Sectoral Consumption during FY 2017-18

				(Tonnes)
Sectors/ Regions	Domestic	Commercial	Industrial	Total
Federal Capital Area	7,598	8,755	4,369	20,723
Punjab	265,315	379,675	211,365	856,355
Sindh	25,740	52,497	34,821	113,057
Khyber Pakhtunkhwa	72,349	21,269	10,133	103,751
Balochistan	12,708	13,438	7,170	33,316
Northern Area	39,735	12,339	-	52,074
FATA	32,751	10,657	390	43,798
AJK	39,613	17,150	714	57,477
Annual (Tonnes)	495,808	515,780	268,961	1,280,550
Daily (Tonnes)	1,358	1,413	737	3,508

Source: LPG Marketing Companies Reports

Fig 3.1: Region-wise Share in LPG Consumption

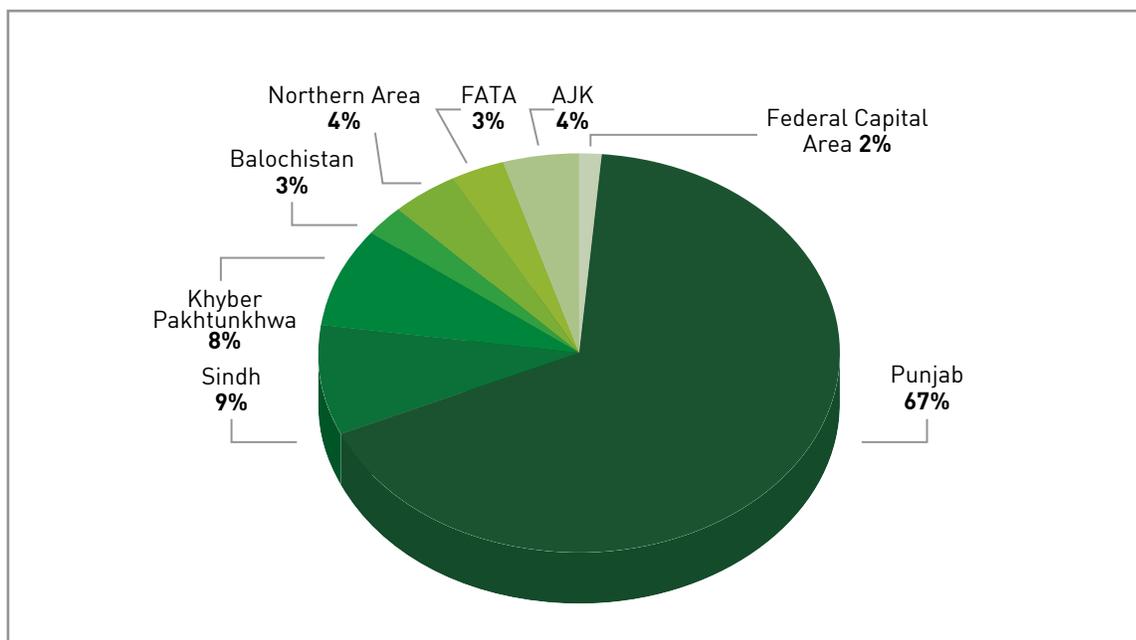
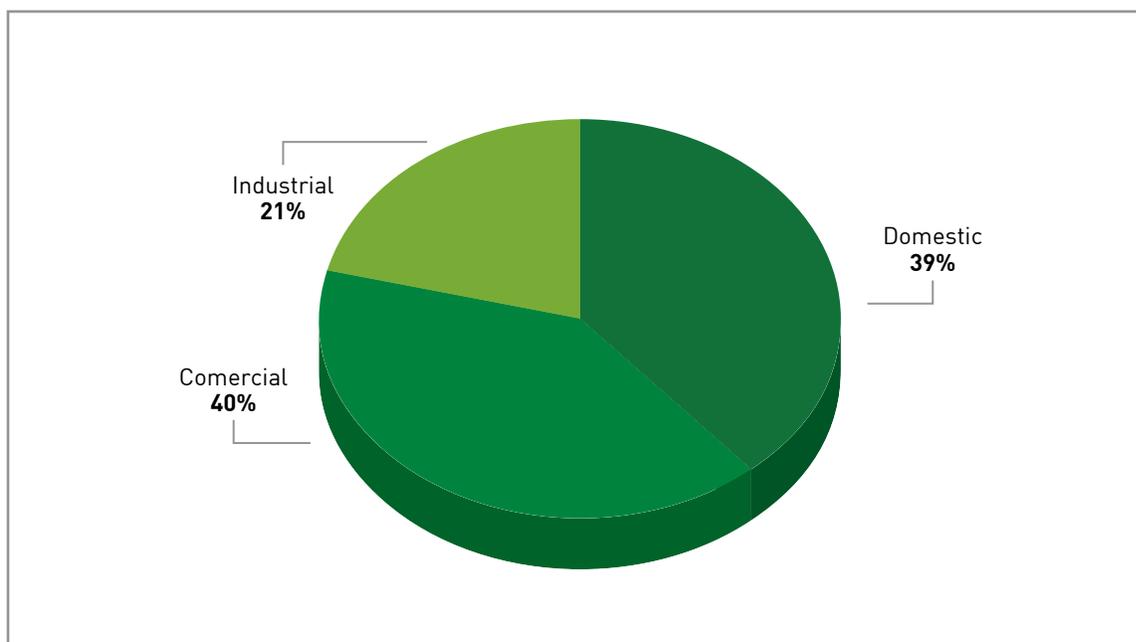


Fig 3.2: Sectoral Consumption of LPG



3.3 LPG Supplies

Currently, LPG supplies are being met through three sources: refineries, gas producing fields and imports. The actual supply from refineries/producing fields is presented in **Table 3.2** and the respective share of each supply source in the countrywide supply is shown in **Fig 3.3**. Gas producing fields supplies around 48 percent of LPG and refineries 18 percent of total LPG supply and the remaining 34 percent were imported during FY 2017-18. Out of total LPG production (fields and refineries), private sector share in the production was 57 percent whereas 43 percent was produced by public sector companies **Fig 3.4**.

Table 3.2: LPG Supply during FY 2017-18

Sectors	Annual (Tonnes)	Daily (Tonnes)
Refineries		
Attock Refinery Limited	1,976	5
Pakistan Refinery Limited	19,803	54
National Refinery Limited	6,758	19
Pak Arab Refinery Company	143,642	394
Byco Petroleum	40,423	111
Refineries Sub-Total	212,602	582
Fields		
OGDCL	192,385	527
UEPL (Naimat Basal)	6,642	18
OPI (Ratna, Ex-Meyal)	3,216	9
JJVL(On behalf of SSGCL)	67,852	186
POL (Mayal-Pindhori)	16,849	46
PPL	107,363	294
MOL Pakistan	175,229	480
Fields Sub-Total	569,536	1,560
Total Production	782,138	2,143
LPG Import	402,685	1,103
Total Supply (Production + Import)	1,184,823	3,246

Source: LPG monthly production reports of producers

Fig 3.3: Share of LPG Supply Source during FY 2017-18

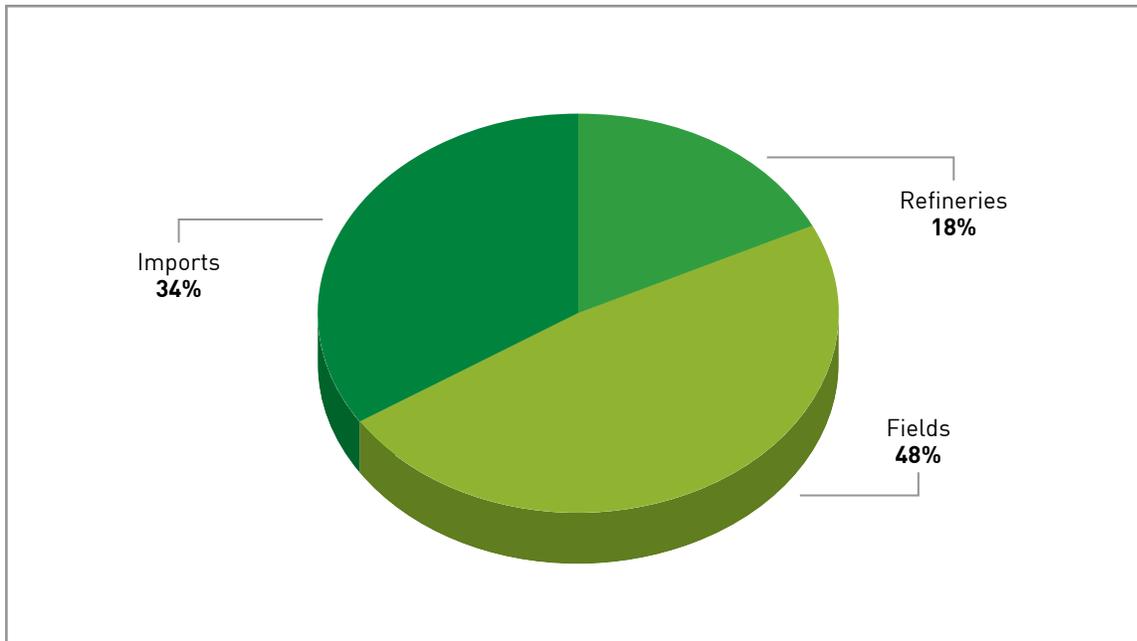
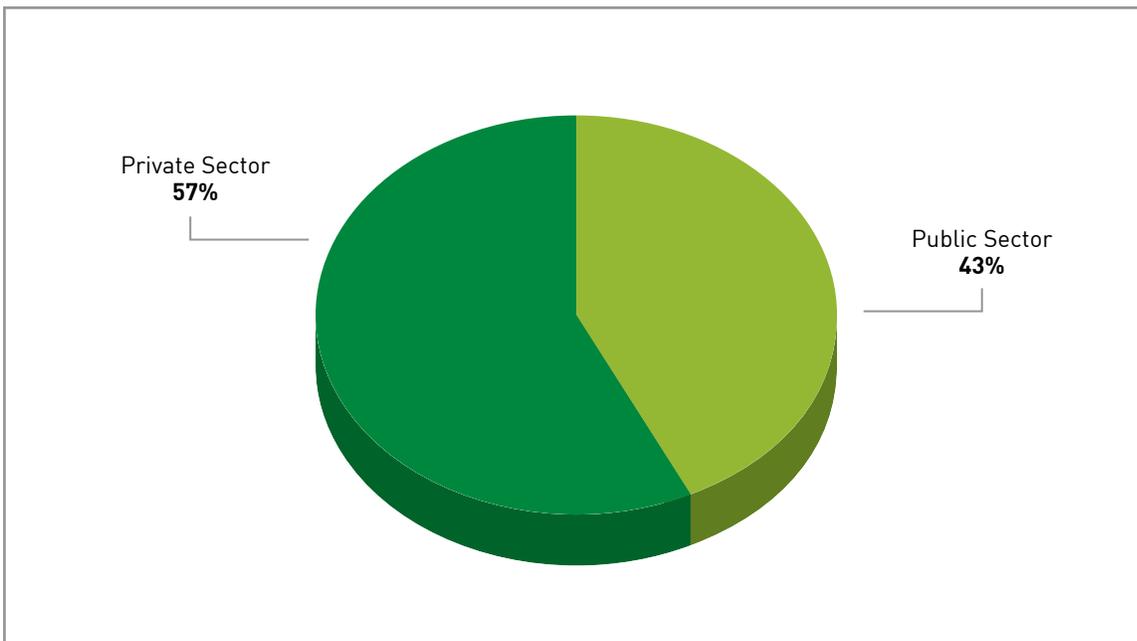


Fig 3.4: LPG Production Share





4. Liquefied Natural Gas

Natural gas is presently contributing nearly 48% in Pakistan's Primary Energy Supply mix. In view of the Natural gas demand supply gap, GoP introduced LNG Policy for potential investors to facilitate the successful implementation of LNG import projects. As per the said Policy, the project structures can be (i) integrated, in which the terminal developer arranges LNG imports as well as arrange its own buyers and (ii) unbundled, in which the terminal developer, LNG importer and LNG buyers are different.

In pursuance of LNG Policy, 2006 and OGRA Ordinance, 2002, OGRA notified LNG Rules, 2007 to bring the anticipated LNG activity under regulatory regime. LNG Policy encourages prospective project developers to enter into LNG Market after fulfillment of requisite formalities as per LNG Rules.

The Status of Valid LNG Licences issued

Sr.No	Name of LNG Developer	Licence Issuance Date	Type of Licence Issued	Regasification capacity (MMSCFD)
i.	PGP Consortium Limited	Apr 03, 2018	Operation Licence of LNG Receiving Terminal at Port Qasim, Karachi	600-750
ii.	Pakistan Gasport Limited	Jun 25, 2018	Provisional Licence	-
iii.	Energas Terminal (Pvt.) Limited	Apr 03, 2018	Provisional Licence	-
iv.	Bahria Foundation	Mar 17, 2015	Provisional Licence	-
v.	Global Energy Infrastructure Pakistan Limited	Sept 23, 2016	Extension in Project Completion Timelines for Licence granted for LNG Integrated Project at Port Qasim, Karachi	500
vi.	Engro Elengy Terminal Limited	Mar 18, 2016	Operation Licence of LNG\ Receiving Terminal at Port Qasim, Karachi	600-690

Engro Elengy Terminal Limited (EETL) established its LNG regasification terminal at Port Qasim Karachi. The LNG is being imported by the GoP through Pakistan State Oil Company Limited whereas EETL is providing the regasification services at a tolling tariff. The licence for operation of LNG Terminal was granted on 18th March, 2016.

PGP Consortium Limited (PGPCL) established Pakistan's second and its first LNG regasification terminal at Port Qasim Karachi. The LNG is being imported by the GoP through Pakistan LNG Limited and PGPCL is providing the regasification services at a tolling tariff. The licence for Operation of LNG Terminal was granted on 3rd April, 2018.

Pakistan produces around 4000 MMCFD (4 bcf/d) of indigenous natural gas against demand of over 6000 MMCFD (6bcfd). The addition of new LNG Regasification Terminals and respective enhancement of pipeline capacities of gas utility companies of the country shall open up new business avenues and help diversifying Pakistan's energy basket.

OGRA's role, being the concerned regulator is to grant licence for construction and operation of LNG Terminal and associated pipeline infrastructure to the companies interested in the instant business. LNG Rules, 2007 define the pre-requisites for obtaining licences.



LNG Jetty and Working Platform

5. Compressed Natural Gas

Compressed Natural Gas (CNG) was introduced by the Government in the year 1992, as alternative fuel for automobiles to reduce environmental degradation and save foreign exchange. The CNG (Production & Marketing) Rules, 1992 along with the Standard Code of Practice were framed to regulate construction as well as operational phases of CNG refueling stations. OGRA since its inception has played a vital role in the promotion of CNG in transport sector and setting up higher standards for safe operation of CNG Stations.

The use of CNG as an alternate fuel in transport sector has helped in reducing the air pollution to a considerable extent which also include excessive suspended particulate matter (SPM) emitted from the public transport as well as private vehicles. The middle-class commuters opted for CNG, as an

alternate fuel as they had the option of comparatively cheaper fuel, besides huge investment was made by entrepreneur for establishment of CNG Stations, which resulted in employment of skilled / semi-skilled manpower.

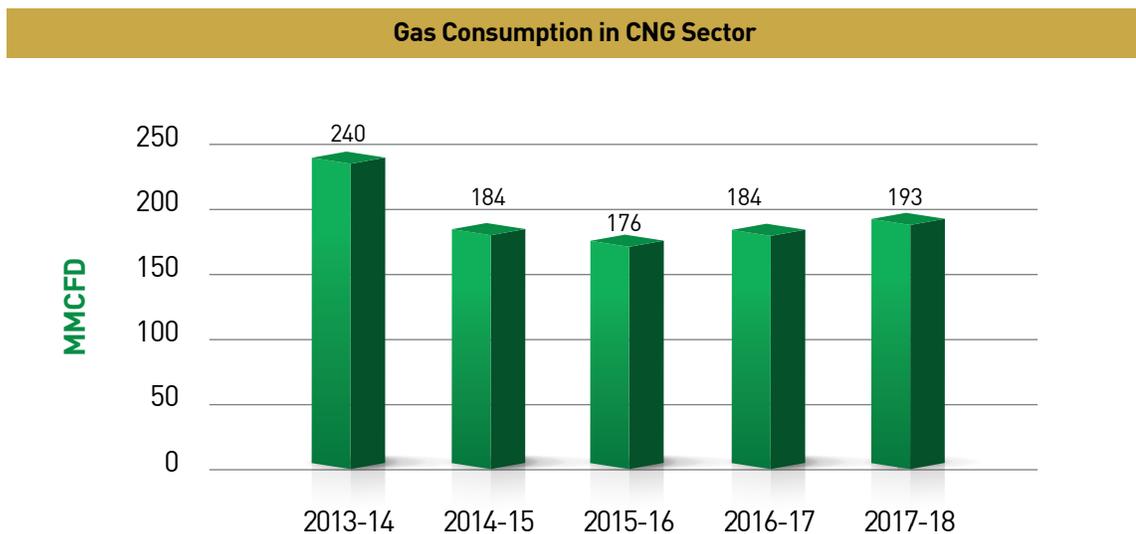
Pakistan has been able to achieve a higher position in the international CNG ranking in a relatively short span of time due to fiscal incentives offered by GoP, rising prices of motor gasoline, environmental concerns etc. however, in the year 2006, it was envisaged that indigenous gas supplies would not be able to meet the rising demand of natural gas that resulted into widening of supply-demand gap of the natural gas in forthcoming years. Consequently, gas supply to various sectors including CNG Sector has been curtailed. As a result, GoP, imposed ban on issuance of new CNG provisional licences all across the country in 2008. Whereas, during last few years, natural gas supply to CNG Sector has been improved, as the GoP has started import of LNG to bridge the Country's demand supply gap of natural gas.

5.1 Licences for CNG Stations

Since February 2008, due to imposition of ban by the Federal Government, no new CNG licence has been issued for establishment of CNG Stations across the country. However during FY 2017-18, one (01) existing licence of CNG station was extended for operation upon fulfillment of requisite formalities, as per law and applicable rules.

5.2 Gas Consumption in CNG Sector

Gas Consumption in CNG Sector during last five years (i.e. from 2013-14 to 2017-18) is shown below:



5.3 Manufacturing of CNG Equipment

OGRA has always given priority to safety and quality with regard to certification of local and foreign CNG equipments. Further, in order to promote indigenous production of CNG equipments, the Authority has granted permission for manufacturing/ assembling of CNG Compressor, Dispenser and Conversion Kits for vehicles subject to conformity of the laid down international technical standards. Consequently, locally manufactured CNG equipments are competing with international brands on the basis of their quality & performance.





6. Mid and Downstream Oil Sector

6.1 Sectoral Consumption of Petroleum Products

During FY 2017-18, the consumption of petroleum products (both energy and non-energy) amounted to 24.6 million tons compared to previous year's 26 million tons posting a decrease of 5.3 percent.

Table 6.1: Sectoral Consumption of Petroleum Products

(000 Tons)

Sr.No.	Sector	MS+ HOBC	HSD	KERO	Aviation Fuels	FO	LDO	Total Energy	Total Non- Energy	Grand Total
1.	Domestic	-	-	66.1	-	0.0	-	66.1	-	66.1
2.	Industry	22.5	579.1	12.2	-	1,167.0	4.1	1,784.8	238.9	2,023.8
3.	Agriculture	-	-	-	-	-	14.5	14.5	-	14.5
4.	Transport	7,466.3	7,599.3	0.0	459.4	0.4	-	15,525.6	247.1	15,772.6
5.	Power	-	184.5	0.0	-	6,192.8	0.1	6,377.4	0.7	6,378.1
6.	Government	22.5	153.6	36.1	172.8	0.4	2.4	387.8	0.0	387.8
Total FY 18		7,511.3	8,516.5	114.4	632.3	7,360.7	21.0	24,156.1	486.7	24,642.8
Total FY 17		6,738.4	8,484.3	121.0	638.7	9,560.1	19.5	25,561.9	460.9	26,022.8
% Growth		11.5	0.4	(5.5)	(1.0)	(23.0)	7.6	(5.5)	5.6	(5.3)

Source: OCAC

The decrease in consumption of petroleum products was mainly observed in the power sector i.e. 6.38 million tons for FY 2017-18 as compared to 8.53 million tons for FY 2016-17 and increase in consumption of POL is mainly observed in transport sector i.e 15.78 million tons for FY 2017-18 as compared to 14.76 for FY 2016-17. The major share in sectoral consumption of petroleum products was owned by transport (64.3%) and power sector (26.4%). The significant increase in the consumption of MS (11.5%) was observed, whereas consumption of HSD remained almost same as compared to previous fiscal year. Further, there was a marked decrease in Fuel Oil consumption (23%) due to shifting of power sector to LNG.

Fig. 6.1 illustrates the sector-wise share in consumption of energy products. The decreasing trend of sector wise share was; transport (64.3%), power (26.4%), industry (7.4%), government (1.6%), domestic (0.3%) and agriculture (0.1%).

Fig. 6.1: Sectoral Share of POL Consumption of Energy Products

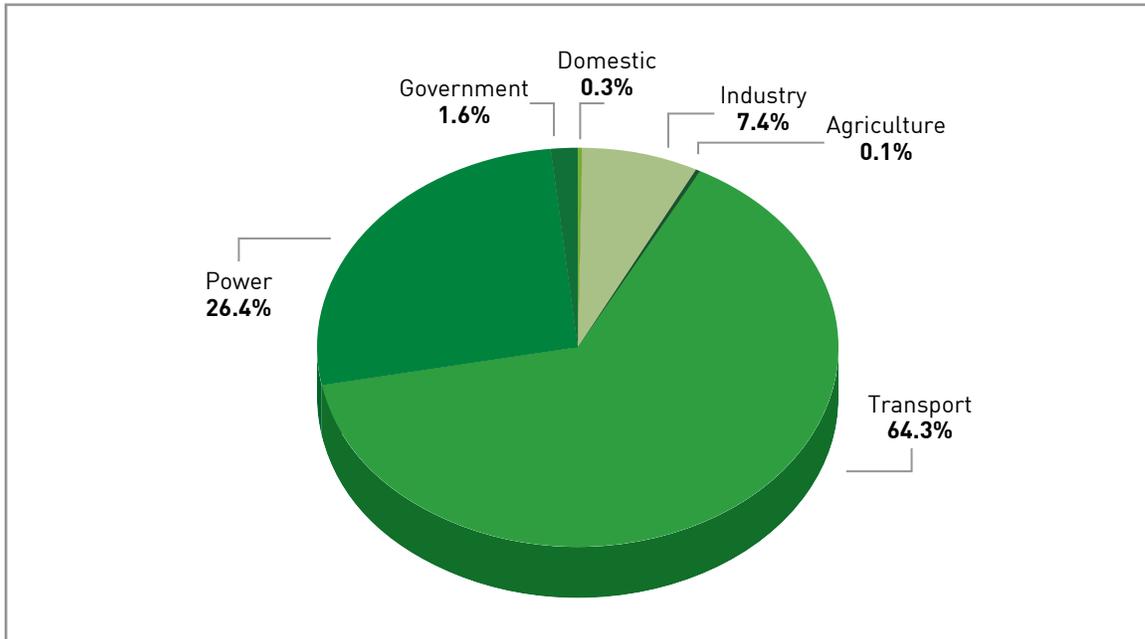
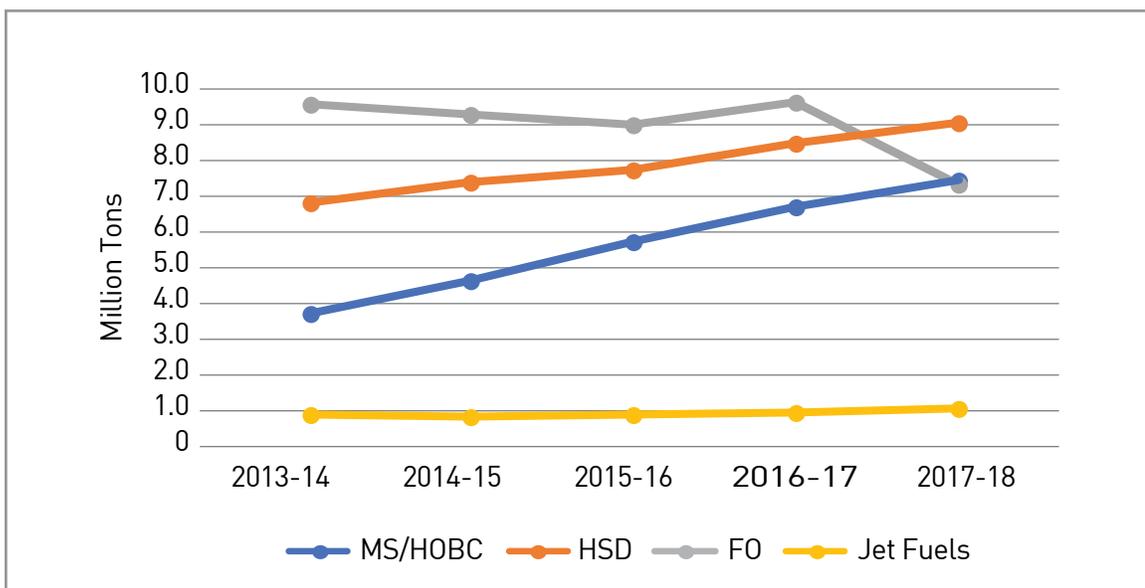


Fig 6.2 shows the trend line of various major POL products i.e. MS/HOBC, HSD, FO and Jet Fuels. MS consumption indicates a steep rise over the years due to rising demand in transport sector. HSD growth is very gradual over the past five years. FO shows a mixed trend and finally ended in steep decline due to LNG entering the power sector. Jet Fuels shows an almost consistent/stagnant consumption trend.

Fig 6.2: Consumption Trend of POL Products During Last Five Years



6.2 Market Share of OMCs

The market share of PSO remained at the top, as usual, with 49.7% of the total energy supply. It was followed by Hascol, APL, TPPL and Shell with 11.7%, 8.9%, 8.8% and 6.7% share respectively. **Fig 6.3**

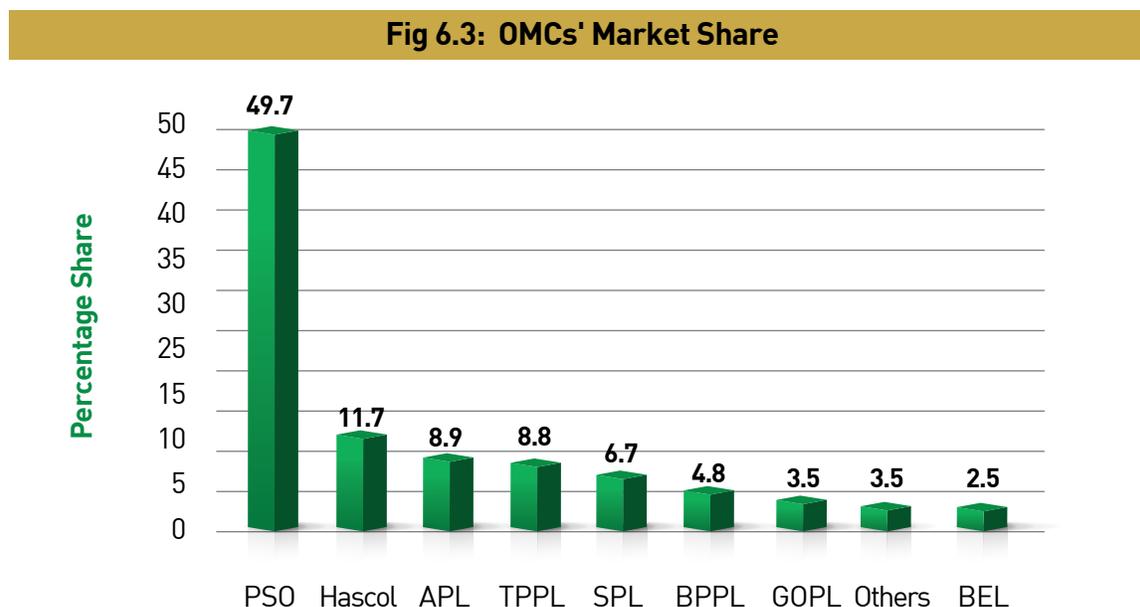


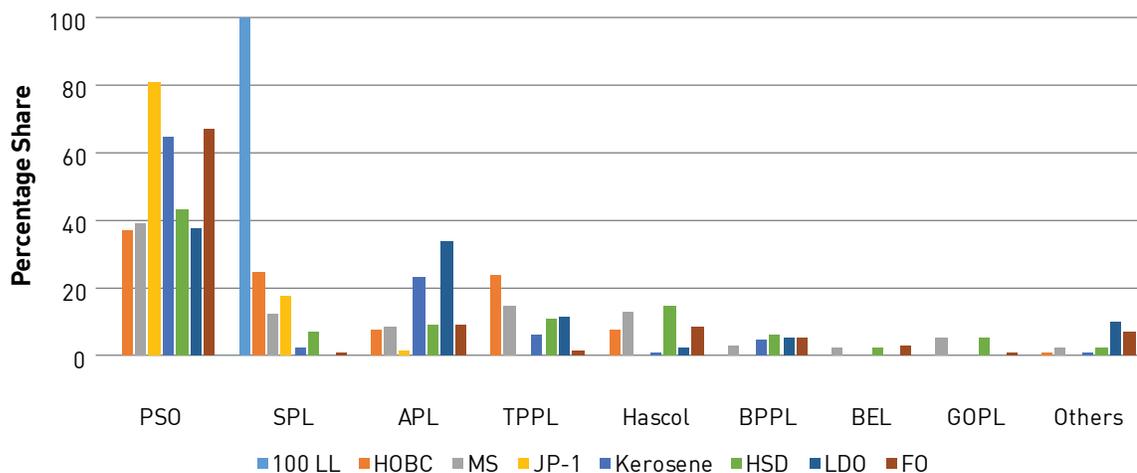
Table 6.2 and **Fig 6.4** give out the detail of the product-wise sales by OMCs for energy products, wherein PSO is at top for all product except 100 LL, followed by mixed leads in various POLs.

Table 6.2: Product-wise Sales by OMCs

(000 Tons)																	
Sr.No.	Product	PSO	SPL	APL	TPPL	Pearl Parco	PUMA	Hascol	Askar	BPPL	BEL	ZOOM	GOPL	OTO	Horizon	ZMOPL	Total
1.	HOBC (95/97 RON)	46.2	30.9	9.3	29.3	-	-	9.1	-	-	-	-	-	0.2	-	-	124.9
2.	MS	2,895.3	914.7	638.9	1,082.6	-	96.6	933.3	12.9	228.0	178.8	25.2	370.2	-	5.4	6.8	7,383.6
3.	JP-1	391.2	84.4	7.2	-	-	-	-	-	-	-	-	-	-	-	-	482.8
4.	Kerosene	73.8	2.2	26.4	6.8	-	0.0	0.1	-	4.7	-	-	-	-	-	-	114.0
5.	HSD	3,854.8	598.1	827.4	965.6	32.1	141.8	1,310.3	21.8	577.7	225.1	26.5	451.6	3.7	1.7	-	9,038.3
6.	LDO	7.8	-	7.1	2.3	2.1	-	0.5	-	1.1	-	-	-	-	-	-	21.0
7.	FO	4,922.5	1.5	664.9	74.7	369.1	0.3	616.7	-	360.8	203.2	-	31.7	115.3	-	-	7,360.7
Total		12,191.6	1,631.7	2,181.2	2,161.3	403.4	238.8	2,870.0	34.7	1,172.3	602.1	51.7	853.5	119.2	7.1	6.8	24,525.4

Source: OCAC

Fig 6.4: Share of Major OMCs in Product-wise Sales



6.2.1 OMCs' Market Share in Petroleum Products Sales

Fig 6.5 illustrates the share of OMCs in the sale of MS, wherein PSO leads with 39 percent followed by TPPL and Hascol with 15 and 13 percent respectively.

Fig 6.5: OMCs' Share in MS Sale

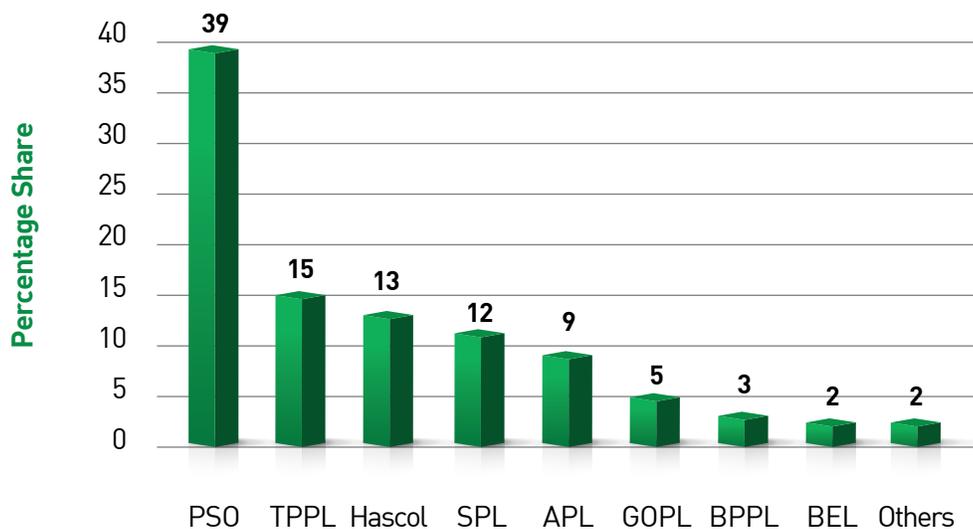
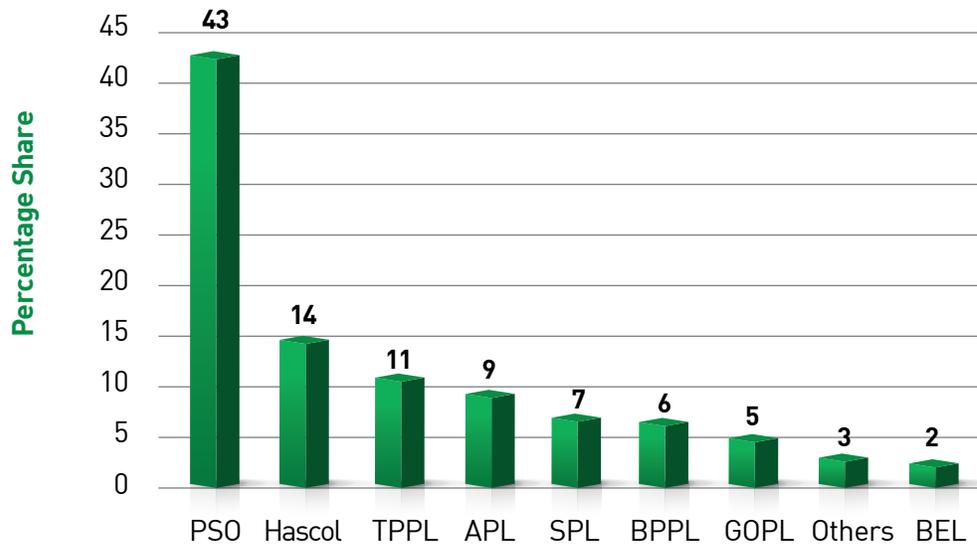


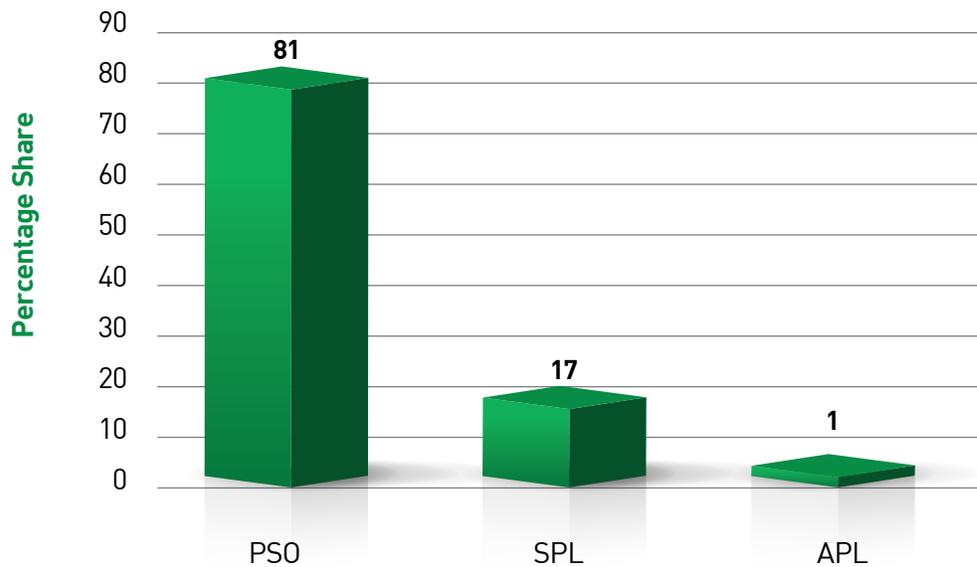
Fig 6.6 provides details of OMCs' share in HSD, wherein PSO (43%) and Hascol (14%) are first two major shareholders, followed by TPPL (11%) and APL (9 %).

Fig 6.6: OMCs' Share in HSD Sales



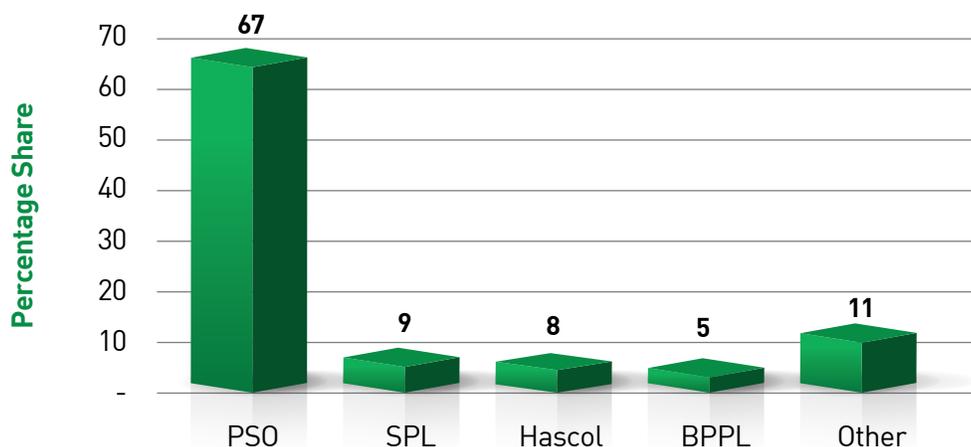
In Aviation fuel sales, PSO & Shell are two main contributors with 81 percent and 17 percent share of the total supply whereas APL has a minor share of 1% as depicted in **Fig 6.7**.

Fig 6.7: OMCs' Share in JP-1 Sales



In FO sales, PSO supplied the bulk with 67 percent followed by SPL & Hascol with 9 percent & 8 percent of the total FO supply respectively as shown in **Fig 6.8**.

Fig 6.8: OMCs' Share in FO Sales



6.3 Refineries' Production

During FY 2017-18, the total production (energy & non-energy) by refineries were 13.64 million tons compared to 12.07 million tons in FY 2016-17, showing a growth of 13 percent (**Table 6.3**). Only PARCO have shown a slight decline in the production as compared to last fiscal year's production. BPPL's production remained significantly higher (113.5% growth) due to operation of its 2nd oil refinery.

Table 6.3: Refineries' Production & Growth (FY 2017-18)

(000 Tons)						
Sr.No.	Refinery	Energy Products	Non-Energy Products	Total (FY 2017-18)	Total (FY 2016-17)	Growth (%)
1.	PARCO	4,264	184	4,448	4,527	-1.8
2.	NRL	1,914	394	2,308	2,271	1.6
3.	PRL	1,634	-	1,634	1,581	3.4
4.	ARL	2,044	108	2,152	2,084	3.3
5.	BPPL	2,580	-	2,580	1,209	113.5
6.	ENAR	311	-	311	279	11.4
7.	DHODAK	184	22	205	118	73.7
Total		12,930	708	13,638	12,068	13.0

Source: OCAC

As clear from the **Fig. 6.9**, PARCO is the major contributor in POL production with 33 percent share followed by BPPL and NRL with 19 percent and 17 percent shares respectively.

Fig 6.9: Production Share of Refineries during FY 2017-18

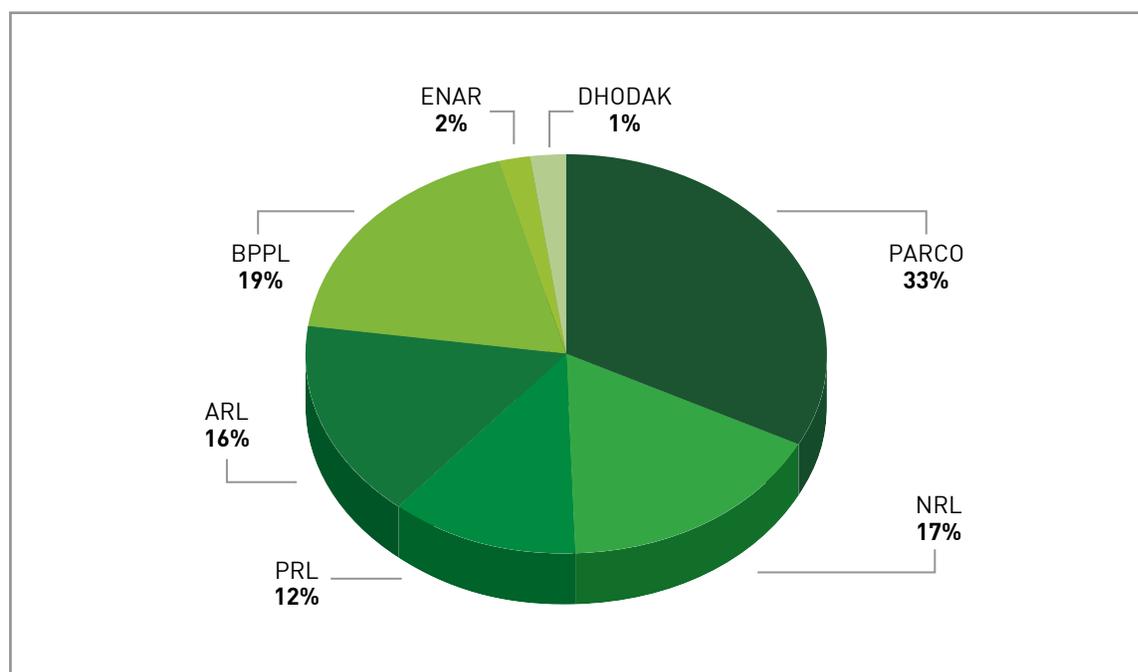


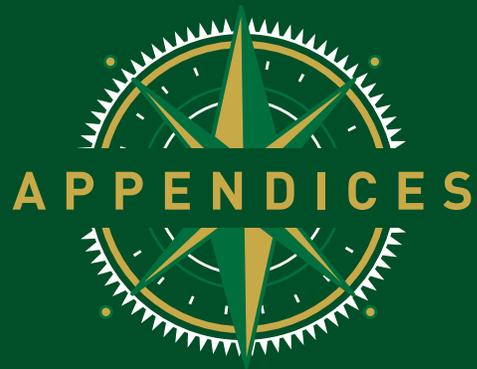
Table 6.4 gives the detail of the production pattern of the refineries in terms of energy products which reveals that PARCO was at top in production of petroleum products.

Table 6.4: Refineries' Production during FY 2017-18

									(000 Tons)
Sr.No.	Product	ARL	BPPL	NRL	PARCO	PRL	ENAR	DHODAK	Total
1.	MS	640	233	213	887	226	-	-	2,199
2.	Kerosene	49	6	3	36	4	14	-	112
3.	HSD	692	1,096	893	1,857	662	59	-	5,258
4.	Furnace Oil	371	952	431	897	524	88	-	3,263
5.	Aviation Fuels	170	8	138	435	105	18	-	873
6.	LDO	9	13	-	11	-	-	-	33
7.	Naphtha	111	230	230	-	94	132	-	797
8.	LPG	2	41	7	142	20	-	184	395
Total		2,044	2,580	1,914	4,264	1,634	311	184	12,930

Source: OCAC





Appendix - I

Licences issued by OGRA, as of June 30, 2018.

Sr.No.	Company	Type of Licence	Date of Issue	No. of Licences
1.	Sui Northern Gas Pipelines Limited (SNGPL)	1. Transmission, Distribution, and Sale of Natural Gas in the Punjab, Khyber Pakhtunkhwa, AJK, FATA and Some parts of Sindh 2. Gas Storage Facility at Lilla Town Punjab	September 3, 2003 April 30, 2008	02
2.	Sui Southern Gas Company Limited (SSGCL)	Transmission, Distribution, and Sale of Natural Gas in Sindh and Balochistan	September 3, 2003	01
3.	Mari Petroleum Company Limited (MPCL)	Sale of Natural Gas to <ul style="list-style-type: none"> • Fauji Fertilizer Company Limited (FFCL), • Engro Chemicals Pakistan Limited (ECPL) • Central Power Generation Company Limited (CPGCL) • Any other retail consumer with prior approval of the Authority 	August 11, 2004	01
4.	Pakistan Petroleum Limited (PPL)	Sale of Natural Gas to Central Power Generation Company Limited (CPGCL)	November 23, 2004	01
5.	Oil and Gas Development Company Limited	1. Transmission and Sale of Natural Gas to Uch Power Plant 2. Sale of Natural Gas to Fauji Kabirwala Power Company Limited 3. Sale of Natural Gas to Altern Energy	December 30, 200	03
6.	Fauji Fertilizer Company Limited	Transmission of Natural Gas	April 7, 2005	01
7.	Engro Chemicals Pakistan Limited	Transmission of Natural Gas	April 7, 2005	01
8.	Central Power Generation Company Limited	Transmission of Natural Gas	April 14, 2005	01

Sr.No.	Company	Type of Licence	Date of Issue	No. of Licences
9.	Fatima Fertilizer Company Limited	Transmission of Natural Gas	April 16, 2007	01
10.	Foundation Power Company Limited	Transmission of Natural Gas	August 27, 2007	01
11.	Star Power Generation Limited	Transmission of Natural Gas	January 30, 2008	01
12.	Engro Fertilizer Ltd.	Transmission of Natural Gas	January 13, 2014	01
13.	OGDCL	Sale of Natural Gas from Reti Meru Gas Field	June 26, 2014	01
14.	OGDCL	Sale and Transmission of Natural Gas from UCH.	June 26, 2014	01
15.	ETPL	Transmission of Natural Gas from LNG receiving Terminal at Port Qasim (Karachi) to SSGC's Transmission Line injection point.	July 02, 2014	01
16.	Universal Gas Distribution Company Pvt. Ltd. (UGDCL)	Sale of Natural Gas (RLNG) to OGRA's Licensed CNG Stations.	February 22, 2016	01
17.	Gaseous Distribution Company Pvt. Ltd. (GDCL)	Licence to undertake Sale of Natural Gas (RLNG) to OGRA's licensed CNG Stations, where by RLNG will be transported from T&D network of SSGCL and M/s GDCL will sell the RLNG to CNG Stations at their respective CMSs.	December 21, 2016	01
18.	Fauji Oil Terminal and Distribution Company Ltd. (FOTCO)	Licence to undertake Transmission of Natural Gas, which incorporates Construction and Operation of natural gas pipeline (30" x 13.3 Km long) alongwith ancillary / connected facilities for the purpose of transmission of natural gas from proposed Pakistan Gas Port Consortium Ltd. (PGPCL) Terminal to SSGC's tie in point located at Port Qasim, Karachi.	December 21, 2016	01

Sr.No.	Company	Type of Licence	Date of Issue	No. of Licences
19.	M/s Hitech Pipe and Engineering Industries (Pvt) Ltd.	Licence (w.r.t. OGDCL's Daru Central Facility in Sindh) for construction and operation of Compression Facility of Low Pressure Flare Gas as well as Storage, Transportation and Marketing of CNG and Sale of Natural Gas to Industrial Clients and OGRA's Licensed CNG Stations.	August 25, 2017	01
20.	M/s E-GAS (Pvt) Ltd.	Licence (w.r.t. OGDCL's Rajjan Field in Chakwal, Punjab) for construction and operation of Compression Facility of Low Pressure Flare Gas as well as Storage, Transportation and Marketing of CNG and Sale of Natural Gas to Industrial Clients and OGRA's Licensed CNG Stations.	October 04, 2017	01
21.	M/s Pakistan LNG Ltd.	Licence to undertake the regulated activity of Sale of Natural Gas / RLNG.	October 31, 2017	01

Appendix - II

Demand Supply Scenario with Indigenous Natural Gas

MMCFD

PROJECTED DEMAND												
SNGPL	FY-17	FY-18	FY-19	FY-20	FY-21	FY-22	FY-23	FY-24	FY-25	FY-26	FY-27	FY-28
Residential	527	527	585	663	741	891	897	975	1,053	1,131	1,209	1,287
Commercial	62	60	64	68	72	76	80	84	88	92	96	101
General Industries	172	210	248	286	323	361	399	437	475	512	550	588
Fertilizer	181	114	252	239	239	239	239	239	239	239	239	239
Cement	172	210	202	202	202	202	202	202	202	202	202	202
Captive Power	204	169	223	223	223	223	223	223	223	223	223	223
Power	424	650	1,542	1,542	1,542	1,542	1,542	1,542	1,542	1,542	1,542	1,542
Transport	114	126	382	382	382	382	382	382	382	382	382	382
Internal Consumption	11	18	9	8	7	6	5	4	3	3	2	2
Total	1,696	1855	3,507	3,613	3,732	3,850	3,696	4,088	4,207	4,327	4,446	4,565

PROJECTED DEMAND												
SSGCL	FY-17	FY-18	FY-19	FY-20	FY-21	FY-22	FY-23	FY-24	FY-25	FY-26	FY-27	FY-28
Power	203	167	637	637	637	637	637	637	637	637	637	637
Residential	270	272	302	319	338	357	378	400	423	448	474	501
Commercial	28	28	32	34	36	38	40	42	44	47	50	53
Transport	70	67	85	94	103	113	125	137	151	161	182	201
General Industry	183	193	84	90	97	105	113	122	131	141	152	164
Captive Power	189	211	219	234	249	264	279	294	309	324	339	354
Cement	1	1	1	1	1	1	1	1	1	1	1	1
Fertilizer	49	52	85	85	85	85	85	85	85	85	85	85
JJVL Shrinkage	9	6	15	15	15	15	15	15	15	15	15	15
Company Use /UFG	159	196	189	180	158	129	104	87	74	62	53	52

Winter Load	-	-	50	50	50	50	50	51	52	53	54	54
Total Constrained Demand	1,161	1,194	1,699	1,739	1,769	1,794	1,827	1,871	1,922	1,979	2,042	2,117

PROJECTED DEMAND

Independent System	FY-17	FY-18	FY-19	FY-20	FY-21	FY-22	FY-23	FY-24	FY-25	FY-26	FY-27	FY-28
Uch Power Plant	197	197	188	188	188	188	188	188	188	188	188	188
Fauji Kabirwala PCL	50	50	50	50	50	50	50	50	50	50	50	50
CPGC	328	363	363	363	363	363	363	363	363	363	363	363
Foundation Power Co. Ltd	60	60	60	60	60	60	60	60	60	60	60	60
Star Power Generation Ltd	0	0	0	0	0	0	0	0	0	0	0	0
Fauji Fertilizer	229	229	229	229	229	229	229	229	229	229	229	229
Fauji Fertilizer (Captive Power)	46	50	50	50	50	50	50	50	50	50	50	50
Fatima Fertilizer	71	73	74	74	74	84	84	84	84	84	84	84
Fatima Fertilizer (Captive Power)	14	12	12	12	12	12	12	12	12	12	12	12
Engro Fertilizer	185	185	185	185	185	185	185	185	185	185	185	185
Power	695	732	723	723	723	723	723	723	723	723	723	723
Fertilizer	485	487	488	488	488	488	488	488	488	488	488	488
Total	1,180	1,219	1,211	1,211	1,211	1,221						
UFG, Losses, Winter load for SNGPL etc taken @ 500 MMcfd	500	500	500	500	500	500	500	500	500	500	500	500
Total Country Demand	4,537	4,768	6,917	7,063	7,212	7,365	7,244	7,680	7,850	8,027	8,209	8,403

Sector wise Total Demand of the Country

Sector	FY-17	FY-18	FY-19	FY-20	FY-21	FY-22	FY-23	FY-24	FY-25	FY-26	FY-27	FY-28
Residential	797	779	887	982	1,079	1,176	1,275	1,375	1,476	1,579	1,683	1,788
Commercial	90	88	96	102	108	114	120	126	132	139	146	154
General Industries	355	403	332	376	420	466	512	559	606	653	702	752

Fertilizer	715	653	825	812	812	822	822	822	822	822	822	822
Cement	173	211	203	203	203	203	203	203	203	203	203	203
Captive Power	393	380	442	457	472	487	502	517	532	547	562	577
Power	1,322	1,549	2,902	2,902	2,902	2,902	2,902	2,902	2,902	2,902	2,902	2,902
Transport	184	193	467	476	485	495	507	519	533	548	564	583
UFG, Gas Supply for LNG Plant, internal combustion, shrinkage etc	670	714	748	738	715	685	659	642	629	618	609	608
Total Demand	4,698	4,971	6,902	7,048	7,197	7,350	7,502	7,665	7,835	8,012	8,194	8,389
Committed and Anticipated Supplies												
SNGPL	FY-17	FY-18	FY-19	FY-20	FY-21	FY-22	FY-23	FY-24	FY-25	FY-26	FY-27	FY-28
	1,364	1,259	1,397	1,271	1,132	1,002	894	775	654	521	447	386
Committed and Anticipated Supplies												
SSGCL	1,180	1,072	1,122	1,082	1,011	868	708	588	501	386	340	301
Committed and Anticipated Supplies												
Independent	990	990	990	990	990	990	990	990	990	990	990	990
Total Committed and Anticipated Supplies												
Total Country Supply	3,534	3,321	3,509	3,509	3,133	2,860	2,592	2,353	2,145	1,897	1,777	1,677
Committed & Anticipated Supply	3,534	3,321	3,509	3,509	3,133	2,860	2,592	2,353	2,145	1,897	1,777	1,677
Total Demand	4,537	4,768	6,917	7,063	7,212	7,365	7,244	7,680	7,850	8,027	8,209	8,403
Gap	1,003	1,447	3,408	3,720	4,079	4,505	4,652	5,327	5,705	6,130	6,432	6,726

Assumptions:

Total supplies for independent system are taken as of FY 2015-16

UFG, Losses, Winter load for SNGPL etc taken @ 500 MMcf

The above figures are estimated projections

Appendix - III

Demand Supply Scenario with Indigenous and Imported Natural Gas

MMCFD

Demand & Supply Scenario												
	FY-17 [Actual]	FY-18 [Actual]	FY-19	FY-20	FY-21	FY-22	FY-23	FY-24	FY-25	FY-26	FY-27	FY-28
Committed & Anticipated Supply (Indigenous)	3,534	3,321	3,509	3,343	3,133	2,860	2,592	2,353	2,145	1,897	1,777	1,677
LNG Supply	600	754	1200	1200	1800	1800	1800	1800	1800	1800	1800	1800
Iran-Pakistan Pipeline	0	0	0	450	750	750	750	750	750	750	750	750
TAPI	0	0	0	500	1325	1325	1325	1325	1325	1325	1325	1325
Total Supply (Indigenous & Imported)	4,134	4,075	4,709	5,493	6,408	6,735	6,467	6,228	6,020	5,772	5,652	8,403
Total Demand	4,537	4,768	6,917	7,063	7,212	7,365	7,244	7,680	7,850	8,027	8,209	6,726
Gap without IP, TAPI, LNG	1,003	1,447	3,408	3,720	4,079	4,505	4,652	5,327	5,705	6,130	6,432	6,726
Gap with IP, TAPI, LNG	403	693	2,208	1,570	804	603	777	1,452	1,830	2,255	2,257	2,851

SOURCE:

Data taken from Gas Companies (SSGCL / SNGPL) and Independent System Companies (Central Power Generation Company Limited, FFCL Plants, Uch Power, Fauji Kabirwala Power Company, Fatima Fertilizer Company Limited, Foundation Power Company)

Appendix - IV

Consumer Gas Tariff Schedule during FY 2017-18

Category		Sale Prices	
		w.e.f 01.07.2016	w.e.f 15.12.2016
		Rs. / MMBTU	
(i)	A. Domestic Consumers		
	a)	Standalone Meters	
	b)	Mosques, churches, temples, madrassas, other Religious Places and Hostels attached thereto;	
	(i)	Upto 100 M ³ per month	110.00
		All off-takes at flat rate of	110.00
	(ii)	Upto 300 M ³ per month	220.00
		All off-takes at flat rate of	220.00
	(iii)	Over 300 M ³ per month	600.00
		All off-takes at flat rate of	600.00
		Minimum Monthly Charges (Rs.)	148.50
	c)	Bulk Meters: Government and semi-Government offices and Hospitals, Clinics, Maternity Homes, Government Guest Houses, Armed Forces messes, Langars, Universities, Colleges, Schools and Private Educational Institutions, Orphanages and other Charitable Institutions along-with Hostels and Residential Colonies to whom gas is supplied through bulk meters including Captive power.	
		All offtakes at flat rate of	600.00
		Minimum Monthly Charges (Rs.)	810.00
			3,600.07
(ii)	B. Commercial Consumers		
		All establishments registered as commercial units with local authorities or dealing in consumer items for direct commercial sale like cafes, bakeries, milk shops, tea stalls, canteens, barber shops, laundries, hotels, malls, places of entertainment like cinemas, clubs, theaters and private offices, corporate firms etc.	
		All off-takes at flat rate of	700.00
		Minimum Monthly Charges (Rs.)	3,304.00
			4,200.07
(iii)	C. Special Commercial (Roti Tandoors)		
	(i)	Upto 100 M ³ per month	110.00
		All offtakes at flat rate of	110.00
	(ii)	Upto 300 M ³ per month	220.00
		All offtakes at flat rate of	220.00
	(iii)	Over 300 M ³ per month	700.00
		All offtakes at flat rate of	700.00
		Minimum Monthly Charges (Rs.)	3,304.00
			148.50
(iv)	D. Ice Factories		
		Sale Price	700.00
		Minimum Monthly Charges (Rs)	3,304.00
			4,200.07

(v)	E. Industrial Consumers			
	Sale Price	600.00	600.00	
	Minimum Monthly Charges (Rs.)	20,232.00	20,232.00	
(vi)	F. Captive Power			
	Sale Price	600.00	600.00	
	Minimum Monthly Charges (Rs.)	20,232.00	20,232.00	
(vii)	G. CNG Stations			
	Sale Price	700.00	700.00	
	Minimum Monthly Charges (Rs.)	23,604.00	23,604.00	
(viii)	H. Cement Factories			
	Sale Price	750.00	750.00	
	Minimum Monthly Charges (Rs.)	25,290.00	25,290.00	
(ix)	I. Fertilizer Factories			
(1)	Pak American Fertilizer Limited, Daudkhel.			
	(a)	Feed Stock	200.00	123.00
	(b)	Fuel	600.00	600.00
(2)	Pak Arab Fertilizer Limited, Multan.			
	(a)	Feed Stock	200.00	123.00
	(b)	Fuel	600.00	600.00
(3)	Dawood Hercules Chemicals Limited, Chichoki Malian, Sheikhpura District:			
	(a)	Feed Stock	200.00	123.00
	(b)	Fuel	600.00	600.00
(4)	Pak-China Fertilizer Limited / Hazara Phosphate Plant Limited, Haripur.			
	(a)	Feed Stock	200.00	123.00
	(b)	Fuel	600.00	600.00
(5)	ENGRO Fertilizer Company Limited			
	(a)	Feed Stock	70.61	\$0.70
	(b)	Fuel	600.00	600.00
(6)	Fauji Fertilizer Bin Qasim Ltd.			
	i)	Feed Stock upto 60 MMCFD	200.00	123.00
	ii)	Additional allocation (10 MMCFD) Provisional	70.61	-
	iii)	Fuel	600.00	600.00
(7)	Fauji Fertilizer Company Ltd. Mirpur Mathelo, District Ghotki (ex-PSLF)			
	i)	Feed Stock upto 60 MMCFD	200.00	123.00
	ii)	Additional allocation (10 MMCFD) Provisional	70.61	-
	iii)	Fuel	600.00	600.00
(8)	Hazara Phosphate Fertilizer Plant Ltd., Haripur			
	i)	Feed Stock Upto 60 MMCFD	200.00	123.00
	ii)	Fuel	600.00	600.00

(9)	Fatima Fertilizer Company Ltd.		
	i)	Feed Stock upto 60 MMCFD	70.61 \$0.70
	ii)	Fuel	600.00 600.00
(x)	J. Power Stations		
	(a)	WAPDA/KESC	
		Sale Price	600.00 400.00
		Minimum Monthly Charges (Rs.)	20,232.00 13,488.00
	(b)	WAPDA's Natural Gas Turbine Power Station, Nishatabad, Faisalabad	
	i)	Sale Price	600.00 400.00
	ii)	Fixed Monthly Charges (Rs.)	975,000 975,000
	(c)	Liberty Power Limited, Daharki.	
	i)	Sale Price	713.89 443.58
	ii)	Minimum Monthly Charges (Rs.)	24,071.94 14,957.52
(xi)	K. Independent Power Producers		
	i)	Sale Price	600.00 400.00
	ii)	Minimum Monthly Charges (Rs.)	20,232.00 13,488.00
(xii)	L. Foundation Power Company (Daharki) Ltd.		
	i)	Sale Price	600.00 400.00
	ii)	Minimum Monthly Charges (Rs.)	15,510.78 15,510.78





ABBREVIATIONS & ACRONYMS



Abbreviations & Acronyms

AJK	Azad Jammu and Kashmir
APL	Attock Petroleum Limited
ARL	Attock Refinery Limited
BBcfd	Billion Cubic Feet Per Day
BTU	British Thermal Unit
BEPL	Bakri Energy Private Limited
BESOS	Benazir Employees Stock Option Scheme
Bhp	Brake horsepower
BOC	Burmah Oil Company
BPD	Barrel Per Day
BPPL	Byco Petroleum Pakistan Limited
BTU/Scf	British Thermal Unit/Standard Cubic Feet
CAN	Calcium Ammonium Nitrate
CMS	Consumer Meter Station
CNG	Compressed Natural Gas
CPGCL	Central Power Generation Company Limited
CSR	Corporate Social Responsibility
D&P	Development and Production
DFIs	Development Finance Institutions
E&P	Exploration and Production
ECPL	Engro Chemicals Pakistan Limited
EETL	Engro Elengy Terminal Limited
EPC	Engineering, Procurement and Construction
ETPL	Engro Terminal Pakistan Limited
EWT	Extended Well Test
FATA	Federally Administered Tribal Areas
FFBL	Fauji Fertilizer Bin Qasim Limited
FFCL	Fauji Fertilizer Company Limited
FFCL	Fatima Fertilizer Company Limited
FKPCL	Fauji Kabirwala Power Company Limited
FO	Fuel Oil/Furnace Oil
FOTCO	Fauji Oil Terminal & Distribution Company
FPCDL	Foundation Power Company Dharki Limited
FY	Fiscal Year/Financial Year
GDCL	Gaseous Distribution Company Private Limited
GDS	Gas Development Surcharge
GoP	Government of Pakistan
GOPL	Gas & Oil Pakistan Limited
GTG	Gas Turbine and Generator
HOBC	High Octane Blending Component
HPL	Hascol Private Limited
HR	Human Resource
HRSG	Heat Recovery Steam Generator
HSD	High Speed Diesel
ILBP	Indus Left Bank Pipeline
IP	Iran Pakistan Gas Pipeline
IRBP	Indus Right Bank Pipeline

ISO	International Organization for Standardization
JJVL	Jamshoro Joint Venture Limited
JP	Jet Propellant
KERO	Kerosene Oil
KESC	Karachi Electric Supply Company
Km	Kilometer
LDO	Light Diesel Oil
LNG	Liquefied Natural Gas
LPG	Liquefied Petroleum Gas
MMCFD	Million Cubic Feet per Day
MPCL	Mari Petroleum Company Limited
MS	Motor Spirit
MT/M.Ton	Metric Ton
MW	Megawatt
NAP	Nitrogen Ammonium Phosphate
NBFIs	Non-Bank Financial Institutions
NRL	National Refinery Limited
OCAC	Oil Companies Advisory Council
OGDCL	Oil and Gas Development Company Limited
OGRA	Oil and Gas Regulatory Authority
OHSAS	Occupational Health Safety Assessment Series
OMC	Oil Marketing Company
PARCO	Pak-Arab Refinery Company Limited
PGPCL	Pakistan Gas Port Consortium Limited
PMP	Pakistan Maroc Phosphore
POL	Pakistan Oilfields Limited/Petroleum Oil Lubricant
PPIB	Private Power infrastructure Board
PPL	Pakistan Petroleum Limited
PRL	Pakistan Refinery Limited
PSO	Pakistan State Oil
RLNG	Re-gasified Liquid Natural Gas
Rs.	Rupees
SNGPL	Sui Northern Gas Pipelines Limited
SPM	Suspended Particulate Matter
SSGCL	Sui Southern Gas Company Limited
STG	Steam Turbine and Generator
T&D	Transmission and Distribution
TAPI	Turkmenistan - Afghanistan - Pakistan - India Gas Pipeline
TPML	Total-PARCO Marketing Limited
TPPL	Total-PARCO Pakistan Limited
UEPL	United Energy Pakistan Limited
UFG	Unaccounted for Gas
UGDCL	Universal Gaseous Distribution Company Limited
WAPDA	Water and Power Development Authority

OGRA Regional Offices

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