Development of LPG and Liquid Storage Terminal within Port area at Village Chhara-Sarkhadi, Taluka Kodinar, District Gir-Somnath, Gujarat by West Coast Liquid Terminal Pvt. Ltd.

Introduction & background

The Shapoorji Pallonji Group (SP Group) is an Indian business conglomerate with a rich legacy of more than 150 years and a consistently superior track record, the group is committed towards excellence in each domain of its operations. SP's business interests cover construction (including residential, commercial, industrial and infrastructure), real estate, infrastructure (comprising coal mining, power, ports and roads), biofuels and agriculture, consumer products, electro-mechanical and MEP services, facades and interiors, engineering, textiles, business automation and shipping and logistics.

Simar Port Pvt. Ltd. (SPPL) - a SP company, is developing a deep draft, all weather, multipurpose, direct berthing Simar Port, Village: Chhara-Sarkhadi, District- Gir Somnath, Gujarat (the 'Port') under the concession granted by Gujarat Maritime Board to SPPL for a period of 30 years.

SPPL have been granted EC & CRZ Clearance (F. No. 11-73/2009-IA.III dated 6th January, 2014). Activities for which CRZ clearance is granted are provided in the EIA report.

Royal Vopak is the world's leading independent tank storage company, it operates a global network of terminals located at strategic locations along major trade routes. With a history of 400 years Vopak has deep knowledge and understanding of development and operation of Liquid Bulk cargo.

M/s West Coast Liquid Terminal Pvt. Ltd. (WCLTPL) is a JV between Vopak India BV and SP Ports Pvt. Ltd. WCLTPL is developing a liquid products import terminal including the refrigerated LPG import, storage and distribution facility at Simar Port. Chhara is an upcoming Greenfield port, situated in South Saurashtra region of Gujarat and is being developed by SPPL.

About the project

The project involves setting up of a proposed LPG/POL/Veg oil (edible & non-edible) import, storage and Distribution terminal (along with jetty within the proposed Port) at Chhara. This port, with the right marine conditions and sufficient back-up area, is strategically positioned for markets of North India, parts of West and Central India.

Liquid propane, butane and LPG will be imported via Very Large Gas Carrier (VLGC), will be heated, blended and dosed with odorant to make LPG for distribution via trucks and pipelines. POL will be imported via ocean moving petroleum oil tankers and distributed via trucks. Veg oil will be imported via ocean moving veg oil tankers and distributed via trucks.

WCLTPL has identified Simar Port since it is a suitable and available site for setting up a liquid bulk terminal for the following reasons:

- The Port offers excellent depth (up to ~20 m) within a distance of 1.2 km. This is suitable for large vessels and will reduce trestle length.
- The Port has sufficient land bank for development of the proposed LPG and liquid terminal.
- The Port is very well located to cater to the largest LPG and veg oils deficit regions of North India and parts of Western / Central India.
- The breakwater being constructed by SPPL provides tranquil conditions at the berth for year round all weather operation.

Nature of project

The proposed project is a Greenfield project within the Port boundary.

Location

The proposed project is located in Village Chhara and Sarkhadi in the Gir-Somnath District of Gujarat State.

Project description

Need for the project

India is the third largest LPG importer in Asia and country is expected to have a LPG deficit as local production will not suffice the growing demand. Imports have grown significantly in the past 5 years from 32% to 45% of total demand and will continue to grow in future as well.

More than 90% of country's LPG consumption is in the domestic cooking segment, but a large population still uses wood, bio-mass, kerosene etc. for cooking, which creates health hazard for households due to unclean fuel. This project will be an important contributor in increasing LPG penetration in the Northern, Western and Central parts of the country, for domestic cooking fuel segment, by enabling LPG imports and thus, ensuring availability at the demand centres in cost-effective manner. The project will also contribute to the needs of commercial segment and provide impetus to industrial development in Northern, Western and Central parts of the country by making clean fuel available and thus, replacing/providing alternate to conventional solid and liquid fuels that are less environment friendly.

Table 1: Area statement

S. no.	Land	Area in m^2	Area in Acres
1	Storage Tanks	30,238	7.47
2	Equipment	26,815	6.63
3	Building	13,750	3.40
4	Landscape	55,860	13.80
5	Road	47,058	11.63
6	Paved Area	1,04,979	25.94
7	Unpaved Area	1,16,152	28.70
	Total	**3,94,852**	**97.57**

List of products

Table 2: LPG & liquid storage product details

S. No	Cargo	Chemicals	Total no. of tanks	Storage capacity	Maximum storage capacity in m^3	Maximum throughput (MMTA)
1	LPG	Propane	2	50,000 m^3 each	2,00,000	**5.0**
		Butane	2			
		Propane	2	450 MT each	2700	
		Butane	2			
		Mixed LPG	2			
2	POL	POL products of categories conforming to Class A / B / C and non-classified	8	30,000 m^3 each	2,40,000	3.5
3	Veg oil	Vegetable oils	20	5,000 m^3 each	100,000	1.5

S. No	Cargo	Chemicals	Total no. of tanks	Storage capacity	Maximum storage capacity in m^3	Maximum throughput (MMTA)
	Total		**38**		**542,700**	**10**

Marine facilities

Dedicated jetty will be developed (maximum length ~45 mt and width ~35 mt) for unloading of propane, butane, LPG and liquid products from vessel. Trestle length will be ~1900 mt.

Propane, Butane, LPG

Proposed terminal will cater to imports of bulk-refrigerated propane, butane, LPG and distribution of pressurised propane, butane and LPG to the market. The operations philosophy will be as under:

Refrigerated propane and refrigerated butane will be received in the terminal through ships and will be first stored in refrigerated, full containment double walled storage tanks separately.

Propane and butane will then be heated, pumped to mounded tanks and stored separately. Pressurised propane and butane will be transferred to static mixer for blending and making the mixed LPG.

Pressurised propane, butane and mixed LPG will be dispatched from terminal through road tankers and also through pipelines.

POL and vegetable oils

Proposed terminal will cater to the bulk imports of POL and vegetable oil products and distribution to the market. The operations philosophy will be as under:

- Products will be received in the terminal through ships.
- Product(s) will be stored in designated tanks and will be dispatched from terminal through road tankers.

Jetty

A dedicated jetty unloading of LPG and liquid products will be constructed to import the products.

The terminal will also provide value added services like, blending, homogenisation (circulation), heating, chilling, as per the customer's need. As part of the pipes cleaning, the wastes generated will be collected and stored in containers/tank and disposed as per the approved guidelines of the MoEF&CC, Govt. of India.

Propane, Butane, LPG

Dolphins

S. no.	Type of dolphin	Numbers of dolphin	Remark
1	Mooring Dolphin	6	with catwalk
2	Berthing Dolphin	2	-

Unloading facility

S. No.	Description of facility	Numbers	Remark
1	Unloading arm	2	One for Propane and one for Butane

Pipeline details

S. No.	Route of pipeline	Numbers	Remark
1	Pipeline from Jetty loading arm to terminal	2 x 18″ NB & 2 x 6″ chilling return line	-

POL & vegetable oils

Dolphins

Same jetty platform will be used for POL & vegetable oils.

Unloading facility

S. no.	Description of facility	Numbers	Remark
1	Unloading arm	2	POL
2	Unloading Hoses	8	Veg oils

Pipeline details

S. No.	Route of Pipeline	Numbers	Remark
1	Pipelines for POL from Jetty to terminal	2 x 16″ NB	-
2	Pipelines for vegetable oils from jetty to terminal	2 x 12″ NB	-

- **Characteristics of vessel operating at the proposed jetty**

The optimum size of the vessel operating at the proposed jetty would be 1,00,000 DWT. These barges/ships will be 230 m long with 37 m beam width.

Table 3: Characteristics of vessel operating at the proposed Jetty

Vessel type	Vessel characteristics			
	Dead weight tonnage	Overall length	Beam	Draught
VLGC / LR1	1,00,000 DWT	230 m	37 m	15 m

- **Dimensions of the approach channel**

Simar Port facility w.r.t. channel with 250 m to 300 m width and 20 m depth will be used for this project.

- **Turning circle / Manoeuvring area**

Simar Port facility w.r.t. turning circle will be used for this project.