# EXECUTIVE SUMMARY

## 1.0 Introduction

This EIA report is prepared to assess the Environmental Impact and to suggest suitable mitigation measures for proposed expansion of sugar and cogeneration power plant manufacturing activity of M/s Baramati Agro Limited unit-3 (BAL U-3). at Gat Nos: 192, 267, 275, 276, 277, 278 and 279 Halgaon, Taluka Jamkhed, District Ahmednagar (New Name Ahilyanagar), Maharashtra.

The proposed project is a brownfield expansion of a sugar and cogeneration power plant located in Halgaon, Taluka Jamkhed, District Ahmednagar, Maharashtra. As per the Environmental Impact Assessment (EIA) Notification issued by MoEF&CC (S.O. 1533 dated 14th September 2006) and its subsequent amendments, the proposed expansion falls under Schedule 5(j) and 1(d), and therefore requires Prior Environmental Clearance. Being categorized as a Category B1 project, it will be appraised by the State Expert Appraisal Committee (SEAC).

The Owner (Project Proponent) of BAL U-3 is given in below table **(Table No. 1)** & registered office and factory site address is at Gat Nos. 192, 267, 275, 276, 277, 278 and 279 Halgaon, Taluka Jamkhed, District Ahmednagar, Maharashtra 413205, India.

**Table 0 List of the promoters and their responsibilities/designation**

| Sr. No | Full Name | Designation | DIN | Address |
|---|---|---|---|---|
| 1 | Mr. Rajendra Dinkarrao Pawar | Chairman & Managing Director | 00226848 | 601, Subhadra Bang, Pimpali, Tal. Baramati, Dist. Pune - 413102 |
| 2 | Mr. Rohit Rajendra Pawar | Whole-Time Director | 00590679 | 601, Subhadra Bang, Pimpali, Tal. Baramati, Dist. Pune - 413102 |
| 3 | Mr. Subhash Jagannath Gulve | Executive Director | 02625022 | A/P. Takali, Tal. Karmala, Dist. Solapur - 413203 |
| 4 | Mrs. Vijaya Shivyogi Hirmath | Independent Director | 07385209 | Rajmudra, Flat No. 8, House No. 424/8 Near Ganesh Mandir, Ashok Nagar, Baramati - 413102 |
| 5 | Mrs. Sushma Shantikumar Mane | Independent Director | 10061431 | w/o Shantikumar Mane, 82/A, Gavthan, Jainakwadi, Ktfal, Pune - 413133 |
| 6 | Mr. Rishikesh Namdeo Dabhade | Non - Executive Director | 06434185 | 191 Malwadi Chakan Road, Talegaon Dabhade, Tal. Maval. Dist. Pune - 410507 |

## 2.0 Project Location

The proposed expansion will be carried out at Gat Nos. 192, 267, 275, 276, 277, 278 and 279 Halgaon, Taluka Jamkhed, District Ahmednagar, Maharashtra State. The GPS (Global Positioning System) location of the project site is 18°35'26.84"N Latitude & 75°15'8.69"E Longitude & it is situated at 607 m above from mean sea level.

As per Toposheet developed by Survey of India department; the project site is falling in toposheet no E43J6 while 10 km radius study area covers four toposheets as E43J6, E43J7, E43J10 and E43J11.

The project site is accessible via State Highway No. 143 (SH-143), which connects to National Highway NH-548D. The nearest airport, Dharashiv Airport, is approximately 92 km away by air, while the closest railway station, New Ashti, is located about 28 km from the site (aerial distance).

There are no national parks, Biosphere Reserves, Tiger/Elephant Reserves, and Wildlife Corridors etc. within 10 km distance except Patches of the Protected Areas of Great Indian Bustard Sanctury are located within study area. Nearest patch is located at approximately 6.0 km from the project site.

## 3.0 Project Description

The proposed expansion of sugar and cogeneration power plant falls under schedule 5(j) and 1(d). Salient features of proposed project are presented in **Table No. 2**.

**Table No. 2: Salient Features of Project**

| Sr. No. | Component | Details | | | |
|---|---|---|---|---|---|
| 1 | Name & Address of Company | **M/s. Baramati Agro Limited Unit-3 (BAL U-3)** Gat Nos. 192, 267, 275, 276, 277, 278 and 279 Halgaon, Taluka Jamkhed, District Ahmednagar – 413205. | | | |
| 2 | Product Type | Manufacturing of Agro Based Products (Sugar and Cogeneration Power) | | | |
| 3 | Project Type | Expansion | | | |
| 4 | Schedule of project as per EIA Notification, 2006 | 5(j) & 1(d) | | | |
| 5 | Category of Project* | 'B1' | | | |
| | | | | | |
| 6 | **Plot Area Details** | | | | |
| | **Particulars** | **Area in Sq. m.** | | **% of Total Plot Area** | |
| a | Built-up Area | | | | |
| | Existing - | 16771.36 | 40640.44 | 7.07 | 17.13 |
| | Proposed - | 23869.08 | | 10.06 | |
| b | Area Under Utility | | | | |
| | Existing - | 20610.10 | 49752.16 | 8.69 | 20.98 |
| | Proposed - | 29142.06 | | 12.29 | |
| c | Parking Area | 35873.84 | | 15.13 | |
| d | Area Under Road | 20052.50 | | 8.45 | |
| e | Green Belt Development | 78402.49 | | 33.06 | |
| f | Open Space | 12458.78 | | 5.25 | |
| | **Total** | **237180.21** | | **100.00** | |
| | | | | | |
| 7 | **Production Details** | | | | |
| | **List of Products** | **Existing** | **Proposed** | **Total** | |
| a | Sugarcane Crushing<br>Sugar Production | 2500 TCD<br>300 TPD | 9500 TCD<br>1140 TPD | 12000 TCD<br>1440 TPD | |
| b | **Co-generation Power** | 8 MW | 30 MW | 38 MW | |
| | | | | | |
| 8 | **Budgetary Estimation** | | | | |
| a | Project Cost (Indian Rs.) | 310.00 Cr (INR) | | | |
| b | EMP Cost (Indian Rs.) | Capital: 21.96 Cr (INR), Recurring/Annum: 151 Lakh | | | |
| | | | | | |

| 9 | **Power Requirement** | | | | |
|---|---|---|---|---|---|
| | **Plant** | **Existing** | **Proposed** | **Total** | **Source** |
| a | Sugar Unit | 2.2 | 8.3 | **10.5** | Existing – 8 MW & Proposed 30 MW Cogen Unit |
| b | Co-generation Unit | 0.8 | 3.0 | **3.8** | |
| | **Total** | **3.0** | **11.3** | **14.3** | After use remaining 23.7 MW to MSEDCL grid. |
| | | | | | |
| 10 | **Steam Requirement** | | | | |
| a | Sugar Unit and Co-generation Power Plant | 40 | 152 | 192 | From Existing 40 TPH (Standby after proposed expansion) and proposed 2*100 TPH boilers of co-generation unit. |
| | | | | | |
| 11 | **Fuel Requirement** | | | | |
| | **Boiler/DG Set Details** | **Fuel** | **Quantity** | **Source** | |
| a | Existing 40 TPH Boiler (Standby after proposed expansion) Proposed 2*100 TPH Boilers | Bagasse (MT/day) | 2094.5 | Own Sugar Unit | |
| b | Existing 250 KVA DG Set | HSD | 150 Ltr/Hr | Open Market | |
| c | Proposed 2*1250 KVA DG Sets | HDS | 1500 Ltr/Hr | Open Market | |
| | | | | | |
| 12 | **Diesel Generator (D.G.) Details** | | | | |
| | Capacity & No. | Existing 1*250 KVA and Proposed 2*1250 KVA DG Sets. | | | |
| | | | | | |
| 13 | **Boiler Details** | | | | |
| a | Steam Boiler | Existing 1*40 TPH Boiler (Standby after proposed expansion) & Proposed 2*100 TPH Boilers | | | |
| | | | | | |
| 14 | **Stack and APCE Details** | | | | |
| a | Existing 40 TPH Boiler Stack (from ground level) (Standby) | Stack of 48 m (ESP will be installed instead of existing wet scrubber) | | | |
| b | Proposed 2*100 TPH Boiler Stack (from ground level) | Common Stack of 75 m & ESP | | | |
| c | Existing 1*250 KVA D.G Set | Stack of 3 m above roof level | | | |
| d | Proposed 1*250 KVA D.G Set | Stack of 7.2 m each above roof level | | | |
| | | | | | |

| | | | | |
|---|---|---|---|---|
| 15 | Man Power | Existing: 350 Nos.<br>Proposed: 450 Nos.<br>Total: 800 Nos. | | |
| | | | | |
| 16 | **Water Requirement (m3/day)** | | | |
| | **Particular** | **Existing** | **Proposed** | **Total** |
| | **Domestic*** | **90*** | **00*** | **90*** |
| | Existing 1*40 TPH (Standby) and Proposed 2*100 TPH boilers | 960 | 3840 | 4800 |
| | DM Plant | 143 | 569 | 712 |
| | Process water | 195 | 800 | 995 |
| | Washing of equipment | 30 | 90 | 120 |
| | Condenser Water | 0 | 0 | 0 |
| | Spray pond blowdown | 375 | 1425 | 1800 |
| | Cooling tower | 172 | 688 | 860 |
| | Recycling of Excess Condensate | 0 | 0 | 0 |
| | Recycle of treated effluent | 0 | 0 | 0 |
| | **Total (Industrial)** | **1875** | **7412** | **9287** |
| | | | | |
| 17 | **Effluent Generation (m3/day)** | | | |
| | **Particulars** | **Existing** | **Proposed** | **Total** |
| | **Domestic*** | 72* | 00* | 72* |
| | Existing 1*40 TPH (Standby) and Proposed 2*100 TPH boilers | 34 | 134 | 168 |
| | DM Plant | 29 | 115 | 144 |
| | Process water | 190 | 780 | 970 |
| | Washing of equipment | 30 | 90 | 120 |
| | Condenser Water | 0 | 0 | 0 |
| | Spray pond blowdown | 125 | 475 | 600 |
| | Cooling tower | 22 | 88 | 110 |
| | Recycling of Excess Condensate | 0 | 0 | 0 |
| | Recycle of treated effluent | 0 | 0 | 0 |
| | **Total Effluent (Industrial)** | **430** | **1682** | **2112** |
| | | | | |
| 18 | **Recycle/Reuse Water Details (m3/day)** | | | |
| | **Particulars** | **Existing** | **Proposed** | **Total** |
| | **Domestic*** | **0** | **0** | **0** |

| | | | | |
|---|---|---|---|---|
| | Existing 1*40 TPH (Standby) and Proposed 2*100 TPH boilers | 846 | 3386 | 4232 |
| | DM Plant | 0 | 0 | 0 |
| | Process water | 0 | 0 | 0 |
| | Washing of equipment | 0 | 0 | 0 |
| | Condenser Water | 375 | 1425 | 1800 |
| | Spray pond blowdown | 0 | 0 | 0 |
| | Cooling tower | 0 | 0 | 0 |
| | Recycling of Excess Condensate | 375 | 1425 | 1800 |
| | Recycle of treated effluent | 417 | 1631 | 2048 |
| | **Total (Industrial)** | **2013** | **7867** | **9880** |

| | | |
|---|---|---|
| 19 | **Net Water Requirement (m3/day)** | |
| | **Domestic Purpose** | Existing 90, which shall be adequate even after expansion. |
| | **Industrial Purpose** | Net Water Reqt. = Water Reqt. – Recycled water<br>Net Water Reqt. = 9287 – 9880 = -593 (Saved)<br>**Note:** For industrial purpose water requirement will be zero in fact, 593 KLD of excess condensate saved during crushing season. Out of 593 KLD, 211.10 KLD used for irrigation purpose and 164.93 KLD used for greenbelt purpose (i.e. 164.93*180= 29687 m3/annum stored in proposed 30000 KLD storage tank). |
| | | |
| 20 | **ETP Details & Effluent Treatment Scheme** | |
| a | Industrial | Industrial Effluent – 2112 $m^3$/day.<br>2112 KLD out of which sugar effluent - 1090 KLD, spray-pond effluent – 600 KLD and co-generation power plant effluent 422 KLD (Co-gen effluent- 422 KLD, out of which 168 KLD boiler blow-down, 110 KLD cooling tower blow –down and 144 KLD of DM plant reject).<br>Sugar effluent, co-generation power plant effluent and spray-pond effluent shall be treated in proposed ETP of 2400 KLD capacity.<br>Excess condensate shall be treated in proposed CPU of 2000 KLD capacity and recycled and used for various industrial purpose. |
| b | Domestic | Domestic Effluent – 72 $m^3$/day.<br>Domestic effluent shall be treated in proposed STP of 100 $m^3$/day capacity and treated effluent shall be used for greenbelt/gardening. |

| | | | | | |
|---|---|---|---|---|---|
| 21 | **Details of Hazardous Wastes** | | | | |
| **Sr. No.** | **Particulars** | **Category*** | **UOM** | **Quantity** | **Method of Disposal/Management** |
| a | Spent/Used Oil | 5.1 | KLA | 2.7 | Shall be collected in Leak Proof Containers and utilized as lubricant for bullock carts or burnt in boiler along with bagasse. |

| |
|---|
| *Schedule I of The Hazardous and Other Wastes (Management and Trans boundary Movement) Rules, 2016. |

## 4.0 Description of the Environment

Baseline surveys/studies were conducted during winter season **November 2023 – January 2024** for collecting information on physicochemical, biological, socio-economic and physical environment from the study area.

### *4.1 Topography, Land use & its Classification*

Contour map of area covering 10 km radius around project site is prepared using DEM with 3 m interval. The map of 10 km radius around project site shows nearly flat terrain throughout the study area, minor undulations are observed towards eastern periphery of study area. There are no significant undulating geo features seen within 10 km study area. Highest point of the area covering 10 km radius around project site is 630.9 m located at the south-east periphery of study area whereas the lowest point is at 537 m is located at the southern periphery within study area.

The study area of 10 km radius from the center of project site shows seven land use classes. The study area is located in the Jamkhed Tehsil of Ahmednagar District in Maharashtra. The study area is irrigated though Sina River, Vincharna River, Khairi River and natural streams. The study area is dominated by Fallow land (45.26%) and Agriculture land (40.43%). Open land (11.90%) which indicate non vegetative cover within the study area is one of the dominant class within the study area. Since there are no dense forest areas present within the study area, scrub land (1.45%) is classified as the only small vegetation cover class within the study area. Presence of village settlements/built-up like Halgaon, Lawala, Maharli, Matewadi, Maharuli, Rajewadi and Chondhi etc within the study area represent habitation class corresponding to 0.26% of total land use. Various waterbodies including Sina River, Vincharna River, Khairi River and a number of small man-made reservoirs etc. correspond to 0.71% of land cover.

The area shows comparatively flat terrain with very minor undulations. Majority of drainage lines are flowing towards Sina River Basin which is located towards west inside the study area. Few streams contributing to Khairi River which is flow towards south and few other streams contributing to Vincharna River flow towards south-west and both Rivers contribute to Sina River.

Based on the physical characteristics and Land Use Land Cover (LULC) of the study area, it is understood that the additional land required for the proposed expansion is owned by the factory and situated adjacent to the existing premises. This land, currently classified as agricultural, will be converted into greenbelt area. As the change in land use is minor, no mitigation measures are deemed necessary.

### *4.2 Soil Environment*

The soil samples were derived from 8 different locations within the study area of the project. Analysis results of the same, revealed that the pH values of soil samples were varying in range of 7.35 to 7.86; which indicated neutral to slightly alkaline soil samples. The organic matter content in soils was varying between the range from 0.62 – 0.73 percent. The values for Nitrogen at all locations varied between 315 to 381 Kg/ha. & maximum concentration of Nitrogen was observed at location S8. Concentrations of Phosphate were found to be in the range of 64.3 to 106.3 mg/kg. Whereas highest concentration was observed at location S2, while the lowest concentration was observed at location S6. Concentration of potassium amongst all locations was found to be ranging between 139 to 165 kg/ha. Heavy metals viz. As, Cr, Hg & Pb were below detection limit whereas the concentration of Ni & Zn varied in the range of 0.70 to 0.88 mg/kg and 1.69 to 1.85 mg/kg respectively.

Based on the above findings it can be concluded that the soil samples can be classified as per soil classification given by Tondon H.L.S. (2005). The samples fall under very low to Medium fertile soils.

### *4.3 Air Environment*

Ambient Air quality for criteria pollutants viz. PM10, PM2.5, NOx, $SO_2$ and CO was monitored at nine (9) locations in study area.

**Particulate Matter ($PM_{10}$)**

The study reveals that maximum concentration was observed to be in the range of 42.90 - 61.10 µg/$m^3$. The highest 24-hourly concentration was recorded at sampling location AAQ-2 whereas the minimum concentration was observed at location AAQ-5. The high concentration of particulate matter recorded at project site (AAQ-2) may be due to local vehicular movement on unpaved road. It should be noted that the concentration of $PM_{10}$ was not observed to be exceeding the standards prescribed by the CPCB on any occasion.

**Particulate Matter ($PM_{2.5}$)**

The major source of $PM_{2.5}$ is said to be the combustion of fossil fuels, fire wood and industrial emissions etc, present within study area. The maximum of $PM_{2.5}$ (39.70 µg/$m^3$) during the study period was recorded at location AAQ-2, whereas the minimum value (24.70 µg/$m^3$) concentration was recorded at AAQ-5 location. It should be noted that the concentration of $PM_{2.5}$ was not observed to be exceeding the standards prescribed by the CPCB on any occasion.

**Sulphur Dioxide ($SO_X$)**

High level of $SO_X$ in ambient air indicates the presence of combustion of fossil fuel in the vicinity. The maximum of $SO_X$ (15 µg/$m^3$) during the study period was recorded at location AAQ-8, whereas the minimum value (8.0 µg/$m^3$) concentration was recorded at AAQ-1 location and all the observed concentrations are within prescribed standards of CPCB.

**Oxides of Nitrogen (NOx)**

The various forms of Nitrogen in NO, $NO_2$ and $N_2O$ are collectively called as Oxides of Nitrogen. The highest value of $NOR_XR$ during the monitoring period was observed at location AAQ-2 while the minimum average was recorded at AAQ-6. The maximum 24 hourly value of $NO_X$ was recorded at the monitoring location AAQ-2 (20.70 µg/$m^3$) whereas the minimum concentration of NOx was recorded at location AAQ-6 (10.30 µg/$m^3$).

**Carbon Monoxide (CO)**

The anthropogenic source of CO is due to incomplete combustion of fuel majorly in absence of air. The maximum of CO (1.50 µg/$m^3$) during the study period was recorded at location AAQ-2, AAQ-7 and AAQ-9 whereas the minimum value (0.60 µg/$m^3$) concentration was recorded at AAQ-3.

All the parameters were found to be within the desired limits specified by NAAQ Standard set by CPCB.

### *4.4 Noise Environment*

Ambient noise levels were monitored at eight (11) locations in the study area during the study period.

**Daytime Noise Levels $(Leq)_{day}$**

**Industrial Zone:** The day time noise level at the Project site was found in the range of 61.70 – 67.80 dB (A), which is well below the permissible limit of 75 dB (A).

**Residential Zone:** The daytime noise levels in all the residential locations were observed to be in the range of 44.50 (A) to 47.60 dB (A).

**Night time Noise Levels $(Leq)_{night}$**

**Industrial Zone:** The night time noise level in the Project site was observed in the range of 50.40 (A) to 59.30 dB (A), which is well below the permissible limit of 70 dB (A).

**Residential Zone:** The night time noise levels in all the residential locations were observed to be in the range of 38.10 dB (A) 41.90 dB (A).

It shall be noted that the noise levels during the day time as well as night time were estimated to be under the prescribed standards by CPCB.

### *4.5 Ground Water Environment*

The above results revealed that values/ concentrations of various parameters amongst all the samples were in the range of pH - 7.08 to 7.62, TDS – 313 to 370 mg/l, Sulphates – 53 to 72 mg/l, Chloride – 77 to 114 mg/l, Total Hardness – 199 to 274 mg/l, Calcium – 36 to 58 mg/l, Sodium – 10 to 20 mg/l, Fluoride - 0.47 to 0.63 mg/l, Magnesium – 19 to 37 mg/l, COD - 6.88 to 10.20 mg/l, BOD - <3.00 mg/l, Iron– 0.16 to 0.22 mg/ whereas concentrations of Arsenic, Lead were <0.01 mg/l and that of Cadmium, Chromium, Mercury, Nickel & Zinc were <0.003 mg/l, <0.01 mg/l, <0.001 mg/l, <0.01mg/l & <0.01 mg/l respectively.

### *4.6 Surface Water Environment*

Surface water samples were derived from 6 locations in different surface water bodies within study area, analysis results of the same revealed that pH values amongst all samples varied in the range of 7.41 to 7.91, Total Hardness concentration varied in the range of 140 mg/l to 173 mg/l & maximum concentration was recorded at SW6, TDS concentration varied in the range of 185 to 211 mg/l. Electrical Conductivity was found to be ranging in between 289 to 320 mS/cm. The concentrations of Dissolved Oxygen, BOD & COD were found to be varying in the range of 4.88 to 7.08 mg/l, 7.3 to 9.1 mg/l & 26.18 to 34.00 mg/l respectively whereas the concentrations of Phosphates, Nitrate varied in the range of 0.21 to 0.27 mg/l, 2.60 to 3.05 mg/l respectively.

Concentrations of elements such as Calcium, Magnesium & Sodium were found to be in the range of 27.00 to 34.00 mg/l, 4.80 to 24.00 & 9.00 to 15.00 mg/l respectively.

Heavy metals viz. Lead, Chromium, Mercury, Zink, Cadmium, Arsenic & Nickel were found to be <0.01 mg/l. Concentration of Fluoride varied in the range of 0.30 to 0.47 mg/l.

### *4.7 Biotic Environment*

***Project site flora & fauna:***

The current project is located in a rural set up. The recce of the project area showed large green patches due to presence of orchards and agricultural land. Very less natural vegetation cover is seen in the surrounding areas as most the land is cleared for cultivation due to the presence of highly fertile black regur soil in the region which results in high agricultural produce. Thereby the assessment of core area and buffer area for flora and fauna was done by checklist method for better and realistic account of biodiversity.

During the study period 09 species of reptiles, 03 species of mammals, 36 species of birds. 37 species of insects, 09 species of fish and other aquatic organisms, 02 species of macro algae, 34 genus of phytoplankton, 06 species of zooplankton and 04 types of benthic organisms were observed on site and in buffer area. None of the species observed on site were listed as threatened or endangered. The

vegetation observed in the study area were mainly of the semi deciduous type and those which were planted for horticultural purposes. None of the floral species were listed as endangered or threatened.

The plankton and benthic organisms observed in Vaitarna and the surrounding reservoirs river were mainly indicators of organic pollution and eutrophication due to anthropogenic activities like washing, bathing and excretion along the banks of the water body. The aquatic flora too observed in the area were those adapted to growth in waters having organic pollution.

Patches of The Great Indian Bustard Wildlife Sanctuary are present in Jamkhed Tehsil which are at a distance of approximately 6 km. from the project site. Great Indian Bustards were not observed during the study period. Majority of the ecology and biodiversity study of the region has been focused on Mayureshwar wildlife sanctuary thereby secondary data assessment of the study area isn't available and the data available will not give a holistic view of the location.

### *4.8 Socio-Economic Environment*

The 10 km study area encompasses Halgaon Village, located in Jamkhed Tehsil of Ahmednagar District. A total of 25 villages fall within this study area, which is predominantly rural in character. Out of these, four villages have been selected for the Environmental Impact Assessment (EIA) field study. The socio-economic survey at the household level was carried out during the final week of April 2025. A summary of the socio-economic characteristics of the study area is presented in the table below.

**Table 3: Summary of Socio-Economic Aspects**

| Sr. No. | Items | Rajewadi | Aghi | Matewadi | Borle |
|---|---|---|---|---|---|
| 1 | No of Households | 162 | 194 | 202 | 178 |
| 2 | Total Population Person | 750 | 961 | 946 | 795 |
| 3 | Total Population Male | 401 | 501 | 497 | 434 |
| 4 | Total Population Female | 349 | 460 | 449 | 361 |
| 5 | Population in the age group 0-6 Person | 96 | 98 | 123 | 89 |
| 6 | Population in the age group 0-6 Male | 59 | 61 | 76 | 55 |
| 7 | Population in the age group 0-6 Female | 37 | 37 | 47 | 34 |
| 8 | Scheduled Castes population Person | 17 | 254 | 36 | 69 |
| 9 | Scheduled Castes population Male | 8 | 137 | 18 | 37 |
| 10 | Scheduled Castes population Female | 9 | 117 | 18 | 32 |
| 11 | Scheduled Tribes population Person | 0 | 24 | 0 | 1 |
| 12 | Scheduled Tribes population Male | 0 | 16 | 0 | 1 |
| 13 | Scheduled Tribes population Female0 | 0 | 8 | 0 | 0 |
| 14 | Literates Population Person | 63.61% | 71.96 % | 69.50 % | 72.95 % |
| 15 | Literates Population Male | 73.68 % | 83.41 % | 80.05 % | 80.21 % |
| 16 | Literates Population Female | 52.56 % | 60.05 % | 58.46 % | 64.53 % |
| 17 | Total Worker Population Person | 487 | 527 | 687 | 280 |
| 18 | Total Worker Population Male | 259 | 278 | 356 | 250 |
| 19 | Total Worker Population Female | 228 | 249 | 331 | 30 |
| 20 | Main workers | 487 | 501 | 356 | 273 |
| 21 | Main Cultivator Population Person | 462 | 326 | 269 | 215 |
| 22 | Main Agricultural Labourers Population Person | 19 | 139 | 71 | 46 |
| 23 | Marginal Worker | 0 | 26 | 331 | 7 |
| 24 | Marginal Worker- male | 0 | 13 | 91 | 7 |

| | | | | | |
|---|---|---|---|---|---|
| 25 | Marginal Worker- female | 0 | 13 | 240 | 0 |

***Source:*** *Ahmadnagar District Census Report 2011, GoM.*

## 5.0 Anticipated Environmental Impacts and Mitigation Measures

**Table 4: Summary of Impacts & Mitigations**

| A | Impacts During Construction Phase | | | |
|---|---|---|---|---|
| | **Activities** | **Impact** | **Severity** | **Mitigation** |
| **1.** | **Impacts on air environment** | | | |
| | Site preparation, fencing, construction of roads | Dust emission | Severe | Use tarpaulins,<br>Use face masks |
| | Transportation of construction materials | Vehicular exhaust | Moderate | Allow vehicles with PUC |
| | Excavation | Dust emission | Severe | Store soil, |
| | Civil work | Dust emission | Moderate | Segregate construction waste and dispose as per C & D rules |
| | D G set operation | Exhaust emission | Moderate | As it is an existing site with electricity D G operation will be minimum. Stack provided for emission discharge |
| | Greenbelt development | Soil shifting, dust emission | Severe | Soil shall be used in levelling, Positive impact |
| | | | | |
| **2.** | **Impact on water environment** | | | |
| | Domestic activities by workers | Waste generation | Minor | Workers will not be staying at site |
| | Use of water for cleaning, washing etc | Sewage generation | Moderate | Water will be treated in existing STP. |
| | Use of water for civil construction | Water extraction from ground | Moderate | No discharge |
| | | | | |
| **3.** | **Noise environment** | | | |
| | Transportation of plant and machinery | Noise generation | Moderate | Night working shall be avoided |
| | Operation of D G set, cranes, JCB | | Severe | Acoustic encloser provided PPE ear muffs, ear pads etc shall be used |
| | Civil construction activities | | Moderate | PPE shall be used |
| | | | | |
| **4** | Soil environment | | | |
| | Storage, handling and transportation of construction material and machinery | Contamination of soil | Severe | Good practices of storing and handling will be followed |
| | Civil construction activities | | | Construction waste will be segregated as recyclable and reuse and disposed accordingly |
| | Spillage of oil, grease | | | Site is already concreted and good storing facilities provided |
| | | | | |
| **5.** | Land use, hydrogeology and geology, ecology and biodiversity | Nil | Nil | As site is already existing |

| | | | | |
|---|---|---|---|---|
| | | | | |
| **6.** | Solid and hazardous waste | | | |
| | Construction waste | Soil contamination | Severe | Will be segregated and stored properly and disposed as per C & D rules |
| | Top soil removal | Site contamination | Severe | Will be used for greenbelt development |
| | | | | |
| **7.** | Hazards and risks | | | |
| | Handling of construction materials | Physical injuries Fall from height | Minor to Severe | Guard rails, barricades<br>Expert supervision |
| | Civil construction activities | | | Safety belts to be used |
| | Installation of plant and machineries | Fall from height | | Remove fuses while operating in working area |
| | Electrocution | Loss of life | | Expert supervision |
| | | | | |
| **8.** | Employment generation | | | |
| | Temporary employment | Economic benefits | Major | Positive for 300 persons |
| | Permanent employment | | | Positive for 20 persons |
| | | | | |
| **B** | **Impacts During Operation Phase** | | | |
| | | | | |
| **1.** | **Air Environment** | | | |
| **a** | Existing boiler 40 MT/hr steam generation | Emission of TPM, SO2, NOx, | Major | Wet scrubber is provided to restrict emission within 150 mg/nm3.<br>Proposed to be changed from wet scrubber to ESP.<br>48 m high stack provided.<br>Use bagasse as fuel i.e. low Sulphur content fuel. |
| **b** | **Proposed boilers 2 nos 100 MT/hr steam generation** | Emission of TPM, SO2, NOx, | Major | Electrostatic precipitator will be provided to restrict emission to within 50 mg/nm3.<br>75 m high stack shall be provided.<br>Use bagasse as fuel i.e. low Sulphur content fuel |
| **c** | **Existing D G set 250 KVA** | Emission of $SO_2$, NOx due to 150 ltr/hr HSD 1500 lit/hr HSD consumption | Minor | As the plant is already existing with electrical connection D G usage low<br><br>Stack height 3 m and 7.2 m above roof provided. |
| | **Proposed D G set**<br>**2 nos 1250 KVA** | | Minor | |
| | | | | |
| **2,** | **Water environment** | Water extraction from jackwell in river Sina | Severe | Detailed Water budget Described in chapter 2, section no. **2.7.6.** |
| | **Domestic use 90 KLD** | 72 KLD sewage | Moderate | STP provided |
| | | Waste Water | | |
| | **Use for boiler 4800 KLD** | 168 KLD | | 5648 KLD recycled, reused |
| | **D M plant use 712 KLD** | 144 KLD | | |

| | | | | |
|---|---|---|---|---|
| | **Process use 995 KLD** | 970 KLD | 2112 Effluent generated. | All effluent shall be treated in proposed ETP and recycled. Described in chapter 2, section no. **2.7.6.** |
| | **Equipment washing 120 KLD** | 120 KLD waste | | As sugarcane juice contains about 70% water there will be excess condensate generation of about 1800 KLD. After reutilizing all water still about 593 KLD water will be available in excess. |
| | **Spray pond, 1800 KLD** | 600 KLD Blowdown | | |
| | **Cooling tower 860 KLD** | 110 KLD blowdown | | |
| | **Greenbelt utilization** 156.81 KLD water about 19601 plants | -- | Minor | After plant stabilization no extra water will be needed |
| | | | | |
| **3** | **Solid waste generation** | | | |
| | **Ash generation from existing 40 TPH (Standby) boiler & proposed 2 x 100 TPH boilers** | 31.42 MT/day | Moderate<br>**As per quantities indicated** | Ash is mixed with Pressmud / ETP / CPU sludge and sold as manure. |
| | **ETP sludge** | 252 MT/annum | | |
| | **CPU sludge** | 230 MT/annum | | |
| | **STP sludge** | 5 MT/annum | | |
| | | | | |
| | **Nonbiodegradable municipal solid wate** | 250 Kg/moth | | Sold as scrap |
| | **Biodegradable municipal solid wate** | 2 MT/month | | Used for composting |
| | **Paper waste** | 0.02 MT/moth | | Sold as scrap |
| | | | | |
| | **Hazardous waste** | | | |
| | **Used oil** | 2.7 KLA | **Minor** | Shall be collected in Leak Proof Containers and utilized as lubricant for bullock carts or burnt in boiler along with bagasse. |
| | | | | |
| **4.** | **Noise environment** | High noise level<br>High vibration | **Moderate** | Use of acoustic encloser<br>Use vibration pads<br>Use ear plugs and muffler<br>Greenbelt will be developed |
| | **Plant and Machinery operation** | | | |
| | **Turbine operation** | | | |
| | **D G sets 250 KVA and 2*1250 KVA** | | | |
| | **F D fans and I D fan** | | | |
| | **Boiler operation** | | | |
| | | | | |
| **5** | **Power requirement** | | | |
| | **Existing 2500 TCD unit** | 3 MW | **Positive Impact** | 8 MW will be generated 5 MW will be fed to MSEB |
| | **Proposed 12000 TCD unit** | 11.3 MW | | 30 MW will be generated 18.7MW will be fed to MSEB |
| | **Steam requirement**<br>**Existing 40 TPH (Standby),**<br>**Proposed 192 TPH from (200 TPH Boilers)** | | | Renewable source of energy bagasse is fuel |
| | | | | |
| **6** | **Land use** | | | |

| | | | | |
|---|---|---|---|---|
| | Land required for existing and proposed unit installation and operation including parking, greenbelt and storage | 237180.21 m2 | **No impact** | Land already in possession |
| | | | | |
| **7** | Hazards and risk assessment | | | Please refer chapter-7 |
| | | | | |
| **8** | Socio-economy | 350 persons will get employment | **Major positive** | Employment<br>Income to farmers<br>Availability of cheap nutrient rich manure. |

## 6.0 Quantitative Risk Assessment and Mitigation Measures

Project proponent will implement all preventive measures to tackle all type of emergencies arising out of operation or malfunction of individual unit's. The required resources for Onsite and Offsite emergency management plan will be properly planned and provided to implement the plan effectively. The factory shall give highest priority towards Health and safety of the employees and people residing nearby areas. Management shall conduct the training to the nearby villagers to appraise them about their role during emergency. All nearby people shall be given training on do's and don'ts during emergency situation.

As the hazards involved during operation and production activities will be known to the Management, all required mitigation measures shall be implemented in time to avoid the emergency situation from the arising. Unfortunately, if there is any emergency onsite of offsite, it will be tackled effectively due to availability of required resources at the site. Similarly, all the concern staff and members of the Teams shall be trained appropriately to tackle the emergencies in the plant. By knowing the type of emergency situation that may arise during operation of the plant, appropriate control measures will be implemented to reduce the gravity of the emergencies. Similarly, to avoid the emergency situation, all required mitigation measures will be implemented as recommended.

Appropriate recommendations for the identified category & range of hazards explicitly are mentioned in Chapter 7 in respective sections.

## 7.0 Disaster Management Plan

Disaster Management Plan will be implemented in consultation with the District Administration to take care of health and safety during any untoward incident.

In view of handling of processes in industry, On-site Emergency Plans are important and hence has been prepared for the industry. Additionally, recommendations for and Off-site shall be provided to the District Administration. During operational phase, surrounding population shall be made aware of safety precautions to be taken in case of any emergency situation due to the overall project activity.

## 8.0 Occupational Safety & Health Management

The Project Proponent shall continue to strictly adhere to the rules of Factories Act 1948 & the Maharashtra Factories Rules, 1963 regarding the occupational health facilities to be provided to the workers of the company.

- Industry will provided decontamination facilities for the workers. The health records of the workers will be maintained.

- For the continuous and continual development, company will continue to train & educate the operators and workers with the environment, health & safety rules & regulation, procedure and measures.
- Periodic medical check-ups will be carried out to ensure the health status of the all workers.
- Job rotation will be done.

## 9.0 Post Project Environmental Monitoring Plan

Post project environmental status will be evaluated as per the Environmental Monitoring Plan framed in EIA along with additional parameters suggested if any Statutory Clearances/Permissions and frequency of environmental attributes including monitoring locations will be as per the guidelines provided by MoEF&CC/CPCB/MPCB. Monitoring shall be carried out by third party laboratories that are accredited by NABL and/or MoEF&CC.

## 10.0 Environmental Management Plan

Conduction of Environmental monitoring program as per plan, periodic reviews & audits will be carried out for effective environmental management. Project Management along with EHS department will ensure overall effective implementation of the management plan.

Systems will be in place to ensure compliance of all environmental statutory requirements & obligations and it will be ensured Corporate Environment Policies of BAL U-3 are strongly adhered to all time.

All recommendations given in the EIA report including that of occupational health, risk mitigation and safety shall be complied. BAL U-3 have allocated Indian Rs. 23.47 Cr for environmental pollution control measures & environment management plan activities; which is ~7.571 % of total project cost.

## 11.0 Project Benefits

The following benefits are expected from the proposed project:

- This project of BAL U-3 will have locale specific positive social and economic benefits.
- Some of these would be direct benefits of long-term nature.
- The project will help bridge the demand-supply gap for sugar and power products in the country.
- The project will generate revenue for the State Government.
- The project will create additional direct/indirect employment at various downstream & upstream ends and largely for local people.
- Local people will be preferred for employment during the construction and operation stage.

## 12.0 Corporate Environment Responsibility (CER) Action Plan

Ideally CER planning is envisioned from the perspective of need based assistance in health, education, sustainable lifestyles, social mobilization, infrastructure, water harvesting, agriculture and environmental protection taking into consideration locale specific scenarios around the project area.

BAL U-3 will carry out its duties under Corporate Environment Responsibility (CER) as per the MoEF&CC Office Memorandum - F.No.22-65/2017-IA.III dtd. 30th September 2020, by virtue of which the CER activities will be implemented as part of Environment Management Plan.

CER cost of 0.75% of proposed project cost viz. 232.5 lakh is allocated for implementation of need based CER activities in project area.