

## **1.0 INTRODUCTION**

Jinbhuvish Power Generations Private Limited (JPGPL) is joint venture of Arya Powertech Private Limited (APPL) and Gayatri Energy Ventures Private Limited (GEVPL) and is developing coal based power project of 1260 MW capacity in two phases. The power project is located near Bijora/Ghanmukh village in Mahagaon Taluq of Yavatmal District, Maharashtra. This power project is envisaged with two units of 300 MW under phase I and one unit of 660 MW phase II, with a total power generation capacity of 1260 MW.

## **2.0 PROJECT BACKGROUND**

India's energy demand has been increasing over the years. With an ever-increasing demand and limited capacity addition, the demand-supply gap has widened to alarming proportions in the past few years. Due to sustained economic growth, industrialization and with the Indian economy growing year-on-year, the shortfall is bound to increase in the coming years. JPGPL is now interested in entering into Power Generation field and is establishing a 2 X 300 MW and 1 X 660 MW coal based Thermal Power Plant near Bijora- Ghanmukh village in Mahagaon Taluka, Yavatmal district, Maharashtra.

## **3.0 NEED FOR PUBLIC HEARING**

As per the of environment impact assessment Notification by the Ministry of Environment and Forest, New Delhi dated Sept. 14, 2006 the proposed power project is categorized as Cat A project and hence it require to approach to MOEF for Environmental Clearance after preparation of Environment Impact Assessment based on approval of TOR proposed by the Project proponent. The TOR was approved during the expert committee meeting held on Oct. 19,2010 at Ministry of Environment and Forest, New Delhi and communicated vide letter no. J-13012/158/2010 –IA.II (T) dt. Dec.1, 2010.

As per the requirement the project proponent of Thermal Power Plant has approached Maharashtra Pollution Control Board ( MPCB) for conducting the public hearing/Consultation as per the procedure laid down in para 7 and Appendix IV of EIA notification 2006. of Ministry of Environment and Forest , New Delhi.

#### **4.0 Site Location and its Surrounding**

The proposed project is located at Bijora and Ghanmukh Taluka Mahagaon and District Yavatmal , Maharashtra. The site is selected after assessing different site in the area.

##### **Geographical Location**

The Yavatmal district lies between 19<sup>o</sup> 26' to 20<sup>o</sup> 42' North latitude and 77<sup>o</sup> 18' to 79<sup>o</sup> 9' East Latitude. It is surrounded by Amravati in the North, Chandrapur and Wardha in the east, Nanded district and Andhra Pradesh in the south and Akola and Prabhani in the west. The taluka Mahagaon is bounded in the south by Umerkhed north by Kali and east by Pusad. The boundaries of Nanded and Yawatmal district covered by river Penganga and Wardha river..

The slope of the district is from north –northwest to south east. The Yawatmal district belongs to Balaghat ranges. On the north it extends into Payanghat, and includes a small part of it which is belt of plain from 8 to 22 km in breadth along the north of Yavatmal and Dharwah tashil. Penganga river gives a strip of plain in many parts of its course on the southern border of district.

The main rivers of the district are the Wardha and Penganga both of which flow skirting the district and forming the district boundaries. However the district is well drained by a large number of tributaries of the two rivers such as Bembala, and Pus, Adan Arunawati, Waghadi, Khuni, Vidarbha and the Nirguda. The Pus River flows through Pusad.

JPGPL site has good communication facilities with Mahagaon located nearby. The JPGPL is located 11 km away from the Mahagaon taluka headquarter under whose jurisdiction the JPGPL project falls.

### **Physiography**

The selected site is in Bijora and Ghanmukh and whose left side is Bori Tuljapur road which is State highway no, 3. The total area for the project is 995 Acres. The slope of site is slightly towards north and south sides. There is small nallah on NE side along the plant boundary and on the SW side of the plant boundary. The drainage pattern of the study area is dendritic.

### **Geography**

The JPGPL site is located at Bijora, Ghanmukh village having 19<sup>0</sup> 42' 74" North latitude and 77<sup>0</sup> 44'17" East Latitude. It is bounded on the north by the village Januna on the west by Wadad on the south by Fulsawangi and in East Nandghavan in Yavatmal district.

Yavatmal district is bounded on the north Amravati and west by Wardha district, on the east by Akola and on the south by Andhra Pradesh.

Yavatmal district falls in the Penganga river catchments. Main River of the district is Penganga.

### **Topography**

The project site is generally flat with some undulations. The elevation of the project area varies between 330 to 360MSL. The project area is mostly barren with few trees and shrubs in patches.

## **5.0 Baseline Status**

### **Air Quality**

The sampling locations are project site Bijora, Chilli Ijara, Beldari Wakodi, Mudana and Kalgaon.

At each station, ambient air samples monitored for 24 hour duration were collected at a frequency of twice a week and analyzed for Respirable Suspended Particulate Matter 10 micron and 2.5 micron , Sulphur dioxide and Oxides of Nitrogen.

Concentrations of RSPM 10 and 2.5 micron monitored were in the range of 52.3 to 65.1 and 8 to 11 as against Central Pollution Control Board standards of 100  $\mu\text{g}/\text{m}^3$  and 40  $\mu\text{g}/\text{m}^3$

Levels of  $\text{SO}_2$  and  $\text{NO}_x$  were in the range of 7 to 11  $\mu\text{g}/\text{m}^3$  and 11 to 17  $\mu\text{g}/\text{m}^3$  respectively as against Central Pollution Control Board standards of rural area.

### **Dust Fall**

The dust fall rate monitored at (JPGPL) plant site and in Bijora, was 4 to 6 tonne per  $\text{km}^2$  per month (200  $\text{mg}/\text{m}^2/\text{day}$ ) during monitoring period 3 months. No Indian standards exist for free dust fall rate. However, the results are below German standards of 350  $\text{mg}/\text{m}^2/\text{day}$  i.e. 10.5 T/ $\text{km}^2/\text{month}$ .

### **Noise Level**

At JPGPL, boiler, turbine, crushers, compressors, pumps, coal handling equipment, generators and various material handling equipments as well as process operations will produce noise. Noise produced by these equipments will be in the range of 80 to 90 dB (A).

Residual, median and peak noise levels monitored within buffer zone of (JPGPL) were in the range of 4 to 6 dBA respectively.

### **Water Environment**

Water quality of Penganga river is compared with the drinking water standards given in I.S 10500. It is observed that levels of all parameters in all the samples were below their respective permissible limits.

### **Land use pattern**

The study area of the JPGPL covers 27 villages. In mahagaon taluka 20% of forest land, 2% irrigated land, 60.7% unirrigated land, 5.2% culturable waste and 6% area is non –cultivable area.

### **Cropping pattern**

Out of the cropped area in the villages located within study area of (JPGPL), about 83 percent area is under cereals, 2.8 percent under pulses, 2.3 percent under oilseeds, 8.8 percent under sugarcane and 2.90 percent under horticulture.

### **Soil Quality**

Soil samples collected from B zone of agriculture land of Bijora were analysed for pH, moisture content, water holding capacity, organic matter, ammoniac nitrogen, potassium, phosphorous, copper, Zinc, Iron, Manganese, molybdenum lead, chromium and cadmium using standard methods of Association of Official Agricultural Chemist.

### **Flora and Fauna**

A exhaustive survey was carried out within core and buffer zones of (JPGPL) to get an idea of major vegetative patterns, plant, animal communities, dominant species, correlation between plant, animal communities and topography, geology, soil, water etc. and present / past human influence on them in order to establish existing scenario of flora and fauna.

The fauna found in study area include Jungle cat , Jackle Fox, Common Langur, Five stripped Squirrel, Common House Rat, and birds like Blue rock pigeon, House crow, Indian robin, Indian Maina

Wild-boar, Deer, Nilgai, Sambar and Hyena are some of the animals found in the forests. There are no bird sanctuaries or wild life sanctuaries in the buffer zone of 10 km radius.

### **SOCIAL ENVIRONMENT**

As regards to base-line environmental data in respect of Demography, Occupational Structure, Community Services such as Post Offices, Post & Telegraph Offices, Telephone, Educational and Health Care Facilities, Banks and Co – Operative institutes, social and Cultural Institutions, present within buffer zones of (JPGPL) were collected from Department of CENSUS operations,

Government of India, Department of Statistics and Economics of the Government of Maharashtra, Village Patwaries, Department of Post and Department of Health for preparation of existing environmental scenario in respect of these parameters.

### **Demography**

There are 46.2 % literate and 53.8 % of illiterate population. Scheduled Caste, Scheduled Tribe and Other Casts population is 5.6%, 17.5% and 76.9%, respectively.

## **5.0 Environment Management Plan**

Environmental Management Plan (EMP) is aimed at mitigating the possible adverse impact of a project and for ensuring to maintain the existing environmental quality. The EMP converses all aspects of planning, construction and operation of the project, which are relevant to environment. It is essential to implement the EMP right from the planning stage and then continuing it throughout the construction and operation stage. Therefore the main objective of the EMP is to identify the project specific activities that would have to be considered for investigation of the significant adverse impacts and the mitigation measures required.

### **Air Environment**

#### **1. Air pollution control system**

##### **A) Stacks**

ESP will be designed in such a way that the dust concentration level at outlet is maintained below  $100 \text{ mg/Nm}^3$  at TMCR with worst coal. Though the present stipulation of the Central Pollution Control Board (CPCB) is to limit the suspended particulate matter emission to  $150 \text{ mg/Nm}^3$ , looking at the current trend and recent permits issued to various project companies, it is better to keep this provision more conservative. Fly ash collection hoppers will be located beneath each field. Fly ash will be collected by ESP hoppers of 8 hours storage

capacity and removed periodically by pneumatic ash handling system and stored in dry ash silos. The bottom ash shall also be collected dry.

## **B) Soot Blowing System**

The Soot Blowing System will be controlled by a programmable logic control system. The control system will be as per the manufacturer recommended soot blowing sequence/ program. The control system will be operational in the full automatic mode and a manual mode that would allow the operation of single soot blower unit or groups of soot blowers.

## **Water Environment**

### **1. Rain Water Harvesting**

Rain water in the power plant areas will be collected through a network of drains. Surface drains will be of either RCC rectangular drains or bricklined drains trapezoidal in section. The rain water collected from the roof of buildings is channelized through the rain water down comers and routed to the garland drain around the buildings. These garland drains are connected to the plant storm water drainage network system all around the plant. Several recharge wells will be located at strategic locations within the plant and will be interconnected to the storm water drain network system. This will ensure recharging of the Ground Pond. The surplus water received in the Guard Pond will overflow and will be diverted to the storm water drain. Rain water harvesting will reduce the load on fresh water intake from river and will also increase ground water table.

### **2. Ground And Surface Water Quality**

Wastewater generated from unit is sent to an ETP for treatment before disposal to on land for green belt development. Hence potential for groundwater and surface water contamination does not exist.

## **Zero Liquid Effluent Discharge Scheme**

The Plant is designed for Zero Liquid Effluent Discharge (i.e) No liquid effluent discharge outside the Plant boundary is envisaged.

The source of effluents, method of treatment proposed and their point of discharge / downstream users within plant boundary are identified in the table below:

## **Solid waste**

### **Solid wastes from the plant:**

Dry Fly ash from ESP	-	1.69 MTPA
Bottom ash from boiler	-	0.43 MTPA

Both fly ash and bottom ash shall be collected dry and shall be utilized through manufacturing of cement, RCC, brick and filling of earth embankments etc. 100% fly ash utilization should be achieved by the end of 4 years from the commissioning of units as per MoEF guidelines.

## **Fire Protection**

### **Fire Detection & Alarm System**

The plant will be provided with microprocessor based analogue addressable fire alarm and detection system, which will include detectors, manual call points, panels, etc.

The fire alarm & detection system will be designed generally as per TAC's recommendations. The detector spacing will be as per IS 2189.

## **Green Belt Development**

Trees function as sinks of air pollutants, besides there by bio esthetical values, owing to its large surface area. It will also check soil erosion; make the eco system more complex and functionally stable. Thus, implementation of afforestation program shall be of paramount importance.

## **Occupational Safety And Health**

Occupational safety and health is very closely related to productivity and good employer employee relationship. The main factors of occupational health in proposed site are fugitive dust and noise. To avoid any adverse affects on the

health of workers due to dust, heat, noise; sufficient measures have been provided in the proposed project. These include:

Provision of rest shelters for workers with amenities like drinking water, fans, toilets, etc. Provision of personal protection devices to the workers. First-aid facilities on the site.

## **7. 0 Laboratory Facilities And Monitoring Plan**

### **1. Monitoring Facility**

JPGPL shall acquire-monitoring equipments namely High Volume Samplers, Stack Monitoring Kit, Automatic recording Weather Monitoring Station, Noise Monitoring Equipments etc. to carry out environmental monitoring work. The in house monitoring shall be adopted.

### **2. Monitoring Plan**

A comprehensive monitoring program is suggested. Environmental attributes will be monitored as described below:

### **3. Air Pollution and Metrological Aspects**

Both ambient air quality and stack emissions should be monitored. It is also proposed that continuous monitoring of SPM, NO<sub>x</sub> and SO<sub>2</sub> emissions be undertaken in the stacks. The ambient air should be monitored in line with the guidelines of Central Pollution Control Board.

### **4. Water and Waste Water Quality**

All the effluent streams from the plant shall be monitored for their physico-chemical characteristics and heavy metals. In addition ground water samples surrounding the waste storage area will be monitored.

### **5. Noise Levels**

Noise levels in the work zone environment shall be monitored. The frequency should be once in three months in the work zone.

## **8.0 Conclusion:-**

The proposed 2x300 MW and 1x600 MW capacity thermal power plant activity producing less adverse impact on the environment.

This activity will have a positive impact in case of Socio-economic culture for the people in the near by villages. They will have chance for local employment like work, fabrication, brick, masonry, and painting and machinery erection and as per qualification. Along with that tree plantation will be one of the key activities.

The EIA report prepared along with suggested mitigatory measures, environment management plan and monitoring system indicate that due care shall be taken by the project proponent to conserve the environment.

# **EXECUTIVE SUMMARY**

**FOR**

**2\*300 MW (Sub Critical) +1\*660 MW (Super Critical)  
Power Project,  
Village-Bijora/Ghanmukh,  
Tal. Mahagaon Dist. Yavatmal, Maharashtra**

**OF**

**Jinbhuvish Power Generations Private Limited  
155 - A, Mittal Tower, Nariman Point, Mumbai.**

**Dec 2010**

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