

## **EXECUTIVE SUMMARY**

**For**

**PROPOSED SARATHI – KURUBARAHALLI INDUSTRIAL AREA  
Over an extent of 149.33 Ha. (369 Acres)**

**At**

**Villages: Sarathi and Kurubarahalli  
Taluk: Harihar  
District: Davanagare  
State: Karnataka**

**By**



**M/s. Karnataka Industrial Areas Development Board  
4<sup>th</sup> & 5<sup>th</sup> Floor, Kanijha Bhavan, Race Course Road, Bangalore**

**Project Termed under Schedule 7(c) – Category A (Appraised under  
MoEF&CC due to applicability of General Conditions)**

### **EIA CONSULTANTS**

**HUBERT ENVIRO CARE SYSTEMS (P) LIMITED, CHENNAI**

**(NABET Certificate No & validity : NABET/EIA/1922/RA 0172 & Valid up to 13.10.2022)**

**December 2021**

## EXECUTIVE SUMMARY

### 1. Project back ground

Karnataka Industrial Area Development Board (KIADB) is a wholly owned infrastructure Agency of Government of Karnataka, set up under Karnataka Industrial Areas Development Act of 1966.

The key objectives of KIADB are:

- Promote rapid and orderly development of Industries in the State
- Assist in implementation of Policies of Government within the purview of KIAD Act, 1966.
- Facilitate in establishing infrastructure projects
- Function on “No Profit – No Loss” basis

The functions of KIADB are:

- Land Acquisition and Development of Industrial Areas in the State of Karnataka.
- Providing basic Infrastructure in the Industrial Areas
- Land Acquisition for Single Unit Complexes
- Land Acquisition for Government agencies for their schemes and Infrastructure Projects.

Till date, KIADB has formed 132 Industrial Areas spread over 40,000 acres across the State, and acquired land for nearly 473 Single Unit Complexes ensuring balanced Industrial development in all regions with well thought out infrastructure and unique features. Additionally, KIADB has established several innovative projects like Agro-Tech Parks, Apparel Parks, Food Parks, Auto Parks, Hardware Park, Bio-Tech Parks, EIPs, Sector Specific SEZs, and Growth Centres. KIADB is also the implementing agency for the ambitious Suvarna Karnataka Development (SKDC) project.

**Karnataka Industrial Areas Development Board (KIADB)** proposes to establish an Industrial Area in the name of Sarathi - Kurubarahalli Industrial Area to support medium and small-scale industries to get an easy access to ready to use base with supportive infrastructure facilities in the Industrial areas, developed and managed by KIADB. The Industrial Area will be established in an area of 149.33 Ha. (369 Acres) at Sarathi and Kurubarahalli villages, Harihar Taluk, Davanagare District, Karnataka State.

## 1.1 EIA Study

Purpose of this report is to obtain Environmental Clearance (EC) from Ministry of Environmental, Forests & Climate Change (MoEF& CC), New Delhi.

For this project KIADB proposing to establish industries like Engineering and Fabrication industries, Glue manufacturing industries, Paint blending industries, Soaps, detergents and cosmetics manufacturing industries, Textile manufacturing industries, Reprocessing of waste plastics, Secondary metallurgical processing industries less than 30,000 TPA capacity, Ceramics and refractories, Fertilizers formulation and bio fertilizers manufacturing, Electrical and electronics items assembling industries, Electrical lams, lenses manufacturing, Biomass briquettes manufacturing by sun drying.

Apart from the industries, CETP is proposed for the project, which attracts Environmental Clearance under Schedule 7(h) as per EIA notification 2006 and its amendments.

For this project, Ranabennur Blackbuck Sanctuary Core Boundary is located about 4.67 Km (W), and Ranabennur Blackbuck Sanctuary ESZ~3.6Km (W). Due to the applicability of General Conditions, the project will be appraised in MoEF&CC .Hence the project attracts, Environmental Clearance under Schedule 7(c) Category A.

**Hence the project will be appraised in MoEF&CC as Category A project.**

## 1.2 Type of industry proposed

**Table 1 Type of industry proposed for the Industrial Area**

S. No	Type of industry	Anticipated Types of Industries	Categorization of industry as per EIA notification	Categorization as per CPCB	Plot numbers	Area (Acres)	Area (ha)	% of plotted area
1	Fabricated Metal products	Manufacturing of pressure vessels	Not Applicable	Orange	121, 132, 141, 142, 151	9.95	4.03	3.7
2	Automobile components	Manufacture of parts and accessories for motor vehicles such as Engine, Gear box parts, Drive axle, steering and suspension, breaks, Seats, Tyres, rubber	Not Applicable	Orange, green, white	1, 2, 3, 4, 5, 6, 7, 8, 9	38.59	15.62	14.4

S. No	Type of industry	Anticipated Types of Industries	Categorization of industry as per EIA notification	Categorization as per CPCB	Plot numbers	Area (Acres)	Area (ha)	% of plotted area
		products etc						
3	Glue	Glue from starch (physical mixing) with Gas/ electrically operated oven/ boiler	Nil	Green	133, 134, 135, 136, 137, 138, 139, 140, 143, 144, 145, 146, 147, 148, 149, 150	4	1.62	1.5
4	Paints	Blending and mixing	Nil	Orange	10, 11, 12, 13, 14, 15, 16	35	14.16	13.0
5		Mixing and blending (Ball mill)	Nil	Orange	17, 18, 19, 20, 21, 22, 23	33	13.35	12.3
6	Manufacturing of tooth paste, tooth powder, cosmetics	Manufacturing of tooth paste, tooth powder, cosmetics	Nil	Orange	KSSIDC Area	10	4.05	3.7
7	Soaps & detergents	Synthetic detergents and soaps manufacturing	Nil	Orange	KSSIDC Area	10	3.72	3.4
8		Handmade soaps without boiler	Nil	Green	KSSIDC Area	5	2.02	1.9
9		Detergents Formulation	Nil	Green	KSSIDC Area	5	2.02	1.9
10	Silk screen printing/ Textile printing	Silk screen printing/ Textile printing	Nil	Orange	KSSIDC Area	10	4.05	3.7
11	Flakes from rejected PET bottles	Flakes from rejected PET bottles	Nil	Orange	KSSIDC Area	5	2.02	1.9

S. No	Type of industry	Anticipated Types of Industries	Categorization of industry as per EIA notification	Categorization as per CPCB	Plot numbers	Area (Acres)	Area (ha)	% of plotted area
12	Reprocessing of waste plastics including PVC	Reprocessing of waste plastics including PVC	Nil	Orange	KSSIDC Area	5	2.02	1.9
13	Secondary Metallurgical processing industries < 30,000 TPA	Foundries (<5MT/Hr capacity and coal consumption <500 Kg/hr)	Nil	Orange	24-35	12	4.86	4.5
14	Secondary Metallurgical processing industries<30,000 TPA	Aluminium and copper extraction from scrap using oil fired furnace (dry process)	Nil	Orange	36-47	12	4.86	4.5
15	Secondary Metallurgical processing industries <30,000 TPA	Ferrous and non ferrous metal extraction using furnaces through melting/ refining/ reprocessing etc	Nil	Orange	48, 82, 83	6	2.43	2.2
16	Secondary Metallurgical processing industries <30,000 TPA	Forging of ferrous and non ferrous metals (oil and gas fired furnaces)	Nil	Orange	49-65	8.5	3.44	3.2
17	Secondary Metallurgical processing industries <30,000 TPA	Rolling mill	Nil	Orange	66-81	8.5	3.44	3.2
18	Secondary Metallurgical processing industries < 30,000 TPA	Steel and steel products using furnaces	Nil	Orange	84-91	4	1.62	1.5
19	Ceramics & Refractories	Ceramics & Refractories	Nil	Orange	92-96	10.32	4.18	3.8
20	Fertilizers	Granulation,	Nil	Orange	122-131	2.5	1.01	0.9

S. No	Type of industry	Anticipated Types of Industries	Categorization of industry as per EIA notification	Categorization as per CPCB	Plot numbers	Area (Acres)	Area (ha)	% of plotted area
		formulation and blending only						
21		Bio fertilizers and bio pesticides without using inorganic chemicals	Nil	White	97-120	6	2.43	2.2
22	Electric lamps and CFL manufacturing by assembling only	Electric lamps and CFL manufacturing by assembling only	Nil	White	92-96	10.32	4.18	3.8
23	Electrical & electronics Assembling	Electrical & electronics Assembling	Nil	White	KSSIDC Area	10	2.02	1.9
24	Manufacturing of optical lenses (using electrical furnaces)	Manufacturing of optical lenses (using electrical furnaces)	Nil	Green	KSSIDC Area	8.65	3.5	3.2
26	Biomass briquettes	Biomass briquettes (sun drying) without using toxic hazardous waste	Nil	Green	KSSIDC Area	10	2.02	1.9
27	CETP	CETP is proposed for treatment of effluent generated from the industries	Schedule 7(h)	Red	Proposed as a common facility for the industries within the Industrial area			
<b>Total</b>						<b>268.52</b>	<b>108.67</b>	<b>100</b>

## 2. Project location

Karnataka Industrial Areas Development Board (KIADB) proposes to establish an Industrial Area Development in an area of 149.33 Ha. (369 Acres) at Sarathi and Kurubarahalli villages, Harihar Taluk, Davanagare District, Karnataka State.

## 2.1 Site Salient features

Table 2 Salient features of the project site and surrounding features

S. No	Features	Description																																
1	Name of the Project	"Proposed Sarathi Kurubarahalli Industrial Area over an extent of 149.33 Ha".																																
2	Developer	Karnataka Industrial Area s Development Board																																
3	Total Land Area of the Project Site	149.33 Ha (369 acres).																																
4	Geographical Location of the Project site	Villages: Sarathi &Kurubarahalli Taluk : Harihar District: Davanagare, State: Karnataka																																
5	Elevation	≈ 531 to 540 mabove MSL																																
6	Nearest Village	Karahalli - adjacent to site (S) Population -902 nos. (as per 2011 census) Kurubarahalli - adjacent to site (E) Population -812 nos. (as per 2011 census)																																
7	Nearest Railway station	Teligi railway station ~8.86 km (SSW)																																
8	Nearest Highway	SH-25 (Shivamogga – Hoskote) ( adjacent to site E)																																
9	Nearest Airport	Jindal VijayanagaraAirport ~105.65km (NE) Mangaluru International Airport -206.92km (SSW)																																
10	Nearest major Town	Harihar ~5.94km (SSW)																																
11	Nearest city	Davanagare~12.6 km (SSE)																																
12	Nearest Port	Karwar Port ~185.74 km towards W																																
13	Reserved Forest/Protected Forest/Notified Wildlife Sanctuary/Ecologically sensitive areas	<table border="1"> <thead> <tr> <th>Sl.No</th> <th>Reserved Forests</th> <th>≈Distance</th> <th>Direction</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Aligilavada RF</td> <td>3.57</td> <td>NNE</td> </tr> <tr> <td>2.</td> <td>Ranebennur Blackbuck Sancturay ESZ</td> <td>3.6</td> <td>W</td> </tr> <tr> <td>3.</td> <td>Ranebennur Blackbuck Sancturay Core /Ranibennur RF</td> <td>4.67</td> <td>W</td> </tr> <tr> <td>4.</td> <td>Jittinakatti South RF</td> <td>10.38</td> <td>ENE</td> </tr> <tr> <td>5.</td> <td>Nilagunda RF</td> <td>10.52</td> <td>NNE</td> </tr> <tr> <td>6.</td> <td>Medleji RF</td> <td>13.41</td> <td>WNW</td> </tr> <tr> <td>7.</td> <td>Herada Block B RF</td> <td>14.95</td> <td>NNW</td> </tr> </tbody> </table>	Sl.No	Reserved Forests	≈Distance	Direction	1.	Aligilavada RF	3.57	NNE	2.	Ranebennur Blackbuck Sancturay ESZ	3.6	W	3.	Ranebennur Blackbuck Sancturay Core /Ranibennur RF	4.67	W	4.	Jittinakatti South RF	10.38	ENE	5.	Nilagunda RF	10.52	NNE	6.	Medleji RF	13.41	WNW	7.	Herada Block B RF	14.95	NNW
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S. No	Features	Description			
		8.	Uchchangidurga RF	14.97	E
14	Water Bodies	<b>Sl.No</b>	<b>Water Bodies</b>	<b>≈Distance</b>	<b>Direction</b>
		1.	Canal(Distributary)	Inside Site	
		2.	Canal near Dittur(Distributary)	0.98km	WSW
		3.	Duggavatti Halla	Adjacent to Site	N
		4.	Marala Halla	Adjacent to Site	S
		5.	Tullagabhadra River	2.42km	WSW
		6.	Kondajji Lake	5.11km	ESE
		7.	Harpanahalli Main Distributary	6.53km	SSE
		8.	Budala/Bettur Halla	6.53km	SSE
		9.	Aligilavada Kere	9.14km	NNE
		10.	Syagali Halla	10.29km	SSW
		11.	Hallikere Lake	11.41km	E
		12.	Kunchuru Kere	12.30km	N
		13.	Medleri Kere	12.76km	WNW
15	National Parks /Wild Life Sanctuary	<b>Sanctuary</b>		<b>≈Distance</b>	<b>Direction</b>
		Ranebennur Blackbuck Sancturay ESZ		3.6km	W
		Ranebennur Blackbuck Sancturay Core		4.67 Km	W

## 2.2 Magnitude of operation

The total Area of the proposed project site is 149.33 Hectares (369 Acres). Of this, 31.83 Ha (78.65 Acres) has been allotted to KSSIDC and remaining 117.5 Ha (290.35 Acres) will be developed by KIADB. Of the total 369 Acres, for 260.09 Acres GO is available and 108.91 Acres have been acquired by KIADB.

The major development would be Industrial Area with plots based on Size of Industry planned to be developed. KIADB proposes 151 number of Industrial Plots to be developed in the proposed industrial area. Apart from industrial plots, common amenities like water supply system, storm water drainage system, Administrative building, Municipal Solid waste management area, parking area, CETP, CSTP, green belt buffer, Commercial area are proposed for the project. The Area break up for the proposed Industrial Area is given in **Table 3.**



**Table 3 Area break up for the project**

S. No	Type of Area	Area in Acres	Area in Hectares	Area in %
1	Industrial	189.87	76.84	65.39
2	Commercial	8.02	3.25	2.77
3	Roads	31.33	12.68	10.80
4	Vehicle Parking	14.73	5.96	5.08
5	Parks and Open area (Will be developed as green belt)	15.12	6.12	5.20
6	Buffer (Will be developed as green belt)	14.25	5.77	4.91
7	Canal	2.32	0.94	0.80
8	Utilities	8.73	3.53	3.00
9	Amenities	5.98	2.41	2.05
	<b>Total</b>	<b>290.35</b>	<b>117.50</b>	<b>100</b>
	Proposed for KSSIDC (Bulk)	50	20.24	-
	Existing KSSIDC	28.65	11.59	-
	<b>Total Area Acquired</b>	<b>369.00</b>	<b>149.33</b>	-

## **2.3 Water requirement**

### **2.3.1 Construction Phase**

The water requirement for the proposed project is 65 KLD including domestic requirements for 100 persons and dustsuppression duringtheconstructionphasebasedonconstructionactivity requirement. Water requirement during construction Phase will be sourced from private water suppliers.

### **2.3.2 Operation Phase**

The Total water requirement is estimated to be 4400 KLD and fresh water requirement is 2350 KLD. Fresh water requirement during the operation phase will be met from Tungabadhra River which is about 2.42 km towards WSW of the project site. 2050 KLD will be met from recycling of treated wastewater.

Sewage generation of 243 KLD and will be treated in common STP of 300 KLD and treated sewage of 243 KLD will be recycled for green belt development.

## **2.4 Power and fuel requirement**

Power requirement for the Industrial Park is estimated to be 20MVA. Apart from this 2x250 KVA DG sets are proposed as power back up for common facilities. Individual industries will have their own power back up in case of power failure.

## **2.5 Solid waste generation and management**

### **2.5.1 Municipal solid waste generation and management**

During operational phase, 2700 Kg/day of Municipal Solid Waste will be generated. The wastes will be segregated by individual industries and organic wastes will be sent to common MSW processing area. This will be composted at site in area earmarked for municipal waste processing. Compost will be used as manure for green belt development. Inorganic wastes will be sold to recyclers. Approximately 1.0 Acre will be allotted for MSW processing in area allotted for common Amenities.

### **2.5.2 Construction Waste Management**

During construction phase approximately 50 kg/day of Municipal Solid Waste will be generated. This will be collected and segregated at site. Organic wastes will be composted at site and compost will be used as manure for green belt development during construction phase. Inorganic waste will be sold to recyclers.

### **2.5.3 Hazardous waste generation and management**

Individual industries will have their own storage area for storing Hazardous waste, within their premises and the hazardous wastes will be sent by individual industries to nearby authorised recyclers/ vendors/ TSDF for recycling /disposal as per the Hazardous and other Wastes (Management and transboundary movement) rules 2016.

## **2.6 Manpower requirement**

During construction phase, man power requirement will be 100 nos. and during operation phase, the man power requirement will be 6000nos.

## 2.7 Project Cost

The proposed Industrial Area Development will be undertaken in an area of 149.33 Ha with an estimated project cost Rs.53.22 crores (approx.) for Land, Infrastructure Development and Environmental Management,

## 3. Environmental Baseline Data

Baseline data was collected from January 2021 to March 2021

### 3.1 Micrometeorology

S. No	Parameter	Observation
1.	Temperature	Minimum Temperature: 12°C Maximum Temperature: 27.5°C Avg Temperature: 27.5°C
2.	Average Relative Humidity	43.91%
3.	Average Wind Speed	2.37 m/s
4.	Predominant Wind Direction during monitoring period	East to West

### 3.2 Ambient Air Quality

The Ambient Air Quality has been monitored at 8 locations for 12 parameters as per CPCB guidelines within the study area. The average baseline levels for Study period (January 2021 - March 2021) is as follows :

- PM<sub>10</sub> ranged from 48.3 to 55.24 µg/m<sup>3</sup>,
- PM<sub>2.5</sub> ranged from 20.3 to 25.13 µg/m<sup>3</sup>,
- SO<sub>2</sub> ranged from 8.74 to 14.28 µg/m<sup>3</sup>,
- NO<sub>2</sub> ranged from 19.58 to 25.36 µg/m<sup>3</sup>,
- O<sub>3</sub> ranged from 10.3 to 12.53 µg/m<sup>3</sup>,
- NH<sub>3</sub> ranged from 5.49 to 8.02 µg/m<sup>3</sup>

All the parameters are well within the National Ambient Air Quality Standards for Industrial, Commercial and Residential areas at all monitoring locations during the study period from January 2021 to March 2021.

### **3.3 Ambient noise Quality**

Noise levels were monitored at 8 locations within the study area. The observations of day equivalent and night equivalent noise levels at all locations for the study period January 2021 to March 2021 are given below.

- In Industrial area day time noise levels was about 52.3 dB(A) and 41.5 dB(A) during night time, which is within prescribed limit by CPCB for Industrial area (75 dB(A) Day time & 70 dB(A) Night time).
- In residential areas day time noise levels varied from 48.2 dB(A) to 52.8 dB(A) and night time noise levels varied from 39.5 dB(A) to 43.7dB(A) across the sampling stations. The field observations during the study period indicate that the ambient noise levels are within the prescribed limit by CPCB for residential areas (55 dB(A) Day time & 45 dB(A) Night time).

### **3.4 Surface water Quality**

Surface water quality was monitored at 8 locations during monitoring period January 2021 to March 2021. The results are discussed below:

- pH in the collected surface water samples varies between 6.82 to 7.89 where all the samples are within the limit of IS 2296:1992
- The Total Dissolved Solids (TDS) value of collected surface water sample ranges from 74 mg/l to 940 mg/l.
- The Total hardness value of the collected surface water sample ranges between 44mg/l to 360mg/l.
- BOD value of the collected surface water sample ranges from 2 mg/l to 6 mg/l.
- COD value of collected surface water varies from 16 mg/l to 44 mg/l.
- The concentration of heavy metals like As, Cd, Cr, Pb, Mn, Hg, Ni and Se are within the limits of IS 2296:1992.

### **3.5 Ground water Quality**

Ground water quality was monitored at 8 locations during monitoring period (January 2021 – March 2021). Summary of analytical results of ground water collected from the study area are presented below:

- The ground water results of the study area indicate that the pH range varies between 7.18 and 8.01. It is observed that the pH range is within the permissible limit of IS 10500:2012.
- The Total Dissolved Solids range of the collected ground water sample is varied between 224 mg/l – 1978 mg/l. All the samples are within the permissible limit of IS 10500: 2012.
- The acceptable limit of the chloride content is 250mg/l and permissible limit is 1000 mg/l. The chloride content in the collected ground water samples in the study area ranges between 17.32 mg/l – 776.96 mg/l. It is observed that all the samples are within the permissible limit of IS 10500:2012.
- The acceptable limit of the sulphate content is 200mg/l and permissible limit is 400mg/l. the sulphate content in the collected ground water samples in the study area is varied between 19.09 mg/l – 148.99 mg/l. It is observed that all the samples are meeting the acceptable limit of the IS 10500: 2012.
- The Total hardness ranges is between 175 mg/l – 891 mg/l for ground water samples. It is observed that all the samples are within the permissible limit of the IS 10500: 2012.
- It is observed that the collected ground water sample within the study area were meeting the drinking water standards IS 10500:2012.

### **3.6 Soil quality**

Summary of analytical results for the soil samples collected at 8 locations in the study area during study period are as follows:

- pH of the soil samples ranged from 7.34 to 8.75 Indicating that the soils are slightly acidic to moderately alkaline in nature.
- Conductivity of the soil samples ranged from 156.5 to 808  $\mu\text{S}/\text{cm}$
- Nitrogen content in the collected soil samples ranged from 69.71 mg/kg to 460.35mg/kg

- Phosphorous content ranged from 2.46 mg/kg to 13.57mg/kg.
- Potassium content ranges from 78.25 mg/kg to 404.0 mg/kg.

### 3.7 Ecology

The field investigation and satellite imagery data show, that the study area is a mixture of agricultural, wasteland and get irrigated by the tanks and tube wells. The Evergreen is observed within the study area. The experimental finding of the pre monsoon season shows the dominance of Scrubs like *Annona squamosa* followed by *Acacia leucopholea* trees, *Pterocarpus marsupium*, are found within the study area.

Domestic – The domestic animals are mainly mammals like cow, goat, cat, dog etc are found common in the study area. Wild animals are seen in Ranebennur Blackbuck Sanctuary with native and non native species. Other than these, some reptiles and amphibians can also be seen with a number of bird species.

### 3.8 Socioeconomic environment

Social indicators of the Davangere district are given in **Table 4** below.

**Table 4** Social Indicators of Davangere District

S.No	Social Indicators	Davanagere District
1	Decadal variation %	8.63
2	Urban population %	32.33
3	Sex ratio	972
4	0-6 age group %	11.19
5	Population density (Persons per square Km)	328
6	Scheduled caste population %	20.18
7	Scheduled tribe population %	11.98
8	Literacy rate %	75.74
9	Work Participation rate %	44.99
10	Main Workers %	80.56
11	Marginal Workers %	19.44
12	Cultivators %	32.20
13	Agricultural labourers %	46.01
14	Workers in household industries %	2.17
15	Other workers %	19.62

#### 4. Impact on Air environment due to proposed industries

Air quality modelling was done using AERMOD software to identify the ground level concentration due to operation of proposed industries. The details on the type of fuel proposed, emissions are taken into consideration for estimation of ground level concentrations (GLCs). Based on the modelling done, the total ground level concentrations are given in **Table -5**.

**Table 5 Total concentration from proposed stacks (controlled emissions)**

Pollutant	Max. Base line Conc. ( $\mu\text{g}/\text{m}^3$ )	Estimated Incremental Conc. ( $\mu\text{g}/\text{m}^3$ )	Total Conc. ( $\mu\text{g}/\text{m}^3$ )	NAAQ standard ( $\mu\text{g}/\text{m}^3$ )	% increase
PM10	65.65	7	72.65	100	10.6
SO <sub>2</sub>	16.97	51	67.97	80	300.5
NO <sub>x</sub>	30.13	24	54.13	80	79.7
CO (1 hour average)	<0.05	7	7	4000	

From the above table, it is evident that due to the emissions from the proposed project, the total Concentrations for PM, SO<sub>2</sub> and NO<sub>x</sub>& CO are well within the NAAQ Standards.

For Modelling purpose, Anthracite Coal was used as fuel for both boilers and Furnaces to identify the worst case scenario.

It is recommended to use Natural Gas/ Bio briquettes as fuel for boilers and propose electric furnaces to further reduce the SO<sub>2</sub> and NO<sub>x</sub> emissions from the project.

#### 5. Alternate site consideration

No Alternative sites were examined for the project. The area has been already finalized by KIADB and land has been acquired for the project. The site selected has good road and railway connectivity which is the prime added advantage for the business & socio-economic development and improvement for the district.

#### 6. Environmental Monitoring Programme

A monitoring schedule with respect to Ambient Air Quality, Water Quality, Soil and Noise as per CPCB/MoEF&CC will be adopted during construction phase and after establishment of the project. Budget for environmental monitoring is allocated.

## **7. Rehabilitation and Resettlement**

The project site is free from habitation. The land required for the proposed project has been acquired by KIADB. Hence, there is no Rehabilitation and Resettlement for this project.

## **8. Environmental Management Plan**

### **8.1 Air Environment**

- Individual industries will be mandated to have Air Pollution control measures as per CPCB /KSPCB guidelines.
- Industries proposing boilers will be mandated to provide cyclone separator followed by bag filter followed by proper stack height as air pollution control measures.
- Industries proposing furnaces will be mandated to provide Spark arrestor and bag filter systems
- Adequate green belt will be developed to mitigate the pollution arising due to proposed project.
- Ambient air Quality monitoring will be carried out on regular basis and if the values are exceeding the NAAQ standards, proper mitigation measures will be mandated for individual industries.

### **8.2 Water Environment**

- During operation phase, sewage will be treated in CSTP of 300 KLD and effluent will be treated in CETP of 2000 KLD to treat the sewage and effluent respectively.
- Zero Liquid Discharge system will be proposed by KIADB.
- Treated sewage will be used for green belt development and treated effluent will be recycled for green belt, utilities and process within the industrial area.

### **8.3 Noise Environment**



- All the noise generating equipments will be designed / operated to ensure that noise level does not exceed 75-70 dB (A) at plant boundary as per the requirement of Central / State Pollution Control Board.
- Noise generating sources will be maintained properly to minimize noise generated by them.
- Wherever feasible, acoustic enclosures will be provided for compressors, DG sets.
- Compliance with noise control norms will be given due importance at the time of purchase of various equipments and it will be mentioned while placing the purchase orders and guarantee for noise standards will be sought from suppliers.
- Green belt will act as a noise barrier.
- Training will be imparted to personnel to generate awareness about effects of noise and importance of using PPEs.

#### **8.4 Land Environment**

- Air emissions will be controlled by appropriate air pollution control Measures by individual industries. Therefore, deposition of air pollutants in and around the premises and surrounding area is negligible.
- Organic solid wastes will becomposted at site and used for green belt development. Inorganic solid wastes will be sold to recycling facilities as per the authorization from KSPCB and there is no internal disposal facility availability within the site. All the hazardous wastes generated from the project will be properly stored and disposed as per the Hazardous and Other Wastes (Management and Transboundary Movement) Rules 2016.Hence there may not be any impact to the land environment.
- Zero Liquid Discharge (ZLD) system is proposed. Hence the treated effluent and treated sewage will be reused, which will minimise the impact on the land environment.

#### **8.5 Ecology**

Ranebennur Blackbuck Sanctuary ESZ is located at a distance of  $\approx 3.6$  km (W) of project site and Ranebennur Blackbuck Sanctuary Core is located at a distance of  $\approx$  about 4.67 km (W) of site.

Following measures are proposed for the project to preserve ecology of the region.

- Water environment - The water will be sourced from Tungabadhra river through pipe lines. There is no extraction of ground water and the local community will not be affected.
- Effluent will be treated in CETP. Treated effluent will be utilized for process and utility. Zero liquid discharge (ZLD) will be implemented.
- Sewage will be treated in CSTP. The treated sewage will be used for Green belt development in KIADB and proposed industrial area
- Storm water will be managed and controlled within the premises and utilized for rain water harvesting. The excess flow will be diverted to nearest lake / pond.
- Air Pollution: Individual industries will be mandated to provide Air Pollution control measures for dispersion of flue gases
- Solid and Hazardous waste: Individual industries will segregate their solid waste. Organic waste will be composted in common municipal waste processing area and converted into manure. Inorganic waste will be disposed to KSPCB authorized recyclers. Hazardous waste will be disposed to KSPCB authorized TSDF/recyclers as applicable by individual industries.
- Noise: 33% green belt is proposed for the Industrial Area. Individual industries will provide acoustic enclosures for their D.G.sets.
- Environmental Monitoring: KIADB will be conducting periodical monitoring of AAQ, noise, water, soil and traffic, to ensure the parameters are within the prescribed limits.

In light of the above there will be marginal impact to Ranebennur Blackbuck Sanctuary due to the proposed Industrial Area.

Application has been submitted to NBWL for NOC.

## **8.6 Green belt development**

The total land area is 149.33 Ha (369 Acres). The Greenbelt area proposed is 49.28 Ha (33 % of total land area). To achieve 33% of green belt, KIADB is proposing 11.89 Ha (10.11 % of land area) and individual industries will be mandated to provide 37.39 Ha (25 % of land area) of green belt area.

A capital cost of INR 12 Lakhs shall be earmarked for greenbelt development and INR of 3.0 Lakhs/annum will be allotted for recurring expenses towards green belt development and maintenance.

## 8.7 Budgetary provisions for EMP

Sl.No.	Activity	Capital cost (Lakhs)	Recurring Cost (Lakhs)
1	CSTP	80	20
2	CETP	450	50
3	Water supply system, conveyance for water supply, sewage and effluent	250	25
4	Strom water drains	50	5
5	Rain water harvesting pits	50	0.75
5	Greenbelt development	8	2
6	Municipal Solid Waste management	20	5
7	Occupation health Centre	10	15
8	Environmental Monitoring	0	3.5
<b>Total</b>		<b>918</b>	<b>126.25</b>

## 8.8 Proposed CER activities

Around INR 106.4 Lakhs will be spending for the CER Activity. The activity proposed is only tentative. Based on the issues raised during Public Hearing the activities will be finalised.

### CER Activities proposed

S. No	Details	Locations	Project Description	Amount in Lakhs				
				2021-2022	2022-2023	2023-2024	2024-2025	2025-2026
1	Setting up Infrastructure in Nearby Schools	Sarathi & Kurubarahalli Villages	Providing furniture, computers, electricity facility to Govt schools	8	8	8	8	8
2	Sanitation & public health in nearby Schools	Sarathi & Kurubarahalli Villages	Provide toilet facilities, dust bins to nearby Govt. schools	9	9	9	9	9

S. No	Details	Locations	Project Description	Amount in Lakhs				
				2021-2022	2022-2023	2023-2024	2024-2025	2025-2026
3	Maintenance of water bodies near site	Near project site	Maintenance of Duggavatti Halla & Karala Halla	4.28	4.28	4.28	4.28	4.28
<b>Sub Total</b>				<b>21.28</b>	<b>21.28</b>	<b>21.28</b>	<b>21.28</b>	<b>21.28</b>
<b>Total</b>				<b>106.4</b>				

### 9. Project Benefits

- There will be an opportunity for job at different cadres and work force.
- This project will have positive impact on the socio economic status of the surrounding human environment and increased inflow of revenue to the Karnataka Government.
- Proposed Industrial Area will help in revenue generation for the State as well as to the Country.