

LG POLYMERS INDIA PVT. LTD.

**SY. NO.S 29 TO 45, 83/1 AND 83/3,
RR VENKATAPURAM VILLAGE, PENDURTI MANDAL,
VISAKHAPATNAM DISTRICT, ANDHRA PRADESH**

PRE-FEASIBILITY REPORT

LG Polymers India Pvt. Ltd.
Sy. No.s 29 to 45, 83/1 and 83/3,
RR Venkatapuram Village, Pendurti Mandal, Visakhapatnam
District, Andhra Pradesh – 530 029
Phone :+91 91000 40246
E E-mail: ppcmohan@lgpi.co.in; ppcmohan@lgchem.com;
N_Satyanarayana@lgpi.co.in

**SUBMITTED TO
MINISTRY OF ENVIRONMENT, FORESTS AND CLIMATE CHANGE
GOVERNMENT OF INDIA
INDIRA PARYAVARAN BHAWAN, JOR BAGH ROAD, NEW DELHI**

Pre – Feasibility Report

LG Polymers India Pvt. Ltd.

Sy. No.s 29 to 45, 83/1 and 83/3,
RR Venkatapuram Village, Pendurti Mandal,
Visakhapatnam District,
Andhra Pradesh – 530 029

1. Executive Summary

M/s. LG Polymers India Pvt. Ltd. has valid consent for operation vides order no. APPCB/VSP/VSP/14082/HO/CFO/2017 dated 19.01.2017 valid till 31.12.2021. It is proposed to expand the manufacturing capacity from 415 TPD to 655 TPD in an existing area of 213 acres. The capital cost for expansion is Rs. 168 crores, towards, additional production block, utilities and enhancement of treatment system at Sy. No.s 29 to 45, 83/1 and 83/3, RR Venkatapuram Village, Pendurti Mandal, Visakhapatnam District, Andhra Pradesh. The proposed expansion has employment potential of 300 nos.

The site is having a longitude 83°12'34"E and latitude 17°45'23"N. The plant site is surrounded by Road connecting Araku – Visakhapatnam in north direction, Shimhachalam North RS in south direction, and open lands in west direction and Prahalada nagar in east directions. The main approach road is Road connecting Araku – Visakhapatnam in north direction. The nearest habitation is RR Venkatapuram in west direction at a distance of 0.1 km in west direction. There are three reserve forests in the study area. Narava RF is at a distance of 5.2 km in east direction, Yerrakonda RF is at a distance of 4.3 km in northeast direction, Kambalakonda RF is at a distance of 5.4 km in northeast direction and Kailasakonda forest is at a distance of 0.5 km in east direction. Meghadri Gedda Reservoir is at a distance of 2 km in northwest direction. There are no national parks, sanctuaries, ecologically sensitive areas, critically polluted areas and interstate boundary within the impact area of 10 km.

2. Introduction of the Project

2.1 Identification of Project and Project Proponent:

M/s. LG Polymers India Pvt. Ltd. proposed to expand the manufacturing capacity from 415 TPD to 655 TPD in an existing area of 213 acres. The capital cost for expansion is Rs. 168 crores, towards, additional production block, utilities and enhancement of treatment system at Sy. No.s 29 to 45, 83/1 and 83/3, RR Venkatapuram Village, Pendurti Mandal, Visakhapatnam District, Andhra Pradesh.



2.1 Brief Description of Nature of the Project:

The proposal is expansion of the manufacturing of polymers (Petroleum based products) from 415 TPD to 655 TPD in an existing area of 213 acres.

General Purpose Polystyrene (GPPS): GPPS is produced by continuous bulk polymerization of styrene monomer carried in two stages through Reactor and Tower process. The final polymer extruded and palletized to cylindrical solids granules in USG system. Product is packed in 25 kg bags. Unconverted styrene recycles back into process.

High Impact Polystyrene (HIPS): HIPS is produced by continuous bulk polymerization of styrene monomer in series of reactors in presence of polybutadiene rubber and pelletized to cylindrical solid granules in USG system. Product is packed in 25 kg bags. Unconverted styrene recycles back into process.

2.2 Need for the project and its importance to the country and or region:

World population is growing at an alarming rate. In the Indian sub continent population growth is more than that of developed countries. To meet the needs and comforts of ever-growing population industrialization became inevitable. For the growing population the needs are also increasing.

2.3 Demands-Supply Gap:

The project is envisaged to meet the demand supply gap in both domestic market and export market.

2.4 Domestic/export Markets:

The products shall cater to both domestic and export markets.

2.5 Employment Generation (Direct and Indirect) due to the project:

The proposed expansion has employment potential of 300 nos

3. Project Description

3.1 Type of Project including interlinked and interdependent projects, if any:

M/s. LG Polymers India Pvt. Ltd. proposed to expand the manufacturing capacity from 415 TPD to 655 TPD in an existing area of 213 acres. The capital cost for expansion is Rs. 168 crores, towards, additional production block, utilities and enhancement of

treatment system at Sy. No.s 29 to 45, 83/1 and 83/3, RR Venkatapuram Village, Pendurti Mandal, Visakhapatnam District, Andhra Pradesh.

3.2 Size or magnitude of operation:

The proposed products are manufactured is presented in the Table given below.

Table A-1 Manufacturing Capacity

S.No	Name of Product	Capacity (TPD)		
		Permitted	Proposed	Total After Expansion
1	Polystyrene	313	137	450
2	Expandable Polystyrene	102	103	205
	Total	415	240	655

3.3 Process Description with process details (a schematic diagram/flow chart)

Process description is as in the Form I Annexures.

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

All the raw materials required for manufacturing mostly available in India or from abroad. There are no banned chemicals or products which are proposed to be used.

It is proposed to enter into long term arrangements with some of the raw material suppliers both in India and overseas to avoid shortages at any time.

3.5 Availability of water its source, energy/power requirement and source should be given

Water is required for process, cooling tower makeup, steam generation and domestic purposes. The required water shall be met from Municipal (GVMC) supply. The total water requirement is in the order of 960 KLD after expansion. Total water balance is presented in [Table below](#).

Total Water Balance

Purpose	Fresh Water (KLD)	OUTPUT (KLD)	
		Loss	Effluent
Process	324		324
Boiler Feed	74	63	11
Cooling Tower	463	413	50
RO/DM Plant	35		35
Domestic	64	4	60
Total	960	480	480



3.5.1 Electricity:

The required energy shall be drawn from TRANSCO. DG set of 1 X 1000 kVA, 1 x 1500 kVA are proposed in addition to existing 1 x 500 kVA and 4 x 1000 kVA.

3.6 Quantity of wastes to be generated (liquid and solid) and Scheme for their Management/disposal:

The main sources of effluent generation from the plant are from process, blow downs from boiler and cooling tower, RO/DM Rejects and domestic wastewater. The Effluent Treatment details and the Solid Waste Management details are listed in the below tables.

Quantity of Effluent Generated and Mode of Treatment

Description	Quantity (KLD)		Mode of Treatment
	Permitted	After Expansion	
Process	185	324	Sent to Effluent Treatment Plant and treated effluent reused for greenbelt development within plant premises.
Boiler Blow downs	28	11	
Cooling Tower Blow downs		50	
RO/DM Rejects		35	
Domestic Wastewater	40	60	Sent to STP and treated wastewater reused for greenbelt development within plant premises.
Total	253	480	

Total Solid Waste Generated and Mode of Disposal

S.No	Description of Waste	Unit	Quantity After Expansion	Disposal method
1	Process residue	TPA	125	Cement Industry/ Authorized recyclers/TSDF
2	Oil and Grease skimming	KLPA	6	Authorized recyclers/TSDF
3	Stack Soot/flue gas cleaning residue	TPA	2	TSDF
4	Used Oil / Waste Lubricating oil	KLPA	4	Authorized recyclers
5	Lead acid batteries	No's/Y ear	30	Authorized recyclers/Buyback
6	Softener / DM Plant Resins	TPA	0.3	TSDF
7	ETP Sludge	TPA	300	TSDF/Brick/Tile manufacturer/Recyclers
8	STP Sludge	TPA	50	Composted and used as manure
9	Used/Discarded Filter Bags	TPA	4	TSDF for Incineration
10	Detoxified Container	TPA	6	Detoxified and reuse/Sale after detoxification
11	Detoxified Liners & Bags	TPA	1	Sale after detoxification



				/ Authorized recyclers
12	Cotton Waste	TPA	0.5	TSDf
13	Insulation Waste	TPA	8	TSDf
14	Discarded PPE	TPA	0.5	TSDf for Incineration
15	Paper, Packing materials i.e. wood, carton , ropes	TPA	0.4	Sale to outside agencies/ recyclers/In-house incineration
16	Waste packing wood/ broken glass etc	TPA	1	Sale to outside agencies/ recyclers
17	Bio Medical Waste	TPA	0.12	Sent to Bio Medical Waste Treatment Facility
18	E- Waste	TPA	1.5	Authorized recyclers
19	Canteen Waste	Kg/day	50	Composted and used as manure/Sent to Piggery farm
20	Plastic Waste	TPA	15	Sale to outside agencies/ recyclers
21	Discarded asbestos sheets	TPA	10	TSDf
22	Wastes or Residues containing oil	KLPA	2	Authorized recyclers/TSDf
23	Waste Rubber	TPA	2	Authorized recyclers/Reprocessors
22	Wastes or Residues containing oil	KLPA	2	Authorized recyclers/TSDf

4. Site Analysis

4.1 Plant Location

M/s. LG Polymers India Pvt. Ltd. has valid consent for operation vides order no. APPCB/VSP/VSP/14082/HO/CFO/2017 dated 19.01.2017 valid till 31.12.2021. It is proposed to expand the manufacturing capacity from 415 TPD to 655 TPD in an existing area of 213 acres. The capital cost for expansion is Rs. 168 crores, towards, additional production block, utilities and enhancement of treatment system at Sy. No.s 29 to 45, 83/1 and 83/3, RR Venkatapuram Village, Pendurti Mandal, Visakhapatnam District, Andhra Pradesh. The proposed expansion has employment potential of 300 nos.

The site is having a longitude 83°12'34"E and latitude 17°45'23"N. The plant site is surrounded by Road connecting Araku - Visakhapatnam in north direction, Shimhachalam North RS in south direction, and open lands in west direction and Prahalada nagar in east directions. The main approach road is Road connecting Araku - Visakhapatnam in north directin. The nearest habitation is RR Venkatapuram in west direction at a distance of 0.1 km in west direction. There are three reserve forests in the study area. Narava RF is at a distance of 5.2 km in east direction, Yerrakonda RF is at a distance of 4.3 km in northeast direction, Kambalakonda RF is at a distance of 5.4 km in



northeast direction and Kailasakonda forest is at a distance of 0.5 km in east direction. Meghadri Gedda Reservoir is at a distance of 2 km in northwest direction. There are no national parks, sanctuaries, ecologically sensitive areas, critically polluted areas and interstate boundary within the impact area of 10 km..

5. Planning Brief:

The project is envisaged to be completed in Phase wise as it involves installation of higher capacity processing equipment's besides improving of yield and the production shall be initiated thereon. Consultants are identified for preparing the detailed project report.

6. Proposed Infrastructure:

6.1 Power Requirement and Supply/Source

The required energy shall be drawn from TRANSCO. The power shall be drawn from proposed DG sets during load shut downs. DG set of 1 X 1000 kVA, 1 x 1500 kVA are proposed in addition to existing 1 x 500 kVA and 4 x 1000 kVA. It is proposed to replace existing 1 x 1000 kVA with 1 x 1500 kVA capacity.

6.2 Utilities

List of Utilities

S. No	Description	Unit	Capacity		
			Existing	Proposed	Total after expansion
1	Oil Fired Boilers	TPH	1 x 5	1 x 5	2 x 5
			1 x 8		1 x 8*
2	Themic Fluid Heater	K.Cal/hr	1 x 10 Lac		1 x 10 Lac
			1 x 12 Lac		1 x 12 Lac
3	DG Set**	KVA	1 x 500	1 x 1500	1 x 500
			4 x 1000#	1 x 1000	2 x 1500
					3 x 1000

* 1 x 8 TPH Furnace oil fired boiler shall be kept as standby after expansion.

**DG sets will be used during load shut down by Transco.

Existing 1 x 1000 kVA out of 4 x 1000 kVA will be replaced by 1 x 1500 kVA after expansion.

6.3 Waste management

Liquid Effluents

The main sources of effluent generation from the plant are process, blow downs from utilities like cooling tower, boiler, RO/DM rejects and domestic effluents. The process, utility blow downs and RO/DM rejects are sent to ETP and treated wastewater reused for greenbelt development. Domestic wastewater sent to STP and treated wastewater reused for greenbelt development.

Air Pollution

It is proposed to establish Furnace Oil fired boiler of capacity 1 x 5 TPH in addition to existing 1 x 5 TPH and 1 x 8TPH Furnace Oil fired boilers. It is proposed to keep existing 1 x 8 TPH boiler as standby after expansion. No additional Thermic fluid heaters are proposed, existing 1 x 10 Lac K. Cal/r anf 1 x 12 Lac K.Cal/hr thermic fluid heaters will meet the requirement after expansion. DG sets of 1 X 1500 kVA and 1 x 1000 kVA are proposed in addition to existing 1 x 500 kVA and 4 x 1000 kVA for emergency power requirement during load shut down period only. Existing 1 x 1000 kVA will be replaced by 1 x 1500 kVA after expansion. Boilers, Thermic fluid heaters and DG sets shall be provided with effective stack heights as controlled equipment.

Solid waste

S.No	Description of Waste	Unit	Quantity After Expansion	Disposal method
1	Process residue	TPA	125	Cement Industry/ Authorized recyclers/TSDF
2	Oil and Grease skimming	KLPA	6	Authorized recyclers/TSDF
3	Stack Soot/flue gas cleaning residue	TPA	2	TSDF
4	Used Oil / Waste Lubricating oil	KLPA	4	Authorized recyclers
5	Lead acid batteries	No's/Y ear	30	Authorized recyclers/Buyback
6	Softener / DM Plant Resins	TPA	0.3	TSDF
7	ETP Sludge	TPA	300	TSDF/Brick/Tile manufacturer/Recyclers
8	STP Sludge	TPA	50	Composted and used as manure
9	Used/Discarded Filter Bags	TPA	4	TSDF for Incineration
10	Detoxified Container	TPA	6	Detoxified and reuse/Sale after detoxification
11	Detoxified Liners & Bags	TPA	1	Sale after detoxification / Authorized recyclers
12	Cotton Waste	TPA	0.5	TSDF



13	Insulation Waste	TPA	8	TSDf
14	Discarded PPE	TPA	0.5	TSDf for Incineration
15	Paper, Packing materials i.e. wood, carton , ropes	TPA	0.4	Sale to outside agencies/ recyclers/In-house incineration
16	Waste packing wood/ broken glass etc	TPA	1	Sale to outside agencies/ recyclers
17	Bio Medical Waste	TPA	0.12	Sent to Bio Medical Waste Treatment Facility
18	E- Waste	TPA	1.5	Authorized recyclers
19	Canteen Waste	Kg/day	50	Composted and used as manure/Sent to Piggery farm
20	Plastic Waste	TPA	15	Sale to outside agencies/ recyclers
21	Discarded asbestos sheets	TPA	10	TSDf
22	Wastes or Residues containing oil	KLPA	2	Authorized recyclers/TSDf
23	Waste Rubber	TPA	2	Authorized recyclers/Reprocessors
22	Wastes or Residues containing oil	KLPA	2	Authorized recyclers/TSDf

7. Rehabilitation and Resettlement (R&R) Plan

Not applicable as the proposed is for expansion of manufacturing capacity within existing site area of 213 acres.

8. Project Schedule & Cost Estimates

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

Within three months as it involves installation of higher capacity processing equipment's besides improving of yield and the production shall be initiated there upon.

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

The estimated cost of the project is approximately Rs. 168 crores towards expansion.