

EXECUTIVE SUMMARY
Of
EIA for Proposed Gas Based Power Project
(1200 MW Combined Cycle Power Plant) at
Cheemeni Village, Hosdurg Taluk,
Kasargod District, Kerala



Submitted by
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Executive Summary

1. INTRODUCTION

Government of Kerala, Vide, G.O (M.S) No: 19/2009/ID/ Dt 7/2/2009 & G.O.No.36/2011/ID, dated 11.02.2011 authorized Kerala State Industrial Development Corporation Limited (KSIDC) to set up 1200 MW Combined Cycle Power Plant (CCPP) at Cheemeni Village, Hosdurg Taluk, Kasaragod District, Kerala. The Government of Kerala Vide above G.O's authorized district collector Kasaragod to assign government land for the proposed project.

2. IDENTIFICATION OF PROJECT & PROJECT PROPONENT

The proposed power plant is a Gas based CCPP. The details of the proposed power project are given in Table 1.

Table 1
Details of the proposed project

S. No	Type of the project	Capacity	Total Power
1	Combined Cycle Power Plant	3 x 400 MW	1200 MW

3. NECESSITY OF THE PROPOSED PROJECT

The demand for electricity has been steadily increasing in the state of Kerala. About 50% of the power requirement in Kerala state is met by hydro power plants installed within the state. Hence, bulk of the power demand of the state being from hydro, which in turn depends on nature of rainfall, the power generation situation is vulnerable to uncertainties of rainfall. Further, for balance of power requirement, the state depends mainly on central sector. Considering the above and in order to have a reliable electric supply for the state, it is necessary to set-up a suitable capacity thermal based power plant in Kerala.

Government of Kerala has therefore decided to set-up a power project of capacity of about 1200MW to meet Kerala's power demand, through its nodal agency KSIDC. KSIDC and Kerala State Electricity Board (KSEB) together will form a Special Purpose Vehicle (SPV), with the approval of Government of Kerala, with equity of 50:50 for development of the power project. Further the Govt. Constituted a steering Committee with Chief Secretary as Chairperson for taking decisions on the project.

Table 2
Salient Features of the Proposed Project Site

Particulars	Details
Location	Cheemeni village, Hosdurg Taluk, Kasaragod District, Kerala
Geographical Positions	Between 12 ^o 13' 44" N and 75 ^o 15' 10" E
Elevation above MSL	80-100 Mts
Land required	200 Acres (80.97 Ha) say 81 Ha
Present Land use	Govt land, small houses (8-9no,s houses),plantation, dense scrubs.
Nature of Soil	Red loam
Nature of Terrain	Undulating terrain, around 60% to 70% of the land requires grading
Predominant Wind direction	The predominant direction is W to E followed by NE to SW
Nearest Highway	NH-17 in North West (12 km)
Nearest Major railway station	Cheruvathur Railway Station in West (13 Km)
Nearest Airport	Mangalore in NW (125 Km)

Nearest Port	Azhikkal Port-W (60 Km)
Nearest Village	Kundyara-NE (0.5 Km), Mukkada-N (1.0 Km) & Podavuru-NW(1.0 Km)
Nearest Town/City	Hosdurg-NW (20 Km)
Hills/Valley	Western Ghats are located in East direction at a distance of 4 Km
Topography	Flat with little undulations partly barren land, partly plantations
Monuments	There are no major certified monuments in 25 km radius.
Archaeologically important places	There are no major notified archaeologically important places in 25 km radius of the proposed plant site.
National Parks	There are no National parks in 25 km radius.
Forests	Eleri R.F-N (4.0 Km), Kinanur.R.F-N (11Km)
Seismicity	The study area falls under seismic Zone-3
Streams/Rivers	Kariangod River-N (0.8 Km)
Nearest Sea	Arabian Sea-W (15 Km)

Table 3
Technical Details of the Proposed 3X400 MW capacity gas based Power Plant

Equipment	Description	
Name of the plant	Cheemeni Power Project	
No of Units	3 x 400	
Gas Turbine	3 nos	
HRSG	3 nos	
Cooling water system	Induced Draft Cooling Tower 3 nos	
Control measures	Low NOx burners	
Gas Consumption	5.11 Million Meter Standard Cubic Meter per Day	
Water Requirement	Option:1 (Fresh Water from River) 3480 m³/day	Option:2 (Sea water) 101328 m³/day (~ 101400 m³/day) (97920 m ³ /day for Wet Condenser type from Sea + 3408 m ³ /day for other purposes from treated sea water)
Effluent Quantity	Option:1 (Fresh Water from River) 490 m³/day (440 m ³ /day to ETP & 50 m ³ /day to STP)	Option :2 (Sea water) 64608 m³/day (64212 m ³ /day to outfall sump sea disposal, 346 m ³ /day to guard pond/ETP, 50 m ³ /day to STP)
Total Project cost	Rs.4756.37 Crores (4.0 Cr/MW)	
EMP Cost	Rs. 142 Crores (nearly 3% of the Total project Cost)	

4. BASIC REQUIREMENTS

Land

The detailed break-up of the land for various activities involved in the proposed Power project is given below.

Table 4
Details of the Land break

S. No	Facilities	1200 MW CCPP	
		Acres	Ha
A. Plant Area			
1	Main power block	10.50	4.25
2	400 kV switchyard	13.00	5.26
3	Cooling towers, water storage and treatment plant	7.00	2.83
4	Gas supply station	3.00	1.22
5	Miscellaneous buildings and structures including landscaping area, roads, inter building spacing	30.00	12.15
	Sub Total	63.50	25.71
B. Outside the Plant Area			
6	Rain water harvesting and evaporation pond	11.00	4.45
7	Green belt area including land required due to plot profile	98.00	39.68
8	Space for future expansion	21.00	8.50
9	Colony	6.50	2.63
	Sub Total	136.50	55.26
	Total (A+B)	200.00	80.97

Fuel

The main raw material required for the proposed project is Natural Gas. The natural gas required for the CCPP will be met from the proposed GAIL's gas pipeline project connecting the South India Region which connects Mangalore to Kochi. A spur line from Mangalore to Kochi gas line would be required for this project. The details of the fuel requirement are given below.

Table 5
Details of Fuel Requirement

Fuel	Quantity	Calorific value	Source
Natural Gas	5.11 MSCMD (1.33 MTPA at 85% PLF)	8829kcal/Sm ³	Gail – A spur line connecting Kochi to Mangalore gas pipe line to plant site

Water

Two different sources have been identified for meeting the plant water requirement depending on the quality of water required based on the type of condenser cooling system envisaged for the power plant and the availability of water at the identified source. The project is proposed with Dry cooling System (Option-1) and Wet Cooling system (Option-2) are described below.

Option-I:

Kariangod River would be used in case of dry cooling system is envisaged for the condenser cooling system of the power plant.

The break-up of raw water requirement for Option-I is given below.

Table 6
Break-up of raw Water Requirement for option-1 m³/day

Option-1	m ³ /hour	m ³ /day	Source of Water
Service Water	109	2616	Kariangod river Kerala Water Authority (KWA) has agreed in principle to supply water for this project
Potable Water	2.5	60	
BWRO-DM plant requirement	26	624	
Sludge from clarifier and filter	7.5	180	
	145	3480	

Option-II :

Sea water from Arabian Sea, which is about 15Km away from site, would be used, in case wet cooling tower is envisaged for the condenser cooling system of the power plant.

Break-up of the total water requirement for Option-II is given below.

Table 7
Break-up of Sea Water Requirement for option-II m³/day

S.No	Option-2	m ³ /hour	m ³ /day	Source	
A	Sea Water Requirement			Sea water – Arabian Sea 15 km away from the site	
1	Condenser cooling (Wet Type)	Cooling makeup	3650		87600
		SWRO	430		10320
	Sub Total	4080	97920 (~98000)		
B	Fresh Water Requirement				
1	Brackish water R.O requirement	26	624		
2	Potable Water	3	72		
3	HRSB Blow Down Dilution	60	1440		
4	Service Water	23	552		
5	AC & Ventilation System	30	720		
	Sub Total	142	3408 (~3400)		
	Total (A+B)	4222	101328 (~101400)		

Considering the issues involved for sea water the project shall be implemented using dry cooling system

5. BASELINE ENVIRONMENTAL STATUS

Meteorology

Weather data was collected for a period of March to May 2010 and analyzed. Predominant wind direction during winter season is found to be from West to East.

Ambient Air Quality

Ambient Air Quality Monitoring (AAQM) was carried out at 12 locations within 10 Km of the project site. AAQ locations were selected in downwind, cross wind and upwind directions of the proposed plant location. AAQ levels are recorded below. The measures AAQ results were found to be within the CPCB limits.

Table 8
Ambient Air Quality levels in the study area- $\mu\text{g}/\text{m}^3$

S.No	Parameter	Min	Max	CPCB,Limits	
1	SPM	70.3	127.0	---*	
2	RPM	PM2.5 μ	10.2	15.9	60
3		PM10 μ	40.2	55.2	100
4	SO ₂	6.1	12.9	80	
5	NO _x	15	20.9	80	
6	O ₃	20.5	35.2	100	
7	Hg	BDL	BDL	---*	

Note:* No standards are given for SPM & Hg in the Revised NAAQ standards.

Noise levels

Baseline noise levels are monitored at 12 locations in the study area, the day equivalent was ranging from 50.4 to 53.0 dB(A) and night equivalents were in the range of 40.7 to 42.5 dB(A) and found that noise levels are within the prescribed limits of night equivalent of 45 dB(A) and day equivalent of 55 dB(A) .

Water Quality

Ground water samples at 12 locations and surface water samples at 2 locations were collected in the study area and analyzed to assess the water quality, results are tabulated below and compared with IS drinking water standards and were found to be within limits.

Table 9
Water Results

S. No	Parameter	Ground waters	Surface Waters	IS:15000 Drinking water Stds	
				Desirable	Permissible
1	pH	7.12 to 8.10	7.00 to 7.62	6.5 to 8.5	6.5 to 8.5
2	Total Dissolved Solids	201 to 1464	212 to 286	500	2000
3	Fluoride	0.64 to 0.85	135 to 191	1.0	1.5
4	Total Hardness	119 to 379	35 to 65	300	600
5	Chlorides	18.3 to 758	0.38 to 0.78	250	1000

All values are mg/l except pH

Soil Quality

Soil samples were collected from 12 locations from the project area at various depths and physico-chemical characteristics of the collected samples were analyzed and the results are furnished below.

- ❖ The soil quality analysis indicates the soils are predominantly Red loam.
- ❖ The pH of soil indicates normal to saline nature (7.25-7.82)
- ❖ Available Nitrogen in the soil observed to be between 126 to 226 kg/ha, available phosphorous levels observed to be between 115.9 to 146.1 kg/ha and available potassium observed to be between 48.3 to 138.7 kg/ha.
- ❖ The organic carbon is in the range of 0.37 to 0.92%

Demography and Socio-economics

The total number of house holds falling in two taluks of study area are 265485 and total population as per census of 2001 are 1312792. For every 1000 number of males there are 1063 females. The literates in the area are 1026211 consisting of around 78%. The SC and ST population in the area are

90600 (6.9%) and 8469 (0.65%) of the total population.

The total number of workers in the area is 451020 coming to 34.3%, most of the population in the study area belongs to the category of Main workers, which includes Cultivators, Agriculture Labourers, workers those engaged in Household industries, Construction activities, Forestry and other allied activities.

Main sources of water supply are wells, hand pumps, ponds and taps in few villages. Market facilities are available in few villages. Communication facilities in the villages are quite good with all villages having Branch Post offices, Telephone facility. Police stations exist in all major villages.

6. ENVIRONMENTAL IMPACTS OF THE PROPOSED PROJECT

The proposed power plant may cause impact on the environment in two phases.

- ❖ During construction phase
- ❖ During Operation phase

During construction period SPM, RPM, SO₂, NO_x & CO levels increase due to construction activities and movement of vehicles. The impact of these activities would be temporary and will be confined within the project boundary.

The impact on water environment during construction phase is likely to be short term and insignificant. The impact of noise due to construction activities is insignificant, reversible and localized in nature. No significant adverse impacts on the soil in the surrounding area are anticipated. No major impacts on the flora and fauna in the region are anticipated during the construction phase. Overall, there will not be any adverse impact on the surroundings during the construction period.

a) Impacts during Operation Phase

Impact on Air Quality

Nitrogen Oxide is the main air pollutant generated from the proposed power plant. The stack and emission details for the proposed unit would be as follows:

Table 10
Stack and Emission Details

Details	3 x 400 CCPP			
	Units	CCPP1	CCPP2	CCPP3
Plant capacity	MW	400	400	400
Type of fuel	-	Natural Gas	Natural Gas	Natural Gas
Fuel Consumption	MSCMD	1.75	1.75	1.75
Height of the stack	(m)	70	70	70
Dia. Of stack	(m)	7	7	7
Temp of flue gas	(° C)	107	107	107
Velocity of flue gas	(m/s)	25	25	25
Flow	Nm ³ /s	760	760	760
NO _x Emissions	(g/s)	38	38	38
Emergency power supply – DG Sets	5 x 1000 KVA (one stand by for CCPP 1 and 2, one stand by for CCPP 3)			

Stack Height formula		Ht of Building + $0.2\sqrt{\text{KVA}}$ for DG sets above 800 KVA the minimum stack height as per MOEF guidelines is 30 m					
Fuel (Diesel)		100 L/hour for 1000 KVA					
Sulphur content		0.5% max					
NO_x		5.1 g/Kg					
Density		0.860					
Location	Source	Height (m)	Dia. (m)	Temp. In °C	Gas Vel. (m/sec)	SO ₂ gm/sec	NO _x gm/sec
CCPP 1	1000 KVA	30	0.5	85	18	0.24	0.12
CCPP 2	1000 KVA	30	0.5	85	18	0.24	0.12
CCPP 3	1000 KVA	30	0.5	85	18	0.24	0.12
Note: For modeling DG sets were not considered as worst case will be during power plant operation							

Using the above emission data and meteorological data, incremental concentrations of NO_x have been predicted. For predictions of incremental GLCs, USEPA approved ISCST3 model has been used and post project scenario has been assessed as follows. The predicted ground level concentrations are superimposed on the baseline levels. The post project pollution levels are found to be within the CPCB limits.

Table 11
Post Project Scenario-Units: $\mu\text{g}/\text{m}^3$

S.No	Particulars	Oxides of Nitrogen (NO _x)
1	Baseline Scenario (Max)	20.9
2	Predicted GLC (Max)	7.52
3	Maximum Concentration occurring distance	1Km
4	Direction	East
5	Future predicted value - Overall Scenario (Worst Case)	28.45
6	MOEF / CPCB Standards	80

b) Impact on Water Environment

Impact on the water environment is explained based on the selection of the water sources such as Option-I (Fresh water from Kariangod river) and Option-II (Sea water from Arabian Sea). However, the impacts on water environment for both options are explained below.

(Option – I)

Kariangod River water would be pumped to raw water reservoir located with plant boundary to meet the plant water requirement. A dam would be constructed across this river for sourcing required quantity of water.

No effluent will be generated from Dry Condenser cooling type in Option-I. However, the major effluent from Option – I are from service water, BWRO-DM plant and Clarifier & filter wash. Effluent on Zero discharge concept would be adopted for the proposed plant. Liquid effluents are treated/reused in the plant. A guard pond would be provided to facilitate collection of treated wastewater. The treated water from guard pond would be utilised for gardening, plant wash etc, hence no adverse impacts are envisaged on water quality. Detailed wastewater generation is given below.

Table 12
Wastewater generation – m³/day (Option – I)

Particulars	Wastewater Generation	Remarks
HRSG blow down	240	Guard Pond/ETP
BWRO plant	94	Guard Pond/ETP
DM water reject	26	Guard Pond/ETP
Plant drain water	80	Oil & Grease Trap/Guard pond/ETP
Sub Total	440	ETP treated water used for gardening
Domestic wastewater	50	STP – treated water used for gardening
Total	490	

Option – II

Sea water would be sourced from Arabian sea. The fresh water requirements would be met by desalinating sea water using RO process. Pre-treatment of sea water is considered prior to use within the plant. The details of wastewater generation from various activities are given below.

Table 13
Wastewater generation – m³/day (Option – II)

Particulars	Wastewater Generation	Remarks
Cooling tower blow down	57888	To outfall sump/sea disposal
SWRO reject	6324	To outfall sump/sea disposal
Sub Total	64212	Discharge to Sea
HRSG blow down	240	Guard Pond/ETP
DM water reject	26	Guard Pond/ETP
Plant drain water	80	Oil & Grease Trap/Guard pond/ETP
Sub Total	346	ETP treated water used for gardening
Domestic wastewater	50	STP – treated water used for gardening
Total	64608	

The major sources of effluent generation from Wet Condenser Cooling system in Option – II are from cooling tower blow down followed by SWRO reject. The effluent from the regeneration of the cation resin units in the water treatment plant (DM Plant) is generally acidic in nature and from the anion resin units are alkaline in nature. The combined waste water from the DM plant would be neutralized and sent to guard pond.

The CW blow down would be led to outfall sump for its further disposal to sea to supply to salt production plant. Other liquid effluents are treated/ re-used in the plant. The treated water from guard pond would be utilized for gardening, plant wash etc.

The wastewater characteristics, treated wastewater characteristics for guard pond and STP and discharge standards of liquid effluents are given in below tables.

Table 14
Wastewater characteristics

Parameter	Units	CT Blow Down	SWRO reject	BWRO reject	Plant drain	Neutral izing pit	HRSB Blow down	Dom & San
pH	-	6.5-8.0	6.5-8.0	6.5-8.0	6.5-8.0	3.0-10.0	6.5-8.0	6.5-8.0
Oil & Grease	mg/l	<1.0	<1.0	<1.0	10	<5	<1.0	15
TSS	mg/l	200	50	50	250	100	50	150 - 200
TDS	mg/l	37000	40100	3500	750	250	500	400 - 450
COD	mg/l	-	<25	<25	<5	<5	<5	300 - 400
BOD	mg/l	-	<2	<2	<1	<2	<2	200 - 275

Table 15
Final Treated characteristics (Guard pond & STP)

S. No	Parameter	Value
1	PH	6.5 - 8.5
2	Oil & Grease (mg/l)	<10
3	TSS (mg/l)	<100
4	TDS (mg/l)	<2100
5	Temperature, °C	Not exceeding 5°C above the receiving water temperature
6	Free available chlorine	<0.5
7	Phosphates	<5.0

Table 16
Discharge Standards

Source	Units	CCPP
Parameters		
pH		6.5 to 8.5
Temperature	°C	Not >5 °C than the intake
Suspended solids	mg/l	100
Oil & Grease	mg/l	20
Copper (Total)	mg/l	1.0
Iron (Total)	mg/l	1.0
Free available Chlorine	mg/l	0.5
Zinc	mg/l	1.0
Chromium (Total)	mg/l	0.2
Phosphates	mg/l	5.0
Other corrosion inhibiting material		-
Source : EPA Notification S.O. 844 (E), dt 19 th Nov 1996 & GSR 7, Dec 22, 1998		

c) Impact on Soil Quality

The effluents from the power plant would be led to common guard pond for collection and treatment for different services such as horticulture, washing etc. Effluents on Zero discharge philosophy would be followed, hence there will be no impact envisaged due to the proposed project on soil quality. Treated wastewater coming from domestic and plant services are treated and reused within plant premises for greenbelt development, make up for fire, etc.

d) Impact on Terrestrial Environment

The proposed power project is Gas based Combined Cycle power Plant and may not have adverse impacts on terrestrial flora and fauna. Further, as there are no Rare or Endangered or Threatened (RET) species within the core area, the project does not pose any direct threat to the survival of any rare species.

e) Demography and Socio-economics

The impacts of the proposed power plant during operation of power plant on demography and socio economic conditions would be both positive and negative some of them are as follows.

- ❖ Increase in employment opportunities and Reduction in migrants to outside for employment.
- ❖ Growth in services sector
- ❖ Increase in consumer prices of indigenous produce and services, land prices, house rent rates and Labour prices.
- ❖ Improvement in socio cultural environment of the study area.
- ❖ Improvement in transport, communication, health and educational services.
- ❖ Increase in employment due to increased business, trade and commerce and service sector.

The overall impact on the socio economic environment will be beneficial.

7. ENVIRONMENT MANAGEMENT PLAN**a) Air Quality Mitigation Measures**

The impacts during the construction phase on the Air environment would be basically of temporary nature and are expected to reduce gradually on completion of the construction activities.

Nitrogen oxide from the flue gas is the main air pollutant which is generated from the proposed Power Plant during operation phase.

The following methods of abatement will be employed for the air pollution control.

- To reduce NO_x emission, steam generators would be fitted with advanced low NO_x burners.
- NO_x generation in steam generators would be limited to 50 ppm in accordance with MOEF/CPCB norms.
- The NO_x emissions would be checked for Ground Level Concentrations (GLC's) as per Indian Emission Regulations.
- Internal roads will be concreted / asphalted to reduce fugitive emissions.

Pollution Monitoring and Surveillance Systems

The emission and gas monitoring systems proposed for this project consist of the following:

i) Flue Gas O₂ and CO Monitoring:

These would be measured at the economizer outlet. In addition, O₂ would be monitored at the air pre heater outlet. For this purpose CO and O₂ monitor probes and analysers would be installed separately.

ii) Stack Emissions monitoring

Stack gas analysis for SO₂, CO₂, and NO_x would be performed by extracting a gas sample from the following stream in the stack, filtering to remove particulate droplets, diluting with scrubbed instrument air and conveying the sample to the analysers. One sampling system per unit would be provided.

Air Monitoring Stations (AMS) would be set up to monitor the air quality in the neighboring villages. The parameters to be monitored are suspended Particulate Matter (SPM), Respirable Particulate Matter (RPM_{<2.5} & RPM_{<10}), Sulphur dioxide (SO₂), Nitrogen Oxide (NO_x), Carbon Monoxide (CO) and Hydro Carbons (HC). The air quality monitoring would be carried out continuously.

iii) Meteorological Observations

The dry bulb temperature, wet bulb temperature, wind speed, wind direction, cloud cover, rainfall and solar radiation will be recorded daily.

b) Water Quality Management

Sewage from various buildings in the power plant area would be conveyed through separate drains to sewage treatment plant followed by tertiary treatment to meet the requirement of MOEF/CPCB standards and state government pollution norms. The tertiary treated water is proposed to be utilized for gardening and other miscellaneous use.

c) Noise Level Management

The specifications for procuring major noise generating machines/equipment would include built in design requirements of 85 dB (A) to have minimum noise levels meeting Occupational Safety and Health Assessment (OSHA) requirement. The major sources of Noise Pollution are as follows:

- Steam turbine generator
- Other rotating equipment
- Combustion induced noises
- Flow induced noises
- Steam safety valves

Measures Proposed

The rotating equipment in the Proposed Power plant will be designed to operate with a total noise level of not exceeding 85 to 90 dB (A) as per the requirement of Occupational Safety and Health Administration (OSHA) Standards. The rotating equipments are provided with silencers wherever required to meet the noise pollution. Appropriate noise barriers/shields, silencers etc. would be provided in the equipment, wherever feasible. As far as possible noise emanating from noisy equipment would be adequately attenuated by keeping them in enclosures, using insulation material etc.

8. COST PROVISION FOR ENVIRONMENTAL MITIGATION MEASURES

In order to comply with the environmental protection measures as suggested in the above sections, M/s. Kerala State Industrial Development Corporation Ltd has budgetary provision for Environmental Protection and Safety measures. The estimated cost of the overall project is about INR 4756.37 Crores. Around 3% of the total project cost (Rs.142 Crores) will be allocated for Environmental Management.

9. CONCLUSION

The EIA study has made an overall assessment of the potential environmental impacts likely to arise from the proposed power plant. The impact predictions indicate the maximum GLC levels of NO_x value

were well within the prescribed limits of CPCB standards and the expected impacts are minimised within a 1km in the East direction from the release of pollutant from the stacks. The predicted GLC are superimposed on the baseline levels and the post project levels are found to be within CPCB limits.

Mitigation measures are proposed to minimise the adverse impacts likely from this activity in the form of EMP.

The proponent proposes using Natural Gas as fuel which will be obtained from GAIL. This is one of the cleaner technologies for power generation, which minimises fuel combustion related emissions considerably.

The demand for electricity has been steadily increasing in the state of Kerala. About 50% of the power requirement in Kerala state is met by Hydro Power Plants installed within the state.

Hence, bulk of the power demand of the state being from Hydro, which in turn depends on nature of rainfall, the power generation situation is vulnerable to uncertainties of rainfall. Further, for balance of power requirement, the state depends mainly on central sector. Considering the above and in order to have a reliable electric supply for the state, it is necessary to set-up a suitable capacity thermal based power plant in Kerala.

Kerala is good in agriculture and industrial sector due to historical reasons. Setting up of Power Plant in this area will benefit the society by providing better infrastructural, educational and medical facilities in the area.