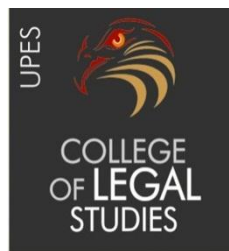


TRANSPORTATION AND DISTRIBUTION OF NATURAL GAS IN INDIA: LEGAL AND REGULATORY FRAMEWORK

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Submitted under the guidance of: Prof. Raj Kumar

*This dissertation is submitted in partial fulfillment of the degree of B.A., LL.B.
(Hons.)/B.B.A., LL.B. (Hons)*



College of Legal Studies

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Dehradun

2015

CERTIFICATE

This is to certify that the research work entitled “TRANSPORTATION AND DISTRIBUTION OF NATURAL GAS IN INDIA: LEGAL AND REGULATORY FRAMEWORK” is the work done by Monika Singh under my guidance and supervision for the partial fulfillment of the requirement of B.A., LL.B. (Hons.) degree at College of Legal Studies, University of Petroleum and Energy Studies, Dehradun.

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DECLARATION

I declare that the dissertation entitled “TRANSPORTATION AND DISTRIBUTION OF NATURAL GAS IN INDIA: LEGAL AND REGULATORY FRAMEWORK” is the outcome of my own work conducted under the supervision of Asst. Prof. Raj Kumar, at College of Legal Studies, University of Petroleum and Energy Studies, Dehradun.

I declare that the dissertation comprises only of my original work and due acknowledgement has been made in the text to all other material used.

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TABLE OF CONTENTS

- Abbreviations.....	7
- Table of Cases.....	10
- Acknowledgement.....	11
1. Introduction.....	12-13
2. Background Overview of Natural Gas	
2.1 What is Natural Gas?	14-18
2.1.1 Composition and Formation of Natural Gas	14-16
2.1.2 Importance of Natural Gas.....	17
2.1.3 Extraction of Natural Gas.....	18
2.1.4 Uses of Natural Gas.....	18
2.2 Advantages of Natural Gas.....	19
2.3 Disadvantages of Natural Gas.....	19
2.4 Influence on Environment of Natural Gas.....	19-20
3. Historical Background of Natural Gas	
3.1 History of Natural Gas.....	21-22
3.2 History of Natural Gas in India.....	22-26
3.3 Brief History of Regulatory Entities.....	27-30
4. Transportation Infrastructure	
4.1 Introduction.....	31-32
4.2 Existing Pipeline Infrastructure.....	32-33
4.3 Major Pipeline Networks.....	33-35
4.4 GAIL.....	35-37
4.5 RGTIL.....	38
4.6 Other Pipelines.....	39

4.7 National Gas Grid.....	39-40
5. City Gas Distribution	
5.1 Introduction.....	41-42
5.2 Historical Development of CGD Network.....	42-43
5.3 Current Status.....	43-47
5.4 Future of CGD.....	47
5.5 CGD Network Safety.....	48
6. Legal Framework and the Role of PNGRB as the regulator for Downstream Sector	
6.1 Transportation and Distribution.....	49-59
6.1.1 Transportation.....	49-54
6.1.2 Distribution.....	55-59
6.2 Regulations.....	59-60
6.3 Legal Framework.....	60-61
6.4 Regulatory framework under PNGRB, 2006.....	61-64
6.5 CGD Regulations.....	64-66
6.6 Natural Gas Pipeline Regulations.....	66-68
6.7 Policy.....	68-71
7. Issues and Concerns	
7.1 Policy Issues.....	72 -74
7.2 Regulatory Issues.....	75-77
8. Cases.....	78-81
9. Conclusion.....	82-85
- Bibliography.....	86-91

Tables:

Table No. 1 - Typical Composition of Natural Gas.....	14
Table No. 2 – Summary of Planned Additions to the Pipeline Infrastructure	32
Table No. 3 – Total Gas Availability – 12 th and 13 th five Year Plan.....	35
Table No. 4 – Authorized Pipelines to GAIL by MOPNG in 2007.....	36
Table No. 5- The existing pipeline network of GAIL.....	36
Table No. 6 - List of Dedicated Pipelines.....	37
Table No. 7 - Authorized under regulation 5.....	44
Table No. 8 - Acceptance of central govt. authorization: under regulation 17.....	45
Table No. 9 - Authorized under regulation 18(1).....	46

ABBREVIATIONS

- ✓ **CGD** – City Gas Distribution
- ✓ **GAIL** – Gas Authority of India
- ✓ **Ltd.** – Limited
- ✓ **Ors.** – Others
- ✓ **PNGRB** – Petroleum & Natural Gas Regulatory Board
- ✓ **PSC** – Production Sharing Contract
- ✓ **UOI** – Union of India
- ✓ **Vs** – Versus
- ✓ **OISD** – Oil Industry Safety Directorate
- ✓ **GAEL** – Gujarat Adani Energy Limited
- ✓ **SGL** – Sabarmati Gas Limited
- ✓ **GSPC** – Gujarat State Petroleum Corporation
- ✓ **MoU** – Memorandum of Understanding
- ✓ **MGL** – Mahanagar Gas Limited
- ✓ **GGCL** – Gujarat Gas Company Limited
- ✓ **GSPC** – Gujarat State Petroleum Corporation
- ✓ **BOD** – Board of Directors
- ✓ **MoF** – Ministry of Finance
- ✓ **NTPC** – National Thermal Power Corporation
- ✓ **HSD** – High Speed Diesel
- ✓ **SGL** – Sabarmati Gas Limited
- ✓ **EOIs** – Expressions of Interest
- ✓ **NGHDAI** – National Gas Highway Development Authority
- ✓ **CBM** – Coal Bed Methane
- ✓ **HC** – High Court
- ✓ **SC** – Supreme Court
- ✓ **Kg** – Kilogram
- ✓ **PL** – Pipeline
- ✓ **IGL** – Indraprastha Gas Limited
- ✓ **GA** – Geographical Area

- ✓ **SCC** – Supreme Court Cases
- ✓ **AIR** – All India Reporter
- ✓ **J & K** – Jammu & Kashmir
- ✓ **PNG** – Piped Natural Gas
- ✓ **LNG** – Liquefied Natural Gas
- ✓ **Mcm** – Thousand Cubic Metres
- ✓ **E & P** – Exploration & Production
- ✓ **DVPL** – Dahej - Vijaipur Pipeline
- ✓ **DUPL** – Dahej – Uran Pipeline
- ✓ **DPPL** – Dhabol – Panvel Pipeline
- ✓ **EWPL** – Dhabol – Panvel Pipeline
- ✓ **RIL** – Reliance Industries Limited
- ✓ **JVC** – Joint Venture Company
- ✓ **GREP** – Gas Rehabilitation and Expansion Project
- ✓ **MMBTU** – Million Metric British Thermal Unit
- ✓ **BGL** – Bhagyanagar Gas Limited
- ✓ **MGL** – Mahanagar Gas Limited
- ✓ **Mmscmd** – Million Metric Standard Cubic Metre Per Day
- ✓ **R & D** – Research & Development
- ✓ **HPCL** – Hindustan Petroleum Corporation Limited
- ✓ **BPCL** – Bharat Petroleum Corporation Limited
- ✓ **BGCL** – Bombay Gas Company Limited
- ✓ **Edn.** – Edition
- ✓ **RoU** – Right of User
- ✓ **FY** – Financial Year
- ✓ **GoI** – Government of India
- ✓ **PSU** – Public Sector Undertaking
- ✓ **FDI** – Foreign Direct Investment
- ✓ **NELP** – New Exploration and Licensing Policy
- ✓ **CNG** – Compressed Natural Gas
- ✓ **RGTEL** – Reliance Gas Transportation Infrastructure Limited

- ✓ **HBJ** – Hazira-Bijapur-Jagdishpur
- ✓ **UK** – United Kingdom
- ✓ **US** – United States
- ✓ **OGL** – Open General License
- ✓ **OIL** – Oil India Limited
- ✓ **IOC** – Indian Oil Corporation
- ✓ **BC** – Before Christ
- ✓ **KG** – Krishna Godavari
- ✓ **Tef** – Trillion Cubic Feet
- ✓ **CHP** – Combined Heat and Power
- ✓ **DGH** – Directorate General of Hydrocarbon
- ✓ **APM** – Administered Price Mechanism
- ✓ **Km** – Kilometre
- ✓ **ESIA** – Environmental and Social Impact Assessment
- ✓ **EMP** – Environmental Management Plans
- ✓ **RoW** – Right of Way
- ✓ **RoU** – Record of Undertaking
- ✓ **MoD** – Ministry of Defence
- ✓ **MoEF** – Ministry of Environment and Forest
- ✓ **RPO** – Renewable Purchase Obligations
- ✓ **CSR** – Corporate Social Responsibility
- ✓ **PSO** – Pipeline System Operator

TABLE OF CASES

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P.C. Thomas vs. Union of India, (1993) 3 SCC 499

Union of India and Ors. Vs. Hindustan Development Corporation and Others

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1. INTRODUCTION

Natural gas is a vital component in the world's supply of energy. "It is an efficient fuel, emits 60% less carbon dioxide than coal and 42% less than oil, and is available in abundance".¹ "It is one of the cleanest, safest, and most useful of all energy sources. Natural Gas has many industrial uses, including providing the base ingredients for such varied products as plastic, fertilizer, anti-freeze, fabrics, steel, glass marking, and petrochemicals industry."²

"Natural Gas is being viewed as an energy security option in reducing India's dependence on liquid fuel. The Indian natural gas industry has come a long way from being dominated by government owned companies in the 1950s to the participation of private players in the present scenario. However, the government continues to interfere in matters relating to pricing, marketing freedom, and production sharing contracts (PSCs)."³ But to incentivize future private investments, a more transparent regulatory framework is required and furthermore, there are economic, geopolitical, and infrastructural challenges in transition to a gas-fuelled economy in India.

The object of the research work undertaken is to discuss the overview of the Natural Gas Sector – Downstream Segment and moreover to analyze the efficacy of the current regulatory framework in Transportation and Distribution of Natural gas in India. There are various legislations dealing in the sector, and the foremost legislation is the PNGRB Act, 2006. The Regulatory Board Act accommodates the foundation of Petroleum and Natural Gas Regulatory ('Board') to manage the refining, handling, stockpiling, transportation, dispersion, advertising and offer of petroleum, petroleum items and common gas barring generation of raw petroleum and characteristic gas.

¹ Sudha Mahalingam, "Is natural gas the fuel of the 21st century?", <http://infochangeindia.org/agenda/energy-vs-environment/is-natural-gas-the-fuel-of-the-21st-century.html>, last accessed on 19th March, 2015.

² Uses in Industry, Natural Gas.org, <http://www.naturalgas.org>, last accessed on 18th March, 2015.

³ Policy, India Infrastructure Research, "Gas in India – 2010", Transportation Infrastructure, 5th Edn..

Furthermore, there are other legislations that affect the natural gas sector - The Petroleum Act, 1934, along with the Petroleum Rules, 1976 as amended by Petroleum and Natural gas Rules, 2002 ('PNG Rules, 2002') which relate to marketing, transmission and distribution of natural gas, "The Petroleum and Mining Pipeline (Acquisition of Right of Users in Land) Act, has provisions for acquisitions of right of way for laying transportation pipelines, etc"⁴. "In addition, other authorizations, clearances under the Forest (Conservation) Act, such as environmental, pollution control etc. may be required for setting up and operating pipelines."⁵ In the report, major issues involved in Natural Gas Downstream Sector in India, has also been discussed. Moreover, the project deals with the Regulatory Scenario of City Gas Distribution in India.

Therefore, the primary objective of the paper is to analyze the adequacy of the current legal framework to address various issues arising out of activities in Downstream Segment of Natural Gas in India, and if necessary, to suggest some changes in the current framework to make Indian legal system more effective so as to address the recent problems in a more efficient manner.

⁴ 1962 ("Pipeline Act")

⁵ 1980

2. BACKGROUND OVERVIEW OF NATURAL GAS

2.1 What is Natural Gas?

2.1.1 Composition and Formation of Natural Gas

“Natural gas is a gaseous mixture of hydrocarbon compounds, the primary one being methane.”⁷ Natural gas, in itself, is considered an uninteresting gas – it is shapeless, colorless, and odorless in its purest form. The Natural Gas when burned gives more of energy with less emission than other sources. Natural gas is cleaner burning and releases low level of harmful byproducts in the air, when compared to other fossil fuels. We require constantly increasing supply of energy for heating our homes, cooking and generate electricity. This need for energy has elevated natural gas to a level of importance in our society and lives. The Natural gas is a flammable mixture of the hydrocarbon gases. Natural gas is primarily formed of methane; but can also contain propane, butane, ethane, and pentane. The natural gas which we use at our home is almost pure methane. Methane is referred as CH₄ comprises of a molecule which is made up of one Carbon atom and four Hydrogen atoms. The composition of the natural gas can differ generally, but below is a

chart outlining the typical makeup of natural gas before it is refined.⁸

Typical Composition of Natural Gas⁶

Methane	CH ₄	70-90%
Ethane	C ₂ H ₆	0-20%
Propane	C ₃ H ₈	
Butane	C ₄ H ₁₀	
Carbon Dioxide	CO ₂	0-8%
Oxygen	O ₂	0-0.2%
Nitrogen	N ₂	0-5%
Hydrogen sulphide	H ₂ S	0-5%
Rare gases	A, He, Ne, Xe	trace

Mercaptan is an odorant, smell of rotten egg, which is associated with natural gas and added before delivery to the end user.

⁶ U.S. Energy Information Administration, http://www.eia.gov/dnav/ng/TblDefs/ng_pri_fut_tbldef2.asp, last accessed on 19th March, 2015.

⁷ Ibid.

⁸ <http://naturalgas.org/overview/background/>, last accessed on 19th March, 2015.

Formation of Natural Gas

Natural gas is a fossil fuel, it means that the remains of plants and microorganisms, animals, who lived millions of years ago. There are many different theories about the origins of the fossil fuels. “The most commonly accepted theory says that, fossil fuels are formed when organic matter (such as the remains of a plant or animal) is compressed under the earth, at very high pressure for a very long time. This is referred to as thermogenic methane. Similar to the formation of oil, thermogenic methane is formed from organic particles that are covered in mud and other sediment. Over time, more and more sediment and mud and other debris are piled on top of the organic matter. This sediment and debris puts a great deal of pressure on the organic matter, which compresses it.”⁹

The compression when is combined with the high temperatures, breaks the carbon bonds into the organic matter, which is found deep under the earth. As we get deeper into the earth, the temperature gets higher. More oil is produced at low temperatures comparative to natural gas. More natural gas is produced at higher temperatures as compared to oil. This is the reason why natural gas is frequently associated with the oil in deposits that is laid 1 to 2 miles deep below earth’s crust. “Deeper deposits, very far underground, usually contain primarily natural gas, and in many cases, pure methane.”¹⁰

Transformation of organic matter with the help of microorganisms can be helpful in formation of Natural Gas and it is a type of methane which is called as “biogenic methane”. “Methanogens, tiny methane-producing microorganisms, chemically break down organic matter to produce methane. These microorganisms are commonly found in areas near the surface of the earth that are void of oxygen. These microorganisms also live in the intestines of most animals, including humans. Formation of methane in this manner usually takes place close to the surface of the earth, and the methane produced is usually lost into the atmosphere. In certain circumstances, however, this methane can be trapped underground, recoverable as natural gas. An example of biogenic methane is landfill gas. Waste-containing landfills produce a relatively large amount of

⁹ Background, <http://naturalgas.org/overview/background/>, last accessed on 19th March, 2015.

¹⁰ Ibid.

natural gas from the decomposition of the waste materials that they contain. New technologies are allowing this gas to be harvested and used to add to the supply of natural gas.”¹¹

“A third way in which methane (and natural gas) may be formed is through abiogenic processes. Extremely deep under the earth’s crust, there exist hydrogen-rich gases and carbon molecules. As these gases gradually rise towards the surface of the earth, they may interact with minerals that also exist underground, in the absence of oxygen. This interaction may result in a reaction, forming elements and compounds that are found in the atmosphere (including nitrogen, oxygen, carbon dioxide, argon, and water). If these gases are under very high pressure as they move toward the surface of the earth, they are likely to form methane deposits, similar to thermogenic methane.”¹²

Natural Gas Under The Earth

“There are numerous methods through which methane can be formed, and thus resulting in the formation of natural gas. It is commonly found below the surface of earth. Because natural gas has low density when formed rises towards the earth surface through free shale type rock & other material. Some of this methane will simply rise to the surface and dissipate into the air. However, a great deal of this methane will rise up into geological formations that ‘trap’ the gas under the ground. These formations are made up of layers of porous, sedimentary rock (kind of like a sponge that soaks up and contains the gas), with a denser, impermeable layer of rock on top. This impermeable rock traps the natural gas under the ground. If these formations are large enough, they can trap a great deal of natural gas underground, in what is known as a reservoir. There are a number of different types of these formations, but the most common is created when the impermeable sedimentary rock forms a ‘dome’ shape, like an umbrella that catches all of the natural gas that is floating to the surface.”¹³

¹¹¹¹ Background, <http://naturalgas.org/overview/background/>, last accessed on 19th March, 2015.

¹² Ibid

¹³ Ibid.

2.1.2 Importance of Natural Gas

“The demand for primary energy is ever growing. As the world struggles to find new sources of energy it is clear that the Fossil fuels will continue to play a dominant role in the foreseeable future. Within the hydrocarbon family the fastest growing hydrocarbon is Natural gas. Most estimates put the average rate of growth of 1.5-2.0%.”¹⁴

Natural gas is considered as a connecting natural bridge, by the environmentalists, amid the present fossil fuels and the future renewable fuels. When some amount of natural is burned, the amount of heat produced releases about half of the carbon dioxide as compared to burning of coal, which is the main cause of the global warming. As the natural gas burns cleaner and releases lower greenhouse gases as compared to Oil and Coal, thus, it is becoming a major source for electric generation and is ever increasing. This ability raises the opportunity that it can emerge as a transition fuel which could help in the battle against the global warming.

“In nature Natural gas is much more in abundance than Oil. Most oil economists put the Natural gas reserves at least 50% higher than Oil reserves at the current consumption rates. At present Natural gas reserves are estimated to last in excess of 60 yrs whereas Oil reserves are estimated at 40 odd years. In the US, over the last few years approximately 1800Tcf of Natural gas reserves have been discovered, bringing the total reserves to approximately 3000Tcf. Even for the US, this is the world’s biggest gas market, this represents almost 100 years of supply. The discovery of unconventional gas and, in particular, Shale Gas is perceived by many to be a game changer.”¹⁵

Natural Gas, in the past, used to be a local based fuel, frequently flaring off in oil fields as it was of little use, but now with the establishment of pipelines and LNG, it is now becoming a major international commodity.

¹⁴ http://www.haziralngandport.com/natural_gas.htm, last accessed on 19th March, 2015.

¹⁵ Ibid.

2.1.3 Extraction of Natural Gas

When a potential natural gas deposit has been identified by a team of experts of exploration geophysicist and geologists, it is up to them to dig where the natural gas is said to exist. “Although the process of digging deep into the Earth’s crust to find deposits of natural gas that may or may not actually exist seems daunting, the industry has developed a number of innovations and techniques that both decrease the cost and increase the efficiency of drilling for natural gas. Advancements in technology have contributed greatly to the increased efficiency and success rate for drilling natural gas wells.”¹⁶ The drilling requires are of two types Onshore and Offshore, which require different advanced techniques and equipment’s depending on the environmental conditions of the drilling. When the discovery is made then the well may be completed for production of natural gas.

2.1.4 Uses of Natural Gas

For the hundreds of years, the natural gas is being acknowledged as a very valuable substance. “The Chinese discovered a very long time ago that the energy in natural gas could be harnessed, and used to heat water. In the early days of the natural gas industry, the gas was mainly used to light streetlamps, and the occasional house. However, with much improved distribution channels and technological advancements, natural gas is being used in ways never thought possible.”¹⁷

There are many different applications for this fossil fuel and new uses are still to be discovered. Natural gas has many uses, commercially, in industry, in home’s and even in the transportation sector, etc. Natural gas is being used in the all sectors, in different amounts. “Natural gas is a source of environmentally friendly and efficient energy and is the cleanest-burning conventional fuel, with lower levels of greenhouse gas emissions than heavier hydrocarbon fuels. The

¹⁶ <http://naturalgas.org/naturalgas/extraction/>, last accessed on 28th April, 2015.

¹⁷ <http://naturalgas.org/overview/uses/>, last accessed on 19th March, 2015.

International Energy Agency predicts that the demand for natural gas will grow by approximately 44 percent through 2035.”¹⁸

2.2 Advantages of Natural Gas

- Natural Gas has many advantages over usage of Coal.
- Natural Gas is much cleaner and less damaging to the environment.
- It can be a renewable resource in some sense.
- It is created from the degradable matters at landfills.
- It can be safely and efficiently stored.
- It is in thermo genic sense, a fossil fuel like petroleum, but after burning produces low emission and thus is more environmental friendly.
- One of the most important and notable fact is that most of the natural gas reserves are underutilized.

2.3 Disadvantages of Natural Gas

- Natural Gas produces greenhouse gas emissions, like any other fossil fuels.
- Though the production of Natural Gas from landfills is in renewable form, but for large scale production non – renewable forms of gas is to be relied on.
- Natural Gas can be dangerous being highly volatile gas, if handled carelessly.
- Natural Gas leak detection is very difficult as it is an odourless, tasteless and colourless gas.

2.4 Influences on Environment of Natural Gas

“Natural gas is less damaging to our climate than coal if we see in the long term and thus becomes an important fuel source as we work towards a cleaner energy future. However, if

¹⁸ “Natural Gas – Importance and Uses”, Published on 1st July, 2013, <http://www.vanguardngr.com/2013/07/natural-gas-importance-and-uses-2/#sthash.MfcyV7ue.dpuf>, last accessed on 19th March, 2015.

produced irresponsibly, it creates serious environmental and health risks, and wastes a valuable energy resource. To reduce these impacts, we're working to make sure natural gas is produced as safely as possible.”¹⁹

“Natural gas, when burned, emits lower quantities of greenhouse gases and criteria pollutants per unit of energy produced than the other fossil fuels. This occurs in part because natural gas is more easily fully combusted, and in part because natural gas contains fewer impurities than any other fossil fuel. The amount of carbon dioxide produced for an equivalent amount of heat production varies substantially among the fossil fuels, with natural gas producing the least. The major constituent of natural gas, methane, also directly contributes to the greenhouse effect through venting or leaking of natural gas into the atmosphere. This is because methane is 21 times as effective in trapping heat as is carbon dioxide. A major transportation-related environmental advantage of natural gas is that it is not a source of toxic spills.”²⁰

“Natural gas is seen by many as an important fuel in initiatives to address environmental concerns. Although natural gas is the most benign of the fossil fuels in terms of air pollution, it is less so than non-fossil-based energy sources such as renewables or nuclear power. However, because of its lower costs, greater resources, and existing infrastructure, natural gas is projected to increase its share of energy consumption relative to all other fuels, fossil and non-fossil, under current laws and regulations.”²¹

¹⁹ <http://www.edf.org/climate/natural-gas>, last accessed on 19th March, 2015.

²⁰ Energy Information Administration, “Natural Gas 1998: Issues and Trends”, Page No. 49, http://www.eia.gov/pub/oil_gas/natural_gas/analysis_publications/natural_gas_1998_issues_trends/pdf/chapter2.pdf, last accessed on 29th March, 2015.

²¹ Ibid.

3. HISTORICAL BACKGROUND OF NATURAL GAS

3.1 History of Natural Gas

“Natural gas is nothing new. In fact, most of the natural gas that is brought out from under the ground is millions and millions of years old. However, it was not until recently that methods for obtaining this gas, bringing it to the surface, and putting it to use were developed.”²²

Natural gas was a mystery to the mankind, before we understood that what natural gas is. Every so often, lightning strikes used to ignite the natural gas that escaped from the earth. Resulting into fire from the earth surface, burning it as oozed out from the ground. All these fires mystified the earliest civilizations, and became the root of superstition and myth. “One of the most famous of these flames was found in ancient Greece, on Mount Parnassus around 1000 B.C. A goat herdsman came across what looked like a ‘burning spring’, a flame rising from a fissure in the rock. The Greeks, believing it to be of divine origin, built a temple on the flame. This temple housed a priestess who was known as the Oracle of Delphi, giving out prophecies she claimed were inspired by the flame.”²³

These kinds of mechanisms became noticeable in the religions of Greece, India, and Persia. They were unable to clarify from where these fires came and were often considered as supernatural or divine. “It wasn’t until about 500 B.C. that the Chinese discovered the potential to use these fires to their advantage. Finding places where gas was seeping to the surface, the Chinese formed crude pipelines out of bamboo shoots to transport the gas, where it was used to boil sea water, separating the salt and making it palatable.”²⁴

“The first commercialized natural gas occurred in Britain. Around 1785, the British used natural gas produced from coal to light houses and streets. In 1816, Baltimore, Maryland used this type

²² “History”, <http://naturalgas.org/overview/history/>, 20th September, 2013, last accessed on 29th March, 2015.

²³ Ibid.

²⁴ Ibid.

of manufactured natural gas to become the first city in the United States to light its streets with gas.”²⁵

During the 19th century, the natural gas was almost used solely as a source of light. Non availability of pipeline infrastructure made it difficult to transport the gas from one place to another at a long distance or to the homes to be used as for heating or cooking. “Most of the natural gas produced in this era was manufactured from coal, rather than coming from a well. Near the end of the 19th century, with the advent of electricity, natural gas lights were converted to electric lights. This led producers of natural gas to look for new uses for their product.”²⁶

3.2 History of Natural Gas in India

“Natural gas use in India really started to grow in the late 1970s after the first major gas finds in the western offshore and the development of the first transmission pipeline in the northern region.”²⁷ “Before 2009, gas demand potential was estimated to be 20 or 30 bcm higher than actual use as consumption had been constrained by the lack of supply for over a decade”²⁸.

To address the supply shortage, the Indian government has passed certain changes amid the end of the 1990s in order to empower the local generation and development of LNG terminals. The New Exploration Licensing Policy (NELP), cleared path for Exploration & Production for private and remote speculators. It has been reasonably effective since the mid 2000s; the generation has expanded in light of the fact that the Krishna Godavari KG-D6 field has begun in April 2009. Subsequently, year 2009 is checked as a defining moment for Indian gas market with the accessibility of new supplies and the Indian gas utilization has expanded upto 59 bcm in Financial Year 2009-10, from 43 bcm in Financial Year 2008-09. Still difficulties persevere,

²⁵ American Public Gas Association, “A Brief History of Natural Gas”, <http://www.apga.org/i4a/pages/index.cfm?pageid=3329#sthash.kQhLg41j.dpuf>, last accessed on 29th March, 2015

²⁶ Ibid.

²⁷ Anne – Sophie Corbeau, International Energy Agency, “Natural gas in India, 2010”, Page No. 5, https://www.iea.org/publications/freepublications/publication/natural_gas_india_2010.pdf, last accessed on 29th March, 2015.

²⁸ MoPNG, 2000

which is outlined by the disappointment of NELP to pulling in the boss universal oil organizations and the fight at the distribution and cost of KG-D6 gas. Government is presently considering reporting an Open Acreage Licensing Policy (OALP).

The Indian Natural gas market has tremendous potential for growth but is very price sensitive market since paying capacity of the customers differs with that of the sectors. The main consumers are the fertilizer and power sector.

The legislature is financing the Fertilizer makers and accordingly has less capacity to enthrall higher costs. In the force era division, gas needs to go up against coal for base-load era. Any change in the force area or in coal markets will have an immense effect on whether gas is utilized as a base-load alternative or for crest purposes, and hence on future gas request in the force segment. City gas and mechanical clients show more noteworthy value adaptability, yet they are as yet developing markets.

Verifiably, gas had been dispensed in need to compost and force plants, while city gas, packed regular gas (CNG) and mechanical had the rest of. Moreover, manure makers and force generators were distributed gas at low Administrative Price Mechanism (APM) costs controlled by the legislature. In any case the late estimating changes that occurred mid- 2010 mean the end of low APM costs, and that new gas supplies are liable to be more costly.

The Indian gas part is vanquished by state-possessed organizations. “Oil and Natural Gas Corporation (ONGC) and Oil India Ltd (OIL) have dominant upstream positions, while until 2006; Gas Authority of India Ltd (GAIL)”²⁹ and prior alone had been in charge of the pipeline gas transport. The state has additionally an imperative part in the administrative system and gas strategy, specifically the allotment and valuing of gas. Late changes have gotten more private speculators the upstream and downstream divisions, yet a more straightforward administrative structure will be discriminating to incentivize future private speculations.

The Indian gas business sector is in this way at a junction in 2010. Regardless of the emotional increment of residential generation, a year ago has seen an intense fight over the portion and the evaluating of KG-D6 gas, which could have broad results for some partners. In place for the

²⁹ Founded in 1984, it is a state-owned Natural gas Processing and Distribution Company.

Indian gas business to achieve its potential, there are still numerous obstacles to be understood on valuing, supply, base, regulation and arrangement. As we are mindful of the way that Natural Gas is extricated alongside the oil i.e. it is delivered in pressurized stores found somewhere down in the world's hull, ordinarily found just above oil stores. Consequently the historical backdrop of Natural Gas in India goes back to the historical backdrop of Oil in India.

Pre – Independence Era:

Investigation and generation (E&P) in India started in the nineteenth century. In 1866, the first well was bored and the first business revelation was made in 1889 in Digboi. E&P exercises were from that point fundamentally restricted to the Assam Oil Company and Attock Oil.

1947-1960

“During pre-independence, the Assam Oil Company in the North-Eastern and Attock Oil Company in North-Western part of undivided India were the only oil companies producing oil in the country. The major part of Indian sedimentary basins was deemed to be unfit for development of oil and gas resources. After independence, the Government realized the importance of oil and gas for rapid industrial development and its strategic role in defense. Consequently, while framing the Industrial Policy Statement of 1948, the development of the hydrocarbon industry in the country was considered to be of utmost necessity.”³⁰

“Until 1955, private oil companies mainly carried out exploration of hydrocarbon resources of India. Assam Oil Company was producing oil at Digboi, Assam”³¹ and “the Oil India Ltd.”³² “was engaged in developing two fields Naharkatiya and Moran in Assam. In West Bengal, the Indo-Stanvac Petroleum project was engaged in exploration work. The vast sedimentary tract in other parts of India and adjoining offshore remained largely unexplored.”³³

³⁰ ONGC, “History” <http://www.ongcindia.com/wps/wcm/connect/ongcindia/Home/Company/History/>, last accessed on 29th March, 2015.

³¹ Discovered in 1889

³² A 50% joint venture between Government of India and Burmah Oil Company

³³ a joint venture between Government of India and Standard Vacuum Oil Company of USA

In 1955, Government of India decided to develop the oil and natural gas resources in the various regions of the country as part of Public Sector development. With this objective, an Oil and Natural Gas Directorate was set up in 1955 under the then Ministry of Natural Resources and Scientific Research. The department was constituted with a nucleus of geoscientists from the Geological survey of India.

“A delegation under the leadership of Mr. K D Malviya, the then Minister of Natural Resources, visited several countries to study the oil industry and to facilitate the training of Indian professionals for exploring potential oil and gas reserves. Foreign experts from USA, West Germany, Romania and erstwhile USSR visited India and helped the government with their expertise. Finally, the visiting Soviet experts drew up a detailed plan for geological and geophysical surveys and drilling operations to be carried out in the 2nd Five Year Plan”³⁴.

In April 1956, the Government of India embraced the Industrial Policy Resolution, which set mineral oil industry amongst the Schedule "A" commercial enterprises, the future advancement of which was to be the sole and selective obligation of the state. Before long, after the development of the Oil and Natural Gas Directorate, it got to be evident that it would not be workable for the Directorate with restricted monetary and managerial forces to capacity proficiently. So in August, 1956, the Directorate was raised to the status of a commission with improved forces, despite the fact that it kept on being under the legislature. In October 1959, the Commission was changed over into a statutory body by a demonstration of Parliament, which upgraded forces of the commission further. The primary capacities of the Oil and Natural Gas Commission subject to the procurements of the Act, were "to plan, advance, compose and execute programs for improvement of Petroleum Resources and the generation and offer of petroleum and petroleum items created by it, and to perform such different capacities as the Central Government might, now and again, appoint to it". The demonstration further plot the exercises and ventures to be taken by ONGC in satisfying its command.

1961 – 1990

“Since its inception, ONGC has been instrumental in transforming the country's limited upstream sector into a large viable playing field, with its activities spread throughout India and

³⁴ 1956-57 to 1960-61, <http://ongcindia.ongc.co.in/wps/wcm/connect/ongcindia/Home/Ticker/>

significantly in overseas territories. In the inland areas, ONGC not only found new resources in Assam but also established new oil province in Cambay basin (Gujarat), while adding new petroliferous areas in the Assam-Arakan Fold Belt and East coast basins (both inland and offshore).”³⁵

ONGC went offshore in early 70's and discovered a giant oil field in the form of Bombay High, now known as Mumbai High. This discovery, along with subsequent discoveries of huge oil and gas fields in Western offshore changed the oil scenario of the country. Subsequently, over 5 billion tonnes of hydrocarbons, which were present in the country, were discovered. The most important contribution of ONGC, however, is its self-reliance and development of core competence in E&P activities at a globally competitive level.

After 1990

“In 1991, India entered into a liberalization process for the economy, and began to deregulate the gas market and disengage itself from Public Service Undertakings (PSU). The Directorate General of Hydrocarbons (DGH) was created in 1993 to oversee the upstream sector. In 1994, ONGC was reorganized as a public company and GoI divested 2% of its share through competitive bidding. In 1999, 10% was sold to India Oil Corporation (IOC) and 2.5% to GAIL. In 1997, GoI started to open the upstream sector to private and foreign investments through the NELP by allowing them 100% project ownership. Between 1997 and 2009, eight licensing rounds took place. Meanwhile, GAIL started to build a transmission network with the first major trans-regional pipeline, the Hazira-Vijaipur-Jagdishpur (HVJ) completed in 1991, and gas distribution in major cities progressively took place over the following decade. A few private players and foreign companies have entered the Indian gas market in different parts of the gas value chain (upstream, transmission, LNG terminals, and distribution). RIL, active in upstream, transmission and distribution, is the most notorious example.”³⁶

³⁵ Ibid.

³⁶ Supra 22, page No. 8, (Anne – Sophie Corbeau, International Energy Agency, “Natural gas in India, 2010”, Page No. 5, https://www.iea.org/publications/freepublications/publication/natural_gas_india_2010.pdf, last accessed on 29th March, 2015).

3.2.1 Brief History of Regulatory Entities

“Government of India plays a key role in different energy sectors through dedicated ministries. A total of five ministries or departments oversee the energy sector:

1. the Ministry of Power,
2. the Ministry of Coal,
3. the Ministry of Petroleum and Natural Gas,
4. the Ministry of New and Renewable Energy and
5. the Department of Atomic Energy.”³⁷

Two regulators now exist for the upstream and downstream oil and gas sectors. The main players for the gas industry are therefore the following:

- A. **The Ministry of Petroleum and Natural Gas (MoPNG)** – It is the Apex approach – making body for the Petroleum Industry. Controls the investigation and creation of oil and characteristic gas; their refining, conveyance and advertising; and the import, fare and preservation of petroleum, items and melted common gas. It gets its power under Article 246 of the Constitution of India, which accommodates 'regulation and improvement of oilfields and mineral oil assets, petroleum and petroleum items, and different fluids.

“It has been regulating the allocation and pricing of gas produced by ONGC and OIL through administrative orders while the gas from JVs and NELP is governed by Production Sharing Contracts (PSC). A total of 14 Public Service Undertakings (PSU) such as GAIL, and ONGC, depend on the ministry as well as 8 entities such as the Petroleum Planning and Analysis Cell (PPAC) and the Directorate General for Hydrocarbons.”³⁸

“Important areas of work allocated to the Ministry of petroleum & Natural Gas -

1. Exploration and exploitation of petroleum resources, including natural gas.

³⁷ Supra 22, Page No. 9.

³⁸ Ibid.

2. Production, supply distribution, marketing and pricing of petroleum including natural gas and petroleum products.
3. Oil refineries, including lube plants.
4. Additives for petroleum and petroleum products.
5. Lube blending and greases.
6. Planning, development and control of, and assistance to all industries dealt with by the Ministry.
7. All attached or subordinate offices or other organizations concerned with any of the subject specified in this list.
8. Planning, development and regulation of oilfield services.
9. Public sector projects failing under the subjects included in this list, Engineers India limited and IBP Company. together with its subsidiaries, except such projects as are specifically allotted to any other Ministry/Dept.,
10. Administration of :
 - i. Petroleum Act, 1934 (30-1934) and the rules made thereunder.
 - ii. The Oilfields (Regulation and Development) Act 1948 (53 of 1948).
 - iii. The Petroleum pipelines (Acquisition of Right of User in land) Act, 1962 (50 of 1962).
 - iv. Kerosene (Restriction on use and fixation of price) Order, 1993.
 - v. Kerosene (Fixation of Ceiling prices) Order, 1970.
 - vi. Paraffin Wax (supply, Distribution and Price Fixation) Order, 1972.
 - vii. Light Diesel Oil (Fixation of Ceiling Price) Order, 1973,
 - viii. The ESSO (Acquisition of Undertaking in India) Act, 1974 (4 of 1974)
 - ix. The Oil Industry (Development) Act, 1974 (47 of 1974) and Rules 1975.
 - x. Furnace Oil (Fixation of Ceiling Price and Distribution) Order, 1974.
 - xi. The Burmah-Shell (Acquisition of Undertaking in India) Act, 1976 (2 of 1976).
 - xii. The Caltex Acquisition of shares of Caltex Oil Refining (India) Limited and of the Undertakings in India Caltex (India) Limited Act, 1977 (17 of 1977).
 - xiii. Domestic Gas Pvt, Limited and parcel Investment private Limited takeover of Management Act, 1979.

- xiv. Kosan Gas Acquisition Act. 1979.
- xv. Lubricating Oils & Greases (Processing, Supply and Distribution) Regulation Order 1987.
- xvi. Liquefied Petroleum Gas (Regulation of supply and Distribution) Order, 1993.
- xvii. Motor Spirit and High Speed Diesel (Prevention of Malpractices in Supply and Distribution) Order, 1990.”³⁹

B. The Directorate General for Hydrocarbons (DGH) - The Directorate General of Hydrocarbons (DGH) was secured in 1993 under the managerial control of Ministry of Petroleum & Natural Gas through Government of India Resolution. Destinations of DGH are to advance sound administration of the oil and characteristic gas assets having an adjusted respect for environment, security, innovative and financial parts of the petroleum action.

“DGH has been entrusted with several responsibilities like implementation of New Exploration Licensing Policy (NELP), matters concerning the Production Sharing Contracts for discovered fields and exploration blocks, promotion of investment in E&P Sector and monitoring of E&P activities including review of reservoir performance of producing fields. In addition, DGH is also engaged in opening up of new unexplored areas for future exploration and development of non-conventional hydrocarbon energy sources like Coal Bed Methane (CBM) as also futuristic hydrocarbon energy resources like Gas Hydrates and Oil Shale’s.”⁴⁰

C. The Petroleum and Natural Gas Regulatory Board (PNGRB) – “was created in 2006 to oversee the downstream part of the market. The members of the Board are nominated by the government. The Board is independent from the Ministry, but Government of India can occasionally give the Board directions in the interest of sovereignty and to maintain or increase supplies. Its mission not only involves protecting the interests of consumers, but also registering and authorizing companies active in LNG, storage, city

³⁹ Ministry of Petroleum & Natural Gas, Government of India, <http://petroleum.nic.in/>

⁴⁰ Directorate General of Hydrocarbons, Under Ministry of Petroleum & Natural Gas, Government of India, <http://www.dghindia.org/>

distribution and transport. It also regulates transportation access and rates, and access to distribution or city networks. The notification of Section 16 of the PNGRB Act by the government, which was issued on 15 July, empowered the downstream oil regulator to issue authorizations for CGD licenses.”⁴¹ “Powers regarding complaints and resolutions of disputes by the Board -

A. The Board shall have jurisdiction to-

- a. Adjudicate upon and decide any dispute or matter arising amongst entities or between an entity and any other person on issues relating to refining, processing, storage, transportation, distribution, marketing and sale of petroleum, petroleum products and natural gas according to the provisions of Chapter V, unless the parties have agreed for arbitration;
- b. Receive any complaint from any person and conduct any inquiry and investigation connected with the activities relating to petroleum, petroleum products and natural gas on contravention of-
 - i. Retail service obligations;
 - ii. Marketing service obligations;
 - iii. Display of retail price at retail outlets;
 - iv. Terms and conditions subject to which a pipeline has been declared as common carrier or contract carrier or access for other entities was allowed to a city or local natural gas distribution network, or authorization has been granted to an entity for laying, building, expanding or operating a pipeline as common carrier or contract carrier or authorization has been granted to an entity for laying, building, expanding or operating a city or local natural gas distribution network;
 - v. Any other provision of this Act or the rules or the regulations or orders made there under.

B. While deciding a complaint under sub-section (1), the Board may pass such orders and issue such directions as it deems fit or refer the matter for investigation according to the provisions of Chapter V.”

⁴¹ Supra 32.

4. TRANSPORTATION INFRASTRUCTURE

4.1 Introduction

“Natural Gas Pipeline Infrastructure connects with various gas sources to different gas markets to meet the existing & future natural gas demand of various industries like Power, Fertilizer, CGD, etc., in the Country. The much needed industrialization has been possible due to the gas pipeline infrastructure with the socio-economic changes in the areas from where the pipeline passes. Pipeline transportation of gas offers a safe, economic and environmentally sound alternative to other modes of energy transport. But a big challenge still lies in bridging the physical gap between demand and supply centers in a safe, efficient and eco-friendly manner. The Government and Regulator also recognize the need to augment the natural gas transmission infrastructure in the country and has provided continual support towards development of natural gas pipeline which is shaping-up into Natural Gas Grid (NGG).”⁴²

“Transportation Segment in the Natural Gas Sector has crucial importance for the effective growth of the Gas Sector, and one of the prerequisite is the sufficient transportation infrastructure for the growth. The Gas Market has grown along with the transportation/ pipeline networks and thus is a pressing need to spread the network to the areas that have potential demand of gas. Traditionally, most of the country’s gas production came from the country’s western offshore finds like Mumbai High, Neelam and Heera, Vasai and Satellite Assets, Basein field, and the Panna-Mukta and Tapti fields. Therefore, the western offshore region contains most of the production infrastructure, with the gas exploration and production (E&P) fields supplying the Urban terminal in Maharashtra and the Hazira terminal in Gujarat.”⁴³

“Natural Gas Infrastructure consists of R - LNG terminals, Gas Pipelines and City Gas Distribution (CGD) networks. The share of natural gas in the energy mix of India is expected to increase to 20% in 2025 as compared to 11% in 2010”⁴⁴. “However, given that all the plans for

⁴² GAIL India, Ltd, http://www.gailonline.com/final_site/naturalgas_transmission.html

⁴³ India Infrastructure Research, “Gas in India – 2010”, Transportation Infrastructure, 5th Edn., Page – 167.

⁴⁴ As per the ‘Hydrocarbon Vision 2025’ report

expansion in natural gas supply in the country with the help of additional RLNG terminals, nationwide transmission pipeline network and transnational pipelines are expected to materialize by 2025, it is envisaged that the share of natural gas in the primary energy mix would reach 20% till 2030 if not more. The supply of natural gas is likely to increase in future with the help of increase in domestic gas production and imported LNG. However, the expected increase in domestic production at present is significantly lower than earlier projections due to a steady reduction in gas output from the KG D6 field.”⁴⁵

4.2 Existing Pipeline Infrastructure

India, presently, has a system of around 13,000 km of regular gas transmission pipelines with a configuration limit of around 337 MMSCMD. This pipeline system is required to grow to around 28,000 Kms with an aggregate configuration limit of around 721 MMSCMD in next 5-6 years, putting set up a large portion of the National Gas Grid that would associate all real request and supply focus in India. This would guarantee more extensive accessibility over all districts furthermore possibly help to accomplish uniform financial and social advancement. A summary of planned additions to the natural gas infrastructure in India during the projected period has been provided in the Table below

Table No. 2 – Summary of Planned Additions to the Pipeline Infrastructure⁴⁶

Pipelines	Design Capacity (mmscmd)	Length (Kms)
Existing till 2012	306	12144
Expected addition in the 12 th plan	416	15928
Expected addition in the 13 th plan	60	3360
Capacity addition MBBVPL/MBPL/Surat Paradip/pipelines beyond 13 th plan & till 2030	33	1295
Total	815	32,727

The outline limit of pipeline system in India is relied upon to achieve 815 MMSCMD in 2029-30. Nonetheless, considering the expansion of limit specifically connected to the

⁴⁵ <http://www.pngrb.gov.in/newsite/Hindi-Website/pdf/vision-NGPV-2030-06092013.pdf>, last accessed on 29th March, 2015.

⁴⁶ Page No. 11, <http://www.pngrb.gov.in/newsite/Hindi-Website/pdf/vision-NGPV-2030-06092013.pdf>

current/arranged wellsprings of characteristic gas in the nation, the gas network limit in India (pipeline exuding from source) is required to achieve 582 MMSCMD in 2029-30 from the present 274 MMSCMD. This limit is required to deal with the regular gas supply situation in the anticipated period. Notwithstanding the storage compartment lines provincial gas pipelines, like the intra-state system of Gujarat, are suggested for profoundly industrialized states. It is normal that going ahead the Southern and Northern piece of India would get up with the Western part as far as pipeline framework while Eastern and North Eastern piece of the nation would linger behind and would oblige approach support for modern advancement to pull in more ventures.

“Today, the natural gas sector is at the threshold of rapid growth in India supported by ever increasing demand for natural gas in the country, increased exploration efforts under NELP, commissioning of the LNG import terminals in the West Coast, projected upcoming LNG terminals and the Government’s initiatives in the direction of development of a nationwide natural gas pipeline grid. However, there is a need to provide a proactive enabling environment to support the fast-paced development of natural gas infrastructure. An enabling environment includes providing desired policy support and the correct pricing signals for investment in the sector, reforming the present set of regulations to adopt to changing needs and making them more robust and addressing the distortions in the fiscal regime applicable for natural gas.”⁴⁷

4.3 Major Pipeline Networks

“Most of the gas pipeline network in the country is controlled by three companies – GAIL, Reliance Gas Transportation Limited (RGTEL) and Gujarat State Petronet Limited (GSPL). GAIL controls a vast majority of the gas transmission network and has proposed several projects that will help it retain its leadership position. GSPL operates mainly in Gujarat. It is, however, venturing beyond the State and has proposed new projects for the same. RGTEL is a subsidiary of RIL and has been set up after RIL made huge discoveries of gas in the KG Basin. RGTEL has already received approval for new projects and is expected to grow substantially.”⁴⁸

⁴⁷ Ibid.

⁴⁸ India Infrastructure Research, “Gas in India – 2010”, Transportation Infrastructure, 5th Edn., Page – 168.

“India's existing gas pipeline network is estimated at about 15,000 km, with GAIL owning 10,700 km and Gujarat State Petronet Ltd and Reliance Gas Transportation Infrastructure Ltd (RGTIL) operating the rest. It can transmit 350 million metric standard cubic metres per day (mmscmd) of gas. Developers have slowed investments on planned pipeline projects, pending clarity on the availability of gas. Progress has been slow on GAIL's Surat-Paradip and Jagdishpur-Haldia projects due to constrained gas supplies. Oil regulator Petroleum and Natural Gas Regulatory Board has cancelled RGTIL's licences to build four pipeline projects.”⁴⁹

Gas Imports through Cross Border Pipelines

“India has remained interested in sourcing gas through cross border pipelines from countries like Turkmenistan, Iran and other Middle-East countries for a long time. The Turkmenistan-Afghanistan-Pakistan-India (TAPI) pipeline is proposed for transporting Caspian Sea natural gas from Turkmenistan through Afghanistan into Pakistan and then to India covering approximate 1680 km. The four partners (Turkmenistan, Afghanistan, Pakistan and India) are likely to constitute a consortium that would build and operate the pipeline and the project is likely to be completed by 2017-18. India plans to import 30-40 mmscmd of natural gas from Turkmenistan through this pipeline and negotiations are under way with Afghanistan and Pakistan over transit fee and other related matters. MoPNG has projected a natural gas availability of 30 mmscmd through TAPI pipeline from 2017-18 to 2021-22 in the Plan Document. The same has been assumed for projecting natural gas supply through transnational pipelines and given that no other firm cross border pipeline proposal is under active considerations at present, this supply of 30 MMSCMD through TAPI pipeline has been further assumed to continue till 2029-30. The natural gas supply projections through trans-national pipelines.”⁵⁰ Domestic gas production at the moment stands at around 99 mmscmd and given the high international prices, the demand for LNG is only 48-50 mmscmd and hence the total gas being transported is around 150 mmscmd.

⁴⁹ Sarita C Singh, ET Bureau Jul 18, 2014, “Government's natural gas pipeline grid extension unlikely soon due to shortage of domestic gas”, http://articles.economictimes.indiatimes.com/2014-07-18/news/51708903_1_gas-grid-gas-pipeline-network-mmscmd

⁵⁰ Supra 45

The situation is not expected to improve in the near to medium term unless there is a dramatic change in gas availability or global prices⁵¹

Table No. 3 – Total Gas Availability – 12th and 13th five Year Plan⁵²

MMSCMD	12th plan					13th plan				
	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
Domestic Sources	101.1	102.5	110.9	120.4	156.7	161.4	166.2	171.2	176.4	181.6
LNG Imports	44.6	64.4	85.0	123.6	143.0	188	188	188	188	188
Gas Imports (Cross border Pipelines)	0.00	0.00	0.00	0.00	0.00	30.00	30.00	30.00	30.00	30.00
Total	145.7	166.9	195.9	244.1	299.7	367	384	389	394	400

4.4 GAIL

“GAIL is an entity which is, inter-alia, laying, building, operating or expanding Natural Gas Pipelines and has been authorized to do so by the Central Government before the Appointed Day of PNGRB (i.e. before 1st October 2007), and also authorized to do so under the PNGRB (Authorizing entities to lay, build, operate or expand a Natural Gas Pipeline) Regulations, 2008. GAIL is also engaged in the activity of marketing Natural Gas.”⁵³

“Over the years, GAIL as a major pipeline operator has contributed to the growth and development of natural gas pipeline infrastructure and natural gas market and has existing 10,972 Kms. of robust gas pipeline infrastructure with a capacity of 210 MMSCMD. GAIL’s existing natural gas pipeline network has Pan- India presence and covers 16 States (AP, Assam, Delhi, Goa, Gujarat, Haryana, Karnataka, Kerala, MP, Maharashtra, Punjab, Rajasthan, TN, Tripura, Uttarakhand, & U.P.) and 2 UT’s (Puducherry & Dadra Nagar Haveli).”⁵⁴ Ministry of Petroleum and Natural Gas, in the year 2007, authorized five new pipelines to GAIL covering a length of over 5,200 km.

⁵¹ Supra 46

⁵² Supra 45

⁵³ http://www.gailonline.com/final_site/pdf/Regulated_activities_of_GAIL_and_its_affiliates.pdf

⁵⁴ http://www.gailonline.com/final_site/naturalgas_transmission.html

Table No. 4 – Authorized Pipelines to GAIL by MOPNG in 2007⁵⁵

S.No.	Pipeline	Length Kms.	Capacity (MMSCMD)	Status
1	Dadri Bawana Nangal	610	31	Commissioned
2	Chainsa Jhajjar Hissar	300	35	Completed till Sultanpur
3	Dabhol Bangalore	1386	16	Commissioned
4	Kochi Kanjirikkod Bangalore	860	16	Phase-1 commissioned
5	Jagdishpur Haldia	2050	32	Under Planning
	TOTAL	5206	130	

Table No. 5- The existing pipeline network of GAIL⁵⁶

Operational Natural Gas Pipelines of GAIL		
Common Carrier+ Dedicated		
Sl. No.	Network/ Region	Length (in KMs.)
1	HVJ-GREP-DVPL	4658
2	GREP DVPL Upgradation	1119
3	DUPL-DPPL	875
4	TRIPURA	61
5	GUJARAT	691
6	MUMBAI	129
7	KG BASIN	881
8	CAUVERY BASIN	278
9	ASSAM	8
10	CJHPL	265
11	DBNPL	810
12	DHABOL-BANGALORE PIPELINE	1004
13	KKBMPL	41
14	JAISELMER REGION	151

⁵⁵ Ibid.

⁵⁶ Ibid.

GRAND TOTAL	10972
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GAIL was likewise recompensed Grant of Authorization for Surat-Paradip P/L on 25.04.2012 by PNGRB which GAIL won under aggressive offering. The limit of the P/L is 74.81 MMSCMD extending over a Length of approx. 1990 Kms. With up and coming of Jagdishpur Haldia P/L and Surat Paradip P/L, GAIL might cover 5 all the more new States, for example, Bihar, Chattisgarh, Jharkhand, Odisha and West Bengal. GAIL should keep on meeting the Noble goal of supply and transportation of characteristic gas through its condition of workmanship common gas transmission pipeline framework and might add to the development and Industrialization in India.

Table No. 6 - List of Dedicated Pipelines⁵⁷

NETWORK	Pipeline Name
SOUTH GUJARAT	
	BARODA
1	EPS AKOLJONI - SAPNA CHEMICAL
2	EPS NANDA - SUPREME GLASS
3	ANKHI(TAP) - SCHOTT GLASS*
4	HALDYN TAP OFF - HALDYN GLASS*
5	PUNJAB STEEL TAP OFF - PUNJAB STEEL*
	BHARUCH
1	Dahej GGS to GACL P/L
2	GGS Olpad to CYA. & CHEM.
3	Jolwa EPS to NAHAR P/L
4	JOLWA EPS -GACL (MDPE)
5	KIM EPS to Spire cera P/L (MDPE)
6	AMBOLI TAP OFF - HSGL*
NORTH GUJARAT	
1	EPS WASANA - UNIVERSAL METAL(MANGLAM ALLOYS)
2	MOTERA GGS - RIL SUGHAD
3	KALOL COLLECTOR LINE T/O-BVM
4	EPS NANDASAN - NIRMA
5	EPS NANDASAN - STERLING
6	EPS NANDASAN - STERLING (K)
7	EPS WADU - PIONEER
8	SANAND GGS - JALARAM
9	LIMBODARA EPS - AKASH
10	NANDASAN EPS - AKIK TILES
11	RANASAN T POINT - SHYAM INDUSTRIES*
KG BASIN	
1	AFL
2	HITECH
3	STEEL EXCHANGE
RAMGARH	
1	DANDEWALA - GAMNEWALA--RSEB RANGARH
2	LANGTALA to RAMGARH (For Focus Energy supply)

Note:

* : **The status of these Pipelines is a subject matter of appeal before Hon. Supreme Court and is sub-judice**

⁵⁷ GAIL (India) Limited, http://www.gailonline.com/final_site/pdf/Dedicated-Pipeline.pdf

4.5 RGTIL

“RGTIL is a wholly owned subsidiary of Reliance Industries Limited. It was formed after RIL discovered substantial amounts of natural gas in the KG basin. The first task of RGTIL was to set up the 1,400 km East-West pipeline that would initially evacuate gas produced from RIL’s KG – D6 find and later be used for transporting other gas finds in the basin. The East-West Pipeline (EWPL) was commissioned in end April 2009; it has a capacity of 80 mmscmd which is also the peak production expected to be ramped up to 80 mmscmd during 2010.”⁵⁸

“The pipeline connects to GAIL’s pipeline network at three locations at Oduru in KG Basin, Mhaskal with the DUPL-DPPL network in Maharashtra and at Ankot with the HVJ-DVPL-GREP network at Gujarat. It also connects to GSPC’s pipeline network at Badbut. Therefore the final distribution of RIL’s KG Basin gas is through GAIL’s and GSPL’s network. As the other gas finds in the KG Basin come to production, RGTIL is set to emerge as the primary transporter of the gas produced from basin. Besides, RGTIL has already made several proposals for other pipelines and has received authorizations for some. Relogistics Infrastructure Limited (Relog), a subsidiary of RGTIL, has been authorized to lay following cross-country pipelines:

- Kakinada-Basudebpur-Howrah pipeline - Overall length 928 km; Traverses through states of AP, Orissa and West Bengal
- **Kakinada-Chennai pipeline** - Overall length ~577 km; Traverses through states of AP and Tamilnadu
- **Chennai-Bangalore-Mangalore pipeline** - Extension of Kakinada-Chennai Pipeline. Overall length - 538 km; Traverses through states of Tamilnadu, AP and Karnataka
- **Chennai – Tuticorin pipeline** - Extension of Kakinada-Chennai Pipeline. Overall length ~585 km; Traverses through state of Tamilnadu.

RGTIL is committed to build, operate and maintain its pipeline systems adopting best industry practices and establishing highest benchmarks for performance in all areas of its business operations with a focus on complete customer satisfaction.”⁵⁹

⁵⁸ Reliance Gas Transportation Infrastructure Limited, <http://www.rgtil.com/aboutus.html>

⁵⁹ Ibid.

4.6 Other Pipelines

“During the 12th five year plan GAIL is expected to upgrade the GREP/DVPL pipeline, GSPL is expected to upgrade the Gujarat network adding around 420 kms of pipeline and AGCL/OIL is expected to lay an additional pipeline infrastructure of 350 kms in Assam. Therefore at the end of the 12th five year plan a pipeline network of around 28,000 kms is expected to be in place in the country in the form of a national gas grid with an expected design capacity of around 721 MMSCMD. In the 13th plan additional pipeline from Guwahati to Baurani, Durgapur to Calcutta and Kochi to Tuticorn are expected to come up and any spillover pipelines from 12th plan will get completed. In addition regional networks will get developed in states getting transmission pipeline in the 12th plan thus strengthening the national gas grid. By the end of the 13th five year plan, India is expected to have a natural gas pipeline network of around 31,432 kms with a design capacity of 782 MMSCMD with a nationwide gas grid and more uniform pipeline network coverage in place. Post 13th plan, capacity addition linked to the pipelines that would get commissioned during the 12th plan but continue adding capacity has been considered. At the end of the of the projection period in 2030, the design capacity of the natural gas pipeline network in India is expected to touch 815 MMSCMD.”⁶⁰

4.7 National Gas Grid

“At present, there is a strong regional imbalance within the country with regard to access natural gas. Few states like Gujarat, Maharashtra and UP together consume more that 65% of the available gas, while a large number of states have no access to gas. This regional imbalance is mainly on account of lack of pipeline infrastructure in many states like West Bengal, Bihar, Jharkhand, Odisha and Chhattisgarh. In order to take the benefits associated with natural gas to all states across the nation, it is essential that the pipeline network is expanded to all regions of the country. Ministry is contemplating to development of a National Gas Grid having multiple

⁶⁰ Page No. 50, <http://www.pngrb.gov.in/newsite/Hindi-Website/pdf/vision-NGPV-2030-06092013.pdf>, last accessed on 29th March, 2015.

points of injection and multiple points of withdrawal. The proposed gas grid would connect the gas sources to major demand centers such as industrial clusters, big cities etc.”⁶¹

The thought of shaping an across the country gas network has been doing the rounds in government and industry circles. Be that as it may, the residential gas finds, and the conclusive acknowledgement of common gas as a real wellspring of fuel for mechanical and household purposes, have given further impulse to the thought. The current spread of gas transmission base is extremely uneven with the greater part of it moved in the northern and north-western parts of the nation. The revelations in the eastern seaboard are prompting the development of the system in the eastern and southern districts while uniting the same toward the northern and northwestern systems. Then again, there are a few sections of the nation where the gas system has not yet come to. There are a few arrangements and proposition by different organizations, which if executed effectively, will bring about an across the nation gas matrix.

⁶¹ Ministry of Petroleum & Natural Gas, Government of India , <http://petroleum.nic.in/docs/abtng.pdf>

5. CITY GAS DISTRIBUTION

5.1 Introduction

The CGD part includes Compressed Natural Gas (CNG) and Piped Natural Gas (PNG) clients. With expanded accessibility of gas in the nation, the CGD system has been augmented to cover different urban communities supplying gas for local shoppers, open transport, and business/modern substances. As on 31.12.2013, there are an aggregate of 936 packed characteristic gas (CNG) stations the nation over and 24, 14,288 family units with Piped Natural Gas (PNG) integration. The utilization of gas in the CGD system amid 2013 – 14 was around 15.48 MMSCMD, of which 8.60 MMSCMD was utilized for CNG (transport) & PNG (local) and 6.88 MMSCMD was utilized for Industrial & Commercial PNG. At present, there are various substances working in 47 geological zones (GAs) and presently 18 GAs are under offering process by PNGRB. Till March 2009, CGD had spread to 36 GA (Geographical territories). With the quick development of City Gas Distribution in the Oil and Gas Industry, the PNGRB chose not to try for Cities or towns, yet to call for CGD offers for GA. The GA's have been delineated in order to incorporate a blend of business, mechanical and local client base. The Supreme Court choice was the introductory step towards the development of CGD to control natural contamination. Notwithstanding, the current development is driven by the business appeal of it.

There are different employments of NG in the transportation and household area, which has been perceived. To advance CNG (transport) and PNG (household) and for a created CGD area in the nation, Ministry has taken a choice to meet 100% prerequisite (to the greatest degree conceivable) of CNG (transport) and PNG (residential) of all CGD substances the country over with no separation amongst elements. Rules in such manner have been issued in February, 2014. This choice has cut down the cost of CNG (Transport) and PNG (residential) the country over and has prompted increment in the utilization of common gas, an earth well disposed fuel, in the segment. Further so as to acquire straightforwardness evaluating of CNG (transport) & PNG (household), the Ministry has issued guidelines in February, 2014 to CGD substances to show the separation of CNG cost at CNG stations and to outfit the separation of PNG (local) cost in the receipt issued to the clients.

Because of the accessibility of Natural Gas and the vicinity of financial specialists why should willing put resources into CGD, the portion will see an unstable development. On the other hand, there are a few administrative issues connected with the portion that needs to be dealt with to understand the development. In January 2010, the Delhi High Court had decided that the PNGRB does not have power to approve elements to attempt CGD exercises. Anyhow in 2011, the Supreme Court engaged the PNGRB to issue CGD licenses in the offer

5.2 Historical Development of CGD Network

CGD is usually portrayed as the last part of the characteristic gas quality chain. CGD is that portion of the chain which makes common gas accessible to clients for utilization as transport and cooking fuel other than business and modern employments. While extensive buyers of regular gas, for example, the force and manure industry get characteristic gas specifically through the high weight interstate transmission pipelines, CGD is given through a system of medium to low weight conveyance pipelines by a neighborhood dissemination organization. The tap off point from where the city conveyance system takes its supply from the transmission framework for the city appropriation framework is alluded to as the city entryway. CGD includes supply of little volumes of the gas to countless clients. Ordinarily, it embodies compacted common gas (CNG) systems that supply characteristic gas for auto use through CNG administering stations, and a channeled regular gas (PNG) system that gives characteristic gas as a fuel for city based business/ mechanical/ household purposes.

CGD in India started as ahead of schedule as 1880 when the Calcutta Gas organization restricted started to attempt gas retail business. It relied on upon coal gas; it is as yet working, however causing misfortunes. The Bombay Gas Company Limited which started to embrace CGD operations in 1990 is presently bankrupt. Since 1970 onwards CGD operations were attempted by different players, yet these were restricted to Delhi, Mumbai and a few urban areas and towns of Gujarat. The enormous driving force for CGD development came in 1998 when the Supreme Court issued requests to change over all open transport vehicles handling in Delhi to CNG because of open interest case documented looking for an answer for the rising air contamination

in Delhi. This was trailed by a comparable activity in Mumbai and after that more urban community.

5.3 Current Status

“City Gas Distribution (CGD), is one of the rising sectors in the Energy Sector in India. Started with the regulatory issues taken by the Supreme Court, the government began to promote CGD with long term plans. Recent reports say the CGD is among the fastest growing segments in the gas sector with all major players recording rapid growth in the past couple of years. The CGD segment would continue to grow in the coming years as well with 20 per cent growth in demand in metropolitan cities and 15 per cent in other areas. Among the customers, demand growth from the industrial segment is expected to be the fastest followed by the transportation segment.”⁶²

“The CGD segment in India has grown on the back of a competitive regulatory environment provided by the Petroleum and Natural Gas Regulatory Board (PNGRB), which plans to roll out CGD networks in over 200 new cities by 2015. The new regulatory framework has facilitated the entry of several new players in the segment including some of the existing energy and infrastructure players, and an international major, which is exploring a joint venture with an Indian firm for gas sourcing and distribution.”⁶³

There are two leading players in the CGD segment in India:

1. Indraprastha Gas (IGL)
2. Gujarat Gas Company (GGCL)

⁶² GSPC Gas, “GSPC Gas - The fastest growing CGD company is now largest CGD company in India”, http://www.gspcgas.com/en/news_updates.php?id=4f2fcb33901f7&t=5

⁶³ Ibid.

Government Authorization CGD Network

Table No. 7 - Authorized under regulation 5⁶⁴

S. No.	Name of the CGD Network	Area Covered	Entity Authorized
1	Sonipat CGD Network	Sonipat	Gail Gas Limited
2	Meerut CGD Network	Meerut	Gail Gas Limited
3	Kakinada CGD Network	Kakinada	Bhagyanagar Gas Limited
4	Dewas CGD Network	Dewas	Gail Gas Limited
5	Kota CGD Network	Kota	Gail Gas Limited
6	Mathura CGD Network	Mathura	JV of M/s DSM Infratech Pvt. Ltd. & M/s Saumya Mining Pvt. Ltd.
7	Chandigarh CGD Network	Chandigarh	M/s IOCL-AGL
8	Allahabad CGD Network	Allahabad	M/s IOCL-AGL
9	Jalandhar CGD Network	Jalandhar	M/s Jay Madhok Energy Pvt. Ltd.
10	Jhansi CGD Network	Jhansi	M/s Central UP Gas Ltd.
11	Bhavnagar CGD Network	Bhavnagar	M/s Gujarat Gas Company Ltd.
12	Jamnagar CGD Network (Latest)	Jamnagar	GSPC Gas Company Limited
13	Kutch CGD Network (Latest)	Kutch (West)	GSPC Gas Company Limited

⁶⁴ Petroleum & Natural Gas Regulatory Board, http://www.pngrb.gov.in/newsite/CGD-network-govt_authorization.html, last accessed on 15th March, 2015

http://www.pngrb.gov.in/newsite/CGD-network-govt_authorization.html

Table No. 8 - Acceptance of central govt. authorization: under regulation 17⁶⁵

S. No.	Name of the CGD Network	Area Covered	Entity Authorized
1	Agartala CGD Network (Latest)	Agartala CGD Network	Tripura Natural Gas Ltd
2	Upper Assam CGD Network	Upper Assam CGD Network	Assam Gas Company Ltd
3	Firozabad Geographical Area (Taj Trapezium Zone)	Firozabad Geographical Area (Taj Trapezium Zone) in the state of UP	GAIL Gas Ltd
4	Agra CGD Network	Agra	Green Gas Limited
5	Hyderabad CGD Network	Hyderabad	Bhagyanagar Gas Limited
6	Indore CGD Network	Indore including Ujjain	Aavantika Gas Limited
7	Gwalior CGD Network	Gwalior	Aavantika Gas Limited
8	Ghandhinagar Mehsana Sabarkantha CGD Network	Ghandhinagar Mehsana Sabarkantha	Sabarmati Gas Limited
9	Pune City including Pimpri Chichwad CGD Network	Pune City including Pimpri Chiechwad and along with adjoining contiguous areas of Hinjewadi, Chakan & Talegaon GA	Maharashtra Natural Gas Limited
10	Kanpur CGD Network	Kanpur GA	Central U.P. Gas Limited
11	Bareilly CGD Network	Bareilly GA	Central U.P. Gas Limited
12	Delhi CGD Network	National Capital Territory of Delhi	Indraprastha Gas Limited
13	Mumbai CGD Network	Mumbai & Greater Mumbai	Mahanagar Gas Limited

⁶⁵ Petroleum & Natural Gas Regulatory Board, http://www.pngrb.gov.in/newsite/CGD-network-govt_authorization.html, last accessed on 15th March, 2015

http://www.pngrb.gov.in/newsite/CGD-network-govt_authorization.html

14	Vijaywada CGD Network	Vijaywada GA	Bhagyanagar Gas Limited
15	Mumbai CGD Network(GA-2)	Thane City & adjoining contiguous areas including Mira Bhayender, Navi Mumbai, Thane City, Ambernath, Bhiwandi, Kalyan, Dombivily, Badlapur, Ulhasnagar, Panvel, Kharghar & Talaja.	Mahanagar Gas Limited

Table No. 9 - Authorized under regulation 18(1)⁶⁶

S. No.	Name of the CGD Network	Area Covered	Entity Authorized
1	Valsad (Latest)	Valsad Geographical Area	GSPC Gas Company Limited
2	Hazira (Latest)	Hazira Geographical Area	GSPC Gas Company Limited
3	Rajkot	Rajkot Geographical Area	GSPC Gas Company Limited
4	Surendranagar	Surendranagar Geographical Area	GSPC Gas Company Limited
5	Navsari	Navsari Geographical Area	GSPC Gas Company Limited
6	Nadiad	Nadiad Geographical Area	GSPC Gas Company Limited
7	Khurja	Khurja Geographical Area	Adani Gas Limited
8	Moradabad	Moradabad Geographical Area	Siti Energy Limited
9	Surat-Bharuch-Ankleshwar	Surat-Bharuch-Ankleshwar Geographical Area	Gujarat Gas Company Limited

Given the profits of CGD both as far as financial aspects to customers and profits to nature, a few states are competing to take CGD to their urban areas and towns as quickly as time permits. Since the initiation of generation of characteristic gas from the Krishna-Godavari (KG) D6 obstruct, the endeavors and requests of different states have increased. A percentage of the urban

⁶⁶ Petroleum & Natural Gas Regulatory Board, http://www.pngrb.gov.in/newsite/CGD-network-govt_authorization.html, last accessed on 15th March, 2015

areas, in any case, can't get regular gas promptly, as the current transportation system is yet to reach numerous potential utilization focuses. The real extension of the CGD program in the short run will be in urban areas that are in close nearness of the present gas transmission trunk lines over the western and northern districts.

5.4 Future of CGD

“The Delhi High Court verdict had created some uncertainty in the segment, resulting in the delay in the exponential growth of this sector which was anticipated earlier. However, factors like supply of gas and the number of CGD players are sufficient to hold the growth of the sector. Also, there is political will to forward this expansion as the direct benefit CGD gives to a vast number of domestic consumers has been recognized. Due to this the segment is likely to overcome the uncertainty and continue with the high growth. Post 13th five year plan it has been assumed that the total demand for the CGD sector i.e. the demand considering the CGD networks that exist today as well as those that would be setup till the end of 13th five year plan, assumed to grow at a rate of 8% annually. The total demand from CGD sector is expected to grow from 15.3 MMSCMD in 2012-13 to 85.6 MMSCMD in 2029-30 at a CAGR of 10.7%.⁶⁷ It is expected to invite bidding in 50 more cities by the year ending 2022.

Several companies are planning and forming various collaborations to enter CGD. The fact that this segment does not require as high investments as other areas of the oil and gas industry will bring in more players. Also, the PNGRB has provided the option for interested players to enter into technical tie-ups with other players and also provided sufficient time for the players to tie up gas supplies upon winning the bid. If there is clarity in the regulatory framework and the favorable provisions are kept, the earlier projections can still hold good.

⁶⁷ Page No. 25, <http://www.pngrb.gov.in/newsite/Hindi-Website/pdf/vision-NGPV-2030-06092013.pdf>, last accessed on 29th March, 2015.

5.5 CGD Network Safety

Since the CGD system transverses through thickly populated zones of urban communities, upkeep of the most noteworthy wellbeing measures, to guarantee all preventable mishances are maintained a strategic distance from, is concurred high need. The CGD regulation tells gives this perspective high need while conceding new licenses.

The current CGD operations presently take after the wellbeing rules set around the Oil Industry Safety Directorate, which is a specialized directorate under the MOPNG, which details and directions the execution of a progression of self - administrative measures went for improving security in the oil and gas industry in India.

In increments, urban nearby bodies (ULB's) assume an imperative part in guaranteeing that CGD administrators keep up the most elevated amounts of wellbeing gauges and attempt normal calamity administration drills to arrangement quickly with any mishances inside the system.

Normal wellbeing projects included in every system incorporate the accompanying:

Spill Detection Equipment – CGD organizations commonly introduce spill identification hardware at different basic indicates in the system distinguish breaks of characteristic gas from the framework. Further, since characteristic gas is dull and unscented, an odorant is added to the common gas to guarantee less demanding hole recognition.

Wellbeing Education Programs – CGD organizations likewise right now run instruction programs for their clients and people in general everywhere through open data crusades, occasions in schools, and so on, to teach people in general on great practices in gas securely and the ventures to take in the occasion of a hole or mischance.

Crisis Preparedness – All CGD administrators are obliged to have crisis reaction benefits notwithstanding fiasco administration plans, which are regulated by the ULBs.

Further, most administrators likewise give round-the-clock crisis reaction focuses which deliver client issues identified with holes and sec

6. THE EXISTING LEGAL FRAMEWORK FOR TRANSPORTATION AND DISTRIBUTION AND THE ROLE OF PNGRB AS THE REGULATOR

6.1 Transportation and Distribution of Natural Gas in India

6.1.1. Transportation

“The Petroleum and Mining Pipeline (Acquisition of Rights of Users in Land) Act, 1962 (“Pipeline Act”) provides regulatory framework and provisions for acquisitions of right of way for laying transportation pipelines. The party is required to publish notice with details of land requirements, right of use and description of the land to be crossed. After the publication of notice the party is required to obtain approval from Government of India. Further it needs to obtain environment, pollution and safety clearances depending on the nature of the project and comply with other applicable legislations.

PNGRB has issued various legislations to organize and regulate transportation pipelines and associated infrastructure, as entitled below”⁶⁸:

Regulations for Natural Gas Pipelines:

- **“Imbalance Management Services.** - These regulations applies to the natural gas pipeline which are covered under the provisions of regulations 4, 17 and 18 of the Petroleum and Natural Gas Regulatory Board (Authorizing Entities to Lay, Build, Operate or Expand Natural Gas Pipelines) Regulations, 2008. A transporter shall provide imbalance management services which being deferred delivery services so as to facilitate shippers to manage the transportation imbalances. For the purpose, deferred delivery service is a one where a transporter and a shipper, as per a separate agreement, agrees on day-wise plan for the receipt of shipper’s natural gas quantities into the pipeline and for its delivery by the transporter to shipper. The transporter charges fee for providing the imbalance management services.”⁶⁹

⁶⁸ Under the provisions of the Regulation Board Act.

⁶⁹ F.No.PNGRB/M(C)/48 17/02/2014, Petroleum and Natural Gas Regulatory Board, <http://www.pngrb.gov.in/newsite/OurRegulation/NGP-F-No-MC-48.html>, last accessed on 31st March, 2015

- **Integrity Management System for Natural gas pipelines.**⁷⁰ - Regulations cover all the existing and the new natural gas transmission pipelines, sub-transmission pipelines (STPL), spur lines, and dedicated pipelines. This also includes the associated facilities which are required for the transportation of natural gas through the pipelines that is terminals, compressor stations, intermediate pigging facilities, sectionalizing valves etc. The materials and specifications should be in accordance with Petroleum and Natural Gas Regulatory Board (Technical Standards and Specifications including Safety Standards for Natural gas pipeline) Regulations, 2009. These regulations skeleton the basic features and requirements for developing and implementing the effective and efficient integrity management plan for the natural gas pipeline system.

- **Determining Capacity of Petroleum, Petroleum Products and Natural Gas Pipeline.**⁷¹ – The objectives for declaring natural gas pipeline as contract carrier or common carrier-
 - (a) Natural gas pipeline is the widely accepted mode of bulk transportation from a source to a delivery point, over particular route. Concept of natural monopoly in the transportation of natural gas is universally accepted in outlook of its safety factors, capital intensiveness and the need for protecting consumer interests. Therefore, the consumer interest is being best served by promoting competition, avoiding infructuous investments by optimum utilization of infrastructure of natural gas pipelines.
 - (b) The concept of allowing capacity to be utilized by any entity on a non-discriminatory basis and incentivize emergence of independent shippers of natural gas that shall enter into common carrier or carrier arrangements with entities owing such infrastructure for transportations of natural gas which results to development of competitive natural gas markets.

⁷⁰ F.No.Infra/IM/NGPL/1/2010 05/11/2012, Petroleum and Natural Gas Regulatory Board , <http://www.pngrb.gov.in/newsite/OurRegulation/NGP-F-No-Infra-IM-NGPL-1-2010.html>, last accessed on 31st March, 2015

⁷¹ GSR 476(E) 07/06/2010, Petroleum and Natural Gas Regulatory Board, <http://www.pngrb.gov.in/newsite/OurRegulation/NGP-GSR476.html>, last accessed on 31st March, 2015

- **“Technical Standards and Specifications including Safety Standards for Natural Gas Pipelines Regulations, 2009.** - The regulations cover pipeline design, materials and equipment, welding, fabrication, installation, testing, commissioning, operation and maintenance and corrosion control of common carrier or contract carrier natural gas pipelines (Transmission or Sub transmission) including safety requirements for natural gas pipelines.”⁷² The standards are intended to safeguard uniform application of design principles and guide in selection and application of materials and components, equipment and systems and uniform operation and maintenance of the natural gas pipeline system and shall primarily focus on safety aspects of the employees and public and facilities associated with natural gas pipelines.
- **Guiding Principles for declaring or authorizing Natural Gas Pipeline as Common Carrier or Contract Carrier**⁷³ - The Natural gas pipeline is widely accepted mode of bulk transportation for natural gas from a source point to a delivery point over particular route. The concept of the natural monopoly in transportation of natural gas is widely accepted with view of its safety factors, capital intensiveness, and the need for protecting consumer's interests. Hence, consumer interest is being best served by promoting competition, and avoiding infructuous investments through optimum utilization of infrastructure for natural gas pipelines.

The natural gas pipeline can be utilized by any entity, on a non-discriminatory basis and shall incentivize emergence of independent shippers of natural gas who shall enter into common carrier or contract carrier arrangements with the entities owing such infrastructure for the transportations of natural gas which, resultant into shall lead to development of competitive natural gas markets.

⁷² GSR 808(E) 11/11/2009, Petroleum and Natural Gas Regulatory Board , <http://www.pngrb.gov.in/newsite/OurRegulation/NGP-GSR808.html>, last accessed on 31st March, 2015

⁷³ GSR 273(E) 21/04/2009, Petroleum and Natural Gas Regulatory Board, <http://www.pngrb.gov.in/newsite/OurRegulation/NGP-GSR273.html>, last accessed on 31st March, 2015

- **Determination of natural gas pipeline tariff.**⁷⁴ – The natural gas pipeline tariff is in respect of an entity which is covered under sub-regulation (1), sub-regulation (2) or sub-regulation (3) of regulation 3 and shall be determined as per the procedure at Schedule A. Before the determination of the natural gas pipeline tariff, the Board has to issue a public notice on its website containing a public consultation document. Stakeholders can submit their comments in writing within 15 days from the date of webhosting of public notice. The Board can after considering the filings issue the tariff order.

- **Affiliate code of conduct for entities engaged in marketing of natural gas and laying, building, operating or expanding natural gas pipeline.**⁷⁵ - The objectives of this code are to ensure-
 - (a) Protection of the consumer interests and other entities;
 - (b) Prevention of cross-subsidization of the costs
 - (c) no preferential access is allowed by the entity to itself or its affiliate; and
 - (d) Development of a fair and competitive natural gas market.

- **Access code for common carrier or contract carrier natural gas pipelines.**⁷⁶ - The capacity of the natural gas pipeline must be as per the authorization by the Board for the new pipelines under The Petroleum and Natural Gas Regulatory Board (Authorizing Entities to Lay, Build, Operate or Expand Natural Gas Pipelines) Regulations, 2008. It can also be determined by the Board in compliance with the relevant regulations for declaring natural gas pipelines as contract carrier or common carrier or under the Petroleum and Natural Gas Regulatory Board (Determination of Natural Gas Pipeline Tariff) Regulations, 2008. The transporters declares entry and exit point-wise design and also the available capacity of the pipeline and publishes the same on its web site on the 1st of every month and send this information to the Board.

⁷⁴ GSR 807(E) 20/11/2008, Petroleum and Natural Gas Regulatory Board, <http://www.pngrb.gov.in/newsite/OurRegulation/NGP-GSR807.html>, last accessed on 31st March, 2015

⁷⁵ GSR 540(E) 17/07/2008, Petroleum and Natural Gas Regulatory Board, <http://www.pngrb.gov.in/newsite/OurRegulation/NGP-GSR540.html>, last accessed on 31st March, 2015

⁷⁶ GSR 541(E) 17/07/2008, Petroleum and Natural Gas Regulatory Board, <http://www.pngrb.gov.in/newsite/OurRegulation/NGP-GSR541.html>, last accessed on 31st March, 2015

- **Authorizing entities to lay, build, operate or expand natural gas pipelines.**⁷⁷ - An entity who desires of building, operating, laying, or expanding a natural gas pipeline can submit an expression of interest with the Board in the form of an application as per Schedule A along with application fee as specified under the Petroleum and Natural Gas Regulatory Board (Levy of Fee and Other Charges) Regulations, 2007. The Board can suo-motu initiate a proposal inviting entities to participate in the process of selection of an entity.
- **Approved PNGRB (Authorizing Entities to Lay, Build, Operate or Expand City or Local Natural Gas Distribution Networks) Amendment Regulations, 2015.**⁷⁸ - the words one hundred and twenty days, has been substituted with the words sixty days shall. Additional, in sub - regulation (8), the proviso has been added which states that the Board can extend the date for submission of bid which can be for a period not more than thirty days for which the reasons are to be recorded in writing and the decision shall be webhosted.

The Land Acquisition Act, 1894, for public purposes, governs the acquisitions of land by Government of India. Furthermore, the pipeline Act accommodates procurement of right of route for laying transportation pipelines.

The Regulatory Board Act contains thorough acquirements for approval to lay, form and work or to expand any pipeline. The Regulatory Board Act draws in PNGRB to oversee Open Access and transportation rates for the agreement bearer or basic transporter. A draft Regulation of Access Code has been issued setting out the guidelines regarding Open Access to Transportation pipelines. By and large, the cutoff of Open Access is a subordinate of contractual relationship between the gatherings as per the regulation of Access Code. GAIL controls the advantages of the Natural Gas transportation frameworks on the business premise, the degree that it relates to supply through its pipelines.

⁷⁷ GSR 340(E) 06/05/2008, Petroleum and Natural Gas Regulatory Board, <http://www.pngrb.gov.in/newsite/OurRegulation/NGP-GSR340.html>, last accessed on 31st March, 2015

⁷⁸ 18-Feb-2015

Interconnectivity between the distinctive pipelines networks has been referred to under the regulation for transportation and promoting and regulation for Access Code that proposes a unfair open access premise for booking of pipeline limit and for any significant access limit. When completely implemented, it will direct the open access and transportation rates for the contract carrier or common carrier.

PNGRB has issued a draft regulation for competition, with an aim of minimizing or removing any form of impediment to competition, among the entities by encouraging access to certain identifiers infrastructure in an unfair manner. Under the regulation, PNGRB can proclaim framework needed for processes, reefing, storage, distribution, transportation, marketing and sale of petroleum and petroleum products or natural gas as a typical client office which makes it compulsory for element controlling the base to impart its utilization to different entities under a shared concurred common user facility sharing agreement. The entities that controls infrastructure constituting common user facility, shall have the right of first use for its own prerequisite providing it is not hindering to consumer interest. The seeking share must first submit with the entity that has controlling power of the infrastructure written request for negotiation of the mutually agreed arrangement for such imparting. In the event that the entities are not able to achieve a commonly concurred course of action, a solicitation is documented with the PNGRB, who will issue its choice regarding whether the element that controls the foundation is obliged to impart it to the substance looking for imparting. At whatever point the entities are not able to arrange or negotiate an intentional imparting and compensation agreement, the PNGRB may introduce a compensation mechanism for common user facility to guarantee a sensible rate of return of 12% post tax on capital employed.

6.1.2. Distribution

In India, the pipeline system has been generally grown in the north- west district. In 2008, another pipeline was fabricated to interface another generation district in the east with the current Network. Keeping in mind the end goal to further add to the utilization of gas it is basic to extend the transmission the base to supply new urban areas and create appropriation systems. In both cases, the administrative system, in a specific transport duties, ought to give sufficient motivating forces for new foundation to be assembled.

PNGRB, according to the procurements of directing board Act, directed the transmission and circulation of Natural Gas. GAIL and ONGC hold the biggest supply, transmission and appropriation chain of Natural Gas. Private re-merchants are additionally introduce in business.

The Regulatory Act enables PNGRB to accommodate approval and enrollment to lay, manufactured or work or extend any pipeline a typical bearer or contact transporter and to lay, fabricated or work or grow any CGD Network. Further, gatherings need to get Environment, Pollution and Safety Clearance relying upon the way of task and procurements of relevant laws.

Dissemination charges are liable to the terms of the agreement between the gatherings; the regulation of access code obliges approbation of expenses charged for getting to circulation system from PNGRB, to advance non-prejudicial open access.

An organization approved to set up or construct a Natural Gas pipeline as far as the PNGRB regulations 2008, can't exchange the approvals by method for deal, evaluation or surrendered amid a time of 3 years from the date of issue of such approvals without acquiring former assent of PNGRB.

Regulations for City Gas Distribution:

“With the years PNGRB has Notified Regulations in the Natural Gas Sector exercising the powers conferred by section 61 of the Petroleum and Natural Gas Regulatory Act, 2006 (19 of

2006), the Petroleum and Natural Gas Regulatory Board hereby makes the following regulations⁷⁹:

- **Integrity Management System for City or Local Natural Gas Distribution Networks⁸⁰** - evaluating risks can improve the safety of CGD network and can be more effective in operations in minimizing the probability of CGD network failure. The Integrity Management System helps the professionals and technicians in integrity tasks so as to ensure work plans and targets which in turn will improve their efficiency and satisfaction to attain them. The IMS enables the CGD operator to select an identified system for implementation to make it uniform for all CGD entities within the country. An effective Integrity Management System can ensure the quality of CGD network integrity in all the areas which have potential for adverse consequences; promote more rigorous and the systematic management of CGD network integrity and also mitigate the risk; Increase the general confidence of the public; optimizing life of the CGD network.
- **“Access Code for City or Local Natural Gas Distribution Networks** - The regulation aims at establishing the industry wide transparent and uniform principles to allow the entities to gain access to the pipelines systems and CGD Networks. This regulation for competition, mainly aims at removing and minimizing any kind of impediment to competition which may arise among entities by sharing of infrastructure. This regulation promotes development of a competitive Gas market which by establishing uniform principles, preventing abuse of monopoly power, and also to allow transparent and non-discriminatory access of the Gas Pipelines and CGD Networks.”⁸¹

⁷⁹ Petroleum and Natural Gas Regulatory Board, <http://www.pngrb.gov.in/newsite/OurRegulation/notified-regulation.html>, last accessed on 31st March, 2015

⁸⁰ Notification dated - F.No. INFRA/IMP/CGD/1/2013 16/05/2013, Petroleum and Natural Gas Regulatory Boards, <http://www.pngrb.gov.in/newsite/OurRegulation/CGD-Network-S-Admn12-07-2013.html>, last accessed on 31st March, 2015

⁸¹ F.No. S-Admn./II/8/2010 29/03/2011, Petroleum and Natural Gas Regulatory Board, <http://www.pngrb.gov.in/newsite/OurRegulation/CGD-Network-S-Admn29-03-2011.html>, last accessed on 31st March, 2015

- **Code of Practice for Quality of Service for City or Local Natural Gas Distribution Networks**⁸² - lays down code of practice to promote reliable service to consumers and the public and also obligations of consumers in addition conforming to minimum levels of service which is to be provided by the entity who is authorized. The regulations applies from the date of their notification to all the entities authorized. These entities shall apply after 6 months from the date of notification of these regulations. The Provisions which are in relation to quality of service standards under these regulations are in addition to and are not in derogation of the provisions in the Petroleum and Natural Gas Regulatory Board (Authorizing Entities to Lay, Build, Operate or Expand City or Local Natural Gas Distribution Networks) Regulations, 2008
- **Technical Standards and Specifications including Safety Standards for City or Local Natural Gas Distribution Networks.**⁸³ – The regulation applies to Definitions, design, welding, fabrication, materials and equipment, installation, operation and maintenance, testing, and corrosion control of CGD network shall be in compliance with requirements of ASME B31.8. Except such requirements are specifically cancelled or replaced or modified by the requirements specified in these regulations.
- **“Authorizing entities to lay, build, operate or expand city or local natural gas distribution network** - These regulations shall apply to an entity which is laying, building, operating or expanding, or which proposes to lay, build, operate or expand a CGD network. A CGD network shall be designed to operate at a pressure as specified in the relevant regulations for technical standards and specifications, including safety standards for maintaining the volumes of supply of natural gas on a sustained basis to meet the following requirements, namely:- (a) customers having requirement of natural gas upto 50,000 SCMD shall be supplied through the CGD network; (b) customers having requirement of natural gas more than 50,000 SCMD and upto 100,000 SCMD shall be supplied- (i) through the CGD network; or (ii) through a pipeline not forming

⁸² GSR 720(E) 01/09/2010, Petroleum and Natural Gas Regulatory Board, <http://www.pngrb.gov.in/newsite/OurRegulation/CGD-Network-GSR720.html>, last accessed on 31st March, 2015

⁸³ GSR 612(E) 27/08/2008, Petroleum and Natural Gas Regulatory Board, <http://www.pngrb.gov.in/newsite/OurRegulation/CGD-Network-GSR612.html>, last accessed on 31st March, 2015

part of the CGD network; (c) customers having requirement of natural gas more than 100,000”⁸⁴

- **“Exclusivity for city or local natural gas distribution network** - These regulations shall apply to an entity which is laying, building, operating or expanding or which proposes to lay, build, operate or expand a city or local natural gas distribution network (hereinafter referred as CGD network) under the Petroleum and Natural Gas Regulatory Board (Authorizing Entities to Lay, Build, Operate or Expand City or Local Natural Gas Distribution Networks) Regulations, 2008. The rationale for allowing exclusivity to an entity is explained in Schedule A, which only explains the rationale for allowing exclusivity to entities to lay, build, operate or expand CGD networks, is not part of this regulation, does not have any legal force and should not be quoted or relied upon while interpreting these regulations. Entity laying, building, operating or expanding a CGD network before the appointed day and authorized by the Central Government for such activities shall be required to furnish to the Board, a specific performance bond linked to allowing of exclusivity and equal to the amount as specified under regulation 9 of the Petroleum and Natural Gas Regulatory Board (Authorizing Entities to Lay, Build, Operate or Expand City or Local Natural Gas Distribution Networks) Regulations, 2008. Infrastructure exclusivity is 25years while marketing exclusivity is 5years for new entities and 3 years for existing. Entities need to abide the service obligations failing which they will be penalized.”⁸⁵
- **“Determination of network tariff for city or local natural gas distribution networks and compression-** In a CGD network, the network tariff and compression charge for CNG has to be determined on normative level of capital employed plus a normative level of operating expenses in the CGD network, by considering a reasonable rate of return The entity must submit all operating, technical, financial and cost data of the CGD

⁸⁴ GSR196(E) 19/03/2008, Petroleum and Natural Gas Regulatory Board , <http://www.pngrb.gov.in/newsite/OurRegulation/CGD-Network-GSR196.html>, last accessed on 31st March, 2015

⁸⁵ GSR 198(E) 19/03/2008, Petroleum and Natural Gas Regulatory Board , <http://www.pngrb.gov.in/newsite/OurRegulation/CGD-Network-GSR198.html>, last accessed on 31st March, 2015

network or CGD network project that might be required by the Board for determining the network tariff and compression charge for CNG. The unit rate which is to be charged for a period shall be based on a discounted cash flow methodology which considers the reasonable rate of return as project's internal rate of return.”⁸⁶

6.2. Regulations

“**The Ministry of Petroleum and Natural Gas** - is the primary agency for regulating this sector in India. It is entrusted with the responsibility of handling legislation and issues related to E&P of oil and natural gas, such as, refining, distribution and marketing; and the import, export, and conservation of petroleum products and Liquefied Natural Gas (LNG). There are several leading Public Sector Undertakings (PSUs) and private players across the value chain.”⁸⁷

The Energy Coordination Committee (ECC) – was constituted in July 2005 under the chairmanship of the Prime Minister. Different individuals incorporate the Union Minister Power, Finance, Petroleum and Natural Gas, Coal and Non-Conventional vitality Sources, the Deputy Chairman Planning commission, Member (Energy), Planning Commission; Chairman, Economic Advisory Council to the Prime Minister, National Security Advisor; Cabinet Secretary and Principle Secretary to the Prime Minister, who is the Convener of the Committee. The fundamental focus is to empower a deliberate way to deal with advance definition and advance coordination in latent office activity. Additionally gives institutional backing to choice making in vitality arranging and security.

Oil Industry Safety directorate (OISD) – was set up in 1986. A technical directorate that formulates and coordinates the implementation of self-regulatory measures, aimed at improving safety in the industry in India.

⁸⁶ GSR 197(E) 19/03/2008, Petroleum and Natural Gas Regulatory Board, <http://www.pngrb.gov.in/newsite/OurRegulation/CGD-Network-GSR197.html>, last accessed on 31st March, 2015

⁸⁷“Oil & Gas - Market & Opportunities”, India Brand Equity Foundation IBEF, http://www.ibef.org/download/Oil_Gas_210708.pdf, last accessed on 29th March, 2015.

Petroleum Planning and Analysis Cell (PPAC) – in the petroleum division, this cell was situated up in the wake of disassembling of the Administered Pricing Mechanism (APM), with impact from first April first, 2002 and the India's Oil Coordination Committee (OCC) of Government was abolishment. PPAC helps the Government in discharging a percentage of the capacities earlier being performed by OCC, these capacities incorporates organization of appropriation on Public Distribution System (PDS), family LPG, light fuel and cargo endowment for far flung regions; support of information data bank to oversee emergencies; examining the examples in the oil expense determining petroleum import and fare patterns and operationalizing the area especially extra charge plans, if any.

The Center for High Technology –Under the control of MoPNG, it is a satellite association to work in the field of capacity, refining and treatment of petroleum and transportation of raw petroleum, petroleum items and common gas.

6.3. Legal Framework

Article 246, The Seventh Schedule of the Constitution of India vests the authority to legislate on all matters related to petroleum products with the Union Government.

The following statues and Acts provide the legal framework for the Petroleum Sector, including the PNGRB Act, 2006, which aims to regulate the midstream and downstream petroleum industry –

- **The Petroleum and Natural Gas Regulatory Board Act, 2006** - refining, processing, storage, transportation, distribution, marketing, and sale of petroleum, petroleum products and natural gas with the aim to protect consumer interests and promote competitive markets.
- **The Oilfields Regulation, Development and Control Act, 1948** – Regulates the grant of exploration and mining leases in respect of petroleum and natural gas.
- **The Petroleum Rules, 1956** (framed under the Petroleum Act) – Regulates storage, ports of receipt, and transportation by water, land and pipelines, and right of way.

- **The Petroleum and Natural Gas Rules, 1959** (framed pursuant to the Oilfields Act) – Regulates the grant of exploration license and the mining leases with respect of petroleum and natural gas, and conservation and development thereof; also specifies the area and term of the grant of licenses.

- **The Petroleum and Minerals Pipelines (Acquisition of right of user in land) Act, 1962** – Grants for the acquisition of right of user in land for laying of pipelines for transport of petroleum which includes natural gas and refinery gas & other minerals and matters connected therewith. The act provides only for acquisition of the rights of the user of the land and not for the acquisition of the land itself.

- **The Territorial Waters, Continental Shelf, Exclusive Economic Zone and Other Maritime Zones Act, 1976** – Regulates the exploration and exploitation of resources of the continental shelf and exclusive economic zones.

- **The Essential Commodities Act, 1955** – Spells out provisions controlling the production, supply and distribution of certain essential commodities, which include petroleum and petroleum products.

Some of the Other Acts that impact the Indian Gas Industry are as follows:

- The Water (Prevention and Control of pollution) Act, 1974.
- The Air (Prevention and Control of Pollution) act, 1981, amended in 1987
- The Environment (Protection) Act, 1986.
- The Environment (Sitting for Industrial Projects) Rules, 1999
- Customs Act, 1962
- Arbitration and Conciliation Act, 1996
- Income Tax Act, 1961
- Foreign Exchange Management Act, 1999.

6.4. Regulatory framework under PNGRB, 2006

“The board is constituted under Petroleum and Natural Gas Regulatory Board Act, 2006. Aim to regulate the downstream segment of the oil and gas industry consisting of refining, processing, storage, transportation, distribution, marketing, and the sale of petroleum, petroleum products and natural gas. However, as of now the Board is looking at the processing, storage, transportation and distribution of natural gas in the country. It can look into its other responsibilities only when the petroleum products are notified.

The Boards aims at

- Regulating the operations of petroleum transmission and the distribution network.
- Protect the interest of the consumers and entities.
- Act as a regulatory body for settling disputes between entities in downstream segment

Establishment - The act came in to force on the date when the central government by notification in the official gazette, establish a board called the Petroleum and Natural gas regulatory Board. But different dates may be appointed for different provisions, as notified timely.”⁸⁸ “The board consists of a chairperson, a Legal member and three other members are appointed by the central government.”⁸⁹ “Each member of the Board has term of Five years or 65 years whichever is earlier”⁹⁰ and Chairperson and other members not eligible for reappointment.⁹¹

“Key Functions of the Board –

- Ensuring uninterrupted and sufficient supply of petroleum, petroleum products and natural gas in all parts of the country;
- To promote competitive markets;
- Protect consumer interest and foster fair trade and competition;

⁸⁸ Section 1(3) and Section 3 of PNGRB Act, 2006

⁸⁹ Section 3 (3) of PNGRB Act, 2006

⁹⁰ Section 5 (2) of PNGRB Act, 2006

⁹¹ Section 5 (2) of PNGRB Act, 2006

- Declare pipeline or CGD as common carrier or contract carrier;⁹²
- **Register entities to,**
 - Market notified petroleum & petroleum products
 - Establish and operate LNG terminals
 - Establish storage facilities
- **Authorize Entities**
 - To lay, build, operate, or expand contract carrier or common carrier
 - lay, build, operate or expand local or local natural gas distribution network.
- Fix transportation rates for common carrier or contract carrier
- Declare pipeline as common carrier or contract carrier.
- Transportation rates for common carrier or contract carrier

“Under Section 22 of the PNGRB Act, 2006, the Board is assigned with the responsibility of defining the natural gas pipeline tariff that is to be charged by the entities that are laying, operating, building or expanding a natural gas pipeline, before the appointed day.

The methodology for determining pipeline tariff has already been specified in the provisions of the Petroleum and Natural Gas Regulatory Board (Determination of Natural Gas Pipeline Tariff) Regulations, 2008 (hereinafter referred to as “Tariff Regulations”). Under this, the PNGRB is to regulate the initial unit natural gas pipeline tariff firstly on a provisional basis and then finalize it considering the actual costs and data on the basis of audited accounts, at the end of the financial year.”⁹³

“Adjudication - Decide disputes arising amid entities or amid an entity and any other person who is relating to refining, storage, processing, transportation, marketing, distribution and sale of petroleum or petroleum products and natural gas (except the parties those have agreed for

⁹² Section 11 of PNGRB Act, 2006

⁹³ Notified on 20.11.2008 of PNGRB Act, 2006

arbitration)”⁹⁴. The board has the powers like a civil court as under the code of civil procedure 1908 while trying a suit⁹⁵.

Appeals – “Appellate tribunal established under section 110 of the electricity act 2003, shall be the appellate tribunal for the purpose of this act and exercise jurisdiction, powers, authority conferred on it under this act. The central government shall appoint one or more technical members on the appellate tribunal”⁹⁶.

Appeal From PNGRB - Appeal lies to Appellate tribunal for electricity⁹⁷. Time period for appeal is 30 days⁹⁸. Appeal has to be disposed within 90 days from the receipt of the appeal⁹⁹. Order of the board will be executed as decree.¹⁰⁰

Appeal From Tribunal - Appeal from the tribunal lies to Supreme Court¹⁰¹. No appeal lies against any decision or order made with the consent of the parties by the appellate tribunal. Time period for appeal is 90 days from the date of decision or order appealed.

Power of the Government – Section 42 of the demonstration vests control on the administration to issue approach mandates that should tie PNGRB, on the off chance that it discovers important to do it in general society interest or for keeping up or expanding supplies of petroleum, or petroleum items or characteristic gas or all or any of them or with the end goal of securing their impartial dispersion and guaranteeing sufficient accessibility.

⁹⁴ Section 12 of PNGRB Act, 2006

⁹⁵ Section 13 of PNGRB Act, 2006

⁹⁶ Section 30 of PNGRB Act, 2006

⁹⁷ Section 33 [Common Tribunal for Electricity, Petroleum & Natural Gas].

⁹⁸ Section 33 (2) of PNGRB Act, 2006

⁹⁹ Section 33(5) of PNGRB Act, 2006

¹⁰⁰ Section 36 of PNGRB Act, 2006

¹⁰¹ Section 37 of PNGRB Act, 2006

6.5. CGD Regulations

“Ministry of Petroleum & Natural Gas established the Petroleum and Natural Gas Regulatory Board (PNGRB) with effect from 01.10.2007, under the Petroleum and Natural Gas Regulatory Board Act 2006, to regulate the refining, processing, storage, transportation, distribution, marketing and sale of petroleum, petroleum products and natural gas excluding production of crude oil and natural gas. The Petroleum & Natural Gas Regulatory Board Act-2006 provides the legal framework for the development of the natural gas pipelines and city or local gas distribution networks. With the arrival of the PNGRB the implementation of PNG in various cities is being taken up in a phased manner as and when the bids are called for by the Regulator.”¹⁰²

PNGRB sets down regulations for CGD concerning approval, pipeline duty, pipeline access and eliteness. The CGD regulations set out the criteria for approval of a CGD Network in a touching geographic region for all organizations that need to lay, work, fabricate or grow a CGD system that is presently not approved by MOPNG before the warning of PNGRB on October 1, 2007.

Authorization Process for CGD –

- Expression of interest (EOI)/Suo moto
- Preliminary Scrutiny
- Public consultation process
- Bidding
- Bidding criteria and evaluation
- Authorization

The approval methodology is either started by a substance through accommodation of an EoI or by PNGRB suo-moto welcoming offers. In the event that the element presents an EoI, the PNGRB embraces a preparatory appraisal taking into account gas accessibility and conceivable integration with existing or proposed pipeline systems. In the event that the PNGRB is fulfilled

¹⁰² GAIL India Limited, http://www.gailonline.com/final_site/citygasdistribution.html

by its appraisal, it launches an open meeting procedure, from the date of accommodation of EoI, for a time of 30 days. The PNGRB then solidifies the approved region taking into account the EoI and remarks got amid the counsel process, and welcomes offers from the elements inside 15 days of culmination of people in general meeting period. The offers are assessed in view of the qualification and offering criteria expressed in the regulations. Any substance which covets for laying, working, building or extending a GCD arrange in a predefined geographic zone needs to demonstrate its capacity of undertaking such an activity. The substance ought to likewise have satisfactory budgetary capacity to attempt the undertaking.

The offers are assessed taking into account slightest present estimation of the general system tax (weightage 40 every penny) and the pressure charges (weightage 10%) over the financial existence of the task. The extra two offer assessment criteria are the most astounding present estimation of inch-km of steel pipelines (weightage 20 every penny) and household funneled characteristic gas (PNG) associations (weightage 30 every penny) amid the selectiveness period. The present worth for all the biddable criteria is figured utilizing a markdown rate of 14 every penny.

On the off chance that no element is chosen, the PNGRB strives for a re-offer; else, approval is conceded inside the following 30 days. In the wake of being approved, the element needs to tie up its gas supply for the whole term of the selectiveness period for a volume of at least 50 every penny of what was considered amid system duty determination for every year of the restrictiveness period. The gas supply tie-up requirements to be carried out inside 90 days and ensuing monetary conclusion inside the following 30 days.

The regulation considers 25 years to be the monetary existence of a CGD venture for all elements. Amid this period, the element is obliged to embrace ventures to keep up the pipeline system, online compressors and related hardware and offices, including development and specialized upgradation as may be needed. Toward the end of the restrictiveness period, the element might re-apply which may be allowed relying on its acceptable execution of administration and quality commitments.

Approval for gas pipeline will be surrendered to the element, if the setup pipeline farthest point is no under 33% more than the utmost requirements of the concerned substance and despite the

cemented contracted cutoff (termed as aggregate limit) and this limit is available for usage on basic bearer premise on open access and non-one-sided premise at transportation rates set out by the Board. The limit accessible under "open access" normal bearer premise will be allocated in the straightforward and target path as per the regulations to be drafted by the Board in this appreciation.

On the off chance that any issue emerges as for the gas pipeline get to, the transportation levy or limit booking, the elements can approach the Board, who may pass requests as regarded reasonable and fitting according to the truths of the case created on the procurements of the Act and the said regulations.

6.6. Natural Gas Pipeline Regulations

These regulations are pertinent to any substance laying, working, building or growing regular gas pipelines, or proposing it. Any substance who wishes to perform the above capacities needs to present an EoI. The PNGRB might likewise suo-moto welcome EoIs. From there on, The PNGRB does a preparatory appraisal of the gas accessibility, save limit accessibility in the current pipelines, conceivable network with different pipelines, and some other significant issues for a time of 15 days. It then strives for open ads for an additional 15 days, consequently informing the acknowledgement or dismissal of the EoIs after an additional 15 days. The base qualification criteria for each element incorporate specialized and monetary ability.

Not long after that the PNGRB welcomes offers from the substances. The monetary existence of the undertaking is considered as 25 years, while the offering criteria for these undertakings comprise of the pipelines tax, pipelines all through, and sensible rate of return. The financial life can be reached out by an additional 10 years by the PNGRB on tasteful consistence of the administration commitments. The pipelines tax is ascertained after the same recipe utilized for deciding the duty for CGD.

If there should arise an occurrence of a solitary offer, the PNGRB examines the achievability report of the venture and surveys the sensibility of the proposed arrangement. In any case, if the arrangement is discovered to be problematic, the PNGRB maintains whatever authority is needed

to reject the offer. The approval is conceded after the element chose gives an execution bond. On the off chance that a substance neglects to do its operations according to the administration commitments, notification are issued to the element twice at an interim of one month. In the event that healing moves are made, no punishment is required. Something else, the punishments continue as before as that for disregarding administration commitments for CGD. Further augmentation of the financial life additionally stays under the PNGRB's optional forces. Further, the limit of a gas pipeline is approved by the PNGRB for new pipelines, or dictated by the PNGRB under significant regulations for proclaiming gas pipelines as normal or contract transporters.

The transporter obliges pronouncing the section and leaving point - savvy plan and accessible limit of the pipeline, and facilitating it on its site on the first day of each month furthermore sending it to the PNGRB. It additionally needs to define the calorific quality for transportation of the common gas, through the pipeline. It can audit this worth periodically, considering the new wellsprings of gas and new buyers.

Interconnection of the two normal or contract transporter pipelines may be required by either a shipper or a transporter subject to limit accessible. The gas quality likewise needs to be perfect. Also, if the pipeline limit is used more than 110% by the shipper without the consent of the transporter, the shipper will be charged for the overwhelm.

6.7. Policy

Policy on the Development of Natural Gas Pipelines and City Gas Distribution Network¹⁰³

The Policy supersedes all other prevailing policies on the subject which was notified by the Government of India, Ministry of Petroleum and Natural Gas, on 20th December, 2006,

Objective- It is a Regulatory reform, which permit and encourage market forces to enhance competition and to produce a more efficient and competitive industry structure. It is a

¹⁰³ Ministry of Petroleum & Natural Gas, <http://petroleum.nic.in/policy%20of%20pipelines.pdf>

preconceived notion that the competition can reduce the need for regulation. In many areas some areas of monopoly exists where the benefits of regulation potentially overshadow the cost.

“Natural gas pipelines infrastructure and CGD networks fall under this category. The natural gas sector is at the verge of rapid growth in the country, with the increased exploration efforts under NELP and large scale discoveries of gas in the East Coast, the commissioning of the LNG import terminals in the West Coast, projected upcoming LNG terminals and the Government’s initiatives in natural gas through transnational pipelines, there is an imminent need to provide a policy framework for the future growth of the pipeline infrastructure in the country with a view to facilitating the evolvement of a nation-wide gas grid and the growth of city or local gas distribution networks.”¹⁰⁴

The objective of the policy is –

- to promote investment from both public and private sector in the natural gas pipelines and the CGD networks,
- to facilitate the open access for all the players to the pipeline network on a non-discriminatory basis,
- promoting competition amongst the entities thus avoiding any abuse of the dominant position by any entity, and
- securing the consumer interest with respect to gas availability and reasonable tariff for natural gas pipelines and CGD.

The Petroleum & Natural Gas Regulatory Board Act, 2006 provides the legal framework for the development of the natural gas pipelines and CGD. This policy may be read in aggregation with the provisions in the Act and the rules and regulations framed thereunder. Except if stated, the various terms and phrases will have the same meaning as used in this policy as stated in the Act and the rules and regulations frame.

Key Features – The policy applies to natural gas pipelines and city or natural gas distribution networks, except for the dedicated pipelines laid to supply gas to the specific consumers which are originating from regulated pipelines if the same are not for resale but for their own use. The

¹⁰⁴ Ibid.

PNGRB ensures selection of an entity to build, lay, operate or expand the natural gas pipeline or a CGD network in a transparent and objective manner so as to facilitate investments in the sector and protecting the interests of the consumers.

Pipeline Authorization - No gas pipeline or the CGD system will be fabricated, laid, worked or extended without the approval of the Board. With the exception of gas pipeline it might be conceded just if the outline pipeline limit is no less than 33% more than the limit necessities of the concerned element and notwithstanding the solidified contracted limit (termed as aggregate limit) and this additional limit is accessible for utilization on regular bearer premise by any outsider on open access and non-prejudicial premise at transportation rates set around the Board. The limit accessible under "open access" basic bearer premise will be designated in a straightforward and target way in consistence with the regulations drafted by the Board. On the off chance that any issue emerges with respect to the gas pipeline get to, the limit booking or transportation duty, substances may approach the Board and may pass suitable and reasonable requests in light of the truths of the case and taking into account the procurements of the Act and the regulations.

Advertising Service Obligation and Exclusivity – The substance approved by the PNGRB to fabricate, work, lay, or grow a CGD system needs to take after the PNGRB's endorsed showcasing administration commitments. The time of restrictiveness, which is for a predefined number of years, is allowed by the PNGRB, for which it might be avoided from the domain of the agreement or normal transporter according to its regulations.

Unbundling of Operations - Any element who wishes for requisitioning working, building, or growing contract or basic bearer gas pipelines and need to present an endeavor expressing that if such a substance has business intrigues in the related regions with business intrigues in such zones then it will guarantee separation with the exercises. An Affiliate Code of Conduct must be taken after as detailed by the Board under the regulations. The Board has the privilege to enquire about the administrative structure or proprietorship example and further records of the approved substance furthermore its connected elements in order to discover that such a relationship does not exists in the endeavor. The Board can intercede at any suitable stages to guarantee unbundling of transportation action that from different exercises of the element.

Transportation Tariff - The way for deciding transportation levies of the agreement or regular bearer transmission pipelines or CGD system will be set around the Board, in agreeability with the procurements of the Act and the regulations.

Part of the State Government - The State Governments is having central part in encouraging rapid, opportune fulfillment and operation of Gas pipeline and CGD extends by guaranteeing different statutory and different clearances on a most optimized plan of attack premise. The Central Government needs to bring up the matter with the State Governments. The State Governments readies their arrangements for building up the CGD where they need to organize the urban areas or neighborhoods be taken up for setting up gas dissemination systems keeping in mind organizing they may be guided by natural concerns, local & mechanical fuel prerequisites, and so on.

Outside Direct Investment - Foreign Direct Investment (FDI) in the framework area has been recognized as one of the vital variables of the financial development of the nation. The Central Government is trying all the endeavors to welcome and encourage FDI in order to supplement and supplement the local venture. The FDI upto 100% is allowed in the laying of common gas pipelines under the programmed endorsement course.

Others - The Central Government/Board, in discussion with the Oil Industry Safety Directorate (OISD), audits the current standards & measures, surveys their relevance furthermore build up a complete arrangement of specialized & HSE guidelines concerning characteristic gas transmission & circulation pipelines and CGD. The Board sets out the models in agreeability with Section 11 (i) of the Act to guarantee constant improvement of common gas pipeline & circulation framework in the nation.

7. ISSUES AND CONCERNS

Creating focused regular gas markets and drawing in interest being developed of foundation may require incessant administrative changes and mediations, as it happened in both USA and UK. On the other hand, expanded administrative danger and the danger of political mediation debilitate interest in the regular gas part. In this manner, it is imperative to present auxiliary changes toward the start of the change to set the stage for creating markets and rivalry. From there on, ceaseless change in the administrative structure should dependably bolster market advancement. The business sector strengths have likewise ended up being essential and compelling in the characteristic gas industry, once a proper basic and administrative system is placed set up.

Mulling over the current situation with common gas showcase and related base in India and also the universal experience, the issues for prompt consideration could be comprehensively separated under the heads of Policy Issues and Regulatory Issues.

7.1 Policy Issues

- **Enabling Efficient utilization of gas/ Infrastructure status to gas pipelines** – to give sufficient backing to the improvement of regular gas showcase and energize interest in the common gas base in India, approach level activities would be obliged to permit gas to exchange openly in the business where suppliers, substantial clients, merchants, and so forth could partake. Advancement of such an exchanging stage is prone to encourage foundation of aggregators/ dealers in the commercial center with differed plans of action who might thus give profundity to the business and location the dissimilar needs of diverse suppliers and purchasers of regular gas. Such an instrument would establish the framework at the business based cost revelation of regular gas. Going ahead, it is key to build up an exchanging stage to find costs and make sufficient profundity in the Indian common gas showcase so that more venture thinks that some way or another into the characteristic gas foundation and the framework that gets made gets used proficiently. Effective utilization of gas ought to likewise be advanced through era of force through

CCHP, which is more productive than focal producing stations and lessens the weight to include additionally creating limit putting the rare vitality asset to best utilize.

It is recommended that gas transportation industry be given "foundation status"/ tax breaks/ remote region advantages/ whatever other monetary motivations, to make higher enthusiasm for this division. It is likewise prescribed that feasibility crevice subsidizing is given to certain sub-practical pipeline advancement ventures.

- **Strategic Storage** – The offer of characteristic gas in the essential vitality blend of India is required to go past 20% by 2030 expanding as the outcome, the significance of regular gas in the connection of vitality security. Subsequently, it is basic that a far reaching approach activity be coordinated at investigating the choice of keeping up vital stockpiling/ support stock post 2020. Vital capacity is an imperative component of a danger administration framework went for expanding security of vitality supply in a nation. Vital capacity can not just address sudden interruptions in supply in emergency a circumstances yet it can likewise assume a part in advancing reasonable rivalry and adding to a free market. PNGRB/ GOI need to setup a group to basically assess the requirement for such stockpiling, the sort of capacity which would be practical for the nation.
- **Environmental and Social Impact** – Oil & Gas Pipeline ventures have been amongst the greatest foundation extends in creating nations lately. The environmental change effect of methane spillage from maturing gas pipelines has been one of the greatest effects of such activities previously. Hence it is critical that the natural and social effects connected to common gas pipelines extends in the nation additionally gets sufficient arrangement center. Natural and social effect appraisal (ESIA) is one structure that may help in avoiding/ minimizing any unfavorable effect coming about because of laying of funnels.
- **Evaluate distinct options for the present differential duty administration** – Natural Gas draws in differential expense treatment in distinctive states inside India which confines free development and swaps crosswise over topographies. In swapping of

regular gas the 'title of proprietorship' in Gas is battered with that of another substance, closer to the end customer, to empower conveyance without gas needing to go over avoidable long separations. Swapping of gasses aides in overseeing characteristic restrictions in taking care of, capacity and transportation of common gas. Twofold tariff and the nonappearance of an exchanging stage make swap courses of action troublesome, especially in rising Gas markets like India. Subsequently, it is essential to assess distinct options for the present differential duty administration for regular gas so that free development and swapping of gas gets encouraged crosswise over India

- **Capacity building (assets) to help advancement of characteristic gas foundation** – Capacity building for the improvement of common gas base, through advancement of preparing establishments for gifted and semi-talented laborers is a region that obliges strategy center. Considering the exponential development of gas transmission pipelines and CGD system that India is required to see in not so distant future, accessibility of gifted/ semi-talented work power is going to demonstrate basic to the appearance of the gas foundation improvement of arrangements. Albeit mechanical advancements have prompted decrease in labor prerequisites for advancement of common gas base extra minutes, they have not possessed the capacity to thoroughly balance the last.
- **Long term gas tie ups** – The expanding utilization of characteristic gas would be cleaner for the earth as well as lead to more noteworthy expansion of the vitality/ fuel wicker container of India, in this way reinforcing the nations vitality security. However keeping in mind the end goal to expand the utilization of characteristic gas in the nation on a maintained premise, long haul dependable supply plan/ tie-ups would be required notwithstanding expanding household vitality asset base. This can either be carried out through trans-national pipelines or import of LNG. Thus to guarantee long term vitality security of India, GoI and its orgs ought to work with its political/ strategic channels to give vital backing to the merchants of the gas on time up long haul assets in outside nation which can either course through LNG course or through pipelines taking into account geological vicinity with the nation. This is imperative since the issue accept geo-political overtonns. Likewise, all extensive buyers of Gas like China re working at largest amount in the administration to guarantee such

7.2 Regulatory Issues

The characteristic gas space in India has seen real consistency changes as of late. There is a requirement for synchronization of regulations over the quality chain. Non-arrangement boxes issue with gas based force creating stations and urea makers wherein they endure because of issues like diverse close down days permitted, occasions of power majeure advertisement funny rate adaptability and so on.

- **Unbundling of Transportation and Marketing of Natural Gas** – Unbundling of exercises of transportation and showcasing of regular gas has yet to happen in the nation. The unbundling of these two exercises to counteracts cross-appropriations between the two exercises and makes a level playing field for all shippers, maintaining a strategic distance from favors by transporters to its supply associate. The advancement of extensive number of supply organizations (that buy the characteristic gas in the wholesale market, resale it downstream, and utilize the transportation administrations of pipeline and dispersion organizations). All gets encouraged by demonstration of unbundling. Also, expanded in the quantity of such organizations pushes down their re-deal markups because of rivalry along these lines going through expense sparing from the generation section to end clients. At present the regulations give just to bookkeeping and monetary partition (by keep up particular budgetary records and books of records for the managed action). On the off chance that a substances member is locked in or an element all alone takes part in both transportation and promoting of regular gas.
- **Robust Open Access Code** – There is a requirement for vigorous open access code for the common gas pipelines as it is relied upon to encourage access to pipeline framework and profit market members. Characteristic gas makers get advantage from it as open access permits new suppliers to achieve purchasers Downstream members like the circulation substances get advantage from direct access to the regular gas makers and a more noteworthy decision in gas supply. End clients likewise profit through expanded rivalry and decision of Gas distributors. Rules advised by PNGRB permit use of limit in a characteristic gas pipeline by any substance on a non-oppressive premise and additionally the task of and exchanging of limit in the open business. PNGRB has additionally turned

out with an "Entrance Code" for the common gas pipelines. Be that as it may, the code needs to be fortified further to accomplish the coveted result. The current code is not intended to arrangement enough with numerous holder administrators prompting issues of similarity. PNGRB needs to setup a different group to turn out with suitable proposals to fortify the entrance code, in accordance with created codes of developed markets.

- **Review of Mechanism of Infrastructure Development** – For advancement of any foundation the engineers need to be given affirmation of sensible returns, maintainable for a time period which helps them to attain to financing. There is have to audit the current system of honoring the approval for improvement of base, the component needs to be such that it guarantees –
 - a) all elements offer for the same item or limit.
 - b) Technical parameters may be settled by all the invested individuals in co-appointment with PNGRB.
 - c) Bid can be approached the premise of tax can be permitted according to the levy determination regulations,
 - d) With the change in situations extra capex can be presented in the venture as permitting remuneration on the capex would dependably be in the hand of PNGRB and the same can be fittingly given to the substance.

- **Capacity trading** – improvement of common gas transportation showcase likewise stays one of the critical venture in the development of Indian Natural Gas market towards development. At present, the regulations accommodate limit exchanging. Be that as it may, foundation of fluid and straightforward essential and auxiliary markets for exchanging pipelines limit still looks removed. While in the essential business sector pipelines organizations can offer transportation contracts to advertisers, nearby circulation organizations or end-clients, the auxiliary business permits pipeline organizations and holders of transportation contracts of re-offer the unused limit. The unbundling is required to encourage the improvement of a fleeting transportation advertise in the nation (where pipelines organizations and transportation contract holders would have the capacity to offer accessible limit for offer) by presenting a requirement

for concurrent clearing characteristic gas and transportation markets (given that market investment get regular gas in view of accessibility of transportation, and the other way around) and advancing straightforward and reasonable piecing of transportation administration. A strong access code would likewise bolster the advancement of transportation market by encouraging foundation imparting.

- **Independent operator for system discipline and security of supply**– There is additionally a need to think about constituting as a free pipeline framework administrator (PSO) to streamline duty offering among different pipeline framework holders and in addition guaranteeing framework discipline. The common gas pipeline system working in the nation are 6 in numbers- GAIL, GSPL, GGCL, RGTIL, IOCL, AGCL. In such a various situation, an income imparting model may be actualized where all pipeline holders would be permitted to build up a system as indicated by the PNGRB regulations while the PSO would function as a shell organization, working the whole system having value of every pipeline manager proportionate pipeline limit that the holder substance offers to the PSO. The offering of benefit would be chosen by the PSO in light of a recipe. The setting up of PSO will get consistency access parameters among pipelines and thus guarantee framework train supply security. Since the setting-up of a PSO is an unwieldy and tedious action, the controller ought to begin the procedure so that the same can be operationalized with the advancement of the gas network.

8. CASES

8.1 Indraprastha Gas Limited vs. Petroleum and Natural Gas Board

Brief Facts:

- Indraprastha Gas Ltd (IGL), in this case, has challenged the PNGRB notification for bidding in Ghaziabad quoting section 16 as not notified by the Government, the PNGRB thus has no authorization.
- Indraprastha Gas Ltd (IGL) and Voice of India, a non-profit organization, has challenged the PNGRB notification for bidding in Ghaziabad in Delhi High court stating section 16 has not so far being notified by the Government, resulting PNGRB does not have authorization to issue licenses for city gas distribution network.
- The PNGRB order of March 19, 2009, wherein IGL's contention that it had authorization to issue licenses for Ghaziabad and with the Board inviting bids for city, was rejected - liable to be set aside as it violates the principles of natural justice.

DELHI HIGH COURT Held: In undertaking the challenge by IGL, the Delhi high court on January 10, 2010 held that the PNGRB did not have powers to issue city gas licenses. Since the government did not notified section 16 of the Act, the downstream regulator did not have powers to grant authorization for beginning city gas distribution. The board was constituted in 2007 without section 16 of the act being notified.

SUPREME COURT – PNGRB filed a special leave petition against the orders of the Delhi High Court. The Supreme Court has said that the PNGRB can only process pending applications, but cannot any final orders.

Government notified – The government in July 2010 notified Section 16 of the act, which gives it power to grant licenses. In an application PNGRB has submitted that since section 16 of the PNGRB Act, 2006, been notified and thus is now legally authorized to grant license.

Section 16 – “AUTHORIZATION [Section 16(1) (2)] - Entities to lay, build, operate or expand or local natural gas distribution network or city gas distribution network should get authorization

from the board. Entities who want to lay build operate or expand any pipeline as common carrier or contract carrier.”¹⁰⁵

PNGRB Authorization – “The entities who obtained authorization immediately before PNGRB appointment shall deemed to have the authorization but any change or usage in the purpose shall require separate authorization from the board”¹⁰⁶

HELD - In May 2011 the Supreme Court empowered the PNGRB to issue CGD licenses.

8.2 Reliance Industries Limited and Others vs. Indian Oil Corporation Limited and Others¹⁰⁷

The complaint has been filed by Reliance Industries Ltd. And others under Section 12 read with Section 11 and Chapter V of the Petroleum and Natural Gas Regulatory Board Act, 2006. The Respondents are public sector undertakings in the oil sector. The main grounds of the present complaint are - the restrictive and unfair trade and marketing practices and cartelization in respect of marketing and sale of petroleum and petroleum products by Respondent who deal in the supply of crude oil.

The background Facts

- Prior to 1997, the marketing of petroleum products, including the transportation fuels namely - Motor Spirit (M.S. or petrol), High Speed Diesel (HSD) and Aviation Turbine Fuel (ATF) was controlled under the mechanism known as “Administered Price Mechanism” APM.
- But on 1.9.1997 the Govt. of India took a decision to dismantle the APM and to introduce reforms in a phased manner.
- On 8.3.2002, the Govt. of India issued a Notification which declares the decision to grant authorization to market transportation fuels, like, MS, HSD, and ATF to companies

¹⁰⁵ Section 16 of PNGRB Act, 2006

¹⁰⁶ Section 16(b) of PNGRB act, 2006

¹⁰⁷ Complaint No. 4 of 2008, <http://www.pngrb.gov.in/newsite/pdf/orders/order02july.pdf>

owning and operating refineries with the investment of Rs. 2000 crores; or annually producing at least 3 million tonnes of crude oil; or proposing or investing to invest Rs. 2000 crores in exploration and production, refining, pipeline or port terminals.

- Later, Notification dated 15.3.2002 was amended to give decisions contained in the Notification dated 21.11.1997 and 8.3.2002, issued under Section 3 of the Essential Commodities Act, 1955, the MSD and HSD (Regulation of Supply and Distribution and Preventive of Malpractices) Order, 1998. The amendment provided private companies to apply for authorization for market transportation fuels.
- Another notification was issued on 28.3.2002 wherein the Govt. of India declared the dismantling of APM in hydrocarbon sector and announced the winding up of Oil Pool account, which with effect from 1st April 2002 and also stated that new entrants including private sector will be allowed to market transportation fuel.
- The Complainants made applications under the amended MS and HSD (regulation of Supply and Distribution and Prevention of malpractices) Order, 1998 for marketing rights of transportation fuels and also made for the venture qualifying level of investments.
- On 27.5.2002 and 14.7.2004 the Govt. of India granted marketing rights to Complaints. The Complainants are seeking enforcement of the said policy.

The Complainants alleged that –

- The policy as stated in the GoI notifications, stated above, is still valid so shall be enforced.
- The PSC OMCs did not rationalize their prices in accordance with the international prices despite of the fact that APM was dismantled.
- Predatory pricing and unfair trade practices and the practices adopted by the Respondents have the effect of preventing, distorting or restricting competition.
- Complainants also submitted that they suffered from huge losses.
- The Govt. has been regulating the prices of MS and HSD as sold by the PSU OMC's only and not the prices of MS and HSD as commodities.
- PSU OMC's have acted in contravention with the PNGRB Act, 2006.

Case Laws Referred:

The Complainants cited the under mentioned cases:

1. **Ashoka Smokeless Coal India (P) Ltd. Vs. Union of India**,¹⁰⁸ – to submit that the Government while regulating the prices of MS and HSD as sold by PSU OMCs has not acted as a sovereign power but only in its capacity as a majority shareholder in the company.
2. **Poonam Verma vs. DDA**,¹⁰⁹ – to submit that the Government cannot act beyond its professed policy.
3. **BALCO Employee Union (Regd.) vs. Union of India**,¹¹⁰ – wherein it was held that in the case of a policy decision on economic matters, the court should be very circumspect in conducting any enquiry or investigation.
4. **P.C. Thomas vs. Union of India** – where the Hon'ble Court dismissed the case of the Petitioner refusing to interfere with the petrol price hike holding that it is the domain of the Executive and there is nothing that the Courts can do in such matters.
5. **Union of India and Ors. Vs. Hindustan Development Corporation and Others**¹¹¹ – wherein cartelization is held to be an unfair trade practice, which is not in the public interest. Further, predatory pricing is said to be a conspiracy which is by nature speculative.

The Court held –

1. Charges of Cartelization and collusion have no basis.
2. No merit can be seen in the contentions that PSU OMCs indulged in monopolistic or anti-competitive behavior.

On these basis, the complaint was dismissed and the court directed complainants to pay Rs. 1,00,000 to Respondents as costs.

¹⁰⁸ (2007) 2 SCC 640

¹⁰⁹ (2007) 13 SCC 154

¹¹⁰ (2002) 2 SCC 333

¹¹¹ (1993) 3 SCC 499

9. CONCLUSION

In the wake of traversing the entire of the Natural Gas Sector, downstream fragment, it can be inferred that the area need clear arrangement and administrative system keeping in mind the end goal to pull in ventures which is needed in the vitality segment to support high financial development as well as to manage neediness which leaves a great many individuals without access to vitality. The part and forces of the controllers must be plainly characterized. India has opened up to private and remote organizations and these need administrative soundness with least mediation from the state.

Generally speaking, the Indian gas segment is balanced for quick development with interest keeping on growwing notwithstanding the worldwide subsidence. All sections of industry especially investigation and generation, and transport framework, have pulled in significant speculations. Eight areas of the National Gas Grid are balanced for execution. There is changed over exertion from the administration to expand vitality security for the nation. The way to this will be a reasonable and unsurprising strategy and administrative administration. The powers ought to consider the buyer and financial specialist viewpoint while acquainting distinctive regulations relating with the business.

The key test confronted by the gas business is the unlucky deficiency of a statutory upstream administrative power. Numerous universal majors still not discover the potential environment helpful for behavior business. The DGH, being a division of the administration, is not saw as totally autonomous and private part enthusiasm for the business.

A. Policy and Regulation

Recommendations and Suggestions

1. **Clarity in Policy system** – The nation needs to critically address the arrangement administration on the gas business, despite everything it needs to develop and balance out. Strategies, for example, the gas usage Policy have been defined without much vision and clarity, which may prompt contortion of the business, for the sake of ideal use. With the warning of the PNGRB in October 2007, the MoPNG is by all accounts

a promoter of business sector standard. However, with the announcement of an allocation policy, it is restricting the operating and marketing freedom which was promised in NELP. This has discouraged exploration companies from investing millions in high risk exploration activity if it is not assured of marketing freedom, given that big international players are already wary of the political climate in the country.

2. **Reliable and Affordable Availability of gas** – It is essential that the gas is available to different consumers in the required quantity and at a price which is affordable to them. The gas supply is dependent upon the successful discoveries made by the developers. Due to the restrictive policies of the government, the private sector players and international players are shying away from entering the exploration sector. Remedial and appropriate measures should be adopted by the government in order to increase the competition in the sector which, in turn, will help in improving the gas availability.
3. **Cost Reflective Pricing** – There exists lack of political consensus of the free/market pricing of gas. The price of the gas should be deregulated and based on market forces. The subsidized and controlled gas pricing mechanism has constrained the profitability of ONGC and OIL.
4. **Proposed National Gas Grid** - in order for a city to receive gas, it must be connected to the main transmission system, which is still inadequate as it consists mainly in pipelines in the northwest region and the EWPL. There are therefore large transportation pipeline requirements for major cities in the South, the North and the East to be connected.
5. **Fiscal Regime** - There are arrangement vulnerabilities identified with tariff and financial perspectives. There has been an absence of clarity on qualification of E&P exercises for money tax cuts with a refinement being made in the middle of oil and characteristic gas. The Center ought to dispense more gas to CGD and prescribed

assessment occasion under Section 80 I-An of Income Tax Act 1961 to offer impulse to the part.

6. **PSC** – The PSC puts a few confinements on designers as far as their opportunity to value and business sector the gas they have delivered. It is likewise a conviction among private players that the administration arrangements are situated for open area organizations and that PSCs are additionally surrounded appropriately.
7. **Organized Market Structure** – will help to expand the ventures and enhance productivity in the division. At present, there is constrained business sector action. The business sector will be encouraged and viable when there are numerous players and when there is a sorted out commercial center. Likewise, bigger number of organizations working in the division will make it more focused and will prompt more prominent profit picks

B. City Gas Distribution and Transportation Infrastructure

There are a few elements that are the matter of sympathy toward the City Gas Distribution Segment. Some of them for instance – the accessibility of gas has been dealt with to a degree with the initiation of generation from KG-D6 piece. Accordingly the supply showed signs of improvement and a few finds that the supply from KG-D6 ought to be distributed for the CGD. Different concerns remain are – the base which incorporates transmission pipelines and the arranged Natural Gas Grid.

Recommendations and Suggestions:

1. **Regulatory** – For the development of the fragment, clarity on the part of controller needs to be made. The motivation behind naming a controller was to increase a level playing field for all the players, which is essential to draw in the ventures into the segment. Despite the fact that it has got cleared to a degree after the choice of Supreme Court in IGL Case in 2012.
2. **Developer Risks** – The Developers are liable to face a few sorts of dangers as the business sector creates, which incorporate specialized and wellbeing determinations

or rules, execution issues, numerous leeway prerequisites, and so on. They likewise needs to seek the neighborhood clearances and regards like building plans, exchange and industrial facility licenses, pipeline formats, NOC's from activity and flame police, and a few different supports/ clearances. Because of this Urban Local Bodies is assuming a discriminating part here. CGD system arranging requires to be embraced as a major aspect of the city improvement plan or end-all strategy advancement prepare to guarantee that a legitimate utility passage be reserved for protected and successful advancement of the pressurized CGD system.

3. **Infrastructure** – For the advancement of CGD activities, one of the key highlights is the improvement of the conveyance base, particularly from new land zones. Trunk line integration, a reasonable administrative system and asset necessities all requires to be tended to. Both, the Central and the State, Government needs to guarantee that the foundation blockages are evacuated expediently in order to encourage improvement.

The difficulties confronted by the Indian Energy Sector and by the gas part specifically are huge. Lacking supplies remain an approach issue in spite of a relative change. The downstream division is very immature and huge speculations are needed so as to offer access to more shoppers. Privately owned businesses obliges a steady and straightforward administrative system furthermore an equivalent treatment as of state-possessed organizations.

The unbundling of characteristic gas transportation and advertising is still to happen. In any case, it is imagined that over the long haul, with the developing of the gas advertises, the approved elements won't have any business premiums in the gas advertising or city or neighborhood dispersion systems. PNGRB has as of now turned out with regulation to guarantee lawful possession unbundling of transportation action from different exercises of a substance, even before the unbundling is influenced. PNGRB needs to guarantee that the limit in transportation pipelines is accessible on a straightforward premise to all the shippers and shoppers.

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