	EIA for the Proposed 30 MW Captive Power Plant at Durgapuram Village, Dachepalli, Guntur District, Andhra Pradesh
Table of Contents	

Table of Contents

Chapter	Title	Page
	Table of Contents	TC-1
	List of Figures	TC-IV
	List of Tables	TC-V
1.0	Introduction	
1.1	Purpose of the Report	C1-1
1.2	Identification of Project & Project Proponent	C1-1
1.3	Power Scenario in Andhra Pradesh	C1-2
1.4	Project Details	C1-3
1.5	Environmental Setting	C1-3
1.6	Scope of the Study	C1-4
1.7	Methodology of the Study	C1-5
2.0	Project Description	
2.1	Introduction	C2-1
2.2	Plant Layout	C2-1
2.3	Size or Magnitude of Operation	C2-1
2.4	Process Description	C2-6
2.5	Fuel Requirement	C2-12
2.6	Land Requirement	C2-13
2.7	Water Requirement	C2-13
2.8	Power Requirement	C2-14
2.9	Manpower	C2-15
2.10	Proposed Schedule and Approval for Implementation	C2-15
2.11	Utilities and Services	C2-15
2.12	Sources of Pollution	C2-16
2.13	Greenbelt Development	C2-19
3.0	Baseline Environmental Status	
3.1	Introduction	C3-1
3.2	Hydrology	C3-1
3.3	Landuse Studies	C3-14
3.4	Soil Characteristics	C3-20
3.5	Meteorology	C3-23
3.6	Air Quality	C3-33
3.7	Water Quality	C3-37
3.8	Noise Level Survey	C3-42
3.9	Flora and Fauna Studies	C3-46
3.10	Demography and Socio-economics	C3-53


	EIA for the Proposed 30 MW Captive Power Plant at Durgapuram Village, Dachepalli, Guntur District, Andhra Pradesh Table of Contents
---	--

Table of Contents (Contd.)

Chapter	Title	Page
4.0	Anticipated Environmental Impacts and Mitigation Measures	
4.1	Identification of Impacts	C4-1
4.2	Impacts during Construction Phase	C4-1
4.3	Impacts during Operational Phase	C4-4
4.4	Indirect Impacts	C4-26
4.5	Impact on Other Sensitive Locations	C4-26
4.6	Measures for Minimizing Adverse Impacts	C4-26
5.0	Environment Managment Plan	
5.1	Introduction	C5-1
5.2	Environment Management during Construction Phase	C5-1
5.3	Environment Management during Operation Phase	C5-3
5.4	Compliance with Corporate Responsibility for Environmental Protection Guidelines	C5-22
5.5	Summary of Anticipated Environmental Impacts and Mitigation Measures	C5-23
5.6	Environment Management System	C5-26
5.7	Budgetary Allocation For Environment Protection	C5-28
6.0	Analysis of Alternatives For Technology and Project Site	
6.1	Analysis of Alternative Technology	C6-1
6.2	Analysis of Alternative Sites for Location of Power Plant	C6-3
7.0	Environment Monitoring Programme	
7.1	Implementation Schedule of Mitigation Measures	C7-1
7.2	Environment Monitoring	C7-1
7.3	Monitoring Methods and Data Analysis	C7-3
7.4	Monitoring Equipment and Consumables	C7-3
7.5	Occupational Health and Safety	C7-4
7.6	Environmental Management Cell	C7-4
8.0	Additional Studies	
8.1	Public Consultation	C8-1
8.2	Issues Discussed During Public Hearing	C8-6
8.3	Conclusion on Public Hearing	C8-10
8.4	Written Suggestions on Complaints	C8-10
8.5	Risk Assessment and Disaster Management Plan	C8-19
8.6	Hazard Assessment and Evaluation	C8-21
8.7	Disaster Management Plan	C8-29
8.8	Off-site Emergency Preparedness Plan	C8-41
8.9	Occupational Health and Safety	C8-44



	EIA for the Proposed 30 MW Captive Power Plant at Durgapuram Village, Dachepalli, Guntur District, Andhra Pradesh
Table of Contents	


Table of Contents (Contd.)

Chapter	Title	Page
9.0	Project Benefits	
	9.1 Improvements in the Physical Infrastructure	C9-1
	9.2 Corporate Social Responsibility	C9-1
	9.3 Estimated Budget	C9-3
	9.4 Improvement in the Social Infrastructure	C9-6
	9.5 Employment Potential	C9-6
10.0	Summary & Conclusion	
	10.1 Introduction	C10-1
	10.2 Screening Category	C10-1
	10.3 Objective of the Report	C10-1
	10.4 Magnitude of the Project	C10-1
	10.5 Cost of the Project	C10-1
	10.6 Environment Setting	C10-1
	10.7 Process Description and Sources of Pollution	C10-3
	10.8 Baseline Environmental Status	C10-5
	10.9 Anticipated Environmental Impacts and Mitigation Measures	C10-6
	10.10 Risk Assessment and Disaster Management	C10-10
	10.11 Environmental Monitoring Programme	C10-11
	10.12 Occupational Health and Safety	C10-11
	10.13 Project Benefits	C10-11
11.0	Disclosure of Consultants	
	11.1 Introduction	C11-1
	11.2 Vimta Labs Limited – Environment Consultant	C11-1
	List of Annexures	
	Annexure-I Compliance to TOR Conditions	AI-1
	Annexure-II EC Letter	AII-1
	Annexure-III Consent for Establishment	AIII-1
	Annexure-IV Methodology of Sampling and Analysis	AIV-1
	Annexure-V Applicable Environmental Standards	AV-1
	Annexure-VI Landuse Pattern	AVI-1
	Annexure-VII Ambient Air Quality Levels	AVI-1
	Annexure-VIII Ecological Details	AVIII-1
	Annexure-IX Demographic Details	AIX-1
	Annexure-X Emission Calculations	AX-1
	Annexure-XI Public Hearing Details	AXI-1
	Annexure-XII Particulars of Coal	AXII-1
	Annexure-XIIa Fuel Supply Agreement	AXIIA-1

	EIA for the Proposed 30 MW Captive Power Plant at Durgapuram Village, Dachepalli, Guntur District, Andhra Pradesh
Table of Contents	


List of Figures

Figure	Title	Page
1.1	Index Map	C1-6
1.2	Study Area Map (10 km Radius)	C1-7
2.1	Google Image	C2-2
2.2	Photographs showing existing Plant Facilities	C2-3
2.3a	Plant Layout	C2-4
2.3b	Proposed CPP Plant Layout	C2-5
2.4	Coal Handling Plant	C2-8
2.5	Crusher Routing Schematic Diagram	C2-9
2.6	Process Flow CPP	C2-10
2.7	Energy Balance	C2-11
3.2.1	Depth to Water Table (Pre monsoon May 2003)	C3-6
3.2.2	Depth to Water Table (Post Monsoon November 2003)	C3-7
3.2.3	Flood Zone Mapping	C3-13
3.3.1	Satellite Imagery	C3-18
3.3.2	Landuse Map	C3-19
3.4.1	Soil Sampling Locations	C3-21
3.5.1	Site Specific Windrose – Pre Monsoon Season	C3-26
3.5.2	Post Monsoon Windrose – IMD Rentachintala	C3-27
3.5.3	Winter Windrose – IMD Rentachintala	C3-28
3.5.4	Pre Monsoon Windrose – IMD Rentachintala	C3-29
3.5.5	Monsoon Windrose – IMD Rentachintala	C3-30
3.5.6	Annual Windrose – IMD Rentachintala	C3-31
3.6.1	Air Quality Sampling Locations	C3-35
3.7.1	Water Sampling Locations	C3-39
3.8.1	Noise Monitoring Locations	C3-45
3.9.1	Terrestrial Ecological Sampling Locations	C3-50
4.1	Short Term 24 hourly Incremental GLCs of PM ₁₀	C4-10
4.2	Short Term 24 hourly Incremental GLCs of SO ₂	C4-11
4.3	Short Term 24 hourly Incremental GLCs of NO _x	C4-12
4.4	Cumulative GLC Concentration of PM	C4-13
4.5	Cumulative GLC Concentration of SO ₂	C4-14
4.6	Cumulative GLC Concentration of NO _x	C4-15
4.7	Water Balance Diagram	C4-21
4.8	Predicted Noise Levels around Plant	C4-23
5.1	Schematic Diagram of Sewage Treatment Plant	C5-10
5.2	Schematic Diagram of Effluent Treatment Plant	C5-11
5.3	Rainwater Harvesting Structure	C5-14
5.4	Recharge System for Workshop	C5-15
5.5	Recharge System for Paved Road through Recharge Trench	C5-15
5.6	Greenbelt Development Plan	C5-21
7.1	Organization Chart	C5-6
8.1	Paper Advertisement	C8-2
8.2	Paper Advertisement	C8-3
8.3	Radiation Contours	C8-27
9.1	CSR Activities	C9-8-12

	EIA for the Proposed 30 MW Captive Power Plant at Durgapuram Village, Dachepalli, Guntur District, Andhra Pradesh
Table of Contents	

List of Tables

Tables	Title	Page
1.1	Power Supply Position of Andhra Pradesh	C1-3
1.2	Details of Environmental Setting	C1-4
1.3	Environmental Attributes and Frequency of Monitoring	C1-8
2.1	Details of Proposed Facilities	C2-1
2.2	Details of Proposed Captive Power Plant	C2-6
2.3	Expected Coal Quality	C2-12
2.4	Coal Characterization	C2-13
2.5	Landuse Breakup	C2-13
2.6	Water Requirement	C2-14
2.7	Sources of Emission	C2-17
2.8	Water Balance	C2-17
2.9	Details of Solid Waste Generation	C2-18
2.10	Noise Levels of Machineries in CPP	C2-19
3.2.1	Ground Water Depth Levels	C3-5
3.2.1a	Mandal Wise Ground Water Results 2004 Guntur Dist. A.P	C3-8
3.2.2	Mandal Wise Villages falling under Semi-Critical/Critical / Over Exploited Categories in Guntur District	C3-10
3.2.3	Formation Wise Details of Different Ground Water Abstractions Structures and Their Yields in the District	C3-11
3.2.4	Area Irrigated by Different Sources during 2002-2003	C3-11
3.2.5	Mandal Wise Sources Wise Area Irrigated 2002-2003	C3-12
3.3.1	Land Use Pattern in the Study Area	C3-14
3.3.2	Landuse/Land Cover Classification System	C3-15
3.3.3	Landuse Breakup of the Study Area	C3-17
3.4.1	Details of Soil Sampling Locations	C3-20
3.4.2	Soil Analysis Results	C3-22
3.4.3	Standard Soil Classification	C3-22
3.5.1	Summary of the Meteorological Data Monitored at Site	C3-24
3.5.2	Summary of Wind Pattern at the Study Area	C3-24
3.5.3	Climatological Data	C3-32
3.5.4	Summary of Wind Pattern – IMD Rentachintala	C3-32
3.6.1	Details of Ambient Air Quality Monitoring Locations	C3-34
3.6.2	Summary of Ambient Air Quality Results	C3-36
3.7.1	Details of Water Sampling Locations	C3-38
3.7.2a	Ground Water Quality	C3-40
3.7.2b	Surface Water Quality	C3-41
3.8.1	Details of Noise Monitoring Locations	C3-43
3.8.2	Noise Levels in the Study Area	C3-44
3.9.1	Sampling Locations for Ecological Studies	C3-47
3.9.2	Floristic Composition in Core Zone	C3-47
3.9.3	Classwise Distribution of Plant Species in the Study Area	C3-51
3.9.4	Details of Forest in Study Area	C3-51
3.9.5	Fauna in the Core Zone	C3-52
3.10.1	Distribution of Population in the Study Area	C3-53
3.10.2	Distribution of Population by Social Structure	C3-54
3.10.3	Distribution of Literate and Literacy Rates	C3-54
3.10.4	Occupational Structure	C3-55

	EIA for the Proposed 30 MW Captive Power Plant at Durgapuram Village, Dachepalli, Guntur District, Andhra Pradesh Table of Contents
---	--

List of Tables (contd...)

Tables	Title	Page
4.1	Expected Solid Waste from Power Plant	C4-5
4.2	Emissions from proposed Stack	C4-8
4.3	Short Term Incremental Modelling Results	C4-8
4.4	Resultant Baseline Concentration after Commissioning	C4-9
4.5	Traffic Details	C4-16
4.6	Vehicular Emissions Rates for Trucks	C4-17
4.7	Meteorological Data Considered for Modelling	C4-17
4.8	Hourly predicted Results for CO, HC, and NOx	C4-18
4.9	Details of Water Consumption and Wastewater Generation from the Proposed Plant	C4-20
4.10	Wastewater Characteristics	C4-20
4.11	Expected Noise Levels at the Power Plant	C4-22
4.12	Predicted Noise Levels at Plant Boundary	C4-22
5.1	Wastewater and Treatment	C5-9
5.2	Waste Minimization Approach in Various Processes of CPP	C5-16
5.3	Plantation Scheme	C5-17
5.4	Compliance with CREP Guidelines	C5-22
5.5	Summary of Anticipated Impacts during Operation Phase	C5-24
5.6	Implementation Schedule	C5-28
5.7	Cost of Environmental Protection Measures	C5-28
6.1	Details of Emission in CPPS Equipped with ESPs	C6-2
7.1	Monitoring Schedule for Environment Parameters	C7-2
8.1	Summary of Issues raised are Grouped and Discussed	C8-6
8.2	Reply to Applications Received in Writing	C8-11
8.3	Category-wise Schedule of Storage Tanks	C8-20
8.4	Properties of Fuels/Chemicals used at the Plant	C8-20
8.5	Applicability of GOI rules to Fuel/Chemical Storage	C8-20
8.6	Preliminary Hazard Analysis for Process and Storage Areas	C8-21
8.7	Preliminary Hazard Analysis for the Whole Plant in General	C8-21
8.8	Fire Explosion and Toxicity Index	C8-22
8.9	Fire Explosion and Toxicity Index for Storage Facilities	C8-22
8.10	Damage Due to Incident Radiation Intensities	C8-24
8.11	Radiation Exposure and Lethality	C8-24
8.12	Scenarios Considered for MCA Analysis	C8-25
8.13	Properties of Fuel Considered for Modeling	C8-25
8.14	Occurrence of Various Radiation Intensities – Pool Fire	C8-25
8.15	Hazard Analysis for Process in Power Plant	C8-28
8.16	Classes of Fire	C8-30
8.17	Hazardous Activities and Safety measures to be adopted	C8-44
8.1	Budget for Proposed CSR Schemes	C8-4
9.1	CSR Activities as on 28.01.13	C9-3
9.2	Budget Breakup of CSR Activities undertaken	C9-5
9.3	Budget for Proposed CSR Schemes	C9-5
10.1	Air Quality Results	C10-5
10.2	Predicted 24 Hourly Short Term Incremental Concentration	C10-8