	<p>EIA for the Proposed 30 MW Captive Power Plant at Durgapuram Village, Dachepalli, Guntur District, Andhra Pradesh</p> <p style="text-align: right;">Chapter-1 Introduction</p>
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1.0 INTRODUCTION

This chapter describes the purpose of the report, identification of project and proponent, brief description of nature, size, location of the project and importance to the region and country. The chapter also describes the scope of the study, details of regulatory scoping carried out as per Terms of Reference (TOR) issued by State Expert Appraisal Committee, Hyderabad.

• **Present Project**

Durga Cement Works (DCW) which is a unit of Andhra Cements Limited (ACL) is proposing to install 30 MW coal based Captive power plant for meeting the power requirement of 2.31 MTPA existing cement plant at Durgapuram village, Dachepalli, Guntur District, Andhra Pradesh. ACL has been taken-over by Jaypee group.

1.1 Purpose of the Report

As per the Environmental Impact Assessment (EIA) Notification dated 14th September 2006, commissioning and operation of thermal power plants requires Environmental Clearance (EC) to be obtained from Andhra Pradesh State SEIAA before the commencement of ground activity.


Application prior environmental clearance for the above proposal has been submitted to the SEAC for getting Terms of Reference (TOR) for the preparation of EIA/EMP Report and the meeting was held on 4th July 2012. The present EIA Report was prepared based on the TOR conditions prescribed by APSEIAA. The Terms of Reference (TOR) for the proposed project was issued by APSEIAA, vide letter no. SEIAA/AP/GTR/2012, dated 24/07/2012. The copy of the same along with its compliance are enclosed in **Annexure-I**.

EIA/EMP has been prepared and submitted to state PCB for conducting Public Hearing and the meeting was held near Durga temple located adjacent to the plant premises at Durgapuram Village, Dachepalli mandal, Guntur district on 30th January 2013 and public concerns and comments are taken into consideration for preparing the final EIA/EMP report. The public hearing details are incorporated in Chapter-8.

This final EIA Report addresses the environmental impacts of the proposed project and proposes the mitigation measures for the same after conducting the public hearing.

1.2 Identification of the Project Proponent

- Andhra Cement Limited has two operating units:
 - ✓ Durga Cement Works at village Durgapuram village, Dachepalli, Guntur district in operation since 1986; and
 - ✓ Visakha Cement Works at Parlupalem village, Durganagar, Visakhapatnam in Andhra Pradesh.
- Durga Cement Works cement manufacturing capacity is under expansion from 0.8 MTPA to 2.31 MTPA;

	<p>EIA for the Proposed 30 MW Captive Power Plant at Durgapuram Village, Dachepalli, Guntur District, Andhra Pradesh</p> <p style="text-align: right;">Chapter-1 Introduction</p>
---	---

- Visakha Cement Works (VCW) has only a Cement Grinding Unit (Slag and PPC) of 2.0 MTPA production capacity; and
- Andhra Cements Limited has been taken over by Jaypee Development Corporation Limited., a Jaypee group company by acquiring 59.80% shares in 2011.

ACL, has been taken over by **Jaypee group** which is a well-diversified industrial conglomerate in India with a turnover of over Rs.18000 crores that commenced its operations in mid sixties. Four decades later, with growth and diversification the group is engaged in the businesses of Engineering and Construction, Cement, Private Hydropower, development of Expressways, Highways and Hospitality. With a professional management team and a competent technical cadre, the group employs a total workforce of over 50000.

Jaiprakash Associates Limited (JAL), the flag ship company of Jaypee Group. Its cement division has computerized process control cement plants at 18 locations with an installed capacity of 22.8 MTPA in operation which is proposed to enhance upto 35 MTPA by 2012.

Jaypee cement plants have 100% power backup through coal based captive thermal power plants as well as a bank of diesel generating sets. Captive Power Plants (CPP) with cumulative capacity are functioning to meet the power requirement of the cement plants

Jaypee Cement Complex is consistently producing quality cement of OPC grades 33, 43, 53, IRST-40 and all the popular special blends of pozzolana cement such as 'Buniyad' and 'Buland' and Superplus Jaypee Cement.

➤ **Status of Approvals**

- ✓ Environmental Clearance for Durga Cement Works (expansion) of Cement Production (from 0.8 to 2.31 MTPA) capacity, Clinker Production (from 1.0 to 2.0 MTPA) capacity and Captive limestone mine (from 1.50 to 3.0 MTPA) capacity has been granted by MoEF vide letter no: F.No:J-11011/719/2007-IA-II(I) dated 20th December 2007. The EC letter along with its compliance is enclosed as **Annexure-II**;
- ✓ Consent to establishment for expansion of Cement production (from 0.8 to 2.31 MTPA) capacity, clinker production (from 1.0 to 2.0 MTPA) capacity has been granted by AP pollution Control Board vide consent order no: APPCB/VJA/GTR/534/CFE/HO/2008/882, dated: 27.06.2008. The CFE letter & its compliance are enclosed as **Annexure-III**. Expansion in production capacity is under implementation.

1.3 Power Scenario In Andhra Pradesh

From the below table it can be observed that Andhra Pradesh has energy shortages ranging from 0.8 % to 15.7% in the period 2005-2013. The details showing the power supply position in Andhra Pradesh is given in **Table-1.1**.

TABLE-1.1
POWER SUPPLY POSITION OF ANDHRA PRADESH

Year	Peak Demand	Availability	Surplus (+)/Deficit (-) MW/MU	Surplus (+)/Deficit (-) %
2005-2006	7487	7346	-141	-1.9
2006-2007	8224	8154	-70	-0.9
2007-2008	8920	7520	-1400	-15.7
2008-2009	5939	5575	-364	-6.1
2009-2010	6190	5860	-330	-5.3
2010-2011	6696	6436	-260	-3.9
2011-2012	6811	6756	-55	-0.8
2012-2013	7406	7125	-281	-3.8

Cement plant operation requires uninterrupted power supply to run its pyro-processing plant. Andhra Pradesh state is facing deficit of power. The proposed 30 MW CPP will ensure continuous supply and thereby efficient plant operations. Grid power to the extent of 13 MW will be used for clinker grinding operations or for emergency use.

1.4 Project Details

1.4.1 Plant Capacity

The proposed captive power plant will be installed with a production capacity of 30 MW.

1.4.2 Cost of the Project

The cost estimated for the proposed power plant including utilities, offsite, auxiliary services etc. is about Rs.135.87 crores. The anticipated capital expenditure for the in-built pollution control measures is Rs. 16.3 crores.

1.4.3 Location of the Project

The proposed plant is at a distance of about 5.5-km from Dachepalli town, located on the State Highway (SH-2) runs at a distance of 20-m from the site and the main road connecting to major destinations. The proposed plant site is 95-km from Vijayawada.

1.5 Environmental Setting

The environmental setting within 15-km of the project site given in **Table-1.2**. The index map is shown in **Figure-1.1**. Topsheet representing location map of 1:50,000 scale covering land use/ land cover, reserve forests, wildlife sanctuaries, national parks, tiger reserves etc. within 10-km of the project site is shown in **Figure-1.2**.


	EIA for the Proposed 30 MW Captive Power Plant at Durgapuram Village, Dachepalli, Guntur District, Andhra Pradesh
	Chapter-1 Introduction

TABLE-1.2
DETAILS OF ENVIRONMENTAL SETTING (10-KM RADIUS)

Sr. No.	Particulars	Details
1	Location	
a	Village	Durgapuram
b	Tehsil	Dachepalli
c	District	Guntur
d	State	Andhra Pradesh
e	Geographical co-ordinates	Latitude - Longitude
		Plant: A: 16° 38'37.36" N to 79° 41.0' 41.15" E B: 16° 39'16.05" N to 79° 42.0' 07.93" E C: 16° 39'09.94" N to 79° 42.0' 38.29" E D: 16° 38'20.69" N to 79° 42.0' 34.28" E E : 16° 39'02.83" N to 79° 42.0' 32.53" E
2	Elevation	80-m above Mean Sea Level
3	Land use at the project site	Existing Cement Plant -Industrial
4	Nearest highway	State highway 2- (20-m, SSE)
5	Nearest railhead / Railway station	Nadikudi RS (5.3-km, SSE)
6	Nearest airport	Hyderabad (145-km, NW)
7	Defence installations	Nil within 15-km radius
8	Archaeological important places	Nagamma Temple (4.0 -km, SSE) (As per A.P State Archaeological Department; not listed for ASI)
9	Ecological Sensitive Areas (National Parks, Wildlife sanctuaries)	Nil within 15-km radius
10	Reserved/Protected forests within 15-km radius	Madinapadu Ext RF (0.5-km, NE) Gomalapadu RF (0.8-km, N) Madinapadu RF (1.0-km, E) Daida RF (4.0-km, W) Saidulnam RF (4.4-km, W) Ravipahad RF (6.1-km, N) Wazirabad RF (6.3-km, NW) Pasupulabodu RF (7.0-km, NW) Nirchintavagu RF (7.8-km, NNE)
11	Industries in 10-km radius	Deccan Cement Limited (6.6-km,N) India Cements Limited (8.0-km, NW) Penna Cement (7.0-km, N)
12	Nearest major city	Vijayawada (95-km)
13	Nearest major settlement	Vijayawada (95-km)
14	Nearest water bodies	Krishna river (3.6-km, N) Dandivagu (4.1-km, W)
15	Socio-economic factors	As plant will be developed within the existing cement plant complex, no resettlement and rehabilitation issues involved.
16	Seismic zone	Zone-I as per IS:1893 (Part-1) 2002

1.6 Scope of the Study

Based on the TOR, the Environmental Impact Assessment report is prepared covering study area of 10-km radial area around the plant site. The scope of study broadly includes:

- To conduct literature review and to collect data relevant to the study area;
- To undertake environmental monitoring so as to establish the baseline environmental status of the study area;

- To identify the ambient air quality levels in the proposed project area;
- To predict incremental levels of pollutants in the study area due to the proposed project activities;
- To evaluate the predicted impacts on the various environmental attributes in the study area by using scientifically developed and widely accepted environmental impact assessment methodologies;
- To prepare an Environment Management Plan (EMP) outlining the measures for improving the environmental quality and scope for future expansions for environmentally sustainable development; and
- To identify critical environmental attributes required to be monitored.

The literature review includes identification of relevant articles from various publications, collection of data from various government agencies and other sources.

1.7 Methodology of the Study

Vimta Labs Limited, Hyderabad along with Durga Cement Works officials had conducted a reconnaissance survey and sampling locations were identified on the basis of:

- Predominant wind directions in the study area as recorded by India Meteorological Department (IMD), Rentachintala;
- Existing topography, location of surface water bodies like ponds, canals and rivers;
- Location of villages/towns/sensitive areas;
- Accessibility, power availability and security of monitoring equipment, pollution pockets in the area;
- Areas which represent baseline conditions; and
- Collection, collation and analysis of baseline data for various environmental attributes.

Field studies have been conducted for a period of three months (*1st March to 31st May 2012*) representing pre-monsoon season and *1st June to 31st July 2012* covering monsoon season to determine existing conditions of various environmental attributes as outlined in **Table-1.3**. The applicable environmental standards for the project and the methodology of monitoring and analysis are given in **Annexure-IV** and administrative legislation in **Annexure-V**.

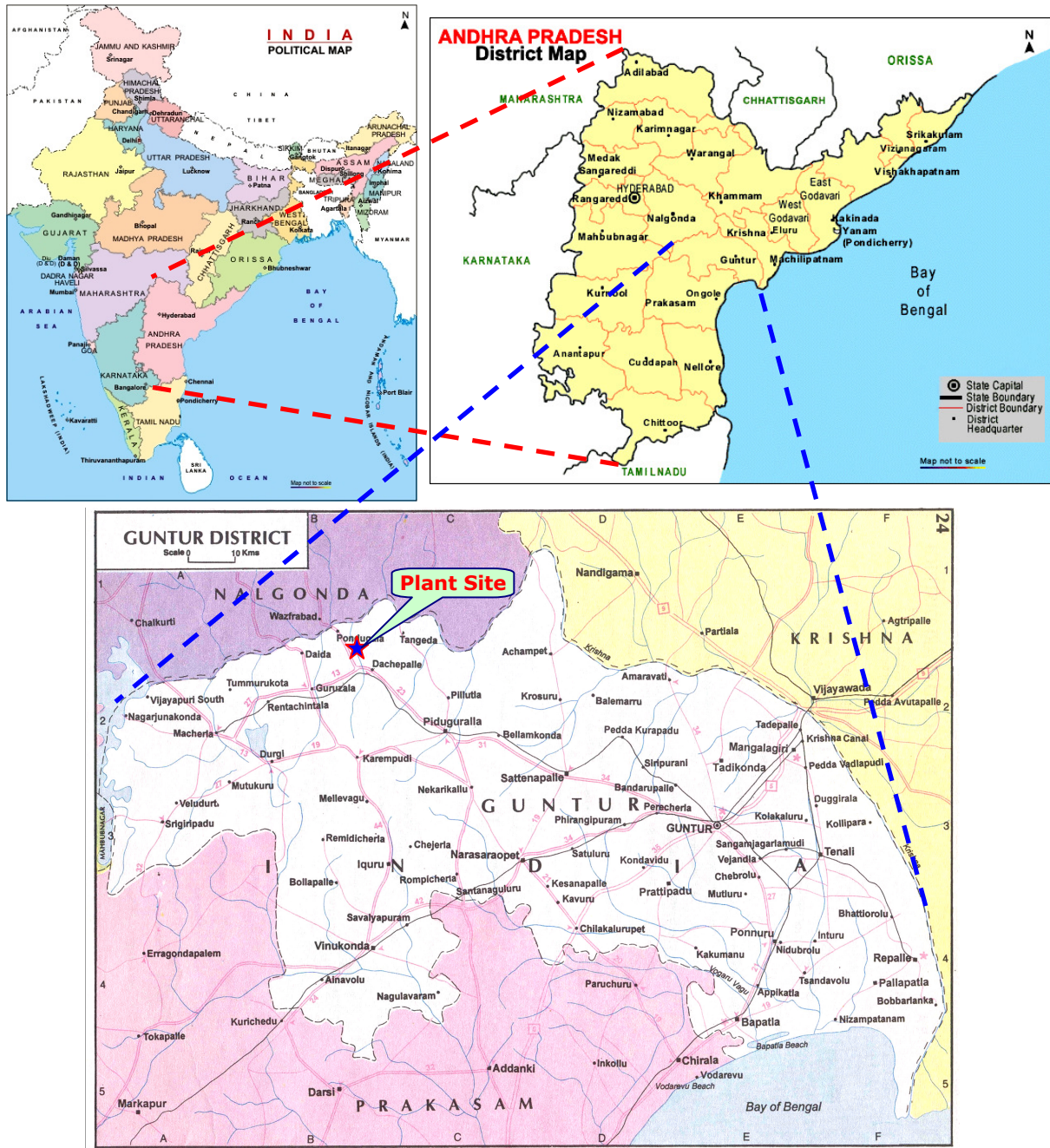


FIGURE-1.1
INDEX MAP


	<p><i>EIA for the Proposed 30 MW Captive Power Plant at Durgapuram Village, Dachepalli, Guntur District, Andhra Pradesh</i></p> <p style="text-align: right;">Chapter-1 Introduction</p>
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FIGURE-1.2
STUDY AREA MAP (10-KM RADIUS)

TABLE-1.3
ENVIRONMENTAL ATTRIBUTES AND FREQUENCY OF MONITORING

Sr. No.	Environmental Component	Sampling Locations	Sampling Parameters	Total Sampling Period	Sampling Frequency	Detection Limit	Methodology
1	Meteorology	One central location	Temperature, Wind Speed, Wind Direction	3 months	Hourly	WS: +/-0.02 m/sec WD: +/- 3 degrees Temp: +/- 0.2 °C	The meteorology parameters were recorded using automatic micro-meteorological equipment consisting of Anemometer, Wind wane and thermometer. Review of secondary data collected from IMD station at Rentachintala
			Rainfall	3 months	Daily	Rainfall: 0.2 mm	Rainfall was recorded every morning at 0830 hours
			Relative Humidity, Cloud Cover	3 months	Hourly	RH: +/- 3%	Humidity recorded using wet and dry thermometer and psychometric charts on hourly basis.
2	Ambient Air Quality	8 locations	As per NAAQS 2009	Two days per week for 13 weeks	24 hourly	PM _{2.5} : 2 µg/m ³ PM ₁₀ : 5 µg/m ³ CO: 12.5 µg/m ³ SO ₂ : 4 µg/m ³ NOx: 9 µg/m ³	Gravimetric method for PM _{2.5} and PM ₁₀ . Modified West & Gaeke method for SO ₂ (IS-5182 part-II 1969) using Tetrachloro mercurate 0.01 N absorbing solution. Jacob-Hochheiser method (IS-5182 part-IV 1975) for NOx using Sodium Arsenate absorbing solution of 0.01 N absorbing solution. CO was measured by GC method.
3	Water Quality	13 locations (5 Surface water 8- Ground water)	As per IS:10500-1991	Grab sampling	Once in study period	EC: +/-0.1 us/cm TSS/TDS: 0.5 mg/l O&G: 0.1 mg/l DO: 0.5 mg/l BOD: 2 mg/l COD: 0.5 mg/l Ca, Mg, Na, K: 0.1 mg/l Alkalinity, PO ₄ , SO ₄ , Cl, NO ₃ : 0.1 mg/l Coliform: 1 MPN	As per APHA methods. The conductivity, temperature were analyzed at site laboratory and rest of the parameters were analyzed at VIMTA's Central Laboratory at Hyderabad.

Sr. No.	Environmental Component	Sampling Locations	Sampling Parameters	Total Sampling Period	Sampling Frequency	Detection Limit	Methodology
			Heavy metals (As, Hg, Pb, Cd, Cr ⁶ , Total Cr, Cu, Zn, Se, Fe)	Grab sampling	Once in study period	0.001 mg/l	
4	Noise	8 locations	Leq	Hourly readings for 24 hours	Once in study period	SPL: 0.1 dB(A)	Integrated on hourly basis
5	Soil	8 locations	Soil profile, Chemical constituents, Suitability for agricultural growth	Composite sample up to 100- m depth	Once during study period	EC: $\pm 0.1 \mu\text{s/cm}$ N, P, K: 0.1 mg/kg	Analysis was carried out as per Soil Chemical analysis by ML Jackson
6	Terrestrial Ecology	Total study area	Flora and fauna	Field observations	Once in study period	-	Through field visits and collected secondary data. Count and quadrat method
7	Demography and Socio-economic aspects	Total study area	Demographic profile	-	-	-	Through field visits and secondary information sources like National Informatic Center, Delhi and Census operation division
8	Land Use	Total study area	Trend of land use change for different categories	-	-	-	Through field visits and secondary information of IRS, LISS P6 satellite imagery.
9	Geology	Total study area	Geological history	-	-	-	Secondary information sources (Geological survey of India and Central Ground Water Board, Delhi)
10	Hydrogeology (Surface and ground)	Total study area	Drainage pattern, nature of streams, aquifer characteristics, recharge and discharge areas	-	-	-	Secondary information sources like (Geological survey of India and Central Ground Water Board)