

EXECUTIVE SUMMARY OF ENVIRONMENTAL IMPACT ASSESSMENT REPORT

FOR

Manufacturing of Phenol Formaldehyde Resin

AT

Plot No. 514, 515, 474/1, 474/2, 475/2,
Village: Sikara- Bhachau,
Ta. Bhachau, Dist.: Kutch.

Project Proponent:



EURO DÉCOR Pvt. Ltd.

Prepared by:



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**Chapter
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EXECUTIVE SUMMARY

0.1 PROJECT DESCRIPTION

0.1.1 THE PROJECT

EURO group is involved in manufacturing of various building material products i.e. Pre-laminated particle board, Pre-laminated MDF board and Decorative Laminates, Decorative Veneers, door skin, marquetry and border patties, Marine Plywood (IS 303 & IS 710 BWR & BWP Grade respectively), Commercial Plywood IS 303, Block Boards IS 1659, Densified Plywood IS 4990 and Flush Doors IS 2202, in the name of Euro Décor Pvt. Ltd.

M/s. Euro Décor Pvt. Ltd. was earlier known as M/s. Shubhnen Decor Pvt. Ltd. The board of directors changed the name of the Company to Euro Décor Private Limited in order to reflect that this Company belongs to the Euro group of Companies. The current unit, viz. M/s. Euro Décor Pvt. Ltd. (Unit-3) is in existence since 2008 and engaged in manufacturing of veneers, decorative boards etc.

Earlier the company was outsourcing the resin - required for adhesive for veneer manufacturing. They now intend to produce the same in-house. Moreover, the increasing demand and attractive prospects have compelled the unit to initiate the Veneer dyeing process for decorative veneer. The capital cost of the resin project is Rs. 48.95 Lakhs

Table A: Product Portfolio

Sr. No.	Name of Product, units	Existing Capacity	Proposed Capacity	Total Capacity
Existing products/ processes				
1	Veneer, MT/M	750	---	750
2	Plywood, MT/M	1620	---	1620

Sr. No.	Name of Product, units	Existing Capacity	Proposed Capacity	Total Capacity
3	Block board, MT/M	460	---	460
4	Flush door, MT/M	150	---	150
5	Decorative Veneer, MT/M	250	---	250
Proposed products/ processes				
6	Veneer Dyeing, m ² /M	---	75000	75000
7	PF Resin, MT/M	---	240	240

The veneer dyeing process does not require prior environmental clearance as the process/ type of process is not covered under the provisions of EIA-notification-2006 (as amended). However, as per the EIA notification-2006, the company needs to get the *Environmental Clearance* for the PF Resin project. The proposed resin project falls under 'Item no. 5(f) i.e. Synthetic Organic Chemicals and since it is located outside a notified industrial estate, it is a *Category A* project. The project was considered during the 94th meeting of the *Expert Appraisal Committee* held during 12th -14th May, 2009 and the Terms of References were awarded for carrying out the EIA study. The present EIA study has been conducted by Precitech Laboratories, as per the TORs awarded during the scoping stage of the prior Environmental Clearance process, required for the project.

0.1.2 PROJECT LOCATION

The proposed Resin project is the requirement of the existing manufacturing operations and hence it will be a part of the existing set up. The new plant will be set up within the premises of the existing unit for ease of operation.

The company is located at Plot No. 514, 515, 474/1, 474/2, 475/2, Village: Sikra-Bhachau, Ta. Bhachau, Dist.: Kutch. The site is approx. 3.25kms (W) away from village Sikra and 4.5 kms (SSE) away from town Bhachau. The Bhachau-Bhuj road passes at approximately 0.5kms away from the project site. Bhachau railway station is the nearest rail heads available on western railway lines. The tentative

geographical position (latitude and longitudinal) of the site boundary of the existing unit are given under as:

- North Corner : Latitude 23°20'27.24"N, Longitude 70°19'56.01"E
- West Corner : Latitude 23°20'17.74"N, Longitude 70°19'46.48"E
- South Corner : Latitude 23°20'11.33"N, Longitude 70°19'56.51"E
- East Corner : Latitude 23°20'15.54"N , Longitude 70°20'7.12"E

0.1.3 PROCESS

Manufacturing processes for proposed productions are described below in brief

Veneer Dyeing

- First Veneer is sorted after receiving and stacked lengthwise. Preparation of veneer undertaken and dipped in water at swimming pool, then the Veneers are set on the coiler and passed through auto clave for dyeing and again it is set on the coiler for rewinding.
- After rewinding the duly dyed veneers are passed through dryer to reduce the moisture. The bucking of veneer is controlled through Hot Press.
- Then materials are made packed for dispatch.

Phenol Formaldehyde Resin

- The process involves two stage polymerization reaction between Phenol about and Formaldehyde
- Step-1 requires external heating for initiation of the reaction to proceed in presence of oxalic acid, till the exothermic reaction becomes strong enough, to form Novolac resin through condensation reaction. It is then refluxed at a set temperature for required time. The mass is then cooled before the second step is initiated.
- Step-2 involves controlled addition of sodium hydroxide (33%) for increasing the pH of the mass and the temperature is to be controlled. Addition of

Formaldehyde results in increase in temperature and second condensation reaction to form Resole resin. During the exothermic reaction, the temperature is controlled and viscosity checked continuously, till the desired viscosity of the resin is achieved.

- The resin becomes significantly soluble in water and is to be further cooled by circulating cold water.
- Adding of extenders/ additives is to be done to make desired glue for utilization in Plywood making process.

0.1.4 RESOURCES

Table B: Resource Requirement (after proposed project)

Resource	Existing	Proposed Additional	Source
Land	<ul style="list-style-type: none"> ▪ Existing total land area - 1,57,075.32 m² 	<ul style="list-style-type: none"> ▪ No additional land requirement. 	<ul style="list-style-type: none"> ▪ The proposed project will be installed in the existing premises itself and no additional land will be required.
Building	<ul style="list-style-type: none"> ▪ Total built-up area - 23,485.33 m² 	<ul style="list-style-type: none"> ▪ No major construction except a base platform for Resin Plant: Rest all to be MS structure 	<ul style="list-style-type: none"> ▪ Construction materials from Local traders and work through local contractors & labours
Raw-materials	<u>RM for Existing Veneer plant</u> <ul style="list-style-type: none"> ▪ Round Timber 7500 MT/M ▪ Resin /Glue- 200 MT/M 	<u>RM for Resin plant</u> <ul style="list-style-type: none"> ▪ Phenol -73.00 MT/M ▪ Formaldehyde -122.00 MT/M ▪ Sodium Hydroxide -11.00 MT/M ▪ Oxalic Acid-1.00 MT/M <u>RM for Dyeing plant</u> <ul style="list-style-type: none"> ▪ Veneer - 75000.00 m²/ M ▪ Verolant NBO-1.60 MT/M ▪ Hydrogen Peroxide-15.00 MT/M ▪ Ruco stab OKE-5.50 MT/M ▪ Acetic Acid-0.55 MT/M ▪ Ruco Blanc AMA-0.20 MT/M ▪ Colours/ Dyes:0.3 MT/M 	<ul style="list-style-type: none"> ▪ Wood is imported. ▪ Some of the raw-materials for dyeing process to be imported. ▪ Rest of the chemicals for resin manufacturing to be purchased from local market.
Water	<ul style="list-style-type: none"> ▪ 38 KL/D 	<ul style="list-style-type: none"> ▪ 30.5 KL/D 	<ul style="list-style-type: none"> ▪ Existing permission from GWIL for 20KLD + applied for additional 100 KLD. ▪ Planning also for utilization from rainwater collection pond of Approx. Capacity - 98500 KL, located just behind the adjacent unit.
Power	<ul style="list-style-type: none"> ▪ 315 kVA 	<ul style="list-style-type: none"> ▪ 55 kVA (Resin) + 180 kVA (Dyeing) 	<ul style="list-style-type: none"> ▪ Existing: Permitted power demand of 550 kVA from PGVCL & 500kVA DG Set as stand-by arrangement ▪ No additional requirement
Fuel	<ul style="list-style-type: none"> ▪ Wood waste – 12 TPD ▪ Diesel – 60 LPH 	<ul style="list-style-type: none"> ▪ Wood waste – 6 TPD ▪ Diesel – Nil 	<ul style="list-style-type: none"> ▪ Wood waste - captive from veneer and board making process

Resource	Existing	Proposed Additional	Source
			<ul style="list-style-type: none"> ▪ Diesel from Local market
Man-power	<ul style="list-style-type: none"> ▪ Existing - 400 Nos. 	<ul style="list-style-type: none"> ▪ Proposed additional – 35 Nos. 	<ul style="list-style-type: none"> ▪ Preference to the local people

0.2 POLLUTION POTENTIAL

The sources of pollution from the proposed project are illustrated as under with the respective planned control measures.

Table: C - Pollution Potential & Mitigation Measures

Pollution parameter	Potential	Mitigation
Wastewater	<p><u>Generation Existing</u></p> <ul style="list-style-type: none"> ▪ Domestic: @6.5 KL/D ▪ Industrial: Nil <p><u>Generation Proposed Additional</u></p> <ul style="list-style-type: none"> ▪ Domestic: @1.0KL/D ▪ Industrial: 22.6 KL/D 	<ul style="list-style-type: none"> • 22.5 KLD effluent from the proposed dyeing unit will be treated in ETP and re-used for irrigation of greenbelt within premises. • 0.1 KLD Effluent from the proposed resin plant –washing will be recycled directly in next batch of manufacturing process. • Domestic sewage from existing & proposed operation to be disposed off through septic tank & soak pit. ▪ The RO will be provided for proposed dyeing unit and RO reject will be diluted with treated effluent from ETP as well as 25.5 KLD freshwater, for use as irrigation water. ▪ During monsoons, the ETP & RO reject to be diverted to one of the log ponds, which is specially constructed for use as storage pond as well.
Air Emissions	<p>Emission concentration from existing & proposed utilities</p> <p><u>From Existing Thermic Fluid Heaters (2 x 20 Lakhs Kcal/hr.)</u></p> <ul style="list-style-type: none"> ▪ PM: <150 mg/Nm³ ▪ SO₂:< 100 ppm ▪ NO_x:< 50 ppm <p><u>From Existing DG Set (500 kVA)</u></p> <ul style="list-style-type: none"> ▪ PM: <150 mg/Nm³ ▪ SO₂:< 100 ppm ▪ NO_x:< 50 ppm <p><u>From Proposed Boiler (4 MT/Hr)</u></p> <ul style="list-style-type: none"> ▪ PM: <150 mg/Nm³ ▪ SO₂:< 100 ppm ▪ NO_x:< 50 ppm 	<ul style="list-style-type: none"> ▪ The existing as well as proposed boiler will be in operation. The DG set is used only in case of failure of power supply as backup power utility. ▪ Bio-fuel- Wood waste is used for existing utility (TFH) and similarly wood waste will be used for proposed Boiler to reduce the emission level of pollutants. ▪ Stacks of Adequate height & internal diameter with proper sampling port are provided for existing sources (Thermic Fluid heaters & DG set) & will be provided for proposed boiler. ▪ Multi-cyclone Dust Collector is provided with existing thermic fluid heaters and will be provided to proposed Wood waste fired boiler as APCD for control of particulates emission. ▪ Regular monitoring is done and similar practice will be continued after proposed project.

Pollution parameter	Potential	Mitigation
Hazardous & solid waste	<u>Generation- Existing</u> <ul style="list-style-type: none"> ▪ Used Oil-50 Lit./Yr ▪ Ash-190 kg/day ▪ Wood waste- 12 TPD <u>Generation- Proposed Additional</u> <ul style="list-style-type: none"> ▪ ETP Waste-60 T/M ▪ Discarded bags-759 Nos./M ▪ Ash-95 kg/day ▪ Wood waste- 6 TPD 	<ul style="list-style-type: none"> ▪ The Hazardous wastes will be handled, stored & transported as per CPCB/MoEF Guidelines ▪ Disposal of ETP will be made through TSDF Site ▪ Non-Hazardous waste-Ash is/will be sold to end users ▪ Non-Hazardous waste-wood waste is/will be used as fuel for in-house requirement for utilities ▪ Used oil will be recycled through/sold to authorized recycler ▪ Discarded bags will be managed through take-back arrangement with suppliers.
Noise	<u>Noise Level in Premises</u> <ul style="list-style-type: none"> ▪ 70-75 dB(A)- Nr. Main Gate ▪ 75-85 dB(A)- Nr. Utility Area ▪ 75-80 dB(A)- Nr. Plant Area 	<ul style="list-style-type: none"> ▪ The present noise sources are DG set & TFH and other machineries and equipment of production area like pumps, motors & Blowers etc. ▪ DG set is housed in enclosed room with acoustic enclosure. ▪ Source of noise for proposed project will be boiler, which will be housed in designated Boiler house/room with necessary PPE arrangement & Shift timing.

0.3 BASELINE ENVIRONMENTAL STATUS

The baseline environmental quality has been assessed in the summer season of 2010 (March'10 to May '10), in a study area of 5 km radial distance from the project site, as per the awarded TORs. An additional one month validation monitoring was carried out in the month of Jan'12 for establishing the recent scenario. The baseline status of the study area is summarized below.

0.3.1 TOPOGRAPHY

Topography of the study area is plain as there are no hills, hillocks or undulating land within the study area.

0.3.2 DRAINAGE

Various natural ponds like water bodies have been observed in study area.

0.3.3 WATER RESOURCES & QUALITY

Water requirement at site would be met through Gujarat Water Infrastructure Limited (Narmada Canal) water supply and rainwater harvesting collection pond. Various natural ponds like water bodies have been observed in study area.

As per the groundwater potential data of Kutchh district for year 1997 & 2002, the region of Bhachau falls under over exploited zone with level of groundwater development of 112.18% & 129.68% respectively for year 1997 & 2002. Further, considering the data of survey of GWSSB in 2006, the regional groundwater status of the Bhachau region has significantly improved in year 2006.

During the period of baseline study, surface water quality of 3 ponds and groundwater quality of 5 locations has been studied by collecting sample once in study period in month of March 2010. An additional one month validation monitoring was carried out on same locations in the month of Jan'12 for establishing the recent scenario.

The results of water in terms of parameters having noticeable concentration are presented below.

- Surface water (all results are in mg/lit except pH): pH - 6.95 to 7.74
TDS- 358 to 820, Total hardness – 76 to 274, Total alkalinity- 20 to 32, BOD- 5 to 9, COD-15 to 22, Sodium- 83 to 176, Chloride- 142 to 350, Sulphate- 35 to 145, Fluoride- 1.0 to 1.4 & Lead – BDL (Below Detection Limit)
- Groundwater (all results are in mg/lit except pH): pH - 7.25 to 8.10, TDS- 822 to 1644, Total hardness – 319 to 492, Total alkalinity- 64 to 285, COD- 10 to 17, Sodium -170 to 386, Chloride -315 to 669, Sulphate - 94.4 to 289, Fluoride -0.8 to 1.5, Nitrate- 5 to 11, Lead - BDL & Iron- BDL

0.3.4 METEOROLOGY

Meteorology observed during March to May 2010:

- Temperature: Max. = 37.7°C, Min = 18°C, Avg. = 28°C.
- Humidity: Max. = 81.5%, Min = 28%, Avg. = 55%.
- Rainfall: Avg. annual rainfall of Bhuj = 378 mm. No rain in the study period.
- Wind Pattern: It was observed that wind direction is predominantly from WSW direction for the study period. The dominant wind vector was observed to be 257 degree with 87% frequencies.

0.3.5 AMBIENT AIR QUALITY

Ambient Air Quality Monitoring (AAQM) was carried out at 6 locations during March to May 2010 and an additional one month validation monitoring was carried out on same locations in the month of Jan'12 for establishing the recent scenario. The sampling locations were selected in the study area of 5 km radial distance from the plant site.

- The average & 98th percentile values of 24 hourly PM₁₀ at all the locations ranged between 81–95 µg/m³ and 88–99 µg/m³, respectively.
- Similarly, the average & 98th percentile values of SPM varied in the range of 141-183 µg/m³ and 154– 201 µg/m³, respectively.
- Average values of PM₁₀ and SPM levels in ambient air were observed below stipulated standards of CPCB for residential/rural region at all air quality monitoring locations during the winter season. Once, the SPM level was found high in one of the locations, due to some maintenance activities, which may have resulted in higher 98th percentile value of SPM but the values of PM₁₀ were found well within the limit.
- The average and 98th percentile values of SO₂ at all the locations were observed to be in the range of 29 – 34 µg/m³ and 35– 39 µg/m³ respectively.
- Similarly, the average and 98th percentile values of NO_x at all the locations

ranged between 30– 40 $\mu\text{g}/\text{m}^3$ and 33– 45 $\mu\text{g}/\text{m}^3$ respectively.

- At all the AAQM locations, the 98th percentile & average values of SO₂ and NO_x were observed to be within limits.
- The CO & VOC values were found below detectable limits.

0.3.6 NOISE LEVELS

The noise levels have been measured at the project site & surrounding region, once at each location for 24 hours at hourly intervals, in month of March 2010 and an additional one month validation monitoring was carried out at the same locations in the month of Jan'12 for establishing the recent scenario.

The noise level at monitoring locations were noticed to be in range of 46.9-71.2 dB(A) during day time (6 am to 10 pm) and 38.5-63.6 dB(A) during night time (10 pm to 6 am) with Leq level of 51.7-68.1 dB(A) & 43.5-61.2 dB(A) respectively for day time & night time. Highest noise level as Leq was noticed in case of location at Euro ceramic being an industrial area. Noise level at project site as Leq has been noticed to be 54.6 dB(A) & 53.0 dB(A) respectively for day time & night time. Besides, noise due to transportation have also been monitored at two locations and the measured noise level as Leq has been noticed to 69.1 dB(A) & 69.5 dB(A) for day time and 55.4 dB(A) & 53.8 dB(A) for night time respectively near Bhachau Cross road & Navi Bhachau road (SH). Noise levels are noticed to be within standard limits for day & night time for respective category of area.

0.3.7 LANDUSE PATTERN

The landuse carried out for a 10km radial periphery of the project site revealed that maximum area is covered by fallow land having 69.65% & 69.56% area of 10 km & 5 Km study area respectively. Agriculture area is noticed to be 12.78% & 13.27%, where as Industrial land is found to be 0.33% & 0.69% respectively for 10 km & 5 km study area.

0.3.8 SOIL QUALITY

Surface soil samples were collected in the month of March 2010 and an additional one-month validation monitoring was carried out on the same locations in the month of Jan'12 for establishing the recent scenario.

The results revealed that the soil is slightly saline & sodic than the desirable limits of cultivable land. The organic matters & nutrient levels were also noticed to be lower. Further, the soil texture was also found sandy loam to loamy sand, which is another issue together with the Exchangeable Sodium Percentage & Cation Exchange Capacity. These together create inadequate transfer of nutrients in plants due to poor exchange of negatively charged nutrients. Besides the fertility issues, no evidence of contamination is noticed in the region and the higher level of chloride /salinity is noticed due to the inherent salinity of the soil in the region.

0.3.9 ECOLOGY

No national park/ Wildlife Sanctuary/ Reserve Forest cover has been observed in a 5 km radius of the project area. The wild ass sanctuary is almost 12 km away from the project site and separated from the project area by considerable fallow and cultivable land, which acts as a natural barrier.

The terrestrial eco-region is known as Rann of Kutchh Seasonal Salt Marsh. The forest in the region is recorded as Tropical Thorn Forest. The region of the project site is falling under the agro-ecoregion of South Kutchh & North Kathiawar peninsula, which is described as Western Plain, Kutchh and part of Kathiawar Peninsula, hot arid eco-region.

Vegetation of Kutchh varies with different physiographical regions. In some regions Acacia Senegal, Euphorbia spp. communities are found largely but most of the parts are barren and denuded. The other major species observed in the region are Acacia leucophloea, Prosopis juliflora, Zizyphus nummularia etc. The scrub

vegetation includes Euphobia, Zizyphus nummularia, Acocia nilotica and Acacia leucophloea species. During study period, 52 species of 22 families of trees are noted through primary survey by direct sighting. Similarly 20 families of Shrubs and 22 families of herbs are also found within the study area.

In study region 168 species of birds have been noted through either direct sighting or as reported species. Some of the migratory birds are also noticed as the area is falling in their migration route to Little Rann of Kutchh and Great Rann of Kutchh, which are their nesting & breeding ground. In the study area similar to the bird species, 36 species of reptiles are noted by direct sighting or reported. During study period, 34 species of wild animals have been reported by direct sighting or reported in secondary sources. Further, important endangered & endemic faunal species in the region are noticed/ reported to be Nilgai, Chinkara, Hyena, Caracal, Pangolin, Wolf and Desert fox.

0.3.10 SOCIO-ECONOMIC LAYOUT

The socioeconomic layout of the study region has been studied from data of Census of India 2001. The villages under 5 km and 10 km buffer were considered for establishment of socioeconomic layout of the region. The average household size is around 4.4 and the sex ratio is around 950. The average literacy rate is around 39% within 10 km area and the female literacy rate below 39%. The presence of the weaker sections in terms of Scheduled Caste in the study area is 9.56% within 5 km 9.69% within 10km area and that of Scheduled tribe is 9.70% within 5 km 11.37% within 10km area. The work participation rate is only 35.39% within 5km and 38.01% within 10 km area as per the Census 2001, indicating the dependency of more than half the population. It can also be seen that majority of the people are dependent on agriculture (i.e. cultivators or agricultural labourers and rest on other type of work and household work. All the villages have potable water supply and in 100% area the drinking water is supplied through taps. All the

villages have power supply facilities in the study region. All public amenities/facilities are also available either in the village or in neighbouring village.

0.4 ANTICIPATED IMPACTS & MITIGATION

0.4.1 AIR ENVIRONMENT

During construction & commissioning phase:

- Only minor construction work like foundation, platforms etc will be required.
- Minor, temporary & reversible impacts in terms of deterioration of air quality due to dusting, vehicular emission, hot mix plants, air borne construction materials, Machine/equipment operations etc.
- It has been suggested to reduce the dusting by sprinkling of water and by temporary barricading and ensuring proper maintenance of vehicles.

During operational phase:

- Stationary sources of impact on air during operation phase are existing Thremic fluid heaters (2 Nos.), proposed Steam Boiler and existing stand-by DG Set.
- As wood waste is utilised as fuel for existing TFHs and proposed boiler; the main pollutant from the emission from these utilities will be PM which will be controlled by multi cyclone dust separators provided with both utility.
- Further, the resultant concentrations viz. the predicted level of conventional pollutants in the ambient air are noticed to be well below the National Ambient Air Quality Standards.
- Thus, the impacts of conventional pollutants would be insignificant from the proposed project during normal operation phase.
- Likely impacts on air envisaged due to fugitive emission in form of formaldehyde and ash due to handling & storage, which will be minimized by mitigation measures like adequate closed system for process & charging of raw materials, ventilation, covering of ash storage area by tarpaulin, provision of PPEs and regular work place monitoring & employee health check up program.

- Hence, it can be said that there will not be any significant impact due to the proposed project, on the air environment.

0.4.2 WATER ENVIRONMENT

During construction & commissioning phase:

- Temporary impacts are likely to occur due to water consumption & sewage generation, which will not be significant as water requirement would be temporary and proper sanitation facilities with adequate disposal system such as Septic tank & soak pit already exist within the operational plant.

During operational phase:

- No drawl of groundwater for the project. Water requirement to be met from Gujarat Water Infrastructure Ltd. and also provision of rainwater harvesting pond located behind adjacent unit.
- Adequately designed ETP will be provided for treatment based on advance oxidation process for efficient treatment of effluent from dyeing unit (process & washing) & boiler blow down.
- No effluent will be drained out of process of resin. The wastewater arising from washing in resin unit will be recycled back in to the process.
- The treated effluent from ETP will be utilised as irrigation water for greenbelt development. The water usage & wastewater recycling scheme has been planned so as to minimise freshwater intake by maximum recycling.
- Sewage generated from domestic activities will be disposed off through septic tank & soak pit.
- Rainwater harvesting will be done within premises.
- Thus looking to overall planning for water consumption & wastewater management, possibility of contamination and depletion of water resources is not envisaged.

0.4.3 LAND ENVIRONMENT

During construction & commissioning phase:

- Project proposed in existing operational site. Hence, no change in land use as the land is already been converted for use as industrial purpose.

During operational phase:

- Development of greenbelt area in about 33% of total available land to be beneficial to land use/ land cover.
- The raw materials storage & production area reclamation to prevent contamination of soil.
- The ETP sludge will be stored in designated storage area and will be disposed off through the TSDF site. The wood-waste is used as fuel and the ash generated from burning of this waste is currently given to the nearby farmers for use as manure. In case of generation being more, it will be sold to brick manufacturers.
- Thus looking to the waste management practice it has been noted that the impacts of proposed project on land would be negligible.

0.4.4 SOCIO-ECONOMIC ENVIRONMENT

During construction & commissioning phase:

- Short term, local & reversible impacts due to dusting/ noise generation from construction activities, operation of machines/equipments and miscellaneous construction operations
- Local contractors to be employed for construction. Hence, no other issues like, social conflict etc. envisaged. Economic benefits to the local contractors
- No habitation on land and no displacement is required.

During operational phase:

- Slight beneficial impacts due to employment are envisaged.
- Recycling & reuse of wastewater, provision of rainwater harvesting, proper disposal of hazardous wastes, safe handling & storage of hazardous

chemicals, provision of adequate air pollution control devices will ensure no significant negative adverse impact on the aesthetics of the area.

- Accidents can lead to harm to the health. The RA studies indicate that the effect of accident will not be transited out of the premises. However, necessary safety measures as specified in the risk assessment report need to be implemented to avoid mishaps like chemical hazards & fire.
- CSR activities carried out by proponent have beneficial impacts.

0.4.5 ECOLOGICAL ENVIRONMENT

- During construction phase no impacts are likely to occur as the site is considerably away from ecologically sensitive area.
- The construction work would be minimal like preparation of platform & foundation of equipments not causing much disturbance to the local fauna.
- There are no significant impacts envisaged on the ecological environment of the region as the area is almost covered with fallow land devoid of any considerable ecological layout.
- Further, there would not be any considerable sources (noise, gaseous pollutants, effluent and hazardous waste) of impacts on ecology and thus no significant impacts on ecological layout due to operational activities are envisaged.
- The greenbelt development will significantly improve the ecological layout of the area considering the baseline ecological status of the immediate surrounding area.
- It is noteworthy that the area falls under the migration route of some migratory birds. No harm to the migratory birds is envisaged as the level of contaminants will remain far below the concentration suspected to cause any harm.
- Due the development & maintenance of the healthy greenbelt at site as well as rainwater storage ponds, the migratory birds as well as other faunal species will be slightly benefited. The area may serve as the resting ground for the migratory birds.

- Thus the overall impacts, considering the normal hazard free operation, appreciable beneficial impacts are anticipated on the ecological layout of the region.

0.5 ADDITIONAL STUDIES

The Risk Assessment & Disaster Management Plan has been prepared and the suggestion cited in RA report should be implemented for fire & explosion hazard prevention, emergency management, other potential occupational health hazard prevention, safety gear etc. Safety & emergency management cell/ department have already been formed & responsibilities of safety, disaster & emergency management have been assigned to the cell/department. Main risk due to the propose project is identified to be that of the Fire & toxic dispersion due to handling of Formaldehyde & Phenol. The damage radius as modelled for the worst case scenario during risk assessment study is confined within the vicinity of the site. However, all related measures suggested shall be implemented before inception of operation of plant. Regular health check-up & workplace monitoring shall also be conducted.

Public consultation is applicable to the proposed project as the project is proposed in the existing unit located outside of notified industrial area Hence, Public hearing will be conducted as per the schedule of state pollution control board and necessary action to address the issues raised in Public hearing will be initiated immediately after public hearing.

0.6 PROJECT BENEFITS

The project is for meeting the captive requirements of Phenol-Formaldehyde resin for manufacturing of various existing products like plywood, block board, laminates etc. Thereby, the unit shall be self reliant for its raw-material, thus reducing logistics as well as improvement of product quality. The proponent has proposed to employ local contractual labour force, which may lead to slight growth in the

social status & improvement of the quality of life in the surrounding area. Considering the size of the project, the proposed peak manpower requirement during construction and commissioning will be 40-50 contractual persons. During the operation phase, operation activities will require total manpower of 35 nos. It is advised to give priority to the local people.

0.7 EMP & MONITORING PLAN

As a part of necessary action plan to minimise or eliminate the impact from proposed project, EIA study, environment management plan (EMP) has been prepared considering the probable impacts and their significance. Necessary suggestion & guidelines for post project monitoring are provided therein the monitoring program along with suggestive schedule & budgetary provisions. Budgetary provision for EMS has been made in the project planning by the proponent with 37.43 Lakhs as capital cost and 36.875 Lakhs/ Annum as recurring cost for proposed project.

An environmental management plan covering structural measures, administrative & management actions, schedule & responsibilities for implementation and formation of EHS management cell with assigned duties has been prepared to prevent/ minimize impacts on Air, Water, Land, Noise, Social and Ecological environment to ensure that mitigation measures are implemented properly. Necessary action plans for ecological conservation & welfare, social upliftment by CSR, greenbelt development programs, rainwater harvesting, energy efficiency & conservation and resources conservation through “waste recycling & reuse” have been covered in the EMP prepared for the proposed project.

The major structural & management measures include; separate Cyclone Dust separators for APCDs for Boiler & TFHs, Well designed ETP for effluent treatment based on advance oxidation process, provision of hazardous waste storage as per regulatory requirement, greenbelt development in 33% of total land, rainwater harvesting system with rainwater harvesting pond to meet partial but major water

requirement of proposed project and safety system & facilities including action plan & facilities for emergency management. 100% reuse of wastewater, use of wood waste as fuel has been planned as in house action for waste recycling & reuse. Similarly 100% utilisation of wood ash has been planned through indirect waste utilisation thorough farmers & brick manufacturers.

0.8 CONCLUSION

The outcome of EIA Study indicates that the negative adverse impacts of the proposed project would be reduced significantly and brought down to acceptable levels by the implementation of the mitigation measures. The residual impacts would almost be negligible and the noticed residual impacts could be due to impacts on air quality mainly in work place area. Besides, the slight impacts on human health due to occupational hazards could also have some minor residual impacts. These two are the major residual impacts noticed as outcome of EIA study. As the impacts are associated with work place & occupational hazards; it is recommended to implement the Safety procedures & control as suggested in Risk assessment study. Further, it is also recommended to improve the safety system as part of routine operational activities to gradually eliminate the residual impacts identified for the proposed project.

With adequately planned & efficiently implemented EMP & safety system; the proposed project would not have any critical issue and will have sustainability throughout its operation phase. Thus it can be summarized that the proposed project is feasible considering the overall aspects of the project and direct & indirect benefits as well as potential of area development due to proposed project.