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Annexure-4

NOTE ON PROJECT

INTRODUCTION: -

GAIL (India) Limited, India's principal Gas Transmission and Marketing Company, was set up by the Government of India in August 1984 to create gas sector infrastructure for sustained development of the Natural gas sector in the country. The 1800 km Hazira – Vijaipur - Jagdishpur (HVJ) pipeline became operational in 1989. During 1991-93, three LPG plants were constructed and some regional pipelines acquired, enabling GAIL to begin its regional gas distribution in various parts of India.

GAIL (India) Limited, is India's flagship Natural Gas company, integrating all aspects of the Natural Gas value chain (including Exploration & Production, Processing, Transmission, Distribution and Marketing) and its related services. In a rapidly changing scenario, GAIL is spearheading the move to a new era of clean fuel industrialization, creating a quadrilateral of green energy corridors that connect major consumption center in India with major Gas Fields, LNG terminals and other cross border gas sourcing points. GAIL is also expanding its business to become a player in the International Market.

M/s. GAIL (India) Limited envisages to strengthen local gas grid network in any state / U.T. of India via authorization by MoPNG. GAIL (India) Limited (GAIL), a Public Sector Undertaking (PSU) company is also one of the leading companies in the field of Natural Gas transmission pipeline. GAIL has taken a lead in developing energy transportation infrastructure and connecting major natural gas supply sources and demand markets. GAIL is first company in India to transport natural gas on open access basis and is a pure natural gas transmission company. The company has developed requisite expertise and confidence with proven project management competencies.

GAIL has been awarded authorization by Ministry of Petroleum and Natural Gas to lay a network of gas pipeline and associated facilities for the transportation of natural gas to fulfill the requirement of various consumers in the states of Odisha & Andhra Pradesh. The proposed pipeline shall be Bi-directional and pass through the states of Andhra Pradesh and Odisha. This pipeline would connect to GAIL's Jagdishpur-Haldia-Bokaro-Dhamra pipeline (JHBDPL) at Angul and APGDC's Kakinada-Srikakulam (KSPL) natural gas pipeline at Srikakulam.

In view of this M/s. GAIL (India) Limited, (GAIL) has proposed to lay Srikakulam – Angul Natural Gas Pipeline (SAPL) Project including associated Spur Pipe lines under Authorization from MoPNG (Ministry of Petroleum and Natural Gas), Govt. of India. The approximate length of the SAPL pipeline is 690 kms with an initial system capacity of at least 5 MMSCMD. The said pipeline shall be passing through the various parts of Andhra Pradesh & Odisha for supply and distribution of Natural Gas / RLNG to various industries and City Gas Distribution networks. Accordingly, GAIL has to start pre-project activities immediately and pipeline is scheduled to be completed by 2022.

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The proposed Srikakulam - Angul Pipeline along with spurlines will be laid across forest land falling along / across the ROU (Right of Use) and various utilities such as roads, canals, rivers etc. The said pipeline shall be laid at the minimum depth of 1.2 mts. below NGL (Natural ground level).

1) The present proposal is for laying of underground Natural Gas Pipeline along with Optical Fiber Cable (OFC) from Srikakulam to Angul (Odisha section). The Srikakulam - Angul Natural gas pipeline (SAPL) Odisha Section by GAIL (India) Ltd. involves 6.1487 ha. of forest land and 586.7539 ha of non- forest land passing through 286 villages in Odisha section. This SAPL Odisha section involves 06 forest divisions namely Angul, Dhenkanal, Athagarh, Khurda, Nayagarh, Ghumusar (South) Division, Brahmapur & Paralakhemundi and 07 Districts namely Angul,Dhenkanal, Cuttack, Khurda, Nayagarh, Ganjam and Gajapati.

Forest and Non forest area Details

Sl. No.	Division	Forest land involved (Ha)						Non Forest Land Area (Ha.)	Grand Total (Ha.)
		RF	PF	Revenue Forest	Sabik Kisam Forest	DLC Forest	Total Area (Ha.)		
1	Angul	-	-	-	-	-	-	29.4132	29.4132
2	Dhenkanal	-	-	2.010	0.3040	-	2.3140	92.9799	95.2939
3	Athagarh	0.3650	-	0.5238	0.4087	-	1.2975	38.9541	40.2516
4	Khurda	-	-	0.0728	-	-	0.0728	91.7323	91.8051
5	Nayagarh	-	-	0.2559	0.3707	-	0.6266	81.0559	81.6825
6	Ghumusar (South)	-	-	1.1521	0.5375	0.1461	1.8357	142.2679	144.1036
7	Brahmapur	-	-	-	-	-	0.0000	103.4171	103.4171
8	Paralakhemundi	-	-	0.0021	-	-	0.0021	6.9335	6.9356
	Grand Total	**0.3650**	**0.000**	**4.0167**	**1.6209**	**0.1461**	**6.1487**	**586.7539**	**592.9026**

Division / District wise Break-up

Sl. No.	District	Division	Village Details			Length of Pipeline (m)	Forest Area (Ha.)	Non Forest Area (Ha.)
			No. of Village	Start Village	End village			
				Village / Tehsil	Village / Tehsil			
1	Angul	Angul	9	Balrama-prasad (Banarpal)	Ganthigaria (Banarpal)	14706.6	0.0000	29.4132
2	Dhenkanal	Dhenkanal	40	Badibahal (Hindol)	Krushna-prasad (Dhenkanal)	48803.95	2.314	92.9799
3	Cuttack	Athagarh	19	Matikot (Athagarh)	Bangarsihan (Baramba)	20774.55	1.2975	38.9541
4	Khurda	Khurda	52	Pattugadadharpur (Banki)	Kautara (Bolgarh)	45938.95	0.0728	91.7323

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5	Nayagarh	Nayagarh	47	Bijpur (Nayagarh)	Maheswarpur (Odagoan)	41154.55	0.6266	81.0559
6	Ganjam	Ghumusar South	61	Kampaupada (Jagannathprasad)	Naibandha (Sergarh)	72969.65	1.8357	142.2679
		Brahmapur	54	Gambharigura (Sanakhemundi)	Polanki (Patrapur)	51708.55	0.0000	103.4171
7	Gajapati	Paralakhemundi	4	Burujholi (Parala-khemundi)	Gudivadra (Parala-khemundi)	3468.85	0.0021	6.9335
	Grand Total		**286**			**299525.65**	**6.1487**	**586.7539**

PROJECT OVERVIEW: -

The proposed project includes approx. 690 km of underground natural gas pipeline network with associated facilities such as Sectionalizing Valve (SV) / Tap off / metering / receiving / dispatch / intermediate pigging / compressor stations.

As a consequence of rapid rate of industrialization in India, fuel needs are increasing at an equally rapid rate and the supply – demand gap is widening and steps must be taken to address the issue.

Overland transport of fuels by trucks is uneconomical, unsafe and is a contributor to environmental degradation in terms of pollutants released by vehicles in transit and by accidents and spillage.

Pipelines are internationally recognized as the preferred alternative for transport of fuel for safety, economy and environmental friendliness.

Natural gas is used in a variety of applications such as feed stock in fertilizer, petrochemical industry and as fuel in power generation, manufacturing steel, textile, ceramic, glass and other industrial products. As a fuel natural gas competes with alternative products such as coal, lignite and petroleum products such as liquefied petroleum gas, naphtha, high speed diesel, light diesel oil and fuel oil. However due to lower fuel operating cost and better combustion characteristics, natural gas has distinct economic advantage over other sources of energy. In addition, natural gas has substantial environmental advantage over other energy sources due to lower emissions.

NEED AND BASIS OF PIPELINE: -

The projected demand and supply of natural gas in the states of Andhra Pradesh and Odisha are provided by the Marketing department of GAIL. The Gas demand is going to come from existing anchor industries in the state of Odisha like Vedanta Limited, Utkal Alumina (Hindalco), Nalco, and other demands for domestic/ Industrial/ Commercial/ Transport sectors in Ganjam/ Nayagarh districts. This pipeline will connect various RLNG terminals like, Dhamra, Dahej, etc. and domestic gas fields of K G basin etc., to the customers in Eastern region through JHBDPL and Southern region through KSPL. Therefore it will provide connectivity to multiple sources to the enroute customers also. In view of the same, it has strategic importance and part of the National Gas Grid.

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PROJECT IMPLEMENTATION SCHEDULE: -

The project is expected to be completed within 3 years. Pre-project activities such as detail route survey, engineering design, obtaining ROU etc. are expected to be completed by 2022. M/s. GAIL (India) Limited has already conducted pre-project activities like Detail Route Survey and Engineering Design till date. The further, obtaining RoU and Statutory permission activities is going on and at advance stage.

PIPELINE ROUTE: -

The tentative route of the main trunk pipeline is Srikakulam – Ganjam – Nayagarh – Khordha – Cuttack – Dhenkanal - Angul. As per the DERS survey, the total length of the main trunk line is 424 kilometers with approximately 124 km in Andhra Pradesh and 300 km in Odisha. The mainline route is proposed to pass through approximately 8 districts in the two states (7 in Odisha and 1 in Andhra Pradesh). The spurline, however, is proposed to pass through 3 districts, all in the state of Odisha. The ground profile is mostly flat with a few undulations having mostly open countryside and forests in the region. The mainline route is expected to cross approximately 4 National highways, 5 railway crossings and about 185 State highways and other roads. Further, the survey records 15 river crossings and about 40 other canals/streams/nalas etc. Further, the PDI data along route indicates that about 44% of the mainline is of class location I, 46% under class location II and 10% under class location III. The report does not mention any areas of class location IV.

Further, spurline of approximately 322 Km has been envisaged from suitable location near Brahmapur and to connect anchor load customers like Vedanta Limited Kalahandi, Utkal Alumina (Hindalco) Rayagada, Nalco, Koraput in the state of Odisha.

JUSTIFICATION FOR ROUTE SELECTION: -

The criteria for route selection are

- Optimum distance between source of supply and consumer location (demand points)
- Avoidance of Wild Life Sanctuaries, Reserved Forest, Mining area and Defense establishment to the best possible.
- Avoidance rocky, marshy and low-lying areas.
- Safety of people and environment.
- Easy access to route during construction and operation.

The route was selected based on least disturbance to environment, forest, human habitation and aquatic bodies. It avoids National Parks and Wild Life Sanctuaries.

The selected route is optimized considering the above factors and connectivity between supply source and consumer location.

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FINANCIAL & SOCIAL BENEFITS OF PROJECT

The project will provide cleaner fuel stock for the industries and the population in the region and thus will help improve the environment considerably while inducing development.

The project would enhance employment 300 to 400 People opportunities through contractors for the local people during construction phase approximate.

Consequent development activities due to availability of natural gas in the region shall generate employment opportunities for the population and may improve their standard of life.

There will not be any adverse impact on communication and transportation.

Residential and populated areas will not be acquired for this project. Hence, there will be no displacement of population.

Transportation of natural gas by pipeline is comparatively less expensive than other modes of transport both in capital and operating cost. This will ensure that this alternative source of energy is available to the consumers at a lower cost.

An additional advantage of transporting natural gas by pipeline is that the scope of economic offences like theft, pilferage, adulteration will be negligible and consumers will get value for money.

Place: Bhubaneshwar
Date:

M/s. GAIL (India) Limited

V. Santa Kumar
Dy. General Manager (Const.)

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Divisional Forest Officer
Angul Division