

## Chapter –1

### Introduction

#### 1.0 Purpose of the Report

**Jamkhandi Sugars Limited (JSL)** is proposed to enhance the Sugar Unit with a capacity from 2500 TCD to 3500 TCD along with Cogeneration power plant from 15 MW to 27 MW capacity at village Nad KD, Taluka Indi, District- Bijapur, State- Karnataka.

The purpose of this report is to present the environmental related issues of the enhanced project from 2500 TCD to 3500 TCD of sugar unit and 15 MW to 27 MW cogeneration of power plant in an area of 98.04 acres at NAD KD village, Indi Taluka, Bijapur District of Karnataka. This project requires environmental clearance as per EIA Notification dated 14<sup>th</sup> September 2006.

The Terms of References issued by MoEF vide Letter no. **J-13012/38/2012 - IA. II (T)** dated October 29, 2012 for carrying out the Environmental Impact Assessment study.

#### 1.1 Identification of Project

The salient features of the study area covering 10 km radius from the project site are described below in **Table 1.1**.

**Table – 1.1**  
**Salient Features of the Project Site**

Name of the Project	Enhanced Capacity from 2500 TCD to 3500 TCD of Sugar Plant and 15 MW to 27 MW of Cogeneration Power Plant
<b>Location of Project</b>	
Village	Nad KD
Taluka	Indi
District	Bijapur
State	Karnataka
Coordinates of the plant site	17°07' 37.40"N , 76 °07'43.00"E 17 °07'36.95"N, 76 ° 08'03.20"E 17 °07 '12.08"N, 76 ° 07' 57.98"E 17 °07'12.19"N, 76 ° 07 '43.25"E
Elevation	458 m above Mean Sea Level
<b>General Climatic Conditions</b>	

Draft EIA/EMP Report of enhanced from 2500 TCD to 3500 TCD Sugar Plant and 15 MW to 27 MW of Co-generation Power Plant	Jamkhandi Sugars Limited – Unit II
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Maximum Temperature (°C)	45 °C
Minimum Temperature (°C)	20°C
Relative Humidity (Maximum) (%)	55%
Annual average Rainfall (mm)	595 mm
Dominant wind direction (during study period)	North-East (NE)
<b>Accessibility</b>	
Road Connectivity	National Highway (NH-13)- 13.0 km State Highway(SH-34) of Indi-Afazalpur– 2.0 km
Rail Connectivity	Railway station Indi–24km
Airport	Belgaum–300km
<b>Environmental Sensitivity</b>	
Water bodies	Sattanalnadi–1.5 km DoddaNalla- 5.2 km Bhima river – 9.0 km
Forest Area	None within the 10 km radius of the proposed plant site
Sanctuaries / National Parks	None within the 10 km radius of the proposed plant site
Archaeological/Historically Important Site	None within the 10 km radius of the proposed plant site
Seismic zone	Seismic Zone –II as per IS: 1893-2002 , GOI

The location and topographical maps of 10 km radius study area of project site is shown in **Fig 1.1 and Fig 1.2** respectively.

## 1.2 Project Proponent

Jamkhandi Sugars Limited is managed under the leadership of its Chairman Shri S.B. Nyamagouda, who is an Ex- member of Karnataka State Legislative Council and Ex- Union Minister. The Managing Director is Shri S. Dhayanandhan. Both the Chairman and the Managing Director are highly experienced and successfully managing various industries including the existing sugar unit –I at Jamkhandi and allied co-generation unit. It is under the leadership of these two that the Jamkhandi Sugars Ltd., was received awards of “Best Performance Sugar Factory and Best Cane Development” Third Place in Karnataka for the Crushing Season 2009-2010, “Best Performance Sugar Factory and best Cane

Development “second place in Karnataka for the Crushing Season 2006-2007 from the South Indian Sugarcane & Sugar Technologists ‘Association (SISSTA )and second place for Best Cogeneration Award (2007-08).

### **1.3 Brief Description of Project site**

JSL is located in the Bhima river belt, which is ideal basin for growing rich varieties of sugar cane to achieve highest yield. In view of the cane availability at NAD KD, JSL has established Sugar unit and proposed to enhance from 2500 TCD to 3500 TCD capacity with cogeneration of 27 MW.

The site is centrally located in the area of operation and is in heart of sugarcane area. The project site is well connected to the village roads for transportation of sugar cane by carts/trucks. An adequate skilled, semi-skilled and unskilled labourforce is available in the study area. The infrastructure facilities like power, road, communication facilities, and banks are available around the project site.

### **1.4 Project Importance to the Country & Region**

The sugar industry scenario in Karnataka and in Nation is very bright as India being the second largest producer of sugarcane in the world and the second largest producer of sugar next to Brazil. There is a very good scope for export of quality sugar.

#### **Present Status of Demand and Availability**

The existing Sugar factories could not crush all available cane from the areas of operation and hence, rest of the sugarcane is being taken to the sugar factories in neighbouring districts of Karnataka and Maharashtra. Presently, the cane grown by farmers are diverting to the sugar factories located in Maharashtra, in this connection farmers are suffering like delay in disposal, less price, less payment etc., Thus, the farmers are facing problems of disposal of sugarcane in 3-4 seasons. This situation has demanded to need Sugar units at this area.

The demand for electrical power has been increasing at a faster pace after the country's economic development the pace speeded up, especially in Karnataka which has been the hub of software services. The effective generation of power has not been meeting the demand and the same trend is expected to continue, especially during the peak hours and summer seasons. Hence, there is good scope for exporting power to the third parties using the state grid through power traders / purchasers.

## 1.5 Scope of the Study

M/s Jamkhandi Sugars Limited has entrusted to M/s Bhagavathi Ana Labs Ltd, Hyderabad, so as to carry out Environmental Impact Assessment (EIA) studies and to prepare an effective Environmental Management Plan for implementation during the operation of the project.

Scope of this study is to identify environmental impacts and to provide mitigation measures as per Ministry of Environment & Forests (MoEF)/ Central Pollution Control Board (CPCB) guidelines. The report is prepared based on TORs issued by MoEF reference no. F. No **J-13012/38/2012 - IA. II (T)** dated October 29, 2012.

The TORs issued by MOEF Expert Appraisal Committee are given as under:-

- i) Vision document specifying prospective long term plan of the site, if any, shall be formulated and submitted.
- ii) Status of compliance to the conditions stipulated for environmental and CRZ clearances of the previous phase(s), as applicable, shall be submitted.
- iii) Status of compliance to the conditions stipulated in the environmental clearances accorded for sugar plant shall be submitted as applicable.
- iv) Executive summary of the project indicating relevant details along with recent photographs of the approved site shall be provided. Response to the issues raised during Public Hearing and to the written representations (if any), along with a time bound Action Plan and budgetary allocations to address the same, shall be provided in a tabular form, against each action proposed.
- v) Harnessing solar power within the premises of the plant particularly at available roof tops and other available areas shall be formulated and status of implementation shall be submitted to the Ministry.
- vi) The coordinates of the approved site including location of ash pond shall be submitted along with topo sheet (1:50,000 scale) and confirmed GPS readings of plant boundary and NRS satellite map of the area, shall be submitted. Elevation of plant site and ash pond with respect to HFL of water body/nallah/river shall be specified, if the site is located in proximity to them.
- vii) Layout plan indicating break-up of plant area, ash pond, area for green belt, infrastructure, roads etc. shall be provided.
- viii) Land requirement for the project shall be optimized and in any case not more than what has been specified by CEA from time to time. Item wise break up of land requirement and revised layout (as modified by the EAC) shall be provided.

- ix) Present land use as per the revenue records (free of all encumbrances of the proposed site, shall be furnished. Information on land to be acquired) if any, for coal transportation system as well as for laying of pipeline including ROW shall be specifically stated.
- x) The issues relating to land acquisition and R&R scheme with a time bound Action Plan should be formulated and clearly spelt out in the EIA report.
- xi) CWC clearance for drawl of water from the river for the proposed TPP shall be submitted.
- xii) Satellite imagery or authenticated toposheet indicating drainage, cropping pattern, water bodies (wetland, river system, stream, nallahs, ponds etc.), location of nearest villages, creeks, mangroves, rivers, reservoirs etc. in the study area shall be provided.
- xiii) Location of any National Park, Sanctuary, Elephant/Tiger Reserve (existing as well as proposed), migratory routes / wildlife corridor, if any, within 10 km of the project site shall be specified and marked on the map duly authenticated by the Office of the Chief Wildlife Warden of the area concerned.
- xiv) Topography of the study area supported by toposheet on 1:50,000 scale of Survey of India, alongwith a large scale map preferably of 1:25,000 scale and the specific information whether the site requires any filling shall be provided. In that case, details of filling, quantity of fill material required; its source, transportation etc. shall be submitted.
- xv) A detailed study on land use pattern in the study area shall be carried out including identification of common property resources (such as grazing and community land, water resources etc.) available and Action Plan for its protection and management shall be formulated. If acquisition of grazing land is involved, it shall be ensured that an equal area of grazing land to be acquired is developed alternatively and details plan shall be submitted.
- xvi) A mineralogical map of the proposed site (including soil type) and information (if available) that the site is not located on economically feasible mineable mineral deposit shall be submitted.
- xvii) Details of 100% fly ash utilization plan as per latest fly ash Utilization Notification of GOI along with firm agreements / MoU with contracting parties including other usages etc. shall be submitted. The plan shall also include disposal method / mechanism of bottom ash.
- xviii) Water requirement, calculated as per norms stipulated by CEA from time to time, shall be submitted along with water balance diagram. Details of water balance calculated shall take into account reuse and re-circulation of effluents which shall be explicitly specified.
- xix) Water body/nallah (if any) passing across the site should not be disturbed as far as possible. In case any nallah / drain have to be diverted, it shall be ensured that the diversion does not disturb the natural drainage pattern of the area. Details of diversion required shall be furnished which shall be duly approved by the concerned department.

- xx) It shall also be ensured that a minimum of 500 m distance of plant boundary is kept from the HFL of river system / streams etc.
- xxi) Hydro-geological study of the area shall be carried out through an institute/ organisation of repute to assess the impact on ground and surface water regimes. Specific mitigation measures shall be spelt out and time bound Action Plan for its implementation shall be submitted.
- xxii) Detailed Studies on the impacts of the ecology including fisheries of the river/estuary/sea due to the proposed withdrawal of water / discharge of treated wastewater into the river/creek/ sea etc shall be carried out and submitted along with the EIA Report. In case of requirement of marine impact assessment study, the location of intake and outfall shall be clearly specified along with depth of water drawl and discharge into open sea.
- xxiii) Source of water and its sustainability even in lean season shall be provided along with details of ecological impacts arising out of withdrawal of water and taking into account inter-state shares (if any). Information on other competing sources downstream of the proposed project. Commitment regarding availability of requisite quantity of water from the Competent Authority shall be provided along with letter / document stating firm allocation of water.
- xxiv) Detailed plan for carrying out rainwater harvesting and its proposed utilisation in the plant shall be furnished.
- xxv) Feasibility of zero discharge concept shall be critically examined and its details submitted.
- xxvi) Optimization of COC along with other water conservation measures in the project shall be specified.
- xxvii) Plan for recirculation of ash pond water and its implementation shall be submitted.
- xxviii) Detailed plan for conducting monitoring of water quality regularly with proper maintenance of records shall be formulated. Detail of methodology and identification of monitoring points (between the plant and drainage in the direction of flow of surface / ground water) shall be submitted. It shall be ensured that parameter to be monitored also include heavy metals.
- xxix) Socio-economic study of the study area comprising of 10 km from the plant site shall be carried out by a reputed institute / agency which shall consist of detail assessment of the impact on livelihood of local communities.
- xxx) Action Plan for identification of local employable youth for training in skills, relevant to the project, for eventual employment in the project itself shall be formulated and numbers specified during construction & operation phases of the Project.

xxxi) If the area has tribal population it shall be ensured that the rights of tribals are well protected. The project proponent shall accordingly identify tribal issues under various provisions of the law of the land.

xxxii) A detailed CSR plan along with activities wise break up of financial commitment shall be prepared. CSR component shall be identified considering need based assessment study. Sustainable income generating measures which can help in upliftment of poor section of society, which is consistent with the traditional skills of the people, shall be identified. Separate budget for community development activities and income generating programmes shall be specified.

xxxiii) While formulating CSR schemes it shall be ensured that an in-built monitoring mechanism for the schemes identified are in place and mechanism for conducting annual social audit from the nearest government institute of repute in the region shall be prepared. The project proponent shall also provide Action Plan for the status of implementation of the scheme from time to time and dovetail the same with any Govt. scheme(s). CSR details done in the past should be clearly spelt out in case of expansion projects.

xxxiv) R&R plan, as applicable, shall be formulated wherein mechanism for protecting the rights and livelihood of the people in the region who are likely to be impacted, is taken into consideration. R&R plan shall be formulated after a detailed census of population based on socio economic surveys who were dependant on land falling in the project, as well as, population who were dependant on land not owned by them.

xxxv) Assessment of occupational health as endemic diseases of environmental origin shall be carried out and Action Plan to mitigate the same shall be prepared.

xxxvi) Occupational health and safety measures for the workers including identification of work related health hazards shall be formulated. The company shall engage full time qualified doctors who are trained in occupational health. Health monitoring of the workers shall be conducted at periodic intervals and health records maintained. Awareness programme for workers due to likely adverse impact on their health due to working in non-conducive environment shall be carried out and precautionary measures like use of personal equipments etc. shall be provided. Review of impact of various health measures undertaken at intervals of two years shall be conducted with an excellent follow up plan of action wherever required.

xxxvii) One complete season site specific meteorological and AAQ data (except monsoon season) as per MoEF Notification dated 16.11.2009 shall be collected and the dates of monitoring recorded. The parameters to be covered for AAQ shall include SPM, RSPM (PM<sub>10</sub>, PM<sub>2.5</sub>), SO<sub>2</sub>, NO<sub>x</sub>, Hg and O<sub>3</sub> (ground level). The location of the monitoring stations

should be so decided so as to take into consideration the pre-dominant downwind direction, population zone, villages in the vicinity and sensitive receptors including reserved forests. There should be at least one monitoring station each in the upwind and in the pre - dominant downwind direction at a location where maximum ground level concentration is likely to occur.

xxxviii) A list of industries existing and proposed in the study area shall be furnished.

xxxix) Cumulative impact of all sources of emissions (including transportation) on the AAQ of the area shall be well assessed. Details of the model used and the input data used for modelling shall also be provided. The air quality contours should be plotted on a location map showing the location of project site, habitation nearby, sensitive receptors, if any. The wind roses should also be shown on the location map as well.

xl) Composition of fuels and its ratio (as applicable) to be explicitly stated.

xli) Fuel analysis shall be provided. Details of auxiliary fuel, if any, including its quantity, quality, storage etc. should also be furnished.

xlii) Quantity of fuel required, its source and characteristics and documentary evidence to substantiate confirmed fuel linkage shall be furnished.

xliii) Details of transportation of fuel from the source (including port handling) to the proposed plant and its impact on ambient AAQ shall be suitably assessed and submitted. If transportation entails a long distance it shall be ensured that rail transportation to the site shall be first assessed. Wagon loading at source shall preferably be through silo/conveyor belt.

xliv) For proposals based on imported coal, inland transportation and port handling and rolling stocks /rail movement bottle necks shall be critically examined and details furnished.

xlv) Details regarding infrastructure facilities such as sanitation, fuel, restrooms, medical facilities, safety during construction phase etc. to be provided to the labour force during construction as well as to the casual workers including truck drivers during operation phase should be adequately catered for and details furnished.

xlvi) EMP to mitigate the adverse impacts due to the project along with item - wise cost of its implementation in a time bound manner shall be specified.

xlvii) A Disaster Management Plan (DMP) along with risk assessment study including fire and explosion issues due to storage and use of fuel should be carried out. It should take into account the maximum inventory of storage at site at any point of time. The risk contours should be plotted on the plant layout map clearly showing which of the proposed activities would be affected in case of an accident taking place. Based on the same, proposed



safeguard measures should be provided. Measures to guard against fire hazards should also be invariably provided.

xlvi) The DMP so formulated shall include measures against likely Tsunami/Cyclones/Storm Surges/Earthquakes etc, as applicable. It shall be ensured that DMP consists of both on-site and off-site plan, complete with details of containing likely disaster and shall specifically mention personnel identified for the task. Smaller version of the plan shall be prepared both in English and local languages.

xlix) Detailed plan for raising green belt of native species of appropriate width (50 to 100 m) and consisting of at least 3 tiers around plant boundary (except in areas not possible) with tree density of 2000 to 2500 trees per ha with a good survival rate of about 80% shall be submitted. Photographic evidence must be created and submitted periodically including NRSA reports.

l) Status of development of green belt shall also be submitted along with photographic details.

li) Over and above the green belt, as carbon sink, additional plantation shall be carried out in identified blocks of degraded forests, in close consultation with the District Forests Department. In pursuance to this the project proponent shall formulate time bound Action Plans along with financial allocation and shall submit status of implementation to the Ministry every six months.

lii) Corporate Environment Policy

- i. Does the company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be detailed in the EIA report.
- ii. Does the Environment Policy prescribe for standard operating process / procedures to bring into focus any infringement / deviation / violation of the environmental or forest norms / conditions? If so, it may be detailed in the EIA.
- iii. What is the hierarchical system or Administrative order of the company to deal with the environmental issues and for ensuring compliance with the environmental clearance conditions. Details of this system may be given.
- iv. Does the company has system of reporting of non compliances / violations of environmental norms to the Board of Directors of the company and / or shareholders or stakeholders at large? This reporting mechanism should be detailed in the EIA report.

All the above details should be adequately brought out in the EIA report and in the presentation to the Committee.

liii) Details of litigation pending or otherwise with respect to project in any court, tribunal etc. shall invariably be furnished.