

Citizen consumer and civic Action Group (CAG)

New No.246, Old No.277-B, T.T.K. Road (J.J. Road),
Alwarpet, Chennai 600 018.
Ph: 044- 2499 4458/2466 0387



CAG's Comments on the Executive Summary, Form-1, TOR, Amended TOR, Draft EIA Report and Pre-Feasibility report for proposed Singareni collieries company Ltd, for establishment of 1 x 600 MW (Additional unit) of coal Based Thermal Power plant besides the 2 x 600MW units already existing at Pegadapalli (V), Jaipur (M), Mancherial District, Telangana by Singareni collieries company Ltd. The proposed capacity is amended to 1x800MW.

Environmental Impact Assessment for proposed expansion of Singareni Thermal Power Plant (from 2 X 600 MW to 2000 MW by adding 1 X 800 MW) at Pegadapalli Village Jaipur Mandal, Mancherial District, Telangana (Jan 2018).

- 1) Project Executor : M/s SINGARENI COLLIERIES COMPANY LIMITED
- 2) Detailed Project Report by : Inferred from Water Balance Figure as NTPC
(nowhere stated);
- 3) Accredited EIA Organization : Ramky Enviro Services Pvt Ltd
- 4) Other Agencies involved : -----
- 5) Land requirements : 280.4 Ha for 2 X 600 MW + 105.21 Ha for 1 X 800 MW
= 385.61 Hectare or 964 Acres; 1200 acres available
- 6) Project Cost : INR 5879.62 Crores for 1 X 800 MW
- 7) Alternatives considered : 3 sites and Technological alternatives;
Site point of view (3 Nos)
- 8) Form-1 & PFR date : 10.03.2015 and covering letter only for configuration
change vide 6/9/2017 & 29/7/2019 and 30/8/2017
- 9) Standard TOR receipt date : 27th May, 2015 (for 1 X 600 MW)
- 10) EAC Member visit date : Not applicable (Sub-committee)
- 11) Additional TOR date : 26.09.2017 (where configuration altered to 800 MW)
- 12) Baseline study period : As TOR, use of earlier baseline data permitted
- 13) Draft EIA to PP : Not known
- 14) Draft EIA to authority : Jan 2018
- PH date : Not yet
- Final EIA to PP : NA
- Final EIA to authority : NA
- Final EIA by other ACO : NA
- EC (as per web site) : Not yet
- 15) Environmental mitigation cost : In draft EIA no capital & recurring cost with break-up declared
- 16) CSR allocation : Rs 15 Crore in draft EIA
- 17) Ecological sensitive area : None

Citizen consumer and civic Action Group (CAG)
 New No.246, Old No.277-B, T.T.K. Road (J.J. Road),
 Alwarpet, Chennai 600 018.
 Ph: 044- 2499 4458/2466 0387

1. Comments on Pre-Feasibility report (PFR): Entire Pre-Feasibility report has no declaration of any Environmental mitigation plans (whatever required under legal provision), Air pollution control system and associated budgets. Details of water balance is also missing.

Subject	Issue	Comments
S. No 15 : Boiler	<p>Sub critical design is used for Boiler.</p> <p>Table of comparison for 2 X 600 MW versus 1 X 800 MW: Capacity of boiler is 2050 TPH for both.</p>	<p>Contradictory Statements in PFR on Boiler:</p> <p>In <i>PFR</i> it is mentioned that the Boiler design is based on the <i>sub critical parameter</i>.</p> <p>However <i>Executive summary</i> states that boiler design is based on <i>supercritical technology</i>.</p> <p>There are two different design available for a single boiler. The statements are inconsistent.</p> <p>Boiler capacity for <i>1 x 800 MW is 2050 TPH, when it is same for 2 x 600 MW</i>.</p> <p>It explains that the proposed new boiler is also catering to 2 x 600 MW.</p> <p>Action suggested:</p> <p>The inconsistency in boiler design should be rectified and consistent in every document.</p> <p>Boiler capacity should be checked again as per the proposed design.</p>
S. No. 21: Water Pumps details	<p>Water allocation for 2 x 600 MW TPP, from river Godavari 1.05 TMC per annum and from river Pranahitha 2.0 TMC per annum. Same water will be used for 1 X 600MW.</p>	<p>Mismatch in Specific water consumption between sanctioned and standards: Water sanction quantity is 3.05 TMC per year. But As per MoEF & CC, Specific water consumption of</p>

Citizen consumer and civic Action Group (CAG)
 New No.246, Old No.277-B, T.T.K. Road (J.J. Road),
 Alwarpet, Chennai 600 018.
 Ph: 044- 2499 4458/2466 0387

	<p>As stated in amended TOR the proposed expansion is for 1 x 800 MW.</p>	<p>thermal power plant should be 2.5 m3/MW.hr.</p> <p>Calculations: 1 TMC is 28,316,846.5 m³ Total water sanction quantity: 3.05 X 28316846.5 m³/year =236620 m³/day =9860 m³/hr In the PFR - For 1800 MW plant, Specific water consumption is equal to 5.48 m3/MW.hr</p> <p>Amended TOR: For 2000 MW plant, Specific water consumption is equal to 4.8 m3/MW.hr</p> <p>Action suggested: The water quantity permission given by the respective authorities should be examined again and should be reworked in line with MoEF & CC standards.</p> <p>Further, the project proponent should undertake a study of spatial and riparian consumptive demand should be taken in to consideration.</p>
--	---	--

2. INTRODUCTION OF THE PROJECT/BACKGROUND INFORMATION

<p>I. Identification of Project and Project Proponent: Paragraph 4</p>	<p>As SCCL is already constructing 2x600 MW units, some of the BOP facilities of these units have spare capacities which can be utilized for the proposed 600 MW unit.</p>	<p>Balance of plant(BOP) facilities design For 2 x 600 MW TPP: As it stated in the PFR, 1 x 600 is going to use some of the BOP facilities proposed for 2 x 600 MW plant. As regards BOP systems, a number of site specific input</p>
---	--	--

Citizen consumer and civic Action Group (CAG)
 New No.246, Old No.277-B, T.T.K. Road (J.J. Road),
 Alwarpet, Chennai 600 018.
 Ph: 044- 2499 4458/2466 0387

		<p>parameters are involved which have to be kept in view while designing various systems.</p> <p><i>Project proponent must consider BOP facilities while designing 2 x 600MW.</i></p> <p>Action suggested: Design of BOP facilities must be done during design phase for better understanding of utilization of resources. According to that project proponent should design for plant.</p>
IV. Demand-Supply gap	<p>Apr-14.-Dec: Peak Deficit/Surplus: -1236 Dec-14: Peak Deficit/Surplus -239</p>	<p>Justification of Demand of 1 x 800MW: The Peak Deficit by Dec 2014 is only 239 MW. The project for 1 x 800 MW is proposed in 2018, while the status reflects from 2014. Hence the additional requirement of 800 MW is not justified in Demand – Supply gap.</p> <p>Action suggested: The project proponent must provide a peak deficit value for 2017 with a projection for 2025 to justify the purpose of additional requirement of 800 MW.</p>
3. PROJECT DESCRIPTION		
I. Type of Project including interlinked and interdependent projects if any:		
b. Land Requirement:	Total land required is 280.4 Ha + 105.21 Ha = 385.61 Hectare	Total land available with SCCL:

Citizen consumer and civic Action Group (CAG)
 New No.246, Old No.277-B, T.T.K. Road (J.J. Road),
 Alwarpet, Chennai 600 018.
 Ph: 044- 2499 4458/2466 0387

		<p>As claimed in the PFR total land is fully available with Project proponent. No data is attached with the report to justify the statement in PFR.</p> <p>Action suggested: Project proponent must attach a present land availability and planned acquisition details with PFR for reference.</p>
<p>c. Water requirement</p>	<p>Total Water required for 3x600 MW is 132000 KLD (5500 m³/hr).</p> <p>And for (2x600 + 1x800) Mw is 136800 KLD (5700m³/hr).</p>	<p>Water consumption more than Prescribed Norms:</p> <p>Specific water consumption per MW will be</p> $\frac{5700m^3/hr}{2000MW} = 2.85 \text{ m}^3/mw.hr$ <p><i>As per MoEF & CC</i>, Specific water consumption of thermal power plant should be in between 2.5 m³/MW.hr</p> <p>As per the Water Pumps details provided in PFR, the total water allocated is 9860 m³/hr, which is much more than the actual requirements of 5700 m³/hr.</p> <p>Even after that state sanctioned the proposed amount of water for the plant.</p> <p>Action suggested: The water quantity permission should be examined again and designed as per the prescribed MoEF & CC norms</p>

		Proper examination and calculation must be carried out before sanctioning raw water for any plant from river.
d. Fuel requirement : Coal requirement	<p>Lignite <i>ash content</i> should be mentioned as per the study.</p> <p>1) For 2x600 MW plant under construction: 4.784 MTPA</p> <p>2) For additional 1X600 MW : 2.32 MTPA</p> <p>3) For additional 1X800 MW (as proposed in amended TOR): 4.05 MTPA</p> <p>4) Total coal required for 3x600 MW: 7.104 MTPA</p> <p>5) Total coal required for (2x600 + 1x800) MW: 8.834 MTPA</p>	<p>Specific coal consumption:</p> <p>The difference in coal consumption for 2x600 MW and (2x600 + 1x800) MW is 0.734 MTPS</p> <p>(2x600 + 1x800) MW plant is using much more coal than 2x600 MW.</p> <p>Specific coal consumption of any proposed plant should be 0.45 Kg Coal/kWhr as per US standards.¹</p> <p>Specific coal consumption of proposed plant: $\frac{8.834 \times 10^9}{365 \times 1800 \times 24 \times 1000} = 0.5\text{kg/kw.hr}$</p> <p>Specific coal consumption of proposed plant is more than the prescribed amount.</p> <p>Action suggested:</p> <p>Coal required for the (2x600 + 1x800) MW plant should be re-calculated as per norms to reflect 0.45 Kg Coal/kWh as per US standards.</p> <p>There should be a justification as to why the plant requires greater coal consumption if any.</p>
e. Power Evacuation: Project Cost & Tariff:	The estimated Capital Cost, Capitalized Project Cost (including IDC) has been taken	Break up of Cost is missing: Details of cost break up are not attached.

¹ <http://iopscience.iop.org/article/10.1088/1748-9326/aa814a/pdf>

Citizen consumer and civic Action Group (CAG)
 New No.246, Old No.277-B, T.T.K. Road (J.J. Road),
 Alwarpet, Chennai 600 018.
 Ph: 044- 2499 4458/2466 0387

	<p>as Rs. 3570.20 Crs for 3x600 Mw and Capital cost of the 2x600 MW plant under construction is Rs. 7573.51 Crs.</p> <p>Total Capital cost of all the units will be Rs.11143.71 Crs.</p> <p>In Amended TOR The estimated Capital Cost, Capitalized Project Cost (including IDC) has been taken as Rs. 5879.62 Crs for (2x600 + 1x800) MW.</p> <p>Total Capital cost of all the units will be Rs.13453.13 Crs.</p>	<p>However, it is not clear whether this cost includes all mitigation cost to meet stringent norm for PM (< 30 mg/Nm³), SO₂, NO_x and Hg.</p> <p>Action suggested: Break up of capital cost should be attached cost utilization, including mitigation expenses.</p>
<p>6. Proposed Infrastructure</p>	<p>The proposed infrastructure are main plant building, boiler, transformer bay, switchyard, chimney, coal handling system, water system, Induced draught cooling towers, administrative building, miscellaneous building like control room, diesel generator building, fuel oil pump house, water treatment plant etc.,</p>	<p>Contradictions in proposed infrastructure: The PFR clearly mentioned that existing Fuel storage capacity and water system of 2 x 600 MW plant will be used for expansion (2x600 + 1x800) MW.</p> <p>However in the same PFR it is stated that Fuel storage capacity and water system will be considered for proposed infrastructure.</p> <p>Action suggested: The need for any additional construction of fuel storage capacity and water system should be clarified.</p>

Citizen consumer and civic Action Group (CAG)
 New No.246, Old No.277-B, T.T.K. Road (J.J. Road),
 Alwarpet, Chennai 600 018.
 Ph: 044- 2499 4458/2466 0387

<p>6.6 Drinking Water Management</p>	<p>Drinking water required during the construction will be met from the ground water</p>	<p>Justification of statement for drinking water: As stated in PFR, during construction time water requirement will be fulfilled by groundwater.</p> <p>For using of ground water project proponent must take permission from the state government. The project proponent has not undertaken any groundwater study and its use by various sectors - domestic, agriculture etc in the area.</p> <p>Further, given the fact that they are already allocated surface water over and above the normal requirement.</p> <p>Action Required: A detail study of the groundwater requirement should justified and attached.</p>
---	--	---

2. Comments on TOR issued vide MOEF & CC letter dated 27th May, 2015 (for 1 X 600 MW additional Plant):

Subject	Issue	Comment
<p>S. No 3</p>	<p>The committee agreed for use of baseline data being collected for pre-monsoon season 2015 (1st march-31st may, 2015)</p>	<p>Usage of old baseline data: Project proponent used the same old baseline data collected during of 1st March to 31st May, 2015. EAC also agreed to utilize same baseline data for proposed project.</p> <p>Action suggested: Project proponent must have generate fresh baseline data,</p>

Citizen consumer and civic Action Group (CAG)
 New No.246, Old No.277-B, T.T.K. Road (J.J. Road),
 Alwarpet, Chennai 600 018.
 Ph: 044- 2499 4458/2466 0387

		through first hand survey,for the proposed project. And EAC must monitor the same. .
S. No 3, point i)	Shall explore the feasibility of switching to Super Critical Technology. . If sub critical technology is proposed, prior approval of Ministry of Power shall be submitted. Accordingly the EIA/EMP shall be prepared”	<p>Confusion of supercritical or subcritical: MoEF & CC has given a relaxation to the project proponent for choosing whether to consider super or sub critical boiler. In PFR it is mentioned as supercritical where as in Executive summary it is mentioned as sub Critical.</p> <p>Action suggested: The project proponent must clarify the same.</p>

3. Comments on Amended TOR vide MOEF & CC dated 26.09.2017:

The additional plant is changed from 1x600(sub-critical technology) to 1x800 (super critical technology) according to Amended TOR.

Subject	Issue	Comments
Coal source and requirement	Coal quality declared for 1 X 600 MW is GCV of 4529 Kcals/Kg as against now 3500 Kcal/Kg for 1x 800 MW.	<p>Changes in declared coal quality and mines: The coal to be used for 1x600 MW shows a higher GCV in quality than the used now for 1x800 MW.</p> <p>In addition, there are changes in coal source in PFR and Amended TOR.</p>

Citizen consumer and civic Action Group (CAG)
New No.246, Old No.277-B, T.T.K. Road (J.J. Road),
Alwarpet, Chennai 600 018.
Ph: 044- 2499 4458/2466 0387

		<p>Fuel quality of 2x600 MW is missing in the reports - PFR and Form 1.</p> <p>In addition, super critical technology shows a lower GCV than sub-critical technology. This is not possible.</p> <p>How can a lower quality coal be given for super critical technology while a higher quality coal be given for sub-critical?</p> <p>As the fuel quality change it will affect the fuel quantity.</p> <p>As mentioned in the comments for PFR, Specific coal consumption of proposed plant:</p> $\frac{8.834 \times 10^9}{365 \times 1800 \times 24 \times 1000} = 0.5 \text{kg/kw.hr}$ <p>The specific coal consumption of thermal power plant is 0.58 kg/mw.hr as it is based on supercritical technology.</p> <p>Action suggested:</p> <p>The change in coal mines without prior notice nor being reflected in the PFR is acceptable. The PFR and Form should be redone.</p> <p>Coal quality for both the plant must be mentioned.</p> <p>Super - critical technology with high quality and higher GCV should be used. Project proponent must focus on using good quality coal for less fly ash generation.</p>
--	--	---

Citizen consumer and civic Action Group (CAG)
 New No.246, Old No.277-B, T.T.K. Road (J.J. Road),
 Alwarpet, Chennai 600 018.
 Ph: 044- 2499 4458/2466 0387

<p>Capital cost</p>	<p>Earlier project cost for 1 X 600 MW is 3570.2 Crores and now for 1 X 800 MW is 5879.62 Crores.</p>	<p>High Capital cost: The specific capital cost has been increased from 5.95 Crores/MW to 7.35 Crores/MW, but no justification given for such increased capital cost.</p> <p>Action suggested : Justification for capital cost increase to be given. Provide detailed facts and figures and reasons for escalation for the increase in capital cost.</p>
----------------------------	---	---

Other actions to be carried out by the Project Proponent:

- a) Separate land shall be identified preferably nearby power plant for achieving green belt development in 33% of the total project area
- b) Impact assessment on downstream users, agriculture and fisheries/aquatic life due to water withdrawal from Godavari/ Pranahitha rivers shall be carried out. Minimum E-Flow shall be maintained for sustenance of ecology and environment in the downstream
- c) Details of water allocation of the reservoir shall be submitted
- d) Noise barriers/reduction measures should be installed

Comments on Form-1: Expansion of 2x600 MW to 3x600MW

Citizen consumer and civic Action Group (CAG)
 New No.246, Old No.277-B, T.T.K. Road (J.J. Road),
 Alwarpet, Chennai 600 018.
 Ph: 044- 2499 4458/2466 0387

Subject	Issue	Comments
Section 1.1 - Land use	Land allotted for 2x600 is 300.972 ha. for the new expansion project quoted land requirement is 105.21 ha.	<p>Reduction in land use: Previously 1x600 MW roughly covers 150 ha. now 1x600 requires only 105 ha. The reduction in land use should be detailed out.</p> <p>Action suggested: Justification for reduction in land use for expansion project should be mentioned.</p>
Section 1.28	1000 workers in operational phase.	<p>Mismatch in workers number: In Executive Summary manpower requirement is given as 100 for 1x600MW and 450 for amended 1x800MW.</p> <p>Action suggested: The project proponent needs to justify the reason a huge increase in manpower for 1x800 MW.</p>
Section 2.2	Water requirement will be met from Godavari and pranahita river. the total allocated water by state government is 3.05 TMC.	<p>Very High water allotment: Specific water consumption for the allocated water is 16.4 Cu.m/MWhr. This is 5 times greater than what has been given. From the requirement stated, Specific water consumption for the existing plant 2x600 which is under construction is 3.08 Cu.m/MWhr. and for the proposed new 1x600 it is 3Cu.m/MWhr. Has the water requirement for the basic necessities have been met before decided to draw water from the river which is a fresh water source?</p> <p>Action suggested:</p>

Citizen consumer and civic Action Group (CAG)
 New No.246, Old No.277-B, T.T.K. Road (J.J. Road),
 Alwarpet, Chennai 600 018.
 Ph: 044- 2499 4458/2466 0387

		<p>Justification for permission for such high allocation for low consumption should be given. It should be within the MoEF&CC and CEA have recommended only 2.5 Cu.m/MW hr.</p> <p>The requirement of water needs in terms of priority for stakeholders should be first met before considering for the power plant.</p>
Section 5.2	<p>The Particulate Matter will be achieved is 50 mg/Nm³ will be achieved with installing electrostatic precipitator and Stack height of 275 m.</p>	<p>PM standards do not follow MoEF Notification:</p> <p>MoEF&CC had issued notification that TPPs coming up after January 2017 for commercial production should have limitation of 30 mg/Nm³ specified for Particulate matter.</p> <p>No indication about the norms for SO₂, NO_X and Hg as how these will be met and proposed mitigation technologies.</p> <p>Action suggested :</p> <p>The Form 1 must be reworked to reflect the MoEF Guidelines on PM. Norms for achieving SO₂, NO_X and Hg targets must also be put forth.</p>

Comments on Executive Summary:

Subject	Issue	Comment
Purpose	The expansion of the plant is put forth to match the demand and supply gap.	<p>Demand and supply gap:</p> <p>Explanation on demand and supply gap is not present here.</p> <p>Action suggested:</p> <p>There should be enough data to justify the purpose of going for an expansion project.</p>

Citizen consumer and civic Action Group (CAG)

New No.246, Old No.277-B, T.T.K. Road (J.J. Road),

Alwarpet, Chennai 600 018.

Ph: 044- 2499 4458/2466 0387

Section 3: Comparison of details	Requirement of land, raw material, water, power, fuel, with source of supply table, the declaration is for 1 X 600 MW versus 1 X 800 MW only.	Poor quality of coal: This being expansion project (brown field), the quality of fuel opted for 2 X 600MW plants is not provided in ES. Action Suggested The quality of fuel and which coal mine together with its calorific value must be put forth. .
Section 4	PM norm to be achieved stated is 30 mg/Nm ³ (declared in PFR 50 mg/Nm ³ or in Form-1 30 mg/Nm ³ is to be met). Wet limestone based FGD technology and stack height of 100m/275 m	Contradictions in Particulate emission standards: There is no clarity in either of the documents and not supported by either PFR or Detailed Project Report. Action suggested: The data should be revised and submitted again.
Boiler technology :	Executive summary states proposed project will adopt supercritical technology.	Supercritical claim: Generally if a plant is said to be having supercritical technology their specific coal consumption should be less than the coal consumption of subcritical technology. Where as in this case it is higher for supercritical technology. Which is not justified for the use of supercritical technology. Actions suggested: The technology adopted by the plant should be re-visited to scrutinise the claim made by them.
Bottom ash disposal:	Bottom ash will be collected in hydrobins and water is separated and sent to underground mines of SCCL. The water is reused.	Bottom ash disposal: The backfilling of mines might lead to pollution of soil ash as well as groundwater.

Citizen consumer and civic Action Group (CAG)
 New No.246, Old No.277-B, T.T.K. Road (J.J. Road),
 Alwarpet, Chennai 600 018.
 Ph: 044- 2499 4458/2466 0387

		<p>The underground mines should be sealed properly in order to avoid possible groundwater contamination.</p> <p>Action Suggested: Present the action plan for backfilling and precautionary measures adopted.</p>
Wastewater	<p>ETP and STP are proposed for treatment of plant effluents and sewage from existing colony respectively.</p> <p>DM plant and clarifiers will be reused within the plant for ash conditioning, bottom ash handling, dust suppression and green belt development. Hence no wastewater will be discharged into surface water bodies.</p>	<p>Zero liquid discharge: Quantity of wastewater generated and place of discharging the water is not given.</p> <p>Zero liquid discharge concept will be adopted. Water withdrawal permission is not in line with ZLD logic.</p> <p>No “Water Balance” provided to justify ZLD claim.</p> <p>Action Suggested: A detailed plan on how ZLD will be achieved and its alignment to water consumption should be given along with wastewater discharge plan.</p>
Stack Height :	<p>Stack height 100/275 with FGD envisaged and wet limestone technology to control Sox emission at 100 mg/Nm³(at 12% CO₂ dry gas basis)</p>	<p>Explanation on FGD Required: This is as per the MoEF & CC draft notification dated 16th Oct, 2017 the stack height can be worked out depending on the SO₂ emission rate, if the plant has Flue Gas Desulphurization unit installed. Here the stack height is given as 100/275 m. FGD system operation consumes lime or limestone to remove SOx</p>

		<p>from flue gas. The generated by-product of FGD is gypsum.</p> <p>Utilization of gypsum is not addressed in executive summary.</p> <p>Action suggested: The methods of disposal of gypsum from the FGD should be mentioned as 100%. Utilization of gypsum should be ensured. A site inspection by the EAC should be made and report to be given.</p>
<p>Air pollution :</p>	<p>Sources of pollution are mentioned</p> <ul style="list-style-type: none"> i) Dust from fly ash ii) Nox iii) SOx iv) dust in ash disposal area 	<p>Sources of pollution: Pollution from mercury is not mentioned as well as the anticipated pollution level.</p> <p>Action suggested: The tabular column should include pollution from mercury and anticipated levels of pollution.</p>
<p>Water consumption:</p>	<p>Water to be consumed under different categories for each process is not given</p>	<p>Missing of water usage break up: In a thermal power plant water is used for various process such as domestic usage, process water for cooling etc. This defines the usage of water in each step. Executive summary doesn't carry the break up report of water consumption.</p> <p>Action Suggested: Attachment of detailed water break up report for better understanding of water usage.</p>

Citizen consumer and civic Action Group (CAG)
 New No.246, Old No.277-B, T.T.K. Road (J.J. Road),
 Alwarpet, Chennai 600 018.
 Ph: 044- 2499 4458/2466 0387

<p>Ash Content:</p>	<p>Coal to be consumed have 40% of ash content. It is given that the total ash will generate 4937.</p>	<p>Mismiscalculation in fly ash generation data: 4.05 MTPA of coal with 40% ash content will generate 4438 TPD of ash. Ideally for the given amount of coal consumption and ash content should generate 4438TPD of fly ash. Since there is no proximate and ultimate analysis of coal and its the ash content of the coal should be analysed properly.</p> <p>Action suggested: The real ash content should be checked with ultimate and proximate values and proper data should be put forth.</p>
<p>Solid and hazardous waste</p>	<p>Under “Solid and Hazardous waste” declaration table, the percentage of Ash in Coal stated is 40%,</p>	<p>Standards in ash content: The stated percentage of ash in the coal is more than 34%, prescribed by Corporate Responsibility for Environment Protection (CREP).</p> <p>Action suggested: The project proponent should use high quality coal. Since captive mining is within the PP’s scope, a proposal for coal washery should be considered to achieve the necessary ash content.</p>
<p>AAQ baseline data</p>	<p>The baseline data period is not declared.</p>	<p>Considering fresh AAQ baseline: 2x600 MW project is a working plant so there will be certain change in AAQ. Using the same baseline data is not feasible for the expansion project. Comparison of existing baseline data with anticipated change in</p>

Citizen consumer and civic Action Group (CAG)
 New No.246, Old No.277-B, T.T.K. Road (J.J. Road),
 Alwarpet, Chennai 600 018.
 Ph: 044- 2499 4458/2466 0387

		<p>baseline due to existing 2x600 MW after 2 or 3 years should be carried out before setting 1x800MW plant.</p> <p>Action suggested : A fresh baseline data should be collected. Anyway the project site is under construction phase and AAQ data for project site must be compared with fresh data. (validation & verification case for past data).</p>
<p>Environmental management plan</p>	<p>EMP not given in any proposed documents.</p>	<p>Environmental management plan: There is no list of “Environmental Management Plan” with break-up of mitigation cost (both capital and recurring), which is essence of EIA report preparation. Similarly, for Corporate social responsibilities (CSR) activities project proponent should provide cost break up which is missing in this report.</p> <p>Action Suggested Environmental management plan should be given in the Executive Summary. A detailed management plan shows the compliance level of the proponent in mitigating the pollution.</p>

Citizen consumer and civic Action Group (CAG)
 New No.246, Old No.277-B, T.T.K. Road (J.J. Road),
 Alwarpet, Chennai 600 018.
 Ph: 044- 2499 4458/2466 0387

Comments on Draft EIA - Total pages 391

- Chapter-1: Introduction (15 pages)
- Chapter-2 : Project description (35 pages)
- Chapter-3: Description of the Environment (75 pages)
- Chapter-4 : Anticipated Impacts & Mitigation measures (40 pages)
- Chapter-5 : Analysis of alternatives (9 pages)
- Chapter-6 : Environmental Monitoring program (13 pages)
- Chapter-7: Additional studies (30 pages)
- Chapter-8 : Project Benefits (7 pages)
- Chapter -9 : EMP (23 pages)
- Chapter -10: Summary and Conclusions (7 page)
- Chapter – 11: Disclosure of Consultants engaged (3 pages)

Chapter 1 to 11 covers 257 pages and balance is list of Table, list of figures, standard TOR, additional TOR and compliance to TOR points.

Overall comments

Annexures- T1 to T15 (shared right in the beginning of the EIA report before starting Chapter-1;

EIA report preparation should have taken essence of various annexure contents in to relevant Chapters of EIA report conforming to EIA notification guidelines of 14th Sept 2006;

- Stand-alone annexure presentation is as good as not owning the content by verification & validation; All annexures should have been attached at the end of the EIA report, with key issues brought out in relevant chapters)

Subject	Issue	Comment
Additional TOR vide S.No ii):	<p>Minimum Environmental Flow and other break-up is not supported by validated information from authorised sources like PWD or such agency.</p> <p>However, it says the water abstraction is only 0.463% of</p>	<p>Minimum environmental flow: It is the quantity of water required to sustain freshwater and estuarine ecosystem. disturbing the flow or altering it have greater consequences in the ecosystem.</p> <p>Action suggested:</p>

Citizen consumer and civic Action Group (CAG)
 New No.246, Old No.277-B, T.T.K. Road (J.J. Road),
 Alwarpet, Chennai 600 018.
 Ph: 044- 2499 4458/2466 0387

	minimum river flow, based on measurement	The data of water flow in the river needs to be check and analysed for the effects it have on the environment if the mentioned amount of abstraction has been done.
Standard TOR vide S.No i):	The explanation provided for switching over from subcritical to supercritical boiler technology is not supported by specific fuel consumption. It is now 0.58 Kg Coal/KW hr for 1 X 800 MW, whereas earlier case of 1 X 600 MW is 0.45 Kg/KW hr.	Supercritical claim: None of the data and its analysis are aligned with “Technology Selection” logic from environmental standpoint. The specific coal consumption is high, so this project does not adopt supercritical technology. Action suggested: Scrutiny of the process flow should be done to verify the supercritical claim.
Standard TOR vide S.No iii):	Amended EC copy dated 10.8.2016 is available and as per this EC had been issued dated 27.12.2010. Form-I is still indicating 2 X 600 MW is under construction phase.	No Clarity in Coal Transportation: From the EC, temporary coal transportation for a period of 2 years is valid only for two years. Action Suggested: Clarity in date of validity is required.
Standard TOR vide S.No xiii & xiv):	Land Use change from barren land to mixed use category.	Land use change: Land Use change from barren land to mixed use category not supported by DTCP Authority. letter issued by Tahsildar alone will not be adequate, as competent authority for LULC is DTCP only.

Citizen consumer and civic Action Group (CAG)
 New No.246, Old No.277-B, T.T.K. Road (J.J. Road),
 Alwarpet, Chennai 600 018.
 Ph: 044- 2499 4458/2466 0387

		<p>Action suggested: The documents that clarify the land use pattern should be submitted.</p>
<p>Standard TOR vide S.No xxii):</p>	<p>100% utilisation of fly ash is stated.</p> <p>Fly ash shall be taken to high concentration slurry disposal system (HCSDS) and bottom ash through wet slurry disposal system for ultimate disposal,</p>	<p>Firm Commitment required: The compliance for 100% ash utilization stated as “Will be” and not “a firm commitment”. Process for ash disposal is not as per Ash Utilization rule for compliance.</p> <p>Action suggested: When 100% ash utilisation is promised but alternatively saying that it ash will be disposed in slurry form. this is in contrast of each other. clarity needed on the ash utilisation.</p>
<p>Standard TOR vide S.No xxvi):</p>	<p>Hydro-geological investigation</p>	<p>Hydro-geological investigation required: No Hydro-geological investigation study done and reported in compliance report (or cross referred). Hydro-geological investigation helps in the groundwater study. Useful in avoiding contamination of the groundwater due to the power plant.</p> <p>Action suggested: As per the norm a hydro-geological investigation to be made and its report should be submitted in the EIA report.</p>

Citizen consumer and civic Action Group (CAG)
 New No.246, Old No.277-B, T.T.K. Road (J.J. Road),
 Alwarpet, Chennai 600 018.
 Ph: 044- 2499 4458/2466 0387

<p>Standard TOR vide S.No xxviii):</p>	<p>The quantity of water abstracted stated in compliance report is 16.5% of minimum river flow, whereas in PFR declaration is different (0.45%).</p>	<p>Inconsistency in water abstraction</p> <p>Thus inconsistency in minimum river flow situation and not supported factually which is incorrect</p> <p>Action suggested: Provide data for abstraction</p>
<p>Standard TOR vide S.No xiii):</p>	<p>Baseline data generated is post monsoon period (Oct to Dec 2017).</p>	<p>Baseline data:</p> <p>Whereas desirable period by CPCB norm is summer period. The past baseline data not compared with the present one.</p> <p>Action suggested:</p> <p>A fresh baseline study should be done to get a clear understanding of the existing condition.</p>
<p>Standard TOR vide S.No xliii):</p>	<p>Ambient Air Quality</p>	<p>AAQ Annexures not available:</p> <p>AAQ for Jan to Dec 2017 claimed submitted in Annexure T10 (not available).</p> <p>Nut elsewhere it appears that 2 X 600 MW is still under construction phase only. So relevance of 104 AAQ data for project case is not correct, as it will not indicate quality due to project in operation.</p> <p>Actions suggested</p> <p>Update AAQ values must be submitted.</p>

Citizen consumer and civic Action Group (CAG)
 New No.246, Old No.277-B, T.T.K. Road (J.J. Road),
 Alwarpet, Chennai 600 018.
 Ph: 044- 2499 4458/2466 0387

Chapter-wise points of the Draft EIA to be noted:

Subject	Issue	Comment
Chapter-1		
Demand and supply gap	The justification for going in for 1 X 800 MW linked to “Demand & Supply”	<p>Data on Demand Supply gap: According to the draft EIA The Peak Deficit by Dec 2014 is only 239 MW. The project for 1 x 800 MW is proposed in 2018, while the status reflects from 2014. Hence the additional requirement of 800 MW is not justified in Demand – Supply gap.</p> <p>Action suggested: The project proponent must provide a peak deficit value for 2017 with a projection for 2025 to justify the purpose of additional requirement of 800 MW.</p>
Chapter - 2		
Table 2.1 - Ash content	The coal usage declared for 1 X 800 MW do not comply an ash content < 34%. Also the Annexure T11 shows an ash content of the coal as 30%.	<p>Ash content data mismatch: Thus, there is inconsistency in quality of coal to be used for current 2 X 600 MW as well as proposed 1 X 800 MW to comply to legal norms.</p> <p>Coal washery need to be insisted by MOEF & CC, as the EIA report is on the premises of an ash content 40%.</p> <p>Action suggested: Reasons for not choosing</p>

		beneficiated coal or setting up a coal washery should be given Reasons for such data mismatch across different documents should be explained.
Table 2.6 - Water balance	The total water consumption for operating 2 X 600 MW and proposed 1 X 800 MW is 5700 m ³ /hr, which is equivalent to a specific consumption of 2.85 m ³ /MW/hr and the permitted quantity of abstraction is 9860 m³/hr or 4.93 m³/MW.hr.	Inconsistent water usage: The ZLD claim is not justified and legal compliance is not met by “Water Balance” approach. As per the MoEF & CC notification and CEA’s recommendation thermal power plant should consume water not higher than 2.5 Cu.m/MW.hr. Action suggested: Water usage should be calculated once again and CEA’s recommendation and MoEF & CC’s notification should be followed.
Fly ash utilisation	There is no justification, as how 100% Fly ash will be utilized linked to production capacity of cement Plants, Brick Kilns, and other beneficial users.	Ensuring 100% fly ash utilisation: As per the fly ash utilisation rule given by MoEF & CC an action plan should be submitted by the thermal power plant to regional office of MoEF & CC and State Pollution Control Board (SPCB). This plan will ensure that the fly ash generated by the unit will be utilised upto 100%. Action suggested : The surrounding industries which have the potential of utilising fly ash should be taken into account and plan for

Citizen consumer and civic Action Group (CAG)
 New No.246, Old No.277-B, T.T.K. Road (J.J. Road),
 Alwarpet, Chennai 600 018.
 Ph: 044- 2499 4458/2466 0387

		ensuring 100% utilisation of fly ash should be provided.
FGD System	The by-product that will be produced because of operation of FGD is not given.	<p>Managing by-product of FGD system: As it was mentioned in the draft EIA, the FGD will function based on wet limestone technology. The wet limestone technology will produce gypsum as the by-product in the process of removing sulphur from the flue gas.</p> <p>What will be the by-products or residues of FGD system and post management of such residues not assessed & included in the EIA report?</p> <p>Action suggested: The possible by-products of FGD should be assessed and the management of the same should be explained.</p>
Chapter – 3		
Ambient air quality monitoring	<p>Ambient Air Quality Monitoring (AAQM) stations were set up at 10 locations.</p> <p>Table 3.6 declares average, maximum, minimum and 98 percentile data for PM 10, PM 2.5 and SO2. Since TOR has sought data for 104 monitored data.</p>	<p>Comparison of annual average data with 98 percentile data: As per annual average, PM10 & PM2.5 values are exceeding for 98 percentile.</p> <p>Action suggested: Comparison for both the given data should be prepared and attach with the report.</p>

Citizen consumer and civic Action Group (CAG)
 New No.246, Old No.277-B, T.T.K. Road (J.J. Road),
 Alwarpet, Chennai 600 018.
 Ph: 044- 2499 4458/2466 0387

<p>Mercury level</p>	<p>Data regarding mercury in coal that used in 1x800MW TPP is missing in everywhere.</p>	<p>Missing of mercury content of coal used in 1x800MW TPP:</p> <p>The control of mercury (Hg) in the air emissions from coal-fired power plants is an on-going challenge.</p> <p>Analysis of Hg in in raw coal, fly ash, bottom ash is important to understand the broad material balance.</p> <p>This will provide justification for achieving Hg norm in stack.</p> <p>Action suggested: A broad material balance should be proposed for verification of the achieved standard norms.</p>
<p>Quality of groundwater</p>	<p>9 Groundwater and 3 surface water sampling locations addressed. All the sampling locations show a TDS value exceeding 500 mg/l , which is required for drinking purpose.</p>	<p>Change in water quality: As proposed in Draft EIA, the water quality for 9 Groundwater and 3 surface water sampling locations were collected. These samples show exceeding of TDS value in each sampling location.</p> <p>As per CPCB standards for drinking water, TDS value should be in between 500 mg/l.</p> <p>This propose installation of water treatment plant (WTP) for community use of drinking water. There is no indication for such treatment in any of the report.</p> <p>Action suggested:</p>

Citizen consumer and civic Action Group (CAG)
 New No.246, Old No.277-B, T.T.K. Road (J.J. Road),
 Alwarpet, Chennai 600 018.
 Ph: 044- 2499 4458/2466 0387

		Project proponent should test the drinking water quality and propose for additional WTP for community use of water.
--	--	---

Chapter - 4		
4.3.5.5 - Mercury	Only theoretical data for Hg is presented.	<p>Missing of Quantitative mercury data in coal: As this project is considered as brown field EIA project, monitoring of mercury in coal is needed. Quantitative mercury level in existing stack, fly ash and bottom ash should have done considered and monitored. And a detailed report of this mercury contain should be provided by the project proponent in EIA report which is missing in this case.</p> <p>Action suggested: Proximate and ultimate analysis of coal should be done to arrive at the level of mercury in the coal to be utilised.</p>
Table 4.11 and Figure 4.11 - Using treated sewage	The treated sewage with BOD of 30 mg/l is 100% applied on land for gardening.	<p>Sewage treatment plant standard: The new STP standard under Environment Protection Act, stated that BOD standard should be 10 mg/l. Where as in Draft EIA it is mentioned as >30 mg/l.</p>

Citizen consumer and civic Action Group (CAG)
 New No.246, Old No.277-B, T.T.K. Road (J.J. Road),
 Alwarpet, Chennai 600 018.
 Ph: 044- 2499 4458/2466 0387

		<p>Action suggested: The treated sewage should follow the new standards prescribed by MoEF & CC. This needs to be ensured by the pollution control board.</p>
<p>Chapter 5</p>		
<p>Table 5.4</p>	<p>Various factors has been considered to decide 600 or 800 MW supercritical boiler technology. However, the coal quality taken is not consistent with calorific value of 3500 Kcal/Kg considered in the EIA report. (Chapter 2 & 4)</p>	<p>changes in declared coal quality and mines: The coal to be used for 1x600 MW shows a higher GCV in quality than the used now for 1x800 MW. In addition, there are changes in coal source in PFR and Amended TOR. Fuel quality of 2x600 MW is missing in the reports - PFR and Form 1. In addition, super critical technology shows a lower GCV than sub-critical technology. This is not possible. How can a lower quality coal be given for super critical technology while a higher quality coal be given for sub-critical? As the fuel quality change it will affect the fuel quantity. As mentioned in the comments for PFR, Specific coal consumption of proposed plant: $\frac{8.834 \times 10^9}{365 \times 1800 \times 24 \times 1000} = 0.5\text{kg/kw.hr}$</p>

Citizen consumer and civic Action Group (CAG)
New No.246, Old No.277-B, T.T.K. Road (J.J. Road),
Alwarpet, Chennai 600 018.
Ph: 044- 2499 4458/2466 0387

		<p>The specific coal consumption of thermal power plant is 0.58 kg/mw.hr as it is based on supercritical technology.</p> <p>Action suggested: The change in coal mines without prior notice nor being reflected in the PFR is acceptable. The PFR and Form should be redone. Coal quality for both the plant must be mentioned. Super - critical technology with lower quality and higher GCV should be used. Project proponent must focus on using good quality coal for less fly ash generation.</p>
--	--	---