

**BEFORE THE NATIONAL GREEN TRIBUNAL
EASTERN ZONE BENCH, KOLKATA
(Through Physical Hearing With Hybrid Mode)**

Appeal No.10/2018/EZ
(M.A. No.68/2018/EZ & I.A. No.96/2020/EZ)

In the Matter of:

Prafulla Samantray,
S/o Dinabandhu Samantaray,
R/o A/3, Road No.8,
Unit-9, Bhubaneswar,
Odisha

..... **Appellant(s)**

Versus

1. Union of India,

Ministry of Environment, Forests & Climate Change,
Through its Secretary,
Indira Paryavaran Bhawan,
Jorbagh Road, Aligunj,
New Delhi - 110003

2. State of Odisha,

Through its Chief Secretary,
Sachivalaya Marg, Unit-2,
Bhubaneswar,
Odisha - 751001

3. Odisha State Pollution Control Board,

Through its Member Secretary,
Paribesh Bhawan,
A/118, Nilakantha Nagar, Unit-VIII,
Bhubaneswar,
Odisha - 751012

4. M/s NTPC Ltd.,

Through its CMD,
NTPC Bhawan, SCOPE Complex,
7, Institutional Area, Lodhi Road,
New Delhi - 110003

..... **Respondent(s)**

Date of completion of hearing and reserving of order: 09.01.2023

Date of uploading of order on the Website: 31.01.2023

**CORAM: HON'BLE MR. JUSTICE B. AMIT STHALEKAR, JUDICIAL MEMBER
HON'BLE, PROF. A. SENTHIL VEL, EXPERT MEMBER**

For Appellant(s) :Mr. Saurabh Sharma, Advocate a/w
Mr. Kaustav Dhar, Advocate (in Virtual Mode)

For Respondent(s) : Mr. Soumitra Mukherjee, Advocate for R-1 (in Virtual Mode),
Ms. Papiya Banerjee Bihani, Advocate for R-3 (in Virtual Mode),
Mr. K. M. Natraj, ASG a/w Mr. Shailesh Madiyal, Advocate and
Mr. Uttam Kumar Mandal, Advocate for R-4(in Virtual Mode)

ORDER

1. We have heard Mr. Saurabh Sharma, learned Counsel appearing (in Virtual Mode) for the Appellant and the learned Counsel for the Respondents.
2. This Appeal has been filed by the Appellant, seeking quashing of the Environmental Clearance dated 12.09.2018 granted by the Ministry of Environment, Forests and Climate Change, Respondent No.1, to M/s NTPC Ltd., Respondent No.4 (hereinafter referred to as 'Project Proponent').
3. The case history preceding the grant of Environmental Clearance dated 12.09.2018 for Talcher Thermal Power Station Stage – III (2 x 660 MW) is that the TTPS is situated in Talcher Town in Angul District of Odisha, established in 1967 having capacity of 460 MW (Stage-I: 4x60 MW in 1967) and (Stage-II: 2x10 MW) in 1982. The Project is stated to have been earlier implemented by the Orissa State Electricity Board (OSEB) and was subsequently taken over by the M/s NTPC Limited, Project Proponent, on 03.06.1995.
4. It is stated that Angul-Talcher was declared as 'Critically Polluted Area' by the Central Pollution Control Board ('CPCB' for short) in 2010 and by an order dated 13.01.2010, the Respondent No.1, Ministry of Environment, Forests and Climate Change, declared a moratorium on Environmental Clearance for the project located in areas of Angul-Talcher. The said moratorium was subsequently lifted vide Office Memorandum dated 31.03.2011 and the Odisha

State Pollution Control Board was required to formulate an Action Plan for the said Critically Polluted Area (CPA).

5. It is stated that for establishing the present Project of 2x660 MW Talcher TPS (expansion), a Terms of Reference ('ToR' for short) was issued by the Respondent No.1, Ministry of Environment, Forests and Climate Change, vide its letter dated 21.10.2014 which was valid for a period of two years i.e., upto 21.10.2016. The said ToR was further extended for one year i.e., till 21.10.2017 vide letter dated 13.01.2017 and again for one more year i.e., till 21.10.2018 vide letter dated 15.09.2017.
6. It is also stated that a Public Hearing for the said Project was conducted on 12.07.2017 in the DAV Public School Premises, NTPC (TTPS), Talcher, District-Angul, in pursuance of the provisions of the Environment Impact Assessment (EIA) Notification dated 14.09.2006. The Final Environmental Impact Assessment Report for Talcher Thermal Power Station (TTPS) for 2x660 MW, Stage-III, was issued in January, 2018. The Project Proponent, Respondent No.4 submitted its online application for grant of Environmental Clearance on 19.01.2018 .
7. It is further stated that the proposal for expansion was considered by the Expert Appraisal Committee (hereinafter referred to as 'EAC') (Thermal Power) in its 16th meeting held on 19.04.2018. On 18.06.2018 the Respondent No.4, Project Proponent, is stated to have submitted additional information sought by the EAC and the Project came up for re-consideration on 27.06.2018 in the 18th meeting of the re-constituted EAC on Environmental Impact Assessment of Thermal Power Projects and the said EAC recommended for grant of Environmental Clearance subject to certain conditions. The EAC in its 16th meeting held on

19.04.2018, while considering the proposal of the Project Proponent for expansion, made the following observations which read as under:-

“16.3.2 *Committee noted that the specific coal mine from which coal will be transported is not known. Longterm coal linkage is yet to be allotted by Ministry of Coal. PP is anticipating that the coal will be sourced from nearby MCL mines. PP submitted that the ash content in the coal used for proposed power plant will not exceed 34%. Either MCL mines shall supply beneficiated coal or Project Proponent shall set up a washery at power plant to meet bring down the ash content below 34%. Further, PP has done the air quality modeling for both stack heights viz. 150&275 m. PP further has carried out cumulative impact by considering two power plants within 10 km radius. However, PP has not considered the cumulative impact or combined release of plume from all the stacks of existing power plant (460 MW) as well as proposed power plant. As the proposed power plant is located near Talcher, which is a critically polluted area, the baseline values which are shown in the EIA report are low compared to the baseline status in the Talcher CPA. CPCB member has verified the online data which show that PM 10 is 240.3 µg/m³ and PM_{2.5} is 79.8 µg/m³. Further, PP has submitted site inspection report of SPCB Regional Office. However, the site inspection report does not cover detailed point-wise compliance status of the conditions stipulated in the Consent to Operate. further, SPCB report mentions that PP is in the process of setting up Effluent Treatment Plant. PP is presently discharging ash in lean slurry form into South Balanda mines through 12 km pipeline. It is also reported that PP is constructing two ash ponds with an area of 133.848 acres and 156.538 acres at Jhadiamba and Santhapada. As per analysis report by SPCB shows that at TTPS Colony, PM 10 is µg/m³. PM emissions from all the stacks and ETP discharge are within the prescribed standard. Further, PP has mentioned that*

the existing power plant will be decommissioned at later stage and only the proposed power plant will be under operation. However, PP has not submitted any details in the EIA report regarding decommissioning of existing power plant which is under operation. Further, Committee felt that cost of green belt development Rs. 5 crores is very minimum and to be revised. CPCB member mentioned that the existing power plant was given directions under Section 5. The Committee also noted that Water Resource Department requested NTPC to submit a fresh proposal for reducing the quantity from 52.8 cusecs to 39 cusecs from River Grahmani.

16.3.3 *After deliberations, Committee deferred the project for want of following information:*

- i. One-month summer season baseline data is to be collected for verification of baseline status of the project. baseline data is to be collected at 4 monitoring locations (two locations from sampling locations mentioned in the EIA report & two locations from Continuous Air Quality Monitoring Station and all four locations should be in the downwind direction). The results shall be compared with data from the 4 OSPCB Air Quality Monitoring Stations in Talcher.*
- ii. Certified point-wise compliance report for Consent to Operate for the existing power plant by RO, OSPCB, as the site visit report submitted by the RO, OSPCB is incomplete.*
- iii. Details of firm coal linkage.*
- iv. Action plan for meeting ash content in coal up to 34%.
Action plan for setting up of a coal washery, if any.*
- v. Details of capital budget for CSR activities and implementing Public Hearing Commitments.*
- vi. Action plan for achieving new thermal emission standards vide dated 7.12.2015 for power plants under operation.*
- vii. Implementation of decision taken by the Ministry of Power vide letter No. 19/3/2018-OM(E)-Part (1) dated 01.03.2018 regarding transportation of coal through closed Pipe conveyor for power plants with in 20 km*

of coal source and shall use MGR system for TPS within 20 to 40 km from coal source.

- viii. Cumulative prediction of air quality for the worst case scenario considering all the stacks which are under operation for both the stack heights 150 m/075m.
- ix. Status of forest clearance for 2.337 acres.
- x. Decommissioning plan for existing power plant, if any.
- xi. Details and copy of directions issued by PCB/SPCB, if any.
- xii. Water requirement of the existing and proposed power plants vis-à-vis availability of water in the Brahmani river considering the potential users in the upstream and downstream.”

8. Further observations were made by the EAC in its 18th meeting held on 7.06.2018 which are as under:-

“(18.5.3 Committee noted that though linkage document form Ministry of Coal is available, exact source of coal is not known. Standing Committee stated that CIL shall have consultations with Ministry of Shipping and Ministry of Railways so that linkages are allocated from sources based on coal availability and transportability. Further, committee noted that Project Proponent is currently sending the ash to South Balanda mines located nearby for its disposal. Committee noted that the ash shall not be directly disposed in the mines. In such cases, there is a high chance of rupturing groundwater aquifer and heavy metals transport into groundwater. Committee felt that the ash should be mixed with either overburden or lime. Further, committee noted that PP is constructing two new ash ponds at Jhadiamba and Santhapada. During Public Hearing, people raised an objection of constructing ash pond at Santhapada as it is located near to Brahmani River. Committee felt that there should not be any necessity of ash pond at all. All the ash generated from the power plant shall be used for various construction purposes, cement and brick manufacturing. The unutilised ash may be sent to South Balanda mines. Further committee

noted that PP could not present the weather classes which were taken for predicting the ground level concentrations for both scenarios of stack heights (150m/275m) as the increase in the GLC is only 0.2-0.5 µg/m³ by decreasing the stack height from 275 to 150m. further, the maximum Ground Level Concentrations in both the cases are occurring at the same distance (1.6 km for PM and 1.3 km for SO₂ & NO_x). PP informed that Stage-I forest clearance for 2.377 acres has been obtained. However, a copy of the same needs to be submitted to the Ministry.

(18.5.4) Committee after detailed deliberations, recommended for grant of Environmental Clearances subject to following conditions in addition to the standard conditions for Thermal Power Plants.

- i. The ash content and Sulphur contents in the Coal shall not exceed 34% and 0.55% respectively. In case of change in coal characteristics, a fresh reference is to be made to Ministry for reviewing the incremental impact, if any and adequacy of the conditions.
- ii. The capital CSR/CER budget shall be in line with Ministry's OM dated 1.5.2018 or Rs. 19.5 crores whichever is higher. The amount shall be implemented during project construction in the surrounding villages.
- iii. As the coal source is determined, the details regarding characteristics of coal along with transport mode shall be submitted to Ministry. Coal transportation shall be done by rail only. In any event, coal shall not be transported by road.
- iv. The ash which is sent to South Balanda mines shall be mixed with 8% lime before disposing into the mines.
- v. The new emission standards shall be achieved for existing units as per the extended timelines given by CPCB. Further, the proposed units shall achieve new emissions standards from the date of commissioning of the plant.
- vi. Considering the proposed project is located in the Talcher Critically Polluted Area, the stack height of

275 m shall be erected to achieve maximum dispersion.

vii. *The ash pond near Santhapada shall not be used as it is near to Brahmani River and high chances of breaching and contaminating the water body.”*

9. The Appellant has raised the following issues as ground for assailing the Environmental Clearance granted on 12.09.2018 which are as under:-

- (I) SITE FOR PROPOSED EXPANSION IS UNSUITABLE BEING IN AN ALREADY CRITICALLY POLLUTED AREA;**
- (II) FALSE AND MISLEADING CALCULATION OF AMBIENT AIR QUALITY;**
- (III) FAULTY CUMULATIVE IMPACT ASSESSMENT AND NON-CONSIDERATION OF CARRYING CAPACITY BY THE EAC;**
- (IV) NTPC NOT SERIOUS ABOUT COMPLIANCE OF EMISSIONS NORMS;**
- (V) THE PROPOSED PROJECT DOES NOT HAVE CONFIRMED FUEL LINKAGE;**
- (VI) THE PROJECT WILL CLEARLY RESULT IN LIQUID DISCHARGES TO GROUNDWATER AND THE BRAHMANI RIVER;**
- (VII) EAC HAS FAILED TO APPRISE THE WATER POLLUTION ISSUES IN PROPER PERSPECTIVE AND MANY RELEVANT DATA ON WATER RELATED ISSUES IN EIA ARE ILLEGIBLE;**
- (VIII) EAC HAS FAILED TO APPLY ITS MIND TO THE ASH RELATED POLLUTION;**
- (IX) THE PROJECT IS NOT NEEDED TO MEET THE NATIONAL ENERGY REQUIREMENT;**
- (X) QUESTIONS RAISED IN THE PUBLIC HEARING HAVE NOT BEEN CONSIDERED BY THE EAC;**

- (XI) FINAL FOREST CLEARANCE IS YET TO BE OBTAINED;**
- (XII) THE ENVIRONMENTAL CLEARANCE HAS FAILED TO SHOW WHETHER THE NEW UNIT WILL ACTUALLY ACHIEVE ULTRA-SUPERCritical OPERATION; AND**
- (XIII) HEALTH IMPACTS ASSESSMENT STUDY HAS NOT BEEN DONE;**

10. With regard to **Issue No.(I) - SITE FOR PROPOSED EXPANSION IS UNSUITABLE BEING IN AN ALREADY CRITICALLY POLLUTED AREA;**

The contention of the Appellant is that the Thermal Power Station in question situated in Talchar-Angul has been established in an area having vast quantity of mineral deposits of coal where there are numerous severely polluting industries including coal mines, thermal power, aluminium smelting, iron and steel, sponge iron and ferro-alloys industries. Pollution in the area is extreme and is recognized as an environmental threat as well as a health hazard since 1994. Reference has been made to a Status Report published by the State Pollution Control Board, Odisha, in March 2016 referred to in para 11 of the Memo of Appeal reads as under:-

“Industries are classified as Red, Orange and Green on the basis of their pollution potential.....Angul-Talcher area is dominated with RED category of industries, mostly power plants, steel aluminium smelter and coal mines. However minor industries in this area are mostly in the sector of Stone Crusher, Health Care Unit and Hotel. The environmental quality of the area is mostly affected by the major industries. The number of such industries have increased from 26 in 2010 to 31 in 2015.”

11. Mr. Saurabh Sharma, learned Counsel for the Appellant submitted that in 2010 the Ministry of Environment, Forests and Climate Change itself had declared Angul-Talcher area as a Critically

Polluted Area and the Environment Impact Assessment had itself also stated that CEPI Action Plan was made by CPCB and OSPCB in consultation with industries, State Government and other stakeholders for various sectors. During the preparation of this action plan several actions were also taken-up simultaneously. Some of the actions are already completed and some are under implementation. These actions have caused significant improvement in the environmental quality of the area. CEPI was calculated on the basis of monitoring data of the SPCB and REMP data collected by ISMU during their study. The revised CEPI from 82.09 (in 2009) to 72.86 (in 2013), indicates that implementation of action plan is quite effective and there is improvement in environmental quality.

["CEPI refers to 'Comprehensive Environmental Pollution Index']

12. The learned Counsel further referring to the Industrial Pollution Study conducted by the Central Pollution Control Board as on 24.06.2016 (Annexure-A4 to the Appeal) and submitted that a State-wise list of 43 Critically Polluted Clusters/Areas wherein for Angul-Talcher area of Odisha was prepared and the CEPI score is shown as 72.86 which is much more than the sub-score of 60 and, therefore, falls in a Critically Polluted Area. It is also stated that in 2009 the CEPI in Angul-Talcher was 82.09 and in 2013 it was 72.86.
13. The learned Counsel further submitted that the EAC in its 16th meeting held on 19.04.2018 had observed that as the proposed Power Plant is located near Talcher which is a Critically Polluted Area, the baseline values which are shown in the EIA report are low compared to the baseline status in the Talcher CPA. Central

Pollution Control Board member has verified the online data which show that PM₁₀ is 240.3 µg/m³ and PM_{2.5} is 79.8 µg/m³.

14. The Respondent No.4, NTPC Limited, in its counter-affidavit dated 12.03.2020 has stated that the Unit in question had submitted application seeking Environmental Clearance on 19.01.2018 and after examination the Respondent No.1, Ministry of Environment, Forests and Climate Change, sought Essential Details (EDS) from the Respondent No.4 Unit on 07.02.2018 which was provided by the Respondent No.4, NTPC Limited, to the Respondent No.1, Ministry of Environment, Forests and Climate Change, under acknowledgement dated 16.02.2018. Thus, prior to 16.02.2018 the Respondent No.1 had already studied the documents and pointed out the deficiencies in the application.
15. With regard to Issue No.(I); the case of the Respondent No.4 Unit in its counter-affidavit is that in 2009 the Comprehensive Environmental Pollution Index (CEPI) score of Talcher-Angul area was 82.09 which declined to 72.86 in 2013 and further came down to 46.43 in 2018. It is also stated that CEPI score of 46.43 monitored in 2018 shows that the Talcher area is categorized as 'Other Polluted Area' instead of 'Critically' or 'Severely' Polluted Area'. It is stated that this score prepared by the Central Pollution Control Board ('CPCB' for short) was accepted by the National Green Tribunal in its order dated 14.11.2019 passed in Original Application No. 1038/2018 (*News item published in "The Asian Age" Authored by Sanjay Kaw Titled "CPCB to rank industrial units on pollution levels"*). Copy of the order has been filed as Annexure R-4/3, page no. 202 of the paper book, wherein Angul-Talcher (Orissa) area is shown at Sl. No. 94 and the CEPI score for the year 2018 is shown to be 46.43.

16. The stand of the Respondent No.4 Unit as stressed by the learned Counsel is that in the circumstances the Talcher-Angul area in 2018 was not “Critically Polluted Area” but rather fell under the categorization of “Other Polluted Area”.
17. The stand of the Respondent No.4 Unit further is that the Talcher Stage-I (4x60MW) and Stage-II (2x110MW) units based on sub-critical technology has since been decommissioned and two units of 660MW based on state-of-the-art ‘Ultra-Supercritical Technology’ complying with new emission norms and Zero Liquid Discharge system are yet to be implemented and, therefore, it is expected that the environmental conditions in and around the Respondent No.4 Unit will further improve.
18. An additional affidavit dated 11.08.2021 has also been filed by the Respondent No.4, categorically stating that as on 31.03.2021, the Respondent No.4 Unit has physically closed down all the older Stage-I and Stage-II Units at Talcher Thermal Power Station, with a capacity of 460 MW (4x60MW + 2x110MW) and the same have become defunct as on date and the permission for closure has also been granted by the Ministry of Labour and Employment with effect from 20.08.2021 vide Ministry’s order dated 12.07.2021. It is further stated that the construction of the two new Units under Stage-III (2x660MW) in respect of which Environmental Clearance has been granted, is yet to be started.
19. The Ministry of Environment, Forests and Climate Change, Respondent No.1, in its affidavit dated 24.09.2020 in reply to the allegations of the Appellant with regard to Issue No.(I) has stated that the Project Proponent had itself stated that the existing older units of Talcher TPP would be dismantled after implementation of new units under Stage-III and that the following pollution control

systems and measures would be implemented to control and abatement of pollution in the proposed Talcher TPP which read as under:-

- i. Ultra-Supercritical Technology will facilitate higher efficiency with lower air pollution load than the conventional technology.*
- ii. High efficiency Electro Static Precipitators (ESPs) would reduce particulate emission to below 30 mg/Nm³.*
- iii. 150m high bi-flue chimney.*
- iv. Flue Gas Desulphurization (FGD) system to capture SO₂ and reduce its emission to below 100 mg/Nm³.*
- v. NO_x (Oxides of Nitrogen) emission from the boiler shall be limited to below 100 mg/Nm³ by installing Low NO_x Burners (LNB), combustion staging and reducing NO_x in the tail flue gas, installing SNCR (Selective Non Catalytic Reduction) or SCR (Selective Catalytic Reduction) technology as per techno-economic feasibility.*
- vi. Dust suppression system will be installed in the Coal Handling Plant (CHP) area/Belt conveyors to minimize fugitive emissions.*
- vii. By maximizing recycle/reuse of effluents and Zero Liquid Discharge (ZLD), there would not be any significant impact on receiving water bodies.”*

20. It is further stated that in para 10 of the Environmental Clearance letter itself it has been noted:-

“that the Ultra-Supercritical Technology has been envisaged to be used in the proposed Talcher TPP which has steam parameters higher than the super-critical/sub-critical technology. In preliminary design consideration main steam pressure will be 270 kg/cm²(a) at HPT inlet, main steam temperature at HPT inlet will be 600 °C.

Adoption of Ultra-Super Critical technology with above USC steam parameters will increase the plant efficiency by approximately 7.5% per kWhr”.

21. From the CEPI score of Talcher-Angul area, we find that in 2009 the CEPI score was 82.09 which declined to 72.86 in 2013 and in 2018, the year when the Project Proponent applied for grant of Environmental Clearance, it was 46.43. The CEPI score has been accepted by the National Green Tribunal in its order dated 14.11.2019 passed in Original Application No. 1038/2018, as already stated hereinabove. The Talcher area is categorized as ‘Other Polluted Area’ instead of ‘Critically’ or ‘Severely Polluted Area’ and, therefore, it is incorrect to say that the Talcher-Angul area falls in a ‘Critically Polluted Area’.

The Environmental Clearance also notes that SO₂ and NO₂ values are well within the National Ambient Air Quality Standard (NAAQS), however, PM₁₀ and PM_{2.5} are slightly higher than the NAAQS in downwind direction. The values are slightly higher due to domestic coal burning, brick kiln, poor road conditions and other industrial activities in the area.

In this view of the matter, on the basis of the documents on record and the scientific analysis reports, it cannot be said that the Project in question in the Talcher-Angul area falls in a ‘Critically Polluted Area’.

22. **With regard to Issue No. (II) FALSE AND MISLEADING CALCULATION OF AMBIENT AIR QUALITY;**

The contention of the Appellant is that sampling stations were not properly distributed and the Expert Appraisal Committee in its meeting dated 19.04.2018 noted that ‘one month summer season baseline data is to be collected for verification of baseline

status of the project. Baseline data is to be collected at monitoring locations (two locations from sampling locations mentioned in the EIA report & two locations from Continuous Air Quality Monitoring Station and all four locations should be in the downwind direction). The results shall be compared with the data from the 4 OSPCB Air Quality Monitoring Stations in Talcher', and, therefore, the EAC minutes require four sampling stations must be in downwind direction i.e., East and South-East but the Project Proponent has established only three monitoring stations in downwind direction (AM-2, AM-3 & AM-4).

23. The allegation with regard to Issue No. (II) has been denied by the Respondent No.4 Unit and it is stated that a reconnaissance survey of the study area covering 10 kilometers radius was carried out and the locations of Ambient Air Quality Monitoring Stations was marked on topo-map, considering the meteorological conditions, topography of the study area, representativeness of regional background air quality, representativeness of likely impact areas, forests and Archaeological Sites etc. and finally the site was selected based on the site level considerations. It is also stated that the guidelines published by the Infrastructure Leasing & Financial Services ('IL&FC' for short) as claimed by the Appellant are not mandatory. It is stated that the Ministry of Environment, Forests and Climate Change Terms of Reference (ToR) has not stipulated the number of sampling locations to be monitored rather they only require that the Ambient Air Quality sampling stations should be monitored both upwind and downwind directions. Besides, the selection of sampling locations depends on a number of site specific factors like – safety and security, availability of power, accessibility, etc.

24. It is further submitted by the Project Proponent, Respondent No.4 that the ToR Condition (xxxvii) stipulates that

‘One complete season site specific meteorological and AAQ data (except monsoon season) as per MoEF Notification dated 16.11.2009 shall be collected and the dates of monitoring recorded. The parameters to be covered for AAQ shall include SPM, RSPM (PM10 and PM2.5), SO₂,NO_x, Hg and O₃ (ground level). The location of the monitoring stations should be so decided so as to take into consideration the pre-dominant downwind direction, population zone, villages in the vicinity and sensitive receptors including reserved forests. There should be at least one monitoring station each in the upwind and in the predominant downwind direction at a location where maximum ground level concentration is likely to occur.’

25. With regard to the allegation that the air sampling locations are in a line and not in downwind direction, it is submitted by the Project Proponent, Respondent No.4, that the predominant wind corridor at IMD Station, Angul; the nearest meteorological station established by IMD is East-West (Ref: Figure 3.6 & 3.7 and Table 3.6 of EIA Report), which was used for locating air quality stations. The locations of air quality stations are West (three nos.), East (one no.), South-East, North-West-West and North-West are suitably located. It is also stated that Ministry of Environment, Forests and Climate Change, Respondent No.1, did not ask NTPC Ltd. to collect additional data because of any faulty location of the stations, but to assess the current level of air quality before taking the final view on appraisal of the Project.

26. With regard to the prediction of Ground Level Concentration (GLC) of air pollutants, it is submitted by the Project Proponent,

Respondent No.4, that the emission rates of pollutants itself are low as per new emission norms. The incremental GLCs are bound to be low. Further, the effect of all the emission parameters is not directly proportional to the input values and, therefore, it is incorrect to correlate the GLCs with input values. It is also stated that the Project Proponent, Respondent No.4, has proposed to install a 275m tall stack for better dispersion of pollutants rather than prescribed height (about 150m) in the Ministry of Environment, Forests and Climate Change Notification dated 28.06.2018.

27. It is also the case of the Project Proponent, Respondent No.4, that the EAC requested it to monitor the air quality data in two locations in downwind directions as mentioned in EIA Report, due to the fact that the Central Pollution Control Board Member of EAC informed the EAC that PM₁₀ level of 240.3 µg/m³ and PM_{2.5} level of 79.8 µg/m³ was recorded by CAAQMS located in MCL mining area. It is stated that high pollution in MCL area may be due to coal mining and road transportation of coal, domestic coal burning by households, but to remove the apprehensions of EAC, the Project Proponent voluntarily agreed to carry out one month's additional monitoring as suggested by the EAC and compared these data with OSPCB stations data. It is stated that not a single station of the OSPCB and Project Proponent, during field monitoring at May, 2018, have reported such high level of particulate pollution (PM₁₀ and PM_{2.5}) as informed by the Central Pollution Control Board. It is further stated that while the data monitored by the Ministry of Environment, Forests and Climate Change, approved laboratory engaged by the NTPC, Project Proponent, shows similar trends i.e. high PM₁₀ concentration (average 101.8 µg/m³ & 87.2 µg/m³) at

NTPC-TTPS area, the other two locations in the EIA Report also have average concentration of PM₁₀ (97.3 µg/m³ & 91.6 µg/m³) which is below the NAAQS. It is also stated that the reason attributed for high PM₁₀ at Bhaghmara village (upwind direction) of PM₁₀ (112µg/m³) and PM_{2.5} (48 µg/m³) is due to MCL mining area, road transportation of coal, domestic burning of coal. It is also stated that the Project Proponent, Respondent No.4, has four CAAQMS stations in its premises (two in NNW and NW and two in S and SE) directions and to comply with the EAC suggestions in true letter and spirit, the Project Proponent has set-up two stations (AM3 & AM4) in downwind directions at the same locations as given in the EIA Report and two stations (AM1 (S) & AM2 (SE)) at CAAQMS stations as desired by the EAC.

28. It is also stated that the high concentration of particulate matter at upwind directions are due to location of air quality stations in the coal mines area, transportation of coal by road and in mining area, domestic burning of coal by labour of the coal mining area, all of which will have a localized impact (within coal mining area) on air quality. On the other hand, the Respondent No.4 Unit is located far away from the coal mining area and consists of a lush Green Township and dense Green Belt which act as a natural barrier for pollution in downwind direction. The average concentration of air quality monitoring station at additional monitoring stations of the Respondent No.4 Unit (AM1 & AM 2) shows high concentrations of particulate matter than OSPCB stations (OS4) which clearly shows that datas monitored by the Respondent No.4 Unit are as per actual air environment at locations. It is also stated that the dispersal modeling is undertaken over an area covered by 10

kilometers X 10 kilometers grid around the power project and has no relation to air quality monitoring locations.

29. The Ministry of Environment, Forests and Climate Change, Respondent No.1, in its affidavit dated 24.09.2020 has also stated that considering the stack height of 150 meters with ESP, FGD and NOx control system, cumulative predication of air quality reveals that the maximum ground level concentration (98 percentile) for PM, SO₂, NO_x was found to be 91.74 (at 1600m), 36.50 (at 1300m) and 40.20 (at 1300m) µg/m³ respectively E, ESE direction and, therefore, the maximum ground level concentration shall further reduce once the existing units will be decommissioned.

30. However, as already noted herein above, the Project Proponent has proposed to install a 275m tall stack for better dispersion of pollutants rather than the prescribed height of 150m, therefore, considering the matter in totality of circumstances, it cannot be said that the calculation of ambient air quality and the readings therein are false or misleading and the contention of the Appellant on this issue is thoroughly misconceived and the same is accordingly rejected.

31. With regard to **Issue No.(III) FAULTY CUMULATIVE IMPACT ASSESSMENT AND NON-CONSIDERATION OF CARRYING CAPACITY BY THE EAC;**

The allegation of the Appellant is that Cumulative Impact Assessment has not been done and the Carrying Capacity of the area has not been considered by the Expert Appraisal Committee. Reference has been made to the EAC minutes of meeting dated 19.04.2018 which mentions that the proposed Power Plant is located at Talcher which is a 'Critically Polluted Area'.

32. The Project Proponent, Respondent No.4, on the other hand, denying the allegations made in Issue No. (III) has submitted that the study on Carrying Capacity of the area was not included in the ToR. The ToR Condition No. (xxxix) stipulates that;

‘Cumulative Impact of all sources of emissions including transportation on the AAQ of the areas shall be well accessed’.

As per the Project Proponent, Respondent No.4, the cumulative impact due to proposed major industries (point source) likely to have a significant impact on air quality and located within 10 kilometers radius study area has been carried out through air modeling, details of which are provided in Section 4.3.2 of Chapter-4 of the Final EIA Report.

33. It is contended by the Respondent No.4 that since the existing Units of the Talcher Thermal Power Station will be closed after commissioning of the proposed Units under Stage-III, therefore, the Cumulative Impact of both Plants were not considered together in the area modeling.

34. We may note here that as already stated by the Respondent No.4 in their additional affidavit dated 11.08.2021 that the older Units of Talcher Thermal Power Station Stage-I and Stage-II with a capacity of 460MW (4x60 MW+2x110MW) have become defunct as on 31.03.2021 and these Units have been physically closed down whereas the construction of new Units under Stage-III (2x660 MW) in respect of which Environmental Clearance has been granted is yet to be started, we, therefore, do not find any force in the submission of the Appellant with regard to the Issue No.(III).

35. With respect to the reference made by the Appellant to the judgment of the National Green Tribunal dated 22.08.2014 in Appeal No. 08/2013 (CZ) (*Ramesh Agarwal Vs. UOI & Ors.*), the

Tribunal has already dealt with the question raised in the present Appeal. The relevant extract of the judgment is extracted herein below:-

“vii. Here it is important to mention that the fugitive emissions are relevant in industries where process emissions are significant source of air pollution. In thermal power plants, there is no process emission. The emission is mainly due to burning of coal. The fugitive emissions or non-stack emissions are only due to coal handling, which is taken care of by dust suppression measures adopted including sprinkling of water on coal during handling. The Technical EIA Guidance Manual for Thermal Power Plants states that the cumulative impacts due to induced development or their level or even secondary indirect impacts are difficult to be quantified and because of higher level of uncertainties, these impacts cannot normally be assessed over a long time of horizon. Further, the guidelines for conducting Air Quality Modelling for Assessment of impacts to Air Environment published by Central Pollution Control Board (for short CPCB) also considers the impacts due to stack emissions only. Therefore, the impact analysis on ambient air was in accordance with the relevant manuals and guidelines and as per the prevailing practice for EIA studies for Thermal Power Projects.”

36. With regard to **Issue No.(IV) NTPC NOT SERIOUS ABOUT COMPLIANCE OF EMISSION NORMS;**

The allegation of the Appellant is that the Condition (vi) of the Specific Conditions of the Environmental Clearance requires that the norms shall be achieved for existing units and that the Ministry of Environment, Forests and Climate Change, has also acknowledged the NTPC's Plan to continue operating all six Stage-I & Stage-II Units at Talcher till as late as 31st December, 2023, but it also notes that the Central Pollution Control Board has directed that new emission norms including Flue Gas Desulfurization ('FGD' for short), must be installed at Talcher Stage-I & Stage-II

Units by 31st December, 2020 and those Units shall not operate beyond 31st December, 2020, if they fail to comply with the new/revised emission limits for SO₂.

37. The allegations on this issue have been denied by the Respondent No.4 Unit and it is stated that the Talcher Thermal Power Station Stage-I & Stage-II are smaller and older units with limited availability of space and provisions have been made for a different type of control system (Dry Sorbent Injection System instead of Wet Limestone Based FGD System), which is smaller and easier to install. It is stated that tendering process for the same is also in progress so that the deadline of 31.12.2020 stipulated by the Central Pollution Control Board can be complied with. The Dry Injection Technology injects Sodium Bi-Carbonate (SBC) before Electrostatic Precipitator (ESP) and the reaction between Sodium Bi-Carbonate and SO₂ results in Sodium Sulphate and SO₂ emissions which can be controlled well within the prescribed standard of 600 mg/Nm³. It is also stated that the Dry Sorbent Injection System is installed in between Air Pre-heater and Electrostatic Precipitator (ESP) and due to chemical reactions of Dry Sorbent with SO₂ available in flue gases precipitates as Sodium Bi-Sulphate (Na₂SO₄) in ESP with fly ash. It is also stated that no impact on particulate emissions from stack happens due to Dry Sorbent Injection System. The additional amount of ash generated will be 60 tonnes per day which is 2% of the quantity of ash generated from existing Units. This small amount can easily be utilized or disposed by filling in mine voids.
38. The Final EIA Report (at page no. 461 of the paper book) with regard to emissions notes as under:-

“Emissions

The emission data for Talcher TPP Stage-III (2 x 660 MW) proposed plant used in the model has been calculated using the sulphur content and emission factors of various components. Emission Rates (Maximum) has been calculated considering the MOEF&CC emission standards of pollutants (SO₂ - 100 mg/Nm³, NO_x -100 mg/Nm³, PM-30 mg/Nm³) dated 07.12.2015. Modelling has been done with two stack height scenerios given as below.

1.The stack height of 150 m with FGD has been taken for design consideration as per MOEF&CC Draft notification dated 16.10.2017.

2. Stack height of 275 m with FGD has also been considered for modelling as per current stack norms of CPCB.”

39. It is the case of the Respondent No.4 Unit that as regards the new Units under Stage-III, additional air pollution control systems for meeting new environmental norms have already been included in the Technical Specification of EPC as an integral part of the Project. Moreover, out of 63,460MW capacity under operation and commissioning, the FGD Plants in Units with capacity of 920MW is already under-operation. Packages for 49,960MW have already been awarded and the FGD packages for balance 12,580MW are under different stages of award.

40. As already noted hereinabove in the counter-affidavit of the Respondent No.4 Unit dated 11.08.2021 it has been stated by the Respondent No.4 that all older units of Talcher Thermal Power Station, Stage-I & Stage-II with a capacity of 460MW (4x60MW+2x110MW) have been physically closed down as on 31.03.2021 and have become defunct as on date. In this view of the matter, we find that the apprehension of the Appellant that the Respondent No.4 will not be able to meet its target by 31.12.2020 is totally belied.

41. With regard to **Issue No.(V): THE PROPOSED PROJECT DOES NOT HAVE CONFIRMED FUEL LINKAGE;**

The allegation of the Appellant is that the letter dated 22.10.2014 granting ToR mentions that the Environmental Clearance shall be applied only after firm fuel and water linkages are obtained. It is also alleged that even in the Environmental Clearance the confirmed fuel linkage is not obtained and in para 8 of the Environmental Clearance it is stated that;

‘the linked mine/subsidiary for Talcher TTP Stage-III (2x660MW) project has not been identified by Coal India Limited (‘CIL’ for short) as yet.’

42. The allegation with regard to Issue No. (V) has been denied by the Respondent No.4 Unit and it is stated that the Standing Linkage Committee (‘SLC’ for short) in its meeting held on 10.04.2018 recommended the long term linkage for the Project from the subsidiaries of CIL which was communicated to NTPC, Respondent No.4, and the copy of the same was also submitted to the Ministry of Environment, Forests and Climate Change on 08.06.2018 (Annexure R-4/6 to the affidavit), and on that basis the Environmental Clearance was granted. It is also stated that during 2016, the NTPC Ltd. had requested the Ministry of Power to recommend to the Ministry of Coal for automatic transfer of existing TTPS linkage to the proposed new Units as per existing coal allocation policy along the firm coal linkage to the proposed new Units with the firm allocation of additional coal. It is stated that on 17th May, 2017, the Cabinet Committee on Economic Affairs (CCEA) approved the new policy for allocation of future coal linkages in a transparent manner for Power Sector. This policy was known as ‘Scheme for Harnessing and Allocating Koyala (Coal)

Transparently in India (SHAKTI)'. This policy was an important initiative in alleviating one key challenge in power sector viz. lack of coal linkage. It is stated that subsequently the NTPC, Respondent No.4, vide its letters dated 07.06.2017 and 24.06.2017 requested the Ministry of Power to recommend to the Ministry of Coal for allocation of coal linkage for proposed NTPC Ltd.-Talcher TPP (2x660MW) as per new SHAKTI Policy of 2017. It is stated that this change in policy for allocation of coal delayed the process of obtaining coal linkage from Ministry of Coal even after the best efforts of the NTPC Ltd.

43. It is further stated by the Respondent No.4 Unit that the name of coal mine/mines were not mentioned in the minutes of the meeting of Standing Linkage Committee-Long Term SLC (LT) as it depends on availability of coal. The name of coal mine/mines is only provided by the Coal India Limited and its subsidiary, after signing of Fuel Supply Agreement (FSA), which generally require 2-3 years after the SLC(LT) recommendations. It is stated that after the NTPC's response letter dated 08.06.2018 informing the Standing Linkage Committee (Long-Term) for Power Sector, the Ministry of Coal, Government of India, has recommended the long term coal linkage with the subsidiary(ies) of Coal India Limited to the proposed Talcher Thermal Power Station Stage-III (2x660MW). The Ministry of Environment, Forests and Climate Change also prescribed a stipulation in the Environmental Clearance at Specific Condition No. (ii) that;

“The Ash content and Sulphur contents in the Coal shall not exceed 34% and 0.55%, respectively. In case of change in coal characteristics, a fresh reference is to be made to the Ministry for

reviewing the incremental impact, if any, and adequacy of the conditions.”.

44. It is stated by the Respondent No.4 Unit that the Ministry of Environment, Forests and Climate Change vide Office Memorandum dated 19th April, 2012 was issued long before the enactment of New Emission Norms for Thermal Power Plants notified on 07.12.2015. At that time, there were no emission norms for SO₂ and the ambient concentrations of SO₂ were only controlled through the wider dispersal of flue gases through tall stacks. However, with the notification of new emission norms on 07.12.2015 and control of emission of Sulphur at the source itself, the emission levels are specified at 100 mg/Nm³ irrespective of the Sulphur content of the coal. It is stated that the NTPC Ltd. has already planned a huge investment of Rs. 1575 crores i.e., 20% of the Project cost, to install the air pollution control systems (ESP, FGD, DeNOx and 275m tall stacks) to comply with the new emission norms of 2015 and ambient air quality standards at the proposed Talcher TPP Stage-III (2x660MW) Project.
45. We find that the issue relating to coal linkages has been dealt with in para 18.5.3 of the Environmental Clearance.
46. The Respondent No.1, Ministry of Environment, Forests and Climate Change, in para 13 of its counter-affidavit has also stated that the Project Proponent (Respondent No.4), has informed that Standing Linkage Committee for Power Sector, Ministry of Coal, Government of India, has recommended long term coal linkage with subsidiaries of Coal India Limited (CIL) to the proposed expansion. Therefore, as per the submission of Project Proponent, the Ministry has accorded the Environmental Clearance to the proposed expansion. It is also stated that in case Fuel Supply

Agreement (FSA) is not obtained in time, commercial operation of the Project cannot be achieved.

47. For reasons aforesaid, the contention of the Appellant that the proposed Project does not have confirmed fuel linkage is without any substance and is accordingly rejected.

48. With regard to **Issue No.(VI): THE PROJECT WILL CLEARLY RESULT IN LIQUID DISCHARGES TO GROUNDWATER AND THE BRAHMANI RIVER;**

The allegation of the Appellant with regard to the Issue No. (VI) is that the Project of the Respondent No.4 Unit will not satisfy Zero Liquid Discharge (ZLD) requirements. The ToR dated 22.10.2014 also states that;

'feasibility of Zero Liquid Discharge concept shall be critically examined and its details submitted'

It is further alleged that during Public Hearing the local community had complained of liquid discharge in the agricultural fields.

49. The allegations with regard to Issue No. (VI) have been denied by the Respondent No.4 Unit, stating that the NTPC Ltd. is a Maharatna Company, operating more than 30 projects all over India and has enough technical knowledge and expertise to implement the Zero Liquid Discharge system and the same has been included in the Technical Specifications for the EPC Package for the main Plant for stage – III (2 x 660 MW). It is stated that in 2014 there was no notification for zero discharge system in thermal power plants and it was only notified on 07.12.2015 by the Ministry of Environment, Forests and Climate Change that all the thermal power plants shall adopt the zero discharge system.

50. Reference has also been made to the Inspection Report for existing units of Stage-I and Stage - II filed at page no. 280 of the paper book), which clearly mentions under the heading of 'F-2 (Water Pollution Control)', Item No.2 Special Conditions that;

“under no circumstances there shall be any discharge of effluent to outside the factory premises’

And the compliance status of the same mentions that;

‘there is no discharge of effluent to outside the factory premises’.

This Inspection Report is based on the inspection carried out on 23.05.2018 and monitored on 23.05.2018 and 24.05.2018. The findings of the Odisha State Pollution Control Board under the heading 'F-2 (Water Pollution Control) to show that there is no possibility of liquid discharge to the ground water and to the Brahmani River are extracted herein below: -

“F-2 (Water Pollution Control)

S. N	Special Conditions	Compliance Status
1.	<i>Specific water consumption shall be limited within 3.5m³/MWh as per MoEF&CC vide Notification dtd. 07.12.2015.</i>	<i>The industry is maintaining specific water consumption below 3.5 m³/MWh. During April-2018 it was 3.17 m³/MWh</i>
2.	<i>Under no circumstances there shall be any discharge of effluent to outside the factory premises.</i>	<i>There is no discharge of effluent to outside the factory premises.</i>
3.	<i>There shall not be any discharge of effluent from CHP area by passing the coal settling tanks.</i>	<i>The industry have provided two nos. of settling tank of 4m x 6.5 m x 1.5m size to treat the effluent from CHP. A pump has been installed at the settling tank for reusing the settled water for dust suppression in the coal yard.</i>
4.	<i>The blow down of power plant</i>	<i>The blow down of power plant</i>

	<p>shall meet the following standards before it is discharged to the common monitoring basin and shall be reused for ash handling, dust suppression and green belt.</p> <p><u>Boiler Blow Down:</u></p> <p>Suspended Solids 100.0 mg/l (Max)</p> <p>Oil & Grease 20.0 mg/l (Max)</p> <p>Copper (Total) 1.0 mg/l (Max)</p> <p>Iron (Total) 1.0 mg/l (Max)</p> <p><u>Cooling Tower Blow Down:</u></p> <p>Free available Chlorine 0.5 mg/l (Max)</p> <p>Zinc 1.0 mg/l (Max)</p> <p>Chromium (Total) 2.0 mg/l (Max)</p> <p>Phosphate 5.0 mg/l (Max)</p>	<p>is collected in the drain water recirculation sump and it is used for ash handling.</p>
5.	<p>Domestic effluent generated from the plant and township shall be properly treated in Sewage treatment plant and shall be reused for gardening after meeting with the prescribe standard of Board. The industry shall ensure continuous power supply for proper treatment of effluent in STP.</p>	<p>Domestic effluent generated from the plant and township is treated in STP and treated wastewater after meeting prescribed standards is being used in Horticulture and in ash slurry making. D.G. set installed at S.T.P. in case of power failure for continuous power supply. Water sample has been collected from the outlet of STP & the analysis report is enclosed.</p>
6.	<p>The online continuous Effluent Quality Monitoring System (EQMS) shall be operated effectively and uninterruptedly and the online</p>	<p>Effluent quality (pH, TSS, BOD, COD, Temperature), is being monitored by online EQMS and data is transmitted to SPCB</p>

	<i>monitoring data so generated shall be transmitted to SPCB and CPCB server on a continuous basis.</i>	<i>and CPCB continuously.</i>
7.	<i>All the cooling water shall be completely re-circulated.</i>	<i>Cooling water is being re-circulated.</i>
8.	<i>Waste water generated from leakages, blow down and D.M. Plant shall be treated individually to meet the prescribed standard of effluent discharged to inland surface water and stored in a common basin (i.e. guard pond) for utilization for plantation, dust suppression ash handling and green belt purpose inside the factory premises. Lining shall be provided in group pond to prevent any seepage into ground to avoid ground water contamination.</i>	<i>No separate treatment at present. However total waste water is being connected to drain water recirculation sump. This wastewater of plant is reused for ash slurry making.</i>
9.	<i>Concrete parapet wall of adequate height should be provided all along the concreted drains on its both the sides with rain cuts at regular intervals to prevent entry of dust/ash from the road and work zone into the drainage system. All the industrial drains shall be cleaned regularly.</i>	<i>The drains are provided concrete parapet walls to prevent entry of dust/ash from the road and are cleaned regularly.</i>
10.	<i>All the safety measures applicable in mines as per DGMS shall be implemented during disposal of fly ash in abandoned coal mine void.</i>	<i>The safety measures are ensured by DGMS along with MCL authorities as stated by the industry representatives.</i>
11.	<i>The settling tank provided in the track hopper area shall be cleaned regularly and made functional all the time.</i>	<i>Two nos. of settling tank has been provided in the track hopper area. One functional and one remains as standby.</i>
12.	<i>Ground water monitoring around the solid waste disposal site/secured land fill shall be carried out regularly and report</i>	<i>The industry has engaged M/s Envomin Consultant (Pvt.) Ltd., Bhubaneswar & M/s NEERI, Nagpur, for ground water</i>

	<i>submitted to the Ministry's Office at Bhubaneswar, CPCB, OSPCB.</i>	<i>monitoring around the solid waste disposal site and reports are being sent to CPCB, OSPCB.</i>
13.	<i>Rain water harvesting structure shall be developed inside the plant premises and maximum effort shall be made to reuse harvesting rain water with a definite plan and programme to reduce the drawl of fresh water from water bodies.</i>	<i>The industry has installed rain water harvesting system near service building. The representatives of the industry intimated that there will provision for rain water harvesting system in the upcoming project.</i>
14.	<i>Oil catch pits shall be provided in oil handling area of power plant for collection of spillage.</i>	<i>Oil separators has been provided to remove oil & grease from effluents.</i>
15.	<i>Storm water drain shall be maintained separately without being mixed up with the industrial effluent or sewage effluent.</i>	<i>Storm water drain is being maintained separately without being mixed with the industrial effluent or sewage effluent.</i>
16.	<i>The runoff water from the factory premises and solid waste dumping area generated during rainy season shall be adequately treated in a series of settling tanks so as to meet the prescribed standard of the Board before discharged to outside/reused.</i>	<i>Runoff from factory premises are collected in a series of settling tanks to meet the prescribed standard of the Board before discharged to outside. The quality of run-off water is monitored.</i>
17.	<i>The industry shall directly adhere to the conditions and stipulation made by MCL authorities for dumping of ash in abandoned mine pit.</i>	<i>The industry is agreed to comply.</i>
18.	<i>The industry shall abide by E(P) Act, 1980 and Rules framed there-under.</i>	<i>The industry is agreed to comply.</i>
19.	<i>In case the consent fee is revised upward during this period, the industry shall pay the differential fees to the Board (for the remaining years) to keep the consent order in force. If they fail</i>	<i>The industry is agreed to comply.</i>

	<i>to pay the amount within the period stipulated by the Board the consent order will be revoked without prior notice.</i>	
20.	<i>The Board reserves the right to revoke/refuse consent to operate at any time during period for which consent is granted in case any violation is observed and to modify/stipulate additional conditions as deemed appropriate.</i>	<i>The industry is agreed to comply.</i>
21.	<i>The industry shall take steps for fulfillment of all the stipulations and necessary measures to check pollution.</i>	<i>The industry is agreed to comply.</i>
22.	<i>Consent to Operate is subject to availability of all other statutory clearances required under relevant Acts/Rules and fulfillment of required procedural formalities.</i>	<i>The industry is agreed to comply.</i>

51. The stand of the Respondent No.4 Unit is that it has already submitted the Plant Water System and Water Pollution Control Systems under Section 2.13.2 and 2.13.3 (page C2-23&24) in the Final EIA Report respectively. In the above sections, the NTPC Ltd. has already committed to maximize recycle/reuse of effluents and minimize effluent quantity to achieve Zero Liquid Discharge (ZLD). It is stated that the surface and ground water resources of the study area were studied and results presented in Section 3.6 (pages C3-32 to 41) of the Final EIA Report. The impact on water resources and water quality are presented in Section 4.3.4 (page C4-19,20) while the impacts on ground water quality during operation phase are presented in Section 4.3.5 (page C4-20,21).

52. The Ministry of Environment, Forests and Climate Change, Respondent No.1, in its counter-affidavit on this issue has stated that as per the Notification S.O. 3305 (E) dated 07.12.2015 and subsequent notifications issued from time to time, the existing Power Plant is also achieving Zero Liquid Discharge (ZLD) and no effluents are being discharged into any natural water bodies. Water system for the Project has been designed to maximize the recycle and reuse of effluents and achieve Zero Liquid Discharge of effluents from the Plant. Similarly, the above notification shall also be followed for the proposed expansion to achieve Zero Liquid Discharge. Hence, impact on water quality to the nearby rivers will be negligible. As far as the provision of being Zero Liquid Discharge in the expansion proposal is concerned, it has been mentioned in the Final EIA Report that the design of the proposed expansion would be such that all the discharged water from all sources in the proposed expansion will be treated and reused in the proposed Power Plant to achieve Zero Liquid Discharge. The Environmental Clearance also mandates the Zero Liquid Discharge of the proposed Plant as per the Notification dated 07.12.2015.

53. The Final EIA Report has also at Section 3.2.4 with regard to Elevation of Plant Site with respect to High Flood Level (HFL) of Brahmani River observed as under:-

“Any flow of water, that over top the banks of natural river flow channel, is termed as flood. During the flood period, the discharge of the river is highest. The duration and extent of the flood is basically dependent upon the intensity of rainfall.

Talcher TPS boundary is located about 2.0 km west of the Brahmani River. The High Flood Level of Brahmani River is 62.1 amsl. The lowest elevation of the eastern boundar of the plant site is 68 amsl. No flooding has occurred in the plant area in last 30 years.”

54. From this report as also the Odisha State Pollution Control Board Report, it is clear that there is Zero Liquid Discharge to outside the Plant premises and it will also be evident that there is no possibility of liquid or effluent discharged into the Brahmani River. Therefore, the allegation of the Appellant that Project in question will clearly result in liquid discharges to ground water and the Brahmani River is thoroughly misconceived and the same is accordingly rejected.

55. **With regard to Issue No. (VII): EAC HAS FAILED TO APPRISE THE WATER POLLUTION ISSUES IN PROPER PERSPECTIVE AND MANY RELEVANT DATA ON WATER RELATED ISSUES IN EIA ARE ILLEGIBLE;**

The allegation of the Appellant is that the EIA in its Annexure-II and in the ToR though provides topographic map and satellite imagery, the figures and images are illegible and the maps do not provide scale information other than illegible scale bars.

56. The Respondent No.4 Unit has denied the allegations of Issue No. (VII) in their counter-affidavit dated 12.03.2020, and has stated that the Final EIA Report was submitted to the Ministry of Environment, Forests and Climate Change, Respondent No.1, vide their letter dated 19.01.2018 having good quality printing and actual size figures, diagrams, images, maps and layout plan for examination by the Expert Appraisal Committee (EAC) and Officials of the Ministry of Environment, Forests and Climate Change. It is also stated that the diagram maps, layouts, figures and images were submitted to the Odisha State Pollution Control Board for Public Hearing. No objection that the same were illegible was taken by anyone during the said Public Hearing.

57. We may refer to the ToR Condition (xxxix) which stipulates that;

“cumulative impact of all sources of emissions on the AAQ of the areas shall be well accessed. The cumulative impact of water pollution was not included in ToR.”

The details with regard to Cumulative Impact have been provided in Section 4.3.2 of the Final EIA Report. With regard to the Zero Liquid Discharge, the reply of the Respondent No.4 is that;

“effluents will be treated to conform to the pollution standards and recycled/re-used to the extent feasible”.

Zero Liquid Discharge of effluents will be implemented and reference has been made to Sub-section 2.13.2 and 2.13.3 in Chapter-2 of the Final EIA Report. The Odisha State Pollution Control Board in its report dated 23.05.2018 under the heading ‘F-2 (Water Pollution Control)’ has noted that;

“there is no discharge of effluent to outside the factory premises”.

The EIA report under the heading Water Pollution has already been noted hereinabove and need not be repeated for the sake of brevity.

58. The Respondent No. 4 Unit further submitted that it has already submitted the Plant Water System and Water Pollution Control Systems under Section 2.13.2 and 2.13.3 (page C2-23&24) of the Final EIA Report. In the above sections, NTPC, Respondent No.4 has already committed itself to maximize recycle/ reuse of effluents and minimize effluent quantity to achieve Zero Liquid Discharge (ZLD).

59. The Ministry of Environment, Forests and Climate Change, in its counter-affidavit has also stated that as per the Notification S.O.

3305 (E) dated 07.12.2015 and subsequent notifications issued from time to time, the existing power plant is also achieving Zero Liquid Discharge (ZLD) and no effluents are being discharged into any natural water bodies. Water system for the project has been designed to maximize the recycle & reuse of effluents and achieve Zero Liquid Discharge of effluents from the Plant. Similarly, the above notification shall also be followed for the proposed expansion to achieve Zero Liquid Discharge. Hence, impact on water quality to the nearby rivers will be negligible. As far as the provision of being Zero Liquid Discharge in the expansion proposal, it has been mentioned in the EIA Report that the design of the proposed expansion would be such that all the discharged water from all sources in the proposed expansion will be treated and reused in the proposed power plant to achieve Zero Liquid Discharge. The Environmental Clearance also mandates the Zero Liquid Discharge of the proposed plant as per the Notification dated 07.12.2015.

60. For reasons aforesaid, it cannot be said that the EAC has failed to apprise the water pollution issues in a proper perspective and many relevant data on water related issues in EIA are illegible and the allegation of the Appellant with regard to Issue No. (VII) is thoroughly misconceived and the same is accordingly rejected.

61. With regard to **Issue No.(VIII): EAC HAS FAILED TO APPLY ITS MIND TO THE ASH RELATED POLLUTION;**

The allegation of the Appellant is that though the EIA and ToR claimed that Hydrogeological Study and Impacts of Ash Filling in Mine Voids area has been conducted in detail. In fact, the ToR still requires the NTPC Ltd. Respondent No.4, to provide all Hydrogeological Study of the proposed Plant site including the impacts of the two existing onsite ash ponds. It is further alleged

that there is no claim or evidence that NTPC Ltd., Respondent No.4, conducted any local or site-specific evaluation of depth to groundwater, determined actual groundwater flow patterns, calculated hydraulic gradient or performed any other fundamental assessment of physical hydrogeology during preparation of the EIA.

62. The allegation with regard to Issue No. (VIII) has been denied by the Respondent No.4 Unit in its counter-affidavit dated 12.03.2020 and it is stated that the NTPC Ltd. has undertaken a number of scientific studies through premier institutions of India which are mentioned herein under:-

- a. *Ash Characterisation, Environmental Baseline Data Generation and Feasibility Study (by CMPDI in 2003).*
- b. *Hydro-geological Investigation of South Balanda Mine (by CMPDI in 2003).*
- c. *EIA-cum-EMP for Disposal of Ash in South Balanda Mine (by CMPDI in 2004).*
- d. *Integrated Hydrogeological, Geophysical, Hydrochemical and Groundwater flow and solute transport modeling studies around the ash filled South Balanda Mine Voids in Angul District, Odisha undertaken (by NEERI during 2012-2016).*
- e. *Assessment of Bioaccumulation of Trace Metals in Flora and Fauna due to Backfilling of Ash from Talcher Thermal Power Station in Mine Voids of South Balanda, NTPC Talcher, Odisha (by NEERI in 2016).*
- f. *Report on Isotope Hydrochemical Investigation on the Impact of Fly Ash Disposal in Open Cast Coal Mine Quarries to Groundwater Quality at Talcher, Odisha (by BARC in 2014).*
- g. *Hydrogeological Investigation for Disposal of Ash in Mine Voids (Quarry Nos. 4, 7 & 8) in Jagannath OCP of Jagannath Area of MCL (by CMPDI in 2014)."*

63. It is, therefore, denied that the Report has been copied from third party publication as alleged by the Appellant. The list of studies has also been mentioned in Section 7.6.2 (page no. 574 of the paper book) the Final EIA Report under the heading “*Scientific Studies Undertaken by NTPC for Mine Voids*”.
64. The Respondent No.4 Unit has further stated that the geology and hydrogeology of the area do not change in a span of 10-20 years, hence, these studies are bonafide and genuinely used and referred in the EIA Study. It is also stated that the behaviour of ash filled in the mine voids has been a subject of investigation and a number of studies have been undertaken by NTPC Ltd. as well as other industries operating in the area through premier institutions like CMPDI, NEERI, BARC etc. The studies continued over more than a decade and based on the findings of the report and the recommendations of the Expert Appraisal Committee (a Multi-Disciplinary Scientific Committee), the MOEF&CC has streamlined the process of ash disposal into mine voids in the whole country by publishing guidelines for ash disposal vide Office Memorandum dated 28.08.2019. It is submitted that doubting the findings of the studies as undocumented and unprecedented is contrary to the facts and questioning the collective wisdom of premier scientific institutions (CMPDI, NEERI, BARC etc. and EAC) is unwarranted. Further, Table 3.12, Page C3-27 & Table 3.18, Page C3-36 of the Final EIA Report, present the monitoring results of Ambient Air and Ground Water Quality respectively, which reveal that no pollution near Ash pond area and Mine Void areas are within the permissible standards.
65. As regards the Ash Management Plan and Ash Utilisation Plan, the same has been dealt with in para 18.5.3 of the Environmental

Clearance. It has also been dealt with in detail in Section 8.5.4 under the heading “Solid Waste Management” at pages C8-11 (page no. 601 of the paper book), of the Final EIA Report, wherein it is stated that the ash management scheme for the proposed Talcher TPP Stage-III (2x660MW) involves dry collection of fly ash, supply of ash to entrepreneurs for utilization, promoting ash utilization and safe disposal of unused ash. The Respondent No.4 Unit will make maximum efforts to utilize the fly ash for various purposes. Unused ash shall be disposed of in mine voids using wet slurry system. Gypsum generated from FGD Systems will be stored in a storage area and thereafter it will be disposed of in an environmentally safe manner. Domestic waste would be collected and disposed appropriately. Section 8.6.2 of the Final EIA Report deals with Ash Utilization Plan and mentions that;

‘NTPC a socially conscious utility considers utilization of ash produced at its coal based power station as a thrust area of its activities. Talcher TPP State-III (2x660MW) is expansion of existing Talcher TPS in Angul District of Odisha. Talcher TPP Stage-III will utilize coal having 34% or less ash content for power generation. It is estimated that about 7000 tonnes of ash per day i.e. about 2.3 million tonnes per annum would be produced in the power generation process and in order to assess ash utilization potential in the vicinity of Talcher, a market survey was undertaken by NTPC through M/s Sycom Projects Consultants Pvt. Ltd. The said survey covered cement plants located within 100/300 kilometers, coal mines (underground and opencast)/quarries of other materials and metals within 50 kilometers, brick manufacturing plants and major construction activities including road construction within the 100 kilometers radius of Talcher Region’.

The sector-wise ash utilization potential indicated in the study has been given in Section 8.6.2.1 under the heading “Mine Filling”, Section 8.6.2.2 under the heading “Cement Sector”, Section 8.6.2.3 under the heading “Brick Kiln Sector” and Section 8.6.2.4 under the heading “Road and Highway Development” which read as under:-

“8.6.2.1 Mine Filling

Mahanadi Coalfields Limited (MCL) have allocated 2 nos. voids of Jagannath OCP (quarry no. VII-3.96Mcum & quarry no. IV – 6.43 Mcum) for ash filling to Talcher TPS. Thus, potential of about 10.4 million cum ash utilization in mining sector is available with Talcher TPP. For this, environmental studies have been carried out by NTPC for taking permission from MoEF&CC/DGMS/SPCB. NTPC shall take up infrastructure development once the permission from MoEF&CC and DGMS are available.

8.6.2.2 Cement Sector

Cement plants provide a potential for Ash Utilization on sustainable basis and demand of PPC is increasing in market. There are around 5 major existing cement manufacturing plants within 300 km radius such as Ultratech Cement – Jharsuguda, OCL India Ltd – Sundergarh, OCL India Ltd. – Cuttack, ACC Cement – Bargarh, ACC Cement – West Singhbhum. These plants are having total installed capacity of about 12.95 million tonnes per annum (MTPA).

Presently these plants are not lifting fly ash from Talcher TPS. However, two nos. new Cement Grinding Units with total installed capacity of about 4.5 MTPA are being installed in this region & planned to be commissioned in 2017-18 which will require about 1.0 MTPA dry fly ash. these new units are nearer to Talcher TPS. It is expected that about 0.3 million tone (assuming 30% fly ash demand shall be met from Talcher TPP) fly ash per annum is expected to be utilized in this sector.

8.6.2.3 Brick Kiln Sector

There are about 150 nos. Fly Ash Brick manufacturing Units with an average production capacity of 12,000 bricks per day

mainly located within 100 km of Talcher TPP. It is assumed that MoEF&CC stipulation of compulsory use of fly ash based bricks/products within 300 km of power plant in the building construction would be implemented and result in demand for fly ash brick would be built up. It is estimated that about 0.10 million tonne fly ash per annum is expected to be utilized in brick manufacturing segment.

8.6.2.4 Road and Highway Development”

There are three road projects which planned to be taken up during next 5 years period and there will be great potential of use of fly ash, these are (i) 4 laning of existing NH-55 from (Cuttack-Sambalpur), (ii) 4 laning of existing NH-200 (Chandikol to Talcher) and (iii) 4 laning of existing NH-42 from (Angul-Sambalpur). These highway projects have potential to utilize about 0.20 million tonne ash per annum.”

66. The Ministry of Environment, Forests and Climate Change, Respondent No.1, in its counter-affidavit dated 24.09.2020 with regard to utilization of fly ash has stated that the Ministry has issued a Gazette Notification vide dated 03.11.2009 which is an amendment to its earlier Notifications dated 14.09.1999 and 27.08.2003. The new notification stipulates that all coal based power stations/units commissioned after the date of issuance of notification have to utilize fly ash from day one of the commissioning of the units as below:-

Sr. No.	Fly ash utilization level	Target date
1.	At least 50% of ash generation	One year from dated of commissioning
2.	At least 70% of ash generation	Two year from dated of commissioning
3.	90% of ash generation	Three year from dated of commissioning
4.	100% of ash generation	Four year from dated of commissioning

67. It is stated that the notification dated 03.11.2009 was further amended on 25.01.2016 wherein additional directives have been issued so as to ensure 100% ash utilization by all power plants. The said amendment dated 25.01.2016 stipulates that the cost of transportation of ash for road construction projects or for manufacturing of ash based products or use as soil conditioner in agricultural activity shall be as under:-

- “(i) up to radius of 100 km shall be borne by TPP.*
- (ii) beyond 100 km and up to 300 km shall be shared equally between the user and TPP and*
- (iii) TPPs shall bear entire cost of transportation of ash within a radius of 300 km in the road construction projects under Pradhan Mantri Gramin Sadak Yojna and asset creation programs of the Govt. involving construction of buildings, roads, dams and embankments.”*

68. It is also stated that the Specific Condition No. (ii) of para 28 of the Environmental Clearance mandates that ash content and Sulphur content in the coal which will be utilized for power generation shall be less than 34% and 0.55% respectively. Further, it is estimated that about 7000 tonnes of ash per day i.e., about 2.3 million tonnes per annum would be produced in the power generation process. As stated in the EIA, the potential areas for ash utilization are mine filling, cement and concrete, manufacturing of building products and road embankment construction etc. and ash utilization plan for the proposed Talcher TPP is a part of the Environment Management Plan (EMP).

69. For reasons aforesaid, the contention of the Appellant that the EAC has failed to apply its mind to the ash related pollution is thoroughly misconceived and the same is accordingly rejected.

70. With regard to **Issue No.(IX), THE PROJECT IS NOT NEEDED TO MEET THE NATIONAL ENERGY REQUIREMENT;**

The contention of the Appellant is that the Central Electricity Authority (CEA) had projected that Distribution Companies (DISCOMs) in India will be power surplus in the year 2016-17 with a peak surplus of 2.6% and an energy surplus of 1.1% and, therefore, another energy plant i.e. the Respondent No.4 Unit is not required.

71. The allegation made in Issue No. (IX) has been denied by the Respondent No.4 Unit and it is stated that the EIA Report itself states that Stage-I & Stage-II (460MW) was proposed to be decommissioned in 2023, the entire power of which was drawn by the State of Odisha. In addition, there are a number of other old and inefficient units across India that are planned to be decommissioned with more efficient units complying with new emission norms in the interest of economy and environment of the country. It is stated that the proposed Talcher TPP Stage-III (2x660MW) has been planned for start of operation in 2025-26 by which time the power scenario is likely to change in the country.

72. The Issue No. (IX) has been dealt with in the Final EIA Report in Section 1.5 and 1.6 (page C1-6 to C1-7 to the EIA Report) wherein it is stated that the proposed Talcher TPP Stage-III (2x660MW) Project is envisaged as an inter-regional base load station for meeting the power demand of Eastern Region beneficiaries and the home State-Odisha and the said Project is expected to start yielding benefits in 2022. It is also stated that based on the Demand Supply situation in the country, there is a peak shortage even without significant peaking up of the Manufacturing Sector. The Manufacturing Sector is likely to peak up with the Make-in-

India campaign which is likely to considerably erode whatever margins are available in base energy availability. In fact, a base energy at all India level is highly likely since the national per capita consumption at 1,000 units/annum is about 40% of the global average of 2,500 units/annum.

73. Considering the Report, we find the contention of the Appellant that the Project in question is not required to be thoroughly misconceived and contrary to the facts on record as well as the projected consumption as emerging from the Final EIA Report.

74. With regard to **Issue No.(X): QUESTIONS RAISED IN THE PUBLIC HEARING HAVE NOT BEEN CONSIDERED BY THE EAC;**

It is alleged by the Appellant that 20 persons out of 38 who were present during Public Hearing, raised their concerns and apprehensions about the proposed expansion and have also complained that ash and waste water from the existing Plant is constantly discharged into the Nandira and Brahmani River streams which is their source of livelihood and further that possibility of leakage or discharge into the water bodies has not been taken into consideration. It is also stated that question of acquiring additional land for construction of new ash pond at Santhapada Village has not been discussed in the EIA Report. There is no mention of ash disposal with regard to existing ash pond or newly constructed ash pond. Various health issues have also not been discussed.

75. As regards the pollution by way of discharge of ash and water into the Nandira and Brahmani River, the case of the Respondent No.4 Unit is that it took over the Project from Odisha State Government in 1995 and at that time the ash slurry was being discharged directly into Nandira Jhor rivulet but immediately after take over,

the NTPC Ltd. Respondent No.4, changed the mode of disposal of ash from Nandira Jhor to abandoned ash ponds and later into Mine Voids of South Balanda Mine Voids along with ash water recirculation system. At present the ash slurry from existing Units of Stage-I & II is being discharged into the South Balanda Mine Void and supernatant water is being recycled back into the Plant. There is no discharge of any ash into any water body.

76. In this regard, we may at the cost of repetition refer to the Odisha State Pollution Control Board Report dated 23.05.2018 where it is mentioned that; “*there is no effluent discharge to outside the Unit premises*”, which has already been extracted herein above.

77. As regards the possibility of leakage and discharge from the proposed Units under Stage-III, it is stated by the Respondent No.4 Unit that the same has been designed on the basis of Zero Liquid Discharge system with same balancing storage of treated effluents.

78. The said issue has also been dealt with in the Final EIA Report in Section 7.2 under the heading “Public Consultation” (page no. C7-1 to C7-37 of the EIA Report) and each and every issue raised during the Public Hearing was dealt with in the Final EIA Report and also duly responded by the NTPC, Respondent No.4 as would be evident from Table 7.1 (page no. 496 of the paper book).

79. The case of the Respondent No.4 Unit further is that with regard to acquisition of additional land at Villages – Jhadiamba and Santhapada, as mentioned in the Specific Conditions (i) & (ii) of the Environmental Clearance, it is stated that the lands at Villages – Jhadiamba and Santhapada were acquired during 2003-05 for construction of ash dyke for existing Units of Talcher TPS, however, no additional land for any new ash pond is being acquired for proposed Talcher TPP Stage-III (2x660MW) since the

NTPC has decided not to use these areas for ash dyke for want of requirement. It is also stated that the issues raised during the Public Hearing by the 20 out of 38 participants have been dealt with and addressed by the Respondent No.4, NTPC Ltd., during the Public Hearing held on 19.04.2018 which also find mentioned at point no. 16.3.1 (xxxii) & 16.3.3(v), (xii) of MOM of EAC held on 19.04.2018 and point no. 18.5.3 of MOM of EAC held on 27.06.2018. The EAC sought additional details including capital budget for CSR activities and for implementing the Public Hearing commitments as given in MOM point no. 16.3.3(iv) vide Ministry of Environment, Forests and Climate Change letter dated 09.05.2018. The NTPC, Respondent No.4 vide its letter dated 08.06.2018 submitted a Draft Community Development (CD)/Corporate Environmental Responsibility (CER) Plan of Rs. 19.50 crores to implement the commitments made during the Public Hearing. It is also stated that the said Plan covered major issues like – employment, loss of livelihood, education, health, water supply, infrastructure, woman empowerment, sanitation, welfare and cultural event, environment, skill development/vocational training, community welfare activities etc. In fact, Ministry of Environment, Forests and Climate Change has stipulated many of the General and Specific conditions to address the issues raised during the said Public Hearing.

80. The learned Counsel for the Respondent No.4 Unit has referred to the Judgment of the National Green Tribunal passed in Original Application No. 08/2013-(EZ) (*Ramesh Agrawal Vs. Union of India and Ors.*), and submitted that the scheme of appraisal shows that while carrying out appraisal, the Expert may seek to clarify any doubts by inviting the Project Proponent if any clarification is

required. The necessity is only in the event of any doubts requiring clarification from the Project Proponent and not any other person. On conclusion of these proceedings the EAC or SEAC concerned shall make their recommendations to the regulatory authority either for grant of prior Environmental Clearance on terms and conditions or for rejection of the application for prior Environmental Clearance. The words 'together with reasons for the same' only refer to reasons for rejection. Para 31 of the judgment of the Tribunal is extracted herein below:-

“31. The Scheme for appraisal quoted above clearly goes to show that under para IV Stage (4) Sub para (i) while carrying out appraisal the Expert may seek to clarify any doubts by inviting the Project Proponent if any clarification is required. The necessity is only in the event of any doubts requiring clarification from the Project Proponent and not any other person. On conclusion of these proceedings the EAC or SEAC concerned shall make their recommendations to the regulatory authority either for grant of prior EC on terms and conditions or for rejection of the application for prior EC. In our view the words “together with reasons for the same” only refer to reasons for rejection. This is clear from a perusal of sub-para (iii) of Para IV Stage (4) under which it is provided that “the prescribed procedure for appraisal is given in Appendix V”. A perusal of Appendix V para 6 quoted above only requires that in the case of favourable recommendation for grant of EC “the minute shall clearly list out the specific environmental safeguards and conditions” as opposed to giving any reason for acceptance of the application. It further provides that it is only “in case the recommendations are for rejection, the reasons for the same shall also be explicitly stated.”

81. Having gone through the judgment of the Tribunal, we are satisfied that the EAC is not required to record reasons for acceptance or rejection of each and every issue raised during the Public Hearing when satisfactory reply has been given by the Project Proponent.

82. Learned Counsel for the Appellant has assailed the Public Hearing and stated that many questions raised therein were not dealt with by the EAC.
83. We may note that the Table 7.1 (page no. 496 of the paper book) onwards refers to the query raised by each and every one of the participants and deals with each of the issues raised.
84. Learned Counsel for the Appellant further submitted that one Sri Abantikanta Dehury, Sarpanch, Bantol Gram Panchayat, had raised the issue that people were suffering from T.B., diabetes etc. which has not been dealt with since the NTPC, Respondent No.4, in its response only mentions that special health camps and awareness drives on Diabetes, Dengue, Tobacco and respiratory diseases etc. will be conducted. We, however, find that the NTPC Ltd. response, however, mentions that mobile health camps are being organised in nearby villages periodically. The provision of Rs. 4 lakhs has been kept for these camps for next two years CSR Plan (2018-2020) though it has not mentioned about treatment of T.B.
85. The response of the Respondent No.4 Unit even though does not mention T.B. specifically but we fail to appreciate that when special health camps and mobile health camps have been provided for, the same would not also deal with issues relating to tuberculosis, and in any case there is nothing on record to show that tuberculosis as a disease is or would be directly attributable to the effects of setting up of Talcher TPP Stage-III expansion Project.
86. With regard to **Issue No.(XI): FINAL FOREST CLEARANCE IS YET TO BE OBTAINED;**

The allegation of the Appellant is that Section 2.3.1 of the EIA Report mentions that;

“total land required for proposed expansion project is about 193 acres, including 2.337 acres of Govt. forest land near upstream of Samal Barrage on Brahmani River for make-up water pump house. The application for diversion of 2.337 acres of forest land, submitted to DFO (Angul) on 08.05.2015 and same is under approval process.”

It is, therefore, alleged that since the process of approval is still pending before the Divisional Forest Officer, Angul, and the Forest Clearance has not yet been granted which is a pre-requisite and as no forest land can be used for a non-forest purposes till such Forest Clearance is granted. Therefore, Environmental Clearance could not have been granted to the Project in question.

87. The allegation with regard to Issue No. (XI) has been denied by the Respondent No.4 Unit and it is stated that the Ministry of Environment, Forests and Climate Change vide Office Memorandum dated 31.03.2011 makes a provision that in case of projects where a project is already considered by the EAC and recommended for grant of Environmental Clearance, the formal Environmental Clearance will be issued only after the Stage-I Forestry Clearance for the forest land involved in the project has been obtained and submitted. It is also stated that the application for diversion of 2.337 acres of forest land was uploaded online on 05.05.2015 and hard copy of the same was submitted on 08.05.2015, and a copy of the application for Forest Clearance was also submitted along with the application seeking Environmental Clearance vide letter dated 19.01.2018. The EAC in its meeting held on 19.04.2018 as well as by the Ministry of Environment, Forests and Climate Change vide its letter dated 09.05.2018 sought information with regard to the status of Forest Clearance.

Thereafter, the Ministry of Environment, Forests and Climate Change accorded the Stage-I Forest Clearance for the said forest land vide its letter dated 12.06.2018. Copy of the Stage-I Forest Clearance was submitted and presented during the EAC meeting held on 27.06.2018. The Ministry of Environment, Forests and Climate Change thereafter processed the file in terms of Office Memorandum dated 31.03.2011 and thereafter accorded Environmental Clearance.

88. A perusal of the ToR Sl. No. 3 (x) would show that this aspect has also been dealt with and under the heading of 'Compliance' wherein it is stated that;

'No additional land is required for plant & township, except for a small area of land (about 2.337 acres, govt. forest land), for make-up water pump house for which Forest Land Division proposal submitted on 08.05.2015.'

However, in view of the fact that State-I Forest Clearance for the said 2.337 acres of forest land was granted by the Ministry of Environment, Forests and Climate Change, vide its letter dated 12.06.2018 and thereafter Environmental Clearance has also been granted, we find that the allegation of the Appellant that Forest Clearance has yet to be obtained has no substance.

89. With regard to **Issue No.(XII): THE ENVIRONMENTAL CLEARANCE HAS FAILED TO SHOW WHETHER THE NEW UNIT WILL ACTUALLY ACHIEVE ULTRA-SUPERCRITICAL OPERATION;**

The allegation of the Appellant is that the operational temperature and pressure requirements in para 10 of the Environmental Clearance are not sufficient to ensure that the new Units will actually achieve Ultra-Supercritical operation.

90. Denying the allegations with regard to Issue No. (XII), the stand of the Respondent No.4 Unit in their counter-affidavit is that the Environment Impact Assessment (EIA) and Environment Clearance specify the key parameters of the technology proposed to be used and if some parameters are missing from the text, it does not signify that the process is incomplete. It is stated that each and every micro level technical detail of the Project cannot be mentioned in the Environmental Clearance. The NTPC Ltd., Respondent No.4, has already successfully commissioned the first Ultra-Supercritical Thermal Power Plant of India at Khargone (M.P.). The Notice Inviting Tenders (NIT) for Ultra Supercritical based Talcher Thermal Power Plant Stage (2x660MW) has been issued and technical and financial bids has been opened.

91. The Issue No. (XII) has also been dealt with in the Final EIA Report in Section 2.6.2 and Section 2.6.3. The relevant extract of Section 2.6.2 and Section 2.6.3 of the EIA Report is extracted herein below:-

“2.6.2 Resource Optimisation, Recycle & Reuse

.....XXXX.....XXXX.....XXX.....

Talcher TPP Stage-III (2 X 660 MW) shall be based on Ultra super critical boiler parameters, which higher thermal efficiency as compared to conventional pulverised coal fired units based on sub-critical boiler parameters. The increase in efficiency results in lower coal consumption as well as lower generation of ash and gaseous emissions per unit of electricity generated.

“2.6.3 Ultra Super Critical Technology and its Advantage

.....XXXX.....XXXX.....XXX.....

An Ultra-super critical plant uses Ultra-Super Critical (USC) steam parameters at the super heater outlet. Ultra-Super critical technology envisaged to be used in proposed Talcher TPP has

steam parameters higher than supercritical/sub-critical technology. In preliminary design consideration main steam pressure will be 270 kg/cm³ (a) at HPT inlet, main steam temperature at HPT inlet will be 600 °C and hot reheat steam temperature at IPT inlet will be 600 °C.

Ultra-super critical technology has many advantages over super critical Technology and sub-critical technology. Plants with Ultra-super critical technology have better efficiency due to higher steam parameters resulting in lesser coal consumption than the sub-critical plants. Lower amount of coal burnt in the power plant for same amount of electrical power being produced means lesser CO₂ and SO_x emissions. Carbon-dioxide emissions, a major cause of concern today due to its global warming potential causing climate change are reduced. This has been a major factor for adoption of Ultra-supercritical technology.

In other words, Ultra-supercritical power plants are highly efficient plants with best available pollution control technology, reduces existing pollution levels by burning less coal per megawatt-hour produced, capturing the vast majority of the pollutants. This increases the kWh produced per kg of coal burned, with fewer emissions.”

92. Section 5.2 under the heading “Analysis of Process Technology, Ultra Super Critical Technology and its Advantages” of the Final EIA Report also deals with the Issue No. (XII). The relevant extract of the same reads as under:-

“5.2 Analysis of Process Technology

Ultra Super Critical Technology and its Advantages

.....XXX.....XXX.....XXX.....

But NTPC as initiative for Environment Protection is envisaging Ultra Super Critical technology for proposed Talcher TPP which is more advance technology than Super Critical Technology.

An Ultra-super critical plant uses Ultra-super critical (USC) steam parameters at the super heater outlet. Ultra-super critical technology envisaged to be used in proposed Talcher TPP has steam parameters higher than supercritical/sub-critical technology. In preliminary design consideration, main steam pressure will be 270 kg/cm³ (a) at HPT inlet, main steam

temperature at HPT inlet will be 600 °C and hot reheat steam temperature at PIT inlet will be 600 °C.

Plants with Ultra-super critical technology have better efficiency due to higher steam parameters resulting in lesser coal consumption than the sub-critical plants. Lower amount of coal burnt in the power plant for same amount of electrical power being produced means lesser CO₂ and SO_x emissions. Carbon-dioxide emissions, a major cause of concern today due to its global warming potential causing climate change are reduced. This has been a major factor for adoption of Ultra-supercritical technology.

.....xxxx.....xxxx.....xxxx.....

Considering the advantages mentioned above, NTPC has moved forward in adopting Ultra-super critical technology (steam parameters of 270 kg/cm³(a)/600 °C/600 °C as MSP/MST/HRHT at turbine end). Adoption of Ultra-super critical technology with above USC steam parameters will increase the plant efficiency by approximately 3.12% point, while the carbon emission would reduce by approximately 7.5% per kwhr. Adoption of Ultra-super critical parameters result in saving of natural resources such as coal. Coal saving due to adoption of above USC steam parameters will be of about 0.14 MTPA.”

93. The Ministry of Environment, Forests and Climate Change, Respondent No.1, in para 8 of its counter-affidavit has also stated as under:-

“8. It is further reiterated that as mentioned in the para No. 10 of the EC letter "that Ultra Super Critical Technology envisaged to be used in the proposed Talcher TPP which has steam parameters higher than super critical/sub-critical technology. In preliminary design consideration, main steam pressure will be 270 kg/cm² (a) at HPT inlet, main steam temperature at HPT inlet will be 600oC. Adoption of Ultra-Super Critical technology with above USC steam parameters will increase the plant efficiency by approximately 3.12% point, while the carbon emission would reduce by approximately 7.5% per kWhr.”

94. In view of the above, we do not find any merit in the allegations made by the Appellant on this issue.

95. With regard to **Issue No. (XIII): HEALTH IMPACTS ASSESSMENT STUDY HAS NOT BEEN DONE;**

The allegation of the Appellant is that the Project Proponent, Respondent No.4, has not conducted health impact assessment study detailing the proposed Project impact on health of the people till the grant of the Environmental Clearance.

96. The allegation with regard to Issue No. (XIII) has been denied by the Respondent No.4 Unit in their counter-affidavit and it is stated that the EIA study has been undertaken as per the ToR dated 22.10.2014 stipulated by the Ministry of Environment, Forests and Climate Change under the Environment Impact Assessment (EIA) Notification 2006 and amendments thereto. It is stated that the Ministry of Environment, Forests and Climate Change stipulated the ToR Condition No. (xxxv) & (xxxvi) which are as under:-

“(xxxv) Assessment of occupational health as endemic diseases of environmental origin shall be carried out and Action Plan to mitigate the same shall be prepared”

(xxxvi) 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 years shall be conducted with an excellent follow up plan of action, wherever required.”

97. It is also stated that in compliance of the abovementioned ToR Conditions, the NTPC Ltd. has provided details of endemic disease

'Malaria' in the Talcher area based on the letter dated 22.09.2015 issued by the Sub-Divisional Medical Officer, Govt. Hospital, Talcher, copy of which has been filed as Annexure R-4/11 to the counter-affidavit.

98. Section 7.5 of Chapter-7 (page no. 560 of the paper book), of the Final EIA Report deals with the "Occupational Health and Safety" which provides that;

'large industries, in general, and power plants in particular where multifarious activities are involved during construction, erection, testing, commissioning, operation and maintenance, employ men, materials and machines as the basic inputs. Occupational health needs attention both during construction and erection and operation and maintenance phases. However, the problem varies both magnitude and variety in the above phases'.

99. Section 7.5.8 of the Final EIA Report deals with the 'Occupational Health Management Plan'. Section 7.5.9 of the Report deals with the 'Occupational Health Monitoring, Awareness and Training' which provides that;

'NTPC TTPS already have a full-fledged hospital with adequate number of qualified medical staff, namely, Ashalok Hospital, which also acts as Occupational Health Centre. First Aid facilities, medicines and ambulance to meet any emergency situation are exist, which will be further strengthened. Medical check-up of all the employees will be done during the pre-employment time and thereafter at periodic intervals. Health records will be maintained for each employee. Regular health check-up will be carried out. the precautionary measures will be taken to avoid any occupational diseases'.

100. It is also stated under the head “Occupational Health Monitoring for Workers” that;

‘engagement of contractual workers will be done only after proper health check-up and fitness certificate by approved Medical Practitioner through contractor’.

It is also stated under the head “Awareness Programme and Training” that;

‘periodic awareness programmes regarding the health and safety with active involvement of the workers will be organized, covering each individual with the minimum annual average duration of 8 hours per workers’.

101. Section 7.5.11 of the Final EIA Report deals with the ‘Assessment of Endemic Diseases of Environmental Origin’ in which under the head ‘Endemic Diseases in the area’ it is stated;

‘that Talcher region falls in the deciduous, dry and wet climatic zone. As per SDMO letter dated 22.09.2015, Malaria is endemic in Talcher region and under the head ‘Action Plant to mitigate the endemic diseases’ it is stated that the District Health Department is a nodal agency to prevent the occurrence of Malaria’.

102. Section 7.5.12 of the Final EIA Report deals with the ‘Medial Facilities and Health Infrastructure at TTPS’ wherein it is stated that;

‘the existing Talcher Thermal Power Station has already full-fledged hospital namely, Ashalok Hospital, to cater the health needs of employees of NTPC, CISF, PAPs and other nearby villages. the hospital has full time qualified doctors in various specialities who are also trained in Occupational Health. Besides this, other consultants are being outsourced to fulfill the health needs. It is also stated that during 2014-15 this hospital has treated total 68,996

patients out of which 34,795 patients were non-employee. While during the same period total number of IPD patients were 1,224’.

The hospital has the following health infrastructure facilities like –

- Pharmacy
- Radiology
- Pediatrics
- Obstetrics & Gynaecology, Labour Room
- Operation theatre
- Pathology
- Store
- Ambulance
- PID (10 nos. of bed)

103. The specific issues raised by the members of the public i.e., 20 out of 38 who attended the Public Hearing has also been dealt with in Table 7.1 of the Final EIA Report.

104. Mr. Saurabh Sharma, learned Counsel for the Appellant submitted that the EIA only deals with issues relating to diabetes, dengue, tobacco and respiratory diseases for which special health camps and mobile health camps have been provided but nothing has been stated about T.B.

105. In our opinion, it has already been noted in the Final EIA Report which we have already extracted hereinabove that the Project is already operating a hospital known as ‘Ashalok Hospital’. In addition, it is organizing special health camps as well as mobile health camps, therefore, merely because T.B. has not been mentioned in the NTPC response or in the Final EIA Report, it does not mean that the Ashalok Hospital or special health camps or mobile health camps cannot identify the patients suffering from tuberculosis (T.B.) and treat them or give advisory/medical opinion, if and when required. In our opinion, the contention of the

Appellant in this regard is totally misconceived and without any basis and is accordingly rejected.

106. The Appellant has also cited a number of decisions in support of his case challenging the Environmental Clearance and also submitted that the Tribunal may give suitable suggestions and directions to the Respondent No.4, NTPC Ltd., to ensure that the environmental norms are observed in true letter and spirit. The judgments are as under:-

Sl. No.	Case Number/ Name/Date	Relevant pages
1.	(2014) 1 SCC 769 (Alaknanda Hydropower Company Ltd. Vs. Anuj Joshi & Ors.)	976 of the paper book
2.	NGT – Appeal No. 05/2011, judgment dtd. 14.12.2011 (Vimal Bhai Vs. MoEF&CC & Ors.)	1004 of the paper book
3.	NGT – Appeal No. 03/2011, judgment dated 12.09.2011 (The Sarpanch, Gram Panchayat Tiroda Vs. MoEF&CC & Ors.)	1044 of the paper book
4.	NGT – Appeal No. 46/2016, judgment dtd. 27.05.2011 (Uma Maheshwar Dahagama Vs. Union of India & Ors.)	1099 of the paper book
5.	United State Court of Appeals, Ninth Circuit – Hugh R. Kern Vs. United States Bureau of Land Management – 284 F. 3d 1062	1142 of the paper book
6.	United States Court of Appeals, Ninth Circuit – Centre for Biological Diversity Vs. National Highway Traffic Safety Administration – 538 F. 3d 1172	1182 of the paper book
7.	Fritiofson Vs. Alexander – 772 F. 2d 1225	1200 & 1210 of the paper book
8.	(2020) SCC 66 (Keystone Realtors Private Limited Vs. Anil V. Tharthare & Ors.)	1223 of the paper book
9.	NGT – O.A. No. 104/2018, order dtd. 23.08.2018 & 15.02.2018 (Shivpal	1240 of the paper book

	<i>Bhagat Vs. Union of India & Ors.)</i>	
10.	<i>NGT – Appeal No. 15/2020/SZ judgment dtd. 30.09.2022 (The Conservation of Action Trust Vs. Union of India & Ors.)</i>	<i>1355 of the paper book</i>
11.	<i>(2019) 15 SCC 401 (Hanuman Laxman Aroskar Vs. Union of India)</i>	<i>1388 of the paper book</i>
12.	<i>Delhi High Court – W.P.(C) No. 9340/2009, judgment dtd., 26.1.2009 (Utkarsh Mandal Vs. Union of India)</i>	<i>1450, 1455 & 1456 of the paper book</i>
13.	<i>NGT – Appeal No. 9/2011, judgment dtd. 13.12.2013 (Samata & Anr. Vs. Union of India & Ors.)</i>	<i>1482, 1503-1504 & 1507-1508 of the paper book</i>
14.	<i>NGT – Appeal No. 47/2012, judgment dtd. 22.08.2013 (Gau Raxa Hitaraxak Manch and Gauchar Paryavaran Bachav Trust Vs. Union of India & Ors.)</i>	<i>1536-1537 of the paper book</i>
15.	<i>NGT – 2012 SCC Online NGT 40 (T. Mohana Rao Vs. The Director, Ministry of Environment, Forests & Ors.)</i>	<i>1538-1548 of the paper book</i>
16.	<i>(2020) 15 SCC 63 (Bengaluru Development Authority Vs. Sudhakar Hegde & Ors.)</i>	<i>1549-1600 of the paper book</i>
17.	<i>NGT – O.A. No. 104/2018, order dtd. 12.09.2022 (Shivpal Bhagat & Ors. Vs. Union of India & Ors.)</i>	<i>1602-1616 of the paper book</i>
18.	<i>NGT – Appeal No. 13/2019 judgment dtd. 31.05.2022 (P. Sundaravathanam Vs. Union of India)</i>	<i>1643 of the paper book</i>
19.	<i>NGT – Appeal No. 02/2020 judgment dtd. 29.09.2022 (EAS Sarma Vs. Union of India & Ors.)</i>	<i>1687-1688 of the paper book</i>
20.	<i>AIR 1964 SC 358 (State of Uttar Pradesh Vs. Singhara Singh & Ors.)</i>	<i>1692-1698 of the paper book</i>
21.	<i>(2014) 8 SCC 425 (Husseini Ghadially & Ors.)</i>	<i>1699-1717 of the paper book</i>

107. We have considered the above judgments but in view of our findings recorded hereinabove on each of the issues raised by the Appellant, it is not necessary to burden our order by reproducing

extracts from the above citations as we are satisfied that there is no illegality or infirmity in the impugned Environmental Clearance dated 12.09.2018. We are also not inclined to give any directions for future as, in our opinion, that is absolutely unnecessary since the Project Proponent is aware of environmental laws, rules and norms and is expected to ensure their due compliances.

108. For reasons aforesaid, the Appeal No. 10/2018/EZ lacks merit and is accordingly dismissed.

109. M.A. No. 68/2018/EZ and I.A. No. 96/2020/EZ are also disposed of accordingly.

110. There shall be no order as to costs.

.....
B. Amit Sthalekar, JM

.....
Prof. A. Senthil Vel, EM

January 31, 2023,
Appeal No.10/2018/EZ
(M.A. No.68/2018/EZ & I.A. No.96/2020/EZ)
AK

NGT