BEFORE THE NATIONAL GREEN TRIBUNAL

SOUTHERN ZONE BENCH AT CHENNAI

APPEAL NUMBER 13 OF 2019

In the matter of:

P. Sundaravathanam and Anr. **... Appellants**

Vs.

Union of India

Ministry of Environment, Forests & Climate Change

And 3 Ors. **... Respondents**

WRITTEN SUBMISSIONS FILED ON BEHALF OF THE FOURTH RESPONDENT, NLC INDIA LTD.

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The Counsel for the Fourth Respondent respectfully submits as under:

1. The above Appeal has been filed by the Appellant under section 16 (h) of the National Green Tribunal Act, 2010 challenging the environmental clearance dated 29/10/2018 granted to the Fourth Respondent by the First Respondent for the purpose of setting up a 2 X 660 MW Supercritical Lignite-based thermal power expansion plant.

2. The factual matrix relevant to the present case is as follows:

    a. The Fourth Respondent viz. the Project Proponent is a Central Public Sector Undertaking **(CPSU)** and a limited company incorporated in the year 1956. It is categorised as a Navratna Company and falls under the administrative control of the Ministry of Coal, Government of India. The Fourth Respondent operates four opencast Lignite mines, five Lignite-based thermal power stations and one Coal-based thermal power plant. The Coal-based thermal power plant is operated on a joint venture basis. It is pertinent to mention that apart from the aforesaid thermal power plants, the Fourth Respondent is also actively setting up

renewable energy-based power plants such as wind and solar based plants.

b. It is submitted that the Fourth Respondent was set up by the Government of India to ensure that the electricity demands of the State of Tamil Nadu and the neighbouring States such as Andhra Pradesh, Kerala, Karnataka, Telangana and Union Territory of Puducherry are met.

c. Due to the increased demand for power/electricity within the aforementioned States, the Fourth Respondent had initiated plans to set up a second expansion of its existing thermal power station viz. TPS -II. The second expansion of TPS-II is a 2 X 660 MW Supercritical Lignite-based thermal power station **(Subject Plant)** which is expected to generate 9250.56 Million units (MU) per year at 80% Plant Load Factor ***(PLF)***. The Subject Plant is being put up within an area of 608 acres owned by the Fourth Respondent which falls within the existing TPS – II complex and is adjacent to the existing TPS-II plant. At this juncture, it is relevant to state that the Lignite linkage or source would be from the basket of mines of the Fourth Respondent, including Mine III.

d. It is submitted that out of the 608 acres of barren land with shrubs, the main expansion plant i.e. the Subject Plant is being constructed in an area of 52 acres and the greenbelt pertaining to the Subject Plant is being put up in an area of 160 acres. Further, out of the total project cost of Rs. 8733.49 crores, a sum of Rs. 1123.71 crores is apportioned towards capital costs for Environmental Management Plan and a sum of Rs. 140.46 crores is towards recurring costs which is in addition to the total project cost. It is relevant to state that the Subject Plant is going to be the first Lignite-based 660 MW Supercritical Power Plant in India.

e. The construction and operation of the Subject Plant is also expected to result in huge employment opportunities benefitting over 1000s of families. In specific terms, it is submitted that the Fourth Respondent estimates to engage the services of 850 persons during the construction stage of the Subject Plant and 1000 persons during the operation stage of the Subject Plant.

f. In so far as the working of a thermal plant is concerned, it is submitted that in a thermal power generation, chemical energy of fuel (in the present case, lignite) is first converted into thermal energy during combustion which is then converted into mechanical energy through a turbine and thereafter finally into electrical energy through a generator. In a supercritical thermal plant, such as the Subject Plant, which uses pulverised fuel combustion technology, the overall process is similar to that mentioned above, however, steam pressure would be over and above the critical pressure of 221 bar i.e. exceeding 240 bar and the steam temperature i.e. both super heat & reheat is ≥ 595°C. Hence there is higher efficiency with reduced amount of fuel utilised to generate power as compared to a sub-critical thermal power plant. It is also pertinent to mention that the emission levels are lower in a Supercritical power plant such as the Subject Plant.

g. It is relevant to state that the primary emissions from a thermal power plant such as the Subject Plant are Particulate Matters **(PM)** in the form of fly ash, Sulphur Dioxide **(SO2)** and Nitric Oxide **(NOX)** which is emitted through the stacks from the burners of the power plant when Lignite is burnt. Hence, the Fourth Respondent is taking various air pollution control/ mitigation measures with regard to the Subject Plant such as installing Electrostatic Precipitators **(ESP)**, Flue Gas De-Sulphurisation **(FGD)** units and DENOX Systems to drastically reduce the levels of PM, SO2, NOx and Mercury

(Hg). It is pertinent to state that the minimum reduction in the SO2 levels of the Subject Plant by installing the FGD would be greater than 95% efficiency, depending upon the prevailing technology when the FGD is installed.

h. It is submitted that for the purpose of obtaining environmental clearance with regard to the Subject Plant and as the same falls under category 'A' of the Environmental Impact Assessment Notification, 2006 read with subsequent amendments **(EIA Notification 2006)**, the Fourth Respondent submitted its application for environmental clearance in Form1 with its Pre-Feasibility Report **(PFR)** and Proposed ToR studies with the First Respondent vide its proposal bearing reference number IA/TN/THE/60765/2016 dated 30.11.2016 ***(Pg. No. 30 – 62 of RV 4)***[1]. It is submitted that details of alternative sites were also listed in the said proposal at ***pgs. 45 – 46 of RV 4***.

Scoping:

i. As stated above, since the Subject Plant falls under category 'A', the stages of Scoping, Public Consultation and Appraisal, as per the EIA Notification, 2006 is mandated. In this regard, prior to issuance of the ToR, the Central Level Expert Appraisal Committee ***(EAC)*** had meetings on 28/12/2016 and 14/02/2017 ***(Pg. 114 of RV 3 – Para 2)*** to determine the ToR to be issued, and meanwhile, the sub-committee of the EAC had visited the site of the Subject Plant on 04/02/2017 and 05/02/2017 ***(Pg. 87 of RV 2)*** wherein certain compliances were sought, and the Fourth Respondent assured compliance of the same. The present site was approved by the EAC after their deliberations and after considering the environmental conditions and the proximity to the existing TPS – II. It is relevant to state that when the sub-committee had visited

[1] AV – Appellant Volume
RV – Respondent Volume

on 04/02/2017 and 05/02/2017, it had looked into the suitability of the Subject Plant and site.

j. Subsequently, in accordance with the EIA Notification 2006, a detailed and comprehensive Terms of Reference **(ToR)** was issued by First Respondent to the Fourth Respondent on 23/03/2017 vide communication bearing reference J-13012/11/2016-IA. II (T) ***(Pg. 114 of RV3)***.

k. Meanwhile, it is submitted that the services of M/s. Hubert Enviro Care Systems (P) Ltd **(Consultant)** was engaged by the Fourth Respondent to carry out a comprehensive Environmental Impact Assessment **(EIA)** study with regard to the Subject Project, as mandated under the EIA Notification, 2006. It is submitted that the Consultant is accredited with the National Accreditation Board for Education and Training which is a constituent board of the Quality Council of India.

l. It is submitted that while the ToR provided for installation of one monitoring station each in the upwind and pre-dominant downwind direction and other dominant direction, considering the environment, the Consultant had placed 12 monitoring stations across all directions ***(Pg. 119 of RV 3 – sl. x(viii))***, in an around the Project Site ***(Pgs. 175 and 176 of RV1)***, to ensure a detailed and holistic study of the AAQ levels and meteorological data. However, it is relevant to note that the highest of the GLC levels were only considered, amongst the monitoring stations, to ascertain the cumulative impact assessment of the Subject Plant.

m. It is submitted that as per the terms of the ToR, a study for the months of March to May, 2017 was conducted, including the study of AAQ levels within the Study Area, and AERMOD dispersion modelling was carried out to ascertain the cumulative impact assessment of the Subject Plant. It is submitted that the modelling was taken

based on the wind-rose between March to May of 2017 ***(Pg. 173 of RV 1 and Pg. 235 of RV1 – Fig. 4-1)***. A detailed draft EIA report was also prepared by the Consultant based on the various studies and analysis carried out.

n. It is submitted that 19 copies of the draft EIA (soft and hard copies), prepared by the Consultant, along with the points of compliance pertaining to the ToR, which was filed as part of Appendix II to the draft EIA ***(Pg. 123 of RV 3)***, was submitted, in person, on 20/12/2017 (Pg. ***123 of RV 3)*** with the District Environmental Engineer, Tamil Nadu Pollution Control Board, Cuddalore **(DEE)** who in turn forwarded the said report and annexures to the other authorities concerned. It is also submitted that copies of the summary of the EIA report, in English and Tamil was also filed along with the draft EIA report. The aforementioned documents were provided along with the letter of request dated 19/12/2017 ***(Pg. 68 of RV 4)*** for conducting the public hearing. A copy of the draft EIA report along with the summary of the report, in hard and soft copy, were also provided to the First Respondent and various other authorities in accordance with EIA Notification, 2006 as evident from the Public Notice dated 12/01/2018 ***(Pg. 149 – 151 of RV 4)***. It is pertinent to state that the draft EIA report along with Appendix, including Appendix II (and the EIA report summary), were available at the District Environmental Engineer' s Office, Tamil Nadu Pollution Control Board, Cuddalore, amongst 14 other locations, for scrutiny or for copies to be issued in the event any person made a request for such copies ***(Pgs. 149 and 150 of RV 3)***.

Public Consultation:

o. Pursuant to the request for Public Hearing made by the Fourth Respondent, submission of the draft EIA report along with its summary in Tamil and English, a notice

intimating about the public hearing, with regard to the Subject Plant, was published on 12/01/2018 in two newspapers viz. The New Indian Express (English) and Dinamani (Tamil) ***(Pgs. 149 and 150 of RV3)***. Under the notice, it was informed that a public hearing would be conducted on 15/02/2018 at 10:30 a.m. at the Community Hall, block - 29, Neyveli Township – 607 807 viz. close proximity of the Subject Plant. It was further informed that the summary of the EIA report and draft EIA report (which include the appendix such as TOR and compliance of the TOR) were made available for the public in several locations for the purpose of reference. Hence, it is submitted that the public were able to scrutinise the draft EIA Report along with the annexures and appendix, including the compliance of the ToR, if required. It was also mentioned in the Notices that the summary of the EIA report is available on website of TNPCB.

p. It is submitted that prior to the public hearing which was scheduled on 15/02/2018, the locals were also informed by Beats (Dhandora) on 12/02/2018 as a reminder to the public hearing ***(Pg. 166 of RV 3)***. Accordingly, the public hearing was conducted on 15/02/2018 wherein various queries were raised by the public and the same was responded to and concerns addressed ***(Pgs. 272 – 297 of RV1 and Pgs. 152 to 238 of RV3)***. It is pertinent to state that the draft EIA was available to the public even during the public hearing along with the ToR and its compliances ***(Appendix II)***. It is also relevant to state that the public hearing was also carried out in accordance with law. This has also been confirmed by the First Respondent in paragraph 6 of its reply statement dated June 2020 filed before this Hon'ble Tribunal to the above Appeal (A. No. 13/ 2019).

q. It is submitted that a public consultation was also carried out in accordance with the EIA notification, 2006 where in

the concerns of the public were addressed ***(Pg. 177 of RV 3)***.

Pursuant to Public Consultation:

r. It is submitted that pursuant to the public hearings and consultation, the EIA Report, which was prepared in accordance with the EIA Notification, 2006, was finalised by the Consultant on 15/06/2018 and was uploaded onto the web portal of the First Respondent on 15/06/2018, albeit to the extent of 20 MB, since the uploading capacity was limited to only 20 MB. The acknowledgement, with regard to the submission, was received by email on 16/06/2018 from the First Respondent ***(Pg. 84 of RV4)***. Further, the First Respondent had issued an Essential Details Sought **(EDS)** to the Fourth Respondent on 17/07/2018 ***(Pg. 85 of RV4)*** seeking certain documents and the same was complied with by the Fourth Respondent on 27/07/2018 ***(Pg. 86 of RV 4)*** by uploading the documents onto the web-portal of the First Respondent. The acknowledgement with regard to uploading of the EDS related compliance and its Annexures was received from the First Respondent on 27/07/2018 ***(Pg. 89 of RV4)***. An EDS -II was received on 09/08/2018 ***(Pg. 90 of RV 4)*** for which the same was complied with by the Fourth Respondent on 13/08/2018 by uploading the documents sought onto the web portal of the First Respondent and the acknowledgement for the same was received on 13/08/2018 ***(Pgs. 91-93 of RV 4)***. Hence, by 13/08/2018, the EIA Report, including the ToR compliances and the EDS related documents were sent electronically to the First Respondent. At this juncture, it is relevant to state that neither the ToR nor the EIA Notification, 2006 stipulate that the entire EIA report with all the annexures and appendix ought to be uploaded onto the website of First Respondent. Be that as it may, it is

submitted that the summary of the EIA report and the final EIA Report with annexure and appendix (including ToR compliances) (hardcopy and soft copy) were duly submitted with the First Respondent and various other offices as stipulated under the EIA Notification, 2006 and ToR and the same were available for scrutiny to the public

s. It is submitted in addition to the above, the Fourth Respondent had also forwarded hardcopies of the entire EIA report with the appendix and annexures along with a compact disk of the same to the First Respondent and the EAC members on 25/08/2018 ***(Pg. 94 of RV4)***. Therefore, it is submitted that the hardcopies and softcopies of the final EIA report along with all its annexures, including the summary of the EIA report was sent to the First Respondent and the members of the EAC. In specific terms, the entire EIA report, along with all annexures and appendix (including the ToR compliance) were available with the EAC for the purpose of scrutiny of the entire report and appraisal of the Subject Project.

t. It is submitted that some of the important points covered in the EIA, after detailed studies were carried out, are as follows:

i. There are no notified ecologically sensitive areas within 10 km from the core of the Subject Plant.
ii. The Subject Plant is not being put up in a critically polluted area.
iii. The Subject Plant is being put up on barren land with shrubs and the same is classified for 'Industrial Use' and not on agricultural land.
iv. The source of water for the Subject Plant shall be the water pumped out during mining operations from the basket of lignite mines including Mine III of the Fourth Respondent and the recycled water from the effluent and sewage treatment plants.

v. The height of stack was originally envisaged at 275 metres which is now reduced to 150 metres pursuant to notification, S.O. 3337 (E) dated 28/06/2018. It is submitted that the reduction to 150 m is also due to the stringent environmental norms to install various air pollution control devices such as ESPs, FGDs and DENOX systems.

vi. The lignite transportation shall be by pipe conveyor system which is also suitable for an environmentally sensitive area.

vii. The ash generated from the lignite obtained from all the mines, including Mine III and burned will be supplied to nearby manufacturers of building material and cement.

viii. The gypsum from the FGD, which is not classified as hazardous under the Hazardous and other Wastes (Management and Trans boundary Movement) Rules 2016, Notification No. G.S.R No. 395 (E) dated: 04.04.2016 **(2016 Rules)** would also be marketed or disposed to cement plant or used for backfilling in the mines.

ix. From the data collected from the 12 air quality monitoring stations in and around the Subject Plant during the period March-May 2017 (non-monsoon season), the particulate matters were within the National Ambient Air Quality Standards **(NAAQ Standards).** Further, the maximum concentration of criteria pollutants such as Sulphur dioxide (SO2), Nitrogen Oxide (NOx), Lead (Pb), Carbon Monoxide (CO), Ammonia (NH3), Benzene (C6H6), Perylene (C20H12), Arsenic (AS) and Nickel (Ni), were also well within the NAAQ Standards. It is also relevant to state that the ToR had required the Fourth Respondent to carry out studies for one non-monsoon season and the same was accordingly carried out during summer season

viz. March to May when the climate is most oppressive.

x. Even after considering the operation of the Subject Plant by applying the AERMOD process, the cumulative impact on the ambient air quality, with regard to PM, SO2 and NOx, would be within the NAAQ Standards. It is pertinent to state that the cumulative impact assessment was based on the highest of the readings of AAQ with regard to the 12 locations upon which the study was conducted in, around and beyond the project site viz. the study area.

xi. From the data collected with regard to surface water, the same fall under category 'B' of IS 2296:1992 of Surface Water Standards. The Chloride content and the Sulphate content of surface water are within the limits of IS 2296:1992 of Surface Water Standards. Likewise, the Chloride content and the Sulphate content of groundwater is also within the desirable limits of the IS 10500: 2012.

xii. As per the Seismic study, the Subject Plant falls in Zone II which is safe.

Appraisal:

u. Pursuant to the uploading/ submission of the entire EIA Report by the Fourth Respondent with the authorities concerned, EDSs being issued twice by the First Respondent pursuant to scrutinising the documents uploaded and the authorities concerned having the entire EIA report, including all annexures and appendix such as TOR compliances, Public Consultation data etc.; the EAC had scrutinised the application of the Fourth Respondent along with the EIA report. The EAC had a meeting on 30/08/2018 as evident from the minutes ***(Pg. 97 at 98 of RV4)*** wherein the Subject Plant was discussed, and

various conditions were stipulated for the purpose of setting up the Subject Plant. It is submitted that the Subject Plant was deliberated by 12 personnel (chairman + members) and thereafter the issuance of the EC was recommended to the First Respondent subject to certain conditions mentioned thereunder.

v. Upon considering the EIA sent to the First Respondent along with all its annexures and the site visits, the environmental clearance with regard to the Subject Plant was issued by the First Respondent on 29/10/2018 **(Environmental Clearance)** ***(Pg. 51 of ATS)*** pursuant to which public notices were issued in the New Indian Express (English)and Daily Thanthi (Tamil) on 4/11/2018 ***(Pgs. 103 of RV 4)*** informing about the said Environmental Clearance. It was also stated in the public notice that the Environment Clearance is available on the official website of the First Respondent and the clearance copies are available with the Central Pollution Control Board and Third Respondent as the same was sent by the First Respondent to the authorities concerned.

w. It is submitted that the Environmental Clearance was granted only after due compliance of the stages mandated prior to issuance of the Environmental Clearance under clause 7 of the EIA Notification, 2006 viz. Scoping, Public Consultation and Appraisal. Further, the EAC's recommendation was based on scrutinising of all required and relevant data placed before the members of the Committee.

x. Therefore, it is submitted that the Environmental Clearance is issued in accordance with Law and that the Appeal filed by the Appellant is baseless and deserves to be dismissed.

y. It is also relevant to state that the Subject Plant had been proposed pursuant to the Fourth Respondent's decision to

decommission its old plant viz. TPS -I and further to keep up with the energy demands of the country. It is relevant to state that the Subject Plant, which is a Super Critical Plant, will operate with utmost efficiency and with all necessary equipment installed to curtail various forms of emissions to ensure adequate protection to the environment.

3. **THE VARIOUS AVERMENTS AND ALLEGATIONS RAISED BY THE APPELLANT IN THE APPEAL FALL UNDER THE FOLLOWINGS HEADS:**

A. The EIA Report did not include the TOR compliance Appendix viz. Appendix II and only included the Appendix I viz. the TOR.

B. The Appellant has referred to a few requirements in the TOR and has averred that the compliances vis-a-viz those requirements have not been addressed by the Fourth Respondent and the same not available on the public domain to enable analysis during public hearing.

C. Non-placing of the complete EIA on the website of the First Respondent takes away the right of the local persons to challenge a project as held in the Order passed by the Central Information omission dated 29/02/20212 in the case of M/s. Shibani Ghosh Vs. Shiv Pal Singh.

D. The expansion of the Subject Plant is being carried out in violation of the sitting criteria guidelines for thermal power plants as published by IL&FS.

E. The Subject Project is not required to meet the energy requirements.

F. Questions raised in the Public Hearing have not been addressed by the EAC.

G. False and misleading calculation of Ambient Air Quality.

H. Environmental Clearance based on faulty data in the EIA regarding fuel input and ash content.

I. Environmental Clearance is based on faulty Sulphur content.

J. Insufficient data to support water use allowed in the EC.

K. The Fourth Respondent has failed to carry out a hydro geological study.

L. The Fourth Respondent has failed to perform hydraulic evaluation of plant site.

M. Insufficient data in EIA regarding availability of water.

N. Inadequate demonstration that the Subject Project will meet zero liquid discharge.

O. Health Impact Assessment study has not been done.

P. EAC has recommended the Subject Project without due application of mind.

4. **SUBMISSIONS TO THE AVERMENTS AND ALLEGATIONS RAISED BY THE APPELLANT:**

At the threshold, it is submitted that the averments and allegations raised by the Appellant are not only false but are also vague, speculative and baseless. The following are the submission in so far as the various averments and allegations raised by the Appellant are concerned:

A. The averment that EIA report did not include the TOR compliance appendix viz. Appendix II and only included the Appendix I viz. the TOR and the same is not available on the public domain to enable analysis during public hearing.

i. It is false to state that the EIA report did not contain the TOR compliance appendix viz. Appendix II. It is submitted that the Fourth Respondent had prior to the

public consultation process submitted, along with its detailed draft EIA, the ToR as well as the compliance of the ToR with the Tamil Nadu Pollution Control Board, Cuddalore while seeking a request for the public hearing to be conducted. In all, 19 copies of the EIA Report, the annexures and appendix were submitted to the District Environmental Engineer **(DEE)** who in turn furnished the same to the other authorities concerned ***(Pg. 68 at RV 4)***. It is relevant to mention that along with ToR various other annexures relating to the EIA and the Subject Plant were also submitted which was also part of the Public Hearing. Hence, the draft EIA report with Appendix, including the TOR compliance Appendix was available for scrutiny by the public even at the time of the public hearing. It is submitted that pursuant to the public hearing, the EIA Report, which was prepared in accordance with the EIA Notification, 2006, was finalised by the Consultant on 15/06/2018 and the said EIA was uploaded onto the web portal of the First Respondent on 15/06/2018 ***(Pg. 83 of RV 4)***, albeit to the extent of 20 MB, since the uploading capacity was limited to only 20 MB. The acknowledgement with regard to the submission was received by email on 16/06/2018 ***(Pg. 84 of RV 4)*** from the First Respondent.

ii. Thereafter, the First Respondent had issued an EDS to the Fourth Respondent on 17/07/2018 ***(Pg. 85 of RV 4)*** seeking certain documents and the same was complied with by the Fourth Respondent on 27/07/2018 ***(Pg. 86 of RV 4)*** by uploading onto the web-portal of the First Respondent. The acknowledgement with regard to uploading of the EDS related compliance and its Annexures was received from the First Respondent on 27/07/2018 ***(Pg. 89 of RV 4)***. An EDS -II was received on 09/08/2018 ***(Pg. 90 of RV 4)*** for which the same was complied with by the

Fourth Respondent on 13/08/2018 ***(Pg. 91 of RV 4)*** by uploading the documents sought onto the web portal of the First Respondent and the acknowledgement for the same was received on 13/08/2018 ***(Pg. 93 of RV 4)***. Hence, by 13/08/2018, the EIA, EDS related Annexures including the ToR compliances was sent electronically to the First Respondent.

iii. It is submitted that the hardcopy along with a compact disk of the EIA Report with all its annexures and appendix (including Appendix II) were sent to the First Respondent and the EAC members on vide letter dated 23/08/2018 ***(Pg. 94 of RV4)***. Thus, hardcopies and softcopies of the entire EIA Report, along with all appendix and annexures, including compliance of the ToR was submitted by the Fourth Respondent with the First Respondent and EAC members.

iv. Hence, it is submitted that Appendix II formed part of the final EIA report and the entire set of the EIA was made available in the public domain and therefore, it could be scrutinised and analysed prior to or during the public hearing. Further, it is relevant to state that the Appellants have not stated anywhere in their Appeal that they had participated in the public hearing and hence it is respectfully submitted that they would not be in a position to confirm whether the draft EIA along with all annexures were analysed or not during the public hearing. It is also submitted that neither the EIA Notification, 2006 nor the ToR stipulates that uploading of the entire EIA report by the Fourth Respondent onto the website of the First Respondent, for the purpose of viewing of the same, is mandated. Be that as it may, as stated above, the hardcopy and softcopy of the entire EIA Report were filed and the EIA report, to an extent of 20MB was uploaded. It is also relevant to state that the entire EIA Report was available for scrutiny by the

EAC to consider the environmental viability of the Subject Plant.

B. The Appellant has referred to a few requirements in the TOR and has averred that the compliances vis-a-viz those requirements have not been addressed by the Fourth Respondent.

i. It is submitted that while the Fourth Respondent complied with all the ToR requirements, the Fourth Respondent, in this Written Submission, is confining itself to only those clauses in the ToR that the Appellant alleges were not complied with, as evident from Appendix II to the EIA report, is reproduced below:

Sl. No.	***Terms of Reference***	***Compliance***
1	*Compliance and implementation status of the sub-committee recommendations made during the site visit on 4-5th February,2017 shall be submitted.*	*1. MoEF&CC Sub committees site visit (4-5th February, 2017) observation is enclosed as Annexure 7 2. Proponent reply to the committee observation is enclosed as Annexure 7 A*
2	*PP Shall submit a request letter to DG-CSIR for facilitating the alternate new technologies available for utilizing of dry flyash to enhance its utilisation level.*	*Proponent has submitted the request letter to CSIR (Lr.No. NLCIL/D(P&P)/113/TPS-II Exp./ENVT./2017 dated: 19.01.2017) and remainder letter submitted to CSIR (Lr.No: DGM/Envt./Fly ash/2018 dated 27.04.2018 (meeting with CSIR officials from Bhopal is expected) Letter*

		submitted to CSIR is enclosed as Annexure 13
5	*Carbon Footprint Study shall be carried out from a reputed institute for existing plant as well as for the proposed project.*	*Carbon Footprint study has been conducted by Environment Engineering Department of Pondicherry Engineering College, Pondicherry Central university. Report is enclosed as Annexure 19*
7	*Need based assessment study/ Skill mapping shall be conducted for all the villages located in and around 10 km radius from the project site. Accordingly, a long term CSR activities shall specifically include improving and providing modern methods of irrigation, Organic farming, Skill development for the local people.*	*Based on SIA study recommendation, CSR plan will cover implementation of modern methods of irrigation, Organic farming, skill development for the local people and towards this 0.25 % i.e Rs. 23.1 crore of the proposed expansion project cost is earmarked as the budget.*
9	*Detailed and time bound action plan for phasing out of the existing unit i.e. TPS-I along with waste management plan shall be submitted and shall be inline with Construction and*	*It is proposed to phase out the existing TPS-I when the (NNTPS 2 x 500 MW) units are commissioned. The time schedule for phasing out (Letter sent to CPCB Lr No. 002/GM/TPS-I/CPCB/2018 dated 10/02/2018 is enclosed as*

	Demolition Management Rules, 2016	*Annexure 20 While de-commissioning the existing unit, the waste management plan will be prepared and handled in line with Construction and Demolition Waste Rules2016.*
10	*The selected location is low lying area and requires filling up upto 2 m depth with borrow materials. Details of borrow materials or filling materials viz., source, total quantity to be used, etc should be provided.*	*The topography of the selected location varies from 47 to 57 m MSL, which will be levelled to a common base level using the soil removed from higher elevation and hence there is no additional material required for this work. If at all any additional filling materials is required pond ash from nearby ash pond will be used.* *Details are given in EIA report,* ***Chapter 4, Section 4.3****.1*
12	*Vision document specifying prospective long term plan of the project shall be formulated and submitted.*	*The vision of the project is derived from the vision of the parent company. The long term vision of the proposed power project is sustainable power generation maintaining high standards of efficiency, environment*

		performance and financial strength, over the design life (25 years) and extended life of the project through suitable Renovation and Modernization Programmes from Time to Time. The long term plan will be covering environmental protection, pollution control and CSR activities.
14	*The project proponent to identify minimum three potential sites based on environmental, ecological And economic considerations, and choose one appropriate site having minimum impacts on ecology and environment. A detailed comparison of the sites in this regard shall be submitted.*	*As it is an expansion project utilizing available land area which is in possession of NLCIL, identification of minimum 3 potential sites does not arise.*
32	*Hydro-geological study to the area shall be carried out through an institute/ organization of repute to assess the impact on ground and surface water regimes. Specific mitigation*	***At Sl. No. 32 Pg. 132 of RV3** with regard to the ToR compliances it provides that the Optimum Ground water Development plan for the multi-layer coastal aquifer system of Neyveli Hydro geological Basin*

	measures shall be spelt out and time bound Action Plan for its implementation shall be submitted.	*conducted by Central Ground Water Board, SECR, Chennai and concluded as follows: Based on the present Hydro geological study it Is concluded that the aquifers of the Neyveli Hydro geologic Basin spread over an area of 3500 sq.km are safe with the present rate of pumping and as such no threat of sea water intrusion exists* ***(this study is at pg. 12 at 16 of RV4)****. In addition, IIT, Madras has prepared Environment Management plan on the mine water generation and disposal and its impacts on ground water, surface water and soil for mine-II expansion, which covers Hydro geological study of the area. As per the recommendation of the IIT, Madras Hydro geological study, Chennai Testing laboratory studied ground water & surface water and soil quality. Report is enclosed in Annexure 14* ***(Pg. 334 at 336 of RV 2).***
33	*Detailed Studies on the impacts of the ecology*	*The wastewater generated from the proposed project is*

	including fisheries of the River/ Estuary/ Sea due to the proposed withdrawal of water/ discharge of treated waste water into the River/Sea etc shall be carried out and submitted along with EIA Report. In case of requirement of marine impact assessment study, the location of intake and outfall shall be clearly specified along with depth of water drawl and discharge into open sea.	*recycling & reused in utilities and ash pond, Hence, there is no discharge of effluent.*
34	*Source of water and its sustainability even in lean season shall be provided along with details of ecological impacts arising out of withdrawal of water and taking into account inter-state shares (if any). Information on other competing sources downstream of the proposed project and commitment regarding availability of requisite quantity of water from the Component*	*Water requirement is water pumped out from the NLCIL mines including mine-III through TPS-II reservoir. Hence, the concept of lean season does not arise.* *Also the water is sourced from NLCIL own mine's, the question of competing downstream user doesn't arise.*

	Authority shall be provided along with letter / document stating firm allocation of water.	
35	*Detailed plan for rainwater harvesting and its proposed utilisation in the plant shall be furnished.*	*The typical rainwater harvesting system is attached Annexure 11. All the rainwater from road drains, roof top drains, would be collected in the rainwater pit. The collected water would be recharged into the ground. All the buildings will be provided with rainwater harvesting arrangement.*
40	*Socio-economic study of the study area comprising of 10 km from the plant site shall be carried out through a reputed institute / agency which shall consist of detail assessment of the impact on livelihood of the local communities.*	*Socio Economic study report is enclosed as Annexure 9*
49	*In case of expansion project, air quality monitoring data of 104 observations a year for relevant parameters at air quality monitoring stations as*	*AAQ monitoring being carried out 104 measurements at 13 locations and results are well within the NAAQ standards, 2009. Results*

	identified/ stipulated shall be submitted to assess for compliance of AAQ Standards (annual average as well as 24 hrs)	are given in EIA report, Chapter 3, Table 3-8 In addition continuous one no online AAQ data monitoring and & 13 semi-automatic monitoring is being carried out as per CPCB guidelines and measured data is being regularly sent to TNPCB/ MOEF&CC, Regional office.
51	Cumulative impacts of all sources of emissions including handling and transportation of existing and proposed projects on the environment of the area shall be assessed in detail. Details of the Model used and the input data used for modelling shall also be provided. The air quality contours should be plotted on a location map showing the location of project site , habitation nearby, sensitive receptors, if any .The windrose and isoplethsshould also be shown on the location map. The cumulative	Impacts due to the proposed project is predicted using AERMOD model. Details are provided in Chapter-4, Section 4.4 The existing baseline concentration covers all the existing emission sources, which has been monitored for the operating units and the contribution due to the proposed project it was assessed through AERMOD and the resulting concentration is within the prescribed standards

	study should also include impacts on water, soil, and socio economics.	
52	*Radio activity and heavy metal contents of coal to be sourced shall be examined and submitted along with laboratory reports.*	*The radioactive and heavy metal content Report conducted by BARC is enclosed as Annexure 24* ***(Pg. 112 – 113 of RV3)***
55	*Details of transportation of fuel from the source (including port handling) to the proposed plant and its impact on ambient AAQ shall be suitably assessed and submitted. If transportation entails a long distance it shall be ensured that rail transportation to the site shall be first assessed. Wagon loading at source shall preferably be through silo/conveyor belt.*	*The transportation is through piped conveyor and no dust pollution is anticipated. Details are provided in Chapter-2, Section 2.6.2*
61	*Detailed scheme for raising green belt of native species of appropriate width (50 to 100 m) and consisting of at least 3 tiers around*	*Green belt layout is enclosed as Annexure 6 Three tier greenbelt of 50 to 100 mt is envisaged as per CPCB guidelines with shrub layer beneath tree*

	plant boundary with tree density of 2000 to 2500 trees per ha with a good survival rate of around 80% shall be submitted. Photographic evidence must be created and submitted periodically including NRSA reports in case of expansion projects. A shrub layer beneath tree layer would serve as an effective sieve for dust and sink for CO2 and other gaseous pollutants and hence a stratified green belt should be developed.	*layer would serve as an effective sieve for dust and sink for CO2 and other gaseous pollutants. The tree species will be short listed and the recommendation of DFO, cuddalore and CPCB guidelines. Greenbelt details are provided in Chapter-9*

C. The averment that Non-placing of the complete EIA Report on the website of the First Respondent takes away the right of the local persons to challenge a project as held in the Order passed by the Central Information omission dated 29/02/20212 in the case of M/s. Shibani Ghosh Vs. Shiv Pal Singh.

i. In addition to reply to the allegation as referred to in 'A', above, it is submitted that the relevance to the order passed in *M/s. Shibani Ghosh Vs. Shiv Pal Singh* is misplaced as the facts in that case does not in any way relate to the facts of the present case. In specific terms, it is submitted that the entire EIA report (including the draft EIA) along with all its annexures were available with the First Respondent and the pollution control board concerned. The draft EIA along with the ToR was also part

of the Public Hearing which was conducted in accordance with Law. The General Conditions of the EC also provide that the EIA shall be forwarded to the regional office of the First Respondent which was duly complied with. The fact that the entire EIA report was available with the First Respondent is also confirmed by the said Respondent in paragraph D (Pg. 5) of its Reply Statement dated June 2020 filed before this Hon'ble Tribunal. It is also relevant to state that, prior to the issuance of the Environmental Clearance, the draft EIA report along with appendix, including Appendix II was made available by the Fourth Respondent at the designated local office for public review prior to the public hearing and the same was also made available during the public hearing conducted.

ii. Further, the Fourth Respondent submits that the Appellants have never written to it under the Right to information Act, 2005 seeking a complete set of the EIA along with all its annexures. It is not the case of the Appellants that despite specifically requesting either the First Respondent or the Fourth Respondent for a copy of the EIA along with all its annexures, the same wasn't provided to them.

iii. It is also reiterated that only due to the data space constraints, the Fourth Respondent could not upload the entire EIA along with all the annexures; however, the hardcopies of the same along with a compact disk containing the entire report were sent to the First Respondent and the pollution control board concerned amongst other authorities.

iv. Therefore, it is submitted that the EIA along with all its annexures were very much made available in the public domain and that the public's access to information to challenge the Subject Project, if need be, were not taken away. Further, it is vehemently denied that the rights of

the public under Article 19 of the Constitution of India is infringed. It is further denied that incomplete information with regard to the EIA was provided to the EAC and that condition 26 of the environmental clearance is attracted. Therefore, it is submitted that the Environmental Clearance is not liable to be withdrawn on the basis of frivolous and incorrect averments raised by the Appellant.

D. The expansion of the Subject Plant is being carried out in violation of the sitting criteria guidelines for thermal power plants as published by IL&FS and the allegation that Cumulative Impact Assessment was not carried.

i. First and foremost, it is submitted that the document referred to by the Appellant as sitting guidelines is issued by IL&FS and not the Administrative Staff College of India, Hyderabad **(ASCI)**. The final sectorial manuals (i.e. guidelines) of ASCI prepared in terms of the EIA Notification, 2006 does not include Thermal Power Plants. The First Respondent issued the ToR based on site inspection and thereafter, the Fourth Respondent complied with the ToR and further submitted the entire EIA with annexures for the consideration of the EAC. It is also relevant to state that the sitting guidelines issued by IL&FS is neither mandatory nor directory and hence not binding. Be that as it may, it is submitted that the EIA and preparation of the report has been strictly carried out in accordance with the EIA Notification, 2006 and the ToR issued by the First Respondent. As per the said notification and ToR, the Fourth Respondent ought to have carried out studies within a radius of 10 kms. or 15 kms., as the case maybe, and the same was accordingly complied with.

ii. With regard to the IL&FS report and without prejudice to the fact that it is neither mandatory nor directory, it is relevant to state that the following table would establish

that the Subject Project is also in accordance with the said report of IL&FS:

S.No	Appellant's reference to the purported Sitting Guidelines	Response
(i)	*Ecologically and/or otherwise sensitive areas: preferably 5 km;* *Depending on the Geo-climatic conditions the requisite distance may be decided appropriate by the agency.*	There are no ecologically sensitive areas, as declared by the Government, in 10 kms radius. It is pertinent to state that as per paragraph 4.2.4 of the IL&FS Report, the Ecological Sensitive areas are listed and none of the said areas fall within 10 kms. of the Subject Plant. ***(Pg. 72 of AV1)***
(ii)	*Coastal areas: Preferably Half a Kilometre from High tide line (HTL)*	There are no costal areas in a radius of 10 km.
(iii)	*Flood plain of the Riverine system: Preferably halfa km. away from flood plain or modified flood plain affected by the dam in the upstream or by flood control system*	There is no riverine system within half – a km. distance from the Subject Project site. Further, there are no notified rivers. It is also relevant to state that the Subject Plant will not be discharging any effluent nor consume any water from any rivers or lakes.
(iv)	*Transport/Communication system:*	The Nearest Highway Road is 1.5 km. from the Project Site.

	Preferably half a way km away from the Highway and Railway line	

Guidelines based on the selection of site of coal based Thermal power plants set by the MoEF:

- *Locations of the Thermal power stations are avoided within 25 km of the outer periphery of the following:*

S.No	Appellant's reference to the purported Sitting Guidelines	Response
(v)	*Metropolitan cities*	There is no Metropolitan City within 25 kms radius. Chennai is the only nearest Metropolitan City which is more than 200 kms.
(vi)	*Natural park and wildlife sanctuaries*	There are no natural parks or wildlife sanctuaries in 25 a km radius. Ref:
(vii)	*Ecologically sensitive areas like (Tropical forest, biosphere reserve, important lake, and coastal areas rich in coral formation);*	There are no ecologically sensitive area in 25 km radius. In specific terms, there are no *tropical forests, biosphere reserve, important lake, and coastal areas rich in coral formation.* Reserve Forests referred to in the EIA are not notified as ecologically sensitive.

(viii)	*The sites should be chosen in such way that chimneys of the power plants does not fall within the approach funnel of runway of the nearest airport.*	No chimney or tower would be constructed within the approach funnel of a runway of the nearest airport. Further, the nearest airports from the Project Plant are:- (i) Neyveli Airstrip (non - functional- 2.5 km (ENE) (ii) Pondicherry airport – 62.2 km (NE)
(ix)	*Those sites should be chosen which are at least 500 m away from the flood plain of river system.*	The Project Plant is not near a flood plain of a river system.
(x)	*Location of the sites are avoided in the vicinity (say 10 km) of places of Archaeological, historical, cultural/religious/tourist importance and defence installations.*	There are none in a 10 km radius.
(xi)	*Forest or prime agricultural lands are avoided for setting up of power houses or ash disposal.*	The proposed Project Plant is not being set up on forest land or agricultural land. It is submitted that land was earlier acquired and under possession of the Fourth Respondent and the Subject Plant is proposed to be put up on land classified as 'Barren Land' by Special Tahasildar, Land Acquisition.

iii. It is further submitted that the Subject Project is not coming anywhere near Ecologically or environmentally Sensitive areas. It is submitted that Ecologically Sensitive areas are National Parks, wildlife sanctuaries, bio-sphere reserves, tropical forest, lake and coastal areas rich in coral formation; and none of the above fall within a 10 km radius of the Subject Project. It is submitted that the reserve forests referred to by the Appellant in the above appeal are not categorised or notified as ecologically sensitive areas and are away from the boundary of the Project Site or core area ***(Pg. 41 of RV 1)***. Further, the areas referred to by the Appellant do not fall under the classification of Tropical forest/Biosphere reserve/ lake and coastal areas rich in coral formation or any other ecologically sensitive areas, hence are not ecologically sensitive areas. The fact that the study area does not fall within any environmentally sensitive area or critically polluted area is further confirmed by the First Respondent in paragraph E, at pg. 6 and paragraph F at pg. 7 of its Reply Statement dated June 2020 filed before this Hon'ble Tribunal.

iv. It is also submitted that the Subject Plant is not being put up on agricultural land. The Appellant is attempting to mislead this Hon'ble Tribunal by misinterpreting the term *'study area'*. It is submitted that the term *"study area"* is described in paragraph 3.2 of chapter 3 of the EIA Report ***(Pg. 139 of RV1)*** to cover 10 km radial distance of the Subject Plant and is not confined to the Subject Plant area alone. Hence, while the land wherein the Subject Plant is proposed to be put up is owned by the Fourth Respondent and is barren with shrubs, it is only some of the area beyond the Subject Plant, which is owned by other villagers, that is referred to in paragraph 3.4.2.1 of the EIA Report ***(Pg. 147 of RV 1)***. Hence, it is submitted that the Appellants have conveniently ignored the description of *"study area"* with an intent to mislead this Hon'ble

Tribunal and have erroneously stated that the Subject Plant is being put up on prime agricultural land. It is submitted that the land on which the Subject Plant is proposed to be put up is classified as 'Barren Land' by Special Tahsildar, Land Acquisition and is owned by the Fourth Appellant ***(Pg. 5 to 19 of RV 2)***.

v. With regard to the allegation that Cumulative Impact Assessment was not carried out; it is submitted that the same was carried out using the AERMOD modelling of dispersion and upon studying the baseline of the entire Study Area upon consideration of all mines and TPPs functioning within the Study Area and the estimated emission from the Subject Plant, it was arrived that the NAAQ standards would be maintained, and the emission of the Subject plant would also be within the concentrated permissible limits ***(Pg. 244 of RV1)***. Hence, it is baseless and false to state that no Cumulative Impact Assessment was carried out. Further, pursuant to the application made in Form I, the ToR provided that the Cumulative Impact Assessment ought to be carried ought which was specifically adhered to by the Fourth Respondent and the results incorporated in the EIA report.

vi. With regard to the allegation concerning 'critically and highly polluted', it is submitted that Cuddalore is not one of the critically and highly polluted areas as falsely averred. It is also relevant to state that the village on which the Subject Plant is to be set up viz. Mudanai, Kunankurichi and Uthangal in Cuddalore District is not a critically polluted area. Even with regard to the SIPCOT Area, the Ambient Air Quality is normal as evidenced from the recent CEPI report of the CPCB, at Sl. No. 62, which forms part of an order of the Hon'ble Principal Bench of the Hon'ble NGT ***(Pg. 108 of RV 4)***. In specific terms, the Air is said to be normal in Cuddalore as it is categorised as 'An'. Be that as it may, the Subject Plant is not near the

SIPCOT Industrial Area in the town of Cuddalore and is around 40 kms away by aerial and road. At this juncture, it is relevant to state that even as per the EIA Notification of 2006, a category B industry would be appraised as a Category A industry only if the boundary of the said industry or plant falls within a radius of 5 kms of a critically polluted area. Therefore, even as per the EIA Notification, 2006, the distance of concern is 5 kms and not more. In this case, even as per the case of the Appellant, there is no critically polluted area within 5 kms of the boundary of the Subject Plant and hence, even from this point of view, the allegations of the Appellant regarding the purported critically polluted area is baseless.

vii. Further, it is submitted that the thermal power plants, associated mines and the ash pits of the Fourth Respondent are not the main source of heavy pollution in the Cuddalore district as evident from the studies conducted and the Ambient Air Quality prevalent ***(Pg. 244 of RV1)***. It is submitted that, as stated in the EIA report, the quality of air is within the NAAQ standards and will improve further by installing FGDs to the Fourth Respondent's older and existing thermal power plants ***(below table 4-12, Pg. 244 of RV1)*** thereby further reducing the emissions. It is submitted that the AAQ, after considering the existing plants and mines within the study area, was ascertained and the impact of the Plant was determined in the EIA using AERMOD. It is submitted that the Fourth Respondent has always been concerned about the environment and has constantly and periodically taken steps and safeguards to ensure that the environment is not impacted by virtue of its thermal power plants and mines. Further, it has ensured a large area of green belt within its premises which is also being implemented with regard to the Subject Plant.

viii. It is submitted that the case laws referred to by the Appellant viz. *Sarpanch Grampanchayat Tiroda Vs. MoEF* and *T Muruganandam & Ors Vs UOI and Ors* will not apply to the facts of the present case as the Impact Assessment was carried out within the Study Area. It is also relevant to state that the ToR had also directed the Fourth Respondent to consider the impact within the 'study area' which was accordingly carried. More so, when the study area with regard to the EIA pertains to a radius of 10 km and not just the core area of the Subject Plant. It is submitted that based on the study area of a radial of 10 km, it is evident that the air quality is within NAAQ Standards and that the AAQ will remain within the NAAQ standards even after the Subject Plant is in operation ***(Pg. 244 of RV 1)***.

ix. Hence, it is submitted that when the Subject Plant becoming operational, the various environmental parameters will still remain within the NAAQ standards as evident from the cumulative impact of the said Subject Plant as contained in the EIA report **(Pg. 244 of RV 1)**.

E. The averment that the Subject Project is not required to meet the energy requirements.

i. It is also submitted that the "Power Sector Report" published by CEA in its website gives the details of power supply position. It is further submitted that the Installed Capacity in India, as on 31.01.2017, was 3,14,642 MW. The per capita electricity consumption of the Country has increased to 1102 KWH in 2016 from 592 KWH in 2003. With the present growth rate of industrialization coupled with availability of power on demand, the per capita consumption would increase manifold in the coming years.

ii. It is submitted that the power scenario up to March, 2017, as per details available in the CEA website,

indicates that India, including the State of Tamil Nadu, suffer a peaking shortage of 2608 MW and 49 MW respectively. As per the 18th Electric Power Survey, the projected peak demand in India and Tamil Nadu in 2016-17 is estimated to be 1,99,540 MW & 20,816 MW, respectively. Taking into account the demand/ supply scenarios at the end of 12th Plan and 13th Plan Periods, provision of spinning reserve of 5 % need to be kept in the system as per National Electricity Policy. It is reiterated that the tariff would be quite lower from the Subject Project as the same is a pit head supercritical plant and hence, would also benefit the public at large.

iii. It is further submitted that as per study of the Committee on Optimal Energy Mix in Power Generation on medium and long term basis for the period 2022-2027, an additional coal-based capacity of 46,420 MW is required to meet the demand projections as per the 19th Electric Power Survey Report by the Central Electricity Authority viz. the **19th EPS** for the year 2026 – 27 ***(Pgs. 73 and 74 of RV4)***. This study has also taken into account the Coal (including lignite) based capacity of 47,855 MW already under construction during 2017-22 and likely retirement of coal-based capacity of 22,716 MW and 25,572 MW during 2017-22 and 2022-27, respectively. The study for the period 2022-27 reveals that a coal-based capacity addition of 46,420 MW is required to meet the demand projections as per the 19th EPS for the year 2026-27 ***(Pg. 74 at RV RV4)***. Hence, it is imperative that the Subject Plant is put up to meet the power demands of the future.

Submissions to the new averments made in the Rejoinder of the Appellant with regard to the alleged sufficiency of energy:

iv. The Appellant has referred to certain installed capacity of various sources of electricity in Tamil Nadu basis of

which, it is submitted that the actual available electricity and proposed demand cannot be ascertained. As per the Appellant, the total installed capacity during 2019 – 20 is 32,840 MW of which 14,352 MW is from Renewable Energy Source, 11833MW is from coal and 1791 MW is from lignite. This averment is flawed for various reasons including for the reasons that (1) the Fourth Respondent's plants supply electricity to various States apart from Tamil Nadu, (2) there is a difference between installed capacity and available capacity and (3) this does not consider the future demand of electricity that is required.

v. It is relevant to state that Renewable Energy Source such as solar based, wind based etc generates lesser electricity (CUF) are cyclic in nature and dependent on various conditions, including weather conditions. In specific terms, in so far as solar source of power generation is concerned, while they may function between 8 am to 5 pm in a day, the other source of generation, including thermal power source will have to step up during the period between 5 pm to 8 am. Therefore, the average Plant Load Factor from solar is 19% and from wind is 27.15%. In other words, the installed capacity of 14,352 MW, if wholly from solar, would only have an available capacity of only 2726 MW (19% of 14,352). With regard to coal, the average Plant Load Factor is 60%, hence, from a total of 13,624 (coal and lignite), the actual available electricity would be 8174.4 MW. Therefore, there is a large difference between what is installed and what is available and comparing the installed capacity, as erroneously attempted to and referred to by the Appellant, to the actual demand for electricity will not provide the true picture of the deficit in electricity.

vi. It is further relevant to state that the power generated from the Fourth Respondent is not only confined for the supply within Tamil Nadu, but also for the other states

viz. Andhra Pradesh, Telangana, Karnataka, Kerala and Puducherry. The Appellant has only referred to the installed capacity of electricity, albeit erroneously, confined to Tamil Nadu while the Fourth Respondent supplies electricity, through the grid to other States as referred to above.

vii. It is pertinent to state that the demand in electricity is further expected to increase considering the exponential growth in the industrial sector in the southern states which would consequently require necessary and adequate power to be supplied to those industries. The data referred to by the Appellant in the Rejoinder is only based for the period upto 2019 – 20 and does not consider the future demand as duly considered in EPS 19th report which categorically provides for the requirement of additional installed and available electricity. Hence, the Subject Plant is imperative for the aforementioned reasons as well.

viii. In so far as the plants enumerated by the Appellant having an installed capacity of 13074 MW, it is submitted that the averments are flawed for the reasons mentioned above and some of the plants do not have the installed capacity as indicated by the Appellant. Further, some of the plants are also reaching its age of retirement and hence, would likely be decommissioned adding to the further deficit in the available capacity of electricity within Tamil Nadu and other States. The EPS 19th report clearly indicate the deficit in the electricity that would occur in the not so far future which would then cause grave repercussions if the demand is not met. It is pertinent to mention that even after the new plants that are expected to be installed and retirement of old plants, there would be an additional requirement of 46,420 MW coal based thermal power plant – EPS 19th report ***(Pg. 74 of RV 4)***.

ix. With regard to the averments pertaining to start-up time or cost associated therewith, it is submitted that the question of start-up time only arises after the shut-down of a plant for maintenance related activities or any other reasons. When the plant is in continuous operation, start-up time or cost does not arise as the Plant is continuously running. Hence, the reference made by the Appellant to start-up cost is misplaced. It is however submitted that the operational cost of a super critical Plant is lesser than a sub-critical Plant.

F. The allegation that the questions raised in the Public Hearing have not been addressed by the EAC.

i. It is false to state that public concerns were not taken into consideration. It is submitted that each and every query raised during the public hearing on 15/02/2018 pertaining to the Subject Plant was responded to and the concerns were duly addressed. This is evident from the contents of Chapter 7 and Table 7-1 of the EIA report ***(Pgs. 272 – 297 of RV1 and Pgs. 149 -238 of RV 3)***. Public Consultation was also carried in accordance with the law. It is submitted that only after completion of public consultation, in accordance with law, was the Environmental Clearance granted by the First Respondent. Below is a reference to the paragraphs or points that were covered in the EIA Report (including response to the public consultation and minutes of the public hearing) in so far as the points of concern raised by the Appellant in its appeal:

S.No	**Public Hearing Concerns**	**Reference to the Sl. No of the minutes of the EAC dated 30/08/2018/ Reference in Documents filed.**

1.	There is no clarification provided for the need of land fill in a plane surface.	**ToR (X)/ Pg No.180 S.no 2 of RV III**
2.	There is no clarification regarding the whether the water requirement is after recovery from effluent treatment plant or without recovery.	**S.No (iX)/ Pg No.181 & 182 S.No RVIII**
3.	It was also taken up that the fuel requirement is mentioned as 10 MT in one document and 8 MT is another page of the application. If 10 MT of fuel is to be used then this project will shall not fall in supercritical thermal power plant category so requested clarification in the project report.	**S.No (vii)/ Pg No.183 & 184 of RVIII**
4.	It was also matter of concern that it is reported that fly ash generation would be 577.5 T/hr there will be increase in time and cost for the disposal of the same.	**S.No (xxiv)/ Pg No.186 of RVIII**
5.	According to the participants Pollution monitoring equipment should be provided in this village.Fly ash deposited in 70% to 80% of their agricultural land, and the lands become not fit for Agricultural purpose due to ash dumping.	**S.No (xxv)/ Pg No.195 & Pg No.198 & Pg No.199 of RVII**
6.	Few people also complained about dumping ash in the fertile agricultural lands.	**S.No (xxiv)/ Pg No.199, S.no 21 & 22 of RVII & Pg No.191, S.No.10 of RVIII**

	Ash from the power plant mixes with the water (Allegation in the Rejoinder of the Appellant).	
7.	People wanted purified drinking water facilities to be extended to the villagers.	The Fourth Respondent is providing water to nearby villages and through CSR activities, the Fourth Respondent has established drinking water supply wells for villages, also constructed overhead tanks and provided solar powered pumps for the use of the village after the authorities concerned including the Collector of the District providing permission to do the aforementioned activities.
8.	It was also stated that during the Public Hearing, public were affected by breathing problems as there was	**S.No (xvii & xviii)/ Pg No. 187, S.No 5 of RVIII**

	dust and pollution control in the area.	
9.	It was highlighted in the public Hearing that Due to air pollution, cancer decease has increased . It was stated that people are suffering from diseases and going to hospital . People also showed the concerned for health survey team to be formed to conduct health survey of the people and take the necessary action	**S.No (xvii , xviii & xix)/ Pg No.191, S.No.10 of RVIII**
10.	The Public at public hearing in their query numbers 4,7,8,10 & 18 have highlighted that people are effected that lungs and Kidney diseases. In reply to the query no 18, The project proponent states that there were proven studies for air quality and water purity to prove that kidney and TB diseases are not caused because of the Neyveli environmental conditions. However no such details of the proven studied have been named or cited and nothing annexure with the EIA report and the issue of Health impact has been evaded cleverly by the project proponent. Infact no health assessment study has been done in this case which can portray the actual health situation in the area surrounding the thermal power plant in question.	**S.No (xvii , xviii & xix)/ Pg No.196, S.No 18 of RVIII.**

11.	There was also a concern by public for forming a team to check in and to take in necessary action to control air pollution.	**S.No (20.2.3 (ii))/ Pg No.193, S.no 13 of RV III amongst various other places this is addressed.**
12.	There was concern about details to be provided for the transport of ash generated from the new power plant it is stated that EC specific conditions A (v) states that transportation of lignite shall be combination of closed and open conveyor system from the lignite mines. However, dust from open transport of lignite was mentioned repeatedly in the public Hearing comments and only a closed system should therefore be used.	**S.No (20.2.3 (v))/ Pg No.193, S.No 13 of RVIII**
13.	According to query no 5 which is to the effect that the village surrounding is effected with dust, Air and Water pollution due to the operation of NLCIL Mines & query no 11 which states that Lorry carrying lignite or Overburden from Mine I to Vadalore causing Dust Pollution and producing lung diseases and query no 13 which states that more than 200 lorries are moving from Mine I to Mine II in the village area in the Day time for transport of lignite and it causes dust pollution and vehicles also met with accident. Hence	**S.No (20.2.3 (v))/ Pg No.193, S.No. 13 of RVIII**

	transporting lignite by lorry from uncovered vehicles needs to be stopped.	

ii. It is therefore submitted that the Fourth Respondent had addressed all concerns of the Public that were raised during the public hearing and consultation. It is further submitted that the concerns of the public were considered by the EAC as evident from the aforesaid table and it is false to state that EAC did not consider the views expressed by the public during the public hearings. The Public Consultation process was carried out in a transparent manner and in accordance with Law. It is submitted that the Public Hearing and assessment made by the EAC was done in accordance with observations of the Hon'ble Delhi High Court in the cases of *Utkarsh Mandal Vs. UOI* and *Samarth Trust Vs. UOI.*

G. The allegation relating to false and misleading calculation of Ambient Air Quality:

i. It is submitted that the allegations regarding false and misleading calculations regarding the Ambient Air Quality is without any basis and incorrect. It is submitted that as per the baseline concentration after considering all mines and TPPs within the Study Area and the estimated increment at source (with 150 m height stack), considering the Subject Plant, the total concentration as compared to the NAAQ standards is as follows ***(Pg. 244 of RV 1)***:

Emission	**Max base line Conc.** (µg/m3)	**Estimated incremental conc. at source.** (µg/m3)	**Total Conc.** (µg/m3)	**NAAQ Standards** (µg/m3)	**% inc.**
PM	95.3	2.13	97.43	100	2.2

SO_2	17.8	7.11	24.91	80	39.9
NOx	29.1	7.13	36.23	80	24.5

ii. As evident from the above table, the Ambient Air Quality during the Study Period was well within the NAAQ Standards. It is further submitted that even after considering the proposed Subject Plant and the cumulative impact it would have on the environment after considering the other units in the Study Area, the Ambient Air Quality will be well within the NAAQ Standards. It is also pertinent to state that the EAC had after reviewing the cumulative impact of the Subject Plant, apart from various other factors, recommended the Environmental Clearance ***(Pg. 8, Paragraph H)*** as stated in the First Respondent's reply statement dated June 2020. With regard to the allegations regarding PM levels, it is submitted that the projected PM level is 2.13µg/m^3, which is a 2.2 % increase from the prevalent conditions. Hence, despite the expansion of the power plant by virtue of the Subject Plant, the impact envisaged is minimum. Be that as it may, it is submitted that the maximum GLC PM levels are within the NAAQ Standards. In so far as the SO_2 and NOx, the same were also within the NAAQ standards.

iii. It is submitted that the base line concentration and the estimated incremental concentration was arrived at based on a scientific approach and after following the norms stipulated under the ToR. In specific terms, as per the ToR and in accordance with the EIA Notification, 2006, the Consultant had carried out the atmospheric dispersion of air pollutant emission from the proposed Subject Plant using the AERMOD modelling methodology, for one season viz. March to May, 2017 by applying the wind-rose applicable from March to May, 2017. AERMOD is an advanced mathematical simulation modelling to estimate the air pollutants dispersed in the ambient atmosphere

from a particular source which in this case is the Subject Plant.

iv. It is further pertinent to state that the Ambient Air Quality Monitoring Data, for the study area, was conducted during the months of March to May, 2017 which is a non-monsoon season and when the climate is most oppressive and pollution level relatively high. This study was made from various locations and the maximum range within the Study Area was considered for arriving at cumulative concentration of emissions such as PM, NO_x and SO_2. It is also relevant to submit that the single seasonal study is in accordance with the EIA Notification, 2006 and the ToR. It is also relevant to state that all the wind directions, within and beyond the site, was considered for installing the monitoring stations and conducting the study.

v. It is submitted that as per the ToR, the locations of the monitoring stations should be decided so as to take into consideration the upwind direction, pre-dominant downwind direction, other dominant directions, habitation and sensitive receptors. There should be at least one monitoring station each in the upwind and in the pre-dominant downward direction at a location where maximum ground level concentration is likely to occur. It is submitted that the aforesaid conditions were complied with and there were monitoring stations installed in the up-wind direction and down-wind direction and other dominant direction. Further, there were also other monitoring stations installed in the other directions and in all 12 monitoring stations were installed and detailed studies conducted ***(Pg. 175 & 176 of RV1)***.

vi. It is incorrect to state that 5 years of metrological data is required to apply the AERMOD methodology and this allegation or averment on the part of the Appellant is without any basis. Be that as it may, the Secondary Data

is based on 29 years of data (1971 to 2000) available with the IMD and the Primary Data is based on March to May, 2017. It is submitted that the study was conducted during the most oppressive time of the year viz. the summer season i.e. March to May, 2017 and despite studying the baseline during such an oppressive period, the PM levels were well within the NAAQ standards along with all other emissions. Hence, it is submitted that the Consultant has carried out the ambient air quality study in accordance with the Law and the TOR.

vii. It is further submitted that Figure 3-20 of the EIA report ***(Fg. 172 of RV 1)*** is with reference to IMD data of Cuddalore in general over several years i.e. 1971 to 2000 (not confined to 2017) for the period of March to May which is regarded to ascertain the likely wind direction whereas Figure 3-21 ***(Pg. 173 of RV1)*** pertains to the Study Area wind direction for the period March 2017 to May 2017 which was prevalent when the study was carried out and according to which the AERMOD modelling was applied. It is reiterated that the monitoring stations were installed in all directions and covered the dominant upwind, downwind and other dominant wind directions, both as per the IMD data and as per that ascertained during March – May 2017. The study was carried out during the summer season when it is most oppressive. It is further submitted that the First Respondent, vide the ToR, had directed Fourth Respondent to carry out one non-monsoon seasonal study which was accordingly carried out by the Consultant. It is pertinent to state that after considering the site conditions with regard to the Subject Plant for the period March – May, the Consultant had concluded that the Ambient Air Quality will be within NAAQ standards.

viii. It is relevant to state that to ascertain the impact of the Subject Plant based on the data collected, the highest of

the AAQ levels were considered and the impact of the Subject Plant were ascertained and recorded in the EIA Report.

ix. At this juncture, it is relevant to submit that clause/ condition A(XIII) of the Environmental Clearance stipulates that the Subject Plant shall *"ensure that particulate emission does not exceed 50 mg/Nm3 or as would be notified by the Ministry, whichever astringent"*. As per the particulate emission parameters set out in the notification dated 7/12/2015 issued by the First Respondent, the same is restricted to 30mg/Nm3 which is more stringent than 50mg/Nm3. Hence, as per the Environment Clearance, the emission of particulate matter shall be restricted to 30mg/Nm3 and not 50 mg/Nm3 which shall be certainly adhered to by Fourth Respondent.

x. It is further submitted that the projected GLC levels with regard to the Subject Plant is arrived at after considering the ash content and sulphur content in the lignite.

xi. It is also relevant to submit that the Mercury emitted from all the existing thermal power plants of the fourth Respondent, even before installation of FGD (and with ESPs in place) , is within the specified norms. For instance, the mercury levels of TPS II, using similar lignite, is 0.0169 mg/nm3 while the limit under the notification dated 07/12/2015 is 0.03 mg/nm3. This analysis was carried out on 25/10/2019. As stated in the EIA, mercury abatement would also occur through the use of FGD, ESP and DENOX system. This is due to the inherent design of wet FGD and DeNox. Therefore, the levels of mercury would further reduce so far as the Subject Plant is concerned. It is also submitted that the chlorine in lignite used in the thermal plants of the Fourth Respondent ranges from 0.04% to 0.06% which will not have any effect

on the FGD. It is also revenant to state that the Subject Plant would be equipped with a stack emission monitoring system which would also monitor the mercury levels emitted.

xii. Further, as per the Radioactivity study conducted on the mines in the Fourth Respondent by Bharath Atomic Research Centre in 1999 ***(Pgs. 112 – 113 of RV 3)***, it was found that all the activity levels of the lignite are much below the activity levels in the Indian soil.

Installation of equipment and other monitoring mechanism:

xiii. It is submitted that the Subject Plant shall be equipped with ESPs, FGD and DENOX system as stipulated under clause 11 and 12 of the Environmental Clearance. This is also specifically provided for in the EIA report. It is submitted that as per clause 11 and 12 of the Environmental Clearance, the ESPs and the FGD system should be installed so as to meet the parameters set either by the First Respondent or the Central Pollution Control Board. The present parameters, as referred to above, are stipulated in the notification dated 07/12/2015 issued by the First Respondent. Needless to state that the Subject Plant shall adhere to such parameters.

xiv. It is submitted that the Environmental Clearance further provides that the FGD system shall have limestone scrubber of a proven design to ensure that the emission parameters are met. The norms for installation of FGD as issued by the Central Electricity Authority of India **(CEAI)** w.e.f. 21/02/2019 provide that the base cost estimate for installation of the FGD shall be Rs. 37 lakhs per MW. This would amount to Rs. 488.40 crores based on 1320 MW. However, the Fourth Respondent proposes to spend an amount of Rs. 560 crores which is also referred to in the EIA report ***(Pg. 333 of RV 1)***. It is submitted that the FGD and the ESPs would be designed, installed and operated

so as to meet the requisite environmental parameters set by the First Respondent or the Central Pollution Control Board.

xv. Further, it is submitted that the Central Pollution Control Board vide it's letter bearing reference no. B-29016/04/06PCI-1/5401 dated 05/02/2014 issued directions under section Act 18 (1) (b) of the Water (Prevention and Control of Pollution), 1974 and Air (Prevention and Control of Pollution) Act, 1981 to the State Pollution Control Boards. As per the aforesaid directions, each thermal power plant such as the proposed Subject Plant shall ensure installation of an online emission quality monitoring system **(OEQMS)** as part of the CEMS. The OEQMS from each of the stacks of a plant shall be connected to the server of the Central Pollution Control Board and the relevant State Pollution Control Board. Therefore, it is submitted that there shall be continuous monitoring of the levels of emissions of PM, SO2 and NOX by Central Pollution Control Board and the relevant State Pollution Control Board. It may also be possible that the parameters for installation of FGD may become more stringent in future depending upon the advancement in the optimum technology.

xvi. With regard to NOx levels, the Environmental Clearance stipulates that the Subject Plant shall be installed with DeNOx technology which is a Selective Catalytic reduction technology and that CEMS shall be installed for each of the Units to ensure continuous monitoring. Hence, it is submitted that the Environmental Clearance categorically stipulates that the SO2 and NOx emissions from the Subject Plant shall be within the environmental norms. With regard to the aforesaid, it is submitted that the EIA stipulates that *"In order to meet the new power plant standards, NLCIL proposed to install higher efficiency electrostatic precipitators to meet the emission level below*

30 mg/Nm3. The envisaged uncontrolled SO2 emissions from each boiler will be in order of 5775 Kg/hr. In order to meet the new power plant standards, a flue gas desulfurization unit (FGD) will be installed to remove about 95% of the SO2emissions from the power plant. Similarly, low NOx burners to maintain NOx levels below 100 mg/Nm3as per the new power plant emission standards.".

H. The allegation that the Environmental Clearance was based on faulty data in the EIA regarding fuel input and ash content.

i. It is submitted that the Appellant has incorrectly based the alleged total ash generation by considering the maximum ash content of 9.9% or 10% and not the average ash generation. It is submitted that the average ash content is 4.83% ***(Pg. 106 of RV 3 – Fuel analysis report of Mine III)*** and not 10% and the estimated total ash generation ought to be based on the average ash content of 4.83%. It is submitted that the EIA report has considered 10% i.e. the maximum ash content for the purpose of determining the ash-generation/ handling/ disposal system, however, the actual ash generation has rightly been considered and determined on the basis of the average ash content of the lignite. In this regard, after analysis of the Lignite samples in Mine III, which is more or less a single lignite, the study of ash content and other elements have been considered and analysed based on which the EIA report including table 2-15 was prepared ***(Pgs. 131 of RV 1 r/w 107 of RV 3)***

ii. The total lignite consumption for the Subject Plant is 8.09 MTPA at 80% of the Plant Load Factor (PLF). The lignite consumption of 8.09 MTPA is arrived on the following basis:

- Lignite consumption for each of the 660 MW/H Subject Plant at 100% PLF = 577.5 TPH. It is

pertinent to state that the Subject Plant will run at a PLF of 80%

- For 2 Units at 100 % PLF = 1155 TPH (577.5 X 2 Plants).
- Hence, per year = 1155 TPH X 24 X 365 days = 101,17,800 TPA on the basis of 100 % PLF.
- On the basis of 80% PLF = 80% of 101,17,800 TPA = 80,94,240 TPA (8.09 MTPA).

iii. The ash (both fly ash and bottom ash) that would be generated on 8.09 MTPA of lignite, based on the average ash content of 4.83 %, would amount to 0.39 MTPA. It is submitted that fly ash, on a conservative basis, constitutes 80 % of the total ash generated which amounts to 0.312 MTPA. It is relevant to state that when the ash content is rounded to 5% (i.e. more than 4.83% which is the prevalent average ash content of the lignite), the total ash generated would be 0.405 MTPA and the fly ash generated would amount to 0.32 MTPA i.e. 80% of 0.405. Hence, it is submitted that the First Respondent has, in the Environmental Clearance, after proper appraisal by its EAC and application of mind, limited the annual ash generation to 0.405 MTPA (on the basis of considering the ash content as 5%), out of which fly ash is to be restricted to 0.32 MTPA i.e. 80% of ash generation ***(Pg. 133 of RV 1)***. It is also submitted that there is high demand for ash in the market and hence, the Fourth Respondent will be supplying all its ash to cement companies for which Consent Letters are in place with various cement companies ***(Pg. 103 and 104 of RV 3)*** which has also been stated in the EIA Report ***(Pg. 51 of RV1)***. In so far as bottom ash is concerned, the same also has various uses, including in the road laying related activities etc.

iv. At this juncture, it is also reiterated that the radioactivity study of the lignite in mines of the Fourth Respondent was conducted by Bharath Atomic Research Centre **(BARC)** and

upon analysing, it was determined that the samples were much lower than the activity levels in the 'Indian Soils' ***(Pg. 112 – 113 of RV3)***.

I. The allegation that the Environmental Clearance is based on faulty Sulphur content.

i. It is submitted that the average Sulphur content of Mine III is 0.67% ***(Pg. 107 of RV 3 – Fuel analysis report of Mine III and Pg. 131 of RV 3)***. The emission level using AERMOD was based on the average Sulphur content of 0.67% in lignite. It is submitted that in the reply to CAG/ NGO, during the Public Hearing (Appendix VI) ***(Pg. 208 of RV III)***, it was clarified that the emission levels referred to in the EIA/ EMP are calculated based on the Sulphur content of 0.67%. The reply to the comment is reproduced below:

"Air pollution control system FGD is used for SOx removal. Sulphur content of 0.67% (table 2-16) is mentioned in the EMP Report and the emission is calculated based on this figure".

ii. It is submitted that the Fourth Respondent shall install FGD systems to ensure drastic reduction of SO2 levels and which shall be designed and installed to operate, as specified, for 24 hours per day, 7days per week, 365 days per year, except during unit outages. Further, the Sulphur content in the liquid fuel ought not to exceed 0.50% which is also provided in the EIA.

iii. It is submitted that by virtue of installation of FGD systems for the purpose of drastic reduction in SO_2, Gypsum would be released due to the presence of lime scrubbers. It is estimated that about 11.88 tons per day of Gypsum would be generated from the FGD ***(Pg. 53 of AV 1)***. As there is a lot of demand for Gypsum in the market from cement companies and the same would be marketed

or disposed to such cement plant or building materials or used for backfilling in the mines in accordance with the law, the generated Gypsum would be put to use. The Gypsum released from FGD systems is not classified as hazardous under the Hazardous and other Wastes (Management and Trans boundary Movement) Rules 2016, Notification No. G.S.R No. 395 (E) dated: 04.04.2016 (2016 Rules) ***(Pg. 19-24 of RV 4)***.

J. Allegation as regards insufficient data to support water use allowed in the Environmental Clearance and Insufficient data in EIA regarding availability of water.

i. It is submitted that the total water requirement for the Subject Plant is 4215 m3/ hr. This is also depicted in the table under para 2-12 to the EIA ***(Pg. 120 of RV1 and Pg. 250 of RV 1)***. It is pertinent to state that in a thermal power plant, majority water is utilised for the cooling tower. Out of 4215 m3/ hr, the total raw water or fresh water requirement is 3299 m3/ hr and the recycled water is 916 m3/ hr (for the main plant) + 463 m3/ hr for the ash handling system. Therefore, based on the Subject Plant capacity of 1320 MW (660 MW + 660 MW) and the raw water requirement of 3299 m3/ hr, the specific water consumption amounts to 2.49 m3/ MWhr. Therefore, adhering to limit of 2.50 m3 / MWh produced which is within the threshold stipulated in the Notification S.O. 3305 (E) dated 07/12/2015 issued by the First Respondent. It is false to state that the Water Balance Diagram ***(Pg. 121 of RV 1)*** envisages contamination of 9.9 million litres of water for ash transport. Infact, there would be Zero Liquid Discharge. The EIA report provides a detailed study of quantity of water that would be required and recycled and further shows the Zero Liquid Discharge of the Subject Plant. As evident from the Water Balance Diagram, 463 m3 / hr would be recycled through the AWS ***(Pg. 121 of RV1)***.

ii. It is submitted that 'Source of Water' or source of raw water for the Subject Plant would be from all the mines of the Fourth Respondent, including Mine III and stored in the plant Lake (Thermal Lake). It is submitted that no ground water source will be tapped within the Subject Plant for the use pertaining to the operation of the Subject Project. Detailed water drawl study has been undertaken in order to confirm the availability of requisite quantity of make-up water for the proposed expansion. It is submitted that the total raw water or fresh water requirement for the Subject Plant is 3299 m3/hr. It is submitted that the water to be utilised from Ground Water Control (GWC) is 1363 m3/hr, from Seepage Well Pumping 545 m3/hr and Storm Water Pumping is 2181 m3/hr which totals 4089 m3/hr which is more than the raw water requirement of 3299 m3/hr ***(Pg. 119 and 250 of RV1)***.

iii. It is submitted that in so far as the GWC requirement of 1363 m3/hr; it is submitted that as per the detailed study pertaining to Mine III alone viz. 'Groundwater Flow Study Development Plan for NLC Mines Area and its Expansion' prepared by IIT, Madras, the pumping rate of ground water would meet the demand of 1363 m3/hr. In specific terms, the pumping rate of GWC water with regard to Mine III alone is an average of 5000 GPM (Imperial Gallons per minute) which amounts to **1362 m^3/Hr.** (i.e. 5000 GPM X 4.54 X 60 minutes/ 1000) ***(Pg. 4 of RV 5)***. With regard to Seepage Water, it is submitted that the average quantity in Mine III alone is 2000 GPM which is **544.8 m^3/Hr** ***(Pg. 3 of RV 5)***. (i.e. 2000 GPM X 4.54 X 60 minutes/1000). With regard to the Storm Water, it is submitted that Mine III is designed to pump 1,50,000 GPM which is the highest capacity. Hence, it is submitted that with a minimum of 8000 GPM against the probability of 1,50,000 GPM, which is about **2181 m^3/Hr** (i.e. 8000 GPM X 4.54X 60/ 1000), the Storm Water requirement would be met even during

lean period. Therefore, considering the GWC, Seepage and Storm Water from Mine III alone, the total available water, at a minimum, would be **4089 m^3/Hr** as against the actual fresh water need of 3299 m^3/Hr.

iv. At this juncture, it is relevant to state that the Fourth Respondent has consistently reduced the utilisation of water for its Thermal Power Plants, Mines and its Township Administration requirement (TA) over a period of time by taking various water conservancy steps. In specific terms, the pumping rate for the period 2018 – 2019 was reduced to 99.97 million cubic meter per annum ***(Pg. 128 of RV 4)*** as against 146.59 million cubic meter per annum in 2010 - 2011. It is also relevant to state that despite the First Respondent having stipulated conditions to maintain the pumping of water within 149.73 million cubic meter per annum ***(Pg. 1 of RV 4)***, the Fourth Respondent has diligently taken steps to reduce the pumping of water over a period of time and has reduced the pumping rate to less than 100 million cubic meter per annum. It is further submitted that the Fourth Respondent's pumping of confined acquifiers does not in any way impact the water table of the surrounding villages.

v. It is pertinent to state that the GWC, Seepage water pumping and Storm Water pumping is necessitated for the following reasons:

a. <u>Seepage Water Pumping (545 m^3/ hr):</u>

Seepage Water is pumped from the Semi Confined Aquifer to ensure that the mines are dry and safe during excavation and to ensure smooth removal of overburden which is necessitated for the safety of its personnel.

b. <u>Ground Water Control (1363 m^3/ hr):</u>

Ground Water Control pumping is mandatorily done from the confined aquifer (upper) during mining to

ensure that the water is de-pressurised so as to ensure that the entire mine is not flooded and thereby causing danger to the miners and other persons in the mines.

c. Storm Water Pumping (2181 m^3/ hr):

Storm Water Pumping from the storm water pits is carried out to ensure that there is no breach of the bund holding this storm water failing which, the water would overflow into the mines causing danger to the miners and other persons in the mines.

vi. It is submitted that the Fourth Respondent will not extract ground water within the Subject Plant but will only utilise water from the Mines that mandates pumping and other treated water which is in compliance with the ToR and the Environmental Clearance. In specific terms, the seepage water will be tapped from Semi-Confined Acquifier and GWC from the Confined Acquifier (Upper). The requirement to pump the water is already stated above and it is not reiterated for the sake of brevity.

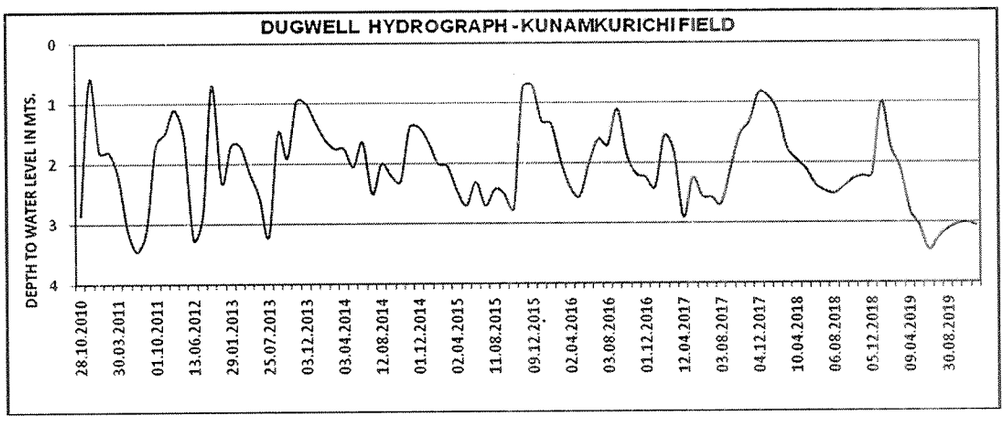
vii. It is also submitted that the source of raw water is Mine III amongst other mines and the rest of the water would be sourced from the water treated by the Fourth Respondent. It is categorically submitted that no other standing water body or stream, including the nallas, would be utilised as a source of water for the Subject Plant.

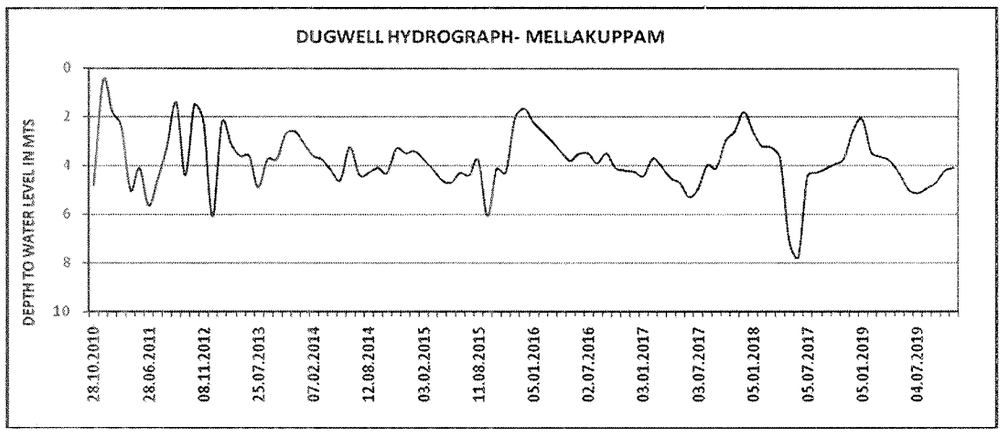
viii. The Fourth Respondent has referred to the IIT, Madras Report and the hydro-geological study conducted by the Central Ground Water Board. It is submitted that the details of GWC, Seepage and Storm Water sources are based on the ground reality and backed by various studies, including the study conducted by IIT, Madras ***(Pgs. 63-67 of RV 4 and Pgs. 1-4 of RV 5).*** As per these studies, it is evident that the water requirement would be sustained from Mine III alone. At this juncture, it is pertinent to state that the water requirement for the

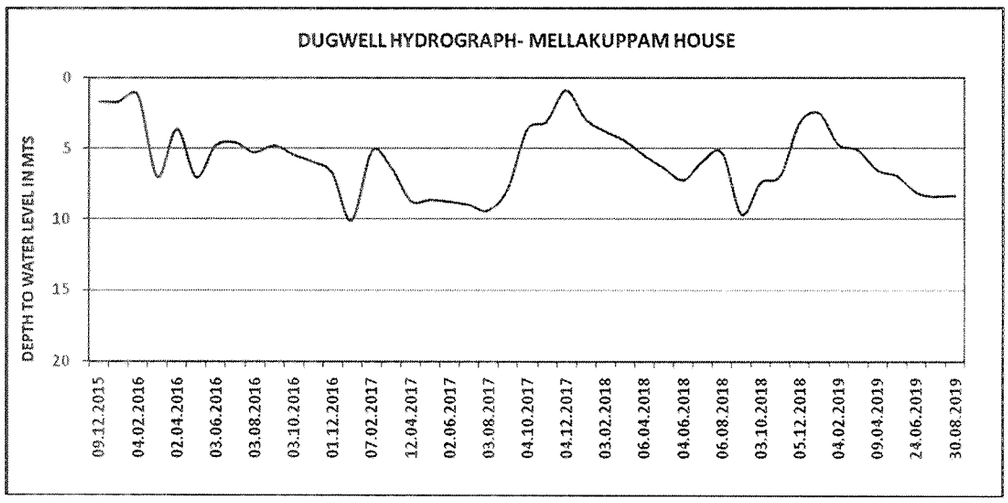
Subject Plant would also be met from the Storm Water pits of the other Mines excluding Mine III.

K. The allegation that the water table level has declined by 61 meters within the vicinity of the TPS – II Project:

i. It is denied that there was a decline of 61 meters in the vicinity of TPS- II project. It is submitted that the Fourth Respondent and the Central Ground Water Board jointly monitors the ground water levels of the entire Neyveli Basis (3500 Sq. kms.) ***(Pg. 16 of RV 4)*** and the data is being submitted to the First Respondent once in 3 months. As per the said report, it is evident that the ground water levels increase or decrease due to rains/ monsoon effect and is not attributable to mining related activities. Further, it is submitted that the ground water has not gone below 10 meters for the period 2010 – 2019 as against the allegation of 61 meters made by the Appellant. A graph of the water table levels/ unconfined acquifier levels based on dug wells within the vicinity of TPS II (i.e. 1-1 ½ kms from the project site) is as follows:







ix. The ground water levels within the Subject Plant would be in the same depth and not less than 10 meters. Hence, as stated above, it is reiterated that the Fourth Respondent's pumping of confined acquifiers (upper) does not in any way impact the water table of the surrounding villages. It is also submitted that while the site is within the village Mudane, Kanaikuruchi and Uthangal, the reason for extracting details of water levels in the above locations is due to the allegation regarding the 'vicinity' of the Thermal Power Plant -II Project and not the Subject Project itself. Further, as per the water table in March, 2021, the water level in Mellakuppam is 3.20 meters and in Kunankurichi is 0.90 meters.

x. At this juncture, it is relevant to state that the First Respondent is carrying out several CSR related activities in the interest of the surrounding villages. For instance,

the Forth Respondent has carried out the desilting of Wallajah tank in the year 2014 – 2015 wherein the storm water from its mines are stored in the tank, amongst other sources. The said tank is supplying water for direct irrigation of 11,500 acres through 11 sluices and 5780 Acre in downstream through Perumal Eri supply sluice.

L. The allegation that the Fourth Respondent has failed to carry out a hydro geological study.

i. The various allegations made by the Appellant are false and baseless. It is submitted that hydro-geological study was conducted by the Central Ground Water Board ***(Pg.12 of RV 4)*** wherein it was confirmed by the board vide its report of October 2015 that the Neyveli Hydro Geological Basin, which is spread over an area of 3500 sq. kms (including the study area of the Subject Plant), is safe even after considering the present rate of pumping and that there is no threat to seawater intrusion ***(Sl. 32, Pg. 132 of RV 3)***. It is vehemently denied that this was a generic 2009 report as falsely stated by the Appellant. It is also relevant state that IIT, Madras had also conducted a hydro-geological study with regard to the mine water generation, treatment, disposal and its impact on groundwater surface water and soil of all the mines as evident from the study area in the aforesaid report of November, 2015 ***(Pg. 334 at 336 of RV 2)*** i.e. 11° 42' N to 11° 62'N. It is further submitted that the ToR does not refer to any hydraulic evaluation of the plant site as no ground water within the Subject Plant would be utilised for the purpose of construction or operation of the Subject Project. It is reiterated that the Consultant had categorically stated in the EIA that the secondary data was collected from Government and Semi-Government organisation and that the primary baseline data pertaining to the 'study area' has been generated by the Consultant.

ii. It is submitted that the primary baseline data pertaining to the 'study area' has been generated by the Consultant. Further, at paragraph 3.4.6 of the EIA, the Consultant had also considered the 'study area' and stated that it mainly covers sandstones. It is also submitted that with regard to paragraphs 3.4.8 to 3.4.10, the Consultant has specifically observed about the 'study area' and also incorporated the drainage patterns of the 'study area'. Hence, the relevant paragraphs with regard to EIA pertains to the study area. The Fourth Respondent vehemently denies that it has violated the terms of the ToR.

M. The allegation that the Fourth Respondent has failed to perform hydraulic evaluation of plant site.

i. It is submitted that the ToR does not refer to any hydraulic evaluation of the plant site as no ground water within the Subject Plant would be utilised for the purpose of construction or operation of the Subject Project. It is reiterated that the Consultant had categorically stated in the EIA that the secondary data was collected from Government and Semi-Government organisation and that the primary baseline data pertaining to the 'study area' has been generated by the Consultant. With regard to Figure ref no. 3-27, it is submitted that the same depicts pre-monsoon and post-monsoon depth of water level within Cuddalore District, including the Subject Project site. As per the said figure, the ground water for the month of May 2006 was 5-10 meters and for the month of January 2007 was 2-5 meters, hence evidencing that there was an increase in water levels after monsoon. It is submitted the surface water and ground water collection locations are provided in the EIA at Figure Nos. 3-26 ***(Pg. 191 of RV 1)*** and 3-28 ***(Pg. 198 of RV1)***, hence, the locations are expressly mentioned. It is further submitted

that the dates on which the tests with regard to Surface Water and Ground Water are collected are mentioned in Test Report pertaining to the baseline studies.

N. The allegation that there is inadequate demonstration that the Subject Project will meet zero liquid discharge.

i. With regard to the allegation concerning Zero Liquid Discharge **(ZLD)**, it is submitted that the EIA provides that the wastewater treatment system shall be designed to collect wastewater from all sources in the Subject Plant and provide treatment to enable it to be reused in the power plant to achieve ZLD (refer ***Pg. 121 of RV 1*** – Water Balance Drawing). The Water and Wastewater Management Plan under the EIA also provides that the Subject Plant will be operated by reusing the water used for cooling tower blow down for bottom ash handling, fly ash conditioning, make up to the evaporation losses in the ash pond area etc so as to achieve ZLD (complete reuse of treated wastewater in the plant). In this regard a suitably designed Reverse Osmosis plant would be installed to treat the water for the cooling tower blow down process ***(Pg. 122 of RV1)***. It is also provided that other stream wastewater, if any, will be collected in a collection pit and will be subjected to neutralization and will be reused for ash conditioning and bottom ash handling operations. Any excess utilised wastewater from the aforesaid process will be collected in a lined polishing pond and will be reused in the Subject Plant, on demand. It is also relevant to state that the Environmental Clearance also mandates ZLD.

ii. In reply to the erroneous allegation that as per Figure 2-2 ***(Pg. 121 of RV 1)*** of the EIA, the Fourth Respondent would only recover 50 m3/ hr from the Ash Pond for re-use and that 9.9 million litres (413 m3/ hr X 24 hrs) of contaminated ash transport water would allegedly be discharged; it is submitted that the 50 m3/ hr is with

reference to the water reused from the FGD into the AWS and hence, there is no basis for deducting 50 m3/ hr from 463 m3/ hr to arrive at 413 m3/ hr. The total water that would be re-used into the AWS, along with 50 m3/ hr from the FGD would amount to 463 m3/ hr which will flow into the Ash pond and thereafter reused again in the AWS to an extent of 463 m3/ hr. Hence, it is baseless to state that 9.9 million litres of water that is contaminated would be used to transport ash to the ash pond per day. The aforementioned 50 m3/ hr is from the 300 m3/ hr used in the FGD, of which 250 m3/ hr would evaporate and 50 m3/ hr alone would be recycled into the AWS. It is submitted that as no effluent water is discharged beyond the Subject Plant area, the Subject Plant is categorised as a ZLD plant. It is submitted that the ash pond will be designed in such way that the ash particles settle down on the surface of the pond and only the clarified water shall flow through the AWS.

O. Allegations that the Health Impact Assessment study has not been done:

i. It is submitted that the Health Impact Assessment Survey, including the impact on account of the Subject Plant and mitigation steps was prepared as part of Social Impact Assessment Report which forms part of Annexure 9 of the EIA ***(Pg. 105 at RV 2)***. It is submitted that as the AAQ would be within NAAQ standards and the increase in levels of PM, SO2 and NOx are marginal as compared to the existing baseline, the Subject Plant would not have any impact on health of people. Hence, the EIA states that due to the clean rural ambience and working nature, there is no major ailment. As per the said assessment, the last one year, *"only 30.09 % of respondents had health issues. Normal fever, viral fevers, Jaundice etc. are common ailments in the area. The other major health issue they mentioned is Urinary tract infection.*

The preference of going to the Private hospital/ clinic (67.68%) is high when compare to the urban areas, affordability and transportation facilities" ***(Pg. 123 of RV 2).***

ii. The Consultant had also carried out public consultation and interaction with regard to health which also forms part of Social Impact Assessment. It is therefore false to state that Health Impact Assessment Study was not conducted. It is submitted that as a part of the Corporate Social Responsibility (CSR) of the Fourth Respondent, in addition to the health programmes already conducted, it proposes to create health infrastructure in the form of primary health centre, which will be beneficial to the employees and also local people living in the region as their dependence on nearby towns and cities for quality medical treatment will be reduced. As part of CSR, it is also proposed to conduct periodic health camps and carryout health campaigns which will lead to better health conditions of the people.

P. The allegation that the EAC has recommended the Subject Project without due application of mind (Pg. 40).

i. It is submitted that the EAC has recommended Environmental Clearance for the Subject Plant after due application of mind and after proper appraisal in terms of the EIA Notification, 2006. It is also relevant to state that the EAC comprises of expert members and had conducted site visits prior to recommending the Subject Plant and issuance of the Environmental Clearance by the First Respondent. All the materials were placed before the EAC pursuant to which, the EAC recommended the Environmental Clearance after providing reasons for such recommendation. The Appellant has erred in stating that the EIA study is bereft of a number of studies and reports and the Fourth Respondent refers to the Annexures

pertaining to the various studies which the Appellant alleged were not carried as referred to in the below table:

S.No	Appellant's Allegation	Reply in the EIA Report
a.	Sub-committee's recommendation made during the site visit on 4-5th February, 2017.	**Annexure – 07**
b.	Request letter to DG-CSIR for facilitating the alternate new technologies available for utilizing of dry fly ash to enhance its utilization levels	**Annexure - 13**
c.	Carbon Footprint Study	**Annexure - 19**
d.	Need based assessment study/skill mapping for all the villages located in 10 km radius from the project site.	**Annexure – 09** **(Pg No. 135-136)**
e.	Detailed and time bound action plan for phasing out of existing unit i.e. TPS-I along with waste management plan.	**Annexure A-20.**
f.	Source of water and its sustainability even in lean season along with details of ecological impacts arising out of withdrawal of water and taking into account interstate shares, if any.	Water requirement is water pumped out from NLCIL Mines including Mine III through TPS II Reservoir. Hence, the concept of lean season does not arise.
g.	Vision document specifying prospective long term plan	**Appendix –II** **(Pg No :531 ToR Compliance)**

h.	Hydro geological study of the area through an institute/organization of repute.	**Annexure – 14**
i.	Detailed studies on the impacts of the ecology including fisheries of the river/estuary/sea due to the proposed withdrawal of water/discharge of treated waste water into the river/sea which were to be submitted along with EIA report.	There will not be any discharge or consumption of water from river/ estuary / sea.
j.	Detailed plan for rainwater harvesting and its proposed utilization in the plant.	**Annexure – 11** The Storm water pit of mines alone to be utilised. No ground water from project site to be utilised.
k.	Socio economic study of the study of area comprising of 10 km from the plant site (to be carried out through reputed institute/agency) consisting of detail assessment of the impact on livelihood of the local communities.	**Annexure – 09**
l.	In case of expansion of project, air quality monitoring data of 104 observations a year for relevant parameters at air quality monitoring stations assessing for compliance of AAQ standards (annual average as well as 24 hours).	AAQ Monitoring being carried out 104 measurements at 12 locations and results are well within the NAAQ Standards, 2009. Results are given in EIA Report, Chapter 3, Table 3-8.

m.	Cumulative impacts assessment study	**EIA report (Pg. No: 164 to 192)**
n.	Radio activity and heavy metal contents of coal which were to be sourced had to be examined and submitted along with laboratory reports.	**Annexure 24 (Pg. No :519 to 520 r/w 112 to 113 of RV3)**
o.	Details of transportation of fuel from the source (including port handling) to the proposed plant and its impact on ambient AAQ had to be suitably assessed and submitted.	**EIA report (Pg No: 48 to 49)**
p.	Detailed scheme for raising green belt of native species of appropriate width (50 to 100m) and consisting of at least 3 tiers around plant boundary with tree density of 2000 to 2500 trees p.a. with good survival rate of around 80% shall be submitted.	**Annexure -21, Annexure -06, Pg. No:77 to 78.**

5. It is submitted that the Environmental Clearance has been granted after applying the principles of sustainable development and the precautionary method principle. As evident from the studies conducted and available on record, the NAAQ levels within the Fourth Respondent's plants are within the limits prescribed and even after setting up of the Subject Unit, the limits will be within that stipulated. The Environmental Clearance mandates various mitigations measures such as installation of FGDs, ESP, DENOX etc; and to ensure that the emissions are monitored, installation of an online continuous monitoring system for stack emission, ambient air and effluent is also mandated. The Environmental Clearance, in condition No. 24, further provides that the same would be revoked if the conditions stipulated are not adhered to and that additional conditions may be inserted or conditions modified, if necessary.

6. It is submitted that above appeal is baseless and frivolous in nature and lacks merit. The Environmental Clearance granted to the Fourth Respondent for setting up an expansion project viz. the Subject Plant is strictly in accordance with the law and was granted after considering the concerns of the public.

Hence, for the reasons aforementioned, it is most respectfully prayed that this Hon'ble Tribune be pleased to dismiss the Appeal (Appeal No. 13/ 2019) filed by the Appellant with costs and pass any such further or other orders as this Hon'ble Tribunal deems fit and proper and thus render justice.

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