

OBTAINING TOR

FOR 2x360 MW COAL BASED SUB-CRITICAL THERMAL POWER PLANT IN GUMMIDIPOONDI TALUK, TAMIL NADU

IV. PROPOSED TOR FOR EIA STUDIES

Project	Proposed 2 x 360 (720) MW Coal based Sub Critical Thermal Power Project
Category	A [1(d) Thermal Power Plant $\geq$ 500 MW]
Project	OPG Power Generation Private Limited
Proponent	
Location	Villages – Periya Obulapuram, Cinna Obulapuram & Pappankuppam, Taluk – Gummidipoondi, District – Thiruvallur, Tamil Nadu

INTRODUCTION

720 (2x360) MW Sub-Critical Thermal Power Project in Periya Obulapuram, Cinna Obulapuram & Pappankuppam Villages, Thiruvallur District of Tamil Nadu is proposed to be set up by OPG Power Generation Private Limited. The plant already has installed four units (2x77 MW, 1x80 MW and 1x180 MW).

The proposed station would require about 2.645 MTPA (PLF @ 90%) of imported coal (Indonesian) considering the installed capacity as 720 MW. The coal will be imported from Indonesia and received at Ennore/Krishnapatnam port and from there it will be transported by road to site through closed trucks.

The water requirement of proposed station will be to the tune of 425 m³/day. Water is proposed to be drawn from bore wells within the site.

TANGEDCO, the Transmission arm of TNEB has planned to construct a 400kV substation at Pervai Kandigai near Gummidipoondi which shall be used for evacuating power from the proposed 2x360MW Power Project.

EIA METHODOLOGY

The EIA Report will address all the Terms of Reference and will be prepared in accordance to the Environment Protection Act, 1986 and EIA Notification published by Ministry of Environment and Forests, Government of India on 14th September 2006 and subsequent amendments thereafter. The scope of the EIA Report for the proposed Power Plant includes identifying relevant environmental concerns and focus on potential impacts that may be changed due to the setting up of the plant. The report will also provide an Environment Management Plan and Disaster Management Plan. Monitoring for baseline data collection will be done for a period of three months during non-monsoon season.

SITE & STUDY AREA

The proposed 720 (2 x 360) MW Sub-Critical Thermal Power Project is located at latitude 13°25'55.74" N and longitude 80°06'00.49" E. The land for the project falls in Villages Periya Obulapuram, Cinna

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Obulapuram and Pappankuppam of Thiruvallur District, Tamil Nadu. A buffer of 10 km radius from the proposed site will be considered as the study area for EIA Study of the project.

PROJECT DESCRIPTION

PROJECT RATIONALE

This section will highlight the goals and objectives of the proposed project. It will also include discussion on the significance of the project in terms of the need of the project in the local as well as national level. It will also highlight the proposed project in line with existing development plans of the State and Central Government and in accordance with the existing or envisioned land-use plans.

PROJECT LOCATION

This section will discuss the geographic location of the project. The location of the project will clearly define the geographical features (e.g. watersheds, national parks/protected areas, defense installations etc.) and the general access to the project site (e.g. presence of existing road networks, feeder roads etc.).

PROJECT/PROCESS INFORMATION

This portion will include the following:

- Statement of the Official name of the project and name/s of proponents (including address, telephone nos., etc.) responsible / liable;
- Vicinity Plan, Processes involved, Site layout, water balance diagram
- Project cost and area
- Resource / Manpower requirements
- Time frame for project implementation

PROCESS DESCRIPTION

The major design parameters for the technology to be used in the project and the process components of the project will be discussed in this section. Also this section will assess the suitability of land and its adequacy to meet the essential requirements for the project development. Materials input and output from the process components including products, fuels, feedstock and utility requirements (gas, electricity, steam and cooling water), material balances (also energy balance); flow diagrams and descriptions of the process to be used will also be provided in this section. The process emissions including air, liquid, and associated wastes, and associated pollution abatement equipments will be discussed.

Pre-Construction

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This section shall discuss / describe the various components of the projects. This section shall also discuss the major activities to be undertaken during the construction phase, which shall include but not be limited to:

- Site mobilization
- Road construction / improvement
- Camp construction
- Site clearing
- Construction of the major facilities / project components
- Construction of support services e.g. Water & Power supply & Telecommunications, etc.

Operation

This section shall discuss the activities to be undertaken during the operation, which shall include but not limited to:

- Major maintenance activities
- Manpower requirements
- Fuel Requirement
- Energy requirements

BASELINE ENVIRONMENT SCENARIO

Description of the existing environment, assessment of historical trends of environmental data specific to the proposed site and description of the socio-economic setting in the area will provide an overall picture of the proposed site before any development activities are undertaken. Thus, equipped with the knowledge of the existing environment and awareness of the specifications of the proposed project will help in reliable prediction of the project impacts.

Methodologies used in the data collection (primary data) shall be briefly discussed with the corresponding interpretation of the data obtained. Likewise, all sources of information (secondary data) shall be identified and appropriately acknowledged.

Study modules	Scope and Coverage	Methodology (Type & Source)
Topography	• Landform Pattern	• Slope and elevation
Soils	• Soil physical and chemical characteristics / analysis	• Soil survey
Hydrology	• Ground water table • Drainage system	• Characterization of inland surface water
Meteorology/ climatology	• Wind & Rainfall pattern • Frequency distribution of wind	• Secondary data from nearest IMD station

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Study modules	Scope and Coverage	Methodology (Type & Source)
	- direction - Temperature - Associated atmospheric pressure	Primary data collection
Air Quality	- Ambient air quality - SPM, NO_x, SO_x, Mercury and Ozone	- Identification of air pollution sources - Air quality measurement
Water Quality	- Physico-chemical characteristics of surface water and ground water - Bacteriological characteristics (total coliform)	Sampling and analysis of surface & ground water
Noise Level	Ambient noise levels at the project sites and nearby community	Noise quality measurements
Flora	- Summary of vegetative cover - Phytosociological study	Primary ecological survey supported by secondary data collected from regional forest office
Fauna	Terrestrial & aquatic faunal species inventory survey	Primary ecological survey supported by secondary data collected from regional forest office
Demography	- Population size - Population density, household size - Population by gender - Literacy rate - Occupation and employment status	Principal data from Census
Other Social Services	- School facilities - Telecommunications, water and power facilities	Principal data from Census
Transportation	Network and mode of transportation	Identification of main and access roads, mode of transportation

ASSESSMENT OF ENVIRONMENTAL IMPACTS

There shall be an assessment on feasibility and cost-effective measures to prevent or reduce significant negative environmental impacts identified, to an acceptable level. In this section, the following aspects will be assessed:

- The project component and development activities that result in discharges to the environment and the effect of these on the environment.

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- Existing conditions in the site area, including existing land-use, resources and other activities, which in combination with the project activity have potential to affect the environment.
- Anticipated environmental effects.

This chapter will include appropriate tables and figures to illustrate and summarize the key information that is relevant in understanding the environmental and socio-economic environment. The environmental and socio-economic impact of the proposed project having regard for regional and cumulative effects will be presented. Wherever possible, the impacts will be quantified. This section will also include measures to address emergency response requirements for accidental events and also estimate costs of those measures and of the institutional training requirements to implement them.

The existing air quality of the region and the impact of the proposed project on regional air quality will be discussed. The component of the project, which will affect **air quality**, will be identified. All emissions as a result of the proposed project and their effects on the environment will be discussed. Also the ways and means of reducing the air emission impact will be discussed.

The project activities that will affect **surface water and ground water** quality will be identified. Any water minimization considerations will be included. The method of plant cooling and the design parameters and criteria for any incremental water management and storage facilities will be provided. The quantity and source of wastewater will be presented including a summary of water quality effects and possibility of recycling.

Project activities during construction and operation phases that will affect **noise levels** and the potential for increased noise resulting from this project will be presented. The effect on noise levels during the construction and operation phase will be ascertained.

Future **waste management** projections, storage and disposal plans and locations will be discussed. The quantity and composition of any waste including solid and hazardous wastes produced will be estimated and classified.

Land-use and **Socio-economic** information will also be provided. The impact on the resources and the present population will be highlighted. This will include the effects on employment, livelihood, economy and infrastructure.

Resource/ Environment	Construction Phase	Operation/Maintenance Phase
	Impact	Impact
Land	• Modification of land forms	• Change in present form
Water	• Change in quality of surface and groundwater	• Change in quality of water bodies due to discharge of effluent
Air Quality	• Dust generation • Change in concentration of pollutant	• Change in level of gaseous pollutants i.e. TSP, SO₂ and NO_x

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Resource/ Environment	Construction Phase	Operation/Maintenance Phase
	Impact	Impact
	gases	
Noise	• Change in noise level	• Change in noise level from various sources
Wastewater/Solid waste management	• Wastewater/Solid waste management	• Solid waste management • Wastewater management
Socio-economic	• Change in employment pattern • Change in Infrastructure facilities	• Change in economy of the region • Employment benefits

ENVIRONMENT MANAGEMENT PLAN

Environment Management Plan will address all the relevant issues like land management, noise pollution, air emissions, water management, hazardous materials' management, solid waste management, sewage treatment besides landscape plan and rain water harvesting.

Monitoring programme

The EIA shall contain an extensive monitoring programme for parameters included in the baseline studies. An Environmental Monitoring Plan containing the following information would serve as a guide in the monitoring activities.

- Frequency of sampling and sampling points
- Sampling parameters
- Work and financial plan for the current year

The Chapter will describe the project cost towards environmental protection.

Contingency / Emergency Response Plan

Procedures on how to cope with emergencies / accidents shall be outlined in a comprehensive contingency/emergency response plan. The institutional responsibilities will be made clear and the flow of communication in cases of emergencies will be included.