The liquefied natural gas environmental sciences essay

INTRODUCTION:

Energy is the lifeline of modern world. The consumption of all forms of energy is increasing with a very high pace globally, hence resulting into growing concern about the energy. Population growth, development of energy dependent technologies, rising living standards are some of the factors responsible for growth in energy consumption. With decline in coal consumption the consumption of other major energy has increased. One of the emerging energy source is natural gas, as it have a lot of advantages over coal and oil. Natural gas is a " bridging fuel" to the depleting primary resources. Major factors that have created a huge market for natural gas is deregulation and shift to cleaner burning fuel. According to the forecasts made; natural gas will be the most preferred fuel in the global energy mix by 2025. And it is also predicted that in Asian markets japan, Korea, china and India will but the emerging biggest consumers. There is a huge gap between demand and indigenous supply of natural gas in India, so there is an increased importance of cross-border gas trade. But for cross borders trade there are a lot of challenges regarding security and supply, pricing, and contracts among countries.

LITERATURE REVIEW:

It is said that share of natural gas in India’s energy mix is about to increase from 9% to 20% by 2025 and in this period the demand of natural gas will increase from 150 mmscmd to 390 mmscmd. To fulfill this demand India’s strategic move is to import gas from countries like Iran, Myanmar, Turkmenistan etc. these kind of strategic moves will lead to an integration of various Asian gas producing nations and consuming regions, and will result

in the benefit of both gas producers and consumers. According to international energy outlook (IEA); it is estimated that the consumption of natural gas is expected to increase at a rate of 2. 3% in comparison to 2%, total energy consumption rate. Natural gas consumption of emerging Asian economies will grow at 3. 5%, which is 50% faster than the world growth rate. The production of natural gas is also expected to increase by 4%. All these facts shows the changing dynamics of natural gas trade. Currently 30 % of the total gas consumed in the world is traded through cross border trade out of which 8 % is traded as LNG and remaining 22 % is trade through cross border pipeline. India ishaving a huge potential for gas production, but on the other hand the demand of natural gas is also increasing. So there is a huge demand-supply gap, which can only be fulfilled through imports. Oil , gas and coal. will continue to be to be the world’s major source of energy for next 25 years, and account for around 80% supplies of world’s energy. Natural gas is very convenient and is a clear source of energy, so it will be the most preferred source for power generation in many markets. It is expected that world wide gas supplies will grow from 280 bcf to 440 bcf by 2030. In the coming years, there will be a tremendous boost in natural gas usage in India. The Hydrocarbon vision 2025 estimated that the demand of natural gas in year 2007 was 231 mmscmd and in 2013 it is expected to be 316mmsmd. So this shows a huge gap between supply and demand of gas in our country. In this scenario to fulfill this increasing gas demand, there are two options for import and they are either LNG or through cross country pipelines. If we talk about India’sself production, ONGC is producing around 35mmscmd in 2012 and this is expected to decrease to 14mmscmd in 2014-15. Global consultant, KPMG International, has released a report saying that

cross country pipelines are still facing a lot uncertainties. There have been a discussion going on for some years about cross country pipelines from Myanmar, Turkmenistan and Iran, and the main reasons which are not allowing to arrive on a decision are unstable political environment and security issues. India Energy Outlook says that " Even when they do materialize, the country may face potential supply disruption if political issues emerge over the medium term. Given these constraints, LNG may be the answer to the Indian natural gas supply issue." Some LNG projects particularly on the west coast are likely to come, in the upcoming future. India began importing LNG in 2004 As India is surrounded by gas producing countries in east as well as west, this is very advantageous as it will reduce LNG cost and LNG price. Estimated LNG import to country is about 30-40 million tons per annum. India is having various LNG terminals like dahej terminal, kochi terminal, dabhol terminal, hazira terminal. The countries from which we are importing LNG are Qatar, Egypt, Oman, Australia, AbuDhabi, Malaysia, Algeria. Both the means of imports have some advantages and disadvantages, so we intend to study the challenges and opportunities in both the cases , and by comparing both, we will find a solution that which option for importing natural gas is better for our country.

PROBLEM STATEMENT:

The demand supply gap of natural gas is widening, so as to meet this growing demand we have to import natural gas. So what is more better; import gas as LNG or through cross country pipelines? Which means is more economical and have less risks for natural gas imports?

OBJECTIVE:

To identify indigenous sources of gas and sources of imports. To gain understanding of gas import options ; LNG and cross country pipelines:

Liquefied natural gas (LNG)

LNG value chain. LNG supply chainIssues and challenges in LNG contracts.

Cross country pipelines

Problems and risks. Economies of pipeline imports. To compare both the import options.

SCOPE OF THE STUDY:

The scope of my research covers: The sources of indigenous natural gas, and the sources of imports. Global energy outlook and Indian energy outlook. Indian energy mix. LNG imports to IndiaImports through cross country pipelines.

LIMITATIONS OF THE STUDY:

This study is not an quantitative research & as objective of this research is accountable to understand the series of facts and chronicle of India oil & gas industry , which will help us to analyze and conclude the momentum of gas business in India in coming future and how does LNG & Cross Country pipeline Will play there role in those activities. No Data is capable to deliver result regarding actually implication to built any LNG terminal or any pipeline, this research is only capable to understand various forcesWhich revolves around these type of projects? Moreover this research has actual case studies but no one is real time study which only gives us historical

perspective of those times, when they underwent. The data is taken from foreign case studies and how there success can be implemented for Indian scenario and why this can be a limitation in Indian scenario.