



GLOBAL JOURNAL OF HUMAN SOCIAL SCIENCE
Volume 12 Issue 2 Version 1.0 January 2012
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals Inc. (USA)
Online ISSN: 2249-460X & Print ISSN: 0975-587X

National Wastage Of Natural Gas In Assam Oil Fields : Oil India Ltd. Vs Ongcl, The Environmental Issues

By Dr. Homeswar Kalita
Deptt of Commerce, Gargaon College

Abstract - Assam is enriched with Petroleum Mineral Resources. Out of the total 25 Oil Blocks of India, 15 Blocks are located in Assam. It holds about 20% of the indigenous Crude reserves and 23% of the total Natural Gas(NG) Reserves of India. If the said Resources are explored and utilized properly, the state will be able to register itself as a developed state. Unfortunately, due to improper utilization of the Resources, the state remains poor. The Per Capita Income of Assam was recorded at Rs. 27,197.00 only against Rs. 46,492.00 of India's National Average Per Capita Income in the year 2009-10. the investment and production scenario in oil sector is so poor that, the state is producing only 14% of the total indigenous crude production and 7% of the total indigenous Natural Gas (NG) Production in spite of having 23% of total Crude Reserves and 21% of total NG of India. On the basis of the Reserve status, the Production of NG of Assam may be increased to 21.0 Billion Cubic Meters against the current production of 3.38 Billion Cubic Meters p.a. A

GJHSS-C Classification : FOR Code : 039903, 050204



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I. INTRODUCTION

Assam is enriched with Petroleum Mineral Resources. Out of the total 25 Oil Blocks of India, 15 Blocks are located in Assam. It holds about 20% of the indigenous Crude reserves and 23% of the total Natural Gas(NG) Reserves of India. If the said Resources are explored and utilized properly, the state will be able to register itself as a developed state. Unfortunately, due to improper utilization of the Resources, the state remains poor. The Per Capita Income of Assam was recorded at Rs. 27,197.00 only against Rs. 46,492.00 of India's National Average Per Capita Income in the year 2009-10. the investment and production scenario in oil sector is so poor that, the state is producing only 14% of the total indigenous crude production and 7% of the total indigenous Natural Gas (NG) Production in spite of having 23% of total Crude Reserves and 21% of total NG of India. On the basis of the Reserve status, the Production of NG of Assam may be increased to 21.0 Billion Cubic Meters against the current production of 3.38 Billion Cubic Meters p.a.

The state needs more production of NG and Promotion of ancillary and downstream projects in order to eradicate poverty and solve the unemployment problem. The state can produce about 2000 MW of power from the available NG Reserves of it. It is a matter of great concern that, about 25% of the total NG Produced in Assam oil fields are either flaring or destroying at the sources. Such flaring of NG leads to the destruction natural environment in a number of ways.

II. OBJECTIVES OF THE STUDY

The primary objective of this study is to carefully examine the extent of natural gas flared by Oil India Limited and Oil and Natural Gas Corporation Limited and compare the loss occurred to the Natural Environment of the State by the said companies. While discussing about the environmental loss, some of the economic contributions to the state of Assam made by

the said companies have also been highlighted.

III. METHODOLOGY

The methodology adopted in this study is quite analytical. Information have been collected from the primary sources and the office of the Directorate of Geology and Mining, Govt. of Assam (India), Kahilipara, Guwahati, different books, Ph.D thesis, newspapers etc.. In addition, a field survey was conducted in the Solar Reserve Forest (Manuhmari Range) of Charaideo Sub-division, Sivasagar , Assam. (India). The information so collected have been classified, tabulated, compared and analysed with the help of simple statistical tools and inferences have been drawn.

IV. SIGNIFICANCE OF THE STUDY

Environmental pollution in industrial sector has emerged as a vital issue all over the world. Lots of Earth summit have been held on environmental issue like from the UN Conference on the Human Environment 1972, the Kyoto protocol the Earth summit 2002 "Rio-10" Johannesburg, to the Copenhagen simmit,2009. Scientists and environmentalists have been raising their voices in such summits. But the political leaders of the world have failed to bring a solutions to the problems.

Most of the industries have been releasing carbon dioxide, CFC etc. at every moment of their operations resulting harm to the natural environment. Natural environment, which is a primary need of human civilization as well as to the survival of the biodiversity of this beautiful world, has been seriously threatening by such nonstop emissions such as fine particles, metallic dust, Carbon particles etc. At the same time, it is also true that without industrialization, human civilization cannot walk forward. It is the industry which has enriched the living standard of human being by providing employment, generating revenue to the Govt. exchequer and producing consumer goods.

Our country, specially the state of Assam, though not industrially advanced one, too, is going to face such adverse situation in near future. So, time has come to focus on such degradation of environment and take necessary steps to safe the environment in one hand and safeguard the interest of the industrial sector on the other.

Author : Associate Professor, Deptt of Commerce, Gargaon College, P.O. Simaluguri, Sivasagar-785 686, Asom. Ph. 94353-56060. E-mail : dr.homeswar.kalita@gmail.com

V. PERIOD OF THE STUDY

The period of the study has covered a period of five years from 2000-01 to 2004-05.

VI. A BRIEF ACCOUNT OF SOCIO-ECONOMIC CONTRIBUTIONS MADE BY OIL AND ONGCL.

Oil India Limited and ONGCL are the two major central Government Public Sector Undertakings engaged in the exploration of Crude Oil and Natural Gas in the country. Before discussing their negative impact on environment of the state, it will be justifiable to highlight their socio-economic contributions made to the state. Table 1 and Table 2 show some of its socio-economic contributions made to the state of Assam.

Table No. 1 shows that as on 31st March 2005, total direct employment generated by Oil India Ltd. was

recorded at 8,163 nos. and total indirect employment generated by the company was recorded at 14,769 nos. It shows that total employment generated by the company has gone to 22,932 nos. On the other hand, total direct employment generated by ONGCL was recorded at 7,200 nos. and indirect employment generated by the company was recorded at 12,960 nos. The company generated a total employment of 20,160 nos. as on the same date.

Table No. 2 shows that during the last five years period, i.e. from 2000-01 to 2004-05, total revenue generated by Oil India Ltd. to the state exchequer was recorded at Rs. 2,571.54 Crore while total revenue generated by ONGCL during the same financial period was recorded at Rs. 1,330.13 Crore. Thus, the contributions made by the two Oil Companies to the employment sector of the state as well as to the Treasury of the Govt. of Assam is a remarkable one.

Table 1 : Employment generated by OIL and ONGCL in Assam (Upto 31.03.2005)

Companies	Direct Employment	Indirect Employment	Total Employment
OIL	8,163	14,769	22,932
ONGCL	7,200	12,960	20,160
Total employment Generate by Oil Industries of Assam	22,157	62,177	84,334

Source : Field Survey.

Besides, the ONGCL spent Rs. 623.24 lakh and OIL spent Rs. 2053.86 lakh during the last five years (from 2000-01 to 2004-05) under its Corporate Social Responsibility Agenda.

Table 2 : Revenue generated to the Govt of Assam by OIL and ONGCL (from 2000-01 to 2004-05) (Rs. In Crore)

	2000-01	2001-02	2002-03	2003-04	2004-05	Total
OIL	329.62	380.06	477.75	622.37	761.74	2571.54
ONGCL	185.82	199.93	265.98	319.20	359.20	1330.13
Total Revenue Generated By the OIL Industries	643.89	763.07	1008.49	1290.57	1777.12	5483.14

Source : Field Survey.

VII. ANALYSIS OF THE FINDINGS

a) Flaring Of Natural Gas

Keeping the socio-economic contributions made by the two Oil Giants in mind, this paper attempts to examine the extent of harm caused to the natural environment by the two major Oil Companies working in the state. The two oil companies have been flared up a major portion of the natural gas produced in Assam Oil and Gas fields since their perceptions. Table 3 shows the amount of unavoidable loss and amount used for Petroleum Mining Operations of Natural Gas by Oil and ONGCL. In the course of production of crude and natural gas in Assam oil fields.

Table 3 : Statement showing amount of unavoidable loss and amount Used for PMO of Natural Gas by OIL & ONGCL

Period	LOSS OF NATURAL GAS (In p.c. to gross production)					
	Oil India Ltd.			ONGCL		
	Unavoidable Loss	Used for PMO	Total Loss	Unavoidable Loss	Used for PMO	Total Loss
2000-01	8.44%	18.19%	26.63%	8.64%	31.57%	40.21%
2001-02	6.68%	19.89%	26.57%	8.77%	31.03%	39.80%
2002-03	6.48%	19.09%	25.57%	10.53%	33.46%	43.99%
2003-04	6.25%	17.26%	23.51%	13.16%	33.06%	46.22%
2004-05	7.33%	16.71%	24.04%	15.32%	33.77%	49.09%

Source : Directorate of Geology & Mining, GOA, Guwahati.

From the tables 3 it is learnt that, while under same socio-political situation and geological formation of the heart of the soil of the state, the OIL has recorded its total loss on production of natural gas as 26.63% , 26.57%, 25.57%, 23.51% and 24.04% respectively for the said period. On the other hand, the loss so recorded by the ONGCL were 40.21%, 39.80%, 43.99%, 46.22% and 49.09% respectively for the same period of its operations. Out of the total loss recorded by the two companies, the amount shown as unavoidable loss have been flared up by the companies in production field of Crude Oil & Natural Gas. The rates of flaring of Natural Gas by the ONGCL are much higher than that of the OIL. This indicates more inefficiency of the ONGCL in management of its resources. Such gas flaring of Natural Gas has degraded the environment of the region in a number of ways.

b) The Environmental Issues

To take an account of the impact on environment of such irresponsible **activities** of the ONGCL, a field survey was conducted in the SOLA RESERVE Forest (Manuhmari Range) of Charaideo Subdivision of Sivasagar district, Assam. In the SOLA RESERVE FOREST, there are 28 Oil wells and a GGA (Gas Gathering Station No. 2) out of which one well was found dead.

As a result of the Operations of the ONGCL in the said Forest and its neighboring areas, the following problems were noticed -

1. During our study it was found that, each well site or drilling site occupied 2.5 to 5.0 Hectors of land area. After successful operation, the well sites were converted into waste land with oil mud and waste pits along with other polluting substances, where plants cannot grow or survive. It destroys the health of the soil by destroying humans, water percolation etc.
2. Flaring of NG has been causing threat to the entire biotic community of the forest area.
3. Flaring of NG has been causing threat to the muga industry of Assam. The flaring of NG emits certain fine particles like Carbon particles, metallic dust,

aerosols, solid oxides, nitrates and Sulphates and certain Coarser particles like heavy dust, Sulphur compounds, Nitrogen Compounds and Halogens etc.

A study showed that when exposed to diesel exhaust fumes, the cholesterol level in the alimentary canal is reduced significantly. Cholesterol is the only accessory growth factor, which is required by all insects for their natural growth and reproduction. When

Silkworms come in contact with chemicals and different gases like Carbon dioxide, Sulphur dioxide ,Ammonia and Formalin etc., their central nervous system paralyses. They lose control over spinning, and hence cocooning does not take place. Another study examined the affect of gas flaring on the biochemical changes of muga feed plants. They found lower moisture, sugar, soluble protein, ascorbic acid and crude fat contents on leaves of muga feed plants situated near the gas flaring points. These chemical contents of leaves of the muga feed plants directly influence the health, growth and survival of muga silkworms. Some pioneering works have also been carried out by the Regional Research Laboratory, Jorhat on the effect of oil field pollution on muga silkworm and its feed plants. These studies have shown that feed plants within 500 meters of oil exploration sites contain several chemicals, Which are detrimental to the proper growth of silkworms. It is reported by the affected rearers that average production of cocoons per acre of land is gradually decreasing in the vicinity of hydro carbon exploring industries. Many of the traditional rearers had given up muga culture forever and destroyed their own muga feed plants.

VIII. SUGGESTIONS

To maintain a balance between economic development through industrialization based on Natural Gas and ecology of the state, the following suggestions may be offered.

- i. Flaring of Natural Gas should be reduced to zero P.C. and such gases should be converted into value added consumers' goods. For this purpose, gas based industries should be promoted.
- ii. A 'Monitoring System' should be introduced by the state Govt. of Assam to take care of the scared resource of its own like Crude Oil and Natural Gas etc.
- iii. It should be made mandatory for the Oil companies to plant 10 more trees against cutting of one tree in their operational areas.
- iv. To make the above mentioned suggestions effective, a new portfolio of Petroleum Ministry may be introduced in the cabinet of Govt. of Assam.

IX. CONCLUSION

The relationship between economic development and destruction of nature is a must. But we cannot allow our industries to destroy this globe. Destruction of nature should be kept at minimum. Present situation demands for sustainable economic development. As a responsible corporate citizen, the industries should come forward to protect the environment at their will. Proper legislative action too, are required to combat the environmental challenges created by the industrial sector all over the world.

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