BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL
SOUTH ZONE BENCH, CHENNAI
ORIGINAL APPLICATION NO. 122/2021(SZ)

IN THE MATTER OF

R. Ravimaran ...Petitioner

Versus

Union of India and Ors. ...Respondents

REPLY AFFIDAVIT ON BEHALF OF MINISTRY OF ENVIRONMENT, FORESTS & CLIMATE CHANGE, RESPONDENT NO. 1

MOST RESPECTFULLY SHOWETH:

I, Dr. C. Kaliyaperumal S/o Chinnakkannu aged about 60 years, presently working as Scientist (F) in the integrated Regional Office of Ministry of Environment, Forest & Climate Change (MoEF&CC), at Chennai, do hereby solemnly affirm and declare as under:

1. That I am duly authorized by the Ministry of Environment, Forest and Climate Change, Respondent no.1 to swear this affidavit and I am conversant with the facts and circumstances of the present case and am thereby competent to depose as under:

2. It is submitted that the present application has been filed on account of alleged ongoing illegal construction of ash pipelines and other infrastructure – which are part of 800 MW North Chennai Thermal Power Station Stage III Project, in Coastal Regulation Zone (hereinafter referred as 'CRZ') areas and non-tidal water bodies without mandatory clearance under Environment Impact Assessment Notification, 2006 (hereinafter referred as EIA Notification 2006) & CRZ Notification, 2011. It is alleged that Kosasthalaiayar river, which is essential for fish population, has been illegally encroached, obstructing and diverting the water flow and tidal

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movement due to construction of bridge like structures to lay new pipelines that will carry ash from Stage III power plant which is currently under construction. Further, it has also been stated in the application that ash generating from the currently operational thermal power plant is contaminating the water bodies due to leakage of ash slurry from the ageing pipelines. As a consequence, water quality has degraded and livelihood of fishermen has been severely affected. In lieu of this alleged environmental damage the applicant has claimed payment of compensation.

3. It is submitted that in light of above, the applicant had sought relief as mentioned below:

   i. *Direct Respondents No. 1 to 5 to forthwith demolish the illegal structures constructed by the 4th and 5th respondents to carry pipelines to transport coal ash across the backwaters and main channel of the Kosasthailayar river.*

   ii. *Direct the 4th and 5th respondents to utilize the pipelines procured by them to replace the leaking, ageing pipelines carrying ash slurry from the 1st and 2nd phase thermal plants in order to prevent further contamination of the environment.*

   iii. *Direct the payment of compensation for environmental harm on account of the violation committed by the 5th respondent.*

   iv. *Direct Respondent No. 1 and 2 to prosecute the 5th respondent for violation of the CRZ Notification, 2011 and for encroachment of the Kosasthailayar and its backwaters.*

4. That the matter came up for hearing on 07.06.2021 wherein the Hon'ble NGT, in order to ascertain the genuineness of the allegations made, appointed a joint Committee that consisted of *'Senior Officer from MoEF&CC, Integrated Regional Office, Chennai'* amongst other member organizations. The relevant extract of the order dated 07.06.2021 is reproduced below:

> *"9. In order to ascertain the genuineness of the allegations made, we feel it appropriate to appoint a joint Committee consisting of (1) The District Collector, Thiruvallur District or a Senior Officer not below the rank of Sub-Divisional Magistrate or Assistant Collector as*

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deputed by the District Collector (2) a Senior Officer from the Ministry of Environment, Forests and Climate Change (MoEF& CC), Integrated Regional Office, Chennai (3) a Senior officer from the Tamil Nadu Coastal Zone Management Authority (TNCZMA),Chennai (4) a Senior officer not below the rank of Superintending Engineer from Public Works Department (PWD) Irrigation Department (5) a senior officer from Tamil Nadu Pollution Control Board(TNPCB) deputed by its Chairman to inspect the areas in question and submit a factual as well as action taken report, if there is any violation found.

10. The Committee is also directed to consider –

(i) The impact of construction of pipeline on riverine environment and environment in general.

(ii) Whether there is any violation of CRZ Notification 2011 or 2019 whichever is applicable or EIA Notification 2006 as amended from time to time.

(ii) Whether the Environmental clearance cum CRZ clearance granted for the unit has covered the work of laying pipeline for discharge of ash slurry in the Kosasthalaiyar river basin.

(iv) Whether on account of laying down the pipeline, is there environmental damage caused any, environmental compensation if so what is the nature of damage caused and remedial measures to be taken and also assess the environmental compensation for the damage caused to the environment."

5. That the answering Respondent grants Environmental Clearance (hereinafter referred as 'EC') to Thermal Power projects in accordance with the provisions laid down in Environment Impact Assessment Notification, 2006 and its amendments thereof. The EIA Notification, 2006 clearly specifies the purpose of such grant of EC before start of any construction work in case of new projects or expansion and modernization of existing projects or activities. The proposed project falls under project activity 1(d) Coal Based

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Thermal Power Plant of Category A. The process involved for grant of EC is as following:

- Stage (1) – Screening
- Stage (2) - Scoping – i.e. prescribing Terms of Reference (TOR) or undertaking detailed Environment Impact Assessment Studies.
- Stage (3) - Public Consultation – to be conducted by the respective
- State Pollution Control Board/UT Pollution Control Committee.
- Stage (4) - Appraisal – by Expert Appraisal Committee (EAC).

6. The process involving grant of EC is transparent & is placed in public domain including the application for grant of EC, submissions and supporting documents filed by the project proponent, the minutes of meeting of the EAC/SEAC and the EC issued in the case.

7. It is submitted that the online proposal of M/s Tamil Nadu Generation & Distribution Corporation Ltd. w.r.t. EC for Expansion by addition of 800 MW (Stage-III), North Chennai TPP and Coastal Regulation Zone (CRZ) Clearance for foreshore facilities at villages Ennore & Puzhudivakkam, Ponneri Taluk, Thiruvallur Distt., Tamil Nadu was received on 26.05.2015. The answering Respondent after examining the proposal, accorded the Terms of Reference (hereinafter referred as 'ToR') for preparation of EIA/EMP Report on 28.05.2012 and thereafter the validity of ToR was extended up to 27.05.2015 on 08.09.2014. The State Coastal Zone Management Authority (hereinafter referred as 'SCZMA') held a detailed discussion on the said proposal in its meeting dated 19.05.2015 and after due deliberation, the SCZMA recommended the CRZ Clearance for foreshore facilities on 16.06.2015.

   The Copy of SCZMA recommendation dated 16.06.2015 is annexed as **Annexure R/1**.

8. It is submitted that the instant proposal was considered by the reconstituted Expert Appraisal Committee, Thermal Power (hereinafter referred as 'EAC') in its 38th Meeting held on 25-26th June, 2015 based on the information submitted by the Project Proponent in the EIA/EMP Report and provided

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during the presentation made before the Expert Appraisal Committee. After detailed deliberations, the EAC sought certain information/documents, including information on utilization and disposal of fly ash and also observed that it will consider the comments/remarks of CRZ sector of the Ministry regarding the said proposal. Accordingly, the EAC deferred the proposal.

Copy of the 38th Minutes of Meeting held on 25-26th June, 2015 is annexed herewith and marked as **Annexure R/2**.

9. It is submitted that thereafter, the proposal was again placed before the EAC (Thermal Power) in its 46th Meeting held on 26-27th November, 2015 wherein the project proponent provided following information in response to the observations made by the Committee in its previous meeting pertaining to utilization and disposal of fly ash which is reproduced below:

> *"(x) Regarding fly ash utilization, at present, TANGEDCO is disposing the fly ash by allotment to the cement companies and the companies have established silos to collect the fly ash from the power plant. The bottom ash is being supplied to the brick manufacturing / SSI units for making fly ash bricks. Open tender system is being adopted to allot the fly ash to the companies. An MOU executed with M/s Dalmia Cements (Bharat) Ltd, Dalmiapuram, Tamilnadu for off take of fly ash from the proposed NCTPS Stage III (1x800MW).*
>
> *(xi) Regarding bottom ash utilization, the bottom ash of the proposed plant will be collected through dry bottom handling system and used for brick manufacturing and road laying purposes. Excess, if any, will be disposed through existing ash dyke of NCTPS."*
>
> Further, the Committee noted that the EAC (CRZ) has recommended the grant of CRZ clearance for the following foreshore facilities of the above proposed Thermal Power Project:
>
> i. *Coal conveyance should take place in closed conveyor and that there could be no open stacking of the coal in the CRZ area.*

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ii. *The Intake water pipeline should be laid as per provisions of CRZ Notification, 2011.*

iii. *Disposal of hot water shall meet TNSPCB norms.*

iv. *Water temperature should be monitored at outlets of each of the unit (3 phases) and also at pre-cooling channel joining Ennore creek.*

Copy of the 46th Minutes of Meeting held on 26-27th November, 2015 is annexed herewith and marked as **Annexure R/3**.

10. It is further submitted that based on the information and clarifications provided by the Project Proponent and detailed discussions held on all the issues, the Committee recommended the project for grant of EC and CRZ clearance subject to compliance of conditions of EAC (CRZ) and the following additional specific environmental safeguard conditions:

I. Explore the feasibility of multiple distributing point for the discharge of cooling water into pre-cooling channel and also the widening of the pre-cooling channel.

II. PP shall endeavour to enter into MoUs with NHAI, Associations of Cement Industries and Municipal Authorities for ensuring full ash utilization.

III. As committed, FGD shall be installed to ensure emission below threshold limits.

11. It is submitted that the answering Respondent, following the aforementioned comprehensive process and after examination of recommendation of the reconstituted EAC (Thermal Power), granted the EC vide letter no. J-13012/14/2012-IA. II (T) dated 20.01.2016 under the provisions of the EIA Notification, 2006 with certain environmental safeguard conditions as recommended by the EAC along with general conditions with a view to minimize the possible environmental concerns associated with the activity and to ensure environment sustainability.

The copy of the EC letter dated 20.01.2016 annexed as **Annexure R/4**.

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12. The relevant conditions addressing the environmental concerns is reproduced below:

"6. Fly ash and bottom ash would be collected and stored in the silos and supplied to cement/ brick industries for manufacturing cement and bricks. 100% Dry Fly ash Collection will be done by providing Pressurized Dry Fly ash Collection System. The fly ash from the existing Units is being sold by e auction and the same is proposed for the instant Unit. An MOU is executed with N /s Dalmia Cements (Bharat) Ltd, Dalmiapuram, Tamilnadu for off take of fly ash from the proposed NCTPS Stage III (1x80OMW]. Ash pond water will be collected, treated and reused for slurry making.

7. (A.) Specific Condition:

(viii) All the recommendations and conditions specified by Tamil Nadu Coastal Zone Management Authority (TNCZMA) vide letter No. 10173/EC.3/2015-1 dated 16.06.2015, shall be complied with.

(xi) Construction activity shall be carried out strictly as per the provisions of CRZ Notification, 2011. No construction works other than those permitted in Coastal Regulation Zone Notification shall be carried out in Coastal Regulation Zone area.

(xxi) Monitoring of surface water quantity and quality shall also be regularly conducted and records maintained. The monitored data shall be submitted to the Ministry regularly. Further, monitoring points shall be located between the plant and drainage in the direction of flow of ground water and records maintained. Monitoring for heavy metals in ground water shall also be undertaken and results/findings submitted along with half yearly monitoring report.

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(xxiii) No water bodies including natural drainage system in the area shall be disturbed due to activities associated with the setting up / operation of the power plant.

(xxxi) Marginalized section of society particularly traditional fishermen communities shall be identified based on 2011 population census data and socio-economic study of the various strata of families such as those carrying out subsistence fishing, commercial fishing etc. shall be carried out and impact on their livelihoods shall be assessed separately. Accordingly, sustainable welfare scheme/measures shall be undertaken and status of implementation shall be submitted to the Regional Office of the Ministry within six months.

(xxxiv) Fugitive emission of fly ash (dry or wet) shall be controlled such that no agricultural or non-agricultural land is affected. Damage to any land shall be mitigated and suitable compensation provided in consultation with the local Panchayat.

(xxxv) Fly ash shall not be used for agricultural purpose. No mine void filling will be undertaken as an option for ash utilization without adequate lining of mine with suitable media such that no leachate shall take place at any point of time. In case, the option of mine void filling is to be adopted, prior detailed study of soil characteristics of the mine area shall be undertaken from an institute of repute and adequate clay lining shall be ascertained by the State Pollution Control Board and implementation done in close co-ordination with the State Pollution Control Board.

(xxxvi) Fly ash shall be collected in dry form and storage facility (silos) shall be provided. Mercury and other heavy metals (As, Hg, Cr, Pb etc.) shall be monitored in the bottom ash. No ash shall be disposed off in low lying area.

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7. (B.) General Conditions:

(viii) Utilization of 100% Fly Ash generated shall be made from 4th year of operation. Status of implementation shall be reported to the Regional Office of the Ministry from time to time."

13. That in view of foregoing paras, it is submitted that EC dated 20.01.2016 covers the aspect of utilization of Fly ash in dry form and disposal thereof and CRZ Clearance was granted for foreshore facilities as mentioned above only. The General Conditions of the EC letter dated 20.01.2016 also states that *"...11. In any case of any deviation or alteration in the project proposed including coal transportation from those submitted to the Ministry for clearance, a fresh reference should be made to the Ministry to assess the adequacy of the condition(s) imposed and to add additional environmental protection measures, if any..."*

14. That it is also worthwhile to mention that the Joint Committee had filed its Inspection Report before the Hon'ble Tribunal on 15.09.2021 and the same has been made available on https://greentribunal.gov.in/. The Joint Committee findings indicate that *"...laying of pipelines for transmitting slurry across Kosasthalaiyar Backwaters has not been covered in the present scope..."*

15. Thus, it is humbly submitted that suggestions/recommendations made in the Joint Committee Inspection Report may guide in deciding the factual status of violation committed by the project proponent and accordingly the Hon'ble Tribunal may issue appropriate directions as deemed fit. The Joint Committee Inspection report is not produced in the present affidavit for the sake of brevity.

It is further submitted that this answering Respondent shall abide with any directions passed by this Hon'ble Tribunal.

16. It is submitted that the present reply affidavit may kindly be taken on record and into consideration and the Hon'ble Tribunal may pass

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appropriate Order(s), direction(s) as deemed fit and proper under the facts and circumstances of the present case.

17. That other/ancillary issues raised in the application under reply do not pertain to the answering respondent. The Answering Respondent seeks leave to make additional submissions, if required, during the course of the proceedings.

DEPONENT

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VERIFICATION

I, the above named deponent do hereby solemnly affirm and state that the contents of the aforesaid affidavit are true and correct to my personal knowledge and have been derived from the official records maintained by the Respondent. No part of it is false nor has anything material been concealed there from.

Verified at Chennai on this 18th day of November, 2021.

DEPONENT

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Annexure R1

3962/Dir(RW)
29/6

Environment & Forests (EC-3)
Department,
Secretariat, Chennai – 600 009

Letter No. 10173/EC.3/ 2015-1, Dated.16.06.2015

From
Thiru Hans Raj Verma, I.A.S.,
Principal Secretary to Government.

To
The Chairman,
National Coastal Zone Management Authority,
Government of India,
Ministry of Environment and Forests and
Climate Change,
New Delhi – 110 003. (w.e.)

Sir,

Sub: Coastal Regulation Zone – Setting up of North Chennai Thermal Power Project – Stage III (1x800 MW) at Ennore & Pulzhuthivakkam villages – Clearance requested for establishment of Foreshore facilities under Coastal Regulation Zone Notification 2011 proposed by TANGEDCO – Regarding.

Ref: From the Director of Environment Letter No. P1/ 013/2015, dated 1.6.2015.

I am directed to state that the Director of Environment has informed that the Tamil Nadu Generation and Distribution Corporation Limited (TANGEDCO) has proposed to establish foreshore facilities viz., coal conveyor and cooling water intake and outfall pipeline structures of the proposed North Chennai Thermal Power Project stage III (1 x 800 MW) at Ennore and Puzhuthivakkam villages, Ponneri Taluk, Thiruvallur district, within the North Chennai Thermal Power Station (NCTPS).

2. In this connection, the TANGEDCO has informed that the above proposed project would be taken within the existing NCTPS complex as a expansion unit. The proposed Power Plant is outside Coastal Regulation Zone and the above said foreshore facilities are falling in CRZ-III. The TANGEDCO is proposed to use seawater for the entire water requirement and the sea water would be drawn from Ennore Port through the existing fore bay of NCTPS state-II intake channel and the coolant water would be discharged through outlet pipe to pre cooling channel (existing) of NCTPs complex after circulating through Natural draft cooling tower system and the outfall water finally joins the creek. There are about 6900 m^3 / hr for cooling water requirement and 780 m^3 / hr for raw water requirement. From the proposed desalination plant 375 m^3 / hr of raw water would be produced from 780 m^3 / hr of sea water. TANGEDCO has also informed that the 100% imported coal, as fuel, would be provided through closed conveyor system to avoid air pollution with enough fire fighting systems.

Office of Secretary (E,F&C)
Dy. No. 3962
Date 23/6/15

3962
24/6/15

3. The Total Project cost in Coastal Regulation Zone is 350 crores. The District Coastal Zone Management Authority (DZMA), Tiruvallur has recommended the proposal for consideration. As per Coastal Regulation Zone Notification, 2011, vide para 4(i)(a) clearance shall be given for any activity within the Coastal Regulation Zone if it requires waterfront and foreshore activities; and as per Coastal Regulation Zone Notification 2011 vide para 8 I CRZ I (i)(b), 8 I CRZ I(ii)(e), 8 III A(iii) (h) and 8 III B(v), the above said activities are permissible activities in CRZ IA, CRZ-IB and CRZ III (in No Development Zone and in restricted development zone) respectively. However, the proposal requires clearance from the Ministry of Environment and Forests, Government of India vide para 4(ii)(d) & (f) of CRZ Notification 2011.

4. The subject was placed before the 83rd meeting of the Tamil Nadu State Coastal Zone Management Authority held on 19.5.2015 and the Authority resolved to recommend the proposal to the Ministry of Environment, Forests and Climate Change, Government of India, subject to the following specific conditions:-

a) The fly ash generated should be disposed / reused by implementing a suitable concrete plan.

b) Closed conveyor system, with latest technology, should be provided for coal handling. A proper Ambient Air Quality Monitoring plan shall be evolved in consultation with the Tamil Nadu Pollution Control Board in such a way to monitor air quality frequently as well as cumulative impact of air quality in that area taken into considering all stages of the project. If necessary, more number of monitoring stations shall be formed for monitoring the air quality.

(c) Shoreline evolution due to the littoral drift on either side of the project site, along the coast, should be monitored continuously based on the LITPAC OF MIKE 21 modeling studies with reference to the intake and outfall points of water and proper remedial action should be taken on the event of any adverse impacts.

(d) Turbulance caused at intake point due to drawl of water and at the outfall point due to discharge of coolant water should be under close and continuous monitoring especially on the turbidity levels so as to take mitigation measures on the event of adverse implications.

(e) Impact of chemicals (used for cleaning of membrane of RO plant) in the R.O. reject (brine) on the marine organisms shall be closely monitored so as to take remedial action on the event of any adverse impact.

(f) A feasibility study on the flora shall be prepared. Further a detailed action plan should be evolved to minimize the impact of project on mangroves available near the project site. Necessary conservation programme shall be implemented for preserving the existing mangroves and also to create fresh mangrove belt in consultation with Forest Department. A copy of action taken report may be sent to Department of Environment.

(g) The temperature of water at the outfall point should be maintained within the prescribed levels. This may be monitored regularly through an institute and fact may be reported to Department of Environment.

(h) The Project should not in any way affect the fishing activities and also should not hinder the livelihood of the Fishermen.

5. Accordingly, the Director of Environment has sent a copy of proposal along with the reports, details, HTL map and minutes of the 83rd meeting of Tamil Nadu State Coastal Zone Management Authority held on 19.05.2015 and also requested that the proposals may be recommend to the Ministry of Environment and Forests and Climate Change, Government of India for clearance under Coastal Regulation Zone Notification 2011.

6. In line with the recommendation of the Tamil Nadu State Coastal Zone Management Authority, this Government recommend the proposal of TANGEDCO for setting up of North Chennai Thermal Power Project – stage III (1 x 800 MW) at Ennore and Pulzhuthivakkam villages to the Chairman, National Coastal Zone Management Authority, Government of India , Ministry of Environment and Forests & Climate Change, New Delhi for clearance under Coastal Regulation Zone Notification 2011, subject to the condition stipulated at para 4 above.

Yours faithfully,

for Principal Secretary to Government

18/6/15

Annexure R2

MINUTES OF THE 38th MEETING OF THE RE-CONSTITUTED EXPERT APPRAISAL COMMITTEE (EAC) ON ENVIRONMENTAL IMPACT ASSESSMENT (EIA) OF THERMAL POWER & COAL MINING PROJECTS

The 38th Meeting of the reconstituted EAC (Thermal Power) was held on **25th-26th June, 2015** at Teesta Meeting Hall, Vayu Wing, First Floor, Indira Paryavaran Bhawan (New Building), Jorbagh Road, New Delhi-110003. The members present were:

1. Prof. C.R. Babu - Vice Chairman (Acting Chair)
2. Shri T.K. Dhar - Member
3. Shri A.K. Bansal - Member
4. Shri J.L Mehta - Member
5. Shri N.K. Verma - Member
6. Dr. S.D. Attri - Member (Representative of CPCB)
7. Shri P.D. Siwal & Shri N.S. Mondal - Member (Representative of CEA)
8. Shri B.B. Barman - Member Secretary

Shri G.S. Dang, Dr. C.B.S Dutt, Dr. S.S. Bala, Dr. Ratnavel and Dr. Asha Rajvanshi could not be present. At the outset, the Committee recollected the excellent contribution of the outgoing Member Secretary, Ms. Sanchita Jindal and expressed their gratitude. List of other participants is at **Annexure –I.**

The Committee also welcomed the newly appointed Member Secretary, Shri B.B. Barman. Thereafter, the following agenda items were taken up:

Item No.1: CONFIRMATION OF THE MINUTES OF THE LAST MEETING.

As no comments/observations were received, the Minutes of the 36th EAC (TP) meeting held during 19th-20th May, 2015 were confirmed.

Item No. 2: CONSIDERATION OF PROJECTS

2.1 2x800 MW Uppur Supercritical Thermal Power Plant at Villages Uppur, Valamavoor & Thiruppalaikudi, Tehsil Tiruvadanai, District Ramanatahapuram, Tamil Nadu by M/s Tamil Nadu Generation & Distribution Corporation Ltd. (TANGEDCO) – For EC.

The Project Proponent (PP) along with their environmental consultant, Bhagavathi Ana Labs Pvt. Ltd., Hyderabad made a presentation and *inter-alia,* provided the following information:

(i) ToR for carrying out EIA study and preparation of EMP for the above proposal was accorded by the Ministry on 28.05.2012 and the validity of TOR was extended up-to 27.5.2015 vide letter 08.09.2014. Public Hearing for the project was conducted on 04.07.2014. TANGEDCO have prepared the CRZ Maps through Institute of Remote Sensing, Anna University, Chennai. The State Coastal Zone Management Authority (SCZMA) recommended the proposal in its meeting held on 27.11.2014 and communicated the same to National Coastal Zone Management Authority (NCZMA) vide letter dated 16.12.2014, where its consideration is awaited.

(ii) The total project area is 1013 acres which includes ash pond and green belt. The Administrative Sanction has been issued by Govt. of Tamil Nadu for land acquisition.

Survey works have been completed. On obtaining EC, land acquisition process will be initiated. No R&R issues are involved in the land acquisition. No further expansion is envisaged due to non-availability of land etc. There are no National Parks, Sanctuaries, Elephant/Tiger Reserves, migratory routes/wildlife corridors, etc., within 10 km of the project site. Authenticated Map has been obtained from the Principal Chief Conservator of Forests and Chief Wildlife Warden. Gulf of Mannar Marine National Park is about 60 km aerial distance from the site. The proposed project site is at a distance of 28 km north of Ramanathapuram on the western side of East Coast Road, which is at a distance of about 600 m from the project site. The NH-210 is at a distance of 4 km west. The nearest Port is Tuticorin at a distance of 140 km south. The project site is located at about 1 km from the HTL, 500 m away from HTL of Palk Bay and about 2.5 km from HFL of Peyar River. Nearest Railway is Ramanathapuram at a distance of 28 km. The project cost is Rs.12,664.76 Crores (approx). The capital and recurring cost towards EMP is Rs. 478 Crores and 48 Crores respectively.

(iii) It is proposed to use 100% imported coal (5.02 MTPA) for the project with maximum sulphur and ash contents of 0.8% and 10% respectively. MOU has been signed with M/s. MMTC on 25.05.2015 for supply of imported coal. Radio activity and heavy metal contents of coal to be sourced have been tested and the parameters are well within limits. The feasibility of transportation of coal for the Project has been carried out through M/s. RITES. Based on the report, it has been proposed to transport coal from Tuticorin Port Trust to the Project site through the existing railway line from Tuticorin - Vanchi Maniyachi – Manamadurai – Ramanathapuram and then a siding of 25.8 km from Ramanathapuram to Thiruppalaikudi and then take off to the power plant.

(iv) The Ambient Air Quality (AAQ) was monitored during July – September, 2012. There are no existing/proposed industries in 10 km radius study area. The maximum base line concentration for PM_{10}, SO_2 and NOx was 66.6 $\mu g/m^3$, 15.4 $\mu g/m^3$ and 18.9 $\mu g/m^3$ respectively. The maximum incremental concentration of PM_{10}, SO_2 and NOx would be 0.8 $\mu g/m^3$, 35.32 $\mu g/m^3$ and 14.6 $\mu g/m^3$ respectively. Final GLC of all these will be within the prescribed AAQ limits.

(v) The total sea water requirement for the Power Plant is about 15,376 m^3/h and the cooling water discharge into the sea is 10,508 m^3/h. COC of 1.3 has been proposed to optimize water usage. Desalination plant (11 MLD Capacity) is proposed for plant water, service water and potable water requirement of the plant and for supply of drinking water to nearby villages. Closed cycle cooling system with Natural Draft Cooling Towers (2 no.) is proposed. Roof tops as well as surface rain water harvesting will be implemented in the proposed plant site. The stored rainwater will be used for green belt development and dust suppression within the plant premises. Brine from the desalination plant and cooling tower blow down will be discharged into the sea after proper dilution. All other effluents will be treated in ETP/STP and utilized within plant premises. It is proposed to implement recirculation of ash pond water.

(vi) The Hydro-geological study was carried out through Anna University, Chennai. Based on the geological details of Thiruvadanai Taluk area, average safe depth of de-silting is from 0.30 m to 0.60 m. By desilting, the average increase in tank capacity will be about 20% to 40%. The channel of Naganendhal big tank is passing through the proposed plant area. Based on Hydrogeological study report, it is proposed to desilt and deepen the nearby tanks so that the water received from the water shed is stored in the tanks. Further, it is proposed to connect both Naganendhal big tank and Valamavur tank (2.2

km long and 6 m wide) so that the excess water can be diverted and connected to the Peyar River in the southern side of the plant boundary.

(vii) The Temperature and Salinity Dispersion Modelling Study for drawl and discharge of sea water has been carried out through M/s. IIT Madras The temperatures in the sea will rise by about 0.5-0.75°C within a radius of 2.0 km. Salinity will rise by about 4 ppt within 1.5 km distance from outfall. Beyond this, ambient conditions will be preserved. The intake/outfall pipelines will be laid over RCC Deck supported by concrete pillars. Height of Deck above Chart Datum will be 7.5 m and this will ensure free movement of fishing vessels. Considering Fish escape velocity of 0.15 m/sec, the Diameter of Intake Well is fixed as 14 m, with offshore pump house. The location of Intake Well is 5.0 Km from LTL and at 4.0 m water depth. The location of Outfall is 7 km at 5.0 m water depth.

(viii) The Marine EIA Study has been carried out through M/s. WAPCOS. Field survey was conducted for three seasons i.e., June 2013, September 2013 and January 2014 for primary data generation on various aspects of marine water quality and ecology. 15 Nos. marine sampling points were selected in Thiruppalakudi and Uppur coastal villages. The Marine samples were collected and tested by a team of experts from the Centre of Advanced Study in Marine Biology of Annamalai University. The results of the survey indicate that the water is well oxygenated and nutrients are adequate supporting good plankton population, the base in the food chain. Similarly, the levels of heavy metals and petroleum hydrocarbon were found to be below permissible level in all the seasons. The outfall of the proposed TPP would not change the quality of existing natural coastal environment. The rise in temperature is not likely to cause any alteration in the biotic community of the coastal waters of the project area.

(ix) The total ash generation is only 0.502 MTPA (1,375 Tonnes/day). 100% fly ash utilization is proposed. Many Cement Companies, viz., M/s. Tamil Nadu Cements, M/s. Dalmia Cements Ltd., M/s. Malabar Cements Ltd., M/s. Ultra Tech Cements Ltd., and M/s. Chettinad Cement Company Ltd., have furnished their expression of interest for off take of fly ash. The fly ash from the other running Units is being sold by e-auction and the same is proposed for the instant Unit. TANGEDCO will encourage small scale industry development in the industrially backward region by supplying fly ash to brick manufacturers. Ash Dyke of 138 acres has been provided within the Plant area for disposal of bottom ash in slurry form and the ash dyke will be lined with geo-membrane.

(x) Detailed Socio-economic & Community Needs Assessment study has been conducted through M/s. Madras School of Social Work, Chennai. Based on the Community Needs Assessment, TANGEDCO has earmarked Rs. 38.0 crores and Rs. 3.0 crores as Capital Cost and recurring cost per annum for CSR respectively.

(xi) Public Hearing/Public Consultation for the project was conducted by Tamil Nadu Pollution Control Board on 04.07.2014. It was noted that the issues raised in the PH pertained to land acquisition not as per the 2013 Act, coal transportation, water source & availability, green belt, higher compensation for land, employment for land losers, effect on the livelihood of the fishermen, CRZ clearance not available, CSR activities etc. The Committee discussed the issues raised in the PH and the reply of the PP.

2. The Committee inter-alia, noted that as per the O.M. dated 03.02.2015, the PP needs to apply online for CRZ clearance to the Ministry. The Committee shall consider the comments/remarks of CRZ sector of the Ministry as and when would be made available. Further, as per the Ministry's O.M. dated 7.10.2014, a preliminary Notification issued by the State Govt. regarding acquisition of land as per the provisions of Land Acquisition, R&R Act, 2013 is mandatory and needs to be submitted. After further and detailed deliberations, the Committee sought the following information/documents:

I. *Pictures and location of the creeks in a legible map.*

II. *Action plan for harnessing solar power.*

III. *Revised layout clearly depicting the various Units and facilities.*

IV. *Clarification that the community land is not being acquired as per the definition of the State Govt.*

V. *Commitment for development of thick green belt of minimum 50 m width between the ash pond and village tanks.*

VI. *Notification issued by the State Govt. regarding acquisition of land as per the provisions of relevant act/rules.*

VII. *Explore the possibility of making an embankment without raising the level of the project site.*

VIII. *Letter from competent Port and Railway authorities for handling & transportation of the coal.*

IX. *The transportation of coal shall be by Rail only. The PP shall take up the matter of transportation of coal by the shortest route which would save journey of around 100 km.*

X. *Diversion of existing Nalahs shall be done in such a way that it shall not dry up the creeks and it shall be ensured that water flows perennially in the creeks so as to preserve the mangroves. Anna University, who has conducted the hydro-geological study, shall present the same in the next meeting.*

XI. *The water quality data was not properly presented. Hence, the same needs to be done for the fresh water and sea water.*

XII. *Details of proposed e-auction for fly ash, the LoIs from prospective takers along with quantities etc. to be submitted.*

XIII. *Explore various avenues for utilization of bottom ash.*

XIV. *Revised and detailed budgetary action plan for Public Hearing issues*

XV. *Employment potential for locals.*

XVI. *Detailed reply to the issues raised by ERC, New Delhi*

XVII. Borrowing of earth should be avoided and efforts be made to balance cutting and filling in the project area/site.

XVIII. In order to maintain tranquility and sanctity of the creek area by ensuring bare minimum disturbances, proposed sea-ward pipe line shall have to be realigned.

XIX. Concerns were expressed on the high PH of water which needs to be dealt extensively in EIA.

On receipt of the above documentation and information, the case will be placed before EAC for reconsideration.

2.2 Expansion by addition of 1x800 MW (Stage-III), North Chennai TPP at Villages Ennore & Puzhudivakkam, Taluk Ponneri, District Thiruvallur, Tamil Nadu by M/s Tamil Nadu Generation & Distribution Corporation Ltd. (TANGEDCO)- For EC.

The PP along with their environmental consultant, Ramky Enviro Engineers Ltd., Hyderabad, made a presentation and *inter-alia,* provided the following information:

(i) ToR for carrying out EIA study and preparation of EMP for the above proposal was accorded by the Ministry on 28.05.2012 and the validity of TOR was extended upto 27.5.2015 vide letter 08.09.2014. Public Hearing was conducted on 05.03.2015. Demarcation of site was done by Institute of Remote Sensing, Anna University, in 1:4000 scale including CRZ Zonation / land use for 7 km radius around the project site. The State Coastal Zone Management Authority (SCZMA) recommended the foreshore facilities viz. coal conveyor and cooling water inlet/outlet pipe lines to MoEF in the meeting held on 19.05.2015. Certified compliance report from the Ministry's Regional Office (R.O) for the conditions stipulated in the ECs of the existing Units was submitted and the compliance is found to be satisfactory.

(ii) The land requirement for the proposed expansion is 76.9 Ha (190 acres), which is located inside the NCTPS complex. Entire land is under possession of TANGEDCO. There are no R&R issues. No further expansion is envisaged. There are no National Parks, Sanctuaries, Elephant/Tiger Reserves, Migratory Routes/Wildlife Corridors within 10 km of the project site. The site is 500 m away from High Tide Line (HTL) of Sea and 100 m away from the HFL of canal. The project site is a graded area with necessary drains developed during execution of NCTPS Stage I project (3x210 MW). The capital and recurring cost towards EMP is Rs. 480 Crores and 48 Crores respectively.

(iii) The imported coal requirement of 2.09 MTPA with maximum sulphur and ash contents of 0.8% and 12% respectively will be sourced through MMTC, New Delhi. Ennore Port is establishing Coal Berth 3 (CB 3) exclusively for the use of TANGEDCO in addition to existing Coal Berth 1 & 2. It is proposed to transport coal from CB 3 to the NCTPS Stage III plant site through closed belt conveyors since the coal conveyor route is well within Port and Power plant area alone. Radio activity and heavy metal contents of coal to be sourced have been tested and the parameters are well within limits.

(iv) The Ambient Air Quality (AAQ) was monitored during June – August, 2012. The maximum base line concentration for PM_{10}, SO_2 and NOx was 94.4 $\mu g/m^3$, 15.8 $\mu g/m^3$ and 37.7 $\mu g/m^3$ respectively. The maximum cumulative incremental concentration of

PM_{10}, SO_2 and NOx would be 1.4 $\mu g/m^3$, 61 $\mu g/m^3$ and 41 $\mu g/m^3$ respectively. Final GLC of all these will be within the prescribed AAQ limits.

(v) The potable water of about 9 MLD required for the plant will be met by treating sea water in R.O. based desalination plant. The sea water (1,65,600 KLD) will be sourced Ennore port basin via existing intake channel of NCTPS Stage II. COC of 1.3 has been proposed to optimize water usage. The domestic wastewater from plant and service wastewater will be collected and treated and reused for greenbelt, dust suppression, etc and zero discharge will be maintained As sea water is proposed for cooling purpose, the same will be discharged into sea through the existing pre cooling channel of NCTPS.

(vi) Both the inlet & outlet points are proposed to be linked with the NCTPS Stage-II systems. Marine EIA study was carried out by IIT Madras in association with WAPCOS Limited. The highlights of the study are that, no rare, endangered or threatened marine flora and faunal species is reported in and around the project area and the area is devoid of sea weeds and coral reefs. The study indicated the availability of primary nutrients (N & P) in moderate level showing the project area having moderate productivity. The marine water quality in and around the proposed outfall area is that of any normal coastal environment. Outfall temperature of coolant water will be only 3.3 °C higher than ambient and at a distance of 2 km from outfall water temperature reduces to 0.4 °C. The outfall of NCTPS stage III project would not change the quality of natural coastal environment.

(vii) Fly ash and bottom ash would be collected and stored in the silos and supplied to cement/brick industries for manufacturing cement and bricks. 100% Dry Fly ash Collection will be done by providing Pressurized Dry Fly ash Collection System. The fly ash from the existing Units is being sold by e-auction and the same is proposed for the instant Unit. Ash pond water will be collected, treated then reused for slurry making.

(viii) Socio economic study of 15 km radius around the project site covering surrounding villages was carried out by M/s Madras School of Social Works. As per the recommendations of the study, the local employable youth will be imparted with training skills since the project area is surrounded by number of Industries. A budget of Rs. 38.0 crores and Rs. 3.0 crores has been earmarked as Capital Cost and recurring cost per annum for CSR respectively. The CSR activities will be monitored by the Environment Cell at project site under the project head.

(ix) Public Hearing/Public Consultation for the project was conducted by Tamil Nadu Pollution Control Board on 04.07.2014. It was noted that the issues raised in the PH pertained to affect of hot water let out into the sea, discharge of ash slurry, affect of soil and ground water, damage to fishing nets and boats, affect of fly ash in air, employment, hydro-geological study, respiratory problems due to carbon particles etc. The Committee discussed the issues raised in the PH and the reply of the PP.

2. *The Committee inter-alia noted that as per the O.M. dated 03.02.2015, the PP needs to apply online for CRZ clearance to the Ministry and accordingly the Committee shall consider the comments/remarks of CRZ sector of the Ministry. After detailed deliberations, the Committee sought the following information/documents:*

I. Action plan for harnessing solar power.

II. *Revised layout clearly depicting the various Units and facilities.*

III. *FSA/MoU for imported coal.*

IV. *Letter from competent Port authority regarding handling of the coal.*

V. *Comparison of the year round base-line data before and after the Stage-I and II.*

VI. *Stack diameter of all the stacks.*

VII. *Rechecking and the AAQ predictions.*

VIII. *The water quality data was not properly presented. Hence, the same needs to be re-done for the fresh water and sea water.*

IX. *Details of existing and proposed e-auction for fly ash, the LoIs from prospective takers along with quantities etc.*

X. *Explore various avenues for utilization of bottom ash.*

XI. *OHS data of the employees of existing Units. If survey not done, the same shall be done and submitted.*

XII. *Green belt development in the existing Units along with illustrative photographs.*

XIII. *Employment potential for local people.*

On receipt of the above documentation and information, the case will be placed before EAC for reconsideration.

2.3 Expansion by addition of 6 MW Turbine to existing 60 MW CPP at Villages Govindapuram & Aminabad, Taluk & Distt. Ariyalur, Tamil Nadu by M/s The Ramco Cements Ltd. - For EC.

The PP along with their environmental consultant, Environmental System Consultants & Ambiente Lab Solutions Private Limited, Chennai made a presentation and *inter-alia*, provided the following information.

(i) ToR for carrying out EIA study and preparation of EMP for the above proposal was accorded by the Ministry on 31.10.2014. Public Hearing was conducted on 05.03.2015. Public Hearing was exempted under Para 7(ii) of EIA Notification, 2006. No litigation is pending against the proposal. Certified compliance report from the Ministry's R.O. for the conditions stipulated in the ECs of the existing Units was submitted and the compliance is found to be satisfactory.

(ii) Govindapuram Cement Plant operations depend only on the CPPs of 60 MW capacity. The power demand of existing Plant operations and Township is about 57 MW along with 12% Auxiliary consumption of the CPP. To conserve the electrical energy, optimization of Plant operations is being adopted by stopping the non critical equipments such as coal mill, coal mill fans, coal mill grinding, reducing the

production feed, etc. Plant also requires about 6 MW additionally for Clinker loading, Handling of Reclaimers for Limestone & Coal (LSR & CSR Handling), proposed APC Measure (Dedusting) for Clinker loading etc. Hence, the PP has to expand the existing CPP power generation capacity at Govindapuram to meet the additional power demand. There is a surplus steam capacity of 26 TPH unutilized now. Thus, without adding any additional Boiler, the existing CPP can generate the required 66 MW thermal power by adding only a 6 MW Turbine to it. Accordingly, it is proposed to augment the power generation by adding only 6 MW Turbine with Air-cooled condenser to enhance the power generation from 60 MW to 66 MW.

(iii) The additional Turbine will be installed in the existing Building of 352.50 sq. m. Additionally, about 478 sq. m will be used for housing the Air Cooled Condensers. There is no National Park/Wild Life Sanctuary/Biosphere Reserve/Reserved Forest/Hot Spot/Historical Monuments exist within 10 km radius area. The proposed project cost is Rs. 21.5 Crores. The capital and recurring cost towards EMP is Rs. 1.0 Crores and 0.1 Crores/annum respectively.

(iv) The proposed augmentation of 6 MW requires another 75 TPD of imported coal from Indonesia with maximum sulphur and ash contents of 1.0% and 14% respectively. Thus, the total coal demand will be 840 TPD for which the Coal Supply Agreement has been made on 19th April, 2014 with M/s. Devendran Coal International (P) Ltd. The imported coal is transported by Rail mode from the Karaikkal Port and the Cement Plant has a Railway Siding.

(v) The maximum base line concentration of PM_{10}, SO_2 and NOx as per the pre-monsoon data of 2014 was 45.25 $\mu g/m^3$, 35.43 $\mu g/m^3$ and 16.13 $\mu g/m^3$ respectively. The maximum incremental concentration of PM_{10}, SO_2 and NOx would be 0.3 $\mu g/m^3$, 1.02 $\mu g/m^3$ and 0.48 $\mu g/m^3$ respectively. Final GLC of all these will be within the prescribed AAQ limits.

(vi) The additional water demand is only 17.5 m^3/d and will be met from Borewells & Mine Pit Water. The existing and proposed water demand viz. 542.5 m^3/d and 17.5 m^3/d, thus, a total of 560 m^3/d is well within the consented quantity of 570 m^3/d by the State Ground Water Board (SGWB). Thus, there will not be any additional water demand for the proposed 6 MW Turbine addition. Air Cooled Condensers will be installed. Fly Ash-85.7 TPD and Bottom Ash-15.1 TPD shall be generated. The entire ash will be utilised in the Cement Plant for PPC manufacture and there will be no Ash Pond.

(vii) The CSR activities will be carried out by providing social and welfare measures for the local residents and nearby villages around the Plant area. The prime focus will be on the creating and maintaining of drinking water facilities for the students at the nearby Government Schools, establishing toilets especially for girl students at the schools, setting up of computer centres, maintenance of village roads & ponds, providing solar street lights, conducting free medical camps etc. About 2% of the Profit (in 3 Preceeding Years) will be earmarked as CSR Budget. The PP has the CSR Committee as per the provisions notified by the Ministry of Corporate Affairs on February 27, 2014. In addition to the CSR Budget earmarked for the Year viz. 1.50 crores, additional Rs. 24.85 lakhs will be spent with a Recurring Cost of Rs. 0.40 Lakhs/annum to address the issues raised by the Public.

(viii) Public Hearing was exempted under Para 7(ii) of EIA Notification, 2006 considering the Spatial Impacts due to the Proposal as negligible/insignificant. As per the direction of MoEF&CC, the Public Notices both in English and Tamil languages, were given on 12.12.2014 (Indian Express & Dinamani). The Proposed Project and EIA Findings were also published on the PP's Website for the comments/responses/views/objections, in writing, from the concerned persons having a plausible stake in the environmental aspects of the project or activity. There were 9 Representations (by Post & In-person) and 1 email Response from a NGO. All Issues are addressed with time bound Action Plan and Budget for successful completion. The Committee discussed the same.

2. *Based on the information and clarifications provided by the Project Proponent and detailed discussions held on all the issues, the Committee recommended the project for environmental clearance subject to stipulation of the following additional specific conditions:*

I. *The boiler shall have at least 10% margin capacity to the TMCR (Turbine Maximum Continuous Rating).*

II. *The Sulphur and ash content of coal shall not exceed 1.0% and 14 % respectively. In case of variation of quality at any point of time, fresh reference shall be made to the Ministry for suitable amendments to the environmental clearance.*

III. *As a part of CSR, a surface water body shall be created for use by the nearby villagers.*

IV. *Ground water recharging shall be done with proper arrangement.*

V. *Green belt of adequate width shall be developed all around the Plant.*

VI. *As committed, a minimum amount of Rs. 24.85 Lakhs shall be earmarked as capital cost for CSR activities and Rs. 0.4 Lakhs/annum or the amount as per the CSR policy of GOI whichever is higher shall be earmarked as recurring cost per annum till the operation of the plant.*

2.4 3x600 MW Mahan Super Thermal Power Plant at Singrauli, Madhya Pradesh by M/s. Essar Power (M.P.) Ltd. - For Amendment and Extension of Validity of EC.

The PP made a presentation and inter-alia provided the following information.

(i) EC was accorded to the above project (4 x 500 MW) vide letter dated 20.04.2007 and the same was amended for change in capacity and Unit size (3 x 600 MW) vide letter dated 10.02.2009. Further, an amendment in EC for change in source of coal from domestic to imported and road transportation of coal for an *interim period not exceeding three years* till Mahan coal block becomes operational was accorded vide letter dated 23.08.2013. COD of Unit I was declared on 29.04.2013 and COD of Unit II is expected by December, 2015.

(ii) Mahan coal block was de-allocated by the Hon'ble Supreme Court vide its order dated 24.09.2014. The PP had participated in the bidding process of coal blocks/ mines and has now been allocated the Tokisud North Coal Mines, Hazaribagh, Jharkhand. The Coal Mining Development and Production Agreement (CMDPA) was signed on 02.03.2015 and the vesting order for the mine was issued vide MoC Order dated 23.03.2015. EC & corresponding amendment and FC were transferred from earlier

allottee (M/s GVK Coal Co. Pvt. Ltd.) to the PP vide letter dated 13.05.2015 and 16.06.2015 respectively.

(iii) As per current approved mine plan, the peak rated capacity of the Tokisud coal mine is 2.32 MTPA from the 2nd year with the weighted average quality of 4750 kcal/kg, which is better than the quality of coal from Mahan coal block on the basis of which original EC was granted. The average ash and sulphur content of the coal from Tokisud mine will be within 35% and 0.5% respectively and in compliance to the original EC condition. For balance fuel requirement, the PP will continue to use imported coal in line with EC/amendment already granted. In case of non-viability of imported coal, the equivalent quantity will be sourced from spot/ forward e-auction. The PP will further evaluate for participation in forthcoming auction of coal blocks to replace balance imported coal.

(iv) The coal will be transported from CHP of Tokisud Mine to Tokisud railway siding over a distance of 4 km by road. EC for the same is available as part of the EC to Tokisud Mine. From Tokisud railway siding, the coal shall be transported to Mahadiya/ Singrauli siding by existing rail link over a distance of 383/375 km and from Mahadiya / Singrauli siding to the Power Plant, the coal transportation shall be done by road via Rajmilan – Bandhoura over a distance of 63/74 km. The said road transportation was approved by MoEF&CC vide the said letter dated 23.08.2013.

(v) In view of above, amendment of EC to source the coal from captive Tokisud mine in addition to the imported coal and extension of validity of EC for 5 years is requested.

2. *The Committee noted that the validity of EC to start the production/operation was for 5 years i.e. till 19.04.2012, whereas the COD of Unit I was declared only 29.04.2013 i.e. beyond the 5 years period. Moreover, the PP did not obtain the extension of EC from the Ministry. Hence, the Ministry may look into the matter in light of the amendment Notification dated 29.04.2015 revising the EC validity to 7 years.*

3. *Based on the information and clarifications provided by the Project Proponent and detailed discussions held on all the issues, the Committee recommended amendment of EC to source the coal from captive Tokisud mine & e-auction in addition to the imported coal till 22.08.2016 and extension of validity of EC by 5 years i.e. till 19.04.2017 subject to stipulation of the following additional specific conditions.*

I. *The Sulphur and ash contents of domestic coal shall not exceed 0.5% and 35 % respectively. The coal shall be sourced through e-auction only in case of emergency and non viability of imported coal. In case of variation of quality at any point of time, fresh reference shall be made to the Ministry for suitable amendments to the environmental clearance. However, for the imported coal, the ash and sulphur contents will be as specified in the earlier order.*

II. *The road transportation shall be restricted to the route as approved earlier vide amendment dated 23.08.2013.*

III. *The transportation by road shall be through mechanically covered trucks to the extent feasible, else through tarpaulin covered trucks so as to prevent coal dust dispersion in the atmosphere.*

2.5 2,640 MW Bhavanapadu Thermal Power Project near Kakarapalli Village, Santhabommali Mandal, Srikakulam District, Andhra Pradesh by M/s. East Coast Energy Pvt. Ltd.- For amendment of EC.

The Committee noted that the EC was accorded to the above project vide letter dated 09.04.2009 and the EC validity was subsequently extended till 08.04.2019 vide MoEF&CC's letter dated 21.08.2014. The Ministry has received an Application filed by some petitioner before Hon'ble NGT, Chennai on the project alleging violation/non-compliance of EC conditions as well as order issued by NEAA. The R.O. of the Ministry in its visit to the project site on 12.02.2015 has, inter-alia, observed that the project proponent had acquired an additional land of 250 acres beyond the total area specified in the EC (condition no.ii of EC order) and constructed 14 km garland drain (width of drain varies from 20 m to 80 m) in 173 acres of land and earmarked remaining 77 acres for CSR activities. For this prior permission from the Ministry is not available. Although, the the RO observed that the construction of garland drain is in compliance to the EC condition no. 3 (v) that says, *"Area drainage system will be prepared and implemented to ensure that the ecology of the area is not disturbed. The garland drain, as per the PP,* has the approval of the State Govt. Notwithstanding this, the PP was directed to obtain the approval of the Ministry for acquisition of additional land. Accordingly, the PP has applied to the Ministry for amendment of EC for the additional 250 acres of land.

2. The PP made a presentation and *inter-alia*, provided the following information.

(i) The project area as per the said EC is 1995 acres. The instant proposal is for the amendment of EC for 250 Acres (173 acres +77 acres) acquired outside the project battery limits for formation of Garland Drainage and for creating infrastructural facilities for implementation of CSR Activities as per Public Hearing Commitment, Stipulation of APIIC and in compliance to EC Conditions. The issue of garland drain was also discussed by the EAC prior to EC.

(ii) A 14 km Garland Drain (width 20 m to 80 m & depth 1 m to 1.5 m) is formed by widening of the existing natural drains in about 173 acres allotted by APIIC. The design of the Garland Drain is approved by the State Irrigation Department vide letter dated 17.06.2009 and the formation is completed in 2010. The Local Fishermen are carrying out fishing activity in the Garland Drain and the local farmers are utilizing the water in the Drain for their second crop. The drainage system has functioned effectively during the recent cyclones and unprecedented rains, when storm water flowed smoothly into the sea. An amount of Rs 54 Crores is incurred for the formation and maintenance of the same. The photographs of the Garland Drain were also presented.

(iii) The formation of the Drain has been appreciated by the Hon'ble NEAA during visit along with MoEF expert to the project site in June, 2010 and has also been appreciated by various committees who had visited the project site till date. The PP has recently requested the District Collector, Srikakulam for taking necessary action for directing the irrigation department for future maintenance of the Garland Drain as per the Public Hearing Minutes.

(iv) About 77 acres located in the North East direction of the project site, away and outside the power project area is allotted by APIIC. This area is for creating infrastructure facilities for carrying out CSR activities for the benefit of the fishing and farming

community in the area as per Public Hearing Commitment. These activities are yet to be initiated.

3. *At the outset, the Committee noted that the 77 acres of land acquired for CSR activities has no relevance to the project area and will not be discussed. The Committee noted the submission of the PP that the issue of garland drain was also discussed by the EAC prior to EC and hence, sought a detailed note with all the supporting documents in this regard. The report/study submitted by the PP to the State Govt. based on which the State Govt. has accorded approval shall be submitted. The purpose being served by the garland drain shall be certified by the concerned State Govt. Further, considering the sensitivity of the project area in light of the developments post EC, representations received and the matter pending before Hon'ble NGT, the Committee recommended to further address these issues by undertaking a* ***Site Visit by a Sub-Group of the EAC****. The proposal was accordingly* ***deferred.***

2.6 6x660 MW coal based Thermal Power Project at Village Nariyara, District Janjgir-Champa, Chhattisgarh by M/s KSK Mahanadi Power Company Ltd.- For Amendment of EC.

EC was accorded for the above project on 19.10.2009 in the name of M/s. Wardha Power Company Ltd. Further, amendments in EC regarding change in the company name to M/s KSK Mahanadi Power Company Ltd. and tapering coal linkage were accorded on 27.12.2010 and 24.01.2012 respectively. The request of PP was considered favorably for extension of validity of EC by the Committee in its 28th Meeting held during 22nd-23rd December, 2014. However, in the meantime, the Ministry has received an Application filed before Hon'ble NGT, Bhopal alleging the shift/expansion of the project site after EC/Public Hearing and the matter is pending.

2. The Regional Office (R.O) of the MoEF&CC was requested to conduct monitoring of the project especially w.r.t the issue of shift of the project site after EC. The R.O's report shows a slight mismatch between the project area and the co-ordinates as per EC (830 ha.) and the actual (844.82 ha.). The above slight increase in the overall project area was also not informed by the PP to the Ministry and the EAC in the documents submitted for extension of validity of EC. Hence, the PP was directed to obtain amendment in EC for the project area and the co-ordinates. Accordingly, the PP has applied to the Ministry.

3. The PP made a presentation and inter-alia provided the following information.

(i) The construction and installation of all the project facilities are done well within the specify 830 ha. of land and also well within the overall co-ordinates as specified in the EIA report. Further, the project facilities are within the four specified villages i.e. Nariyara, Tarod, Amora and Rogda only, which were approved at the time of EC and no shifting of project site as occurred what so ever.

(ii) The topo sheet submitted prior to EC clearly shows the existence of cart tracks for movement of people and goods between the said villages. Since, the power plant facilities are to be set up in the approved 830 ha. area and therefore closing of the cart tracks inevitable, the local district administration, at the instance of people residing in these villages has stipulated that, appropriate road infrastructure be created by the company at its cost, for the usage of people.

(iii) Due to practical issues on ground, 811.01 ha of acquired land falls within the earlier envisaged co-ordinates and 17.45 ha falls outside the co-ordinates but in the same four

villages. Therefore, the land for the project is only **828.46 ha** as against the 830 ha as per EC.

(iv) Regarding the balance land of 16.36 ha (844.82 – 828.46), the same was well within the said four villages and acquired at the instance of the District Authorities and to address the concerns of land owners and their demands of semi fragmented holdings. The said 16.36 ha is out of the project purview & facilities and is used for providing village road infrastructure (already built over a length of 15.11 km with 6.5 m breadth) and additional green belt development (6.54 ha).

(v) The Unit I & II are operational and the remaining Units are at various stages of construction and will be operational latest by 31.12.2017. An amount of about Rs. 41.2 crores was spent on CSR activities till May, 2015 and the balance 22.8 crores (as per EC, the capital cost for CSR is Rs. 64 crores) will be spent by 2017-18. The original and revised layouts, photographs detailing the progress made including the greenbelt and CSR activities were presented.

(vi) An amount of Rs. 9.47 crores and 1.83 crores per annum was proposed for CSR activities in the EIA/EMP report. However, in compliance to the EC condition regarding CSR, an amount of Rs. 64 crores has been earmarked as the capital cost for CSR. It is requested to amend the CSR condition w.r.t the recurring cost as per the CSR policy of Govt. of India.

4. *The Committee, after further deliberations concluded as follows:*

- *Proposed acquisition of excess land of 16.36 ha for construction of village roads is outside the project boundary wall and partly peripheral in nature. This resembles a road project for which the EAC expressed inability to consider.*

- *Providing EC for a road construction outside the project premises may lead to numerous complications.*

- *The Project Proponent may approach designated authority competent to consider EC for road.*

2.7 Expansion by addition of Unit no. 9 of 800 MW capacity by phasing out existing Units 1 to 4 at Panipat Thermal Power Station at Panipat, Haryana by M/s Haryana Power Generation Corporation Ltd.- For ToR.

The proposal was earlier discussed in the 34th Meeting of the EAC (Thermal) held during 29th- 30th April, 2015, the minutes of which are as under:

Quote "The PP along with their environmental consultant, MECON Ltd., Ranchi made a presentation and inter-alia provided the following information-

1) The capacity of existing Units I – VIII are 117.8, 110, 110, 110, 210, 210, 250 and 250 MW respectively totaling to 1367.8 MW. It is proposed to decommission the Units I-IV after the commissioning of the proposed Unit of 800 MW. The coal linkage of Units I-IV shall be diverted to the proposed Unit.

2) The proposed Unit will be installed within the existing plant premises of Panipat Thermal Power Station (PTPS), Panipat. Infrastructure facilities like ash dyke, raw water reservoir, marshalling yard, railway siding and colony of the existing plant shall be commonly used. No alternate sites were identified because required land was available inside the existing plant boundary. Panipat Oil Refinery and Panipat Town are located at a distance of 8 km and 10 km respectively from the project site.

3) The total coal requirement is 3.20 MTPA at 85% PLF. A blend of indigenous (GCV-3600 Kcal/Kg) and imported coal (GCV- 5400 Kcal/Kg) in 70:30 ratio as per CEA guidelines is proposed to be used. The domestic coal will be sourced from existing coal linkages from BCCL, WCL & CCL and imported coal through prospective suppliers (mainly MSTC, MMTC & STC). The water requirement is 2600 m^3/h (25 Cusec) for the proposed Unit and shall be sourced from West Yamuna Canal within the existing allocation. The project cost is about Rs. 4418.9 crores of which the cost towards environment control measures is about Rs. 442 crores.

2. The Committee tried to understand the prevailing wind direction vis-à-vis plant layout including the town ship and the proximity to Panipat Town and Refinery. However, the same was not clear to the Committee. After detailed deliberations, **site visit** by a sub-group of the EAC was recommended. Further, the Committee recommended that breakup of the existing and proposed project site along with revised Form-I and PFR after rectifying the inconsistencies/errors pointed out by the committee, shall be submitted. *The proposal was accordingly* ***deferred. "Unquote***

3. A sub-group of the EAC has visited the project site on 09.06.2015 and recommended, among others, "The proposed site of Unit # 9 in the existing plant area covering also portion of land between plant boundary and township may be considered by the EAC, if the PP undertakes to provide a buffer of green belt (150 m) between the plant boundary & township by demolishing their existing residential complex, use the existing clarifier of Units 1 to 4 for proposed Unit # 9 for water supply and develop substantial additional green belt towards other sides of boundaries close to the proposed Unit 9".

4. Based on the recommendation of the sub-group, the PP has revised the plant layout. The maximum possible green belt width between the Plant and township is 120 m and the same shall be provided. The total project area (existing and proposed) is 2148 acres of which plant area, township and ash pond are 877, 400 and 871 acres respectively. The wind-rose diagram shows that the PTPS township is not located in the predominant wind direction.

5. *Based on the information provided and the presentation made, the Committee* ***recommended*** *the following ToR in addition to the standard TORs (as applicable) at* ***Annexure-A1*** *for undertaking detailed EIA study and preparation of EMP.*

(i) *Cumulative EIA shall be carried out covering a radius of 20 km.*

(ii) *The concentration of Heavy metals including Mercury shall be estimated in the ground and surface water*

(iii) *Examine the feasibility of shifting the project township elsewhere.*

(iv) *As committed, green belt of minimum 120 m width shall be developed between the plant and township.*

(v) *The details of employment opportunity and township to be provided.*

(vi) *Action plan with definitive time frame for decommissioning the 110 MW Units.*

(vii) *The Project Authority informed that they did not require additional allocation of water for the new unit and therefore, will not be drawn additional water from Tajewala Barrage for the plant.*

(viii) *As a water conservation measure, necessary rainwater harvesting arrangement will be put in place and attempts shall be made to make reservoir to store rainwater.*

2.8 2x660 MW Supercritical Coal Based Thermal Power Project at Villages Alailo, Bilipada, Nachhipada & Niamatpur, Taluk Mahakalpara, District Kendrapara, Odisha by M/s. SPI Ports Pvt. Ltd. - For ToR

The PP along with their environmental consultant, B. S. Envi-Tech Pvt. Ltd., Hyderabad made a presentation. At the outset, the Committee noted that all the four sites (proposed and three alternate) are nearby and within the catchment area of River Gobri. Further, water from River Gobri is proposed to be used, which will adversely affect the growth and survival of mangroves etc. The proposed site is said to be 12 km from the eco-sensitive zone of Bhitarkanika Sanctuary. *However, prima-facie, the map of eco-sensitive zone produced appears to be incorrect since the eco-sensitive zone is cutting across the map of the wild life sanctuary. Hence, the PP was advised to obtain a map duly authenticated by the Concerned Authorities. Further, the Committee recommended to explore alternate sites preferably based on use of sea water. The proposal was accordingly* ***deferred.***

2.9 Farakka Super Thermal Power Project at Farakka, District Murshidabad, West Bengal by M/s NTPC Ltd.- For Amendment of EC.

The PP along with Inland Waterways Authority of India (IWAI), Central Inland Fisheries Research Institute (CICFRI) and Jindal ITF Ltd. made a presentation and inter-alia provided the following information.

(i) The total installed capacity of Farakka STPP is 2,100 (3x200 + 2x500 + 1x500) MW. The coal requirement is 16.4 MTPA (about 45,000 TPD) and to be met from domestic coal mines through railways. In order to supplement shortfall of domestic coal to the project, it was proposed to import coal through sea route and transport it to Farakka STPS through National Waterway No.1 (NW-1) i.e river Hoogly. Accordingly, MOEF&CC vide letter dated 31.07.2014 accorded permission for use of blended coal (Domestic 70%: Imported 30%) and temporary permission for transportation of imported coal through NW-1 for a period of one year subject to specific conditions. The present proposal seeks Lifetime Permission for Transportation of Imported Coal through NW-1 to NTPC Farakka STPS. The proposal is claimed to be the first of its kind in India.

(ii) Ganga-Bhagirathi-Hooghly river system from Allahabad to Sagar is declared as NW-1 vide National Waterway (Allahabad-Sagar stretch of the Ganga-Bhagirathi-Hooghly river) Act, 1982 (49 of 1982). Out of the total 1620 Km stretch of NW-1, only 560 Km stretch from Sagar to Farakka of River Hooghly is being utilized for transportation of imported coal. NTPC and IWAI have entered into a MOU to explore the possibility of use of inland waterways as a viable supplementary mode for transportation of coal for Farakka STPP. As per the MOU, IWAI shall maintain the waterway and provide a

guarantee for navigability of channel. However, execution and implementation of the coal transportation project shall be done through a private operator. Accordingly a tripartite agreement amongst NTPC, IWAI & Jindal ITF Ltd. was signed on 11.08.2011. As per the tripartite agreement M/s Jindal ITF Ltd. would be responsible for unloading the coal from the ocean going vessel and thereafter hauling the coal on barges using NW – 1 and ensuring delivery of coal at the coal stack yard of the Farakka STPP by utilizing the unloading infrastructure through grab crane on a civil service platform on Design, Finance, Build, Operate & Transfer (DFBOT) basis.

(iii) Among all modes of transport, inland navigation with adopting proper procedures is currently considered the most environmentally sound and sustainable form (United Nations, 1997; Colvile et al., 2001; European Commission, 2001). According to a report by the Working Group on Ports and Shipping under the National Transport Policy Development Committee of the Planning Commission during 2012, a litre of diesel would carry 105 tonnes over a kilometer through waterways, 85 tonnes through railways and 24 tonnes through roadways. The emission of greenhouse gases is also relatively low from the sector. In view of the above, it is requested that the permission for transport of coal through NW-1 may be accorded for the lifetime of NTPC Farakka STPS. The ecological study carried out by CIFRI and its recommendations were presented.

2. *Based on the information & clarifications provided and detailed discussions held on all the issues, the Committee recommended for continuation of the permission for transport of maximum 1.5 MTPA coal through NW-1 for another one year i.e. till 30.07.2016 and also sought the following additional information based on the study being carried out by CICFRI . After a period of 6 months, the NTPC shall submit/present findings of the study and EAC shall review the findings of the studies and if need be, would undertake a site visit:*

I. *Long term, and a minimum period of one year continuous study shall be conducted on the impacts of varying traffic loads on aquatic flora and fauna with particular reference to species composition of different communities, abundance of selective species of indicator value, species richness and diversity and productivity.*

II. *Impacts of noise generated by the barge movement on Gangetic Dolphin which has been declared a National Aquatic Animal.*

III. *Energy conservation and other perceived benefits vis-à-vis rail and road transportation.*

IV. *Impact on the abundance of economically important fish species (including Dolphin), fish growth and production at varying traffic loads.*

V. *Impact on bank erosion vis-a-vis safeguard measures like stabilization of banks with native vegetation (including mangroves) that will prevent erosion*

VI. *Impact on the fish catch under varying traffic loads and livelihood of fishermen and their views on the coal transportation by barges.*

VII. *NTPC shall set up a permanent laboratory of CIFRI at the site to expedite the study w.r.t above parameters and for making scientifically sound conclusions.*

VIII. *The characteristics of treated sewage which is being reportedly used for irrigation. The coliform count specially has to be monitored and reported.*

IX. *Accordingly, the study should conclusively come out as to what tonnage of coal can be transported through Waterways i.e. in the proposed route of NW-1 in an environmentally sustainable manner.*

2.10 2x150 MW Coal Based Thermal Power Project at Villages Okkur, Veniddangal, Velankudi & Periakannamangalam, Taluks Kilvelur & Nagapattinam, District Nagapattinam, Tamil Nadu by M/s. Nagai Power Pvt. Ltd.- For Amendment and Extension of Validity of EC.

The PP along with their environmental consultant, B. S. Envi-Tech Pvt. Ltd., Hyderabad made a presentation.

(i) EC for the above project was accorded by SEIAA, Tamil Nadu vide letter dated 27.05.2010 using imported coal and Sea Water. An amendment in EC for change in source of fuel i.e. use of blended coal (domestic coal: imported coal - 70:30) was accorded by the Ministry on 05.09.2012 due to non-existence of SEIAA at that time. However, the interstate boundary of Puducherry is within 10 km and the project is classified as Category 'A' and appraised at the Centre. As per EC, a total quantity of 4400 m^3/h (105,600 m^3/d) of sea water was estimated to be drawn. CRZ Clearance to draw water from sea and discharge the treated wastewater of 3645 m^3/h (87,480 m^3/d) has been obtained.

(ii) It is proposed to change the Water Cooled Condensing (WCC) System to Air Cooled Condensing (ACC) System (only 282 m^3/h) for significantly reducing the sea water requirement for the project. Further, considering the allotment of STP treated water (2.5 MLD) by Govt. of Tamil Nadu vide G.O. (3D) No. 19 dated 10.05.2013 through The Tamil Nadu Water Supply and Drainage Board (TWAD), it is proposed to use 104.63 m^3/h of the water allotted by TWAD and sea water (282 m^3/h) in case of necessity.

(iii) Due to various constraints i.e. financial, EPC contractor delay etc, the project execution was delayed. Civil construction works are in full swing, foundations for boiler, Turbine, ESP, CHP, AHP, Ash Pond, Chimney, etc. are completed. Unit # 1 is scheduled to be commissioned by September, 2016 and Unit # 2 is scheduled to be commissioned by September, 2018.

2. *Based on the information and clarifications provided by the Project Proponent and detailed discussions held on all the issues, the Committee recommended amendment of EC for installing ACC instead of WCC & use of STP treated water or sea water and extension of validity of EC till December, 2018. Committee noted that although, the PP vide its letter addressed to Ministry has sought extension of five years, based on the actual requirement which has been informed and explained to be September, 2018, the extension may be granted till this requirement i.e. till December, 2018 only.*

2.11 2x150 MW Power Plant at Village Sirupulalpettai, Taluk Gummidipoondi, District Thiruvallur, Tamil Nadu by M/s Accord Energy Corporation India Private Ltd.- For Amendment of EC

The proposal was earlier discussed in the 26th Meeting of the EAC (Thermal) held during 27th -28th November, 2014, the minutes of which are as under:

Quote *"The* project proponent made a presentation inter-alia provided the following information. The proposal is for Amendment (for augmentation of capacity from 2x150 to 2x180 MW) in EC accorded by the Ministry for the above project on 18.05.2011. An amendment to the EC in the Specific Condition no. (iii) regarding rail transportation of coal was accorded on 17.02.2012, which permits transportation of coal by road only for a limited period of four years. The application for EC was appraised at the Centre due to location of inter-state boundary within 10 km.

2. Regarding the present status of the project, the entire land acquisition is complete, and is awaiting issue of Consent to Establish from TNPCB, which is in the final stages of issue. Financial closure is also in the final stages, and is expected by December 2014. Construction will commence after obtaining Consent to Establish from TNPCB.

3. Regarding the progress of Railway Siding, "In-Principle" approval was accorded by Southern Railway on 29.09.2011. Revised final feasibility has been submitted to Southern Railway and route survey is in progress, which will be completed before December, 2015. The land acquisition is envisaged to be completed by June, 2017 and the commissioning of the Plant is targeted by December, 2017. The laying and completion of Railway line by Southern Railway including within Plant will be completed within four years of commissioning.

4. A similar proposal for augmentation of capacity from 160 to 180 MW was recommended by the Committee in February, 2014 and accordingly amendment was accorded by the Ministry on 23.09.2014. The 150 MW Unit can generate upto 180 MW if operated under valve wide open condition, the technology for which was recently developed by the Turbine Supplier.

5. The advantages of the proposed augmentation are that, keeping majority of the systems same, there is a possibility of 30 MW more in each, much lower heat rate to generate higher capacity with less coal consumption, time required is the same, better utilization of the investment made on the transmission line and the clearances already obtained, will remain the same except an amendment for augmentation capacity at 2 x 180 MW. There will be no change in land area and project cost as per the EC.

6. The additional coal requirement for 2x180 MW as against 2x150 MW will be 215 TPD of imported coal and an additional ash of 19.35 TPD will be generated. The stack height requirement based on the SO_2 emissions is 166.18 m, whereas the stack height proposed to be constructed is however 220 m. An MoU was signed with M/s India Cements Ltd. for fly ash utilization in the cement manufacture.

7. There will only be a marginal increase in ground level concentration of SO_2, NOx and SPM i.e. SO_2 concentration will increase by 1.48 $\mu g/Nm^3$ from 13.12 $\mu g/Nm^3$ to 14.6 $\mu g/Nm^3$, NOx will increase by 0.55 $\mu g/Nm^3$ from 4.92 $\mu g/Nm^3$ to 5.47 $\mu g/Nm^3$ and SPM will increase by only 0.01 $\mu g/Nm^3$ from 0.34 $\mu g/Nm^3$ to 0.35 $\mu g/Nm^3$. The cumulative incremental GLCs of SO_2, NOx and SPM considering all the proposed industries within 10 km will be 30.67 $\mu g/Nm^3$, 20.30 $\mu g/Nm^3$ and 0.97 $\mu g/Nm^3$ respectively. The resultant GLCs will be within the NAAQS.

8. The plant will be based on zero discharge and air cooled condenser for main condensate cooling & finfan coolers for auxiliary cooling. The air Compressors and Air Conditioner Cooling will also be based on air cooled. As such no water will be required for cooling purpose. The fresh water (150 KLD) required will be only for boiler make up and domestic consumption. Clearance from Central Ground Water Authority has already been obtained for drawl of 1300 KLD of Ground Water. Total water available for rain water harvesting (normal rainfall days) is

5,95,072.3 cum/year whereas the total water requirement is 54,750.0 cum/year which is only 9.2 % of the total rain water available for harvesting within proposed project site. Therefore, even during drought years when the rainfall is < 50% of normal rainfall, the water requirement for the project can be met out from the harvested rain water. The wastewater emanating from Boiler blow down, D.M. Plant regeneration waste and domestic consumption will be used within the site for coal dust suppression, and green belt. As such there will not be any discharge of wastewater from the plant.

9. *Based on the information & clarifications provided by the Project Proponent, the detailed discussions held on all the issues and considering the advantages of the proposed augmentation, the Committee recommended the project for Amendment in EC for augmentation of capacity from 2x150 to 2x180 MW subject to stipulation of the following additional specific condition.*

(i) *Need to expedite land acquisition for transportation of coal by Rail. The progress made in this regard shall be submitted to the R.O. of the Ministry on a regular basis.*

The PP shall advertise in the local newspapers and place on the website, the proposed amendment for public information." ***Unquote***

2. The Ministry referred the proposal to EAC to look into the safety aspect of operating under Valve Wide Open Condition. The PP along with their technical consultant made a detailed presentation. *Based on the information & clarifications provided by the Project Proponent, the detailed discussions held on all the issues and considering the advantages of the proposed augmentation, the Committee re-iterated its earlier recommendation subject to stipulation of the following additional specific conditions.*

(ii) *The boiler shall have at least 10% margin capacity to the TMCR (Turbine Maximum Continuous Rating).*

(iii) *Indian Electricity Grid Code (IEGC) shall be complied.*

There being no agenda item left, the meeting ended with a vote of thanks to the Chair. The next meeting of the EAC (Thermal Power) is scheduled for **23rd July, 2015.**

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ANNEXURE- A1

Terms of Reference (TOR):

i) The proposed project shall be given a unique name in consonance with the name submitted to other Government Departments etc. for its better identification and reference.

ii) Vision document specifying prospective long term plan of the project shall be formulated and submitted.

iii) Latest compliance report duly certified by the Regional Office of MoEF for the conditions stipulated in the environmental and CRZ clearances of the previous phase(s) for the expansion projects shall be submitted.

iv) The project proponent needs 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.

v) Executive summary of the project indicating relevant details along with recent photographs of the proposed site (s) shall be provided. Response to the issues raised during Public Hearing and the written representations (if any), along with a time bound Action Plan and budgetary allocations to address the same, shall be provided in a tabular form, against each action proposed.

vi) Harnessing solar power within the premises of the plant particularly at available roof tops and other available areas shall be formulated and for expansion projects, status of implementation shall also be submitted.

vii) The geographical coordinates (WGS 84) of the proposed site (plant boundary), including location of ash pond along with topo sheet (1:50,000 scale) and IRS satellite map of the area, shall be submitted. Elevation of plant site and ash pond with respect to HFL of water body/nallah/River and high tide level from the sea shall be specified, if the site is located in proximity to them.

viii) Layout plan indicating break-up of plant area, ash pond, green belt, infrastructure, roads etc. shall be provided.

ix) Land requirement for the project shall be optimized and in any case not more than what has been specified by CEA from time to time. Item wise break up of land requirement shall be provided.

x) Present land use (including land class/kism) as per the revenue records and State Govt. records of the proposed site shall be furnished. Information on land to be acquired including coal transportation system, laying of pipeline, ROW, transmission lines etc. shall be specifically submitted. Status of land acquisition and litigation, if any, should be provided.

xi) If the project involves forest land, details of application, including date of application, area applied for, and application registration number, for diversion under FCA and its status should be provided along with copies of relevant documents.

xii) The land acquisition and R&R scheme with a time bound Action Plan should be formulated and addressed in the EIA report.

xiii) Satellite imagery and authenticated topo sheet indicating drainage, cropping pattern, water bodies (wetland, river system, stream, nallahs, ponds etc.), location of nearest habitations (villages), creeks, mangroves, rivers, reservoirs etc. in the study area shall be provided.

xiv) Location of any National Park, Sanctuary, Elephant/Tiger Reserve (existing as well as proposed), migratory routes / wildlife corridor, if any, within 10 km of the project site shall be specified and marked on the map duly authenticated by the Chief Wildlife Warden of the State or an officer authorized by him.

xv) Topography of the study area supported by toposheet on 1:50,000 scale of Survey of India, along with a large scale map preferably of 1:25,000 scale and the specific information whether the site requires any filling shall be provided. In that case, details of filling, quantity of required fill material; its source, transportation etc. shall be submitted.

xvi) A detailed study on land use pattern in the study area shall be carried out including identification of common property resources (such as grazing and community land, water resources etc.) available and Action Plan for its protection and management shall be formulated. If acquisition of grazing land is involved, it shall be ensured that an equal area of grazing land be acquired and developed and detailed plan submitted.

xvii) A mineralogical map of the proposed site (including soil type) and information (if available) that the site is not located on potentially mineable mineral deposit shall be submitted.

xviii) Details of fly ash utilization plan as per the latest fly ash Utilization Notification of GOI along with firm agreements / MoU with contracting parties including other usages etc. shall be submitted. The plan shall also include disposal method / mechanism of bottom ash.

xix) The water requirement shall be optimized (by adopting measures such as dry fly ash and dry bottom ash disposal system, air cooled condenser, concept of zero discharge) and in any case not more than that stipulated by CEA from time to time, to be submitted along with details of source of water and water balance diagram. Details of water balance calculated shall take into account reuse and re-circulation of effluents.

xx) Water body/Nallah (if any) passing across the site should not be disturbed as far as possible. In case any Nallah / drain is proposed to be diverted, it shall be ensured that the diversion does not disturb the natural drainage pattern of the area. Details of proposed diversion shall be furnished duly approved by the concerned Department of the State.

xxi) It shall also be ensured that a minimum of 500 m distance of plant boundary is kept from the HFL of river system / streams etc. and the boundary of site should also be located 500 m away from railway track and National Highways.

xxii) Hydro-geological study of the area shall be carried out through an institute/ organization of repute to assess the impact on ground and surface water regimes. Specific mitigation measures shall be spelt out and time bound Action Plan for its implementation shall be submitted.

xxiii) 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 wastewater into the River/Sea etc shall be carried out and submitted along with the 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.

xxiv) 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 Competent Authority shall be provided along with letter / document stating firm allocation of water.

xxv) Detailed plan for rainwater harvesting and its proposed utilization in the plant shall be furnished.

xxvi) Feasibility of near zero discharge concept shall be critically examined and its details submitted.

xxvii) Optimization of Cycles of Concentration (COC) along with other water conservation measures in the project shall be specified.

xxviii) Plan for recirculation of ash pond water and its implementation shall be submitted.

xxix) Detailed plan for conducting monitoring of water quality regularly with proper maintenance of records shall be formulated. Detail of methodology and identification of monitoring points (between the plant and drainage in the direction of flow of surface / ground water) shall be submitted. It shall be ensured that parameter to be monitored also include heavy metals. A provision for long-term monitoring of ground water table using Piezometer shall be incorporated in EIA, particularly from the study area.

xxx) 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.

xxxi) Action Plan for identification of local employable youth for training in skills, relevant to the project, for eventual employment in the project itself shall be formulated and numbers specified during construction & operation phases of the Project.

xxxii) If the area has tribal population it shall be ensured that the rights of tribals are well protected. The project proponent shall accordingly identify tribal issues under various provisions of the law of the land.

xxxiii) A detailed CSR plan along with activities wise break up of financial commitment shall be prepared. CSR component shall be identified considering need based assessment study and Public Hearing issues. Sustainable income generating measures which can help in upliftment of affected section of society, which is consistent with the traditional skills of the people shall be identified. Separate budget for community development activities and income generating programmes shall be specified.

xxxiv) While formulating CSR schemes it shall be ensured that an in-built monitoring mechanism for the schemes identified are in place and mechanism for conducting annual social audit from the nearest government institute of repute in the region shall be prepared. The project proponent shall also provide Action Plan for the status of implementation of the scheme from time to time and dovetail the same with any Govt. scheme(s). CSR details done in the past should be clearly spelt out in case of expansion projects.

xxxv) R&R plan, as applicable, shall be formulated wherein mechanism for protecting the rights and livelihood of the people in the region who are likely to be impacted, is taken into consideration. R&R plan shall be formulated after a detailed census of population based on socio economic surveys who were dependant on land falling in the project, as well as, population who were dependant on land not owned by them.

xxxvi) Assessment of occupational health and endemic diseases of environmental origin in the study area shall be carried out and Action Plan to mitigate the same shall be prepared.

xxxvii) Occupational health and safety measures for the workers including identification of work related health hazards shall be formulated. The company shall engage full time qualified doctors who are trained in occupational health. Health monitoring of the workers shall be conducted at periodic intervals and health records maintained. Awareness programme for workers due to likely adverse impact on their health due to working in non-conducive environment shall be carried out and precautionary measures like use of personal equipments etc. shall be provided. Review of impact of various health measures undertaken at intervals of two to three years shall be conducted with an excellent follow up plan of action wherever required.

xxxviii) One complete season site specific meteorological and AAQ data (except monsoon season) as per latest MoEF Notification shall be collected and the dates of monitoring shall be recorded. The parameters to be covered for AAQ shall include PM_{10}, $PM_{2.5}$, SO_2, NO_x, CO and Hg. The location of the monitoring stations should be so 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 downwind direction at a location where maximum ground level concentration is likely to occur.

xxxix) In case of expansion project, air quality monitoring data of 104 observations a year for relevant parameters at air quality monitoring stations as identified/stipulated shall be submitted to assess for compliance of AAQ Standards (annual average as well as 24 hrs).

xl) A list of industries existing and proposed in the study area shall be furnished.

xli) 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 modeling 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 isopleths should also be shown on the location map. The cumulative study should also include impacts on water, soil and socio-economics.

xlii) Radio activity and heavy metal contents of coal to be sourced shall be examined and submitted along with laboratory reports.

xliii) Fuel analysis shall be provided. Details of auxiliary fuel, if any, including its quantity, quality, storage etc should also be furnished.

xliv) Quantity of fuel required, its source and characteristics and documentary evidence to substantiate confirmed fuel linkage shall be furnished. The Ministry's Notification dated 02.01.2014 regarding ash content in coal shall be complied. For the expansion projects, the compliance of the existing units to the said Notification shall also be submitted

xlv) 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.

xlvi) For proposals based on imported coal, inland transportation and port handling and rail movement shall be examined and details furnished. The approval of the Port and Rail Authorities shall be submitted.

xlvii) Details regarding infrastructure facilities such as sanitation, fuel, restrooms, medical facilities, safety during construction phase etc. to be provided to the labour force during construction as well as to the casual workers including truck drivers during operation phase should be adequately catered for and details furnished.

xlviii) EMP to mitigate the adverse impacts due to the project along with item - wise cost of its implementation in a time bound manner shall be specified.

xlix) A Disaster Management Plan (DMP) along with risk assessment study including fire and explosion issues due to storage and use of fuel should be carried out. It should take into account the maximum inventory of storage at site at any point of time. The risk contours should be plotted on the plant layout map clearly showing which of the proposed activities would be affected in case of an accident taking place. Based on the same, proposed safeguard measures should be provided. Measures to guard against fire hazards should also be invariably provided. Mock drills shall be suitably carried out from time to time to check the efficiency of the plans drawn.

l) The DMP so formulated shall include measures against likely Fires/Tsunami/Cyclones/Storm Surges/Earthquakes etc, as applicable. It shall be ensured that DMP consists of both On-site and Off-site plans, complete with details of containing likely disaster and shall specifically mention personnel identified for the task. Smaller version of the plan for different possible disasters shall be prepared both in English and local languages and circulated widely.

li) Detailed scheme for raising green belt of native species of appropriate width (50 to 100 m) and consisting of at least 3 tiers around 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 CO_2 and other gaseous pollutants and hence a stratified green belt should be developed.

lii) Over and above the green belt, as carbon sink, plan for additional plantation shall be drawn by identifying blocks of degraded forests, in close consultation with the District Forests Department. In pursuance to this the project proponent shall formulate time bound Action Plans along with financial allocation and shall submit status of implementation to the Ministry every six months.

liii) Corporate Environment Policy

a. Does the company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be detailed in the EIA report.
b. Does the Environment Policy prescribe for standard operating process / procedures to bring into focus any infringement / deviation / violation of the environmental or forest norms / conditions? If so, it may be detailed in the EIA.
c. What is the hierarchical system or Administrative order of the company to deal with the environmental issues and for ensuring compliance with the environmental clearance conditions. Details of this system may be given.
d. Does the company has compliance management system in place wherein compliance status along with compliances / violations of environmental norms are reported to the CMD and the Board of Directors of the company and / or shareholders or stakeholders at large? This reporting mechanism should be detailed in the EIA report.

All the above details should be adequately brought out in the EIA report and in the presentation to the Committee.

liv) Details of litigation pending or otherwise with respect to project in any Court, Tribunal etc. shall invariably be furnished.

(Prof. C.R. Babu)
Vice Chairman (Acting Chair)

(Shri T.K.Dhar)
Member

(Shri A.K. Bansal)
Member

(Shri J.L. Mehta)
Member

(Shri N.K. Verma)
Member

(Dr. S. D. Attri)
Member

(Shri P.D. Siwal &
Shri N.S. Mondal)
Member

(Shri B.B. Barman)
Member Secretary

Annexure-I

List of Participants

2.1 & 2.2 M/s. Tamil Nadu Generation & Distribution Corporation Ltd. (TANGEDCO)

1. Sh. T.V.K. Murugan, Director (Projects)
2. Sh. M. Thirumal, SE/C/ Project & Environment
3. Sh. R. Ganapathy Sankaran, OSD(Projects & Environment)
4. Ms. Munavar Sultana, EE/C
5. Sh. N. Srinivasan, EE/C/EMC
6. Sh. A. Stephen Leo, WAPCOS Ltd.
7. Dr. K. Arun Kumar, Consultant, WAPCOS Ltd.
8. Sh. PVR Surendra, Vice President, Bhagavathi Ana Labs.

2.3 M/s. Ramco Cements Ltd.

1. Sh. M. Srinivasan, Sr. Vice president
2. Sh. E. Arumugarajan , GM (L)
3. Sh. P. Kothandapani, Env. Engr.
4. Sh. K. Sekar, Ensyscon, EIA Consultant, Chennai.

2.4 M/s. Essar Power (M.P) Ltd.

1. Sh. Vinay Mittal, M.D.
2. Sh. Pramod Suri, CEO
3. Sh. Dilip K. Naik, V.P (HSE)
4. Capt. Sandeep Gujja, Head (Logistics)
5. Sh. Roshan Agarwal, Head (Raw Material)
6. Sh. Akshay Sharma , Manager

2.5 M/s. East Coast Energy Pvt. Ltd.

1. Sh. R. Srinivasan, V.P (Corporate)
2. Sh. Krovidi Srinivas, V.P (Projects)
3. Sh. Y.B.S Moorthy, Consultant, B.S. Envi Tech Pvt. Ltd.

2.6 M/s. KSK Mahanadi Power Company Ltd.

1. Sh. C.V.K Prasad, Site Head
2. Dr. Acharyulu, Environment Head
3. Sh. H.S. Rajore, G.M (Corp. Affairs)
4. Sh. M. Janardhan, V.P, Vimta Labs

2.7 M/s. Haryana Power Generation Corporation Ltd.

1. Sh. M.K.V. Rama Rao, M.D
2. Sh. S.C. Jain, Director (Generation)
4. Sh. S.K. Khungar, CE/Plg. Sh. D.K. Dua, SE/Plg.
5. Sh. V.K. Chawla, SE/ Civil
6. Sh. Surinder Singh Mittal, OSD (T)
7. Sh. D.P.S. Malik

Annexure R3

MINUTES OF THE 46th MEETING OF THE RE-CONSTITUTED EXPERT APPRAISAL COMMITTEE (EAC) ON ENVIRONMENTAL IMPACT ASSESSMENT (EIA) OF THERMAL POWER & COAL MINING PROJECTS

The 46th Meeting of the reconstituted EAC (Thermal Power) was held on 26th- 27th November, 2015 in the Ministry of Environment, Forest & Climate Change at Teesta Meeting Hall, Vayu Wing, First Floor, Indira Paryavaran Bhawan, Jorbagh Road, New Delhi-110003. The following members were present:

1. Shri Anil Kumar - Chairman
2. Prof. C.R. Babu - Member
3. Shri N.K. Verma - Member
4. Shri A.K. Bansal - Member
5. Shri G.S. Dang - Member
6. Dr. S.S. Bala - Member (Representative of CPCB)
7. Dr. S.D. Attri - Member (Representative of IMD)
8. Shri B.B. Barman - Member Secretary

Shri T.K.Dhar, Shri J.L Mehta, Dr. Ratnavel, Representatives of CEA and WII could not be present. List of other participants is at **Annexure–I.**

At the outset, the Committee welcomed the new Chairman. Chairman reciprocated and congratulated Professor Babu for very successfully conducting the Committee since July, 2014, subsequent to the resignation of earlier Chairman.

Item No.1: CONFIRMATION OF THE MINUTES OF THE 45th EAC (LAST) MEETING.

No comments/observations were received and therefore, the Minutes of the 45th EAC (Thermal Power) meeting held on 29th -30th October, 2015 as circulated were confirmed.

Item No. 2: CONSIDERATION OF PROJECTS

2.1 Expansion of Ramagundam STPP by addition of 2x800 MW (Stage-IV, Telangana STPP, Phase-I) at Village & Mandal Ramagundam, District Karimnagar, Telangana by M/s. NTPC Ltd.- reg. reconsideration for EC

The proposal was earlier discussed in the 45th Meeting of the EAC (Thermal) held during 29th -30th October, 2015, the minutes of which are as under:

Quote "The Project Proponent (PP) along with their environmental Consultant, Vimta Labs, Hyderabad made a presentation and *inter-alia* provided the following information:

(i) ToR for carrying out EIA study and preparation of EMP for the above proposal (2x660 MW) was accorded by the Ministry on 16.09.2014 and an amendment of ToR for revision of capacity to 2x800 MW was accorded on 12.12.2014. The baseline data for EIA/EMP was collected during December, 2014-February, 2015. The final EIA/EMP report, after conducting Public Hearing on 23.05.2015, was submitted to the Ministry for consideration of environmental clearance.

(ii) The land requirement for the proposed TPP would be about 635 acres (main plant- about 235 acres and ash pond-about 400 acres) and will be accommodated within the existing Ramagundam Thermal Power Station. No R&R issues are involved. There are no

ecologically sensitive areas such as Biosphere Reserve, National Park and Wildlife Sanctuary within a radius of 10 km from the site. River Godavari flows at a distance of about 4 km from the project site. The nearest railway station, Ramagundam is about 5 km from the plant which lies on the main Kazipet - Ballarshah broad gauge railway line of South Central Railway. The cost of the expansion project is about Rs. 9,954.20 Crores, which includes about Rs. 834.81 crores for environmental protection measures.

(iii) The coal requirement will be 8 MTPA based on GCV of coal between 3,200-3,900 Kcal/kg Ministry of Coal (MoC) vide letter dated 10.09.2015 has allotted Mandakini-B Coal Mine block in Odisha to the proposed TPP. To expedite the process of project implementation, MoC vide its letter dated 21.09.2015 has accorded in-principle approval for grant of tapering linkage from Coal India Limited (CIL) for the proposed TPP as an exceptional case till the operation of Mandakini-B coal block. The sulphur and ash content in the coal will be 0.5 % (max) and 34-43 % respectively. The transportation of coal will be by rail.

(iv) The water requirement of the proposed TPP is 5,825 cum/hr (about 58 Cusecs), which is proposed to be drawn from Sreepada Yellampally barrage on River Godavari at a distance of about 14 km from proposed site. Govt. of Telangana vide letter dated 31.03.2015 has accorded commitment for 60 Cusecs (2.0 TMC) of water from Sreepada Yellampalli barrage for the proposed TPP. COC of 5.0 shall be adopted. The plant would be designed on zero discharge concept in normal circumstances.

(v) The detailed Hydro-Geological study was carried out through Multi-Tech Services, Hyderabad and the report is enclosed as Annexure-XVI in the final EIA report. As per the said report, the stage of ground water development including existing industrial utilization in the study area is 48.92%. The long term water level monitoring data of CGWB observation well data at Ramagundam and Mancherial in the study area indicate a marginal increasing trend of pre-monsoon or post-monsoon ground water levels. The proposed project does not envisage any drawl of ground water. As the required water from the Yellampalli project is very less compared to the availability, no adverse impact on surface water is envisaged.

(vi) One Twin flue stack of 275 m height shall be installed. The base-line monitoring was done during December, 2014-February, 2015. The maximum base line concentrations of PM, SO_2 and NOx are 68.5 $\mu g/m^3$, 23.5 $\mu g/m^3$ and 32.8 $\mu g/m^3$ respectively The maximum incremental concentrations of PM, SO_2 and NOx are 0.52 $\mu g/m^3$, 34.22 $\mu g/m^3$ and 13.04 $\mu g/m^3$ respectively. The resultant Ground Level Concentrations (GLCs) of these parameters will be within the National Ambient Air Quality Standards (NAAQS).

(vii) The ash generation will be 3.44 MTPA. Ash utilization/management shall be done as per MOEF Gazette Notification on utilization of ash dated 03.11.2009. Ash utilization plan will be implemented for 100% extraction and utilization of dry fly ash along with suitable collection, storage, segregation, loading, transportation and disposal etc. facilities. Dry form fly ash shall be pneumatically transported to fly ash silos. Loading this ash in tankers/ bulkers and also into rail wagons. Fly ash shall be taken by High Concentration Slurry Disposal system (HCSD) and bottom ash through Wet Slurry Disposal system for ultimate disposal to ash disposal area. Expressions of interests for using ash from the proposed TPP were received from Orient Cement, Kesoram Cement and Vasavadatta Cement plants.

(viii) Public Hearing/Public Consultation for the project was conducted by Telangana SPCB on 23.05.2015. The issues raised in the PH pertained to increasing the funds allocated under CSR, employment to the locals & land oustees, adopting the affected villages and provide basic amenities like water, roads, education, health etc., green belt development, control of pollution, facilitating better infrastructure, to construct women society building and underground drainage system in Annapurna colony, to facilitate an agreement for establishing an ESI hospital, medical college, school in collaboration with SCCL & NTPC. The Committee discussed the issues raised in the Public Hearing and the reply of the PP.

2. *After detailed deliberations, the Committee sought the following information/documents which was either not available in the EIA/EMP report or not found appropriate: Accordingly, the proposal was* ***deferred.***

I. *Commitment and Action Plan for compliance to the Ministry's Notification dated 02.01.2014 regarding use of coal with ash content not exceeding thirty-four per cent, on quarterly average basis.*

II. *Detailed note on rise in temperature in consultation with IMD. The data shall be as old as possible.*

III. *Certification from the concerned authority that the site is not located on economically feasible mineable mineral deposit (ToR 15).*

IV. *Occupational Health and epidemic health disorders survey of the study area.*

V. *The Quality of effluent from ash pond vis-à-vis the River water quality. The impact on agricultural fields in terms of heavy metal in food chain and ground water/soil.*

VI. *Plan for recycling and reuse of ash pond effluent after minimizing the discharge of cooling water blow down etc. to the ash pond. No untreated ash pond effluent shall be discharged.*

VII. *Detailed report on water drawl, water channels and diversion duly certified by the Irrigation & Flood Control Department of the State Government.*

VIII. *Satellite map showing the existing green belt. Revised plant layout by maintaining thick three-tier green belt in minimum 33% area.*

IX. *As committed, revised CSR action plan for the proposed expansion with a minimum budget of Rs. 20 Crores (only for the construction phase).*

X. *Budgeted Action plan for the Public Hearing issues.*

XI. *Reply to the representation received by the EAC, a copy of which was provided to the PP.*

XII. *Revised AAQ modeling results.*

XIII. *Commitment for installation of FGD.*

XIV. *Detailed document/permission for tapering coal linkage.*

XV. *All the discrepancies, if any, in the EIA/EMP shall be addressed and submitted.* ***Unquote"***

2. Upon submission of the above documents/information, the proposal was again placed before the Committee during this meeting, wherein the PP along with their environmental consultant, Vimta Labs, Hyderabad, made a presentation and inter-alia, provided the following information:

(i) Regarding compliance to the Ministry's Notification dated 02.01.2014, the coal with ash content not exceeding 34% on quarterly basis will be used for the project. Accordingly, the modified Ash Utilization Plan with 34 % maximum ash content has been submitted and also presented.

(ii) Regarding rise in temperature, the temperature data has been collected from IMD for 1951 to 1980, 1971 to 2000 and 2001-2015 (October) for a period of 65 years. An increase of 4°C in a span of 30 years has inadvertently been mentioned under subsection 3.3.3.3 of chapter-3 of the EIA report due to erroneous comparison of mean maximum IMD data for a period 1951-1980 with the latest 2014 annual temperature data as recorded at Ramagundam STPS. However, comparison of IMD data for period 1951-1980, 1971-2000 and 2001-2015 shows decrease of mean maximum temperature in range between 0.3°C to 1.6°C before and after commissioning of project. The mean maximum temperature during period 1951-1980 (May) is 45.6°C, during period 1971-2000 (May) is 45.3°C and during period 2001-2015 (May) is 43.7°C. Therefore, the mean maximum temperature showed a fall of 0.3°C during the period of 1951-1980 to 1971-2000 and a further fall of 1.6°C during the period of 1951-1980 to 2001-2015. The extreme maximum temperature during period 1951-1980 (May) is 47.2°C, during period 1971-2000 (May) is 47.3°C and during period 2001-2015 (May) is 47.2°C. Further, an increase of 0.1°C is observed in the month of May during period 1951-1980 & 1970-2000 followed by a decrease of 0.1^0 C during subsequent period.

(iii) Regarding economically feasible mineable mineral deposit, a letter has been written by NTPC on 02.11.2015 to Deputy Director General, Geological Survey of India requesting to issue the certificate on mineable deposits in the proposed project location. Necessary Certificate is awaited. However, it is reiterated that the proposed project is being set up within the existing premises of Ramagundam STPS.

(iv) Regarding occupational health, a survey on Environmental Human Health Risk Assessment was conducted by M/s. Pollucon Laboratories Pvt. Ltd, Surat in and around Ramagundam area. The study revealed that there is no specific endemic disease in the surrounding area & the health status of study population was satisfactory and health problems reported during the study were not showing any unusual pattern. The health related problems found during the study like general health related complaints, high blood pressure, malnutrition, anaemia, refractive error were mainly due to life style related factors and not due to above mentioned pollutants in emission.

(v) Regarding the quality of ash pond effluent, the water samples are collected in River Godavari as well as ash pond effluent. Soil samples are collected from agricultural fields of three villages namely Lingapuram, Rayadandi and Peddampet wherein the farmers irrigate their fields with ash water. Paddy samples are collected from Rayadandi Village where in farmers irrigate their fields with ash water. Paddy samples has also been collected from Elkalapalli as a controlled sample. The results of various parameters are within the limits.

(vi) Regarding recycling and re-use of ash pond effluent, the entire ash pond effluent (ash water) of Telangana STPP Stage-I (2x800) MW will be recycled for use in the plant and ash handling system. Ash water recirculation system comprising of pumps and piping are envisaged for the same.

(vii) Regarding report on water drawl etc., irrigation & CAD Department, Government of Telangana vide its letter dated 02.09.2015 has accorded and certified permission for drawl of 60 cusecs (2.00 TMC) water throughout the year from Sreepada Yellampalli Barrage from the net available yield.

(viii) Regarding greenbelt, the photographs relating to green belt development along with satellite map are presented. The revised General Layout Plan with additional proposed Green belt is also presented. Greenbelt of 60 acres shall be provided as shown in Layout plan.

(ix) Regarding CSR action plan, an amount of Rs. 20 crores (during construction phase/five years) will be earmarked for CSR activities of the proposed expansion in the areas of education, health, sanitation, water, electrification, infrastructure etc. During the operation period, CSR funds will be allocated as per GoI Policy.

(x) Regarding budgeted action plan for the Public Hearing issues, during the Public Hearing proceedings most of the public have expressed their concern regarding the Community Development activities for their respective villages. In addition to the regular CSR budget of existing Ramagundam plant, one time cost provision of Rs. 20 Crores for implementation of Community Development (CD) activities related to water, roads, education, health, sanitation, training and support for IGS, etc. under CD Plan for Telangana Project will be earmarked based on assessed needs. Further, post commissioning of Telangana project, CSR funds will also be allocated for Project as per Company Act 2013/ Govt. Guidelines/ NTPC Policy.

(xi) Reply of PP to the representation received by the EAC has been submitted and also presented.

(xii) Regarding the AAQ modeling results, the prediction of maximum Ground Level Concentrations (GLC's) on AAQ due to the proposed power project has been carried out taking in to consideration the worst coal characteristics and worst micro-climatic condition. Based on modeling predictions, it can be concluded that the predicted incremental ground level concentration of SO_2 is about 21.5 $\mu g/m^3$ by using WCL coal. This value when compared to predicted GLCs of SCCL coal (i.e. 34.22 $\mu g/m^3$) reduction of SO_2 emission rate by 37% is observed. As per discussions with CEA representative of EAC, emission load of SO_2 is observed as 27.1 $\mu g/m^3$ considering coal quantity as 7.36 MTPA. Significant reduction in air emission load is envisaged with the use of WCL coal.

The maximum base line concentrations of PM_{10}, SO_2 and NOx are 68.5 $\mu g/m^3$, 23.5 $\mu g/m^3$ and 32.8 $\mu g/m^3$ respectively. The maximum cumulative incremental concentrations of PM_{10}, SO_2 and NOx considering the coal from SCCL /worst case scenario are 11.41 $\mu g/m^3$, 54.47 $\mu g/m^3$ and 20.11 $\mu g/m^3$ respectively. Accordingly, the resultant Ground Level Concentrations (GLCs) of PM_{10}, SO_2 and NOx will be 79.91 $\mu g/m^3$, 77.97 $\mu g/m^3$ and 52.91 $\mu g/m^3$ respectively.

(xiii) Regarding installation of FGD, the cumulative impact indicates a maximum SO_2 concentration of 65.10 $\mu g/m^3$ with the committed tapering linkage of WCL coal which is well within prescribed limits. However, space provision has been kept in General Layout Plan for retrofitting FGD System in future, if required.

(xiv) Regarding tapering coal linkage, Coal India Limited (CIL) vide its letter dated 06.11.2015 has allotted tapering coal linkage for the Telangana Stage-I STPP (2x800) MW from Western Coalfields Ltd. (WCL).

(xv) Regarding discrepancies, if any, in the EIA/EMP, the issues raised in the minutes of EAC meeting have been addressed.

3. Based on the information/document provided by the Project Proponent and clarification provided during detailed discussions held on all the issues, the Committee recommended the project for environmental clearance subject to stipulations of the following additional specific conditions:

I. As the Satellite Imagery submitted was not clear, a clear satellite imagery shall be submitted to the Ministry and its R.O. Further, latest authenticated satellite imagery shall be submitted on an annual basis to the Ministry and its R.O. to monitor the alterations of the area.

II. The PP shall ensure compliance to the Ministry's Notification dated 02.01.2014 regarding use of coal with ash content not exceeding thirty-four per cent, on quarterly average basis. This is to be ensured by incorporating a condition in the MoU/FSA with CIL etc. Also, if required, coal washery shall be installed.

III. The Sulphur and ash content of coal shall not exceed 0.5% and 34 % respectively. In case of variation of quality at any point of time, fresh reference shall be made to the Ministry and suitable amendments to the environmental clearance will have to be sought.

IV. FGD shall be installed as the emissions are found to be almost reaching threshold limit of 80 unit (for the worst case scenario) and also considering the cushion w.r.t NAAQS.

V. NTPC shall endeavor to enter into MoUs with NHAI, Associations of Cement Industries and Municipal Authorities for ensuring ash utilization in roads construction and cement manufacturing.

VI. The PP shall examine possibility of relocating the ash pond. In case, the relocation of ash pond is not possible, precautionary measures by providing maximum green belt between ash pond and reservoir etc. shall be undertaken.

VII. Study shall be conducted regarding the impact on agricultural fields in terms of heavy metal in food chain and ground water/soil for a period of one year and the report submitted to the Ministry.

VIII. The Ash Water Re-circulation System (AWRS) shall be immediately installed for the existing TPP. Till that time, the ash pond effluent shall not be discharged into agricultural fields etc.

IX. The PP shall enhance the green belt of the existing TPP in compliance to the earlier EC conditions etc.

X. *Long term monitoring of temperature shall be undertaken on-site and off-site of the TPP, as data of decrease in temperature needs to be verified. Further, requisite corrective action shall be taken based on the findings of the monitoring.*

XI. *As the data for the health studies was more than five years old, a fresh Occupational Health and epidemic health disorders survey of the study area (10 km radius) shall be conducted and the report submitted to the Ministry and its R.O. within one year.*

XII. *As committed, a minimum amount of Rs. 20 Crores shall be earmarked as capital cost for CSR activities and the recurring cost per annum shall be as per the CSR policy of GOI till the operation of the plant commences.*

2.2 300 MW replacement Coal Based Thermal Power Project at Parli- Vaijanathi, District Beed, Maharashtra by M/s Maharashtra State Power Generation Co. Ltd.- reg. reg. extension of validity of EC.

The Committee noted that EC for the above TPP was accorded by MoEF&CC on 09.09.2008 with a validity period of five years to start the production operations by the TPP. The PP has applied to MoEF&CC for extension of validity of EC only on 02.11.2015 i.e. after more than two years after the expiry of validity. The Committee also noted that the PP has revised the TPP capacity to 250 MW without the prior approval of MoEF&CC.

2. As the validity of the EC expired more than 2 years back, the proposal could not be considered.

2.3 Expansion by addition of 1350 MW (Phase-II) Natural Gas Combined Cycle Power Plant at Village Komaragiri, Mandal U. Kothipali, District East Godavari, Andhra Pradesh by M/s Spectrum Power Generation Ltd.- reg. extension of validity of EC.

The Committee was informed that the PP has applied to the Ministry for extension of validity of EC on 19.03.2015 i.e. within the validity period. The Committee noted that MoEF&CC vide its Notification dated 29.04.2015 has amended the initial validity period of ECs inter-alia for TPPs from 5 to 7 years. However, due to a pending decision by the Ministry on the applicability of the Notification, the proposal was not placed before the EAC. Since the said decision is still awaited, as per the extant procedure being followed, the proposal has been referred to the EAC for its recommendations.

2. The PP made a presentation and inter-alia provided the following information:

(i) EC for the above TPP and CRZ clearance for intake and outfall of sea water was accorded by MoEF&CC on 01.06.2010 and 22.06.2011 respectively. The entire land required is in the possession of the PP. Tender process for sourcing the main plant equipment was completed and the PP is about to issue the LoI to the successful bidder. Financial closure for the first phase of 350 MW out of 1350 MW was completed. APDISCOMs intends to avail 50 % of the expansion capacity without going through competitive bidding process at tariff determine by AP-ERC and the PP is about to enter into PPA.

(ii) The implementation of proposed expansion was deferred on temporary basis due to non-availability of domestic gas till 2015-16 as per MoP and CEA. GAIL (India Ltd.) has agreed in-principle to enter into an MoU/Term Sheet for the supply of Natural Gas for

the proposed expansion. Alternatively, two LNG floating terminals (FSRUs) one at Kakinada Deep Water Port by APGDCL, GAIL, GDF SUEZ & SHELL and another at Gangavaram Deep Water Port by LNG Petronet and other State owned oil companies with a peak capacity of 5 MTPA each are coming up by 2016-17. Hence, extension of validity of EC for a further period of 5 years is requested.

3. *The Committee noted that although the PP is not at fault for non-availability of domestic gas subsequent to the EC, the PP even as on date, does not have firm gas linkage / MoU which is a pre-requisite for the viability of the proposed TPP and accordingly, for the extension of validity of EC. The PP submitted that they would secure the gas linkage within 3/4 weeks time and would produce relevant document. Hence, the proposal was* ***deferred*** *in the absence of firm gas linkage, and PP was advised to approach the Ministry after availability of linkage.*

2.4 Proposed expansion by addition of 1,000 MW (2x500 MW) Lignite based TPP at Neyveli, Tehsil Kurinjipadi, District Cuddalore, Tamil Nadu by M/s Neyveli Lignite Corporation Ltd. – reg. extension of validity of EC.

The PP made a presentation and inter-alia provided the following information:

(i) EC for the above TPP was accorded by MoEF&CC on 21.10.2010. Govt. of India, PIB sanction was accorded for the project on 09.06.2011. Notice inviting tender was floated for steam generator, steam turbine generator and balance of plant packages from 28.06.2011. But as the boiler design is unique for lignite firing, the right agency for the steam generator package could not be finalized as the capability of the agency quoted could not be verified and the process had gone for retender. Finally, the contract for the steam generator (boiler) was awarded in October, 2013 and the steam turbine generator package was awarded in December, 2013 to M/s BHEL. The balance of plant package contract was awarded to M/s ESSAR (EPIL) on 30.04.2014.

(ii) The Boiler, ESP, FD, ID and TG house foundations were completed. TG Raft, TG columns, Spring placements completed. TG Deck casting to be done. Chimney, Cooling Towers, Raw water pump house, Pre-treatment and DM water plant, Lignite handling and Switch yard foundations are in progress. Ash Handling and Circulating Water System foundations are yet to be started. ESP erection is in progress. TG hall columns 'A' row - 19 columns out of 24, 'B' row - 8 of 24 and 'C' row - 7 of 24 had been erected. The Boiler column erection is yet to be started as M/s Alstom, the Technical &Process Collaborator for M/s. BHEL, had insisted for bolted structures and E450 grade structural steel. Now the columns are under fabrication in vendor units and are expected by January, 2016. The unique material specifications and the design for the Main Steel Structures of the Steam Generator (Boiler) which have limited availability in India. All the bottle necks have been overcome and the plant is likely to be commissioned in the middle of 2018. However, it is requested to extend the validity of EC for five years.

2. *The Committee noted that MoEF&CC vide Notification dated 29.04.2015 has amended the initial validity period of EC inter-alia for TPPs from five to seven years. However, while a formal decision by the Ministry on the applicability of the Notification is pending, as per the extant procedure being followed, the proposal has been referred to the EAC for its recommendations. Hence, the Committee recommended the maximum permissible Extension of Validity of EC i.e. for two years/till 20.10.2017 to start the production/operations by the TPP subject to the following additional conditions.*

(i) *The monitoring data of AAQ, water quality etc. shall be compared with the oldest baseline data available to assess the impact of the TPP and also the cumulative impacts on a continuous basis.*

(ii) *Considering the location of the TPP in Cuddalore District and the directions of Hon'ble NGT pertaining to the cumulative impacts/carrying capacity of the area, the PP shall comply with all the conditions stipulated/Action Plan, if any, by SPCB for the area.*

2.5 2x660 MW Thermal Power Project at Karchhna, District Allahabad, Uttar Pradesh by M/s Sangam Power Generation Company Ltd. - reg. reconsideration for extension of validity of EC.

The proposal was earlier discussed in the 26th Meeting of the EAC (Thermal) held during 27th -28th November, 2014, the minutes of which are as under:

Quote "The proposal is for extension of validity of EC accorded by the Ministry for the above project on 30.10.2009. The PP made a presentation and inter-alia provided the following information. The cost of the project is Rs. 6,500 Crores and the expenditure incurred till 31.08.2014 is Rs. 887.47Cores

2. Regarding the project implementation status, the project was awarded to PP by Uttar Pradesh Power Corporation Limited (UPPCL) based on competitive bidding process vide Letter of Intent (LOI) dated 20.02.2009. 'Power Purchase Agreement' executed between PP & the Procurers (5 Discoms of UPPCL, namely MVVNL, PaVVNL, PVVNL, DVVNL and KESCO), to provide total required land for the proposed thermal power project. The requisite land admeasuring 555.63 Ha. was allotted by UPPCL. Land deed of conveyance was executed for 273.48 Ha of land on 23.02.2010, and for 239.473 Ha of land on 05.08.2010. To meet the capital investment for the Project, necessary equity and debt have been tied up. The financial closure for the project was achieved by 12.08.2010. Orders for BTG (Boiler & Turbine Generators) equipment were placed with L&T on 23.07.2010. An advance of Rs.313 crores was also released to the contractor (L&T) as per terms & conditions stipulated in the Letter of Award.

3. Regarding the major reasons for delay in implementation of project, efforts were made to commence the work at the project site on various occasions starting 11.12.2010, 1.12.2011 and recently on 7.9.2014. However, the work could not be started, as section of land owners/villagers were opposing the commencement of work and resorted to violent agitation to stop the activities at site. The PP has reported all the law and order problems and its effect on starting construction activities to UPPCL/District Administration at various levels from time to time.

4. A section of land owners approached to Hon'ble High Court of Allahabad, opposing the land acquisition for establishment of Thermal Power Plant. Hon'ble High Court of Allahabad vide its Order dated 13.04.2012, quashed the land acquisition done vide land acquisition notification dated 23.11.2007 under Section 4 read with Section 17(1) and 17(4) of the Act as well as the declaration under Section 6 of the Act dated 3.3.2008 subject to refund of compensation, if any, received by the petitioners. A Notification in this regard was published in two local newspapers Hindustan and Dainik Jagran on 25.9.2012 to refund the compensation within 30 days. However, none of the land owners turned up to refund the compensation. The Hon'ble High Court of Allahabad, also, ordered to State Government to proceed afresh for acquisition of land relating to relevant villages of Tehsil Karchhana, District Allahabad in accordance with law.

5. Regarding the actions taken by District Administration & UPPCL to sort out issues regarding land acquisition, Principal Secretary (Energy), GOUP, vide its letter, dated 23.10.2013 to District Magistrate, Allahabad, wherein, it has been mentioned that, to comply with Hon'ble High Court's decision, a Notification in this regard was published in two local newspapers, to refund the compensation within 30 days. However, as none of the land owners turned up to refund the compensation, construction work can be started on that land. District Magistrate and Developers can negotiate with land owners, not accepted compensation and their compensation has been deposited in RD with State Govt., for relocation on mutual consent basis, within the acquired land, so that project activities won't get affected.

6. Out of 1,942 affected land owners/farmers owning 512.592 Ha of land under acquisition, 1,850 land owners owning 490.673 Ha of land had given consent and accepted the compensation as per communication dated 12.11.2013 received from District Magistrate, Allahabad. With persistent persuasion thereafter, the number of these distraught landowners/farmers has been reduced from 92 to only 33. More so, out of these 33 land owners, 17 have given consent for relocation of their land outside the plant boundary. UPPCL has tried land acquisition through negotiations with the land owners vide letter dated 28.11. 2013. As a follow up, UPPCL vide its letter to PP dated 22.7.2014 has issued minutes of meeting dated 11.7.2014 chaired by Principal Secretary (Energy), GOUP wherein, it has been mentioned that, the remaining land owners be persuaded to take compensation with interest or get their land relocated outside plant boundary. Principal Secretary (Energy), in pursuance to the above, issued directions to DM to proceed with the formalities for exchange of land under section 161.

7. The Committee noted that the land issue is not yet completely resolved. The Judgment of Hon'ble High Court needs to be submitted along with its compliance. The latest operational LoA/FSA for coal was also sought. The proposal was accordingly ***deferred. Unquote"***

2. Upon submission of the above documents/information, the proposal was again placed before the Committee during this meeting, wherein the PP made a presentation and inter-alia provided the following information. The representative of UPPCL was also present.

(i) A section of land owners approached the Hon'ble High Court of Allahabad, opposing the land acquisition for establishment of Thermal Power Plant. Subsequently, Hon'ble High Court of Allahabad issued Order dated 13th April, 2012 given the Judgement that, "The Notification dated 23rd November, 2007 issued under Section 4 read with Section 17(1) and 17(4) of the Act as well as the declaration under section 6 of the Act dated 3rd March, 2008 are quashed subject to deposit of compensation, if any, received by the petitioners. It shall be open for the State Government to proceed afresh for acquisition of land relating to relevant villages of Tehsil Karchhana, District Allahabad in accordance with law". A Notification in this regard was published by DM, Allahabad in two local newspapers Hindustan and Dainik Jagran on 25th September, 2012 asking the land owners to refund the compensation within 30 days. However, none of the land owners turned up to refund the compensation, as per MoM chaired by DM, Allahabad dated 18.11.2013.

(ii) Further, one of the Farmers of Village Deori Kala , Post- Bheer Pur, Tehsil Karchhana has prayed, vide writ Petition No. 52367 of 2014 in the Hon'ble High Court of Judicature at Allahabad to "Quash the Notification bearing No. 3084/24-P-3-2007-35)p)/2007 U/s 4 of the Land Acquisition Act and the Notification bearing No. 417/24-

p-3-2008 35(P)/2007 U/s 6 dated 03.03.2008 of the Land Acquisition Act. Provide the compensation of the land in question to the petitioner according to the new Land Acquisition Act of 2013". It may please be noted that the Prayer itself is in contradiction, accordingly the Hon'ble High Court of Judicature at Allahabad has issued below order dated 14.08.2015 against the Writ Petition filed by Case No.–WRIT-C No.52367 of 2014.

(iii) The Hon'ble High Court of Judicature at Allahabad Order dated 14.08.2015 given the Judgement that, "The petitioner has filed this petition seeking to invoke Section 24 (2) of the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013. The contesting respondents in their reply have specifically asserted that the petitioner had indeed received compensation under the agreement and the possession of the entire land forming the subject of this acquisition had been taken over. The petitioner has filed a rejoinder affidavit today wherein, the factual aspects, as averred in paragraphs 3 and 4 of the counter affidavit, have not been denied. Though it is cursorily sought to be suggested in paragraph 4 of the rejoinder that the petitioner is having actual physical possession of the land, however, the specific submissions made by the contesting respondents in the counter affidavit have not met with specific denial with all particulars by the petitioner. In the totality of circumstances, we find no reason to issue any writ, order or direction in this petition. Exercise of writ jurisdiction in this matter is declined. The writ petition stands dismissed".

(iv) Subsequent to mentioned Hon'ble High Court Order, a meeting was called by Govt. of Uttar Pradesh in the context of Hon'ble High Court Order on 16th September, 2015, during which Principal Secretary, Govt. of Uttar Pradesh had appraised that the writ petition stands dismissed and the writ jurisdiction in this matter is declined henceforth the land has been acquired for Karchhana Thermal Power Project as per the Land Acquisition Act and no further action is required to be taken in this regard.

(v) The continuity of the coal linkage was taken up during the meeting of "Standing Linkage Committee (Long Term) for Power" held on 17th July, 2015. As per MOM dated 10th August, 2015, issued by Ministry of Coal, the Standing Committee confirmed the continuity of the Coal Linkage to the project.

3. *The Committee was categorically informed by the representative of UPPCL that all the legal matters have been settled, as is evident from the minutes of the meeting held on 16.09.2015 under the Chairmanship of Principal Secretary, Energy, Govt. of U.P.*

4. *The Committee noted that MoEF&CC vide Notification dated 29.04.2015 has amended the initial validity period of EC inter-alia for TPPs from five to seven years. However, while a formal decision by the Ministry on the applicability of the Notification is pending, as per the extant procedure being followed, the proposal has been referred to the EAC for its recommendations. Hence, the Committee recommended the maximum permissible Extension of Validity of EC i.e. for two years/till 29.10.2016 to start the production/operations by the TPP subject to final outcome of all the pending legal matters, if any.*

2.6 4x1000 MW Pudimadaka Super Thermal Power Project at Villages Lalamkoduru, Rambilli, Veduruvdda & Pudimadaka, District Visakhapatnam, Andhra Pradesh by M/s NTPC Ltd. – reg. EC

The PP along with their environmental Consultant, Vimta Labs, Hyderabad, made a presentation. The Committee noted that MoU/FSA for imported coal doesn't mention the coal

quality parameters, details of Port etc. Hence, the same shall be revised and submitted. Further, no study was conducted for transportation of the imported coal. Although, the PP now submits that they propose a captive jetty, this was not a part of EIA/EMP. This seems to be a very recent proposal of PP and no action has been initiated by the PP regarding obtaining EC and CRZ clearance for the Jetty. Hence, the PP needs to firm up the transportation plan and accordingly also shall have to submit permission letter from the Port and Railway authorities depending on the proposed coal transportation plan.

2. Some studies recommended in ToRs i.e. hydro-geological studies etc. were not yet completed and some ToRs i.e. permission from State Govt. regarding diversion of Nalahs etc. have not even been taken up. The PP agreed to attend to these and submit compliance report.

3. The Committee deliberated in detail on the representation received from ERC, New Delhi raising a plethora of flaws, inconsistencies, infirmities and non-compliance of ToR conditions in the EIA/EMP and during public hearing. PP was asked to submit a detailed point wise reply/compliance to all the issues raised in the said representation. A copy of the same was provided to the PP.

4. The EAC advised the Environmental Consultants including IIT Roorkee to guide the PP properly as it was observed that the EIA was not complete in its entirety, some investigations have yet to be taken up, while others are under way, awaiting completion whose data are to be used in the EIA Report.

4. In view of above, the proposal was ***deferred.*** *The Committee also advised the PP that the above lacunae should not be repeated and proposal should never be submitted prematurely.*

2.6A Expansion by addition of 1x800 MW (Stage-III), North Chennai TPP at Villages Ennore & Puzhudivakkam, Taluk Ponneri, District Thiruvallur, Tamil Nadu by M/s Tamil Nadu Generation & Distribution Corporation Ltd. (TANGEDCO)- reg. reconsideration for EC.

The proposal was earlier discussed in the 38th Meeting of EAC (Thermal Power) held on 25th-26th June, 2015, the minutes of which are as under

Quote "The PP along with their environmental consultant, Ramky Enviro Engineers Ltd., Hyderabad, made a presentation and *inter-alia,* provided the following information:

(i) ToR for carrying out EIA study and preparation of EMP for the above proposal was accorded by the Ministry on 28.05.2012 and the validity of TOR was extended upto 27.5.2015 vide letter 08.09.2014. Public Hearing was conducted on 05.03.2015. Demarcation of site was done by Institute of Remote Sensing, Anna University, in 1:4000 scale including CRZ Zonation / land use for 7 km radius around the project site. The State Coastal Zone Management Authority (SCZMA) recommended the foreshore facilities viz. coal conveyor and cooling water inlet/outlet pipe lines to MoEF in the meeting held on 19.05.2015. Certified compliance report from the Ministry's Regional Office (R.O) for the conditions stipulated in the ECs of the existing Units was submitted and the compliance is found to be satisfactory.

(ii) The land requirement for the proposed expansion is 76.9 Ha (190 acres), which is located inside the NCTPS complex. Entire land is under possession of TANGEDCO. There are no R&R issues. No further expansion is envisaged. There are no National Parks, Sanctuaries, Elephant/Tiger Reserves, Migratory Routes/Wildlife Corridors

within 10 km of the project site. The site is 500 m away from High Tide Line (HTL) of Sea and 100 m away from the HFL of canal. The project site is a graded area with necessary drains developed during execution of NCTPS Stage I project (3x210 MW). The capital and recurring cost towards EMP is Rs. 480 Crores and 48 Crores respectively.

(iii) The imported coal requirement of 2.09 MTPA with maximum sulphur and ash contents of 0.8% and 12% respectively will be sourced through MMTC, New Delhi. Ennore Port is establishing Coal Berth 3 (CB 3) exclusively for the use of TANGEDCO in addition to existing Coal Berth 1 & 2. It is proposed to transport coal from CB 3 to the NCTPS Stage III plant site through closed belt conveyors since the coal conveyor route is well within Port and Power plant area alone. Radio activity and heavy metal contents of coal to be sourced have been tested and the parameters are well within limits.

(iv) The Ambient Air Quality (AAQ) was monitored during June – August, 2012. The maximum base line concentration for PM_{10}, SO_2 and NOx was 94.4 $\mu g/m^3$, 15.8 $\mu g/m^3$ and 37.7 $\mu g/m^3$ respectively. The maximum cumulative incremental concentration of PM_{10}, SO_2 and NOx would be 1.4 $\mu g/m^3$, 61 $\mu g/m^3$ and 41 $\mu g/m^3$ respectively. Final GLC of all these will be within the prescribed AAQ limits.

(v) The potable water of about 9 MLD required for the plant will be met by treating sea water in R.O. based desalination plant. The sea water (1,65,600 KLD) will be sourced Ennore port basin via existing intake channel of NCTPS Stage II. COC of 1.3 has been proposed to optimize water usage. The domestic wastewater from plant and service wastewater will be collected and treated and reused for greenbelt, dust suppression, etc and zero discharge will be maintained As sea water is proposed for cooling purpose, the same will be discharged into sea through the existing pre cooling channel of NCTPS.

(vi) Both the inlet & outlet points are proposed to be linked with the NCTPS Stage-II systems. Marine EIA study was carried out by IIT Madras in association with WAPCOS Limited. The highlights of the study are that, no rare, endangered or threatened marine flora and faunal species is reported in and around the project area and the area is devoid of sea weeds and coral reefs. The study indicated the availability of primary nutrients (N & P) in moderate level showing the project area having moderate productivity. The marine water quality in and around the proposed outfall area is that of any normal coastal environment. Outfall temperature of coolant water will be only 3.3 °C higher than ambient and at a distance of 2 km from outfall water temperature reduces to 0.4 °C. The outfall of NCTPS stage III project would not change the quality of natural coastal environment.

(vii) Fly ash and bottom ash would be collected and stored in the silos and supplied to cement/brick industries for manufacturing cement and bricks. 100% Dry Fly ash Collection will be done by providing Pressurized Dry Fly ash Collection System. The fly ash from the existing Units is being sold by e-auction and the same is proposed for the instant Unit. Ash pond water will be collected, treated then reused for slurry making.

(viii) Socio economic study of 15 km radius around the project site covering surrounding villages was carried out by M/s Madras School of Social Works. As per the recommendations of the study, the local employable youth will be imparted with training skills since the project area is surrounded by number of Industries. A budget of Rs. 8.0 crores and Rs. 2.0 crores has been earmarked as Capital Cost and recurring

cost per annum for CSR respectively. The CSR activities will be monitored by the Environment Cell at project site under the project head.

(ix) Public Hearing/Public Consultation for the project was conducted by Tamil Nadu Pollution Control Board on 04.07.2014. It was noted that the issues raised in the PH pertained to affect of hot water let out into the sea, discharge of ash slurry, affect of soil and ground water, damage to fishing nets and boats, affect of fly ash in air, employment, hydro-geological study, respiratory problems due to carbon particles etc. The Committee discussed the issues raised in the PH and the reply of the PP.

2. *The Committee inter-alia noted that as per the O.M. dated 03.02.2015, the PP needs to apply online for CRZ clearance to the Ministry and accordingly the Committee shall consider the comments/remarks of CRZ sector of the Ministry. After detailed deliberations, the Committee sought the following information/documents:*

I. Action plan for harnessing solar power.

II. *Revised layout clearly depicting the various Units and facilities.*

III. FSA/MoU for imported coal.

IV. Letter from competent Port authority regarding handling of the coal.

V. Comparison of the year round base-line data before and after the Stage-I and II.

VI. Stack diameter of all the stacks.

VII. Rechecking and the AAQ predictions.

VIII. The water quality data was not properly presented. Hence, the same needs to be re-done for the fresh water and sea water.

IX. Details of existing and proposed e-auction for fly ash, the LoIs from prospective takers along with quantities etc.

X. Explore various avenues for utilization of bottom ash.

XI. OHS data of the employees of existing Units. If survey not done, the same shall be done and submitted.

XII. Green belt development in the existing Units along with illustrative photographs.

XIII. Employment potential for local people.

On receipt of the above documentation and information, the case will be placed before EAC for reconsideration" **Unquote.**

2. Upon submission of the above documents/information, the proposal was again placed before the Committee during this meeting, wherein the PP along with their environmental consultant, Ramky Enviro Engineers Ltd., Hyderabad, made a presentation and inter-alia, provided the following information:

(i) EAC/CRZ Committee of MoEF&CC has considered the captioned project during its meeting held on 29.07.2015 and recommended CRZ clearance for the proposed project.

(ii) Regarding action plan for harnessing solar power, TANGEDCO proposed to tap solar power by installing PV Solar Plant (with seasonal tilt Mechanism) on roof tops of Administrative & Power house buildings at cost of Rs.850 Lakhs to generate 1000 KW power. In addition to this, Solar water heating systems will be provided on the roof tops of guest house and canteen at estimated cost of Rs. 50 Lakhs. Total budget proposed for tapping Solar power is Rs.900 Lakhs.

(iii) Regarding revised layout, revised layout of NCTPS prepared by Institute of Remote Sensing/Anna university depicting various units Stage I (3x210 MW), Stage II (2x600 MW) and Stage III (1x800 MW) and facilities viz., Coal conveyor, Cooling water inlet/outlet and Bottom ash disposal line to Ash dyke has been submitted and also presented.

(iv) Regarding FSA/MoU for Imported Coal MoU has been signed between MMTC limited, a GOI Enterprise and TANGEDCO on 25th May 2015 for supply of 2.51 MTPA of Coal for proposed NCTPS Stage III (1x800 MW) plant. The maximum sulphur and ash contents of the imported coal shall be 0.8% and 8% respectively.

(v) Regarding letter from Port for handling of Coal, letter has been obtained from Kamarajar Port Limited (erstwhile Ennore Port Limited) on 28.07.2015 for handling of imported coal for NCTPS Stage III (1 x 800 MW) plant. Imported Coal will be transported through closed conveyor from Port to the proposed NCTPS Stage III site since the port is located adjacent to the NCTPS complex.

(vi) Regarding comparison of the baseline data, before Stage I and Stage II. The ambient air quality is being monitored at three locations (Vivekananda Vidyalaya, Vallur, Kamarajar Port and near Cooling water pump house, NCTPS). Sampling is carried out 2 days a week for SPM, SO_2 and NOx. Due to the execution of Vallur TPP (3x500 MW) and NCTPS Stage II (2x600 MW) in the vicinity and development of Ponneri Highway from Chennai, the pollution levels were high during the period of 2007 to 2011. During 2013 and 2014 the values are declining since the construction activities are over

(vii) Regarding stack diameter, the same ranges from 6.6 to 7.5 for the different TPPs with a same stack height of 275 m.

(viii) Regarding rechecking the AAQ Predictions, the same were rechecked considering under execution and proposed power plants. The resultant cumulative PM_{10}, SO_2 and NO_x concentrations in the worst case scenario would be 95.8 $\mu g/m^3$, 76.8 $\mu g/m^3$ and 78.7 $\mu g/m^3$ respectively.

(ix) Regarding the water quality data, three surface water samples were collected and the results were analyzed and compared with surface water standards.

(x) Regarding fly ash utilization, at present, TANGEDCO is disposing the fly ash by allotment to the cement companies and the companies have established silos to collect the fly ash from the power plant. The bottom ash is being supplied to the brick manufacturing / SSI units for making fly ash bricks. Open tender system is being adopted to allot the fly ash to the companies. An MOU executed with M/s Dalmia Cements (Bharat) Ltd, Dalmiapuram, Tamilnadu for off take of fly ash from the proposed NCTPS Stage III (1x800MW).

(xi) Regarding bottom ash utilization, the bottom ash of the proposed plant will be collected through dry bottom handling system and used for brick manufacturing and road laying purposes. Excess, if any, will be disposed through existing ash dyke of NCTPS.

(xii) Regarding OHS data of the employees of existing Units, the consolidated health checkup status of NCTPS I & II plant employees for year 2014-2015 carried out through a clinical Laboratory/Chennai is submitted. Very few employees have shown abnormal results and the needful like change of workspot/division is being done to these employees.

(xiii) Regarding greenbelt, the total land under greenbelt is around 27% and this will be increased to 33% by additional plantation. The photographs of the existing greenbelt has been submitted and also presented.

(xiv) Regarding employment potential, a total (permanent and temporary) of about 175 and 550 persons shall be employed during the construction and operation phase respectively. Preference in employment will be given to local people through Contract works. TNEB (TANGEDCO) has provided direct employment to around 1000 land owners who spared their land for development of NCTPS during 1995. Thiruvallur and Kancheepuram Districts located adjacent to Chennai District became the industrial hub of Tamilnadu because of these infrastructure development in Thiruvallur District.

3. The Committee noted that the EAC (CRZ) has recommended the grant of CRZ clearance for the foreshore facilities of the above proposed TPP subject to the following conditions.

(i) Coal conveyance should take place in closed conveyor and that there could be no open stacking of the coal in the CRZ area.
(ii) The Intake water pipeline should be laid as per provisions of CRZ Notification, 2011.
(iii) Disposal of hot water shall meet TNSPCB norms.
(iv) Water temperature should be monitored at outlets of each of the unit (3 phases) and also at pre-cooling channel joining Ennore creek.

4. Based on the information and clarifications provided by the Project Proponent and detailed discussions held on all the issues, the Committee recommended the project for environmental and CRZ clearance subject to stipulation of the said conditions of EAC (CRZ) and the following additional specific conditions:

I. Explore the feasibility of multiple distributing point for the discharge of cooling water into pre-cooling channel and also the widening of the pre-cooling channel.
II. PP shall endeavor to enter into MoUs with NHAI, Associations of Cement Industries and Municipal Authorities for ensuring full ash utilization.
III. As committed, FGD shall be installed to ensure emission below threshold limits .

2.7 Coal-based Supercritical Thermal Power Project of 1,320 MW (2x660 MW) at Villages Dimirimunda, Samasingha & Mahulamund, Tehsil Rairakhol, District Sambalpur, Orissa by M/s. Visaka Thermal Power Ltd.- reg. ToR

The PP along with their environmental Consultant, Visiontek Consultancy Services Pvt. Ltd., Bhubaneswar made a presentation and *inter-alia* provided the following information.

(i) TOR for preparation of EIA/EMP to the above proposal was accorded by MoEF&CC on 13/05/2011. Considering the maximum period of validity of ToR, the PP has applied to MoEF&CC for fresh ToR. Prior to the said ToR dated 13.05.2011, ToR was accorded twice

for the proposed TPP at two different locations in Bhadrak District of Orissa. However, the ToR expired due to land acquisition issues and techno-economic re-considerations.

2. At the outset, the Committee noted that ToR for the proposed TPP was accorded thrice for three different locations since 2009 and the PP could not submit the final EIA/EMP to MoEF&CC till date. The Committee also deliberated upon the issues raised in the representation received from ERC, New Delhi on the proposed TPP and opined that the said issues need to be first addressed especially considering the lack of progress since 2009.

3. In view of above, the Committee sought detailed reply and compliance to all the issues from the PP. The same shall be duly authenticated by the State Government. Further, the concerned senior officers from the State Govt. shall also be present before the Committee when the proposal would be considered next. The proposal was accordingly ***deferred.***

2.8 Expansion by addition of 2x660 MW (Phase-II) supercritical TPP at Villages Kalisindh and Nimoda, Tehsil Jhalarapatan, District Jhalawar, Rajasthan by M/s Rajasthan Vidyut Utpadan Nigam Ltd.- reg. extension of validity of ToR

The PP along with their environmental Consultant, PCRI, BHEL, Haridwar made a presentation and *inter-alia* provided the following information:

(i) TOR for preparation of EIA/EMP to the above proposal was accorded by MoEF&CC on 10/12/2013. Base line data collection for EIA studies has been completed at site during December, 2013 to March, 2014. Based on site studies & ToR prescribed, EIA report was submitted to Rajasthan State Pollution Control Board (RSPCB) for Public Consultation. Public Hearing has been organized at site on 08.07.2015 by RSPCB. Minutes of Public Hearing along with video CD submitted by RSPCB to MoEF&CC vide letter dated 03.09.2015. Final EIA report incorporating all the aspects could not be submitted to MoEF&CC for consideration of EC due to non-availability of coal for the project. Coal allocation is awaited for the proposed project.

2. The Committee noted that as per the Ministry's O.M. dated 22.08.2014 regarding extension of validity of ToR, the PP needs to apply to the Ministry at least three months before the expiry of validity period, together with an updated Form- I, based on proper justification. However, the PP has submitted the proposal for extension of validity of ToR to MoEF&CC only on 15.10.2015, which is less than three months before the expiry of validity period.

3. The Committee was of the view that subject to condonation of delay by the Ministry in submission of the Application, the extension of validity of ToR may be agreed to.

2.9 1x660 MW Super Critical Power Plant at Salboni, District West Medinipur, West Bengal by M/s JSW Energy (Bengal) Ltd.- reg. extension of validity of ToR

The PP made a presentation and *inter-alia* provided the following information:

(i) TOR for preparation of EIA/EMP to the above proposal was accorded by MoEF&CC on 07/01/2014. Subsequently, on-site data was collected for three month period i.e. from December, 2013 to March, 2014. Public Hearing was conducted at Salboni by WBPCB on 26/08/2014. The Final EIA/EMP Report could not be submitted to MoEF&CC due to the reason that the linked coal block (Ichhapur situated in West Bengal) was de-allocated vide Hon'ble Supreme Court ruling dated 24.09.2014. Accordingly, probable overseas and domestic linkages are being sought. As a result, the proposed TPP doesn't have a

firm linkage at the moment. In view of the above, application has been made for extension of the validity of the TOR which is presently valid up to 07/01/2016.

2. The Committee noted that as per the Ministry's O.M. dated 22.08.2014 regarding extension of validity of ToR, the PP needs to apply to the Ministry atleast three months before the expiry of validity period, together with an updated Form- I, based on proper justification. Although, the PP has apparently requested the Ministry for extension of validity of ToR vide letter dated 23.09.2015, the same was without requisite document i.e. updated Form- I and also not applied online through Ministry's Portal, which is mandatory w.e.f. 01.07.2014. Thereafter, the PP has submitted the proposal for extension of validity of ToR online through Ministry's Portal only on 16.10.2015, which is less than three months before the expiry of validity period.

4. The Committee was of the view that subject to condonation of delay by the Ministry in submission of the Application, the extension of validity of ToR may be agreed to.

Item No. 3: ANY OTHER ITEM WITH THE PERMISSION OF THE CHAIR.

There being no agenda item left, the meeting ended with a vote of thanks to the Chair. The next meeting of the EAC (Thermal Power) is scheduled for **18th December, 2015.**

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(Shri Anil Kumar) Chairman	(Prof. C.R. Babu) Member	(Shri A. K. Bansal) Member
(Shri N.K. Verma) Member	(Shri G. S. Dang) Member	(Dr. S.D. Attri) Member
(Shri S.S. Bala) Member		(Shri B.B. Barman) Member Secretary

Annexure-I

List of Participants

2.1 M/s. NTPC Ltd.

1. Sh. S. Kishore Kumar, Vimta Labs
2. Sh. R.K. Baderia, HoD (Env. Engg.)
3. Sh. A.K. Gupta, ED (Engg.)
4. Dr. P.R. Rao, AGM (Env.)
5. Sh. V. Ravi, Babu, AGM
6. Sh. Neeraj Kapoor, AGM (R&R)
7. Sh. Pankaj Dhyani, AGM(R&R)
8. Sh. S. Padmapriya, AGM (PE-Mech.)
9. Sh. Rajeev Baijal, AGM (PE-Civil)
10. Sh. K. Athinamilagi, DGM, NNTPP/NLC Ltd.

2.2 M/s. Maharashtra State Power Generation Co. Ltd.

1. Sh. V.P. Thagaonkar
2. Sh. A.R. Nandanwar
3. Sh. V.S. Khatare, CE
4. Sh. S.B. Thakur Mohger

2.3 M/s. Spectrum Power Generation Ltd.

1. Sh. Srinivas Rao, CFA
2. Sh. Venkat Rao, AGMC
3. Sh. A.K. Sinha, AGM (F&A)
4. Sh. Paratap Reddy, DGM (Env.)

2.4 M/s. Neyveli Lignite Corporation Ltd.

1. Sh. Shakil Ahmed, Addl. Chief Manager
2. Sh. A. Chellasomg
3. Sh. K. Athinamilahi

2.5 M/s. Sangam Power Generation Company Ltd.

1. Sh. Kamal Dhawan
2. Sh. P.K. Goyal
3. Ms. Sharddha Dubey
4. Sh. Sumeer Saraf, Project Engg.
5. Sh. R.P. Singh, Executive Engg, UPPTCL

2.6 M/s. NTPC Ltd. (Pudimadaka Super Thermal Power)

1. Sh. Shashi Ranjan, ED
2. Sh. P.R. Rao, AGM
3. Sh. Sunil Jain, DGM

4. Sh. Manas Samantrav, Sr. Enggr.
5. Sh. Rajeev Baijal, AGM
6. Sh. R.K. Baderia, HoD
7. Sh. A. Gopalakrishnan
8. Sh. G. Brahmaji Rao, AGM
9. Sh. Y. Apparao, Sr. Enggr.
10. Sh. Subhash Chandra, Sr. Enggr.

2.6(A) M/s. Tamil Nadu Generation & Distribution Corporation Ltd. (TANGEDCO)

1. Sh. Er. K. Sivaprakasam, Director
2. Sh. R. Kamaraj, CE/Project
3. Sh. A. Munavar Sultana, SE
4. Sh. N. Srinivasan,
5. Sh. V. Vajay Kumar, Consultant
6. Sh. Pankaj Malik, Consultant

2.7 M/s. Visaka Thermal Power Ltd.

1. Sh. Uma Shankar Rathi, Director
2. Sh. Kali Charan, Visiontek (Consultant)
3. Sh. Subrat Mallik, Visiontek(Consultant)
4. Sh. P. Kumar Ranjan

2.8. M/s. Rajasthan Vidyut Utpadan Nigam Ltd.

1. Sh. ER. C.L. Koli, SE (PPM)
2. Sh. ER.Mohana Kumar.M.B, Ex.E (PP)
3. Sh. Arjesh Sharma, Sr. DGM
4. Sh. Manish Sachan, Sr. Manager, PCRI, BHEL
5. Sh. Rajendra Singh Yadav, Sr. Enggr., PCRI, BHEL

2.9 M/s. JSW Energy (Bengal) Ltd.

1. Sh. A. Bhattarcharjee, AVP
2. Sh. Jaishankar Balan, Sr. Mgr.
3. Sh. Sutaru Guestt, Consultant

Annexure R4

J-13012/14/2012-IA.II (T)
Government of India
Ministry of Environment, Forest and Climate Change

Indira Paryavaran Bhawan, Jor Bagh Road,
Aliganj, New Delhi-110003.

Dated: 20.01.2016

To

M/s Tamil Nadu Generation & Distribution Corporation Ltd.
(A successor entity of TNEB),
5th Floor Western Wing, NPKRR Maaligai,
144, Anna Salai, Chennai-2,
Telefax: - 044-28520878; E.mail:- cepr@tnebnet.org

Sub: Environmental Clearance for Expansion by addition of 1x800 MW (Stage-III), North Chennai TPP and CRZ Clearance for foreshore facilities at Villages Ennore & Puzhudivakkam, Taluk Ponneri, District Thiruvallur, Tamil Nadu by M/s Tamil Nadu Generation & Distribution Corporation Ltd. (TANGEDCO).

Sir,

This has reference to your online application dated 26.05.2015 and additional information/documents submitted vide letter dated 18.11.2015 & 20.11.2015 w.r.t the aforesaid project. This Ministry has examined the proposal. It is inter-alia, noted that the ToR for preparation of EIA/EMP report was accorded by the Ministry on 28.05.2012 and the validity of TOR was extended upto 27.05.2015 on 08.09.2014. Public Hearing was conducted on 05.03.2015. The State level CZMA in its meeting dated 19.05.2015 has recommended the CRZ clearance for foreshore facilities.

2. The land requirement for the proposed expansion is 76.9 Ha (190 acres), which is located inside the NCTPS complex. Entire land is under possession of TANGEDCO. There are no R&R issues. No further expansion is envisaged. There are no National Parks, Sanctuaries, Elephant/Tiger Reserves, Migratory Routes/Wildlife Corridors within 10 km of the project site. The site is 500 m away from High Tide Line (HTL) of Sea and 100 m away from the HFL of canal. The project site is a graded area with necessary drains developed during execution of NCTPS Stage I project (3x210 MW). The capital and recurring cost towards EMP is Rs. 480 Crores and 48 Crores respectively.

3. The imported coal requirement of 2.09 MTPA will be sourced through MMTC, New Delhi. FSA/MoU for Imported Coal MoU has been signed between MMTC limited, a GOI Enterprise and TANGEDCO on 25.05.2015 for supply of 2.51 MTPA of Coal for proposed NCTPS Stage III (1x800 MW) plant. The maximum sulphur and ash contents of the imported coal shall be 0.8% and 8% respectively. Ennore Port is establishing Coal Berth 3 (CB 3) exclusively for the use of TANGEDCO in addition to existing Coal Berth 1 & 2. It is proposed to transport coal from CB 3 to the NCTPS Stage III plant site through closed belt conveyors since the coal conveyor route is well within Port and Power plant area alone. Kamarajar Port Limited (erstwhile Ennore Port Limited) vide letter dated 28.07.2015 has consented for handling of imported coal for the proposed expansion TPP. Radio activity and heavy metal contents of coal to be sourced have been tested and the parameters are well within limits.

4. The potable water of about 9 MLD required for the plant will be met by treating sea water in R.O. based desalination plant. The sea water (1,65,600 KLD)

will be sourced Ennore port basin via existing intake channel of NCTPS Stage II. COC of 1.3 has been proposed to optimize water usage. The domestic wastewater from plant and service wastewater will be collected and treated and reused for greenbelt, dust suppression, etc. and zero discharge will be maintained. As sea water is proposed for cooling purpose, the same will be discharged into sea through the existing pre cooling channel of NCTPS.

5. The following facilities will be in CRZ area:

i. Coal conveyor having length of 3.5 km and elevation of 6 m for coal transportation form Ennore Port to NCTPS Stage-III TPP.
ii. Supporting trestles (Steel frames) for coal conveyor at about 6 m/8 m from ground level.
iii. Sea water intake from forebay of NCTPS stage-II intake & outlet pipe to pre cooling channel of NCTPS for discharge with intake pipe length of 3 km and outlet pipe length of 1.5 km.
iv. GRP (Glass Reinforced Plastic) pipes on the ground level for cooling water inlet and coolant water outlet.

6. Fly ash and bottom ash would be collected and stored in the silos and supplied to cement/brick industries for manufacturing cement and bricks. 100% Dry Fly ash Collection will be done by providing Pressurized Dry Fly ash Collection System. The fly ash from the existing Units is being sold by e-auction and the same is proposed for the instant Unit. An MOU is executed with M/s Dalmia Cements (Bharat) Ltd, Dalmiapuram, Tamilnadu for off take of fly ash from the proposed NCTPS Stage III (1x800MW). Ash pond water will be collected, treated and reused for slurry making.

7. Based on the information, clarification, documents submitted and presentations made by you and your consultant, viz. Ramky Enviro Engineers Ltd., Hyderabad, before the *Expert Appraisal Committee (EAC - Thermal Power) in its 38th & 46th Meetings held during 25th-26th June, 2015 & 26th-27th November, 2015, respectively and EAC (CRZ) in its 150th Meeting held during 29th-31st July, 2015,* the Ministry hereby accords environmental clearance to the above power plant under the provisions of EIA Notification dated September 14, 2006 & subsequent amendments therein and CRZ clearance for foreshore facilities under the provisions of CRZ Notification, 2011 & subsequent amendments therein subject to compliance of the following Specific and General conditions:

A. Specific Conditions:

(i) *Explore the feasibility of multiple distributing point for the discharge of cooling water into pre-cooling channel and also the widening of the pre-cooling channel.*

(ii) *PP shall endeavor to enter into MoUs with NHAI, Associations of Cement Industries and Municipal Authorities for ensuring full ash utilization.*

(iii) *As committed, FGD shall be installed to ensure emission below threshold limits.*

(iv) *Coal conveyance shall take place in closed conveyor and that there shall be no open stacking of the coal in the CRZ area.*

(v) *The intake water pipeline shall be laid as per provisions of CRZ Notification, 2011.*

(vi) *Disposal of hot water shall meet Tamil Nadu Pollution Control Board (TNSPCB) norms.*

(vii) *Water temperature shall be monitored at outlets of each of the unit (3 phases) and also at pre-cooling channel joining Ennore creek.*

(viii) *All the recommendations and conditions specified by Tamil Nadu Coastal Zone Management Authority (TNCZMA) vide letter No.10173/EC.3/2015-1 dated 16.06.2015, shall be complied with.*

(ix) *Explore to develop Green belt along the conveyor.*

(x) *Periodical monitoring of the sea water at the discharge point shall be done and report be submitted along with the six monthly monitoring reports.*

(xi) *Construction activity shall be carried out strictly as per the provisions of CRZ Notification, 2011. No construction work other than those permitted in Coastal Regulation Zone Notification shall be carried out in Coastal Regulation Zone area.*

(xii) Vision document specifying prospective plan for the site shall be formulated and submitted to the Regional Office of the Ministry within **six months**.

(xiii) Harnessing solar power within the premises of the plant particularly at available roof tops shall be carried out and status of implementation including actual generation of solar power shall be submitted along with half yearly monitoring report.

(xiv) *The sulphur and ash content of coal shall not exceed 0.8 % and 8 % respectively. In case of variation of quality at any point of time, fresh reference shall be made to the Ministry for suitable amendments to the environmental clearance.*

(xv) A long term study of radio activity and heavy metals contents on coal to be used shall be carried out through a reputed institute and results thereof analyzed every two year and reported along with monitoring reports. Thereafter mechanism for an in-built continuous monitoring for radio activity and heavy metals in coal and fly ash (including bottom ash) shall be put in place.

(xvi) High Efficiency Electrostatic Precipitators (ESPs) shall be installed to ensure that particulate emission does not exceed 30 mg/Nm^3. Adequate dust extraction system such as cyclones/bag filters and water spray system in dusty areas such as in coal handling and ash handling points, transfer areas and other vulnerable dusty areas shall be provided along with an environment friendly sludge disposal system.

(xvii) Adequate dust extraction system such as cyclones/ bag filters and water spray system in dusty areas such as in coal handling and ash handling points, transfer areas and other vulnerable dusty areas shall be provided.

(xviii) The SO_2, NOx and Hg emissions shall not exceed 100 mg/Nm^3, 100 mg/Nm^3 and 0.03 mg/Nm^3 respectively.

(xix) The specific water consumption shall not exceed 2.5 m^3/MWh and zero waste water discharge shall be achieved.

(xx) COC of atleast 1.3 shall be adopted.

(xxi) Monitoring of surface water quantity and quality shall also be regularly conducted and records maintained. The monitored data shall be submitted to the Ministry regularly. Further, monitoring points shall be located between the plant and drainage in the direction of flow of ground water and records maintained. Monitoring for heavy metals in ground water shall also be undertaken and results/findings submitted along with half yearly monitoring report.

(xxii) A well designed rain water harvesting system shall be put in place within six months, which shall comprise of rain water collection from the built up and open area in the plant premises and detailed record kept of the quantity of water harvested every year and its use.

(xxiii) No water bodies including natural drainage system in the area shall be disturbed due to activities associated with the setting up / operation of the power plant.

(xxiv) Wastewater generated from the plant shall be treated before discharge to comply limits prescribed by the SPCB/CPCB.

(xxv) Explore the commercial utilization of brine instead of discharging into sea.

(xxvi) Disposal of solid/liquid from Desalination plant shall comply with the prescribed standards and if need be, environmental safeguard measures by providing balancing/neutralizing tank may be set up and operated regularly & efficiently.

(xxvii) Sea water quality shall be continuously monitored for salinity, turbidity and temperature at selective sites across the impacted zone including estuarine waters. Mitigative measures shall be undertaken through institutes such as Annamalai University for continuous preservation of mangroves and their ecology. The monitoring data shall be uploaded on the company's website and also submit to Regional Office of the Ministry every six months.

(xxviii) To minimize entrapment of even small marine flora and fauna, state of the art low aperture intake screens with high effectiveness for impingement and entrainment and fishnet around intake shall be installed.

(xxix) Fish catch along the impacted zone of sea should be monitored periodically by the Department of Fisheries, Government of Gujarat. The project proponent shall accordingly take up the matter with the Fishery Dept., Govt. of Gujarat from time to time.

(xxx) The project proponent shall upload environmental quality monitored data on a regular basis on its website.

(xxxi) Marginalized section of society particularly traditional fishermen communities shall be identified based on 2011 population census data and socio-economic study of the various strata of families such as those carrying out subsistence fishing, commercial fishing etc. shall be carried out and impact on their livelihoods shall be assessed separately. Accordingly, sustainable welfare scheme/measures shall be undertaken and status of implementation shall be submitted to the Regional Office of the Ministry within six months.

(xxxii) A state-of-the-art environmental laboratory at the project site shall be established such that the laboratory has facilities for long term monitoring of sea water quality and sediment in the impacted zone over and above and ambient air, soil quality analysis of the area. The proponent shall undertake mitigative measures if there are any negative impacts.

(xxxiii) Additional soil for leveling of the proposed site shall be generated within the sites (to the extent possible) so that natural drainage system of the area is protected and improved.

(xxxiv) Fugitive emission of fly ash (dry or wet) shall be controlled such that no agricultural or non-agricultural land is affected. Damage to any land shall be mitigated and suitable compensation provided in consultation with the local Panchayat.

(xxxv) Fly ash shall not be used for agricultural purpose. No mine void filling will be undertaken as an option for ash utilization without adequate lining of mine with suitable media such that no leachate shall take place at any point of time. In case, the option of mine void filling is to be adopted, prior detailed study of soil characteristics of the mine area shall be undertaken from an institute of repute and adequate clay lining shall be ascertained by the State Pollution Control Board and implementation done in close co-ordination with the State Pollution Control Board.

(xxxvi) Fly ash shall be collected in dry form and storage facility (silos) shall be provided. Mercury and other heavy metals (As, Hg, Cr, Pb etc.) shall be monitored in the bottom ash. No ash shall be disposed off in low lying area.

(xxxvii) Green Belt consisting of three tiers of plantations of native species all around plant and at least 50 m width shall be raised. Wherever 50 m width is not feasible a 20 m width shall be raised and adequate justification shall be submitted to the Ministry. Tree density shall not be less than 2500 per ha with survival rate not less than 80 %.

(xxxviii) Green belt shall also be developed around the Ash Pond over and above the Green Belt around the plant boundary.

(xxxix) An Environmental Cell comprising of at least one expert in environmental science/ engineering, ecology, occupational health and social science, shall be created preferably at the project site itself and shall be headed by an officer of appropriate superiority and qualification. It shall be ensured that the Head of the Cell shall directly report to the Head of the Plant who would be accountable for implementation of environmental regulations and social impact improvement/mitigation measures.

(xl) The project proponent shall formulate a well laid Corporate Environment Policy and identify and designate responsible officers at all levels of its hierarchy for ensuring adherence to the policy and compliance with the conditions stipulated in this clearance letter and other applicable environmental laws and regulations.

(xli) CSR schemes identified based on need based assessment shall be implemented in consultation with the village Panchayat and the District Administration starting from the development of project itself. As part of CSR prior identification of local employable youth and eventual employment in the project after imparting relevant training shall be also undertaken.

Company shall provide separate budget for community development activities and income generating programmes.

(xlii) For proper and periodic monitoring of CSR activities, a CSR committee or a Social Audit committee or a suitable credible external agency shall be appointed. CSR activities shall also be evaluated by an independent external agency. This evaluation shall be both concurrent and final.

B) General Conditions:

(i) The treated effluents conforming to the prescribed standards only shall be re-circulated and reused within the plant. Arrangements shall be made that effluents and storm water do not get mixed.

(ii) A sewage treatment plant shall be provided (as applicable) and the treated sewage shall be used for raising greenbelt/plantation.

(iii) Adequate safety measures shall be provided in the plant area to check/minimize spontaneous fires in coal yard, especially during summer season. Copy of these measures with full details along with location plant layout shall be submitted to the Ministry as well as to the Regional Office of the Ministry.

(iv) Storage facilities for auxiliary liquid fuel such as LDO/ HFO/LSHS shall be made in the plant area in consultation with Department of Explosives, Nagpur. Sulphur content in the liquid fuel will not exceed 0.5%. Disaster Management Plan shall be prepared to meet any eventuality in case of an accident taking place due to storage of oil.

(v) First Aid and sanitation arrangements shall be made for the drivers and other contract workers during construction phase.

(vi) Noise levels emanating from turbines shall be so controlled such that the noise in the work zone shall be limited to 85 dB(A) from source. For people working in the high noise area, requisite personal protective equipment like earplugs/ear muffs etc. shall be provided. Workers engaged in noisy areas such as turbine area, air compressors etc shall be periodically examined to maintain audiometric record and for treatment for any hearing loss including shifting to non noisy/less noisy areas.

(vii) Regular monitoring of ambient air ground level concentration of SO_2, NOx, $PM_{2.5}$ & PM_{10} and Hg shall be carried out in the impact zone and records maintained. If at any stage these levels are found to exceed the prescribed limits, necessary control measures shall be provided immediately. The location of the monitoring stations and frequency of monitoring shall be decided in consultation with SPCB. Periodic reports shall be submitted to the Regional Office of this Ministry. The data shall also be put on the website of the company.

(viii) Utilization of 100% Fly Ash generated shall be made from **4th** year of operation. Status of implementation shall be reported to the Regional Office of the Ministry from time to time.

(ix) Provision shall be made for the housing of construction labour (as applicable) within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care,

crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.

(x) The project proponent shall advertise in at least two local newspapers widely circulated in the region around the project, one of which shall be in the vernacular language of the locality concerned within seven days from the date of this clearance letter, informing that the project has been accorded environmental clearance and copies of clearance letter are available with the State Pollution Control Board/Committee and may also be seen at Website of the Ministry of Environment and Forests at http://envfor.nic.in.

(xi) A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zila Parisad / Municipal Corporation, urban local Body and the Local NGO, if any, from whom suggestions/representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the Company by the proponent.

(xii) The proponent shall upload the status of compliance of the stipulated environmental clearance conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of MOEF, the respective Zonal Office of CPCB and the SPCB. The criteria pollutant levels namely; SPM, RSPM ($PM_{2.5}$ & PM_{10}), SO_2, NO_x (ambient levels as well as stack emissions) shall be displayed at a convenient location near the main gate of the company in the public domain.

(xiii) The environment statement for each financial year ending 31st March in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of environmental clearance conditions and shall also be sent to the respective Regional Offices of the Ministry by e-mail.

(xiv) **The project proponent shall submit six monthly reports on the status of the implementation of the stipulated environmental safeguards to the Ministry of Environment and Forests, its Regional Office, Central Pollution Control Board and State Pollution Control Board. The project proponent shall upload the status of compliance of the environmental clearance conditions on their website and update the same periodically and simultaneously send the same by e-mail to the Regional Office, Ministry of Environment and Forests.**

(xv) Regional Office of the Ministry of Environment & Forests will monitor the implementation of the stipulated conditions. A complete set of documents including Environmental Impact Assessment Report and Environment Management Plan along with the additional information submitted from time to time shall be forwarded to the Regional Office for their use during monitoring. Project proponent will up-load the compliance status in their website and up-date the same from time to time at least six monthly basis. **Criteria pollutants levels including NO_x (from stack & ambient air) shall be displayed at the main gate of the power plant.**

(xvi) Separate funds shall be allocated for implementation of environmental protection measures along with item-wise break-up. These cost shall be included as part of the project cost. The funds earmarked for the environment

protection measures shall not be diverted for other purposes and year-wise expenditure should be reported to the Ministry.

(xvii) The project authorities shall inform the Regional Office as well as the Ministry regarding the date of financial closure and final approval of the project by the concerned authorities and the dates of start of land development work and commissioning of plant.

(xviii) Full cooperation shall be extended to the Scientists/Officers from the Ministry / Regional Office of the Ministry / CPCB/ SPCB who would be monitoring the compliance of environmental status.

C) An as built or as completed report on EMP to be submitted stating the scope/extent of work envisaged in the EIA along with estimated cost vis-à-vis the actual completed works and cost incurred. A certificate/completion certificate accordingly, shall have to be submitted before commissioning of the TPP.

8. The Ministry reserves the right to revoke the clearance if conditions stipulated are not implemented to the satisfaction. The Ministry may also impose additional environmental conditions or modify the existing ones, if necessary.

9. The environmental clearance for the power plant **shall be valid for a period of 7 years** from the date of issue of this letter to start operations by the power plant. The CRZ clearance for foreshore facilities **shall be valid for a period of 5 years** from the date of issue of this letter for commencement of construction & operation of foreshore facilities.

10. Concealing factual data or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act, 1986.

11. In case of any deviation or alteration in the project proposed including coal transportation system from those submitted to this Ministry for clearance, a fresh reference should be made to the Ministry to assess the adequacy of the condition(s) imposed and to add additional environmental protection measures required, if any.

12. The above stipulations would be enforced among others under the Water (Prevention and Control of Pollution) Act, 1974, the Air (Prevention and Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986 and rules there under, Hazardous Wastes (Management, Handling & Transboundary Movement) Rules, 2008 and its amendments, the Public Liability Insurance Act, 1991 and its amendments.

13. Any appeal against this environmental clearance shall lie with the National Green Tribunal, if preferred, within 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.

Yours faithfully,

(B. B. Barman)
Scientist 'F'

Copy to:

1. The Secretary, Ministry of Power, Shram Shakti Bhawan, Rafi Marg, New Delhi 110001.

2. The Secretary (Environment), Environment Department, Government of Tamil Nadu.
3. The Chairman, Central Electricity Authority, Sewa Bhawan, R.K. Puram, New Delhi-110066.
4. The Chairman, Tamil Nadu Pollution Control Board, No. 76, Mount Road, Mount Salai, Guindy, Chennai - 600 032
5. The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-cum-Office Complex, East Arjun Nagar, Delhi- 110032.
6. The Additional Principal Chief Conservator of Forests (C), Regional Office (SEZ), 1st and IInd Floor, Handloom Export Promotion Council, 34, Cathedral Garden Road, Nungambakkam, Chennai- 34.
7. The District Collector, Thiruvallur District, Govt. of Tamil Nadu
8. Guard file/Monitoring file.
9. Website of MoEF&CC

(B. B. Barman)
Scientist 'F'