

**SUMMARY ON
ENVIRONMENTAL IMPACT ASSESSMENT
REPORT**

OF

M G Power Projects Ltd.

200 MW capacity (1 x 135 MW & 1 x 65 MW) Coal based Power plant

at

Pedaveedu Village, Mattampalli Mandal,
Nalgonda District, Andhra Pradesh

Submitted to:

**ANDHRA PRADESH POLLUTION CONTROL BOARD
Hyderabad**

1.0 PROJECT DESCRIPTION:

M G Power Projects Limited proposes to establish a Coal based Power plant of 200 MW capacity comprising of 1 x 135 MW & 1 x 65 MW units and will be implemented in two phases at Pedaveedu Village, Mattampalli Mandal, Nalgonda District, Andhra Pradesh. The total capital investment envisaged for the proposed project is Rs. 1150 Crores.

Total land envisaged for the proposed project is 97 acres, which comes under parts of Survey no. 540.

CONSULTANT FOR THE PROJECT:

Pioneer Enviro Laboratories & Consultants Private Limited, Hyderabad, which is accredited by NABET, Quality Council of India for conducting EIA studies for Power plant, have prepared this Draft Environmental Impact Assessment (DEIA) Report for the proposed project of Power plant by incorporating the TOR approved by State Environment Impact Assessment Authority. The report contains detailed description of the following:

- Characterization of status of environment with in an area of 10 km radius from the plant for major environmental components including air, water, noise, soil, flora, fauna and socio-economic environment.
- Assessment of air emissions, liquid waste and solid waste from the proposed project along with the noise level assessment.
- Environmental Management Plan comprising of emission control measures proposed to be adopted in the proposed project, solid waste management, Greenbelt development.
- Post Project Environmental Monitoring.

1.1 Fuel Requirement

Coal will be the fuel proposed for power generation. The proposed power plant will be based on Indigenous coal / Imported coal / Blended coal. The Indian coal required for the proposed power plant will be sourced from the SCCL and Imported coal will be sourced from Indonesia.

The requirement of fuel for the proposed power plant is estimated:

Fuel	Quantity (in TPD)	Source	Method of Transportation
Indigenous Coal (100 %)	3200	SCCL	Rail Wagons & by covered trucks
(OR)			
* Imported Coal (100 %)	2000	Indonesia	By Sea route , Rail Wagons & covered trucks up to the site
(OR)			
Indigenous Coal (30%) & Imported Coal (70 %)	800 1500	SCCL / Imported	By sea route , Rail Wagons & by covered trucks up to the site

*MoU signed with M/s. PT Global Dwimudra for supply of Indonesia coal, a copy of same is enclosed EIA report.

1.2 DESCRIPTION OF MANUFACTURING PROCESS

The power plant will be implemented in two phases. Phase I will have 1 x 135 MW and Phase II will have 1 x 65 MW. CFBC boilers have been proposed in both the phases. The whole process comprises of generating heat energy in the boiler and then converting heat energy generated in the CFBC Boiler into mechanical energy in the turbine and further converting this mechanical energy generated in the turbine into electrical energy in the alternator. Coal (Indigenous / Imported / Blended coal) will be used as fuel in the boiler. The combustion of the fuel generates the heat energy in the boilers. This heat energy is transferred to heat transfer area provided in different areas like (bed coils, water wall, Steam Drawn/mud drum, bank tubes, economizer, super heater, air pre-heater). This heat will be transferred to the water which will pass through and steam is generated and this steam will be further super heated in the super heater so that dry super heated steam will be generated. The quantity of the steam generated in the boilers will be 440 TPH & 240 TPH respectively. This Steam will be fed into the turbines and this steam expands in the turbine and generates mechanical energy i.e., it starts rotating the Rotor at high speed and further this mechanical energy will be converted into electrical energy in the alternator. The efficiency of CFBC Boiler is high and the environmental emissions also will reduce. The power generated at the alternator terminals will be 135 MW & 65 MW. The following are the Environmental Benefits of CFBC Technology.

- In CFBC boiler the unburnt carbon particles in the exit flue gases will pass through a cyclone where these unburnt carbon particles will be collected and recycled back into the CFBC Boiler. Thereby the efficiency of the Boiler increases.
- The temperature in the Boiler will be around 850 °C. Hence it is not conducive for formation of thermal NOx. . Hence NOx generation will also be much lower.

1.3 WATER REQUIREMENT

The water required for the proposed power plant will be 19300 cum/day. This includes make-up water for Cooling, Boiler make-up, DM plant regeneration water, Plant service water, air conditioning & domestic water. The water required for the project will be sourced from Pulichintala Reservoir of Krishna river at a distance of 4.5 Kms. from the site. A dedicated pipeline will be laid upto the project site for transportation of water. Water clearance from Irrigation Dept., Govt. of Andhra Pradesh is under process.

WATER REQUIREMENT

S.No.	Item	Water requirement (Cum / day)
1.	Cooling tower make-up	17414
2.	DM water for boilers & its regeneration	1590
3.	Plant potable water	10
4.	Air conditioning & Plant service water	120
5.	Make up Clarifier blow down	96
6.	Evaporation loss	70
	Total	19300

1.4 WASTE WATER GENERATION AND CHARECTERISTICS

The net waste water generated from the proposed power plant will be 2716 cum/day. This includes Cooling tower Blowdown, Boiler Blowdown, DM Plant regeneration, Clarifier Blowdown, Plant service water & Sanitary waste water from the proposed power plant. The Sanitary waste water will be treated in septic tank followed by soak pit.

WASTE WATER GENERATION

S.No.	SOURCE	Quantity (Cum/day)
1.	Cooling tower blow down	2087
2.	Boiler blow down	275
3.	DM Plant regeneration	230
4.	Clarifier blow down	96

5.	Plant service water	20
6.	Sanitary waste	8
	Total	2716

The characteristics of sanitary waste water & Cooling Tower blowdown, Boiler blow down and DM Plant regeneration water are shown below:

PARAMETER	CONCENTRATION					
	DM plant regeneration	Boiler blowdown	Cooling Tower blowdown	Sanitary waste water	Clarifier blowdown	Plant service water
pH	4 – 10	9.5 – 10.5	7.0 – 8.0	7.0 – 8.5	7.0 – 8.0	7.0 – 8.0
BOD (mg/l)	--	--	--	200 – 250	--	--
COD (mg/l)	--	--	--	300 – 400	--	--
TDS (mg/l)	5000 -6000	1000	1000	800 – 900	230 - 250	230 - 250
Oil & Grease (mg/l)	--	10	--	--	--	10-20

1.5 EFFLUENT TREATMENT PROCESS

Service water will be treated in an oil separator. Boiler Blowdown & D.M. Plant regeneration will be treated in neutralization tank. Boiler Blowdown, D.M. Plant regeneration effluents after neutralization will be mixed with Cooling Tower Blow-down and treated service water in a Central Monitoring Basin (CMB). After ensuring compliance with APPCB standards for onland for irrigation the treated effluent will be utilized for Dust suppression, Ash conditioning, for greenbelt development.

1.6 AIR EMISSIONS

The flue gases will be treated in high efficiency Electro Static Precipitators then released in to the atmosphere through stacks of height 108 m & 87 m for 440 TPH & 240 TPH boilers respectively for effective dispersion of emissions. The ESP will be designed for an outlet dust concentration of less than 50 mg/Nm³ to comply with CREP recommendations.

1.7 SOLID WASTE MANAGEMENT

The following will be the solid waste generation & proposed method of disposal.

Ash from	QUANTITY (TPD)	METHOD OF DISPOSAL
Indigenous coal (100 %)	1449	The ash generated in the power plant will be utilized/disposed in accordance with the provisions of the ash utilization Notification issued by the Ministry of Environment &
Or		
Imported coal (100 %)	160	

Or		Forests, New Delhi.
Indigenous Coal (30%) &	360	
Imported Coal (70 %)	120	

The ash generated from the power plant will be given to cement plant. M/s. Sagar Cement Ltd. has issued willingness to utilize the ash generated from the power plant and same is enclosed in EIA report.

2.0 DESCRIPTION OF THE ENVIRONMENT

Baseline data has been collected on ambient air quality, water quality, noise levels, flora & fauna and socio-economic details of the people within 10 km. radius of the site.

2.1 AMBIENT AIR QUALITY

Ambient air quality was monitored for PM_{2.5}, PM₁₀, SO₂, NO_x & CO at 8 stations for one season as per MoEF guidelines. The following are the concentrations of various parameters at all the monitoring stations.

PM _{2.5}	:	14.5 – 26.1 µg/m ³
PM ₁₀	:	24.2 – 43.5 µg/m ³
SO ₂	:	5.4 – 14.3 µg/m ³
NO _x	:	6.1 – 16.8 µg/m ³
CO	:	220 - 520 µg/m ³

2.2 WATER QUALITY

Ground water samples were collected at 8 locations and analyzed for various physico - chemical parameters and Bacteriological parameters. The water samples show that they are suitable for potable purpose.

2.3 NOISE LEVELS

Noise levels were measured at 8 stations during daytime & night time. The noise levels at the monitoring stations are ranging from 43.65 dBA to 52.86 dBA.

3.0 ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

3.1 PREDICTION OF IMPACTS ON AIR QUALITY

The emissions from the proposed project are PM₁₀, SO₂ & NO_x. The predictions of Ground Level Concentrations have been carried out using ISC - 3 model. Meteorological data such as wind direction, wind speed, max. and min. temperature collected at the site have been used as input data to run the model.

It is observed from the computation results that the maximum predicted incremental rise in 24 hourly ground level concentrations of PM₁₀, SO₂ & NO_x are 0.4 µg/m³, 7.5 µg/m³ & 3.8 µg/m³ respectively at a distance of 1.3 Km from the origin stacks in the down wind direction. The emissions from other industries are also considered in the modeling.

The predicted results show that the net resultant concentrations (Max. Baseline conc. + Max. incremental rise in conc.) of PM₁₀, SO₂ & NO_x, which is inclusive of emission from other industries, are well within the National Ambient Air Quality Standards after commissioning of the power plant. Hence there will not be any adverse impact on air environment due to the proposed power plant.

3.2 PREDICTION OF IMPACTS ON NOISE QUALITY

The major sources of noise generation in the proposed project will be STG, DG set & compressors. The ambient noise levels will be within the standards prescribed by MoEF i.e. the noise levels will be less than 75 dBA during day time and less than 70 dBA during night time. Extensive greenbelt proposed to be developed in the Plant premises will further attenuate the noise levels. Hence there will not be any adverse impact due to noise on habitation in surrounding areas due to the proposed power plant.

3.3 PREDICTION IMPACTS ON WATER QUALITY

Effluent from power plant will be treated in effluent treatment plant and will be used for, greenbelt development, ash conditioning and for dust suppression in CHP. There will be not any discharge of waste water into surface water bodies. Sanitary waste water will be treated in septic tank followed by soak pit. Rain water harvesting will be implemented in consultation with State Ground Water Board. Water required for the plant will be sourced from Pulichintala Reservoir of Krishna river at a distance of 4.5 Kms. from the site. Hence

there will not be any adverse impact in water environment in the study area due to the proposed project.

3.4 PREDICTION OF IMPACTS ON BIOLOGICAL ENVIRONMENT

There are no National Parks / Sanctuaries / Migratory route for birds / Tiger reserves within 10 Km. radius of the proposed project site. All air emission control systems such as ESPs, dust extraction systems with bagfilters, dust suppression systems, pucca internal roads, etc. will be provided /installed and operated to comply with the norms. Interlocking system will be provided to ESP in such a way that whenever ESP fails, the coal feed to the boiler will stop and there will be no power generation till the ESP is rectified. Stacks height will be in accordance with the CPCB norms. Outlet dust emission will be below 50 mg/Nm³. Zero liquid effluent discharge will be maintained. Ash utilization will be in accordance with the MOEF notification on fly ash utilization and its amendments. Hence there will not be any adverse impact on flora, fauna, people, animals, etc due to the proposed power plant.

4.0 ENVIRONMENTAL MONITORING PROGRAMME

Ambient Air Quality, Sack monitoring & effluent analysis will be carried out regularly as per CPCB norms and the analysis reports will be submitted to Ministry of Environment & Forest, Bengaluru & A.P. Pollution Control Board regularly. Online monitors will be installed to the stacks.

5.0 ADDITIONAL STUDIES

No Rehabilitation and Resettlement is involved in the proposed project. Hence no R & R study has been carried out.

6.0 PROJECT BENEFITS

With the establishment of the proposed project employment potential will increase. Land prices in the area will increase. The economic status of the people in the area will improve due to the proposed project. Periodic medical checkups will be carried out. Top priority will be given to locals in employment.

7.0 ENVIRONMENTAL MANAGEMENT PLAN

7.1 AIR ENVIRONMENT

The following Air emission control systems are proposed in the project.

S.NO.	STACK ATTACHED TO	CONTROL EQUIPMENT	PARTICULATE EMISSION AT THE OUTLET
1.	CFBC Boilers	Electro Static Precipitators	< 50 mg/Nm ³

The Air Pollution Control measures proposed are

- Continuous sprinkling of water on coal stock piles to enforce the dust suppression.
- Dust extraction system, Dust suppression system will be provided at Coal Handling plant, Crusher & at all other material transfer points.
- All the conveyors will be covered with GI sheets to prevent the fugitive dust emission into the atmosphere.
- Adequate dust suppression system like fog type and water spray system will be installed in the material unloading areas.
- Extensive greenbelt will be taken up all around the plant area to further reduce the emissions.
- All the internal roads will be asphalted to reduce the fugitive dust emission due to the vehicular movement.

7.2 WATER ENVIRONMENT

Service water will be treated in an oil separator. Boiler Blowdown & D.M. Plant regeneration will be treated in neutralization tank. Boiler Blowdown, D.M. Plant regeneration effluents after neutralization will be mixed with Cooling Tower Blow-down and treated service water in a Central Monitoring Basin (CMB). After ensuring compliance with APPCB standards for onland for irrigation the treated effluent will be utilized for Dust suppression, Ash conditioning and for greenbelt development. Zero liquid effluent discharge will be maintained in the proposed power plant.

7.3 NOISE ENVIRONMENT

The major sources of noise in the proposed project will be STG, DG set & compressors. The employees working near the noise generating sources will be provided with earplugs. The

extensive greenbelt development proposed within the plant premises will help in attenuating the noise levels further. Noise barriers in the form of trees are recommended to be grown all around the plant to further mitigate the noise levels.

7.4 LAND ENVIRONMENT

All the required Air emission control systems will be installed and operated to comply with APPCB norms. Ash utilization will be accordance with MoEF notification on Fly ash utilization. Extensive greenbelt will be developed in the plant premises. Desirable beautification and landscaping practices will be followed.

7.5 GREENBELT DEVELOPMENT

Green belt development will further enhance the environment quality through limitation of air emissions; attenuation of noise levels, balancing Eco-environment, prevention of soil erosion and creation of aesthetic environment. Greenbelt of 33 acres will be developed in the plant premises as per CPCB guidelines.

7.6 IMPLEMENTATION OF CREP RECOMMENDATIONS

All the Corporate Responsibility for Environment Protection (CREP) recommendations will be strictly followed in the power plant.