PRE-FEASIBILITY REPORT

For

M/s. Kanoria Chemicals & Industries Limited
Plot No. 50,51 (Block – C)
Industrial Park – Naidupet
Nellore, Andhra Pradesh
1.0 Introduction:

Kanoria Chemicals & Industries Limited (KCI) is a leading manufacturer of chemical intermediates in India. Apart from chemicals, it has diversified business interests including automotive and industrial electronics, renewable energy and textiles. KCI has two chemicals manufacturing facilities, one at Ankleshwar in the state of Gujarat, which manufactures Alcohol based intermediates; and the second at Visakhapatnam in the state of Andhra Pradesh, which manufactures Formaldehyde, Hexamine and resins. Both facilities have ISO 9001, ISO 14001 and OHSAS 18001 certifications. With a product portfolio of over ten products, the company has a market leadership in three and substantial shares in the others.

Kanoria Chemicals & Industries Limited (KCI) is a leading manufacturer of chemical intermediates in India. Established in the 1960s, KCI started with a Chlor Alkali plant in Renukoot in the state of Uttar Pradesh and added a second plant in the 1980s for manufacturing alcohol based intermediates at Ankleshwar in the state of Gujarat. In the year 2011, KCI commissioned a Greenfield Formaldehyde and Hexamine project at Vishakhapatnam in the state of Andhra Pradesh (Resins manufacturing is added afterwards). With this additional capacity, KCI has consolidated its leadership position in the Indian Formaldehyde market with a total capacity of 218220 TPA. The company now proposes to set up Greenfield Formaldehyde and Resins manufacturing plant at Industrial Park Naidupet. While KCI divested its Chlor Alkali business in 2011, the company continues to be a major player in organic chemicals. KCI enjoys leadership position in India for Pentaerythritol, Formaldehyde and Hexamine.

KCI is having manufacturing facility of chemicals at two locations, Ankleshwar in the state of Gujarat and Vishakhapatnam in the state of Andhra Pradesh. Due to increase in demand from customers to meet growing market needs, it is proposed for new manufacturing unit in Plot no. 50,51, Block-C in Industrial Park – Naidupet, Nellore for manufacture of Formaldehyde and Resins.
1.1 Background:

Kanoria Chemicals & Industries Limited (KCI) is a leading manufacturer of chemical intermediates in India. Established in the 1960s, KCI started with a Chlor Alkali plant in Renukoot in the state of Uttar Pradesh and added a second plant in the 1980s for manufacturing alcohol based intermediates at Ankleshwar in the state of Gujarat. In the year 2011, KCI commissioned a Greenfield Formaldehyde and Hexamine project (resins manufacturing is added afterwards) at Vishakhapatnam in the state of Andhra Pradesh. With this additional capacity, KCI has consolidated its leadership position in the Indian Formaldehyde market with a total capacity of 218220 TPA. The company now proposes to set up Greenfield Formaldehyde and Resins manufacturing plant at Industrial Park Naidupet. While KCI divested its Chlor Alkali business in 2011, the company continues to be a major player in organic chemicals. KCI enjoys leadership position in India for Pentaerythritol, Formaldehyde and Hexamine.

As per the EIA Notification, published in Gazette of India, Extraordinary Part –II, Section-3, subsection (ii) of Ministry of Environment & Forest dated 14.09.2006 & subsequent amendments, the proposed project falls in Activity 5(f), Category-B of “List of Projects or activities requiring prior Environmental Clearance”. As per the above notification, proposed project will have to obtain environmental clearance from State Environmental Impact Assessment authority (SEIAA) or State Environmental Appraisal Committee (SEAC).

The project is new one for manufacture of formaldehyde and resins to cater the needs of clients of south India. The project will contribute towards needs of industries which use these as raw material.

The proposed project will contribute direct and indirect employment to local people.

During construction phase, the project will also generate temporary local employment. In nutshell, the project would create better infrastructure, better availability of basic organic chemicals, improve livelihood and socio-economic conditions.
## Project Details:

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Points</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Title of the project</td>
<td>Kanoria Chemicals &amp; Industries Limited</td>
</tr>
<tr>
<td>2</td>
<td>Land Acquired</td>
<td>Land Area: 9.4 Ac. acquired from APIIC, Naidupet, Andhra Pradesh</td>
</tr>
<tr>
<td>3.</td>
<td>Cost of the Project</td>
<td>Rs. 46.44 Crores</td>
</tr>
<tr>
<td>4</td>
<td>Proposed facilities</td>
<td>Manufacture of Formaldehyde &amp; Resins Area for Proposed Activity: 9.4 Acres</td>
</tr>
</tbody>
</table>
| 5       | Production Capacity           | Formaldehyde (37% to 55%) = 111600 MTPA  
*Phenolic Formaldehyde /Urea Formaldehyde/Melamine Formaldehyde (PF/UF/MF/MUF Resins) = 12000 MTPA  
*Either or in combinations |
| 6       | Water Requirement             | Water to be used during operation phase is approx. 550 KLD from Bore Well/APIIC/Tankers Supply.  
Domestic: 50 KL  
*Industrial: 500 kl  
*(Process, Boiler Feed, DM Plant & Cooling towers) |
| 7       | Waste Water Treatment         | **Domestic Effluent = 25 KLPD**  
Mixed with industrial effluent and treated in RO/MEE and recycled back for gardening/cooling towers make-up.  
**Industrial Effluent: 75 KLPD**  
Effluent generated from Process, DM regeneration and cooling towers blowdown will be treated in RO/MEE and recycled back for Cooling Towers make up and |
<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Points</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>gardening.</td>
<td>The sludge will be send to TSDF site for landfilling.</td>
</tr>
<tr>
<td>8</td>
<td>Recycle &amp; Reuse</td>
<td>Treated Water will be used for:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1. Green Belt Development in the plant premises.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Cooling Towers make-up</td>
</tr>
<tr>
<td>9</td>
<td>Solid &amp; Hazardous Waste Management and Disposal</td>
<td><strong>Solid waste:</strong> Garbage(Paper/Plastic/ Food waste/plant leaves) – 100 Kg/day</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Hazardous waste:</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Waste oil – 2500 lit/year</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ETP Sludge – 400 MT / Year</td>
</tr>
<tr>
<td></td>
<td></td>
<td>*Silver Catalyst – 5 MT / Year</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Insulation Waste – 10 MT/Year</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Empty Barrel/Carboys – 1500 Nos / Annum</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Used Lead acid batteries-as per generation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The generated waste will be disposed to the recyclers/re-processors/TSDL site for landfilling as authorized by SPCB</td>
</tr>
<tr>
<td></td>
<td></td>
<td>*To supplier for regeneration.</td>
</tr>
<tr>
<td>10</td>
<td>Green Belt</td>
<td>As per MoEF/SPCB guidelines</td>
</tr>
</tbody>
</table>
2.0 Introduction of the Project

2.1 Identification of Project & Project Proponent

Project Proponent: M/s. Kanoria Chemicals & Industries Limited

Regd Address: Shri Arun Agarwal
Chief Executive-Chemical Business
Plot No. 32, JN Pharma City,
Parawada, Visakhapatnam – 530 019

2.2 Nature of Project

The proposed project is to cater needs of industries which are using resins and formaldehyde as raw material.

2.3 Need of Project

As our plant situated in viskhapatnam is catering the needs of south india and due increase in demand from industries situated in this region and other part of coutry for timely delivery and to meet the growing demand. It is proposed to manufacture Formaldehyde and Resins at this location.

2.4 Employment generation

There will be a positive impact in creation of direct and indirect employment opportunities due to proposed project on local socioeconomic profile.

(a) Direct Employment: 38 no’s
(b) Indirect Employment: 25 no’s
3.0 Project Description

3.1 Type of Project

As per EIA Notification dated 14 Sep 2006 this projects falls under 5(f).

The proposed Plant is planned at the plot no. 50, 51, Block-C at Industrial Park-Naidupet, Nellore Dist, Andhra Pradesh. The nearest Railway station is Naidupet and nearest airport is Tirupati. It is about 65 KM from Tirupati.

3.2 Location

Fig: Google Map showing the Proposed site
SITE PLAN

<table>
<thead>
<tr>
<th>SR.NO.</th>
<th>DESCRIPTION</th>
<th>LENGTH (M)</th>
<th>BREADTH (M)</th>
<th>AREA (SQ.M.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>SECURITY OFFICE / SALES OFFICE</td>
<td>10</td>
<td>3</td>
<td>30</td>
</tr>
<tr>
<td>2</td>
<td>VEHICAL &amp; TANKER PARKING</td>
<td>100</td>
<td>15</td>
<td>1500</td>
</tr>
<tr>
<td>3</td>
<td>STORAGES (ROOF TOP) &amp; ADMIN/LAB (11)</td>
<td>25</td>
<td>15</td>
<td>375</td>
</tr>
<tr>
<td>4</td>
<td>CONTROL ROOM/SPACE ROOM (P)</td>
<td>18</td>
<td>8</td>
<td>144</td>
</tr>
<tr>
<td>5</td>
<td>ELECTRICAL SUB STATION</td>
<td>15</td>
<td>15</td>
<td>225</td>
</tr>
<tr>
<td>6</td>
<td>RAW WATER TANK (2 UNITS)</td>
<td>15</td>
<td>15</td>
<td>225</td>
</tr>
<tr>
<td>7</td>
<td>MSDS PLANT</td>
<td>15</td>
<td>15</td>
<td>225</td>
</tr>
<tr>
<td>8</td>
<td>RO PLANT</td>
<td>15</td>
<td>15</td>
<td>225</td>
</tr>
<tr>
<td>9</td>
<td>FD PLANT</td>
<td>30</td>
<td>15</td>
<td>600</td>
</tr>
<tr>
<td>10</td>
<td>BLOWER ROOM</td>
<td>30</td>
<td>7.5</td>
<td>225</td>
</tr>
<tr>
<td>11</td>
<td>RESIN PLANT</td>
<td>20</td>
<td>20.5</td>
<td>410</td>
</tr>
<tr>
<td>12</td>
<td>UTILITY / COOLING TOWER / DW WATER PLANT</td>
<td>40</td>
<td>15</td>
<td>600</td>
</tr>
<tr>
<td>13</td>
<td>METHANOL STORAGE TANKING AREA (90000 LITERS)</td>
<td>65</td>
<td>3</td>
<td>195</td>
</tr>
<tr>
<td>14</td>
<td>FD LOADING STATION</td>
<td>15</td>
<td>12</td>
<td>180</td>
</tr>
<tr>
<td>15</td>
<td>FD STORAGE (2 NOS, 400 KL)</td>
<td>30</td>
<td>12</td>
<td>360</td>
</tr>
<tr>
<td>16</td>
<td>CARSTIC &amp; HCL STORAGE (15 KL EACH)</td>
<td>20</td>
<td>10</td>
<td>200</td>
</tr>
<tr>
<td>ROAD</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

TOTAL GROUND COVERED AREA SQ.M. = 13663

TOTAL AREA – 38048.2 SQ.M.
3.3 Size or Magnitude of Operations.

Products:
1. Formaldehyde (37% to 55%) = 111600 MTPA
2. *Phenolic Formaldehyde /Urea Formaldehyde/Melamine Formaldehyde/Melamine Urea Formaldehyde Resins (PF/UF/MF/MUF Resins) = 12000 MTPA

* Either or in combinations

Raw materials:
Formaldehyde:
Methanol, Silver Catalyst, HCl, Caustic Lye, H\textsubscript{2}SO\textsubscript{4}

Resins:
Phenol, Formaldehyde, Methanol, Hexamine, Urea, Melamine

3.4 Project Description

3.4.1 DETAILS OF MANUFACTURING PROCESS FOR FORMALDEHYDE PLANT

Formaldehyde is the oxidation/dehydrogenation product of methanol with oxygen in the presence of silver catalyst. A fixed quantity of methanol and water is introduced into a mixing vessel from where this mixture is taken into an evaporator. Air and the recycled tail Gas is also introduced into the evaporator. A temperature of 70 deg C is maintained by heating with steam through the steam coil which facilitates the evaporation of methanol. The air, methanol, vapor, water molecules and Tail Gas mixture is then further heated to 120 Deg C, in the super heater and then introduced into the reactor where, in presence of silver catalyst maintained at a temperature of 650 Deg C, the oxidation dehydrogenation reaction takes place as per the following chemistry.

\[
\text{CH}_3\text{OH} = \text{HCHCO} + \text{H}_2 \quad \text{… Endothermic reaction}
\]
\[
\text{H}_2 + 1/2 \text{O}_2 = \text{H}_2\text{O} \quad \text{… Exothermic reaction}
\]
\[
\text{CH}_3\text{OH} + 1/2\text{O}_2 = \text{HCHO} + \text{H}_2\text{O} \quad \text{… Net Exothermic Reaction}
\]

Several side reactions also happens to produce Formic Acid, carbon dioxide and carbon monoxide. The endeavor is to minimize these side reactions. The catalyst bed temperature is maintained at around 640 to 650 Deg C by controlling the composition of Reactor feed gas.
Absorption

The reaction is net exothermic. In the reactor itself is also a waste heat boiler the temperature of the product gases is brought down to 180 deg C and then further cooled down to about 95 Deg C in the Re-boiler by circulating the solution in the evaporator solution itself getting heated up to 70 Deg C thus saving on energy. With OFF GAS (Tail Gas) Recycle surplus steam to the extent of 200-250 kgs per Ton of Formaldehyde is available for export which can be used in other sections.

The reaction gas containing Formaldehyde, un-reacted Methanol and water vapor is then directed to Absorption column 1 and escaping Formaldehyde gases are absorbed by circulating and cooling the formaldehyde solution in Plate Heat Exchanger from the absorber sump. The part of the circulation is taken out as product.

Mostly the absorber is packed with structured packing. With proper packing and cooling more than 95% absorption is completed in the absorption column-1.

The unabsorbed gas from the absorption column-1 is absorbed column-2 by circulating and cooling absorber sump dilute Formaldehyde solution in Plate Heat Exchanger. Finally the gas is washed with pure chilled DM water at the upper part of the column-2, provided with bubble cap trays.

The tail gas is discharged from the top of absorber and sent to tail gas treatment unit. The tail gas contains 18-20% hydrogen and small amount of formaldehyde, methanol and methane. Through tail gas treatment unit, the pollution of formaldehyde, methanol and methane to atmosphere is reduced.

CHEMICAL REACTION AND MASS BALANCE FOR 1 MT FORMALDEHYDE PLANT (37% BASIS):

Chemical Reaction:

\[
\text{CH}_3\text{OH} + \frac{1}{2} \text{O}_2 \rightarrow \text{HCHO} + \text{H}_2\text{O} \\
\text{(Methanol)} \quad \text{(Formaldehyde)}
\]

Theoretical & Practical Consumption Figures of Formaldehyde Plant:

Reaction:

\[
\text{CH}_3\text{OH} + \frac{1}{2} \text{O}_2 = \text{HCHO} + \text{H}_2\text{O} \\
32 \quad 16 = 30 \quad 18
\]
3.4.2 DETAILS OF MANUFACTURING PROCESS FOR RESINS.

(A) Urea Formaldehyde (UF) & Melamine Formaldehyde (MF) (Liquid Resin)

AND/OR

(B). Urea Formaldehyde (UF) & Melamine Formaldehyde (MF) (Powder Resin)

Manufacturing process

The Manufacturing Process of UF and MF Resin are similar and involves two stages of reaction as described below.

(A) MANUFACTURING PROCESS UF & MF LIQUID RESIN

(I) Chemical reaction stage

The production process between urea and formaldehyde or between melamine and formaldehyde are very similar, only some few process conditions are different.

The selected process is a batch process.

Production of UF/MF resin involves an evaporation stage which is carried out in the reactor.

The chemical reaction is carried out in a batch reactor, which is constructed of stainless steel and equipped with an efficient agitator, coil heat exchangers or jacketed/Limpet coils for heating and cooling of the resin batch as well as a reflux condenser.

The heating of the reactor is made by means of low pressure steam and the cooling by means of cooling water from closed circuit cooling tower system or other suitable
source.
The reactor is fixed or mounted on Load cells which also acts as a weighing scale. Charging of raw materials into the reactors is made in the following manner:
- Formalin of 37-50% strength is charged into a service tank which is graded and then discharged into the Reactor with the help of a pump.
- Urea is charged directly into the reactor from big-bags i.e. 1000 Kg or 500 Kg by crane lift, or by means of a conveyor, chute and hopper arrangement. 50 Kg or 25 KG small bags are also charged in the similar fashion.
The weighing system is electronic if reactor mounted on Load Cells and controls the formaldehyde feed pump and it is used also for controlling the evaporation/dehydration process.
The chemicals which are used in small amounts for adjustment of acidity/alkalinity of the processed batch are charged into the reactor manually through measuring tanks.
The reactor has one discharge strainer, one discharge pump and one discharge filter.
The acidity and progress of the reaction are monitored by determining the pH ON LINE/manually of samples drawn from the reactor.
The progress of the reaction are monitored by determining the viscosity or cloud point of the processed resin manually from samples drawn from the reactor.

(II) Evaporation stage
The aforementioned solids content of UF/MF resin produced by chemical reaction, as described above, depending on Formaldehyde concentration used is usually lower than required for production of, for instance, particle board (i.e. 65% solids) for the consumers requirement (higher concentration due to transport economical reasons and storage handling).
The solids content of UF/MF resin is therefore increased by removing water by evaporation from resin condensate.
The evaporation operation is carried out under vacuum to avoid high processing temperatures of the resin, which would produce undesired types of molecules and reduce the reactivity of the resin.
The removed liquid, distillate, contains mainly water but also methanol and small amounts of formaldehyde.
The amount of water removed from the resin by evaporation can be monitored by several ways. i.e. by means of the graded gauge of distillate tank, or by reactor weighing system if such system is installed. Water recovery done through condenser will be recycled to AF-37 Plant and Water Vapor Losses will be to the atmosphere.

(B) MANUFACTURING PROCESS OF UF & MF POWDER RESIN

(I) PROCESS DESCRIPTION
The fresh ambient air is filter through filter and heated across a direct Air Heater comes in contact with the atomized spray. The air heater is designed for maximum process air temperature of 200°C.

Feed solution from your slurry holding tank is feed to the Atomization system through a variable speed feed pump. The feed is sprayed in the spray chamber at controlled rate through Rotary Disc Atomizer. The atomized particles get dried to the required level of dryness in a co-current fashion. Dehumidified air broom arrangement is provided to displace the powder from the chamber side walls and also simultaneously cool it as it falls to the chamber bottom.

The product is separated in cyclone separated followed by Reverse Pulse Jet Bag Filter. The product is discharge dry product through rotary air lock valves.

The dry product from cyclone and bag filter is then conveyed and cooled as it travels pneumatically into the conveying Cyclone & Conveying Bag filter. The reverse pulse jet bag filter is provided for pollution control. The exhaust air from the conveying bag filter is recycled back at the inlet duct of main Cyclone separator and mixed with process air. The entire operation of the plant is controlled through a Instrument panel cum MCC.
There are two stages in the manufacture of the P F Resin.

I) Chemical reaction stage
The production process between Phenol and formaldehyde is a condensation type of polymerisation.

The selected process is a batch process.
The chemical reaction is carried out in a batch reactor, which is constructed of stainless steel and equipped with an efficient agitator, coil heat exchangers for heating and cooling of the resin batch as well as a reflux condenser.
The heating of the reactor is made by means of low pressure steam and the cooling by means of cooling water from closed circuit cooling tower system or other suitable source.
The reactor is fixed.

Charging of raw materials into the reactors is made in the following manner:
- Formalin of 37 % strength is charged into a service tank which is graded and then discharged into the Reactor.
- Phenol is solid at room temperature and has to be heated and maintained at 65°C for which it is stored in an electrically traced storage tank. Phenol is then pumped to a calibrated service tank in the resin plant and then down loaded by gravity into the Reactor.

The chemicals which are used in small amounts for adjustment of acidity/alkalinity of the processed batch are charged into the reactor manually.

The reactor has one discharge strainer, one discharge pump and one discharge filter.

The acidity and progress of the reaction are monitored by determining the viscosity of samples drawn from the reactor.
II) Evaporation stage

The solids content of PF resin is increased by removing liquid by evaporation from resin condensate.

The evaporation operation is carried out under vacuum to avoid high processing temperatures of the resin, which would produce undesired types of molecules and reduce the reactivity of the resin.

The removed liquid, distillate, contains mainly water but also traces of methanol and small amounts of formaldehyde. In case of PF there would be traces of Phenol also.

The amount of liquid removed from the resin by evaporation will be monitored by means of the graded gauge of distillate tank or by reactor weighing system, if such system is installed.
MANUFACTURING PROCESS PHENOL FORMALDEHYDE POWDER RESIN

Broken lump add into ACM mill along with hexamine. Premix in blender for 30 minutes followed by sieving then proceed for auto packing of net weight of 25 kg with proper marking of batch no & mfg.date

5.0 UTILITIES:

5.1 Land:

The proposed project had acquired a land of about 9.4 acres at IP Naidupet from APIIC.

5.2 Receipt of Rawmaterial:

All the rawmaterials will be transported to the facility through road only.

5.3 Man power:

(a) Direct Employment : 38 No’s
(b) Indirect Employment : 25 No’s

5.6 Water, Energy/Power requirement:

Source of Water: APIIC supply/Ground water

Approximate requirement of water for operation is 550 KLD of which 50 KLD is for domestic, 500 KLD is for Industrial (Process, cooling, DM water).

Power Requirement:

It is envisaged to have HT power connection from APSEB. The approximate power requirement would be supply with a load of 1500 kW & with 1500 kVA contract demand

Details of power back up facilities proposed by are as below:

- DG SETS: 1 nos. 750 KVA (Shall be as per connected load & design requirements)
6.0 Schematic Representative of feasibility drawing which give information of EIA Purpose
EIA will be prepared as per ToR.

7.0 Site Analysis:

7.1 Connectivity:
Plant is well connected by black top road. Nearest railway station is Naidupet at 9 Km away from plant.

7.2 Land Form, Land use & Land ownership
The proposed project had acquired a land of about 9.4 acres and land use of the site is for industrial purpose only.

7.3 Climate:
The maximum temperature is 36 to 46 °C (97 to 115 °F) during summer and the minimum temperature is 23 to 25 °C (73 to 77 °F) during winter. The rainfall ranges from 700 to 1,000 mm (28 to 39 in) through South West and North East Monsoons. Nellore is subject both to droughts and to floods based on the seasons.

7.7 Social Infrastructure Available:
The proposed site is located in IP Naidupet and is having all basic infrastructure facilities like road, power etc.

8.0 Planning Brief

8.1 Planning Concept
It is proposed to construct Formaldehyde and Resins plant in an area of 9.40 ac.

8.2 Population projection
The closest village to the proposed site is Menakuru. The major occupations of population are agriculture, industrial labor activities.
The proposed facility does not envisage any displacement of population and no resettlement of population as proposed facility will be installed in APIIC area. Hence there is no impact on this account.

8.3 Land Use Planning

It is proposed to develop plant in 9.4 ac of land acquired from APIIC.

8.4 Assessment of infrastructure Demand

Infrastructure required for the proposed facilities will be provided. The development shall only lead to positive impact on infrastructure and services.

9.0 Propose infrastructures

9.1 Industrial Area

Proposed infrastructure will be construction of industrial processing and associated facilities including storage tanks etc.

9.2 Residential Area (Non Processing Area)

Not Proposed

9.3 Green Belt

Around 33 % of land will be left for green belt.

9.4 Social Infrastructure

The proposed project will indirectly boost up the social infrastructure of the surroundings. Like development of local education, medical and communication of the whole area.

9.5 Connectivity

All Road in this area are well constructed for heavy transportation only road will need to construct for plant premises transportation.
9.6 **Drinking Water**

The total man power in the plant will be 38 members on direct employment and 25 nos on indirect employment. Their drinking water need met by using ground water only. Daily water need is about 50 KL/D for domestic & 500 KLD for process & Cooling.

9.7 **Sewage**

Sewage water generated will be routed to STP and treated water will be used for green belt.

9.8 **Industrial Waste Management**

In the proposed, there is generation of Solid/Liquid waste as follows:

**Solid waste:** Garbage – 100 Kg/day

**Hazardous waste:**

- Waste oil – 2500 lit/year
- ETP Sludge – 400 MT / Year
- *Silver Catalyst – 5 MT / Year
- Insulation Waste – 10 MT/Year
- Empty Barrel.Carboys – 1500 Nos / Annum
- Used Lead acid batteries-as per generation

The generated waste will be disposed to the recyclers/re-processors/TSDF site for landfilling as authorized by SPCB

*To supplier for regeneration.

10.0 **Rehabitation and Resettlement (R & R) Plan**

The closest village to the proposed site is Menakuru. The major occupations of population are industrial labor activities.

There will be no displacement of local people as the proposed project is located in APSEZ area.
11.0 **Project Scheduled and Project Cost.**

The cost of the Project is Rs. 46.44 Cr, which is scheduled to be completed by target completion period of the project is within 24 months from the date of EC from MOEF/SEIAA.

**Conclusion:**

- Secondary data is available for APIIC Naidupeta as regular monitoring is carrying out by NABL & MoEF&CC recognized laboratory i.e., SV Enviro Labs & Consultants for baseline collection.

  Hence permit us to use the same for preparation of EIA Report.

- As the project site is located in APIIC Industrial area, Naidupeta for which public hearing is already conducted and obtained EC vide F. no: 21-61/2010-IA.III Dt: 26th February, 2016, and hence request for exemption of public hearing.