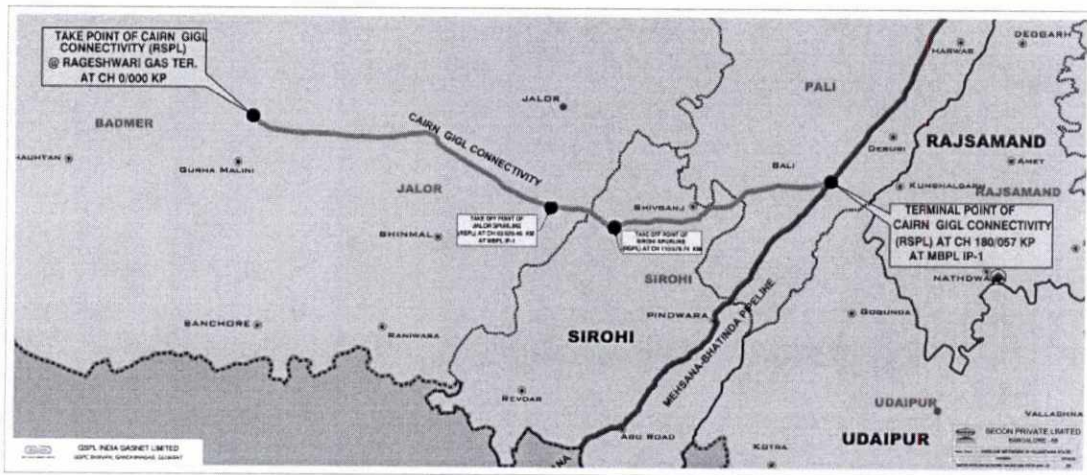




GSPL INDIA GASNET LIMITED

Form 1-Application to MoEF & CC

Barmer-Pali Pipeline



May 2016



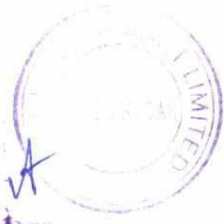
APPENDIX I
(See paragraph – 6)
FORM 1

(I) Basic Information

Sl No	Item	Details
1.	Name of the Project/s	Amendment in Environmental Clearance of Mehsana-Bhatinda Natural Gas transportation pipeline (length 1800Km) project of GIGL, Gujarat by adding 18” Diameter spur line for transportation of Natural Gas from Barmer to Pali (Length 180.057 Km) with associated facilities i.e. 1. Despatch Terminal (DT) : 01 No. 2. Sectionalized Valve (SV) Station : 04 No. 3. Sectionalized Valve (SV)Station with tap off point : 01 No. for proposed Jalore Spurline 4. Sectionalized Valve (SV)Station with tap off point : 01 No. for proposed Sirohi Spurline 5. Receiving Terminal - Pali : 01 No. (IP-01 of Proposed MBPL Main line)
2.	S. No. in the schedule	6(a)
3.	Proposed capacity/area/length/tonnage to be handled/command area/lease area/number of wells to be drilled	18” Diameter pipeline for transportation of Natural Gas from Barmer to Pali (Length 180.057 Km) with associated facilities in Rajasthan state. Capacity :3.8 MMSCMD
4.	New/Expansion/Modernization	Expansion Expansion of Mehsana Bhatinda Natural Gas Pipeline network (1800 km) for which MoEF has issued NoC / Environmental Clearance under Environmental Impact Assessment Notification 2006 vide their letter no. F No. J-11011/231/2012-IA II (I) dated 23.04.2013. Proposed Expansion : 18” Diameter spur line for transportation of Natural Gas from Barmer to Pali (Length 180.057 Km) with associated facilities. Layout drawings of route map is attached as Annexure I.
5.	Existing Capacity/Area etc.	Mehsana Bhatinda Natural Gas Pipeline network (1800 km)
6.	Category of Project i.e. ‘A’ or ‘B’	‘A’
7.	Does it attract the general condition? If yes, please specify.	Yes
8.	Does it attract the specific condition? If yes, please specify	-



9.	Location	<p>GIGL proposes to lay a network of gas pipeline and associated facility like Dispatch Terminal (DT), Sectionalized Valve (SV) stations and Receiving Terminal (RT) as per the PNGRB (Petroleum & Natural Gas Regulatory Board) Guidelines.</p> <p>Route Map is given as Annexure I</p> <p>Pipeline route is passing through the Barmer, Jalore, Sirohi and Pali Districts of Rajasthan State.</p> <p>Kindly refer enclosed Index Map showing the Pipeline Route.</p>																																						
	Plot/Survey/Khasra No.																																							
	Village																																							
	Tehsil																																							
	District																																							
	State																																							
10.	Nearest railway station/airport along with distance in kms	Sr. No.	Name	Arial Distance from Pipeline route (in Km)																																				
		1	Jodhpur Airport	135																																				
		2	Falna Railway St.	10.5																																				
		3	JawaiBandh Railway St.	1.65																																				
		4	Nana Railway St.	19.5																																				
		5	Bhinmal Railway St.	22.2																																				
		6	Ledermar Railway St.	13.2																																				
11.	Nearest Town, city, District Headquarters along with distance in kms.	<table border="1"> <thead> <tr> <th>Length (Km)</th> <th>Taluk</th> <th>District</th> </tr> </thead> <tbody> <tr> <td>16/324</td> <td>Gurha Malani</td> <td>Barmer</td> </tr> <tr> <td>14/505</td> <td>Bagora</td> <td>Jalore</td> </tr> <tr> <td>35/127</td> <td>Saila</td> <td>Jalore</td> </tr> <tr> <td>25/064</td> <td>Bhinmal</td> <td>Jalore</td> </tr> <tr> <td>13/433</td> <td>Jalore</td> <td>Jalore</td> </tr> <tr> <td>47/123</td> <td>Shivganj</td> <td>Sirohi</td> </tr> <tr> <td>00/338</td> <td>Sumerpur</td> <td>Pali</td> </tr> <tr> <td>00/374</td> <td>Shivganj</td> <td>Sirohi</td> </tr> <tr> <td>04/889</td> <td>Sumerpur</td> <td>Pali</td> </tr> <tr> <td>22/88.68</td> <td>Bali</td> <td>Pali</td> </tr> <tr> <td colspan="3" style="text-align: center;">Total - 180/057.68</td> </tr> </tbody> </table>			Length (Km)	Taluk	District	16/324	Gurha Malani	Barmer	14/505	Bagora	Jalore	35/127	Saila	Jalore	25/064	Bhinmal	Jalore	13/433	Jalore	Jalore	47/123	Shivganj	Sirohi	00/338	Sumerpur	Pali	00/374	Shivganj	Sirohi	04/889	Sumerpur	Pali	22/88.68	Bali	Pali	Total - 180/057.68		
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Total - 180/057.68																																								
12.	Village Panchayats Zilla Parishad Municipal Corporation, Local body (complete postal addresses with telephone nos. to be given)	Not Applicable																																						
13.	Name of the applicant	GSPL INDIA GASNET LIMITED																																						
14.	Registered Address	GSPL INDIA GASNET LIMITED GSPC BHAVAN, Sector - 11, Gandhinagar, Gujarat. Pin.:382 010																																						



15.	Address for correspondence:	GSPL INDIA GASNET LIMITED, GSPL Bhavan, Plot no. E-18, GIDC Electronics Estate, Sector - 26 Gandhinagar, Gujarat. Pin.: 382 028
	Name	Pramod Yenge
	Designation (Owner/Partner/CEO)	General Manager (Projects)
	Address	GSPL INDIA GASNET LIMITED, GSPL Bhavan, Plot no. E-18, GIDC Electronics Estate, Sector - 26 Gandhinagar, Gujarat. Pin.: 382 028
	Pin Code	382 028
	E-mail	gigl.rou@gspc.in
	Telephone No.	+91-79-23268500/600
	Fax No.	+91-79-23268506
16.	Details of Alternative Sites examined, if any. Location of these sites should be shown on a topo sheet	During Reconnaissance survey various alternatives have been studied and investigated. The finalized route is shown in the route map attached as Annexure I .
17.	Interlinked Projects	Barmer Pali Natural Gas Transportation Spur line (BPPL) will originate from existing CAIRN Raageshwari Gas Terminal located in Barmer district of Rajasthan State and will terminate at proposed IP-1 station of Mehsana-Bhatinda Natural Gas Pipeline Project at Sevtalav village, Bali tehsil, Pali district of Rajasthan state.
18.	Whether separate application of interlinked project has been submitted	---
19.	If yes, date of submission	---
20.	If no, reason	NoC / Environmental clearance (EC) obtained from MoEF & CC for proposed MBPL Natural Gas pipeline vide F. No. I-11011/231/2012-IA II (I), Dated: 23.04.2013 attached as Annexure II .
21.	Whether the proposal involves approval/clearance under: (a) The Forest (Conservation) Act, 1980 (b) The Wildlife (Protection) Act, 1972 (c) The CRZ Notification, 1991	Yes Proposed Barmer – Pali pipeline route is passing at a safe distance of 4.5 km from the boundary of Kumbhalgadh Wild Life Sanctuary in Pali district, Rajasthan. For (a) &(b) separate permission as per FC Act, 1980 and Wildlife (Protection) Act, 1972 shall be taken. Proposed pipeline does not attract CRZ notification, hence Item (c) is Not Applicable for the project.
22.	Whether there is any Government Order/Policy relevant/ relating to the site?	Draft Notification issued by Govt. of Rajasthan vide letter No.F.1 (71) Forest/2002, Dated 31.03.2011 for Eco sensitive zone of Kumbhalgadh Wild Life Sanctuary. Copy attached as Annexure III .



23.	Forest land involved (hectares)	The proposed pipeline has been aligned carefully by avoiding any Reserved/Protected Forest Land. Pipeline route does not cross any forest area. However, pipeline route crosses NH/SH which are declared as Protected/Social Forest for which permission shall be taken before execution of the pipeline.
24.	Whether there is any litigation pending against the project and /or land in which the project is propose to be set up (a) Name of the court (b) Case No. (c) Orders/directions of the court, if any and its relevance with the proposed project.	No.



(II) Activity

1. Construction, operation or decommissioning of the Project involving actions, which will cause physical changes in the locality (topography, land use, changes in water bodies, etc.)

S.No.	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data
1.1	Permanent or temporary change in land use, land cover or topography including increase in intensity of land use (with respect to local land use plan)	Yes	<p><u>Temporary Change</u> Temporary change in land use will take place due to development of preliminary site preparation, underground laying of pipeline, campsites etc. Total length of pipeline is approximately 180.057 Km. The land will be reinstated to its near original position once pipeline laying is completed. Thus, impact on land use will be marginal and reversible.</p> <p><u>Permanent Change</u> Approximately following numbers of terminals will be constructed :</p> <ol style="list-style-type: none"> 1. Despatch Terminal (DT) : 01 No. 2. Sectionalized Valve (SV) Station : 04 No. 3. Sectionalized Valve (SV)Station with tap off point : 01 No. for proposed Jalore Spurline 4. Sectionalized Valve (SV)Station with tap off point : 01 No. for proposed Sirohi Spurline 5. Receiving Terminal - Pali : 01 No. (IP-01 of Proposed MBPL Main line)
1.2	Clearance of existing land, vegetation and buildings?	Yes	<ul style="list-style-type: none"> • Clearance of vegetation will be required for construction of SV / IP / Receiving / Stations. • Clearing of vegetation will be avoided to the maximum extent possible
1.3	Creation of new land uses?	Yes	<p>No change in land use pattern along the pipeline route is envisaged as the land will be restored to its near original condition after laying the pipeline. However, Construction activities will be carried out at SV, DT& RT in the area as provided. Peripheral Greenbelt will be developed at each station as per MoEF& CC guidelines.</p>
1.4	Pre-construction investigations e.g. bore houses, soil testing?	Yes	<p>The soil investigations such as resistivity, temperature, etc. will be undertaken during / before commencement of construction work of station & along the pipeline route.</p>



1.5	Construction works?	Yes	Laying of Underground Pipeline and associated facilities along the route including DT /SV / RT and best management practice and best available technology will be followed.
1.6	Demolition works?	No	Not Applicable
1.7	Temporary sites used for construction works or housing of construction workers?	Yes	Labors will be sourced & transported to work site from nearby villages as practicable and when it is not possible then only temporary camp site will be developed within the existing land with complete amenities and sanitation facilities for the labors. will be deployed in the site. Labors will be either locally sourced or accommodated within the area taken on lease.
1.8	Above ground buildings, structures or earthworks including linear structures, cut and fill or excavations	Yes	The proposed surface structures include associated facilities like control room, electrical room, DG room, administrative building and signboards along the pipeline route etc. at DT, SV & RT.
1.9	Underground works including mining or tunneling?	No	No mining and tunneling will be required. However, Pipeline will be buried at a minimum cover of 1.2 meters from natural contour level. After laying of the pipeline, land will be reinstated to its near original position.
1.10	Reclamation works?	Yes	Once laying of proposed pipeline is completed, restoration will be carried out for the buried pipeline.
1.11	Dredging?	No	Not applicable
1.12	Offshore structures?	No	Not applicable
1.13	Production and manufacturing processes?	No	Not applicable. No production and manufacturing is involved as the project is for the transportation of Natural Gas.
1.14	Facilities for storage of goods or materials?	Yes	Temporary warehouse will be developed for storage of construction materials, Steel pipes, tools and other equipments, etc. for laying of Pipeline activities. The warehouse will be dismantled later on.
1.15	Facilities for treatment or disposal of solid waste or liquid effluents?	Yes	<u>Solid Waste</u> Solid waste will be collected and segregated in the form of Bio degradable and non Bio degradable like Cement, stone cutting etc. will be suitably disposed as per SPCB/CPCB guidelines. <u>Liquid Effluents</u> The domestic waste from the labour camp will be generated. It will be treated in septic tanks & soak pits. The wastewater generation during hydrostatic testing of equipment and



			pipeline is a temporary and one time activity. The same water will be reused for multiple tests in other sections. The residual hydrostatic testing wastewater at the end of the test will be non-toxic and disposed off suitably.
1.16	Facilities for long term housing of operational workers?	No	Temporary labor camp or porta cabin will be used for the officials of GIGL, whereas the unskilled or semi-skilled laborers for the various activities within the camp sites will be hired from the local area. Hence, no permanent colony or township will be developed.
1.17	New road, rail or sea traffic during construction or operation?	No	Existing road network will be used for mobilization of man and construction materials.
1.18	New road, rail, air waterborne or other transport infrastructure including new or altered routes and stations, ports, airports etc.?	No	It is intended to make maximum use of the existing infrastructure and augment/strengthen existing roads, wherever required.
1.19	Closure or diversion of existing transport routes or infrastructure leading to changes in traffic movements?	No	Not required
1.20	New or diverted transmission lines or pipelines?	No	Not applicable
1.21	Impoundment, damming, culverting, realignment or other changes to the hydrology of watercourses or aquifers?	No	Not applicable
1.22	Stream crossings?	Yes	There are 11 Seasonal rivers and 54 Nala/Drain/Stream/Field Channel crossings. As shown in Annexure IV .
1.23	Abstraction or transfers of water from ground or surface waters?	Yes	No groundwater and surface water extraction is envisaged. The water requirement for pipeline construction is minimum, which will be met through Road Tankers from surplus available sources in the nearby area. However, during operations, water will be sourced from bore or dug wells inside the stations for domestic and tree plantation depending upon the requirements to supplement rain water harvesting.
1.24	Changes in water bodies or the land surface affecting drainage or runoff?	No	All perennial rivers crossing will be carried out by Horizontal Directional Drilling method and the pipeline will be laid safe below scouring depth. Hence there will be no effect on permanent bodies. There will not be any change in the drainage pattern, as the top surface will not be disturbed.



1.25	Transport of personnel or materials for construction, operation or decommissioning?	Yes	Vehicles will be used for carrying equipment and required manpower.
1.26	Long-term dismantling or decommissioning or restoration works?	No	Not Applicable. However, Temporary camp site if any will be left clean and tidy after shifting of the camp site during construction phase.
1.27	Ongoing activity during decommissioning which could have an impact on the environment?	No	Not applicable
1.28	Influx of people to an area in either temporarily or permanently?	Yes	A temporary influx of population might occur during various phases of project like site preparation, operation and maintenance. The impact of influx of people will be temporary, marginal and reversible.
1.29	Introduction of alien species?	No	Not applicable
1.30	Loss of native species or genetic diversity?	Yes	Clearance of trees and other vegetation would be reduced as much as possible
1.31	Any other actions?	No	No other actions are suggested

2. Use of Natural resources for construction or operation of the Project (such as land, water, materials or energy, especially any resources which are non-renewable or in short supply):

S.No.	Information/checklist confirmation	Yes/No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data
2.1	Land especially undeveloped or agricultural land (ha)	Yes	<p>GIGL will require to acquire Right of User (RoU) for approx. 360.114 ha. Land for Barmer – Pali pipe line.</p> <p>After laying of pipeline, the land will be restored back and handed over to land owners for agricultural purpose.</p> <p>Land to be acquired permanently for setting up of following stations :</p> <ul style="list-style-type: none"> ○ DT stations - 1 no * 10,000 sqmtr. ○ SV stations - 4 nos * 4000 sq. mtr. ○ SV stations with ToP for proposed Jalore Spurline - 1 nos * 6000 sq. mtr. ○ SV stations with ToP for proposed Sirohi Spurline - 1 nos * 6000 sq. mtr. ○ RT station - 1 no. * 10,000 sq. mtr. (IP-1 of MBPL Project)
2.2	Water (expected source & competing users) unit: KLD	Yes	<ul style="list-style-type: none"> • Water requirement during construction phase will be approximately 100 KLD.



			<ul style="list-style-type: none"> • During Operations it will be 18 KLD. • The expected source of water is the Road tankers and local surface water bodies depending on the availability of water in them. However, during operation water will be sourced from bore or dug wells inside the SV stations for domestic and tree plantations depending upon the requirements.
2.3	Minerals (MT)	No	Not Required
2.4	Construction material – stone, aggregates, sand / soil (expected source – MT)	Yes	Considering the construction of SV station / Despatch station / Receiving stations, quantities are not likely to be significant. The construction materials such as cement, steel, sand, soil, diesel oil etc. will be procured from local sources.
2.5	Forests and timber (source – MT)	No	Not applicable
2.6	Energy including electricity and fuels (source, competing users) Unit: fuel (MT), energy (MW)	Yes	Required power for SV station / Despatch station / Receiving stations shall be drawn from nearest local power source of the state Electricity Boards. However, DG sets will be kept stand by at Stations. 7 Nos. of DG (Approximate) with each has capacity of 40KVA & tank capacity of 990 liters.
2.7	Any other natural resources (use appropriate standard units)	No	Not applicable

3. Use, storage, transport, handling or production of substances or materials, which could be harmful to human health or the environment or raise concerns about actual or perceived risks to human health.

S.No.	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
3.1	Use of substances or materials, which are hazardous (as per MSIHC rules) to human health or the environment (flora, fauna, and water supplies)	Yes	Hazardous materials namely Diesel in marginal Quantity will be temporarily stored and used onsite. The fuel will be supplied to site by local supplier through mobile tankers and storage will be in the tanks inbuilt with the machinery example DG sets etc. However, it will be handled as per Hazardous management rule and proper storage arrangements of the hazardous materials will be ensured to prevent and control any possible risk arising from such accidental spillage of materials.
3.2	Changes in occurrence of disease or affect disease vectors (e.g. insect or water borne diseases)	No	Not envisaged



3.3	Affect the welfare of people e.g. by changing living conditions?	Yes	There will not be any major changes to the living conditions from the project. However, local workforce will be utilized during construction period. Hence, the project will lead to the employment generation of locals and also help in improvement of the existing socio-economic status.
3.4	Vulnerable groups of people who could be affected by the project e.g. hospital patients, children, the elderly etc.,	No	Not applicable
3.5	Any other causes	No	Not Applicable

4. Production of solid wastes during construction or operation or decommissioning (MT/month)

S.No.	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
4.1	Spoil, overburden or mine wastes	No	Top soil will be stored separately and spread upon completion of laying of Pipeline
4.2	Municipal waste (domestic and or commercial wastes)	Yes	Domestic waste during construction & operation will be limited to labour camps. These wastes will be disposed off at approved municipal sites. Toilets will be connected to septic tank & soak pit for disposal of domestic waste.
4.3	Hazardous wastes (as per Hazardous Waste Management Rules)	Yes	Recyclable hazardous waste may be generated in the form of spent oil from DG sets, Equipments etc. and will be disposed of to the SPCB / CPCB approved recycler.
4.4	Other industrial process waste	No	Not applicable
4.5	Surplus product	No	Not applicable
4.6	Sewage sludge or other sludge from effluent treatment	No	The domestic sewage would be treated in septic tank and soak pits.
4.7	Construction or demolition wastes	No	Construction waste will be used for levelling purposes. Small quantity of metallic scrap waste and packing waste are expected and the same will be disposed as per SPCB / CPCB requirements.
4.8	Redundant machinery or equipment	No	Not envisaged
4.9	Contaminated soils or other materials	No	Not envisaged
4.10	Agricultural wastes	No	Not envisaged
4.11	Other solid wastes	No	Not envisaged



6. Generation of Noise and Vibration, and Emissions of Light and Heat:

S.No.	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data with source of information data
6.1	From operation of equipment e.g. engines, ventilation plant, crushers	Yes	The noise generation sources from the proposed activities include : Construction: Construction and transport equipment. The expected noise levels will be in the range of 70-85 dB (A). Operation: During Operational Phase Noise will not be significantly generated and expected noise levels will be in the range of permissible limit of the MoEF& CC. There will not be any increase in noise during operation phase of the pipeline project.
6.2	From industrial or similar processes	No	Not applicable
6.3	From construction or demolition	Yes	Noise levels will be within standards stipulated by CPCB and will be temporary in nature; hence it will not cause any impact
6.4	From blasting or piling	No	Not applicable
6.5	From construction or operational traffic	Yes	Vehicle movement etc. during construction. The noise levels will be less than 80 dB(A)
6.6	From lighting or cooling systems	No	Not Envisaged
6.7	From any other sources	No	Not Envisaged

7. Risks of contamination of land or water from releases of pollutants into the ground or into sewers, surface waters, groundwater, coastal waters or the sea:

S.No.	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
7.1	From handling, storage, use or spillage of hazardous materials	No	From accidental spillage of Diesel, if not handled properly. Otherwise, no impact is anticipated
7.2	From discharge of sewage or other effluents to water or the land (expected mode and place of discharge)	No	The domestic sewage will be treated in septic tanks and soak pits.
7.3	By deposition of pollutants emitted to air into the land or into water	No	The DG set will be provided with adequate stack height as per CPCB requirement to disperse the pollutants effectively; hence any resultant contamination of land or water would be unlikely.



7.4	From any other sources	No	-
7.5	Is there a risk of long term buildup of pollutants in the environment from these sources?	No	No long term cumulative impact is envisaged given the temporary nature of project activities.

8. Risk of accidents during construction or operation of the Project, which could affect human health or the environment

S.No.	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
8.1	From explosions, spillages, fires etc. from storage, handling, use or production of hazardous substances	Yes	During construction stage, it is Nil. During operations stage the hazards will be thoroughly identified and would be adequately addressed at the design stage itself to bring them as low as reasonably practicable.
8.2	From any other causes	Yes	Natural gas releases are addressed as part of design and planning process. However, company has well defined HSE policy and well documented operational protocol frame work. All health safety and environmental protection actions suggested there in, PNGRB and OISD guidelines over and above MoEF & CC and SPCB shall be strictly practiced.
8.3	Could the project be affected by natural disasters causing environmental damage (e.g. floods, earthquakes, landslides, cloudburst etc.)?	Yes	Natural disasters in form of earthquakes can take place as the site area falls under the moderate to low damage risk zone

9. Factors which should be considered (such as consequential development) which could lead to environmental effects or the potential for cumulative impacts with other existing or planned activities in the locality

S. No.	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
9.1	Lead to development of supporting. Facilities, ancillary development or development stimulated by the project which could have impact on the environment e.g.: • Supporting infrastructure (roads, power supply, waste or waste water treatment, etc.)	Yes	Project may increase the industrial growth of the area. It will support infrastructure facilities, housing, development and supply industry by fulfilling their requirement of cleaner fuel in form of Natural gas.



	<ul style="list-style-type: none"> • housing development • extractive industries • supply industries • other 		
9.2	Lead to after-use of the site, which could have an impact on the environment	No	-
9.3	Set a precedent for later developments	Yes	The project may induce future development due to availability of Natural gas to the industries and domestic use.
9.4	Have cumulative effects due to proximity to other existing or planned projects with similar effects	No	Environmental impact from the proposed pipeline project is marginal



(III) Environmental Sensitivity

S.No.	Areas	Name/ Identity	Aerial distance (within 15 km.) Proposed project location boundary
1	Areas protected under international conventions, national or local legislation for their ecological, landscape, cultural or other related value	No	Not Applicable
2	Areas which are important or sensitive for ecological reasons - Wetlands, watercourses or other water bodies, coastal zone, biospheres, mountains, forests	No	Not Applicable
3	Areas used by protected, important or sensitive species of flora or fauna for breeding, nesting, foraging, resting, over wintering, migration	No	Not Applicable
4	Inland, coastal, marine or underground waters	Yes	Water Courses (Major River): Crosses 11 Nos. of Rivers. Detail is attached as Annexure IV
5	State, National boundaries	No	Pipeline pass through Barmer, Jalore, Sirohi and Pali districts of Rajasthan State.
6	Routes or facilities used by the public for access to recreation or other tourist, pilgrim areas	No	Nil
7	Defence installations	No	Not Applicable
8	Densely populated or built-up area	No	Not Applicable
9	Areas occupied by sensitive man-made land uses (<i>hospitals, schools, places of worship, community facilities</i>)	Yes	As shown in route map in Annexure I
10	Areas containing important, high quality or scarce resources (<i>ground water resources, surface resources, forestry, agriculture, fisheries, tourism, minerals</i>)	No	As shown in route map in Annexure I
11	Areas already subjected to pollution or environmental damage. (<i>those where existing legal environmental standards are exceeded</i>)	No	Not applicable.



12	Areas susceptible to natural hazard which could cause the project to present environmental problems (<i>earthquakes, subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions</i>)	No	Not applicable
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(IV). Proposed Terms of Reference for EIA studies

“I hereby give the undertaking that the data and information given in the application and enclosures are true to the best of my knowledge and belief and I am aware that if any part of the data and information submitted is found to be false or misleading at any stage, the project will be rejected and clearance give, if any to the project will be revoked at our risk and cost.”

Date:

Place: Gandhinagar

For, GSPL India Gasnet Limited (GIGL)



**(Ravindra Agarwal)
Chief Executive Officer**

NOTE:

1. The projects involving clearance under Coastal Regulation Zone Notification, 1991 shall submit with the application a C.R.Z map duly demarcated by one of the authorized agencies, showing the project activities, wrt C.R.Z and the recommendations of the State Coastal Zone Management Authority. Simultaneously action shall also be taken to obtain the requisite clearance under the provisions of the C.R.Z Notification, 1991 for the activities to be located in the CRZ.
2. The projects to be located within 10 km of the National Parks, Sanctuaries, Biosphere Reserves, Migratory Corridors of Wild Animals, the project proponent shall submit the map duly authenticated by Chief Wildlife Warden showing these features vis-a-vis the project location and the recommendations or comments of the Chief Wildlife Warden thereon.(at the stage of EC).”
3. All correspondence with the Ministry of Environment & Forests including submission of application for TOR/Environment Clearance subsequent clarifications, as may be required from time to time, participation in the EAC meeting on behalf of the project proponent shall be made by the authorized signatory only. The authorizes signatory should also submit a document in support of his claim of being an authorized signatory for the specific project.

6(a): STANDARD TERMS OF REFERENCE FOR CONDUCTING ENVIRONMENT IMPACT ASSESSMENT STUDY FOR OIL & GAS TRANSPORTATION PIPE LINE (CRUDE AND REFINERY/ PETROCHEMICAL PRODUCTS), PASSING THROUGH NATIONAL PARKS/SANCTUARIES/CORAL REEFS/ECOLOGICALLY SENSITIVE AREAS INCLUDING LNG TERMINAL AND INFORMATION TO BE INCLUDED IN EIA/EMP REPORT

- 1) Justification of the project
- 2) Route map indicating project location.
- 3) Details of land to be acquired. Details of projects vis-à-vis Ecological Sensitive Areas and approvals thereof.
- 4) Project location along with map of 1 km area (500 meters on either side of the pipeline from centerline) and site details providing various industries, surface water bodies, forests etc.
- 5) Analysis of alternative sites and Technology.
- 6) Location of National Park/Wild life sanctuary/Reserve Forest within 10 km radius of the project.
- 7) Status of clearance from NBWL for pipeline passing through wildlife sanctuary/ Ecological sensitive area.
- 8) Recommendation of SCZMA /CRZ clearance for the proposed pipeline (if applicable).
- 9) Present land use based on satellite imagery for the study area of 10 km radius.
- 10) Details of applications filed for forest clearance to be obtained for the project for the forest land involved in the project along with details of the compensatory afforestation.
- 11) Process Description along with Process Flow Diagram.
- 12) Details of associated facilities/utilities to be installed.
- 13) Details of water consumption and source of water supply, waste water generation, treatment and effluent disposal.
- 14) Detailed solid & Hazardous waste generation, collection, segregation, its recycling and reuse, treatment and disposal.
- 15) Total cost of the project along with total capital cost and recurring cost/annum for environmental pollution control measures.
- 16) Site-specific micro-meteorological data for temperature, relative humidity, hourly wind speed and direction and rainfall for one season at one location.
- 17) Ambient air quality monitoring within the study area of 500 m along the pipeline route and around the pumping station and delivery station for PM2.5, PM10, SO₂, NO_x, CO, HC, VOC for one season (Non Monsoon) taking into account the pre-dominant wind direction at the representative locations covering population zone and sensitive receptors including reserved forests.
- 18) Determination of atmospheric inversion level and assessment of ground level concentration of pollutants. Air quality modelling for proposed project.
- 19) Water monitoring to be conducted including surface & ground water for one season (Non Monsoon).
- 20) Soil sample analysis within the study area for one season (Non Monsoon).
- 21) Noise Monitoring will be taken up for one season (Non Monsoon)
- 22) Demography & socio-economics of the study area.
- 23) Ecological features (terrestrial & Aquatic) of the study area for one season (Non Monsoon)
- 24) Assessment of impact on air, water, soil, solid/hazardous waste and noise levels.



- 25) A detailed note on method to be used for crossing road, nalla, stream, rivers, railway line etc.
- 26) Air pollution control measures proposed for the effective control of gaseous emissions within permissible limits.
- 27) Details of proposed preventive measures for leakages and accident.
- 28) Risk assessment including Hazard identification, Consequence Analysis, Risk Assessment and preparation of Disaster Management Plan as per Regulations.
- 29) Corrosion Management of Pipeline
- 30) Details of proper restoration of land after laying the pipelines.
- 31) Details of proposed Occupational Health Surveillance program for the employees and other labour
- 32) Detailed Environment management Plan (EMP) with specific reference to Energy conservation and natural resource conservation, details of air pollution control system, water & wastewater management, monitoring frequency, responsibility and time bound implementation plan for mitigation measure will be provided.

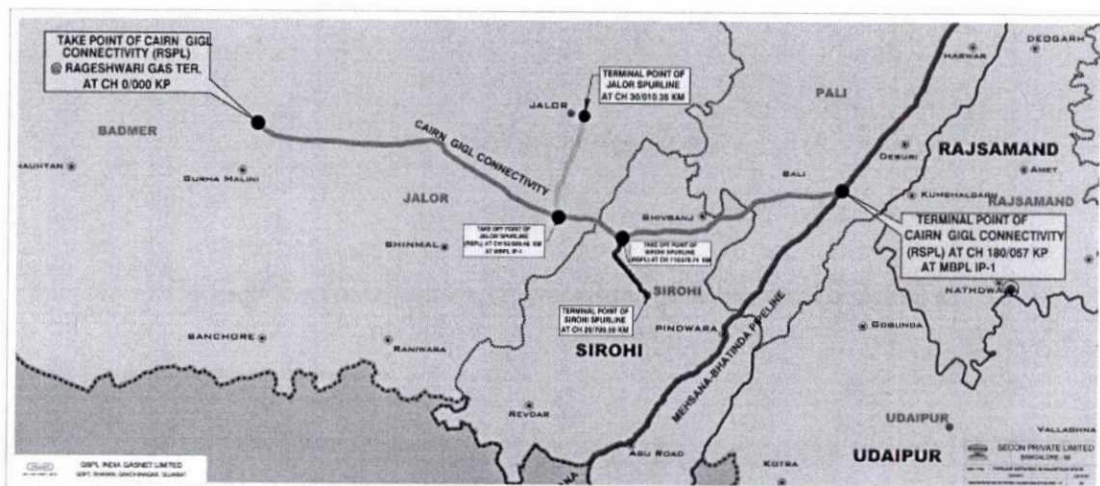




GSPL INDIA GASNET LIMITED

Prefeasibility Report

Barmer-Pali Pipeline



MAY 2016



Prefeasibility Report for MBPL's Barmer - Pali Natural Gas transportation pipe line from Raageshwari to Sevtalav in Rajasthan state by GSPL India Gasnet Limited

1. Executive Summary

Energy security is of utmost importance to any country to achieve rapid industrial growth. The primary sources of energy are coal, oil and natural gas. The past century has seen the dominance of coal and oil, the future is expected to be dominated by natural gas. Petroleum and Natural Gas Regulatory Board (PNGRB), the downstream hydrocarbon sector regulator in India has initiated steps to facilitate the development of natural gas markets and associated infrastructure in the country.

The Project

Gujarat State Petronet Limited has been awarded authorization by PNGRB on July 7, 2011 to natural gas pipeline from Mehsana in North Gujarat to Bhatinda in Punjab (referred to as "MBPL"). The pipeline project (hereinafter referred to as the "Project") is proposed to be implemented through a Special Purpose Vehicle (SPV). GSPL has incorporated SPV GSPL India Gasnet Ltd. for the purpose of implementing Mehsana Bhatinda pipeline project.

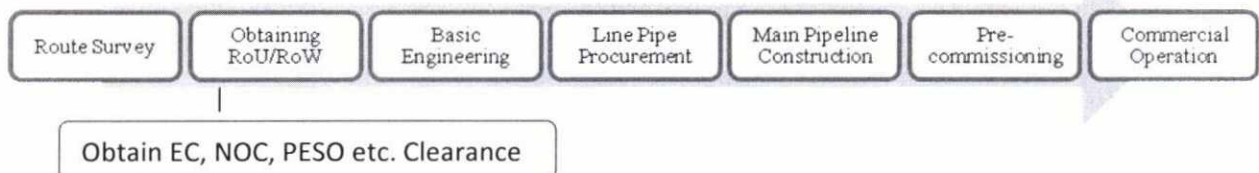
Further, GSPL has entered into a Memorandum of Understanding with, Indian Oil Corporation Limited (IOCL), Bharat Petroleum Corporation Limited (BPCL) and Hindustan Petroleum Corporation Limited (HPCL) to execute the Project under a consortium. Though currently GSPL India Gasnet Limited is 100% subsidiary of GSPL, as per the above MoU, on receipt of investment approvals from the Board of these Oil Marketing Companies (OMCs), GSPL shall offer them up to 48% equity participation in the Project. In case of equity participation from the OMC's, these companies would also form part of the Project Sponsors.

M/s GSPL India Gasnet Limited (GIGL) proposes to lay Barmer- Pali pipeline for transportation of Natural Gas as a Source Connectivity for proposed Mehsana-Bhatinda Pipeline Network which is taking off from the CAIRN's Raageshwari terminal at Dhanlawas village, Guda Malani tehsil, Barmer district and terminating at IP-01 of MBPL trunk line at Sevtalav village, Bali tehsil, Pali district. Also, GIGL proposes to have Tap off points in SV stations of Barmer Pali pipeline for proposed Jalor spur line & Sirohi spur lines to cater City Gas Distribution (CGD) for the cities en-route on proposed network.

This Gas source connectivity will be part of Mehsana Bhatinda Natrual Gas network which have approx. 1800 km long Natural Gas pipeline network from Palanpur (Gujarat) to Bhatinda (Punjab) to cater to gas demands of various industrial consumers & city gas distribution networks in the State of Gujarat, Rajasthan, Haryana and Punjab. Mainline originates from Palanpur despatch point (Ch. 0.0) runs continuously in north direction and terminates at approx. Ch. 838 km at Bhatinda. Main pipeline traverses through in various geographical regions of Gujarat (48 km approx.), Rajasthan (677 km approx.), Haryana (65 km approx.) and Punjab (48 km approx.).

Project Implementation Schedule

The project is expected to be completed within 2 years on receipt of all required statutory clearances / permissions. The project will require one and half year for Construction and testing & commissioning after completion of pre-project activities i.e. detailed Route survey, Engineering Design of the Project obtaining RoU/ROW and other statutory clearances for the project. Mobilisation of various contractors/suppliers is expected by mid-2016. The main critical path to achieve COD is as follows:



Market Assessment for the project

GSPL had appointed Sanguine Management Services Ltd. to carry out a study for assessment of natural gas demand for various sectors viz. Fertilizer, Power, Industrial, Commercial and City Gas Distribution, along the proposed route for MBPL pipeline. In addition, IOCL had engaged Mercados Energy Markets Pvt. Ltd. ("Mercados") for carrying out demand assessment along the proposed pipeline Project. The availability of gas for the time periods 2014-15 and 2020-21 has been assessed by ICRA Management Consulting Services Ltd (IMaCS) on the basis of the domestic E&P Projects and expansion and upcoming LNG Re-Gas terminals.

Project Cost

Basic design engineering for the pipeline has been carried out by M/s. Tractabel Engineering. Based on the DFR prepared, the hard Project cost has been estimated as Rs. 257.40 Crore including 10% contingency to take care of any exigencies and inflation. These cost estimates are primarily based on costs of piping material, equipment and facilities, ROU and pipeline laying cost incurred by GIGL for its recently implemented pipelines and market enquiries on latest prices.

2. Introduction of the Project / Background Information

(i) Identification of project and project proponent. In case of mining project, a copy of mining lease / letter of intent should be given

M/s Gujarat State Petronet Limited (GSPL) a Govt of Gujarat undertaking is one of the leading companies in the field of Natural Gas transmission Pipeline. GSPL has taken a lead in developing energy transportation Infrastructure and connecting major natural gas supply sources and demand markets. Gujarat State Petronet Limited is first company in India to transport natural gas on open access basis and is a Pure Natural Gas Transmission Company. GSPL is continuously expanding its pipeline network to reach the demand centers by laying Natural gas pipeline network. The company has developed requisite expertise and confidence with proven project management competencies.

Gujarat State Petronet Limited has been awarded authorization by PNGRB to lay a network of gas pipeline and associated facilities for the transportation of natural gas to fulfill the requirements of various consumers in the states of Gujarat, Rajasthan, Haryana and Punjab.

Subsequently, GSPL has formed a SPV called "GSPL INDIA GASNET LIMITED (GIGL)" on 13.10.2011 to construct and operate the Project and accordingly Amendment of Letter of Authorization has been issued from PNGRB, New Delhi in favour of GIGL vide letter under their letter dated 31.05.2012.

To meet the requirements of various parts of Gujarat, Rajasthan, Haryana and Punjab, GIGL has proposed an approx. 1800 km Underground Natural Gas Pipeline Network from Mehsana to Bhatinda. That includes Spurline network of Jodhpur Spur line, Udaipur Spur line, Bhilwara Spur line, Ajmer Spur line, Jaipur Spur line, Siganer Spurline, Alwar Spur line, Rohtak Spur line, Sirsa Spur line, Deesa Spurline, Vadnagar Spurline, HPCL Refinery Spurline and associated facilities as per requirement of PNGRB Guidelines. For the aforementioned network, GIGL is in receipt of NoC under Environmental Impact Assessment Notification 2006, from the Ministry of Environment, Forest and Climate Change (MoEFCC), Govt of India vide their letter no. F No. J-11011/231/2012-IA II (I) dated 23.04.2013.

Right now, GIGL proposes to lay Proposed Barmer Pali pipeline as Gas Source Connectivity as a part of Mehsana - Bhatinda Natural Gas pipeline (MBPL) network under Regulation of 12 (1) of the Petroleum & Natural Gas Regulatory Board (Authorizing Entities to Lay, Build, Operate or Expand Natural Gas Pipelines) Regulation 2008. It will feed the Natural gas supply in the proposed MBPL pipeline network in addition to the Natural gas supply from Gujarat and thereby will be able to cater industries and city gas distribution networks in the state of Rajasthan, Haryana, Punjab and Jammu & Kashmir.



Proposed Barmer- Pali pipeline will be taking off from the CAIRN's Raageshwari terminal at Dhanlawas village, Guda Malani tehsil, Barmer district and terminating at proposed IP-01 of MBPL trunk line at Sevtalav village, Bali tehsil, Pali district. Also, captioned network (proposed expansion), GIGL proposes to have Tap off points in SV stations of Barmer Pali pipeline for proposed Jalore spur line & Sirohi spur line to cater City Gas Distribution (CGD) for the cities en-route on proposed network.

(ii) Brief description of nature of the project.

The pipeline size for the Barmer - Pali Natural Gas transportation spur line is 18" diameter and length of 180.057 km approximately. The main pipeline shall originate from the CAIRN's Raageshwari terminal at Dhanlawas village, Guda Malani tehsil, and Barmer district and terminates at IP-01 of MBPL trunk line at Sevtalav village, Bali tehsil, Pali district with associated facilities.

- | | |
|--|--|
| 1. Despatch Terminal (DT) | : 01 No. |
| 2. Sectionalized Valve (SV) Station | : 04 No. |
| 3. Sectionalized Valve (SV) Station with tap off point | : 01 No. for proposed Jalore Spurline |
| 4. Sectionalized Valve (SV) Station with tap off point | : 01 No. for proposed Sirohi Spurline |
| 5. Receiving Terminal - Pali
line) | : 01 No. (IP-01 of Proposed MBPL Main
line) |

This pipeline system shall have Dispatch & Receipt Terminals, SV/Tap-off Stations, Telecom/SCADA Network, Metering Facilities and CP System. Additionally, tap-off provisions have been kept at various locations in the pipeline system for supply of natural gas to consumers, during the economic life of the project

(iii) Need for the project and its importance to the country and or region.

As a consequence of the 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 this issue. Overland transport of fuels by trucks is uneconomical, unsafe, and is a contributor to environmental degradation in terms of the fuel consumed and pollutants released by vehicles in transit and by accidents and spillages (common on Indian roads).

Pipelines are internationally recognized as the preferred alternative for transport of fuels from the point of view of safety, economy and relative environmentally friendliness. The qualities of underground pipelines that make them desirable from these angles are that they are buried underground (at a minimum depth of 1-1.2m), are controlled by SCADA systems which allow continuous monitoring and rapid closure of valves, etc., and that they are routed to avoid human settlements and ecologically sensitive areas.

(iv) Demand - Supply Gap.

Natural gas is a colorless, odorless, naturally occurring gaseous mixture of hydrocarbon components. Natural gas is used in a variety of applications, such as feedstock in fertilizer in the petrochemical industry and as fuel in the power generation manufacturing of steel, textile, ceramic, glass and other industrial products. As a fuel, natural gas competes with a range of alternative products such as coal and lignite as well as petroleum products such as liquefied petroleum gas, naphtha, high speed diesel, light diesel oil and fuel oil. However, due to lower fuel operating costs and better combustion characteristics, natural gas has distinct economic advantages over other sources of energy. In addition, natural gas has substantial environmental advantages over other energy sources, due to lower emissions.

Worldwide, the percentage of global primary energy consumption of natural gas rose from 19% in 1980 to 24% in 2002. High growth in demand of natural gas is expected to occur in developing countries at a rate of 3.9% per year between 2001 and 2025. The Indian natural gas market is relatively underdeveloped compared to other regions of the world. By the years 2024 to 2025, the share of natural gas would increase to 20% of total primary energy consumption, according to Hydrocarbon Vision 2025.



(v) Imports vs. Indigenous production.

It is necessary to achieve energy security locally. There is ample demand for natural gas both within and outside the country. Despite the steady increase in India's natural gas production, demand has outstripped supply and the country has been a net importer of natural gas since 2004. India's net imports reached an estimated 445 Bcf in 2009.

(vi) Export Possibility.

As said earlier, there shall be no manufacturing activity carried out in the project. There shall not be any production carried out in proposed project.

(vii) Domestic / Export Markets.

Not Applicable

(viii) Employment Generation (Direct and Indirect) due to the Project.

The proposed project will generate direct employment at local level due to laying of natural gas pipeline. The downstream activity of maintenance of uninterrupted natural gas supply will generate continuous employment and revenue opportunities.

3. Project Description

(i) Type of project including interlinked and interdependent project, if any

Proposed 18" Diameter Barmer - Pali Natural Gas transportation pipe line (Length 180.057Km). The proposed pipeline is taking off from the CAIRN's Raageshwari terminal at Dhanlawas village, Guda Malani tehsil, and Barmer district and terminating at IP-01 of MBPL trunk line at Sevtaalav village, Bali tehsil, and Pali district with associated facilities i.e.

- | | |
|--|---|
| 1. Despatch Terminal (DT) | : 01 No. |
| 2. Sectionalized Valve (SV) Station | : 04 No. |
| 3. Sectionalized Valve (SV) Station with tap off point | : 01 No. for proposed Jalore Spurline |
| 4. Sectionalized Valve (SV) Station with tap off point | : 01 No. for proposed Sirohi Spurline |
| 5. Receiving Terminal - Pali | : 01 No. (IP-01 of Proposed MBPL Main line) |

This Gas source connectivity will be part of Mehsana Bhatinda Natural Gas network which have approx. 1800 km long Natural Gas pipeline network from Palanpur (Gujarat) to Bhatinda (Punjab) to cater to gas demands of various industrial consumers & city gas distribution networks in the State of Gujarat, Rajasthan, Haryana and Punjab. Mainline originates from Palanpur despatch point (Ch. 0.0) runs continuously in north direction and terminates at approx. Ch. 838 km at Bhatinda. Main pipeline traverses through in various geographical regions of Gujarat (48 km approx.), Rajasthan (677 km approx.), Haryana (65 km approx.) and Punjab (48 km approx.).

(ii) Location (map showing general location, specific location, and project boundary and project site layout) with coordinates

Index map for 18" Diameter Barmer – Pali Natural Gas transportation spur line (Length 180.057Km) of GSPL India Gasnet Limited is attached as an **Annexure- I**.

(iii) Details of alternate sites considered and the basis of selecting the proposed site, particularly the environmental considerations gone into should be highlighted



Alternates routes are examined and finalized the present route based on least disturbance to the environment, human habitations, forest, and aquatic bodies and avoid sanctuary, archeological monuments and other sensitive locations. The route is optimized considering the above factors and connectivity between supply and demand points.

(iv) Size or magnitude of operation

This CAIRN GIGL Gas source connectivity will be part of Mehsana Bhatinda Natural Gas network which have approx. 1800 km long Natural Gas pipeline network from Palanpur (Gujarat) to Bhatinda (Punjab) to cater to gas demands of various industrial consumers & city gas distribution networks in the State of Gujarat, Rajasthan, Haryana and Punjab. Mainline originates from Palanpur dispatch point (Ch. 0.0) runs continuously in north direction and terminates at approx. Ch. 838 km at Bhatinda. Main pipeline traverses through in various geographical regions of Gujarat (48 km approx.), Rajasthan (677 km approx.), Haryana (65 km approx.) and Punjab (48 km approx.).

As an expansion of proposed MBPL network, GIGL proposed to lay 18" Diameter Barmer – Pali pipeline (Length 180.057 Km).

No production and manufacturing is involved as the project is for the transportation of natural gas. Route Map attached as **Annexure - I**

(v) Raw material required along with estimated quantity, likely source, marketing area of final product/s, mode of transport of raw material and finished product.

18" dia. Carbon steel pipelines will be laid from Barmer to Pali for length of 180.057 km. Pipe material and pipe type are API 5L Gr. X-70 PSL-2 and LSAW/HSAW respectively for pipelines of both diameters. It will be commissioned as per PNGRB guidelines. For SV stations construction materials such as MS, sand/ soil, cement, diesel oil etc. will be procured from local sources.

(vi) Resource optimization / recycling and reuse envisaged in the Project, if any, should be briefly outlined.

Resource optimization / recycling and reuse envisaged in the Project.

- (a) All the construction and testing equipments used in the project will be put to use in other similar project once the project is completed.
- (b) Water used for hydrostatic testing of pipes during commissioning will be stored and reused for other pipes.
- (c) Rain water harvesting and recycled water will be used for sanitary purposes, green belt development and gardening purposes as practicable.

(vii) Availability of water its source, Energy / Power requirement and source should be given

Water consumption will be Max. 100 KL/day during Construction period, and during Operations it will be 18 KL/day. Water will be sourced through road tankers. Required power for sectionalizing valve stations (SV) shall be drawn from nearest local power source of Electricity Board. However DG Set will be kept as stand by at the stations.

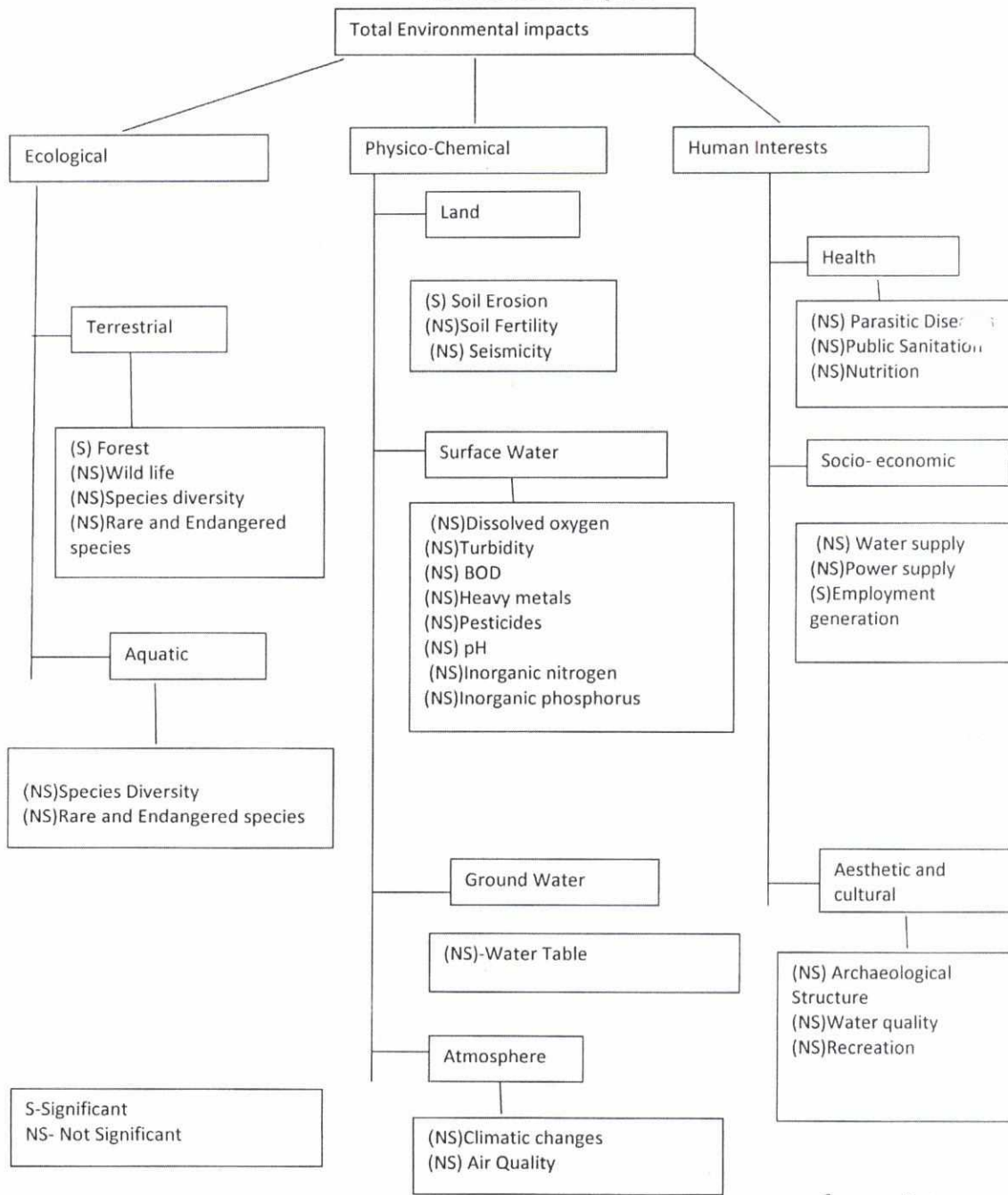
(viii) Quantity of wastes to be generated (liquid and solid) and scheme for their Management / disposal

Quantity of wastes generated is expected to be 0.2-0.5kg/per capita/day during construction activities. On completion of construction works, all temporary structures, surplus materials and wastes will be completely removed to avoid future land use incompatibility. Dumping of construction waste on agricultural land will be prohibited and stockpiles will be provided with gentle slopes.

(ix) Schematic representations of the feasibility drawing which give information of EIA purpose



Environmental Impacts



4. Site Analysis

(i) Connectivity

The state of, Rajasthan, owing to industrial importance, are well connected by air, rail and road.

By Air:

The project site has one Airport at Jodhpur. Nearest Area distance from the project area is 135Km.

By Rail:

The states are linked with important trains from all most all parts of the country. Major stations are well connected by regular express and super-fast trains from various parts of the country.

By Road:

An extensive network of national highways, state highways and other roads run through the state and connect it with the rest of the country. Regular bus and taxi services are available for internal transportation within the state and also to the neighboring states. Other means of local transportation include autos, taxis and cycle rickshaws which are economic and easily available.

(ii) Land Form, Land use and Land ownership

Agricultural Land (RoU) having approx. 360.114 ha for Barmer – Pali pipeline. After laying of pipeline, the land will be restored back and handed over to land owners for agricultural purpose.

Permanent land acquisition:

- DT stations - 1 no * 10,000 sqmtr.
- SV stations - 4 nos * 4000 sq. mtr.
- SV stations with ToP for proposed Jalore Spurline - 1 nos * 6000 sq. mtr.
- SV stations with ToP for proposed Sirohi Spurline - 1 nos * 6000 sq. mtr.
- RT station - 1 no. * 10,000 sq. mtr. (IP-1 of MBPL Project)

(iii) Topography (along with map).

Based on the terrain configuration, surface features and land use, the main route is classified into four sections. Dry & wet cultivation field with patches of Bajra, Jawar, Pulse, Patches of Pomegranates and seasonal Jeera interspersed with open scrub and babul bushes.

SECTION	TERRAIN	LAND USE
Section - 1 : From take-off point, CAIRN Raageshwari Gas Terminal to Bandi river crossing @ ch. 99/190.50 km (Length : 99/190.50 km)	Gently rising terrain interspersed with small & medium sand dunes. Surface soil is silty sand & sandy gravel with seasonal rivers and nalas.	Alignment runs through cross country. Dry cultivated fields of Bajra & pulses with small patches of open scrub & barren land. Communication network along pipeline route is good.



SECTION	TERRAIN	LAND USE
Section - 2 : From Bandi river crossing at ch. 99/190.50 km to Terminal point at IP-1, MBPL @ ch. 180/057.68 km. (Length : 80/867.18 km)	Gently rising terrain. Surface soil is silty gravel & silty clay underlain by murrum & weathered rock with seasonal rivers and nalas. Canal network notice around Oda reservoir and Jawai river.	Pipeline route has been aligned through cross country. Dry & wet cultivated fields of Bajra & pulses with small patches of open scrub & barren land. Communication network along pipeline route is good.

- (iv) **Existing land use pattern (agriculture, non-agriculture, forest, water bodies (including area under CRZ)), shortest distance from the periphery of the project to periphery of the forests, national park, wild life sanctuary, eco sensitive areas, water bodies (distance from the HFL of the river), CRZ. In case of notified industrial area, a copy of the Gazette notification should be given**

Barmer Pali pipeline is proposed to terminate at IP-01 station of MBPL network at Sevtalav village, Bali tehsil, Pali district of Rajasthan which is at a safe distance 4.5 km from the boundary of Kumbhalgadh Wildlife sanctuary. Please note that alignment of proposed Barmer pipeline is not passing through Kumbhalgadh Wildlife sanctuary.

However, the Barmer Pali pipeline's alignment falls in the 10 km vicinity area from the boundary of Kumbhalgadh Wild life Sanctuary. For which, GIGL will apply to the Concerned Authority under the Wildlife (Protection) Act, 1972, for granting statutory permission. Details are tabulated below:

Sr. No.	Particulars	Chainage (Km)		Length(Km)	Remarks
		From	To		
1	Pipeline alignment falls in the 10 km vicinity area from the boundary of Kumbhalgadh Wild life Sanctuary.	166/362	180.057	13/70	Permission /NOC required from National Wildlife Board
Total Length in Km				13/70	

(v) **Existing Infrastructure**

Water:

- Water requirement during construction phase will be approximately 100 KLD
- The domestic water requirement during operation will be 18 KLD
- The expected source of water is the Road tankers and local surface water bodies depending on the availability of water in them. However, during operation water will be sourced from bore or dug wells inside the SV stations for domestic and tree plantations depending upon the requirements

Power



Required power for SV / TOP / IP / Despatch / Receiving shall be drawn from nearest local power source of the state Electricity Boards. Approx. 7 Nos. of DG sets (Approximate) with each has capacity of 40KVA & tank capacity of 990 liters will be provided. However, DG sets will be kept as stand by at Stations.

Tele-Communication and IT

Telecommunications and IT have played a key role in increasing work efficiency and enhancing public accessibility through e-governance. Gujarat Government focuses on growth and development of new & emerging technology areas. State Govt. has adopted Innovative, constructive and progressive policies for the promotion of e-governance in the State. Communication network is good except pipeline chainage near 60 to 75KP.

(vi) Soil Classification

Surface Soil along the pipeline route is silty and sandy clay soil, interspersed with open scrub

(vii) Climatic data from secondary sources

The climate of Rajasthan can be divided into four seasons: Summers, Monsoon, Post-Monsoon and winter.

A summer, which extends from April to June, is the hottest season, with temperatures ranging from 32 degree C to 45 degree C. in western Rajasthan the temp may rise to 48 degree C, particularly in May and June. At this time, Rajasthan's only hill station, Mt Abu registers the lowest temperatures. In the desert regions, the temperature drops at night. Prevailing winds are from the west and sometimes carry dust storms (we call them aandhi).

The second season Monsoon extends from July to September, temp drops, but humidity increases, even when there is slight drop in the temp (35 degree C to 40 degree C). 90% of rains occur during this period.

The Post-monsoon period is from October to November. The average maximum temperature is 33 degree C to 38 degree C, and the minimum is between 18 degree C and 20 degree C.

The fourth season is winter or the cold season, from December to March.

(viii) Social Infrastructure available

The socio-economic profile of the study area based on Census of India data of 2011 is classified into following points:

- Population and dwelling units,
- Social profile,
- Education,
- Health and medical infrastructure,
- Drinking water facilities,
- Communication facilities

5. Planning Brief

(i) Planning concept (type of industries, facilities. Transportation etc) Town and Country Planning / Development authority Classification

GSPL Indian Gasnet Limited (GIGL) proposes to lay proposed Barmer - Pali pipeline which is taking off from the CAIRN's Raageshwari terminal at Dhanlawas village, Guda Malani tehsil, and Barmer district and terminating at IP-01 of MBPL trunk line at Sevtalav village, Bali tehsil, and Pali district. Also, the proposed network of Barmer Pali pipeline will have SV stations with Tap off points for proposed Jalore spurline and Sirohi spurline to cater the requirement of City Gas distribution Entity.



The pipeline size for the Barmer - Pali Natural Gas transportation spur line is 18" diameter and length of 180.057 km approximately with associated facilities. i.e.

- | | |
|--|--|
| 1. Despatch Terminal (DT) | : 01 No. |
| 2. Sectionalized Valve (SV) Station | : 04 No. |
| 3. Sectionalized Valve (SV) Station with tap off point | : 01 No. for proposed Jalore Spurline |
| 4. Sectionalized Valve (SV) Station with tap off point | : 01 No. for proposed Sirohi Spurline |
| 5. Receiving Terminal - Pali
line) | : 01 No. (IP-01 of Proposed MBPL Main
line) |

(ii) Population Projection

The population of the districts from which pipe line passes in Rajasthan state as per the 2011 census data is collected.

Land use planning (breakup along with green belt etc.)

Temporary change in land use will take place due to development of preliminary site preparation, underground lying of pipeline, campsites etc. 18" Diameter Barmer – Pali pipe line length is approximately 180.057km with associated facilities. The land will be reinstated to its near original position once pipeline laying is completed. Thus, impact on land use will be marginal and reversible.

No change in land use pattern along the pipeline route is envisaged as the land will be restored to its near original condition after laying the pipeline. However, Construction activities will be carried out at proposed Dispatch station, Sectionalized Valve stations and Receiving stations. Peripheral Greenbelt will be developed at each station as per MoEF guidelines.

However, Permanent land acquisition will be for BPPL as under:

- DT stations - 1 no * 10,000 sqmtr.
- SV stations - 4 nos * 4000 sq. mtr.
- SV stations with ToP for proposed Jalore Spurline - 1 nos * 6000 sq. mtr.
- SV stations with ToP for proposed Sirohi Spurline - 1 nos * 6000 sq. mtr.
- RT station - 1 no. * 10,000 sq. mtr. (IP-1 of MBPL Project)

Green belt shall be developed to minimum 33% of the total area of the respective stations as per the guidelines of MoEF&CC and State forest department.

(iii) Assessment of Infrastructure Demand (Physical & Social)

Not applicable

(iv) Amenities / Facilities

Facilities for health, water supply, market, sanitary, communication and recreation facilities as practicable are to be provided during construction phase to make the life more adaptive and comfortable.

6. Proposed Infrastructure

(i) Industrial Area (Processing Area)

Not applicable

(ii) Residential Area (Non Processing Area)

Not applicable.



(iii) Green Belt

Green belt will be developed with locally available species along the periphery of Sectionalized Valve stations, IP, Metering, Receiving and control station locations keeping safety distance/hazard area classification zone as applicable. Green belt shall be developed to minimum 33% of the total area of the respective stations as per the guidelines of MoEF&CC and State forest department.

(iv) Social Infrastructure

Large proportion of the states of Gujarat, Rajasthan, Hariyana and Punjab are engaged in running owned businesses and other activities of economic development. The governments of the states are committed to providing better education, training and healthcare to the population.

Education

The state's literacy rate stands at Approx. 65.0 to 69.0 percent. Gujarat, Rajasthan, Hariyana and Punjab have created a network of quality educational institutions, which provide world-class professionals. The states lay strong emphasis on both- elementary and higher education and have been taking step to encourage both. The states house a good number of institutes that provide education in every field. The outstanding research institutes are doing their best in experimenting and its industrial application.

Health

The government has expanded the health infrastructure, involving greater number of health personnel and integration of promotive, preventive, curative and rehabilitative health services. The Department of Health and Family Welfare is striving for the attainment of health for people through wide network of the Government Health Care delivery system. The state assigns due importance to public health and hospitals with modern healthcare facilities are being established at all important centres in the State, A number of state-of-the-art hospitals have come up in the recent past in Rajasthan.

(v) Connectivity (Traffic and transportation Road / Rail / Metro / Water Ways etc)

It is intended to make maximum use of the existing infrastructure and augment/ strengthen existing roads, wherever required. Hence no major changes are envisaged due to this buried natural gas pipeline project.

(vi) Drinking Water Management (Source & Supply of Water)

The government is planning to cover population through the Water grid. Drinking water will be supplied to workers by providing a water treatment plant and pipe network. Source of water supply will be through road tankers.

(vii) Sewerage System

Toilets will be connected to septic tank & soak pit for disposal of human waste during construction phase of the project.

(viii) Industrial Waste Management

Not Applicable.

(ix) Solid Waste Management

Marginal amount may be generated and same will be disposed as per SPCB / CPCB Guideline.

(x) Power Requirement and Supply / Source

Required power for SV / IP / Despatch / Receiving shall be drawn from nearest local power source of the state Electricity Boards. Approx. 7 Nos. of DG sets (Approximate) with each has capacity of 40KVA & tank capacity of 990 liters will be provided. However, DG sets will be kept as stand by at Stations.

7. Rehabilitation and Resettlement (R &R) Plan

- a. Policy to be adopted (Central / State) in respect of the project affected persons including home owners, land owners and landless laborers (a brief outline to be given)**



Not applicable as there is no displacement involved. Land will be restored to the near original condition and returned back to the land owner.

8. Project Schedule and Cost Estimates

a. Likely date of start of construction and likely date of completion (Time schedule for the project to be given)

The project is expected to be completed within 2 years (on receipt of all required statutory clearances / approvals) . The project will require one and half year for construction and testing & commissioning after completion of pre-project activities i.e. detailed Route survey, Engineering Design of the Project obtaining RoU/ROW and other statutory clearances for the project. Mobilisation of various contractors/suppliers is expected to be completed by Q2 of 2016-17.

b. Estimated project cost along with analysis in terms of economic viability of the project

Basic design engineering for the pipeline is being carried out by M/s. Tractebel Engineering. Based on the DFR prepared, the hard Project cost has been estimated as Rs. 257.40 Crore including 10% contingency to take care of any exigencies and inflation. These cost estimates are primarily based on costs of piping material, equipment and facilities, ROU and pipeline laying cost incurred by GIGL for its recently implemented pipelines and market enquiries on latest prices.

9. Analysis of proposal (Final Recommendations)

a. Financial and Social benefits with special emphasis on the benefit to the local people including tribal population, if any, in the area :

- The project will provide cleaner fuel stock for the industries in region, and is environment friendly fuel due to which adverse impacts on environment are found minimal.
- The project would enhance employment opportunities through contractors for the local people during construction phase.
- There will not be any adverse impact on communication and transportation
- Residential/Built up will not be acquired for the proposed project and hence there is no displacement of population.
- Transportation by pipeline is comparatively less expensive than the other modes of transport, both in the capital and operating costs. If a good network of pipelines is implemented throughout the country, this will ensure that the pipeline-transported products will be available to the consumers at a lower cost than alternate modes of transport.
- One of the additional advantages of pipeline transportation is that the scope of economic offences like theft / pilferage and adulteration of products would be almost negligible and the consumers will get immense benefit and value for money.
- Development of gas pipeline infrastructure in the State shall fuel industrialization (due to easy availability of gas as a fuel) and lead to establishment of SMEs as well as big industries thereby leading to a spur in GDP level of the State.
- Raised levels of GDP would have a multiplier effect that shall not only boost the overall economy of the State but shall also generate employment opportunities to the youth of the State.
- Presence of natural gas trunk pipeline network would contribute to growth of City Gas Distribution (CGD) networks in the cities along the said pipeline which would promote usage of CNG for transport sector and lead to reduction in pollution levels.
- The said pipeline would transport/supply gas to CGD companies that in turn would supply Piped Natural Gas (PNG)/Compressed Natural gas (CNG) which shall not only result into monetary saving for people as PNG & CNG is cheaper than LPG & Petrol but shall also result into saving of subsidy for Government. Further usage of PNG shall relieve people from the hassles associated with LPG usage.
- The pipeline connectivity may be used to set up CNG corridors across National Highway / State highways as well as at Urban areas
- Historically, development of such vital gas infrastructure has always led to investments from core sectors / Industries like Fertilizers/Power /petrochemical /Steel/Refineries, regions like Uran & Hazira are some notable cases.



- Due to inherent fact that presence of pipeline in any area spurs overall development of such area, overall standard of living improves which positively affects farmers too.
- Moreover, the benefits of Compressed Natural Gas (CNG) and Piped Natural Gas (PNG) shall not be limited to urban areas but shall also reach rural areas which shall be in the interest of farmers.
- Further, laying of pipeline infrastructure does not adversely affect farmers as they are adequately compensated for the standing crops and it is ensured that fertility of land is not affected. Moreover farmers can continue with cultivation once the pipeline is buried under the ground.

