

# CHAPTER 1

## INTRODUCTION

### 1.1 BACKGROUND OF THE STUDY AND INDIA'S OIL AND GAS SECTOR

Amidst recent trends in spotlight like smart cities, digitization, disruptive technologies, and artificial intelligence etc., 'Energy Demand' still remains as most fundamental to every growing economy, to all businesses and to all policy makers. Successful management of energy projects can impact energy supplies in a big way. Deciding appropriate energy mix is another important part of managing energy projects. Even today, while deciding energy mix options, the most opted and reliable portion revolves around Oil and Gas Energy due to many more reasons like availability, accessibility, affordability etc. But Oil & Gas projects too are suffering with delays, cost overrun, time overrun and other troubles. For example, recent report in India mentions out of 1,076 number of projects worth at least INR 50 crore each, shows a cost overrun of 12.5 percent and among those petrochemical projects are highest to the tune of 82.5 percent with a total number of 76 projects. Almost one-third of the projects that were surveyed are delayed because of various reasons. (MOSPI 2016), (SBI study report, 2016). In oil and gas projects, an average of 15-month delay has been noticed in projects worth INR 100-999 crore each while the delay increases to 18 months in projects worth INR 1,000 crore and more. An average cost overrun of 6.2 percent noticed in projects worth INR 100-999 crore each and 6.9 per cent has been noted in projects INR 1,000 or more

across all PSU petroleum projects (PMI report, 2016). Among various reasons for cost & time overrun, unavailability of funds is another bottleneck for non-PSU projects. But this is not a major issue for PSUs as they have internal funds for their projects, don't depend on the government grant for funds and are empowered to take investment decisions up to certain limit. So leaving apart availability of funds and other exogenous factors not under direct control of an organisation like land clearance, political changes, economic cycles etc. major contributors to cost & time overrun are endogenous troubles like scope creep, contractual disputes, weak contract administration, poor procurement and wrong or poor selection of technology or equipment (KPMG, 2011). These parameters within the purview of an organisation, research is planned to study these intrinsic factors for framework of contract award and hence their impact on project performance.

Large oil and gas project involves more than 50% cost for procurement of equipment & construction contracts. Managing procurement & supply contracts hence forms important link while studying project performance. During oil and gas project performance, one major trouble seen, especially in countries like India where oil and gas projects are owned and operated by Public Sector Undertakings, are issues begin from procurement activity affecting efficiency in terms of time, cost and risk. Further oil and gas operators mainly being public sector undertakings, this procurement function (where large public money is involved), is still relying on old tendering system with contract award based on 'lowest price bid'. This

study, hence, is carried out to study and find is ‘lowest price’ the root cause of all these troubles? And can a holistic framework for contract award is suggested at least for large, critical and suffering projects of oil and gas?

India’s business landscape is so diverse and different, that when a framework is suggested, many loopholes and drawbacks are observed peculiar to Indian scenario. Hence this study is undertaken for oil and gas projects for Indian scenario.

To begin with the study work, some facts are highlighted to know importance of oil and gas in India’s economy. India is a country with world’s third largest Gross Domestic Product as per purchasing power parity (PPP), possesses second largest human asset and ranks fourth in the world as per total energy demand. Figure 1 indicates India’s Energy consumption is 638 million tons of oil equivalents (mtoe) against World Energy consumption of 12000 mtoe which is 4.4% of total World consumption. India’s growth rate of energy consumption is 6.8% which has placed ‘focus on energy’ at the core of India’s economy.



Fig 1.1: (Source: PWC report 2015)

Energy basket of India constitutes oil and gas energy which is next to Coal energy and has a share of more than 35% in the total energy consumption and contributes to 15% of GDP. (India Energy Outlook, 2015) The size of the oil

and gas industry in India is USD 160 billion during Year 2015. But major feature of India's Oil and Gas energy is its high dependence on import which is 70% for crude oil and 30% for gas.

**Primary energy demand by fuel type in India**

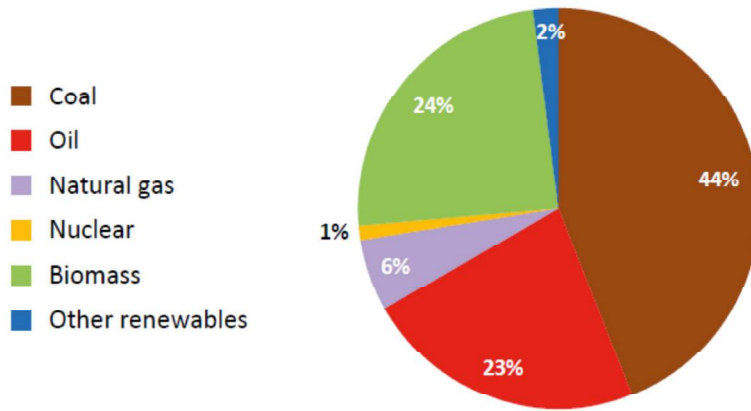


Fig 1.2: (Source: World energy outlook special report 2015)

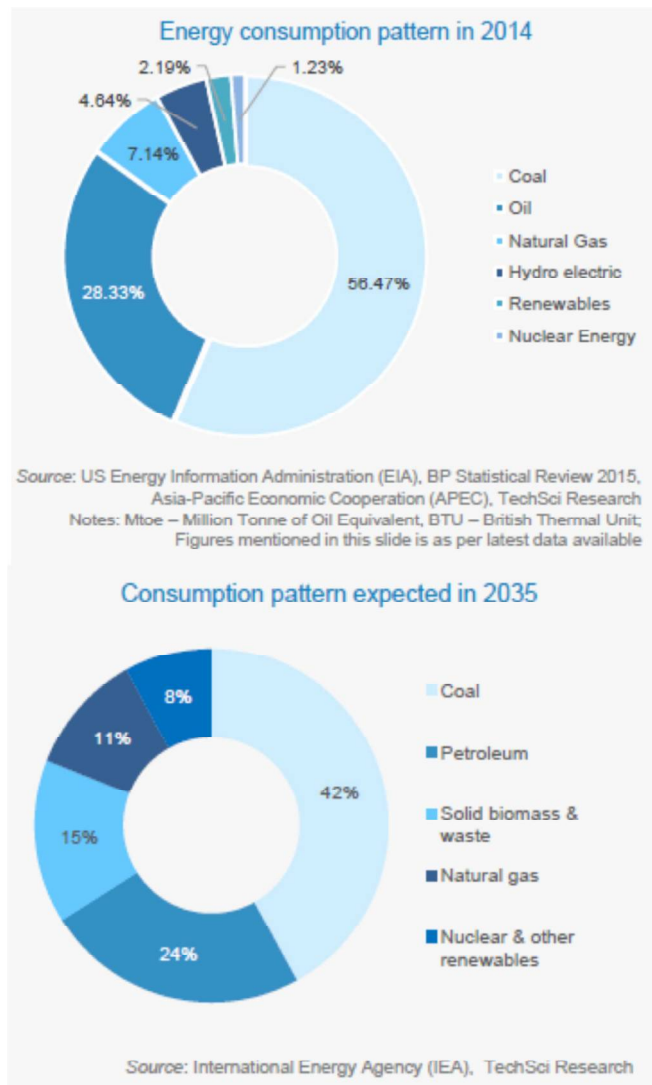


Fig 1.3

Environmental pressures are shifting India's energy consumption pattern from coal based to gas based, and renewable energy based sources with oil still remains as second most preferred energy source making hydrocarbon energy as one of the top energy portion.

**Indian's Oil and Gas Import Against Total Import Bill :**

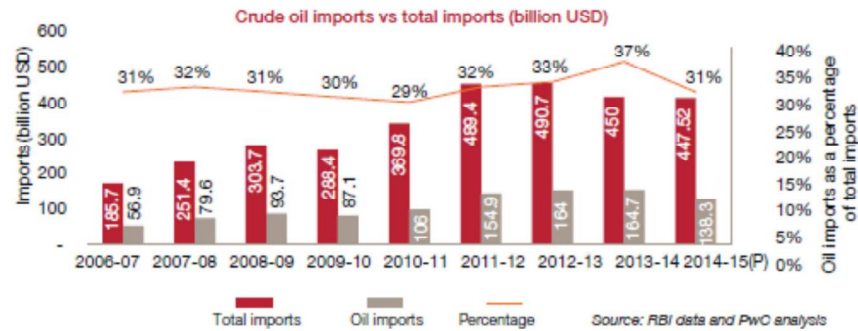


Fig 1.4

Above facts indicate, India's scanty and limited production of oil and gas has created huge gap in demand and production and is forcing India to accord priority to exploration and production of oil and gas reserve from various sources within the country such as; deep water, coal bed methane, Natural Gas hydrate, Shale gas etc. This has created potential for global players to invest in technology, innovation and environmental friendly systems in the country. This is backed by gas supplies to India by construction of LNG regasification terminals, Floating Storage and regasification units (FSRU) in the country and development of transnational and within country gas pipeline infrastructure creating another pool of opportunities for global players. India is world's fourth largest refiner country in 2015 with plan of further addition of refining capacity aimed to boost potential of opportunities in midstream segment as well. Recently Government of India's initiative to reform systems is to promote 'Ease of doing business in India' strategy and 'Make in India' campaign. This as a whole is attracting large foreign investment by various ways like direct import, setting up of establishment in India, technology partnership or participation in International bids invited by Indian public and private companies in oil and gas – upstream, midstream and downstream segments. But India needs strategic thinking for handling challenges during participation or partnership of foreign investments like international market risks, low oil prices, diversified geographies, India's fluctuating exchange rates, environmental pressures, regulatory demands and stringent safety measures. This needs re-look and reformation in every functional activity of project beginning from procurement reforms at the forefront as 'contract

evaluation’, ‘contract award’ etc. to project execution reforms as ‘measure of project success.’ To begin with ‘procurement activity’, the need for reforms in procurement activity is because majority of oil and gas project owner and operator companies in India are either Public Sector undertaking (PSU), or private companies having production sharing contract with government of India. As per ‘Public Procurement bill 2012’ by Ministry of Finance, Government of India, public procurement is governed by tendering system. The Public Procurement Bill is “A bill to regulate public procurement with the objectives of ensuring transparency, accountability and probity in the procurement process, fair and equitable treatment of bidders, promoting competition, enhancing efficiency and economy, maintaining integrity and public confidence in the public procurement process and for matters connected therewith or incidental thereto.” (Public Procurement Act, 2012)

But ground reality has many discrepancies and numbers of issues have been observed during public procurement function in Oil and Gas industry. Hence, ‘Tender Evaluation Activity’ is focused for this study.

Another activity which needs critical review is ‘Project Performance Measure’. Oil and gas Project Performance is becoming more and more complex, and hence, there is a felt need to study quantitative and holistic approach to measure project performance involving broad parameters apart from traditional time, quality, cost triangle, so value for ‘Total Performance’ is measured.

Holistic approach in Tender Evaluation phase can positively impact working of various players in oil and gas’s pyramidal framework of players. Wherein MoPNG, Regulators at its apex and large number of public and private operators of exploration and production companies, refiners, pipeline operators, EPICs, PMC, LSTK, oilfield service providers, equipment and service suppliers forming base of the pyramid. This entire pool has large number of companies from various countries coming from different business culture, environmental concerns, regulatory frameworks and possessing wide choice of technological know-how. Large project execution is an art of

managing mix of contractors, suppliers and service providers so as to gain maximum efficiency, minimum risk, more focus on QHSE and then achieving 'best value for money' to stakeholders and project performer.



## Key Drivers and Regulators of Oil and Gas Sector in India



Fig 1.5 (Source: PWC Exploring India 2012)

Above structure of various player shows that Oil and Gas Sector in India is predominantly driven by public sector entities; involving large money of taxpayers. Can PSU be made answerable to performance efficiency of projects? Can taxpayers demand best value of money from these projects? Are performances lacking in quality, safety, time and cost for Public as well as Private sector enterprises? Are environmental issues taken care at every basic level? Is there any framework for fair and transparent procurement and contract award? Is there any framework applied for measuring project performances in India? All these questions led this research to study contract award and project performance framework.

### 1.2 MOTIVATION AND NEED OF THE STUDY

In spite of many business scams and unfair practices in news in India, (e.g. Year 2011 which is mockingly described as “Year of scam”), in spite of government appointing special committees and conducting CAG audits, in spite of introduction of ‘Public Procurement Bill 2012’, ‘The Lokpal Bill 2013’, ‘Lokayuktas Act 2014 and in spite of various NGO initiatives (e.g. ‘I paid a bribe’ ), the complicated Government Procurement in India (Domestic Regulations and Trade Prospects policy) allows ample loopholes for unscrupulous elements to interpret the rules to suit their convenience, and that often goes against public interest. (CUTS, 2012). There is no central policy or

law for Public Procurement which accounts to 25 to 30 percent of GDP of the Indian economy. The Competition Commission of India had estimated total procurement figure for India around Rs.11 lakh crore per year. Public procurement policy in India is further complicated as it also seeks to fulfil several social and developmental objectives such as the policy of preferences/offsets to favour certain sectors. (Price preference, reservation of products for exclusive purchase from small scale industries and price preference for Central Public Sector Enterprises of up to 10 percent over large scale private units mark the offset policy.)

India's import bill having largest component of crude oil import, oil and gas being very crucial to Indian economy involving big 'energy' component and Oil and Gas Sector in India is driven by players of central or state government and this sector being susceptible to challenges like poor contract enforcement, unreasonable contract award processes, corruption and corporate frauds, exceptionally low prices or artificial raise in prices, compromise in quality, delayed performances, cost over-run, degrading quality, lack of health, safety and environmental concerns etc. thus a need is felt to study Oil and Gas Sector contract procurement framework.

Against the backdrop of World over other practices like 'Best Value Method' are catching attention for contract award which are adopted by United Nations procurement policy, public procurement by UK, Netherlands and US department, India too needs paradigm shift from lowest price bid contract award to multidimensional approach in tender evaluation and public procurement.

In view of this, research study is planned to study a framework for oil and gas sector which is not based on 'lowest price evaluation' but reflects 'Total Value Based Approach', which has comprehensive parameters along with weight for each, can rank each bid based on Total score and is holistic in nature. Project executed based on this quantitative award also needs to have quantitative measures for project performance based on comprehensive parameters for oil and gas projects in India.

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