

DRAFT EXECUTIVE SUMMARY

For

**DEVELOPMENT OF AN INDUSTRIAL PARK AT ALLIKULAM,
KEELATHATTAPARAI, PERURANI, UMARIKOTTAI,
MELATHATTAPARAI, RAMASAMPURAM AND
THERKUSILLUKKANPATTI VILLAGES, THOOTHUKUDI TALUK,
THOOTHUKUDI DISTRICT, TAMIL NADU OVER AN EXTENT OF
796.240 HECTARES (1966.713 ACRES)**

**Activity and Category: Schedule 7(c) – Industrial estates/Park/Areas falls under Category
“A”, Area exceeding 500 ha along with one pre-defined Schedule 5(d) , 1(d) & 8(b)
Category ‘B’ Industry within the proposed Industrial Park as per EIA Notification, 2006
as amended**

ToR File No : 10/19/2025-IA.III Dated on 21/09/2025

**Baseline Period : March 2025 – May 2025 (Summer Season)
(Laboratory Assigned: M/s. Perfact Researchers Pvt Ltd., vide Certificate No. TC-6993,
valid up to 03.04.2029)
by**



PROJECT PROPONENT

**M/s. STATE INDUSTRIES PROMOTION
CORPORATION OF TAMILNADU LIMITED (SIPCOT)**

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DECEMBER 2025



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1. INTRODUCTION

State Industries Promotion Corporation of Tamil Nadu Limited (SIPCOT) as the apex body for industrial infrastructure development in Tamil Nadu has established more than 50 Industrial Parks including 8 Special Economic Zones (SEZs) across 24 districts, spanning over 48,926 acres., since its inception in 1971. These initiatives have attracted investments exceeding ₹1.99 lakh crores and generated nearly 8.79 lakh employment opportunities, solidifying Tamil Nadu's reputation as a premier industrial destination in India.

1.1 Project Description

State Industries Promotion Corporation of Tamil Nadu Limited (SIPCOT) proposes "Development of An Industrial Park at Allikulam, Keelathattaparai, Perurani, Umarikottai, Melathattaparai, Ramasampuram And Therkusillukkanpatti Villages, Thoothukudi Taluk, Thoothukudi District, Tamil Nadu in an area of 796.240 hectare (1966.713 acres). The total project cost will be INR 666.11 Cr. The land is owned by State Industries Promotion Corporation of Tamil Nadu Limited (SIPCOT) vide G.O.(Ms).No.100 dated 26.02.2021.

The proposed Industrial Park features comprehensive zoning for Industrial Plots for Industries attracting EIA Notification (Technical Textile and other Textile units) and for those not attracting as well, plots for amenities, commercial and other activities such as SWM, Internal roads and Stormwater drains and Greenbelt development. Total plotted development will be carried out in 721.338 ha while Non-development area (Nilaviyal odai & RoW for HT Line Buffer) will be 48.951 ha, and no development buffer are left for the windmills falling distance is 25.951 ha.

Proposed Industrial Park will house one pre-defined Lyocell Manufacturing Unit (attracting Environmental Clearance - Category B, Schedule Activity 5(d), CPP 1(d) and Buildings and Construction 8(b) of the EIA Notification, 2006 and its subsequent amendments.

Since Total plot area exceeds 500 hectares and proposed industrial park includes a predefined Category 'B' industry, Man-Made Fibre Manufacturing Unit Schedule 5(d), with 1(d) & 8(b) the entire project attracts the provisions of Category 'A', Schedule 7(c) (Industrial Estates/Parks/Complexes/Areas) attracting specific conditions and applicability to public hearing.

Accordingly, application for ToR was uploaded in PARIVESH portal vide Proposal No IA/TN/INFRA1/548303/2025 dated 16.08.2025 & the project appraised in the EAC 414th Meeting dated 02.09.2025 and ToR was issued for the extent of 796.240 Ha (1966.713 acres) by MOEF&CC vide TOR Identification No: TO25A3102TN5260559N [File No. 10/19/2025-IA.III] dated 21.09.2025. EIA study has been carried out as per the above TOR granted and in compliance to the requirements of the EIA Notification, 2006 and its subsequent amendments to identify environmental impacts resulting from the proposed project and to prescribe mitigation measures. Now the report is



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being submitted for Public hearing.

1.2 About the Project

Table 1. Brief Description of Project

S.No.	Particulars		Details
1.	Location		Allikulam, Keelathattaparai, Perurani, Umarikottai, Melathattaparai, Ramasampuram and Therkusillukkanpatti Villages, Thoothukudi Taluk, Thoothukudi District.
2.	Project Coordinates		Latitude : 8°47'4.25"N Longitude : 78° 1'1.48"E
3.	Total Plot Area	ha	796.240
		acres	1966.713
4.	Project Cost (INR)		Crores 666.11
5.	Approach Road		NH-7A (Thoothukudi–Tirunelveli National Highway), at an approximate distance of 2.75 km towards the south-southeast (SSE) direction
6.	Scope of Development by SIPCOT		Industrial Park development with zonation , layout , Common amenities, Commercial activities, Greenbelt, Stormwater drain, OSR, SWM, Project Management office and such other infrastructure facilities.
7.	Details about the Pre-defined Activity		Setting up of a Lyocell manufacturing unit in 139.46 ha (344.61 acres) with 300,000 TPA capacity, Tissue Manufacturing unit with 100,000 TPA capacity along with 135 MW Captive Power Generation using Coal & Biomass mixture and Industrial buildings & sheds of 2,35,000 sq.m under schedule Activity 5(d) , category B
8.	Other Plotted development		1. Technical Textile Industries – 202.43 ha , 20 plots 2. Non EC Attracting industries – Red/Orange/Green /White Category 318.979 ha. 3. Amenities Plots 4. Commercial Plots 5. Solid Waste Management 6. Project Offices , Security and other Development
9.	SIPCOT Industrial Park	EMP Capital Cost	INR 10636 lakhs
		EMP Recurring	INR 132 lakhs



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S.No.	Particulars		Details
		Cost	
10.	Lyocell Manufacturing Unit	Project Cost	INR 495300 lakhs
		EMP Capital Cost	INR 24600.0 lakhs
		EMP Recurring Cost	INR 450.0 lakhs

Table 2.Land Use Distribution Details of SIPCOT Industrial Park

S.No	Description	Unit	Area (Ha)	Area (Acres)	% of Total area
1.	Industrial Plot Area* (including 15% (193.182 acres) greenbelt as applicable to red category Industries)	Hectare	521.409	1287.880	65.48%
2.	Plots for Common Amenities	Hectare	14.425	35.630	1.81%
3.	Plots for Commercial Activities	Hectare	21.640	53.450	2.72%
4.	Area for Solid Waste Management	Hectare	2.024	5.000	0.25%
5.	Road, Storm Water Drain area	Hectare	53.337	131.740	6.70%
6.	Greenbelt by SIPCOT (30 m on either side of Water body (Odai), 15 m on either side of Nilaviyal Odai & & 15m along the Periphery of Lyocell unit and 10m all along the boundary)	Hectare	108.503	268.005	13.63%
Total Developable area		Hectare	721.338	1781.705	90.59%
7.	Area of wind mill falling distance (Radius 181m)	Hectare	25.951	64.100	3.26%
8.	Existing Nilaviyal Odai (Non-developable area)	Hectare	27.994	69.145	3.52%
9.	RoW HT Line Buffer(Non-developable area)	Hectare	20.957	51.763	2.63%
Total Non-developable area		Hectare	74.902	185.008	9.41%
Grand Total area of the Industrial Park		Hectare	796.240	1966.713	100%

(*Note: Includes greenbelt area to be provided by individual Units to meet MoEF&CC norms as per recent OM dated 29.10.2025.)

1.3 Location & Accessibility

The Industrial Park is proposed at:

- **Villages :** Allikulam, Keelathattaparai, Perurani, Umarikottai, Melathattaparai, Ramasampuram And



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Therkusillukkanpatti Villages,

- **Taluks & District :** Thoothukudi Taluk & District
- **State :** Tamil Nadu.
- **Elevation :** 32 - 38 m (MSL)

Survey Numbers: 1-/1, 1-/2, 1/3A, 1/3B, 1/3C, 1/3D, 1-/4, 1/5A, 1/5B, 1/5C, 1/6,8,10A, 1/7, 1-/9, 1/10B, 6-/1, 6-/2, 6-/3, 6/4A, 6/4B1, 6/4C, 6/4D, 6/4E, 6/4F, 6-/5, 6/6A, 6/6B, 7, 8/1,2,4A, 8/1,2,4B, 8-/10, 8-/11, 8-/3, 8-/5, 8/6,8, 8-/7, 8-/9, 10-/1, 10-/2, 10-/3, 10-/4,16, 10-/5, 10/6A, 10/6B, 10/6C, 10/7A, 10/7B, 10/7C, 10-/8, 10/9A, 10/9B, 10-/11,12, 10-/13, 10-/14, 11-/1A, 11/1B, 11-/2, 11-/3, 11-/4, 11-/5, 11-/6, 11-/7, 12/1A, 12/1B, 12/1C, 12/1D, 12/1E, 12/2A, 12/2B, 12-/3, 12-/4, 12-/5, 12-/6, 12-/7, 13/1A, 13/1B, 13/1C, 13/1D, 13/2A, 13/2B, 13-/3, 13-/4, 13-/5, 14-/1, 14-/10, 14-/11, 14-/12, 14-/13, 14-/14, 14-/15, 14-/16, 14-/17, 14-/2, 14-/3, 14-/4, 14-/5, 14-/6, 14-/7, 14-/8, 14-/9, 15/1A, 15/1B, 15-/2, 15/3A, 15/3B, 15/3C, 15/3D, 15-/4, 16-/1, 16/2A, 16/2B, 16/3,4,5, 16/6A, 16/6B, 17/1A, 17/1B, 17/1C, 17/1D, 17-/2, 17-/3, 18-/2, 18-/8, 18-/9, 18-/10, 18/11A, 18/11B, 18/11C, 18/12A, 18/12B, 18/12C, 18/13, 18/14, 18/15, 18/16, 18/17, 18/18A, 18/18B, 18/19, 18/1A, 18/1B, 18/1C, 18/1D, 18/1E, 18/1F, 18/1G, 18/1H, 18/1I, 18/1J, 18/1K, 18/3A, 18/3B, 18/3C, 18/3D, 18/3E, 18/3F, 18/3G, 18/4A1, 18/4A2, 18/4B, 18/4C, 18/5A, 18/5B, 18/5C, 18/6A, 18/6B, 18/6C, 18/7A, 18/7B, 18/7C, 19/1A, 19/1B, 19/1C, 19/1D, 19/1E, 19-/2, 19-/3, 19-/4, 19/5,8A, 19/5,8B, 19/5,8C, 19-/6, 19-/7, 19-/9, 20-/1, 20-/2, 20-/3, 20-/4, 20-/5, 20-/6, 20/7A, 20/7B, 20/8A, 20/8B, 20/8C, 20/8D, 20/9A, 20/9B, 20-/10, 20-/11, 20-/12, 20/13, 20/14, 20/15A, 20/15B, 20/15C, 20/16A, 20/16B, 20/17, 20/18, 20/20, 20/21, 20/22, 20/23, 20/24, 21, 22-/1, 22/2A, 22/2B, 22-/4, 23-/1, 23/2A1, 23/2B, 23/3A, 23/3B, 23/4A, 23/4B, 23/4C, 23/4D, 24, 25/1,3A, 25/1,3B, 25/1,3C, 25/1,3D, 25/1,3E, 25/1,3F, 25/1,3G, 25/1,3H, 25/1,3I, 25/1,3J, 25/2A, 25/2B, 25/2C, 25/2D, 25/4A, 25/4B, 25/4C, 25/4D, 25/4E, 25/4F, 25/4G, 25/4H, 25/4I, 25/5,7A, 25/5,7B, 25-/6, 25/8A,9A,10A, 25/8B,9B,10B1, 25/8B,9B,10B2, 25/8C,9C,10C1, 25/8C,9C,10C2, 25/8C,9C,10C3, 26/1A, 26/1B, 26/1C, 26/1D, 26/1E, 26/1F, 26/1G, 26-/2, 27, 28-/10, 28/1A, 28/1B, 28/1C, 28/2A, 28/2B, 28/2C, 28/2D, 28/3A, 28/3B, 28/3C, 28/4A, 28/4B, 28/4C, 28/4D, 28-/5, 28-/6, 28-/7, 28-/8, 28/9A, 28/9B, 29-/10, 29/1A, 29/1B, 29/1C, 29-/2, 29/3A, 29/3B, 29-/4, 29-/5, 29-/6, 29-/7, 29-/8, 29-/9, 30-/1, 30-/2, 30/3,4A, 30/3,4B, 30/3,4C, 30/5A, 30/5B, 30/6A, 30/6B, 30/6C, 30/7A, 31-/1, 31-/2, 31-/3, 31-/4, 31-/5, 31-/6, 32, 33-/1, 33/2A, 33/2B, 33/2C, 34-/1, 34-/2, 35, 36, 37-/1, 37-/2, 37-/3, 38-/1, 38-/2, 38-/3, 38-/4, 39/1A, 39/1B, 39/1C, 39-/2, 40/1A, 40/1B, 40/1C, 40/1D, 40/2, 40/3A, 40/3B, 40/3C, 40/4A, 40/4B, 40/4C, 40/4D, 40/5, 40/7, 41/1A, 41/1B, 41/2, 42/1A, 42/1B, 42/1C, 42/1D, 42/1E, 42/1F, 42/1G, 42/1H, 42/1I, 42/2, 42/3,4A1, 42/3,4A2, 42/3,4A3, 42/3,4A4, 42/4B, 42/4C, 42/5, 43, 45/1,2A, 45/1,2B, 47/1,2, 47/3A, 47/3B, 47/3C, 47/3D, 48/1, 48/2, 49, 50/1A, 50/1B, 50/1C, 50/2A, 50/2B, 51/10, 51/1A, 51/1B, 51/1C, 51/1D, 51/2A, 51/2B, 51/2C, 51/3, 51/4A, 51/4B, 51/5, 51/6, 51/7, 51/8, 51/9, 52/1, 52/2, 53/1, 53/2, 54/1, 54/2, 55/1, 55/2, 55/3, 55/4, 56/1, 56/2, 56/3 of Allikulam Village, 335, 337, 338, 340, 342, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 358, 360, 362, 364, 372, 373, 375, 376, 381, 382, 383, 385, 386, 387, 388, 391, 395, 400, 401, 402, 403, 406, 434, 435, 438, 444, 445, 446, 447, 448, 449, 450, 456, 459, 461, 462, 463, 464, 465, 466, 282/1, 282/2, 282/3, 282/4, 282/5, 283/1A, 283/1B, 283/1C, 283/1D, 283/1E, 283/2, 283/3, 283/4, 283/5, 333/1A, 333/1B, 333/2A1, 333/2A2, 333/2B, 336/1, 336/2, 339/1A, 339/1B, 339/2, 341/1A1B, 341/1A1C, 341/1A1D, 341/1A1E, 341/1A2, 341/1B, 341/2, 343/1, 343/2, 343/3, 357/1, 357/2, 359/1, 359/2, 359/3, 359/4, 361/1, 361/2A, 361/2B, 361/2C, 361/2D, 363/1, 363/2, 363/3, 363/4, 365/1, 365/2, 366/1, 366/2, 366/3, 366/4, 366/5, 367/1, 367/2, 367/3, 368/1, 368/2, 369/1, 369/2, 370/1, 370/2, 370/3, 370/4, 371/1, 371/2, 371/3, 371/4, 371/5, 371/6, 374/1, 374/2, 374/3, 374/4, 377/1, 377/2, 384/1, 384/2, 389/1, 390/1, 390/3, 392/1, 392/2, 393/1, 393/2,



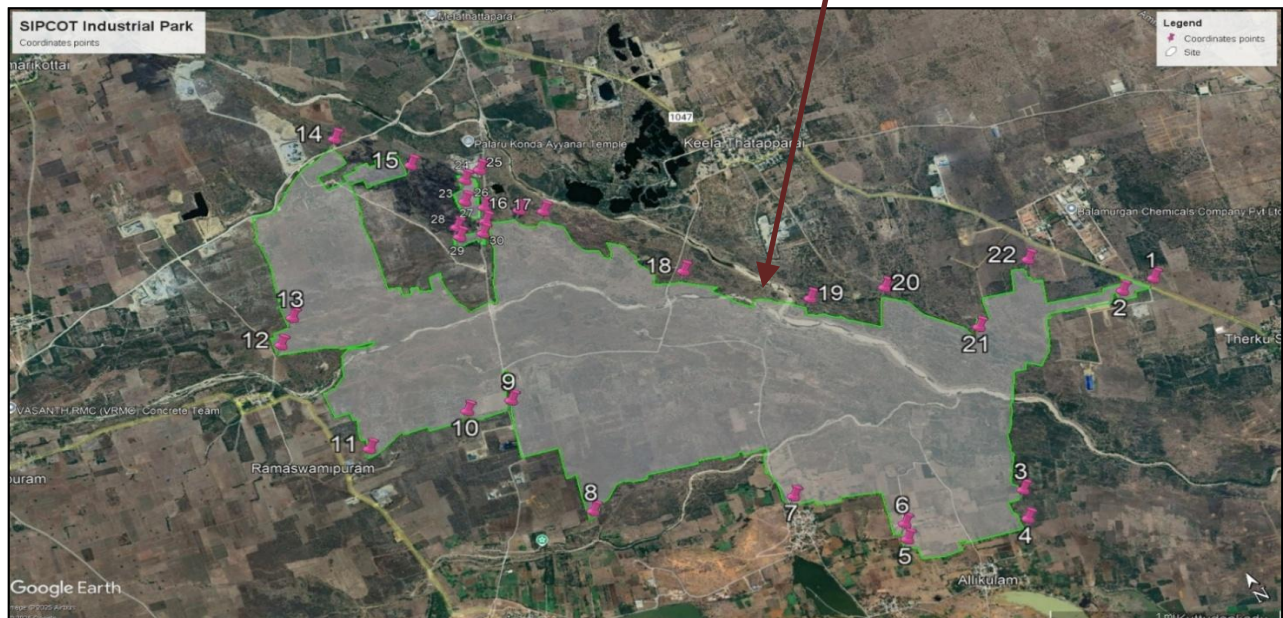
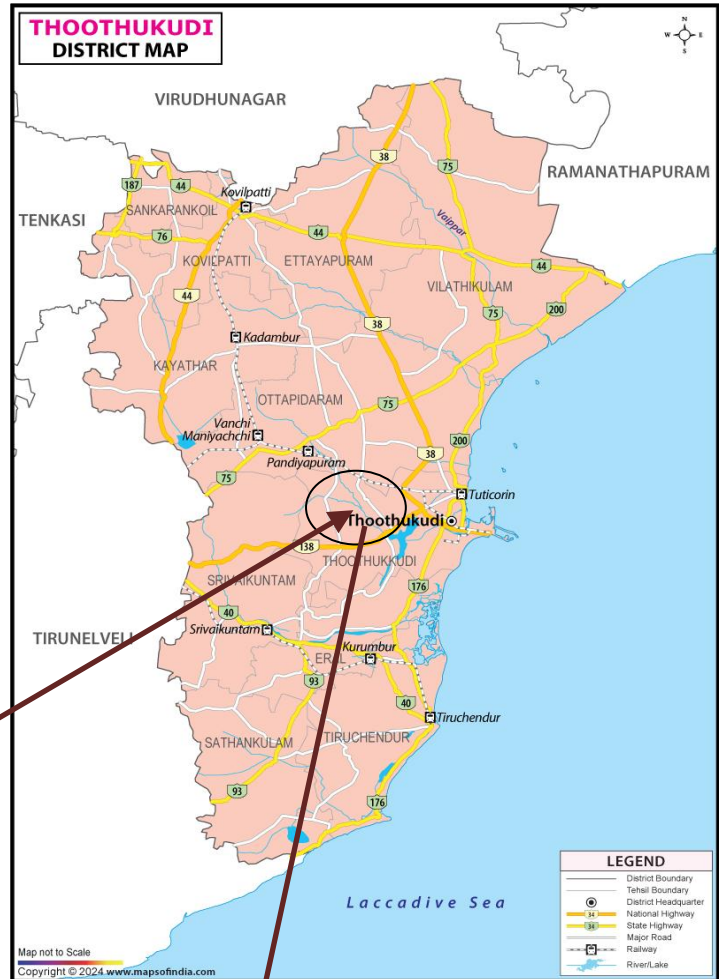
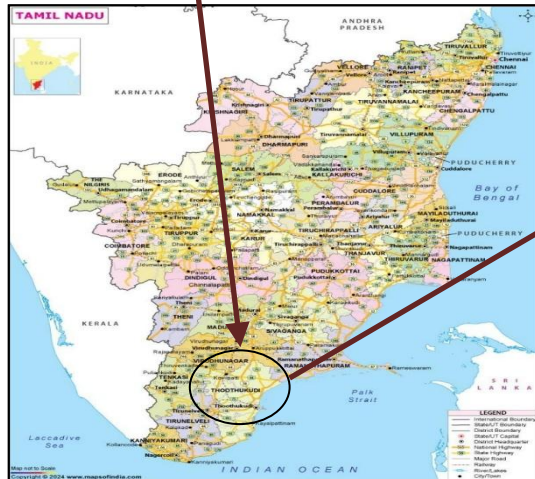
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393/3, 393/4, 393/5, 393/6, 393/7, 394/1, 394/3, 394/4, 394/5, 394/6, 396/1, 396/3, 397/1, 398/1, 398/2, 398/3, 398/4, 399/1, 399/2, 404/1, 404/2, 405/1, 405/2, 407/1, 407/2, 408/1, 408/2, 408/3, 416/1, 416/2, 416/3, 417/1, 417/2, 418/1, 418/2, 419/1, 419/2, 420/1, 420/2, 433/2, 436/1A, 436/1B, 436/1C, 436/2, 437/2, 439/1, 439/2A, 440/1B, 440/2, 440/3, 441/1, 441/3, 442/1, 442/3, 442/4, 443/1, 443/2, 451/2, 452/1, 452/2, 452/3, 452/5, 452/6, 453/1, 453/2, 453/3, 454/1, 454/2, 454/3, 454/4, 460/1, 460/2, 460/3, 467/2, 468/1, 468/2, 468/3 of Keelathattaparai Village, 172/1, 172/2, 172/3, 172/4, 172/5, 172/6, 172/8, 173/1, 173/2, 173/3, 174/1A, 174/1B, 174/2A, 174/2B, 174/3, 175/1, 175/2, 176/1, 176/2, 176/3, 176/4, 197/1, 197/2, 197/3, 197/4, 197/5, 197/6, 198/1, 198/2, 198/3, 199/1, 199/2, 199/3, 199/4A, 199/4B, 199/5, 200/1, 200/2, 201/1A, 201/1B, 201/1C, 201/1D, 201/2A, 201/2B, 202/1, 202/2, 202/3, 202/4, 203/1, 203/2, 203/3, 203/4, 204/1, 204/2, 204/3, 206/1, 206/2, 206/3, 206/4, 206/5, 206/6, 207/1, 207/2, 207/3, 207/4, 207/5, 207/6, 211/1, 211/2, 211/3, 213, 214/1, 214/2, 214/3, 214/4, 214/5, 214/6, 214/7, 214/8, 214/9, 215/1, 215/2, 215/3, 215/4, 215/5A, 215/5B, 215/5C, 215/5D, 215/5E, 218/1, 218/2, 218/3, 218/4, 218/5, 218/6, 219/1, 219/2, 222, 223, 224/1, 224/2, 224/3, 224/4, 225/1, 225/2A, 225/2B, 225/3, 225/4A, 225/4B, 225/4C, 225/5, 226/1, 226/2, 226/3A, 226/3B, 227/1, 227/2A, 227/2B, 227/2C, 228/1, 228/2, 228/3, 228/4, 229, 230/1, 230/2, 230/3, 231/1, 231/2, 231/3, 231/4, 232/1, 232/2, 232/3, 232/4, 233/1, 233/2, 234, 235/1, 235/2, 235/3, 235/4, 238/1, 238/2, 238/3, 238/4, 239, 240/1, 240/2, 240/3, 241/1, 241/2, 242, 243/1, 243/2, 244/1, 244/2, 244/3, 245/1, 245/2, 245/3, 245/4, 246/1A, 246/1B, 246/2, 246/3, 247/1A, 247/1B, 247/2, 247/3, 247/4, 247/5 of Perurani Village, 168, 169/1, 169/2, 170/1, 170/2, 171/1, 171/2, 172/1, 172/2, 173, 174/1, 174/2, 175/1, 175/2, 176, 177/1, 177/2, 177/3, 177/4A, 177/4B, 178/1, 178/2, 179/1A, 179/1B, 179/2A, 179/2B, 179/2C, 180/1, 180/2A, 180/2B1, 180/2B2, 181/1, 181/2, 181/3, 182, 183, 184/1, 184/2, 185/1A, 185/1B, 185/2A, 185/2B, 186, 187, 188, 189, 190, 191/1, 191/2, 192, 193, 194, 195/1, 195/2, 196/1, 196/2, 197, 198, 199, 200, 201/1A, 201/1B, 201/2, 202/1A, 202/1B, 202/2, 202/3, 203, 204, 205, 206/1, 206/2, 206/3, 207/1, 207/2, 207/3, 208, 209, 211/3, 211/4, 212, 213/1, 213/2, 213/3, 213/4, 213/5, 213/6, 214/1, 214/2, 214/3, 214/4, 214/5, 214/6, 214/7, 214/8, 214/9, 214/10, 215 of Umarikottai Village, 151/2, 152, 154/1, 154/2, 155/1A, 155/1B, 155/2, 156/1, 156/2, 157/1, 157/2, 158/1, 158/2, 159, 160, 161, 162/1, 163/1, 163/2A, 163/2B, 164/1, 164/2, 165/1, 165/2, 166, 167, 168, 169, 170, 171/1, 171/2, 172, 173/1, 173/2, 174, 175, 176/1A, 176/1B, 176/3B, 177/1, 177/2, 177/3, 177/4, 178, 179, 180/1, 180/2, 181/1, 181/2, 182/1, 182/2, 183/1, 183/2, 184/1, 184/2, 185/1, 185/2, 186/1, 186/2, 187/1A, 187/1B, 187/2, 188, 189/1, 189/2, 190, 191/1, 191/2A, 191/2B, 191/2C, 192, 193, 194, 195/1, 195/2, 195/3, 196, 197/1, 197/2, 197/3, 198, 199/1, 199/2, 199/3, 200, 201/1, 201/2, 202/1, 202/2, 203/1, 203/2, 204, 205/1, 205/2, 206, 207, 208, 209/1, 209/2, 210/1, 210/2, 211/1, 211/2, 212, 213, 214, 215, 216/2, 217/1, 217/2, 218/2, 219, 221/2, 222, 223, 224/1, 224/2, 225, 226/1, 226/2, 227, 228, 229/1, 229/2, 230/1, 230/2, 231/1, 231/2, 232/1, 232/2, 233, 234, 235, 236/1, 236/2A, 236/2B, 237, 238/1, 238/2, 238/3, 239, 240/1, 240/2, 241, 242, 243, 244, 245, 246, 247/1, 247/2, 248, 249, 250/1, 250/2, 250/3, 251/1A, 251/1B, 251/2A, 251/2B, 252, 253, 254/1, 254/2, 254/3, 254/4, 255, 256/1, 256/2, 257/2, 258/1, 258/2, 259, 260/1, 260/2, 260/3, 261, 262/1, 2A, 262/2B, 263, 264 of Melathattaparai Village, 81, 83, 84/1, 84/2, 84/3, 84/4, 84/5, 84/6A, 84/6B, 84/6C, 84/6D, 88/1, 88/2, 88/3, 88/4, 89/1, 89/2, 89/3, 89/4, 90/1, 90/2, 90/3, 91/1, 91/2, 91/3, 93/1, 93/2, 93/3, 93/4, 93/5, 94/1A, 94/1B, 94/2A, 94/2B, 94/3A, 94/3B, 94/4, 95/1, 95/2, 105/1, 105/2, 105/3, 105/4A, 105/4B, 106/3A, 106/3B, 106/4, 106/5, 107, 108/1A, 108/1B, 108/2A, 108/2B, 108/3, 108/4A, 108/4B, 108/5, 109/1, 109/2, 109/3, 109/4, 109/5A, 109/5B, 109/6, 110/1, 110/2, 110/3, 110/4, 110/5, 110/6, 110/7, 111/1A, 111/1B, 111/2, 111/3, 111/4, 112/1, 112/2, 112/3, 112/4, 112/5, 112/6, 113/1, 113/3, 113/4, 113/5, 114/1, 114/2, 114/3, 114/4, 117/1, 117/2, 117/3, 117/5, 117/6, 117/7, 117/8, 120/1, 120/2, 120/3, 124/1, 124/2, 124/3, 125/1, 125/2, 125/3, 125/4, 126/1, 126/2, 126/3, 127/1, 127/2A, 127/2B, 128/1, 128/2, 129/1, 129/2, 129/3 of Ramasampuram Village and 72/3, 72/4, 72/5, 72/6, 72/7A, 72/7B, 73/5, 73/6, 84/5, 84/6, 84/7, 85/1 of Therkusillukkanpatti Village, located in Thoothukudi Taluk, Thoothukudi



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District, Tamil Nadu.





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Figure 1. Project Site showing Coordinates

Table 3. Coordinates of the project site

Point Nos.	Latitude (N)	Longitude (E)	Direction
1	8°46'34.11"N	78° 2'48.80"E	E
2	8°46'34.49"N	78° 2'41.02"E	E
3	8°45'58.90"N	78° 1'56.30"E	SE
4	8°45'51.78"N	78° 1'53.72"E	SE
5	8°45'59.75"N	78° 1'26.81"E	S
6	8°46'3.64"N	78° 1'28.24"E	S
7	8°46'22.27"N	78° 1'9.12"E	S
8	8°46'39.43"N	78° 0'27.06"E	S
9	8°47'13.71"N	78° 0'24.24"E	SW
10	8°47'15.88"N	78° 0'14.08"E	SW
11	8°47'17.44"N	77°59'49.74"E	SW
12	8°47'50.77"N	77°59'44.77"E	W
13	8°47'55.88"N	77°59'50.44"E	W
14	8°48'32.96"N	78° 0'21.28"E	NW
15	8°48'18.80"N	78° 0'33.19"E	NW
16	8°47'56.84"N	78° 0'49.48"E	N
17	8°47'53.97"N	78° 0'54.22"E	N
18	8°47'25.31"N	78° 1'14.77"E	N
19	8°47'5.70"N	78° 1'37.12"E	NE
20	8°47'0.51"N	78° 1'53.51"E	NE
21	8°46'41.26"N	78° 2'7.62"E	NE
22	8°46'51.92"N	78° 2'25.96"E	NE
23	8°48'3.26"N	78° 0'39.99"E	N
24	8°48'8.34"N	78° 0'43.34"E	N
25	8°48'9.58"N	78° 0'47.56"E	NW
26	8°48'0.41"N	78° 0'43.13"E	NW
27	8°47'56.98"N	78° 0'41.74"E	NW
28	8°47'58.93"N	78° 0'34.71"E	NW
29	8°47'56.00"N	78° 0'33.68"E	NW
30	8°47'55.65"N	78° 0'39.51"E	NW

Topo map of study area & Environment Sensitivity



**DEVELOPMENT OF AN INDUSTRIAL PARK AT ALLIKULAM, KEELATHATTAPARAI, PERURANI,
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The site falls within the {Topo Map No. 58L01 & 58H13} of Thoothukudi District, with general elevation at 32-38 m. Slopes are distinct with natural drainage flowing from North & Northwest to Southeast , finally confluence with the Natural drainage Korampallam at the outskirts of Thoothukudi.

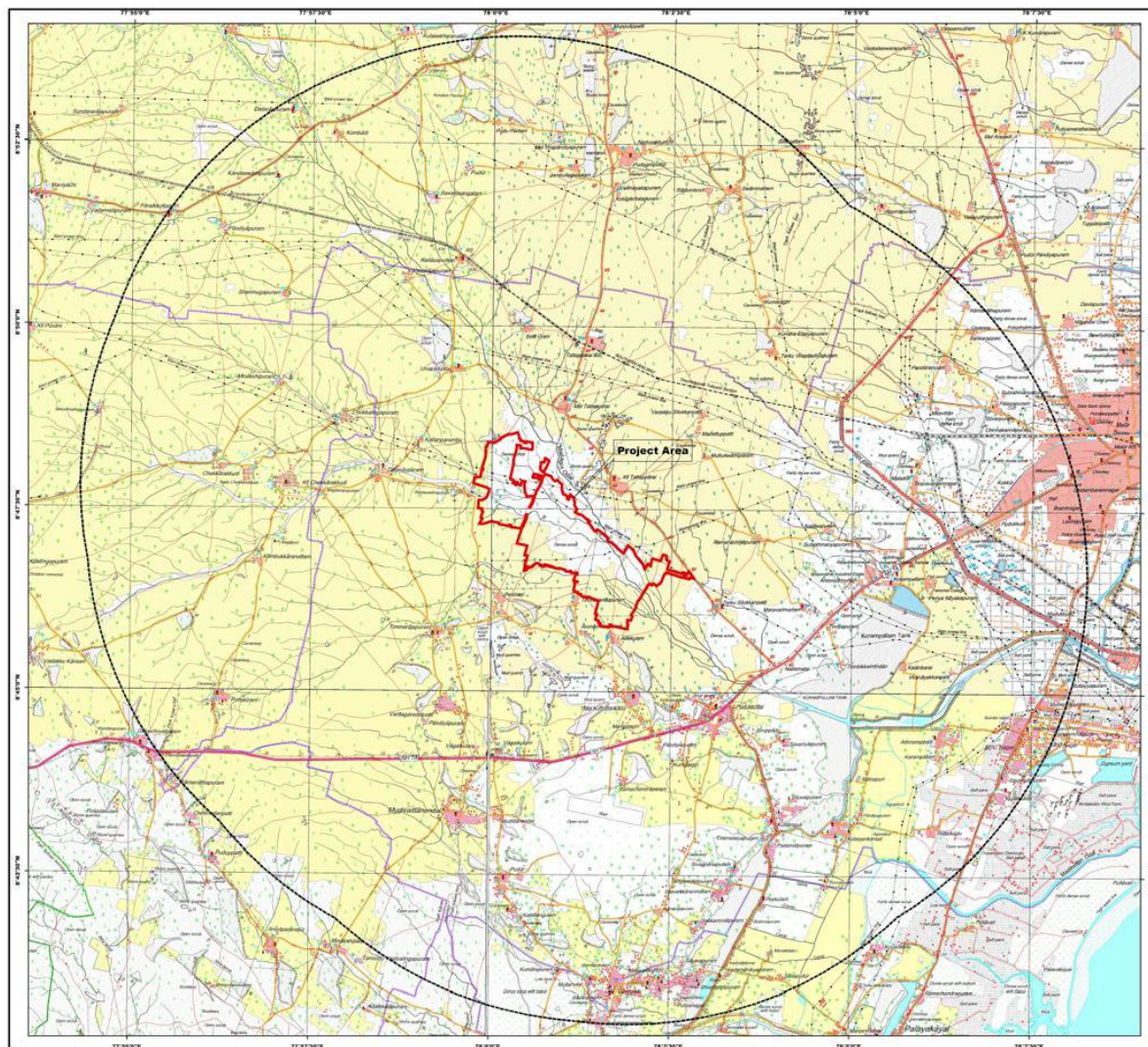


Figure 2. Topo Map of Study area

Table 4. Project Site Specific Environmental Sensitivity Details

Environmental Feature / Sensitive Receptor	Approximate Distance (km)	Direction (from Project Site)
Water Bodies		
Nilviyal odai Within Project Area	Odai Within Project Area	Passing through the site
Odai within Project Area	Odai Within Project Area	Passing through the site
Pond near Project Area	0.21	NE
Pond near Project Area	0.31	NW



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Environmental Feature / Sensitive Receptor	Approximate Distance (km)	Direction (from Project Site)
Pond near Project Area	0.39	SSW
Allikulam Pond	0.43	S
Pond near Perurani	0.80	S
Pond near Allikulam	0.80	SSE
Swimming Pond near Perurani	1.01	S
Neeravi Pond Perurani	1.13	SW
Pond near Perurani	1.25	WSW
Perurani Pond	1.28	SW
Kadamba Kulam (Fishing Pond)	1.53	SSE
Pond near Perurani	1.56	SW
Pond near Mel Kuttudankadu	1.90	S
Pond Elim (Kanchan Kulam)	2.07	SSE
Vepan Pond	2.11	SW
Pond near Umari kkottai	2.39	NW
Pond near Putupatti	3.04	SSW
Koram Pallam Tank	3.52	SE
Pond near Varthagareddypatti	3.52	SW
Pond near Varthagareddypatti	3.60	SW
periya Kulam water body	3.80	SW
Pond Bethesda	3.85	SSE
Senkulam River (River Port)	4.49	ENE
Pond near Korampallam	5.06	E
Pond near Korampallam Check Dam	5.38	SE
North Channal	6.31	SSE
Pond near Jambulinga Puram	6.84	NNE
Canal near Tiruvai Puram	7.18	SSE
Pond near Melmatan	7.68	NNE
Pond near Sakkammal Puram	7.73	SSE
Canal near Peykulam	7.75	SSE
Canal near Brahmapuram	8.10	SSE
Canal near Manakkudu	8.50	SSE
Sivathaiya Puram Pond	8.57	SSE
Nearby Area		
Allikulam Village	0.16	S
Densely Populated Area		
Thoothukudi Corporation Area	2.0	SE



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Environmental Feature / Sensitive Receptor	Approximate Distance (km)	Direction (from Project Site)
Inland, Coastal, Marine Waters		
Gulf of Mannar	14.63	ENE
State/National Boundaries		
International Boundary towards Bay of Bengal	14.63	ENE
ASI Monuments		
Sirupadu (Iron age burial site)	4.75	E
The Panchalankurichi Fort	14.06	N
Sivagalai	14.75	S
Korkai	14.80	SEE
Reserve Forest & Wildlife Sanctuary		
Vallanadu RF & Blackbuck Sanctuary	13.71	SW
Eco-Sensitive Zone		
Vallanadu Blackbuck Sanctuary ESZ	13.27	SW
Inter State Boundary		
No Inter State Boundary within 15 km Radius		
Protected Flora/Fauna Habitats (breeding, nesting, foraging, resting, overwintering, migration)		
Gulf of Mannar – 14.63 (ENE)		
Defence Installation		
No Defence Installation within 15 km Radius		
Areas Already Subjected to Pollution or Environmental Damage		
SIPCOT Industrial Complex, Thoothukudi	5.07	N
SIPCOT Furniture Park	7.48	NE

Table 5. Nearby Facilities, Institutions, and Infrastructure in the Vicinity of Proposes Industrial Park

Identified Sensitive Receptor (Name & Location)	Approx. Distance (km)	Direction (Relative to Project Boundary)
Hospitals		
Jacob Hospital, Pudukottai	3.03	SE
Sree Aicort Maharaja Clinic, Sekkarakkudi	4.43	W
Primary Health Centre, Sekkarakkudi	5.01	W
Government Hospital, Sekkarakkudi	5.02	W
Rapha Hospital and Pharmacy, Ayyanadaippu	5.34	ENE
Nallathambi Hospital, Periyayagapuram	5.93	ENE
Selvaa Hospital, Sawyerpuram	8.93	S



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Identified Sensitive Receptor (Name & Location)	Approx. Distance (km)	Direction (Relative to Project Boundary)
Post Offices		
Branch Post Office, Mela Thattaparai	1.34	NE
Post Office, Melakuttudakadu	2.05	S
Post Office, Pudukottai	2.93	SE
Senthil Postal Service Centre, Pudukottai	2.96	SE
Kumaragiri Panchayat Office (Post Office), Pudukottai	3.36	SE
Post Office, Sekkarakkudi	4.93	W
Post Office, Mudivaithanendal	6.02	SW
Post Office, Kulayankarisal	7.57	SE
Post Office, Sawyerpuram	9.29	S
Places of Worship		
Sri Sappani Madan Temple, Allikulam	0.21	SSE
Sri Muthu Mariamman Temple, Allikulam	0.31	S
Sri Alagiya Thiruveattai Ayyanar Temple, Allikulam	0.31	SSW
Sri Perumal Temple, Allikulam	0.33	S
Sri Vinayagar Temple, Allikulam	0.37	S
Sri Parvathi Parameswari Amman Temple, Allikulam	0.37	S
Sri Muthumari Amman Temple, Allikulam	0.41	SW
Sri Thadikaraswami Temple, Thoothukudi	0.42	S
Mullai Marathu Sudalaimadan Swamy Temple, Thoothukudi	0.50	S
Kaliamman Temple, Melathattaparai	0.90	NE
Nallamadasamy Temple, Melathattaparai	1.14	NE
Shri Angala Parameshwari Temple, Melathattaparai	1.15	NE
Sri Uchinimakali Amman Temple, Melathattaparai	1.23	NE
Ellammal Temple, Melathattaparai	1.25	NE
Shri Nagamma Temple, Melathattaparai	1.33	NE
Sri Sappandimadasamy Temple, Melathattaparai	1.42	NE
Church of God, Melathattaparai	2.31	NE
Schools		
Annai Subasri Vidhyalaya Nursery & Primary School, Melathattaparai	0.95	NNE
TDTA School, Melathattaparai	1.25	NE
Anganwadi Centre (Elementary School), Melathattaparai	1.34	NNE



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Identified Sensitive Receptor (Name & Location)	Approx. Distance (km)	Direction (Relative to Project Boundary)
Govt School, Melathattaparai	2.84	NNE
Soosaipandiapuram Primary School, Kuttudankadu	3.02	SSE
TDTA PSP Hr Sec School, Pudukottai	3.34	SE
Aananthi Pappa Home, Pudukottai	3.36	SE
TNDTA St. Augustine Primary School, Pudukottai	3.37	SE
Banks		
Indian Overseas Bank ATM, Pudukottai	3.05	SE
Tamilnad Mercantile Bank, Pudukottai	3.12	SE
Indian Overseas Bank ATM, Pudukottai	3.18	SE
ICICI Bank, Pudukottai	3.19	SE
Axis Bank ATM, Thattaparai	7.48	NNE
Indian Overseas Bank ATM, Pudiyamputhur	7.61	NNE

Table 6. Connectivity and Transportation Infrastructure proposed project site

Name / Description	Approximate Distance (km)	Direction (from Project Site)
Road		
Kovilpatti–Ottapidaram–Pudukottai–Eral Village Road	Adjacent to Project Area	E
Santhanamari–Ammankovil Street	0.85	SSW
Amman Kovil Street	1.12	NE
Perurani Road	1.25	S
NH-138	2.75	SSE
NH-38	5.10	NE
Therku veerapandiapuram Road	5.48	NNE
Railway Station		
Thattapparai Railway Station	2.78	NNE
Kailasa Puram Railway Station	4.66	NNW
Milavittan Railway Station	5.94	NE
Pandia Puram Railway Station	9.01	NW
Airport		
Tuticorin Airport	4.27	S
Port		
V.O. Chidambaranar Port (Thoothukudi Port)	15.0	SE



1.4 Product Details

Product Capacity - SIPCOT Industrial Park

Table 7. Product Details - SIPCOT Industrial Park

S. No.	Product	Total area (in Hectare)
1.	Total Development area	721.338
2.	Total Non-development area (RoW HT Line Buffer is 20.957 ha & Existing Nilaviyal Odai is 27.994 ha)	48.951
3.	Windmill Falling distance	25.951
Total Plot area		796.240

1.4.1 Break-up of Total Development area (Zonation)

The proposed SIPCOT Industrial Park at Allikulam, Thoothukudi District spans 796.240 ha (1967.44 acres) and is planned to host Technical Textile & other Textile Industries and Non EC Category Industries like Engineering, Automobile Components and Ancillary Units.

Of the total area, 521.409 ha (1287.880 acres) is earmarked for Industrial plots under both EC and Non-EC categories, supported by well-planned infrastructure, utilities, and green spaces to promote industrial diversification and employment generation.

Table 8. Details of Zonation in proposed SIPCOT Industrial Park

S.No	Description	Unit	Area (Ha)	Area (Acres)
1.	Industrial Plot Area* (including 15% (193.182 acres) greenbelt as applicable to red category Industries)	Hectare	521.409	1287.880
2.	Plots for Common Amenities	Hectare	14.425	35.630
3.	Plots for Commercial Activities	Hectare	21.640	53.450
4.	Area for Solid Waste Management	Hectare	2.024	5.000
5.	Road, Storm Water Drain area	Hectare	53.337	131.740
6.	Greenbelt by SIPCOT (30 m on either side of Water body (Odai), 15 m on either side of Nilaviyal Odai & 15m along the Periphery of Lyocell unit and 10m all along the boundary)	Hectare	108.503	268.005
Total Developable area		Hectare	721.338	1781.705



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1.4.1.1 Break-up area for Industrial Plots

Table 9. Summary of Industrial Area Zoning

Category	Type of Industries / Activities	Extent (ha)	Environmental Classification	Regulatory Requirement
EC Category	Technical Textiles, Man-Made Fibre (Lyocell, Tissue and other Technical Textile) (Red Category)	202.43	Schedule 5(d) – EC Category	Prior Environmental Clearance
Non-EC Category	Aerospace/Defense insallations, Auto Components, Electrical, Engineering and Warehousing (Red/Orange/Green/White Category)	318.979	Red/Orange/ Green/White	CTE & CTO from TNPCB
Total Industrial Plot Area		521.409		

EC Category Industries (Red) (Technical Textile & other Textile Industries)

An extent of 202.43 hectares (500 acres) within the Industrial Park has been earmarked for Technical Textile and Man-Made Fibre (MMF) industries, which fall under Schedule 5(d) of the EIA Notification, 2006 and subsequent amendments. These industries are classified under the Environment Clearance (EC) category and will obtain prior clearance from the regulatory authority before commencement.

Table 10. EC-Category Industrial Plot Area – Classification and Regulatory Requirement

Category	Type of Industries / Activities	Environmental Classification	Regulatory Requirement	Extent (ha)	% of Extent
EC Category	Pre-defined : Lyocell and Tissue Manufacturing Unit	Category - B	Prior Environmental Clearance	139.46	17.51%
	Technical Textile and other Textile Industries	Category - A or B		62.97	7.91%
Total EC-Category Industrial Plot Area				202.43	25.42%

Types of Industries and Products

The EC category zone will accommodate industries engaged in:

- Production of Man-Made Fibres and Filaments such as Man-made fibre, Tissue and other



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regenerated Technical textile Industries.

- Polymer preparation and fibre spinning units using closed-loop solvent recovery systems.
- Downstream value-added processing units such as fibre finishing, laminating, and surface modification.
- High-performance fabric and composite material production units catering to industrial, medical, and automotive applications.

All such industries will establish individual Effluent Treatment Plants (ETPs) and adopt Zero Liquid Discharge (ZLD) systems to recycle treated water. Air Pollution Control Systems (APCS) such as scrubbers and bag filters will be installed to maintain emission standards.

Non-EC Category Industries (Red, Orange, Green and White Category Units)

The remaining 318.979 hectares (787.88 acres) of the industrial plot area are earmarked for Non-EC category industries, primarily falling under Red, Orange, Green, and White categories as per TNPCB classification. These industries are characterized by low pollution potential and will require only Consent to Establish (CTE) and Consent to Operate (CTO) from TNPCB under the Water and Air Acts. Non EC category industry also needs to adopt ZLD process. No wastewater is allowed discharge outside the industry.

Table 11. Non EC-Category Industrial Plot Area – Classification and Regulatory Requirement

Category	Type of Industries / Activities	Environmental Classification	Regulatory Requirement	Extent (ha)	% of Extent
Non-EC Category	Aerospace/Defense Installations, Automobile Components, Electrical, Engineering and other light Engineering units	Red/Orange/ Green/White	CTE & CTO from TNPCB	318.979	40.06%
Total Non - EC-Category Industrial Plot Area				318.979	40.06%

Types of Industries Proposed

Typical industries expected in this zone include:

- Aerospace/Defense Installation.
- Electrical and electronic component assembly and fabrication
- Engineering workshops and precision component machining units
- Small-scale equipment manufacturing and service units



- Warehousing, logistics, and maintenance facilities

These industries will generate minor quantities of wastewater, which will be treated and reused within premises. Each unit will develop its own domestic sewage and effluent treatment systems and comply with TNPCB's Red/Orange/Green/White standards.

1.4.2 Project Components

1.4.2.1 Industrial Plot area

The proposed Industrial Park includes 169 designated plots earmarked for various categories of industries, with a cumulative industrial area of 521.409 hectares.

1.4.2.2 Common Facilities

An extent of **14.425 ha (35.63 acres)** has been earmarked within the industrial park for amenities, distributed across designated plots AM-1 to AM-4. These areas are reserved to accommodate a range of essential common services and support facilities necessary for the effective functioning of the industrial park.

Common amenities will be development of water supply, Fire Station, Power supply through TANGEDCO.,etc. and SIPCOT project office with First aid centre.

1.4.2.3 Commercial area

The proposed industrial park includes a well-planned commercial area spanning 21.640 hectares (53.45 acres), distributed across nine plots (CP1 to CP9) as per the approved layout. These commercial plots are strategically allocated to accommodate commercial development that will complement and support the industrial activities within the park. Development within these zones will be undertaken in accordance with SIPCOT guidelines and local planning regulations, ensuring seamless integration with the overall infrastructure of the industrial park. The provision of dedicated commercial spaces will enhance the operational efficiency of the park by offering necessary services and amenities.

1.4.2.4 Greenbelt Development

The proposed project includes a comprehensive greenbelt development plan as part of its environmental management measures. A total greenbelt area of **186.714 hectares (461.187 acres)**, accounting for **23.46% of the total project area**, has been earmarked, which is higher than the minimum statutory requirement.

Out of this, 108.503 hectares (13.63%) will be developed by SIPCOT along water bodies, natural drains, internal buffers, and project boundaries. This includes greenbelt development along the main water body, Nilaviyal Odai, the periphery of the Lyocell unit, and the overall project boundary. About 271258 trees will be planted in these areas.



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In addition, 78.211 hectares (9.83%) of greenbelt will be developed within individual industrial plots by respective industries, covering Red, Orange, Green, and White category units. This will involve planting approximately 195528 trees.

There are about 65 Nos. of existing trees within the Project site, comprising 41 Palm, 20 Vadali, 1 Vagai, 2 Neem and 1 Manjanathi, along with scattered shrubs. In total 30 Nos of grown-up trees (28 Palm trees and 2 Neem trees) are in the proposed road development and amenity plots. Though care will be exercised to transplant the trees within the project site. There will be a minimum of 20 trees 18 Palm tree and 2 Neem tree will be necessitated to cut. SIPCOT will compensate those number of trees by planting 10 trees for every 1 tree felled (of the same species) within the proposed greenbelt development in an area of 108.503 ha, 271258 Nos. of trees .

The proposed greenbelt will help control air and noise pollution, improve local microclimate, support groundwater recharge, enhance site aesthetics, and promote ecological balance within the industrial park. It will also assist in meeting environmental clearance and regulatory requirements prescribed by CPCB and TNPCB.

Table 12. Greenbelt Area Breakup

Description		Unit	Area (Ha)	% of Total Area	No: of Trees @2500
Developed by SIPCOT	Greenbelt by SIPCOT (30 m on either side of Water body (Odai) , 15 m on either side of Nilaviyal Odai & 15m along the Periphery of Lyocell unit and 10m all along the boundary)	Hectare	108.503	13.63%	271258
Developed by Individual Industries	Greenbelt within Industrial Plot Area – Red/Orange/Green/White Category (@ 15%)	Hectare	78.211	9.83%	195528
Total Greenbelt within the Industrial Park		Hectare	186.714	23.46	466786

1.4.2.5 Roads Development

An area of **53.337 ha (6.70%)** is allocated for internal roads and stormwater drains within the Industrial Park. The road network is planned to provide smooth movement and easy access to all industrial plots, commercial areas, and common facilities. Stormwater drains and street lighting will be provided along both sides of the roads. The total length of internal roads proposed is 21.917 km,



comprising 10.830 km of 30 m wide roads, 10.961 km of 20 m wide roads, and 0.126 km of 3 m wide roads.

1.5 Infrastructure requirement for the Project

1.5.1 Power Requirement

The total power requirement for the SIPCOT Industrial Park is estimated at 145 MVA during operation. Power will be supplied by TANGEDCO through a proposed 110/33 kV substation within the park, with internal distribution via 33 kV and 110 kV underground cables to all industrial, commercial, and common facility areas. SIPCOT will not provide a common backup; individual industries will arrange their own DG sets or alternate power systems.

1.5.2 Water requirement

During Construction Phase:

The total water requirement is 175 KLD, sourced from the SIPCOT Desalination Plant (75 KLD) and authorized private tankers (100 KLD). Water will be used for construction works, dust suppression, and domestic needs of around 625 workers during peak activity. No groundwater extraction is proposed.

During Operational Phase :

The total water requirement for the SIPCOT Industrial Park is estimated at 66308 KLD. Freshwater will be sourced from the SIPCOT-owned 60 MLD Desalination Plant at Thoothukudi, while secondary treated sewage from the Tuticorin Municipal Corporation will be used for non-potable purposes such as flushing and greenbelt irrigation. In addition, treated effluents and treated sewage from individual industries will be reused and recycled within their premises, minimizing freshwater dependency and achieving near zero discharge operation.

1.5.3 Manpower Requirement

During the Construction phase, the project will employ 25 permanent personnel and 600 temporary/contractual workers for a period of 2 years, resulting in a total employment generation of 385000 man-days.

During the Operation phase, the project will provide employment to 2025 permanent personnel and 18225 temporary/contractual personnel, activities related to Industrial operations, utilities, administration, and supporting services within the SIPCOT Industrial Park.



1.5.4 Solid and Hazardous Waste Management

1.5.4.1 Municipal Solid Waste Management

Construction Phase (625 persons):

- Approximately 168.75 kg/day of organic waste will be treated on-site using a mobile Organic Waste Converter (OWC), and the processed manure will be utilized for greenbelt and landscaping.
- About 112.50 kg/day of inorganic waste will be segregated and handed over to TNPCB-authorized recyclers.

Operation Phase (20250 persons):

- Around 6,210 kg/day of organic waste will be generated; segregation will be carried out by individual industries, and the organic waste will be composted and utilized as manure.
- Approximately 4,140 kg/day of inorganic waste will be segregated at source and handed over to TNPCB-authorized recyclers by individual industries.

1.5.4.2 Hazardous Waste Management

- Hazardous waste will primarily be generated from process industries, DG sets, and utility operations.
- Each industrial unit will obtain authorization under the Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016.
- Used oil and waste oil from DG sets will be collected in leak-proof containers and handed over to TNPCB-authorized recyclers/reprocessors.
- Sludge from ETP/STP will be dewatered and disposed of through authorized TSDF facilities.
- A common hazardous waste storage area will be developed within the industrial park for temporary storage before disposal.
- All handling, transport, and disposal practices will comply with CPCB and TNPCB guidelines.

1.5.5 Rainwater Harvesting & Storm Water Management For Sipcot Industrial Park

The SIPCOT Industrial Park will have a stormwater drain network designed to prevent waterlogging and to safely convey surplus runoff through check dams, percolation pits, Parshall flumes, and dug recharge pits, ensuring regulated discharge into the Nilaviyal Odai.

While SIPCOT will not provide a common rainwater harvesting system, each industry must install rooftop RWH and ground recharge pits as per TNPCB and BIS standards, supporting groundwater recharge and reducing surface runoff.



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Rooftop rainwater harvesting potential of the proposed Industrial Park will be 34394 m³ (26930 m³ from industrial plots other than the Lyocell unit, 1596.5 m³ from commercial plots, 529 m³ from amenity plots) on an average per day. Individual units will harvest not less than 50% of roof water potential. 14518 m³ will be surplus rooftop rainwater, which will drain into the stormwater drain.

Rooftop rainwater harvesting potential for the proposed Lyocell unit alone is 5358 m³ on an average per day. The plant capacity for two ponds envisaged within the Lyocell unit is for an average 3 days holding of rooftop rainwater capacity.

Total stormwater for the proposed Industrial Park will be 48720 m³ on an average rainy day. Excess rooftop rainwater from other industrial units, commercial and amenities is 14518 m³. Total stormwater will be 63238 m³. The size of the stormwater drain will be 1.5 m wide and 1.2 m deep, 28650 m long all along the boundary. Percolation pits will be made of 1 m dia and 3.5 m deep (holding capacity 2.75 m³ volume) at every 50 m to maximize online percolation.

A suitable groundwater rejuvenation plan is planned to be implemented in discussion with WRD and local administration.

1.6 Lyocell AND TISSUE MANUFACTURING UNIT :

1.6.1 Brief Description

The proposed Lyocell and Tissue Manufacturing Unit will be developed by **M/s APRIL Fiber Resource Pvt. Ltd.** under an MoU with SIPCOT. A total of 139.46 ha (344.61 acres) within the Industrial Park is allocated for this facility, which will include an integrated captive co-generation power plant to ensure reliable, self-sustained energy supply. The unit will be established in full compliance with applicable regulatory and environmental standards.

1.6.2 Product Capacity

The facility is planned to be executed in two phases with the following production details:

Table 13. Product Details (Lyocell Manufacturing Unit)

Particulars	Unit	Quantity Proposed	Remarks
Major Activity (5(d))			
Lyocell	TPA	300000	Phase 1: 150,000 Phase 2 : 150,000
Tissue	TPA	100000	Phase 1 : 50,000 Phase 2 : 50,000
Minor Activity (1(d))			
Captive Power Generation	MW	135	Phase-1 : 90 MW Phase-2 : 45 MW
Minor Activity (8(b))			
Industrial Sheds & other	Sq.m	235811	-



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Particulars	Unit	Quantity Proposed	Remarks
building			

1.6.2 Description and Details of the Process

A dedicated Lyocell and Tissue Manufacturing Unit will be developed within the park as an integrated facility supporting the Technical textile and other Textile Industries.

Lyocell Manufacturing Process

- Handling and storage of polymers, pulp, and chemical inputs
- Fibre production through pulp dissolution, filtration, regeneration, washing, and drying
- Product finishing, quality control, and packaging for domestic and export markets
- In-house power generation to ensure uninterrupted operations

The facility will use modern, energy-efficient technology with strong systems for emission control, resource optimization, and water conservation. It will enhance domestic Lyocell and Tissue production capacity and reduce import dependence.

Tissue Manufacturing Process

- Dissolving pulp sheets in water to form a slurry
- Feeding slurry into a tissue machine to form continuous sheets
- Drying through heated cylinders
- Converting dried sheets into rolls using winders in various sizes
- Packaging and storage in a dedicated warehouse.

State-of-the-art equipment, water recycling systems, and stringent quality controls will ensure efficient operations and consistent product quality.

1.6.2 Raw Material Details for Lyocell and Tissue Manufacturing unit

Table 14. Product-wise Raw Materials and Transportation Details of Lyocell and Tissue Manufacturing Unit

S. No.	Raw Material	CAS No.	Planned Capacity	Means of Storage	Transportation Mode	No. of Tankers / Trailers per Day (or Shipment Details)
1	Solvent	7529-22-8	540 m ³ (610 T)	Tank within dyke wall	Local – Tanker	5 tankers of 20 m ³ capacity per week



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S. No.	Raw Material	CAS No.	Planned Capacity	Means of Storage	Transportation Mode	No. of Tankers / Trailers per Day (or Shipment Details)
2	Sodium Hydroxide (NaOH)	1310-73-2	400 m ³ (600 T)	Tank within dyke wall	Local – Tanker	2 tankers of 20 m ³ capacity per day
3	Hydrochloric Acid (HCl)	7647-01-0	200 m ³ (450 T)	Tank within dyke wall	Local – Tanker	4 tankers of 20 m ³ capacity per week
4	Ferric Chloride (FeCl ₃)	7705-08-0	10 T	HDPE bags	Local – Truck	1 truck per month
5	Propyl Gallate	121-79-9	4 T	200 kg drums in chemical warehouse	Local – Truck	1 truck per month
6	Sodium Hypochlorite (NaOCl)	7681-52-9	50 m ³	Tank within dyke wall	Local – Tanker	3 tankers of 10 m ³ capacity per month
7	Soft Finish	–	250 T	Drums in chemical warehouse	Import (Tuticorin Port) – Sea / Truck	60 T per shipment (3 containers per shipment)
8	Hydroxylamine (HA)	7803-49-8	40 T	Drums in chemical warehouse	Local – Truck	2 trucks per month
9	Pulp (for Product A & B)	65996-61-4	35,000 T	Bales in pulp warehouse	Import (Tuticorin Port) – Sea / Truck	10,000 T per shipment; 50 trucks per day for 6 days
10	Coal	125612-26-2	50,000 T	Loose in covered shed	Import (Tuticorin Port) – Sea / Truck	30,000–40,000 T per shipment; 100–150 trips of 25 T each per day for 12 days
11	Biomass	–	15,000 T	Loose in covered shed	Local – Truck	24 trips per day
12	Pulp (additional)	65996-61-4	10,000 T	Bales	Import (Tuticorin Port) – Sea / Truck	5,000 T per shipment; 50 trips per day for 3 days



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S. No.	Raw Material	CAS No.	Planned Capacity	Means of Storage	Transportation Mode	No. of Tankers / Trailers per Day (or Shipment Details)
13	Lime	–	45 T	Loose in covered shed	Local – Truck	3 trucks per day
14	Sand	–	45 T	Loose in covered shed	Local – Truck	4 trucks per day
15	Diesel	–	250 m ³	Tank within dyke wall	Local – Tanker	As per requirement (occasional)

1.6.3 List of Major Machinery and Equipment

The Lyocell and Tissue unit will include a Captive Power Plant to ensure reliable power and steam supply. The CPP will use efficient combustion and energy-recovery systems to minimize emissions. Key equipment includes CFBC boilers, steam turbine generators, and coal/biomass handling systems.

Table 15. List of Major Machinery and Equipment

Major Equipment Description	Proposed No. & Capacity – Phase I	Proposed No. & Capacity – Phase II	Remarks
Power Boiler – CFBC (70:30 Coal to Biomass)	2 × 280 TPH	1 × 280 TPH	Coal / Biomass fired
Steam Turbine Generator	2 × 45 MW	1 × 45 MW	–
Coal Handling Plant	150 TPH	–	Covered system with mechanical loaders

1.6.4 Manufacturing Process and Technology

The Lyocell and Tissue Manufacturing Unit will use state-of-the-art production processes, supported by an integrated captive co-gen power plant to ensure stable and continuous operations.



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Table 16. Manufacturing Process of Lyocell Manufacturing unit

Manufacturing Process	
Lyocell Manufacturing Process	
Dissolution	Dissolution of the pulp fibers (Lyocell) and mixing with the solvent.
Filtration	The above solution is filtered to remove undissolved Lyocell & impurities.
Regeneration	The filtered solution is extruded through a orifice spinneret and sent through the spinning machine , where it is cut to the required staple length & sent for washing
Washing	Resulting fibers are washed & residual solvent is recovered and recycled
Drying	Washed Fibres are opened up and send to the dryer where the moisture is removed.
Packing	The dried Fibre is sent to the baling press where it is packed as bales and sent to ware house for dispatch
Tissue Manufacturing Process	
Pulping	Pulp sheets are dissolved in water
Tissue Machine	Slurry is passed through dryer cylinder and form tissue paper.
Winder	Tissue paper is passed through winders to make Multiple sheet rolls and cut in various width and diameter rolls as per the market requirements
Warehouse	Customer rolls from winders are stored in warehouse before dispatch.



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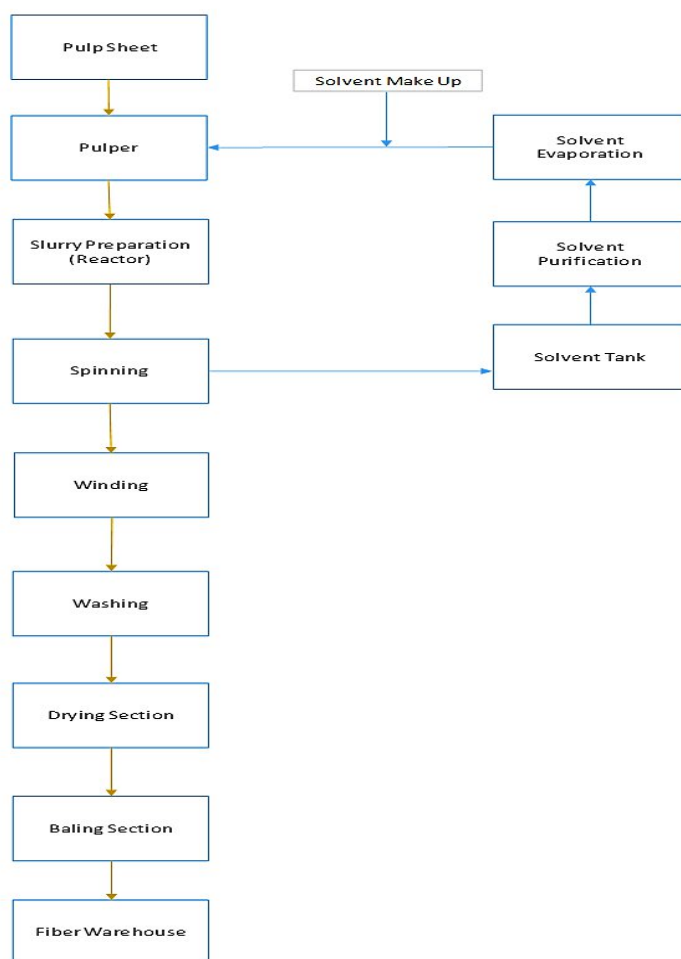


Figure 3. Process Flow of Lyocell

1.6.4 Details of Products and Storage

Table 17. Details of Products and their Storage

Product Name	Physical State	Planned Capacity (Tons)		Means of Storage
		Phase I	Phase II	
Lyocell (i.e., Man Made Fibre)	Solid	9,000	6,750	Bales
Tissue	Solid	3,000	2,250	Rolls & Cartons

1.6.5 Water Requirement and Source

The water requirement for the proposed Lyocell manufacturing facility will be sourced through supply from Tuticorin Municipal Corporation on a long-term contractual arrangement. Tertiary Treated STP



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water from Common Sewerage Treatment plant will be utilized to meet the plant's operational needs, with provisions for water recycling to reduce freshwater dependency. Domestic freshwater demand will be met from SIPCOT fresh water supply.

Table 18. Water Requirement Table for Lyocell and Tissue Manufacturing Unit

Sl. No	Water Requirement	Unit	Proposed	Particulars
1	Source of Water Supply	KLD	39296	Tuticorin Municipal Corporation- Tertiary Treatment Plant through pipeline
1A	Proposed Treatment at Lyocell unit	Tertiary treatment comprising of multimedia filtration, Ultra filtration & RO systems for incoming raw water		
2	Tertiary Treated STP water	KLD	20000	(Phase 1: 10,000) (Phase 2 : 10,000)
3	Recycled Tertiary Treated in-house Effluent	KLD	19296	(Phase 1: 9,648) (Phase 2 : 9,648)

Wastewater Treatment :

- Trade effluent generation is estimated at 22000 KLD (11000 KLD during Phase-I and 11000 KLD during Phase-II)
- 22000 KLD effluent will undergo pre-treatment involving degradation of organic matter through Fe-C treatment.
- Further treatment will be carried out in an ETP of capacity 24000 KLD (12000 KLD in phase 1 augmented with another 12000 KLD in phase -2) . Effluent Treatment will be carried out using an EGSB reactor followed by sedimentation with ozone .
- 19296 KLD Treated effluent will be further sent through UF & 3 stage RO for polishing to meet the reusable quality requirement (9648 KLD capacity in each phase).
- The reject from RO system will be sent to an evaporator, crystallizer, and dryer to achieve Zero Liquid Discharge (ZLD).

1.6.6 Employment Generation (Direct and Indirect) from the Project:

The project will generate about 315 jobs during the construction phase, including skilled, semi-skilled, unskilled, and supervisory staff. During operation, it is expected to create around 1,000 jobs, comprising 100 direct positions within the units and 900 indirect opportunities through ancillary services, supply chains, logistics, and support activities.

1.6.7 Energy / Power Requirement

- It is proposed to install a Steam Turbine Generator (STG) with a total planned capacity of 135 MW



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(3 × 45 MW).

- The power generation facility is proposed to be implemented in phases:
 - **Phase-I:** Two units of 45 MW each.
 - **Phase-II:** One unit of **45 MW**.
- Provision is proposed for DG sets with a total standby capacity of up to 10,000 kVA.
- The DG sets are proposed to operate on High Speed Diesel (HSD).
- The backup system will comprise two DG sets of 5,000 kVA each, intended for emergency and standby power requirements only.

1.6.8 Fuel Requirement and Source

Table 19. Fuel Requirement and Source (Lyocell Manufacturing Unit)

S. No	Fuel	Quant ity	Imported / Domestic	Sources / Location	Mode of Transportation
Coal					
1	Coal	30,000 MT/M	Imported	Indonesia, South Africa, Australia, Russia	By Dump trucks from Thoothukudi Port to site
2	Coal	30,000 MT/M	Domestic	Talcher Coalfields (Odisha); Tilapia II & III (Odisha); IB Valley (Chhattisgarh, MCL); Raniganj Coalfields (West Bengal); Nagpur	By Dump trucks from domestic source to site
Biofuel					
3	Biomass Briquettes	27,500 MT/M	Local / Imported	Local sources / Authorized suppliers	By Dump trucks from biomass source to site
4	Rice Husk / Saw Dust / Other Biomass	27,500 MT/M	Local / Imported	Local sources / Authorized suppliers	
High-Speed Diesel (HSD)					
5	High-Speed Diesel	500 m³ / annum	Domestic	Indian Oil Corporation Ltd. (IOCL)	By tanker trucks from respective supply units to site
				Hindustan Petroleum Corporation Ltd. (HPCL)	
				Bharat Petroleum Corporation Ltd. (BPCL)	
				Nayara Energy (formerly Essar Oil)	
				Reliance Industries Ltd. (RIL)	



1.7 Air Emissions Details

Table 20. Stack details (Lyocell Manufacturing Unit)

Stack Attached	Nos. of Stacks	Pollutants Emitted	Pollution control measures	APCs	Remark
Power boiler	One	Particulate Matter	< 3 (Dry 6% O ₂) mg/Nm ³ .	Electrostatic precipitators will be installed	CSMS for control Single stack for 3 boilers ESP installed for each boiler
		SOX	< 100 (Dry 6% O ₂) mg/Nm ³ .	Dry limestone injection system used for SO ₂ reduction.	
		NOX	< 100 (Dry 6% O ₂) mg/Nm ³ .	Advanced NOx reduction technologies will be employed, including combustion optimization and selective catalytic/non-catalytic reduction.	
		Mercury (Hg)	< 0.03 (Dry 6% O ₂) mg/Nm ³	Mercury control measures include activated carbon injection and process adjustments to minimize emissions.	
Lyocell	4-6 points	VOC	<50 mg/Nm ³	Scrubbed before venting	-

1.8 Solid Waste Management

For the proposed Lyocell and Tissue Manufacturing Unit, the total solid waste generation is estimated at 600 kg/day, comprising 360 kg/day of biodegradable waste and 240 kg/day of non-biodegradable waste. The biodegradable waste will be treated within the premises, and the resulting manure will be utilized for greenbelt development. The non-biodegradable waste will be handed over to TNPCB-authorized recyclers for appropriate recycling and disposal, in accordance with CPHEEO (2016) guidelines.



2. BASELINE ENVIRONMENTAL STUDIES

The baseline environmental study was undertaken for the period from March 2025 - May 2025, covering the summer season. The assessment encompassed a 10 km radius from the project site and included a detailed evaluation of air, noise, water, soil, ecological, and socio-economic components.

2.1 Meteorology

The climatic conditions of the area were assessed based on temperature, humidity, wind speed and direction, and rainfall. The maximum temperature recorded was 40.6°C and the minimum was 15.3°C, while relative humidity ranged from 64% to 85%. The annual mean rainfall was 682.4 mm, with the highest number of rainy days observed in November.

2.2 Ambient Air Quality

Core zone: The mean value of PM_{2.5} ranges from (17.07-20.28 µg/m³) & PM₁₀ at core zone locations ranges from (26.83-31.88 µg/m³) NO₂ ranges from (18.81-22.34 µg/m³), SO₂ ranges from (7.14-8.48 µg/m³), CO₂ (0.56-0.67 mg/m³) which are within the limits of National Ambient Air Quality Standards (NAAQS).

As per the Air Quality Index by CPCB, the air quality of the core zone is found Good during the sampling period from March 2025 to May 2025.

Buffer zone: The mean value of PM_{2.5} ranges from (13.83-24.17 µg/m³) & PM₁₀ at core zone locations ranges from (21.73-37.99 µg/m³) NO₂ ranges from (15.23-26.63 µg/m³), SO₂ ranges from (5.78-10.11 µg/m³), CO (0.46-0.80 mg/m³) which are within the limits of National Ambient Air Quality Standards (NAAQS). As per the Air Quality Index by CPCB, the air quality of the buffer zone is found to be Good during the sampling period from March 2025 to May 2025.

Conclusions: As per the Air Quality Index by CPCB & NAAQS, the air quality of the Core & buffer zone within the standard during the sampling period from March 2025 to May 2025.

2.3 Ambient Noise Quality

Core Zone :

The ambient noise level during day time at the proposed project site varies from 40.6 dB (A) to 48.4 dB (A) which are within the day time standard limit of Industrial area ~75 dB (A). During night the noise level at the project site ranges from 36.4 dB (A) to 43.2 dB (A) which are within the night time standard limit of Industrial area 70.0 dB (A).

Buffer Zone:

Residential Area:

N5: The ambient noise level at Thiruvanthapuram is 54.3 dB (A) which is within the daytime noise standard limit of the Residential area of ~ 55.0 dB (A). During the night the noise level was recorded at 41.9 dB (A) which is within the night-time noise standard limit of ~ 45.0 dB (A).



N6: The ambient noise level at Therku Silukkanpatti is 53.7 dB (A) which is within the daytime noise standard limit of Residential area ~ 55.0 dB (A). During the night the noise level was recorded at 42.6 dB (A) which is within the night-time noise standard limit of ~ 45.0 dB (A).

N7: The noise level at Keela Thatapparai is 52.6 dB (A) which is within the daytime noise within the standard limit of Residential area ~ 55.0 dB (A). During the night the noise level was recorded at 41.8 dB (A) which is within the night-time noise standard limit of ~ 45.0 dB (A).

N8: The noise level at Kuttudankadu is 52.2 dB (A) which is above the standard limit of Residential area ~ 55.0 dB (A). During the night the noise level was recorded at 44.6 dB (A) which is within the night-time noise standard limit of ~ 45.0 dB (A).

N9: The noise level at Korampallam is 47.1 dB (A) which is within the daytime noise within the standard limit of Residential area ~ 55.0 dB (A). During the night the noise level was recorded at 43.7 dB (A) which is within the night-time noise standard limit of ~ 45.0 dB (A).

N10: The noise level at Therkku Veerapandiyapuram is 49.2 dB (A) which is within the daytime noise within the standard limit of Residential area ~ 55.0 dB (A). During the night the noise level was recorded at 43.6 dB (A) which is within the night-time noise standard limit of ~ 45.0 dB (A).

2.4 Groundwater Quality

1. The Total Dissolved Solids (TDS) of the sampling locations ranges from 140.8 mg/l to 1901.5 mg/l. The TDS of sampling locations are within the acceptable limit of 500 mg/l & permissible limit i.e. 2000 mg/l respectively.
2. The Total Hardness of the sampling locations ranges from 88 mg/l to 1484 mg/l. The Total Hardness of sampling locations are within the acceptable limit of 200 mg/l & permissible limit of 600 mg/l respectively.
3. The Alkalinity of the sampling locations ranges from 92 mg/l to 300 mg/l. The alkalinity of sampling locations are within the acceptable limit of 200 mg/l & permissible limit i.e. 600 mg/l respectively.
4. The Chloride Concentration of the sampling locations ranges from 34 mg/l to 519 mg/l. The Chloride concentration of sampling locations are within the acceptable limit of 250 mg/l & permissible limit i.e. 1000 mg/l respectively.

Conclusion :

The groundwater quality parameters (buffer zone) are within the IS 10500:2012 (Drinking water standard).



2.5 Surface Water Quality

Surface water samples were collected from 8 locations namely Nilaviyal Odai Upstream, Drain onsite, Odai onsite, Thiruvanthapuram Pond, Pond near Keelathattapparai, Allikulam Pond, Perurani Pond, and Elim Pond.

As per the samples collected and analyzed from locations SW1, SW2, SW3, SW4, SW5, SW6, SW7 & SW8, surface water quality is meeting the criteria defined by class “C” as per the CPCB criteria. It is suitable for drinking water after conventional treatment and disinfection.

1. The surface water quality of the **Nilaviyal Odai Upstream** shows that the values of the parameters including TDS, total hardness chloride, fluoride, calcium, magnesium, iron, sulphate, nitrate nitrogen and alkalinity are within the IS drinking water quality standards. BOD and DO value indicating that the surface water quality of Nilaviyal Odai Upstream can be placed in Class “B” i.e. Outdoor bathing (Organised).
2. The **Surface water quality of the Drain onsite** shows that the parameters including Turbidity, TSS, Nitrate nitrogen, BOD, COD & iron content are within the EPA discharge standards. BOD & DO value indicating that the surface water quality of Drain onsite can be placed in Class “C” i.e., Drinking Water Source without conventional treatment but after disinfection per CPCB surface water quality - Designated Best Use Water Quality Criteria.
3. The **surface water quality of the Odai onsite** shows that the values of the parameters including TDS, total hardness, calcium, magnesium, and alkalinity are within the IS drinking water quality standards. BOD and DO value indicating that the surface water quality of Odai onsite can be placed in Class “E”. i.e., Irrigation, Industrial Cooling, Controlled Waste disposal.
4. The **surface water quality of the Thiruvanthapuram Pond** shows that the values of the parameters including TDS, total hardness chloride, fluoride, calcium, magnesium, iron, sulphate, nitrate nitrogen and alkalinity are within the IS drinking water quality standards. BOD and DO value indicating that the surface water quality of Thiruvanthapuram Pond can be placed in Class “C” i.e., Drinking water source after conventional treatment and disinfection per CPCB surface water quality - Designated Best Use Water Quality Criteria.
5. The **surface water quality of the Pond near Keela Thatapparai** shows that the values of the parameters including nitrate nitrogen, chloride, fluoride, calcium, magnesium, iron and alkalinity are within the IS drinking water quality standards. BOD & DO value indicating that the surface water quality of the Pond near Keela Thatapparai can be placed in Class “C” i.e., Drinking water source after conventional treatment and disinfection per CPCB surface water quality - Designated Best Use Water Quality Criteria.
6. The **surface water quality of the Allikulam Pond** shows that the values of the parameters including TDS, total hardness, calcium, magnesium, and alkalinity are within the IS drinking



water quality standards. BOD and DO value indicating that the surface water quality of Allikulam Pond can be placed in Class “C” i.e., Drinking water source after conventional treatment and disinfection per CPCB surface water quality- Designated Best Use Water Quality Criteria.

7. The **surface water quality of the Perurani Pond** shows that the values of the parameters including TDS, total hardness, calcium, magnesium, and alkalinity are within the IS drinking water quality standards. BOD and DO value indicating that the surface water quality of Perurani Pond can be placed in Class “C” i.e., Drinking water source after conventional treatment and disinfection per CPCB surface water quality- Designated Best Use Water Quality Criteria.
8. The **surface water quality of the Elim Pond** shows that the values of the parameters including TDS, total hardness, calcium, magnesium, and alkalinity are within the IS drinking water quality standards. BOD and DO value indicating that the surface water quality of Elim Pond can be placed in Class “C” i.e., Drinking water source after conventional treatment and disinfection per CPCB surface water quality- Designated Best Use Water Quality Criteria.
9. The surface water quality of the Bethesda Pond shows that the values of the parameters including TDS, total hardness, calcium, magnesium, and alkalinity are within the IS drinking water quality standards. BOD and DO value indicating that the surface water quality of Bethesda Pond can be placed in Class “C” i.e., Drinking water source after conventional treatment and disinfection per CPCB surface water quality- Designated Best Use Water Quality Criteria.
10. The surface water quality of the Pond near Korampallam shows that the values of the parameters including TDS, total hardness, calcium, magnesium, and alkalinity are within the IS drinking water quality standards. BOD and DO value indicating that the surface water quality of Pond near Korampallam can be placed in Class “C” i.e., Drinking water source after conventional treatment and disinfection per CPCB surface water quality- Designated Best Use Water Quality Criteria.

2.6 Land Use and Land Cover

Agriculture Land:Based on analyzed imagery and ground truth, Crop land area extents have been extracted. The Agricultural Land area is about 20287.0 hectares which is 41.95 percent of the total 10 km radius study area.

Built up Land:Based on analysis of imagery, using GIS and ground truth the total built up area is about 7891.7 hectares which is 16.32 percent of the total study area.



Waste/Barren Land: Barren Land area occupies around 17937 ha which is 37.09 percent of the study area.

Wet Land-Water Bodies: Based on satellite data and ground truth, the total area covered by the inland wetland, river and water bodies is 2244.4 hectares which is 4.64 percent of the total study area.

2.7 Soil Environment

Core Zone : After analyzing the samples collected from the site, it shows that the soil texture is 4/3 Brown, pH is 7.49-7.83 Amount of primary nutrients like Organic matter is 0.41-1.02 %, the available nitrogen 54.4-98.8 mg/kg is low to medium and available Potassium 32.90-56.10 mg/kg is medium to high & the available Phosphorus 6.40-9.75 mg/kg is medium to high range.

The overall fertility of this soil would be considered moderate to low. While the phosphorus levels are adequate, the low levels of organic matter, nitrogen, and potassium suggest that the soil may need amendments, particularly organic matter and fertilizers, to improve fertility.

Buffer Zone: 6/3 Dull Brown, 4/3 Brown, 5/6 Bright Brown, pH ranges from 7.12 to 7.95 Amount of primary nutrients like Organic matter 0.41 to 1.16%, the Available Nitrogen 62.6 to 108.60 mg/kg is low to high range, the Available Phosphorus 2.29 mg/kg to 15.03 mg/kg is low to high range, Available Potassium 28.70 mg/kg to 52.80 mg/kg is low to high range.

The overall fertility of this soil would be considered moderate. The soil has good potential due to its clay loam texture and relatively neutral pH, but the fertility is limited by low to medium levels of organic matter, nitrogen, and potassium.

2.8 Biological Environment

The baseline ecological study indicates that the core and buffer zones primarily comprise dry deciduous vegetation interspersed with agricultural lands, open scrub, and human habitation. The flora mainly includes *Prosopis juliflora*, *Azadirachta indica*, *Albizia amara*, *Calotropis gigantea*, and *Cenchrus ciliaris*, while faunal species such as *house crow*, *Indian myna*, *cattle egret*, *common toad*, and *garden lizard* are commonly observed.

Based on both our primary and secondary surveys, as well as the compiled table above, we have identified a total of 15 species listed under Schedule I of the Wildlife Protection Act, indicating their endangered status and necessitating conservation efforts.

Hence, it is inferred that the project will not cause any major ecological disturbance, provided that the proposed greenbelt and landscaping development measures are effectively implemented to enhance local biodiversity and habitat quality.



2.9 Socio-Economic Environment

The socio-economic study covering the 10 km radius around the project site indicates that the region consists of rural and peri-urban settlements with agriculture as the dominant occupation, followed by small-scale trade, transport, and service activities. The area shows a balanced gender ratio, moderate to high literacy levels, and stable demographic growth.

Infrastructure facilities such as schools, healthcare centers, roads, and electricity are available in most villages. The population exhibits a satisfactory quality of life, with no significant displacement or rehabilitation issues anticipated.

The establishment of the SIPCOT Industrial Park is expected to create direct and indirect employment opportunities, promote industrial growth, and strengthen socio-economic conditions of nearby communities through improvement in infrastructure, skill development, and allied business activities.



3. ANTICIPATED ENVIRONMENTAL IMPACT AND MITIGATION MEASURES

3.1 Air environment

Impacts on ambient air would be mainly due to the emission of Volatile Organic Compounds (VOC's), SO₂, CO₂, PM, SO₂, NO₂ generation, dust generation which could lead to an increase in ground concentration level (GLC), respiratory problems, damage to flora and fauna and aesthetic properties in the environment and increase the level of toxic chemicals to other aspect of environment indirectly. APCS like Wet Scrubber, adequate stack heights are being installed. Plantation of native tree species, installation of water sprinkling systems and dust compression systems in the nearby areas, provision of proper nose masks to laborers, Vehicles with valid PUC certificates will be used for transportation etc. shall be done. Vehicles with valid PUC certificates will be used for transportation of construction material, raw material, waste and finished products.

3.2 Water Environment

The total water requirement for the project is **66308 KLD**, including 10867 KLD of freshwater from the SIPCOT 60 MLD desalination plant, 26246 KLD of treated wastewater from Thoothukudi Municipal Corporation, and 39296 KLD of tertiary-treated sewage for the Lyocell unit.

SIPCOT will provide water supply and drainage infrastructure, while individual industries, including the Lyocell unit, will manage their own wastewater through Zero Liquid Discharge (ZLD) systems. SIPCOT will maintain stormwater drains and rainwater harvesting pits to prevent contamination and support groundwater recharge, with no groundwater extraction proposed.

3.3 Land Use

Land use change is limited to converting acquired land (G.O. No. 100, 26.02.2021) into planned industrial, commercial, and green zones, with no impact on agricultural or forest land. Excavated earth and debris will be reused for site leveling and roads, while construction and solid wastes will be collected, segregated, and managed to prevent open dumping. Individual industries will handle their own industrial waste per TNPCB norms. Impacts from construction and hazardous wastes will be minimized through proper separate collection and disposal.

3.4 Soil quality

Soil quality impacts may arise from industrial activities such as raw material handling, boiler and process operations, chemical storage, and transportation, potentially causing erosion, spills, or waste deposition. To mitigate these, industries will implement proper waste treatment and disposal, impervious flooring, chemical containment, regular equipment inspection, ISO-certified storage, and spill kits, along with greenbelt development for dust control and soil stabilization. With these



measures, no significant adverse impact on soil quality, including from the Lyocell Manufacturing Unit, is expected.

3.5 Noise Levels

Major environmental impacts may arise from machinery operation and transportation, causing increased noise, vibrations, and potential effects on workers, nearby residents, and local biodiversity. Mitigation measures include restricting activities to project areas, proper equipment maintenance, noise barriers, protective devices (earmuffs, silencers), greenbelt development, No-Honking Zones, and regulated traffic management.

3.6 Ecology & Biodiversity

Activities such as site preparation, excavation, manufacturing, machinery operation, transportation, and material handling may impact ecology and biodiversity through dust, emissions, noise, soil erosion, water contamination, and waste generation, leading to habitat loss, reduced plant/tree cover, disturbance to wildlife, and decreased local fauna populations. Mitigation measures include air pollution control equipment, scrubbers, greenbelt development, dust suppression and water sprinkling systems, noise barriers, regulated vehicular movement, proper waste treatment, daytime transport with minimal honking, and greenery along project periphery and roads.

3.7 Solid and Hazardous Waste

Solid and hazardous waste management is the responsibility of individual industries, as SIPCOT will not handle such wastes. Generated solid waste will be reused, recycled, or disposed of through authorized vendors in compliance with the Solid Waste Management Rules, 2016, ensuring no dumping within or outside the park.

Hazardous wastes will be stored, handled, and disposed of per the Hazardous and Other Wastes (Management & Transboundary Movement) Rules, 2016, with TNPCB authorization. Wastes will be collected in labeled drums, stored in covered sheds with impervious flooring, and disposed of through authorized recyclers.

3.8 Hydrology and Geology

Activities like excavation, manufacturing, machinery operation, daily labor and staff activities, and transportation may impact hydrology and geology through solid, e - waste, and biomedical waste generation, wastewater discharge, and chemical spills, potentially affecting surface and groundwater quality. Mitigation measures include proper wastewater channelization and treatment, regular inspection of pipelines and storage vessels, leak detection, using dry adsorbents for chemical spills, and safe disposal of all wastes.



3.9 Socio-Economic

The proposed SIPCOT Industrial Park will drive socio-economic development in the region. While SIPCOT provides infrastructure, the direct benefits will come from individual industries, including the Lyocell and Tissue manufacturing unit, through employment generation during construction and operation, increasing household incomes and reducing rural-urban migration. The project will also stimulate supporting sectors such as transport, warehousing, small-scale manufacturing, and services, enhancing the local economy. Improved roads, lighting, and drainage will boost connectivity and quality of life. As land was legally acquired with no displacement, no resettlement is needed. Overall, the project will contribute positively to regional growth, livelihoods, and social well-being in Thoothukudi District.



4. ALTERNATIVE ANALYSIS

During the site selection stage, SIPCOT carried out a comparative analysis of three alternative locations within Thoothukudi District, considering environmental sensitivity, land availability, infrastructure connectivity, and socio-economic factors. The three sites examined were:

1. Mettupacheri
2. Allikulam and nearby villages (including Keelathattaparai, Perurani, Umarikottai, Melathattaparai, Ramasampuram, and Therkusillukkanpatti)
3. Subramaniyapuram

Each site was assessed based on parameters such as land use pattern, soil characteristics, ecological sensitivity, proximity to human settlements, accessibility to road/rail/air/sea networks, availability of water and power, and the need for rehabilitation and resettlement (R & R).

A site-matrix approach following the MoEF&CC Technical Guidance was applied, assigning weighted scores to each environmental and infrastructural criterion. The analysis concluded that the Allikulam and adjacent villages site achieved the highest environmental compatibility and feasibility score, with minimal displacement and optimal infrastructure connectivity.

4.1 Site Matrix – Environmental Analysis of Alternative Sites

Three locations were inspected on site and reviewed using available land records, revenue details, and the availability of contiguous land. The comparison was carried out following the MoEF&CC Technical Guidance Document. The environmental suitability of the sites was assessed based on area, access, soil conditions, ecological sensitivity, and rehabilitation and resettlement (R&R) requirements.

Among the three locations, Allikulam and nearby villages were found to be more suitable due to the availability of large contiguous land, fewer nearby habitations, minimal tree presence, better road connectivity, availability of nearby water bodies, and no requirement for R&R. The other two sites have nearby settlements, fragmented land parcels, higher tree presence, and would require R&R.

4.2 Site Matrix – Selection Criteria

Based on land availability, connectivity, soil condition, ecological sensitivity, land-use conversion, water sourcing options, R&R requirements, project timeline, and overall project economics, the **Allikulam and adjacent villages** site was found to be the most suitable. The site has more than **900 hectares of contiguous land**, good connectivity by road, rail, air, and seaport, approved Government Orders for industrial land use, no ecological sensitivity issues, and access to desalinated water and secondary treated sewage. The project can also be developed within the planned timeline at comparatively lower cost.



4.3 Site Matrix – Score and Final Site Selection

A weighted scoring method was adopted to compare the three sites. The **Allikulam and adjacent villages** site scored **1250 out of 1500**, which is the highest among all evaluated locations. Mettupacheri and Subramaniapuram scored **600** and **650**, respectively.

Based on the overall environmental suitability, land availability, infrastructure connectivity, absence of displacement, water sourcing options, project feasibility, and economic considerations, the site covering Allikulam, Keelathattaparai, Perurani, Umarikottai, Melathattaparai, Ramasampuram, and Therkusillukkanpatti villages has been selected as the most suitable location for the proposed SIPCOT Industrial Park.



5. ENVIRONMENTAL MONITORING PROGRAMME

Monitoring will be carried out to assess the quality of the environment during the construction phase and after commissioning of the project.

Table 21. Monitoring Plan - Construction Phase

S. No.	Type of Monitoring	Frequency of Monitoring	Parameter	Location	Number Per Year	Responsibility
1	Ambient Air Quality	Six Monthly	Particulate Matter (PM _{2.5}) Particulate Matter (PM ₁₀) Sulphur Dioxide (SO ₂) Nitrogen Oxides (NO _x) Volatile Organic Compound (VOCs) Carbon monoxide (CO)	2 in Core Zone & 2 in Buffer Zone	8	-EMC (Air Incharge) & Contractor
2	Water Quality for drinking water	Six Monthly	All parameters mentioned in IS:10500	One drinking water sample	2	-EMC (Water Incharge) & Contractor
3	Water Quality for Construction purpose	Six Monthly	All parameters mentioned in IS:456	One construction water sample	2	-EMC (Water Incharge) & Contractor
4	Ambient Noise Level	Six Monthly	Day and Night noise level	2 in Core Zone & 2 in Buffer Zone	8	-EMC (Noise Incharge) & Contractor
5	Soil Quality	Six Monthly	All parameters to check soil Fertility	2 in Core Zone & 2 in Buffer Zone	8	-EMC (Soil Incharge) & Contractor

Note :

- Each individual industry within the park will have its own stack, process, and DG monitoring program, to be conducted separately under TNPCB consent conditions.
- SIPCOT's role is limited to ambient and infrastructure-level monitoring to evaluate the effectiveness of mitigation measures and ensure overall environmental compliance.

Table 22. Monitoring Plan - Operational Phase



**DEVELOPMENT OF AN INDUSTRIAL PARK AT ALLIKULAM, KEELATHATTAPARAI, PERURANI,
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S. No	Area of Monitoring	Number of Sampling Stations	Frequency of Sampling	Parameters to be Analyzed	Number per Year	Responsibility
1	Ambient Air Quality	3 stations – one upwind, one downwind, and one within project site	Half Yearly	PM ₁₀ , PM _{2.5} , SO ₂ , NO _x , CO, VOCs and other parameters as per NAAQS (2009)	6	EMC (Air In-charge) / NABL-Accredited Laboratory
2	Noise	3 locations within the study area	Half Yearly	Equivalent Continuous Noise Levels (Leq – Day and Night)	6	EMC (Noise In-charge) / External Monitoring Agency
3	Water (Surface & Ground Water)	2 sampling points (1 surface water & 1 groundwater near the site)	Half Yearly	As per IS:10500:2012 (drinking) and IS:2296:1992 (surface water)	4	EMC (Water In-charge) / NABL-Accredited Laboratory
4	Solid Waste Management Area	1 location – designated solid waste storage / transfer area	Half Yearly	Quantity generated, segregation efficiency, and disposal records	2	EMC (Solid Waste In-charge) / Authorized Disposal Agency
5	Soil	3 locations within the study area (1 on-site & 2 in buffer area)	Half Yearly	Physico-chemical properties, nutrients (N, P, K) and heavy metals	6	EMC (Soil In-charge) / NABL-Accredited Laboratory
6	Greenbelt / Plantation Monitoring	Entire greenbelt area (~186.714 ha)	Yearly	Survival rate, canopy cover, species composition	1	EMC (Horticulture In-charge)



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Note :

- *Each individual industry within the park will have its own stack, process, and DG monitoring program, to be conducted separately under TNPCB consent conditions.*
- *SIPCOT's role is limited to ambient and infrastructure-level monitoring to evaluate the effectiveness of mitigation measures and ensure overall environmental compliance.*



6.ADDITIONAL STUDIES

6.1 Introduction

6.1.1 Hazard Identification and Risk Assessment

- The project is exposed to both natural and man-made hazards.
- Natural hazards include earthquakes and floods.
- Man-made hazards may include fires, explosions, electrical accidents, chemical spills, and accidental release of toxic chemicals.
- Such hazards may arise due to equipment failure, human error, or extreme weather conditions.

6.1.2 Disaster Management Plan

- The Disaster Management Plan (DMP) is prepared to identify and assess potential hazards and associated risks.
- It addresses hazards arising from natural events as well as those related to the proposed industrial activities.
- The plan outlines preparedness measures and response actions to control and manage emergency situations.
- The objective is to ensure effective coordination and timely response during any hazard or emergency occurrence.

6.1.3 General Safety and Occupational safety

It is of utmost importance to take into account the safety of the plant personnel irrespective of the plant size. Proper safety measures should be followed in this regard.

- These include the use of Personal Protective Equipment (hand gloves, dust masks, face shield, goggles, apron, etc.) during working.
- Avoid contact with the raw materials without the use of Personal protective equipment.
- A schedule should be prepared for regular maintenance of each unit and the same should be followed regularly.
- All the valves, which are prone to open and spill inflammable/toxic material due to accident impact, must be placed with a suitable guard.



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- The unit's management should ensure that all rotating machines and moving parts are provided with appropriate guards and the guards are put back in the position after check-up and maintenance.
- All the control systems are being periodically checked for their reliability and accuracy.
- Proper ventilation to be provided in areas where there are chances of a build-up of hazardous gases, chemicals and causing fire hazards

6.2 PUBLIC CONSULTATION

Details will be incorporated after the Public Hearing is conducted.



7. PROJECT BENEFITS

The proposed SIPCOT Industrial Park at Allikulam, Thoothukudi, spread over 796.240 ha, will drive industrial, economic, and social development in southern Tamil Nadu. It will host Man-Made Fibre (Lyocell/Technical Textile and other Technical Textile Industries) and other non-EC industries, promoting industrial diversification and modernization in the region.

The Lyocell unit will produce environment-friendly regenerated Lyocell, a key raw material for the technical textile and apparel sector, serving domestic and export markets. Its integration within the industrial park strengthens the overall industrial value chain.

7.1 Environmental Benefits

- The Lyocell manufacturing process follows a closed-loop system, recovering over 99% of NMMO solvent, thereby minimizing chemical discharge.
- A greenbelt of 186.714 ha (23.46% of Total area), including 78.211 ha within industrial plots, is proposed to act as a buffer for air quality improvement, noise attenuation, and microclimate stabilization.
- Stormwater management measures, including drains, recharge pits, and rainwater harvesting structures, are proposed to enhance groundwater recharge.
- Solid waste management for common facilities will be provided by SIPCOT, while individual industries will adopt ZLD practices to safeguard water quality.
- Measures such as dust suppression, solar lighting, energy-efficient infrastructure, and low-emission transport are proposed to reduce the overall carbon footprint.
- The environmental layout of the industrial park supports resource efficiency and ecological conservation.

7.2 Economic Benefits

- The project is expected to attract domestic and foreign investments in the Lyocell and allied textile sectors.
- Employment generation is estimated at 25 direct and 600 indirect jobs during the construction phase and 2025 direct and 18,225 indirect jobs during the operation phase.
- The industrial park will support logistics, warehousing, MSMEs, and ancillary industries.
- The project is expected to contribute to State GDP, Tax revenues, and Industrial competitiveness.
- Improved infrastructure and proximity to Thoothukudi Port will facilitate export-oriented



industrial activities.

7.3 Social Benefits

- The project will generate direct and indirect employment opportunities for residents of nearby villages.
- Engagement of local workforce, wherever feasible, will help improve income levels and reduce migration.
- Development of supporting infrastructure and civic amenities such as housing, healthcare, and education is expected in the surrounding areas.
- Community engagement and grievance redressal mechanisms will be implemented to address social concerns and enhance social wellbeing.
- The following welfare measures are envisaged as part of the project development:
 - Provision of safe drinking water through RO units, storage facilities, and distribution pipelines.
 - Support to healthcare facilities through medical camps and basic equipment.
 - Improvement of government schools with classroom and digital learning support.
 - Establishment of skill development and training centres aligned with industrial employment needs.
 - Development of sanitation facilities and community-level waste management systems.
 - Greenbelt development and community plantation activities.
 - Improvement of basic community infrastructure such as street lighting and small civic works.



8. ENVIRONMENT MANAGEMENT PLAN

The Environmental Management System (EMS) will ensure continuous monitoring of environmental components. An EMP has been prepared with a capital cost of INR 10636 lakhs and a recurring cost of INR 132 lakhs. Work zone monitoring for gaseous pollutants and dust will be conducted monthly, with records maintained per Factories Rules. During operation, sampling and monitoring will be carried out through NABL approved agencies.

Proposed Cost for the Industrial Park is **INR 66611 Lakhs**. The detailed cost bifurcation is given below:

8.1 SIPCOT Industrial Park – Cost & Environmental Provisions

8.1.1 Project Cost

Table 23. Project cost for Proposed Industrial Park

S.No.	Project Components	Amount (Rs. in lakhs)
1.	Land Cost	16061
2.	Land development cost	200
3.	Roads and drains	28419
4.	Desilting and revetment of odai	1860
5.	Street Light	1193
6.	Water supply system	5765
7.	Amenity Infrastructure	575
8.	Greenbelt development	100
9.	Rain water harvesting	50
10.	Solid waste handling facility	100
11.	Preliminary and Preoperative expenses	12288
Total		66611



8.1.2 EMP Capital Cost

Table 24. Environment Management Plan Capital cost

S. No.	Particulars	Unit	Amount (Rs.)
1	Storm water drains & Groundwater rejuvenation Plan	INR Lakhs	8526
2	Desilting and Revetment of odai and Rainwater Harvesting	INR Lakhs	1910
3	Greenbelt development	INR Lakhs	100
4	Solid waste handling facility	INR Lakhs	100
Total (in Lakhs)			10636

8.1.3 Recurring Cost

Table 25. Environment Management Plan Recurring cost

S. No.	Particulars	Unit	Recurring Expenses (Lakhs)
1	Environmental Monitoring during construction and Operational Phase	INR	2
2	Desilting and Revetment of odai, Storm Water Drain and Rainwater Harvesting	INR	50
3	Greenbelt development	INR	50
4	Solid waste handling facility	INR	30
Total (in Lakhs)			132

8.2 Lyocell & Tissue Manufacturing Unit – Cost & Environmental Provisions

8.2.1 Project Cost

The tentative total project cost for the Lyocell & Tissue Manufacturing unit is **₹4,593.00 crore**, of which ₹4,398.28 crore is allocated towards plant and machinery.

8.2.2 EMP Capital Cost

The total capital cost earmarked for the implementation of the Environmental Management Plan (EMP) for the proposed project is **₹24,600 lakhs**, covering provisions for pollution control measures,



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environmental monitoring systems, greenbelt development, waste management facilities, occupational health and safety infrastructure, and other statutory environmental safeguards.

8.2.3 Recurring Cost

The recurring cost earmarked for the implementation of the Environmental Management Plan (EMP) for the proposed project is **₹450 lakhs per annum**, which includes expenses towards environmental monitoring, operation and maintenance of pollution control systems, greenbelt maintenance, waste management, occupational health and safety measures, and other ongoing environmental safeguards.

8.2.4 Occupational Health and Safety Measures & Budget Allocation

S. No.	Description	Amount (INR Lakhs)
1	Workers will be subjected to primary health check-up before they are employed to ascertain their health conditions. Thereafter, Regular Medical check-up & First Aid facility will be organized for workers to evaluate the adverse impact if any on these persons due to the proposed activity. Occupational health surveillance programmes shall be done yearly. A Medical Officer and full-fledged medical staff are recruited.	60
2	Infrastructure facilities such as sanitation, fuel, restroom, canteen etc. shall be provided to the labour force during construction as well as to the casual workers including truck drivers during the operation phase.	40
Total		100



9. CONCLUSION

The development of the proposed SIPCOT Industrial Park in Thoothukudi District, is part of Tamil Nadu's ongoing efforts to expand organized industrial infrastructure and promote regionally balanced economic development. The project is aligned with the State's objectives to facilitate large-scale industrial investment, generate employment opportunities, and strengthen export potential. Thoothukudi District, with its strategic proximity to Thoothukudi Port and established transport networks, has been identified as a suitable location for industrial project particularly for industries requiring direct access to port infrastructure. The Industrial Park will create the necessary infrastructure framework to attract manufacturing industries, facilitate industrial operations, and support ancillary services, contributing to the State's and the country's economic growth.