# Pre-feasibility report as per MoEF &CC Guidelines for obtaining prior Environmental Clearance in terms of the provisions of EIA Notification,2006

## For

# Expansion of existing Sugar unit from 10,000 TCD to 13,000 TCD (cane crushing capacity) along with expansion of power plant from 22.0 MW to 26.5 MW.

## By:

M/s Avadh Sugar & Energy Limited, Hargaon Sugar Unit

# PRE-FEASIBILITY REPORT

**Introduction**

M/s **Avadh Sugar & Energy Limited, (Hargaon Sugar Unit)** has proposed modernization/expansion of

- Sugar plant from 10,000 TCD to 13,000 TCD.
- Power plant from 22.0 MW to 26.5 MW.

**About Project Proponent:**

Our Company was incorporated on 19th March 2015 with the main object is to deal in sugar and sugar products, spirits and alcohol of denatured of any strength and all other products arising out of the manufacturing process of sugar or resultant of any activity related to sugar business, generation of power through various means, pursuant to business realignment, whereby sugar business undertakings of The Oudh Sugar Mills Ltd and Upper Ganges Sugar & Industries Ltd will be housed geographically in the State of Uttar Pradesh upon approval of the Composite Scheme of Arrangement by the regulatory authorities.

Smt. Nandini Nopany, is the Chairperson of the Company and Sri Chandra Shekhar Nopany, is Co-Chairperson and are the driving force behind the Company and are assisted by team of well qualified and experienced executives.

The Company having four sugar mill at Hargaon (District Sitapur, Uttar Pradesh), Seohara (District Bijnor, Uttar Pradesh), New India Sugar Mills, Hata (District Kushinagar, Uttar Pradesh), Rosa Sugar Works at Rosa (District Shahajahanpur, Uttar Pradesh) with a combined crushing capacity of 31,200 TCD. Our Company is also having two distilleries at Hargaon and at Seohara with a total capacity of 200 KLPD. Our Company is also having Co-gen facility and can produce 74.0 MW power.

Sugar Mills

- Hargaon Sugar Mills, Hargaon, Dist. Sitapur(U.P.) with a crushing capacity of about 10,000 tonnes of sugarcane per day.
- Seohara Sugar Mills, Seohara, Dist. Bijnor (U.P.) with a crushing capacity of about 10,000 tonnes of sugarcane per day.
- Rosa Sugar Works, Rosa, Dist. Shahjahanpur, (U.P.) with a crushing capacity of about 4,200 tonnes of sugarcane per day.

- New India Sugar Mills, Hata, Dist. Kushinagar, (U.P.) with a crushing capacity of about 7,000 tonnes of sugarcane per day

Distilleries

- Hargaon Distillery, Hargaon, Dist. Sitapur (U.P.) with a capacity of producing 100 KLPD of Industrial Alcohol/Ethanol.
- Seohara Distillery, Seohara, Dist. Bijnor (U.P.) with a capacity of producing 100 KLPD of Industrial Alcohol/Ethanol.

Co-Generation Power Plants

- Hargaon Co-generation Power Plant, Hargaon, Dist. Sitapur (U.P.) with a capacity of 26.5 MW Power.
- Seohara Co-generation Power Plant, Seohara, Dist. Bijnor (U.P.) with a capacity of 24 MW Power.
- Hata Power Plant, Dist. Kushinagar, (U.P.) with a capacity of 35 MW Power.

We manufacture the following three main categories of products

- Sugar
- Industrial Alcohol/Ethanol/Rectified spirits
- Power

**Type of Project:**

M/s **Avadh Sugar & Energy Limited, (Hargaon Sugar Unit)** is an agro based company focused on the manufacturer of sugar, power and allied by-products. The proposed plant units will be established in the same premises of the existing sugar industry.

Products of proposed unit are presented in Table 1.

**Table 1: Products of Unit**

| Sl No. | Feature | Existing | Proposed | Total |
|---|---|---|---|---|
| **1** | **SUGAR PLANT** | | | |
| **1.1** | Capacity of Sugar Plant (TCD) | 10000 TCD | 3000TCD | 13000 TCD |
| **1.2** | Co-gen Power (MW) | 22.0 MW | 4.5 MW | 26.5 MW |

The total land area of the project site is 99650.5 Sr Meter which is sufficient for existing and proposed activities. The proposed plants will be established in the same premises of the existing sugar industry.

**Purpose of the Project:**

M/s **Avadh Sugar & Energy Limited, (Hargaon Sugar Unit)** has proposed modernization/expansion of sugar plant from 10,000 TCD to 13,000 TCD and power plant from 22.0 MW to 26.5 MW.

The Ministry of Environment, Forest and Climate Change (MoEF&CC), Government of India has issued an EIA Notification No S.O. 1533 promulgated on 14th September, 2006 amended on 1st December, 2009 vide S.O. No. 3067, under Environmental (Protection) Act, 1986. Prior Environmental Clearance (EC) from the EIA Authorities it is mandatory for the establishment of projects/activities listed in the scheduled of above Notification. Sugar industry ≥ 5000 TCD cane crushing capacity categorized under Category "B" of schedule **5(j).** Therefore, the Projects require prior Environmental Clearance from the State Expert Appraisal Committee (SEAC), New Delhi.

**Site Location:**

This proposed project has a connecting road and has approachability. This site appears to be environmentally best as also from the business angle and therefore this option was finally adopted, including infrastructure optimization.

**ENVIRONMENTAL SENSITIVITY AROUND 15 KM RADIUS OF THE PROPOSED PROJECT**

| Sr. No. | Particulars | Details |
|---|---|---|
| 1 | **Location** | M/s Avadh Sugar & Energy Limited, (Hargaon Sugar Unit) |
| | Village | Hargaon |
| | District | Sitapur |
| | State | Uttar Pradesh |
| | Latitude | 27°46'31.21"N |
| | Longitude | 80°43'46.02"E |
| 2 | Elevation | 149 M |
| 4 | Highway | State Highway-21 is adjacent to the project site in East Direction |
| 5 | Nearest Railway Station | Hargaon Railway Station is located 0.13 Km in south West Direction from the project site |
| 6 | Nearest Airport | Lucknow Airport: 113.0 km In South Direction from the project site |
| 7 | Tourist Places | Nil(within 15 kms of study area ) |
| 8 | Archaeological important places | Nil(within 15 kms of study area ) |
| 9 | Area which are important or sensitive for ecological reasons- Wetlands, watercourses or other water bodies, coastal zone, biospheres, mountains, forests. | NIL(within 15 kms of study area ) |

| | | |
|---|---|---|
| **10** | Reserved Forest | Nil (within 15 kms of study area ) |
| **11** | District headquarter | Sitapur District Headquarter is located 22.31 Km from the project site in South West direction |
| **12** | Village within 2 km Radius surrounding the project | Hargaon, Jalilpur |
| **13** | Nearest River | ⁄Sarayan River located 5.60 Km in South West Direction from the project site.<br>⁄Kheri Branch Sharda Canal located 3.26 Km in North East Direction from the project site<br>⁄Khairabad Distributary is located 0.30 km in North West direction from the project site. |
| **14** | Nearest Hill Range | Nil |
| **15** | Soil Type | Clay loam, Silty clay |
| **16** | Seismic Zone | **Earthquake Moderate Damage Risk Zone (MSK VII)** |

**Location with coordinate:**

For EIA Study 5.0, 15.0 km radial study area is covered and is shown on SOI Toposheets 63A/9, 63D/10, 63A/13, 63A/14 in the map below Fig: 1.1&1.2 respectively.

Latitude and Longitude of the site in the centre given below in Table 2.3

**Table; 2: Latitude and longitude of the project site**

| Coordinates | Direction |
|---|---|
| Latitude: 27°46'31.21"N<br>Longitude: 80°43'46.02"E | Centre |

There is no sensitive establishment in the vicinity such as health resort, hospitals, archeological monuments, sanctuaries, no critically/severely polluted areas, eco-sensitive area within 10 km radius of the project site.

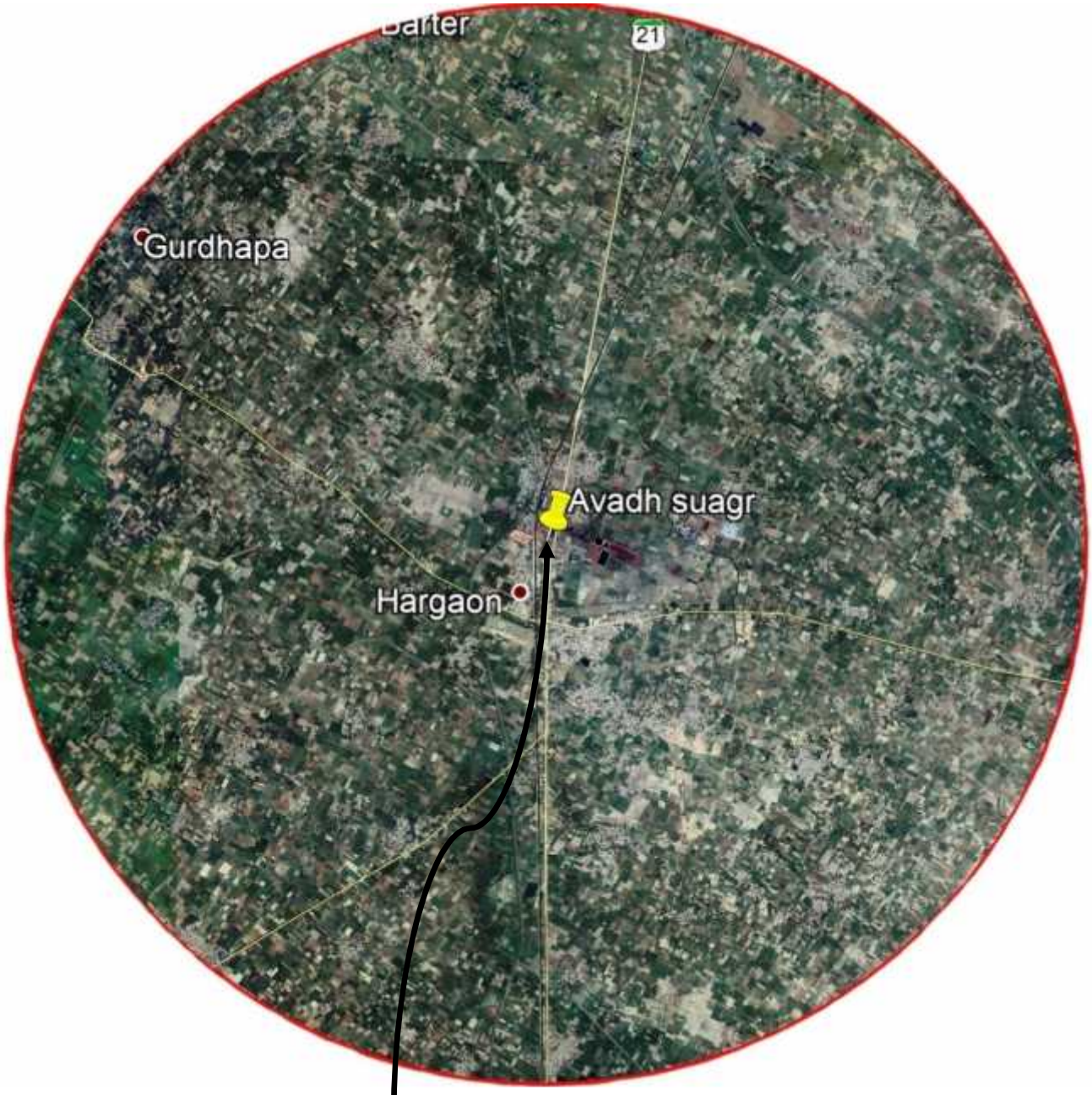
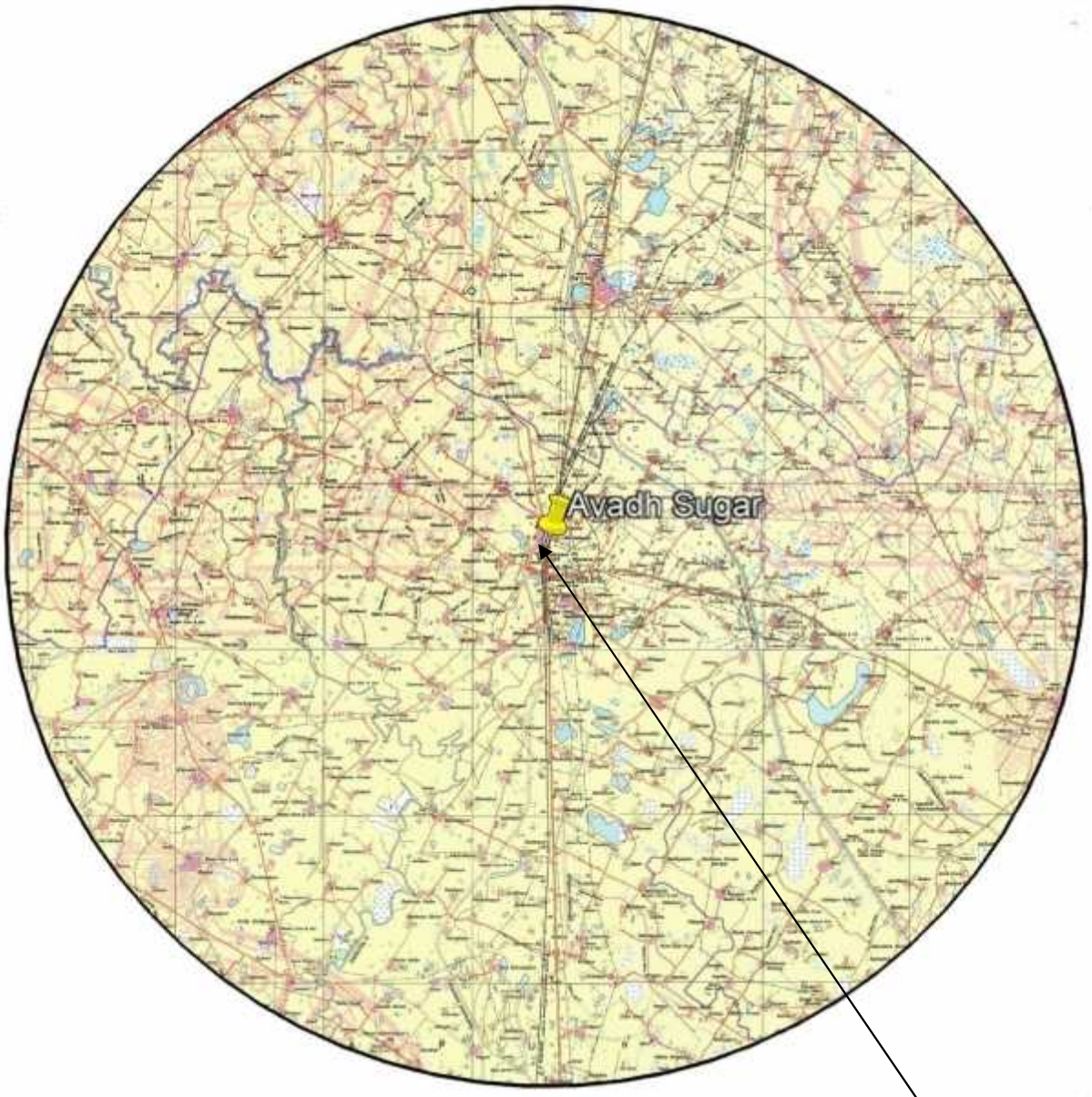
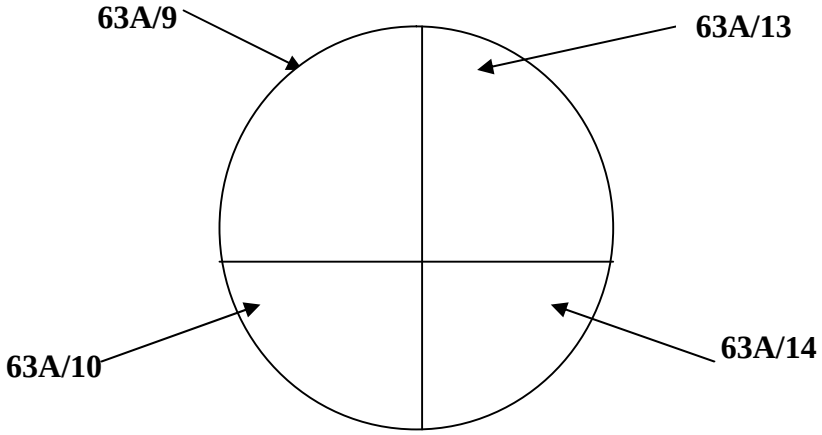



**Figure: 2 Showing Google image of proposed project:**
M/s Avadh Sugar & Energy Limited, (Hargaon Sugar Unit)




Toposheet Map Showing 15 Km Radius around the proposed project site
M/s Avadh Sugar & Energy Limited, (Hargaon Sugar Unit)




**Picture Showing Topo-sheets involved In Study Area**

**Site Selection Criteria:**

- Company intends to increase its profitability by adding more products generated from by-products.
- Company has enough land for installing manufacturing facilities along with composting facility to ensure a zero discharge project (in case of new distillery project).
- Project area is in reserve plot of existing sugar mill where raw material, fuel and power will be available
- Adequate land is available with units to installed manufacturing units using both raw materials and associated pollution control facilities to ensure a zero discharge project
- Infrastructure facilities like communication and electricity are also closely available.
- The site is away from the flood plain of major revering system
- The site is away from metropolitan cities, National parks, wildlife sanctuaries, ecological sensitive areas like tropical forest, biosphere reserve and coastal areas
- There is no defence installation close to the site
- The proposed project provides employment opportunities to a large number of rural populations in the region.
- Location in rural areas benefitting farmers as it is an agro based industry

**Alternative Sites:**

Alternative sites have not been considered as this is an expansion project to be executed at existing location based on above site selection criteria. Therefore, no alternative site has been proposed for this expansion of sugar and distillery units.

**Land Requirement:**

The project site is fully in possession over the years as the factory is working since long. There is no major river within 1 km radius. The details of factory area, built up area and the area reserved for green belt development is given below.

M/s Avadh Sugar & Energy Limited, (Hargaon Sugar Unit) has about 99650.5 Sr Meter of land in its possession to conduct it's for manufacturing activities.

# SUGAR UNIT: EXPANSION PROJECT DETAILS

M/s Avadh Sugar & Energy Limited, (Hargaon Sugar Unit)

## HAS PROPOSED

**Expansion of existing Sugar unit from 10,000 TCD to 13,000 TCD (cane crushing capacity) along with expansion of Power plant from 22.0 MW to 26.5 MW.**

## Importance to the Country and Region:
## (A) Sugar Industry

The Indian sugar industry is passing through a difficult period. The sugar price in the Indian/World market is low. On the other hand, the cost of the raw material the sugarcane keeps increasing every year and so is the production cost. The sugar industry can hope to come out of these situations only by cutting down the cost of production and by adopting energy efficient processing and this justifies going in for higher and more efficient system are as follows:

• India needs sugar, alcohol and power on regular basis. Alcohol saves petrol (additives) and also foreign exchange saver-earner. Condensate water can be used for boiler and process. Consume bagasse and molasses, which otherwise is an environmental risk.

• The world's largest consumers of sugar are India, China, Brazil, USA, Russia to Mexico, Pakistan, Indonesia, Germany and Egypt. Brazil and India are the largest sugar producing countries followed by China, USA, Thailand, Australia, Mexico, Pakistan, France and Germany.

• The world consumption was projected to grow to 160 MMT in 2010 and 172 MMT by 2016. India is predominant an agro based economy.

• Sugarcane plays a very vital role in this agro based economy by providing sugar, the main sweeter used in India. With the growing demand for sugar, the emphasis has been on increasing sugar production.

• Due to the switching over from other sweetening agents to sugar, the effect of population growth and increase in per capital consumption, the sugar consumption is likely to increase. Hence, there is a lot of scope for increasing the sugar manufacturing infrastructure, hence further addition of sugar manufacturing infrastructure is envisaged in India. The economical size of the sugar plants is shifting from 2500 TCD to 8000 TCD considering mainly the cost of production and economical self sufficient own stream industries. The ever growing energy demand and the steep depletion of fossil fuels directed us to explore the possibility of developing other sources of energy particularly from non-conventional renewable energy sources, which is also environmental friendly. Further, it is an undisputed fact that the present level of generation of power from Hydel, Thermal and Nuclear sources could not meet the increasing demand due to various problems. Power interruption leads to unplanned shut down and consequences are excess consumptions of utilities, compromise in quality of sugar and overall increasing in manufacturing costs. Hence, it was decided to utilize bagasse produced in this sugar mill for cogeneration of power. The sugar industry generates large quantities of by-products viz. bagasse, molasses and press mud. To be economically and environmentally sustainable it is necessary for the sugar industries to convert these by-products into high value products. Thus, the proposed plant will be established in the same premises of the existing sugar mill. The raw materials molasses and

bagasse generated from the sugar mill will be utilized in the proposed distillery and co-gen power plant, respectively.

In order to reduce the green house gas emission, the non-conventional energy is to be utilized for the generation of electricity. One of the non-conventional renewable energy sources is bagasse. So, the ministry of non-conventional energy, Government of India encourages sugar mills for bagasse based co-generation by increasing the various subsidies. Bagasse based cogeneration in sugar mills eminently fits in as a desirable source of augmenting the power generation as it has following merits:

• Bagasse based cogeneration is environment friendly as it does not add to the existing pollution level of the environment due to carbon recycling

• It is a renewable source of energy resulting into reduced dependence on fossil fuels

• There is no need to transport the fuel to the generating stations as the sugarcane in any case is transported to the factories

• It helps in bridging the gap between the demand and supply in the power sector to some extent

• It has lower gestation period and lower installation and operating cost compared to the conventional utility thermal plants

• The project land is in possession of promoters and there are no rehabilitation resettlement issues.

• There is no litigation pending against the proposed project.

# SUGAR MANUFACTURING PROCESS TECHNOLOGY

Indian sugar industry is engaged mainly in the production of direct consumption commercial plantation white sugar (99.8 % pure) sugar is produced in vacuum pan factories. Sugar production process mainly comprises of following five operations.

**1. Extraction of juice (Crushing)**

**2. Clarification of juice**

**3. Concentration of juice (Juice to syrup) by evaporation**

**4. Boiling of Syrup to grain (Crystallization)**

**5. Separation of crystals from mother liquor (Centrifuging)**

**Cane receiving:**

The sugar cane in the field is examined for its quality before harvesting and harvesting permits are given after its quality and maturity is found satisfactory. The sugar cane is then manually harvested and transported to factory by tractor trailers, trucks and bullock carts. The farmers are supplied with steel wire rope slings to be placed below the cane in the vehicles to enable unloading by cranes. The vehicles bringing sugar cane are received at the factory cane yard.

**Sugarcane Weighment:**

The vehicles carrying the sugar cane are weighed on the platform type electronic weighbridges and released for unloading. The gross weight is recorded and printed. After unloading the vehicles are once again weighed for the tare weight. These weights are printed on the weighment slips, which also carry the details of the farmer, cane etc.

**Sugarcane Unloading:**

The cart cane is manually unloaded directly to the cane carrier. The cane from the trucks and tractor- trailers are unloaded with the help of cane un-loader crane. The cane is unloaded on to the feeder table.

**Sugarcane Conveying:**

The cane from the feeder table is then dumped to the main cane carrier, which conveys the cane to the cane preparatory devices. Electronic devices, depending on the cane-crushing rate control the speed of the cane carrier, and level in the cane carrier etc.

**Sugarcane preparation:**

The sugar cane is passed through the cane preparatory devices called leveler, cutter and fibriser where in the cane is cut into small pieces to expose the juice cells for extraction. The preparatory index is about 85-90 %.

**Milling:**

The prepared cane then passes through the milling tandem having 4 mills of three roller & necessary feeding device. The mills run at about 4.5 to 6.0 RPM driven through hydraulic motors or DC variable speed drives. The mills loaded hydraulically extract juice from the cane and is subjected for the extraction of juice aided by maceration water and compound imbibition. The cane is conveyed between mills with the help of rake type mechanical conveyors.

Screens then filter the extracted juice and filtered juice is pumped for further processing. The fibrous residue after juice extraction known as bagasse is withdrawn from the last mill and conveyed through drag type steel conveyors to boiler for steam generation. Surplus bagasse is withdrawn from the conveyor and stored for reuse when necessary.

The bagasse conveyor also has return conveyor to feed the stored bagasse.

**Juice clarification:**

The mixed juice received from milling after filtration is weighed in a juice weighing scale or by a mass flow meter to know the quantity of juice flowing.

The juice contains certain undesirable impurities, which are removed before it is taken for concentration in evaporators. The juice is first heated to a temperature of 70°C in a tubular type vertical heater by using heat of vapours from the third effect of a quintuple effect evaporator. The use of third effect vapours resulted in steam economy. The hot juice is then mixed with lime and sulphur dioxide gas maintaining a pH of 7.0. This process is carried out in a reaction vessel known as juice sulphiter. Any $SO_2$ gas coming out of the vessel is again scrubbed though juice and no gas is allowed to atmosphere.

The treated juice is again heated to a temperature of 105°C in a similar tubular type heater using vapours from second and first effect of evaporators. The heated sulfated juice is then sent to a gravity settler known as clarifier wherein the mud flocs and settles. Chemical settling aids like “Magnafloc, Sedipur or Separan” may be added to improve settling rate.

The mud settled at bottom of each of the four compartments in the clarifier is withdrawn continuously and is filtered in a rotary vacuum filter. The filtered mud after washing and removing residual juice in the filter is scraped from the filter drum and sent out. Fine bagasse is mixed with muddy juice as filter aid. The filtrate juice is returned to the raw juice tank and recirculated. The mud is used as manure in fields because of its nutrient value.

**Evaporation:**

The clarified clear juice is withdrawn from the clarifier continuously & sent to evaporators after heating the juice further to 115°C in a plate type heater. The evaporators consist of five evaporator bodies arranged to work in series as a quintuple effect. The exhaust steam or the bled steam from steam turbines at powerhouse is supplied to the first body of the evaporator for heating. The vapours from second body are bled to pans for boiling. The raw juice heating is done with the vapours bled from 3rd effect, sulfated juice with vapours from 2 nd and 1st effects of the evaporators. This type of quintuple effect evaporation and vapour bleeding achieves good steam economy. The exhaust steam condensate from the first body is withdrawn & sent to boiler condensate storage tank for use as boiler feed water. The condensate from all other evaporators is withdrawn individually and sent to hot water storage tank for use in various processes. The clear juice gets concentrated from a brix of 15 to 60 % and is withdrawn continuously from 5th body of the evaporators. The syrup thus, obtained from evaporators is passed through a continuous syrup sulphiter wherein SO2 gas is bubbled through syrup for bleaching purpose. The spurted syrup is then sent to pan floor storage tanks for further boiling.

**Pan boiling:**

A three stage boiling scheme is adopted to produce quality sugar with minimum sugar loss. The first massecuite (A-massecuite, sugar plus mother liquor) is boiled on hopper seed footing, syrup, melt, and A-light molasses. A-heavy molasses is used for boiling B-massecuite& A-light molasses is taken for A-massecuite boiling. C- Massecuite is boiled using true seed along with B-heavy molasses and C-light molasses for complete exhaustion. B-massecuite is boiled using double cured C -sugar magma. This sugar is taken as seed for A-boiling and surplus is melted and used along with A-light molasses and syrup to boil A-

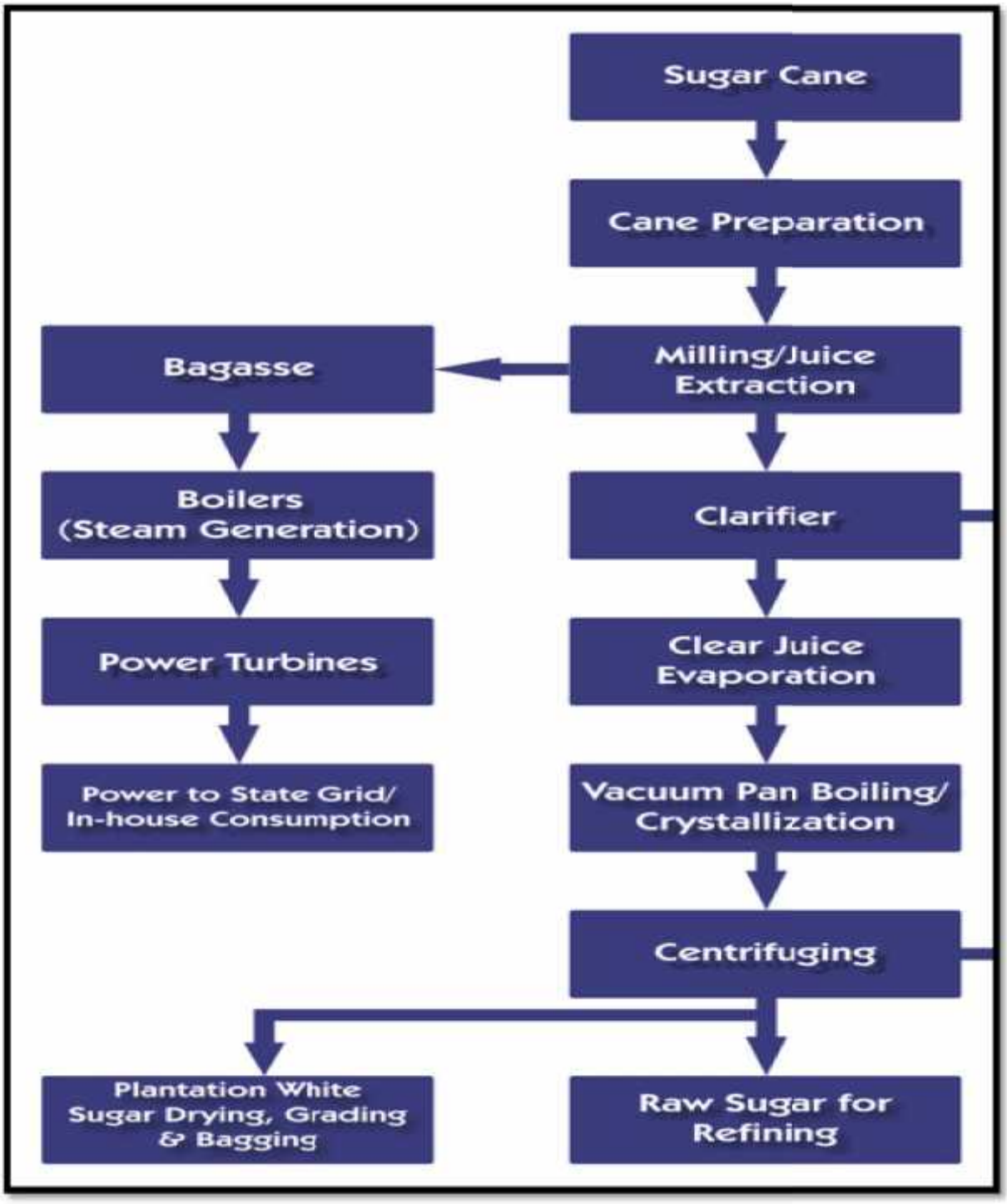
massecuite. The pans used for A-boiling are low head calandria type batch pans and for B and C boiling are fully automated continuous pans.

**Cooling and curing:**

The process of crystallization initiated in the pan is completed in the crystallizer (storage tank with mechanical stirring arrangement and air or water cooling arrangement). Air-cooled crystallizers are used for A-massecuite and water- cooled continuous type vertical crystallizers are used for B and C massecuites. A- massecuite is centrifuged in a fully automated high-speed batch type centrifugal machine to separate sugar and molasses. The sugar is washed with super heated water in the machine to get good quality white crystal sugar. The sugar is then discharged by a plough in the machine and dropped to a grasshopper conveyor. The hopper is provided with facility to dry and cool the sugar before graining. The heavy and light molasses separated in the centrifugal are sent back for reprocessing at pans.

Continuous centrifugal machines are used for centrifuging B and C massecuites. The B-massecuite is cured in continuous centrifugal machines to separate B- heavy molasses and B-sugar. B-sugar thus obtained (B-fore sugar) is again made into magma with water and cured in a continuous centrifugal machine to separate B-light molasses and B- after sugar. Similarly C-massecuite is double cured in continuous centrifugal machines. The fore-worker molasses is the final molasses, which is sent to steel storage tanks. C-double cured sugar is melted and used for boiling B-massecuite.

The sugar discharged from A- centrifugal machines is conveyed through grasshopper conveyors wherein drying and cooling arrangements are provided. Sugar then passes through mechanical graders where the sugar is graded as per their sizes to confirm to the IS standard. The graded sugar is then sent to sugar storage bins with the help of bucket elevators.




**Manufacturing process Flow Chart**

| Sr. No. | Attributes | Project Details |
|---|---|---|
| 1. | **Name of the project** | M/s **Avadh Sugar & Energy Limited, Hargaon Sugar Unit** has proposed modernization/expansion of<br>1. Sugar plant from 10,000 TCD to 13,000 TCD.<br>2. Power plant from 22.0 MW to 26.5 MW. |
| 2. | **Location of the project** | **Village Hargaon, Distt. Sitapur, Uttar Pradesh** |
| 3. | **Project Justification** | ➢ Revenue will be generated for the State Government.<br>➢ Employment will be provided to eligible people of the state.<br>➢ Increase in Local Business<br>➢ Standard of Living of people will increase.<br>➢ Lead to growth in income. |
| 4. | **Project Area** | The proposed expansion will be done in existing sugar unit of area of 16.040 hectare land |
| 5. | **Total Project Cost** | Total Project Cost : 6413.00 Lacs<br>(for Sugar expansion) |
| 6. | **No. of working days** | 240 Days/Annum |
| 7. | **Green Belt Development** | 33 % of Total Project area |

# Project Details

| Sr. No. | Attributes | Project Details (Existing 10,000 TCD) | Project Details (Proposed 3000 TCD cane crushing capacity) Total cane crushing capacity =13000 TCD |
|---|---|---|---|
| 1. | Raw Material Requirement | Sugar cane : 10,000 TCD | Sugar cane : 13,000 TCD |
| 2. | Product (Sugar) | White Crystal Sugar 1300 MT/Day | White Crystal Sugar 1600 MT/Day |
| 3. | Product (Power) | 22.0 MW | 4.5 MW (proposed) Total power production capacity =26.5 TCD |
| 3.1 | Power Requirement | - | 16.0 MW for 13,000 TCD Sugar plant |
| 4. | By product | Molasses : 450 MT/Day Bagasse: 3000 TPD Press-mud: 350 TPD | Molasses : 650 MT/Day Bagasse: 3900 TPD Pressmud:585 TPD |
| 5. | Boiler | 25.0 TPH Boiler (existing)<br>70.0 TPH Boiler (existing)<br>120.0 TPH Boiler (existing) | NO NEW BOILER IS PROPOSED |
| 6. | Fuel Requirement (For Boiler) | Bagasse:<br>2130 TPD will be used as fuel | - |
| 7. | Steam Requirement | -------- | 210 TPH for 13000 TCD Sugar plant |
| 8. | Air Pollution Control System | 25.0 TPH Boiler (existing):<br>Stack :34.0 Meters(MS)<br>70.0 TPH Boiler (existing)<br>Stack:40.0 Meters(MS)<br>120.0 TPH Boiler (existing)<br>Stack:67.0 Meters(RCC)<br>**Wet scrubber** installed as APCS. The emissions of particulate matters from the stacks will be limited to 150 mg/$Nm^3$. | |

<table>
<tr><td rowspan="3">9.</td><td rowspan="3">Fresh Water Requirement</td><td>Industrial Water Requirement (For 10,000 TCD)<br>1000.0 KLD<br>(@ 0.1 KL/KL of product)<br>( Net fresh water requirement after recycling)</td><td>Industrial Water Requirement (For 13,000 TCD)<br>1300.0 KLD<br>(@ 0.1 KL/KL of product)<br>( Net fresh water requirement after recycling)</td></tr>
<tr><td>Domestic Water Requirement:300.0 KLD</td><td>Domestic Water Requirement:300.0 KLD</td></tr>
<tr><td>Total water Requirement: 1300 KLD</td><td>Total water Requirement: 1600 KLD</td></tr>
<tr><td>10.</td><td>Source of water</td><td colspan="2">Tube well</td></tr>
<tr><td>11.</td><td>Waste Water Generation</td><td>Effluent Generation<br>2000.0 KLD<br>Discharge: 1624 KLD</td><td>Effluent Generation<br>2600.0 KLD<br>Discharge: 2100 KLD</td></tr>
<tr><td>10</td><td>Waste water treatment scheme</td><td>Unit has existing ETP for treatment of the effluent.</td><td><u>For industrial effluents:</u><br>For proper treatment of effluent ETP up-to tertiary level shall be modified.<br><u>NOTE:</u><br>20% treated water will be recycled back in process and As per GSR35(E) dated 14.01.2016 i.e. Environmental Standards for Sugar Industry. We will discharge 80% of treated effluent of B.O.D less than30 milligram per liter in surface water.</td></tr>
<tr><td>12.</td><td>Solid waste generation and its management</td><td>
<table>
<tr><th>Particular</th><th>Quantity</th><th>Management</th></tr>
<tr><td>Ash generation</td><td>50.0 MT/Day</td><td>Ash generated will be utilized as manure due to high organic and potash content.</td></tr>
<tr><td>Pressmud</td><td>350 TPD</td><td>Ash generated will be utilized as manure due to high organic and potash content.</td></tr>
<tr><td>ETP sludge</td><td>120 kg/day</td><td>Used as manure</td></tr>
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<tr><th>Particular</th><th>Quantity</th><th>Management</th></tr>
<tr><td>Ash generation</td><td>70.0 MT/Day</td><td>Ash generated will be utilized as manure due to high organic and potash content.</td></tr>
<tr><td>Pressmud</td><td>410 TPD</td><td>Ash generated will be utilized as manure due to high organic and potash content.</td></tr>
<tr><td>ETP sludge</td><td>135 kg/day</td><td>Used as manure</td></tr>
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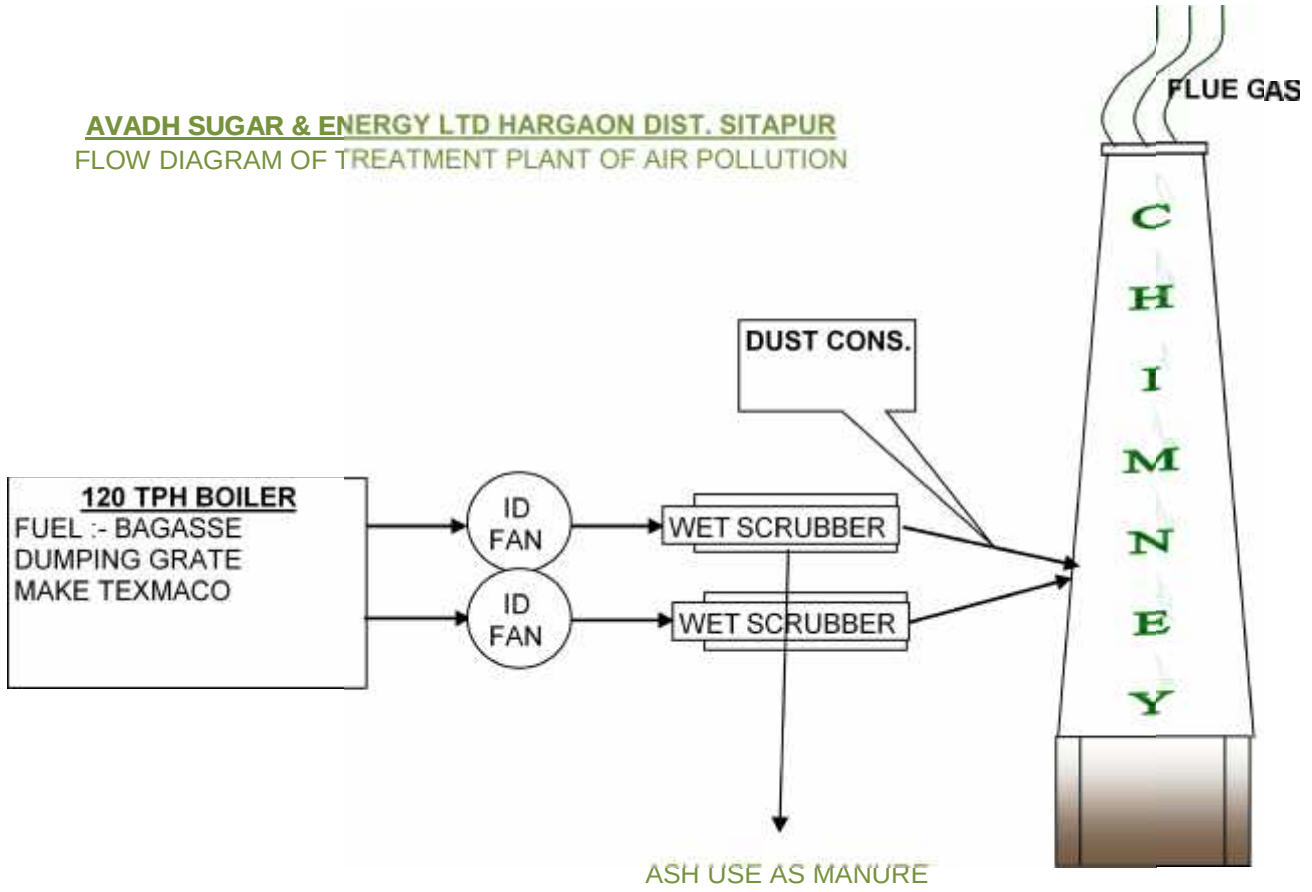
<tr><td>13.</td><td>Employment generation</td><td colspan="2"><u>150 new</u></td></tr>
</table>

## Waste water treatment scheme:

| | | |
|---|---|---|
| **Waste Water Generation** | Effluent Generation<br>2000.0 KLD<br>Discharge: 1624 KLD | Effluent Generation<br>2600.0 KLD<br>Discharge: 2100 KLD |
| **Waste water treatment scheme** | Unit has existing ETP for treatment of the effluent. | For industrial effluents:<br><br>**For proper treatment of effluent ETP up-to tertiary level shall be modified.**<br><br>NOTE:<br>20% treated water will be recycled back in process and As per GSR35(E) dated 14.01.2016 i.e. Environmental Standards for Sugar Industry. We will discharge 80% of treated effluent of B.O.D less than30 milligram per liter in surface water. |




| | | |
|---|---|---|
| | TOP DIA | 3.65 MTRS |
| | BOTTOM DIA | 4.64 MTRS |
| SUGAR | MOC | R.C.C. |

**Existing APCS Details**