

BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL (SOUTH ZONE)

CHENNAI

Original Application No.105 of 2021 (SZ)

Yanati Srinivasulu Reddy & Anr.

...Applicant

*Versus*The Chief Secretary,
Govt. of Andhra Pradesh & Ors.

...Respondents

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COMMITTEE REPORT DATED MARCH 22, 2022**

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Dated at Chennai this the 20th day of July, 2022.

THROUGH



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BEFORE THE NATIONAL GREEN TRIBUNAL, SOUTHERN
ZONE CHENNAI

Original Application No. 105 of 2021

IN THE MATTER OF

Yanati Srinivasulu Reddy & Another

...Applicant

Versus

The Chief Secretary,
Govt. of Andhra Pradesh & Others

...Respondents

REPLY ON BEHALF OF RESPONDENT NO. 9 TO THE
JOINT COMMITTEE REPORT DATED MARCH 22, 2022

MOST RESPECTFULLY SHOWETH:

The 9th Respondent above named begs to submit as follows:

1. The Respondent No. 9 is filing this reply (*hereinafter referred to as the "Reply"*) to the Joint Committee Report (*hereinafter referred to as the "Report"*) dated March 22, 2022. For the sake of convenience, Respondent No. 9 will be referred to as the ("**Respondent**" or the "**Respondent No. 9**" *as the context may require*) throughout the present Reply as where the context may require. All the respondents shall be collectively referred to as the ("**Respondents**" *as the context may require*).
2. The Respondent No. 9 is setting out hereinbelow its preliminary response to the Report *inter alia* to bring out the true and correct facts that are necessary for the adjudication of the subject matter. The Respondent No. 9 reserves its right to issue a subsequent detailed reply to the Report at an appropriate juncture, with the



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leave of this Hon'ble Tribunal. As such nothing stated in the Report may be deemed to be admitted by the Respondent No. 9 for the reason of non-traverse or otherwise.

A. PRELIMINARY OBJECTIONS AND SUBMISSIONS

3. At the outset, the Respondent No. 9 submits that the facts in brief, pleaded in the Reply are -

- (i) The Applicant filed the Original Application before this Hon'ble Tribunal *inter alia* seeking compensation for the alleged pollution caused on account of the operation of the Respondents units. It was *inter alia* vaguely alleged in the Original Application that the Respondents units were not complying with the conditions imposed in the consents/clearances granted to them by appropriate government bodies *qua* the operation of the said units. Further, it was vaguely alleged by the Applicant that the units in question were emitting pollution such that it resulted in large scale damage to the agricultural lands, thereby causing loss of income.
- (ii) The Respondent No. 9 issued its reply to the Original Application filed by the Applicant *inter alia* responding to the unsubstantiated allegations set out in the Original Application with a caveat to file a subsequent detailed response with the leave of this Hon'ble Tribunal. The Respondent No. 9 submits that the contents of the aforesaid



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reply be read as part of this present Reply to the Committee's Report, where the context may require. The contents of the foregoing reply are not being repeated here for the sake of brevity.

- (iii) Subsequently, in order to ascertain the genuineness of the allegations made in the Original Application and also investigate the alleged circumventions, non-compliances, violations etc. if any, caused by the Respondents herein that have as a corollary resulted in economic loss to the Applicant, a Joint Committee was directed to be constituted by this Hon'ble Tribunal *vide* order dated September 16, 2021.
- (iv) Pursuant to the aforementioned order dated September 16, 2021, a Joint Committee was constituted *inter alia* comprising of the following members:
- (a) Smt. H D Varalaxmi, Sc E & Regional Director, Regional Directorate-Chennai, Central Pollution Control Board;
- (b) Dr. Suresh Babu Pasupuleti, Scientist-D, Integrated Regional Office (IRO), Ministry of Environment, Forest & Climate Change, Vijayawada;
- (c) Sri D Hussain Sahib, Revenue Divisional Officer & Divisional Magistrate, Nellore;



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- (d) Dr. V. Sailaja, Principle Scientist (Soil Science & Agri. Chemistry), ANGRAU, RARS, LAM, Guntur; and
- (e) Sri. Ch. Rajasekhar, Environment Engineer, Regional Officer, Nellore, Andhra Pradesh Pollution Control Board.

(hereinafter referred to as the “Committee”).

Scope of the Committee

4. The broad scope of the Committee as contemplated in the order dated September 16, 2021, is set out hereinbelow:

The Committee was vested with the mandate to visit and inspect the site in-question and to ascertain the following:

- (i) Verify whether Respondent 8 and 9 have requisite permissions/clearances;
- (ii) Verify whether any violations were committed by the Respondent 8 and 9 against the conditions imposed in the consents/clearances granted;
- (iii) Verify whether there was any pollution caused on account of the operation of the Respondent 8 and 9's Plant;
- (iv) Verify whether any environmental damage including soil as well as the water has been caused on account of the operation of the Respondent 8 and 9's Plant, if so what is the nature of damage caused and the remedial measures to be taken for restoring the damage caused to the environment;



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- (v) Verify whether any loss of soil fertility resulting in reduction of the agricultural income has been caused to the Applicant on account of the any alleged pollution said to have been caused by the Respondent 8 and 9's Plant and if so, what is the quantum of compensation to which they are entitled for,
- (vi) Suggest the ways and means if there is any pollution found, to avoid the same in future to be carried out by the Respondent 8 and 9's Plant and
- (vii) Verify whether there is any deficiency in the pollution control mechanism provided by the Respondents units and if so, what is the nature of modification or up-gradation required for mitigating the alleged pollution if any caused, on account of their operation.

(the foregoing scope as set out in the order dated September 16, 2021 is hereinafter referred to as the "Scope of the Committee")

Methodology adopted by the Committee whilst collating its Report

5. From a review of the Report, it emerges that the Committee adopted the following approach:

The Report is compartmentalized in the following amongst other buckets:

- (i) Detailed Joint Committee Report;
- (ii) Inspection report of M/s Sri Damodaram Sanjeeviah Thermal Power Station i.e., Respondent No.8 herein;



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- (iii) Compliance report of the conditions stipulated in the Environment Clearance (*hereinafter referred to as the "EC"*) and Coastal Regulation Zone (*hereinafter referred to as the "CRZ"*) clearances of Respondent No.8's Plant;
- (iv) Compliance report of the Andhra Pradesh Pollution Control Board's (*hereinafter referred to as the "APPCB"*), Consent for Operation order (*hereinafter referred to as the "CFO"*) issued to the Respondent No.8's Plant;
- (v) Inspection report of M/s Sembcorp Energy India Limited (Project-I) i.e., Respondent No.9's Plant;
- (vi) Compliance report of the conditions stipulated in the EC & CRZ clearances of the Respondent No.9's Plant; and
- (vii) Compliance report of the APPCB's CFO order issued to the Respondent No.9's Plant.
- (viii) Health Statistics report from Medical Officer, PHC, Muthukur Mandal, SPSR Nellore District for the affected villages i.e., Muthukur Mandal. Notably, reference of this Health Statistics report finds mention in the Report of the Committee allegedly marked as Annexure IX therein, however, from a review of the copy of the Report served on us, it appears that in fact there is no Health Statistics report that is attached to the Report as Annexure IX.



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6. In the aforesaid background, the Committee under broad head IV of the Report- "*Meeting and Inspection by the Committee*" confirms to have adopted the following approach:
- (a) A preliminary meeting of the Committee was convened on October 4, 2021, through video conferencing by the Regional officer, APPCB;
 - (b) The Committee conducted an inspection on October 21, 2021, at Respondent No. 8's 2x800 MW (along with extension unit) Power Plant situated at Painampuram & Nelaturu Villages, Muthukur Mandal, SPSR Nellore District (*hereinafter referred to as the "Respondent No. 8's Plant" or "AP Genco's Plant", as the context may require*);
 - (c) Simultaneously, the Committee also conducted an inspection on October 22, 2021 at Respondent No. 9's 2 X 660 MW (Stage I) Super Critical Coal Based Thermal Power Plant at Village Painampuram, in Muthukur Mandal, in Nellore Distt., in Andhra Pradesh (*hereinafter referred to as the "Respondent No. 9's Plant" or "SEIL's Plant", as the context may require*),
 - (d) During the course of the foregoing inspections carried out by the Committee it conducted the following:
 - (i) monitored the source of emissions and effluents generated/treated & discharged at the Respondent No. 8's Plant and Respondent No. 9's Plant,



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(ii) the Committee monitored the ambient air quality at 3 locations allegedly at the nearby villages of the Respondent No. 8's Plant and Respondent No. 9's Plant. In this regard, at page no. 32 and 33 under broad head XI viz. *Conclusion of Committee*, the Report indicates that the foregoing inspection *qua* ambient air quality was carried out at the below locations:

- a) S. Vijay Kumar Reddy Building, Nelaturu, SPSR Nellore;
- b) MPP Primary School, Dibbameda Colony, Pynapuram Village; and
- c) Amamath Hatcheries, Kotepalli.

(the foregoing locations for carrying out the ambient air quality inspection shall hereinafter be referred to as "Ambient Air Quality Inspection Locations")

(iii) the committee allegedly monitored the stack emissions of 3 boilers. In this regard, it is noteworthy that as only one unit of the Respondent No. 9 Plant was under operation, on the date of the inspection, thus it is apparent that the residual two boilers inspected on the said day belonged to the Respondent No. 8's Plant.

(iv) the committee collected water samples at various sources of the Respondent No. 8's Plant and Respondent No. 9's Plant.



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- (v) the committee collected samples of coal, bottom ash, fly ash, soil samples from agricultural land and ground water to ascertain the compliance status of the Respondent No. 8's Plant and Respondent No. 9's Plant and to assess any pollution being caused as result thereof.

Broad Findings of the Committee

7. Set out hereinbelow are *inter alia* the broad findings of the Committee. These broad findings are non-exhaustively indicative of the compliances being done by the Respondent No. 9. In the same breath, the broad findings will also be indicative of the alleged non-compliances by the Respondent No. 9. In subsequent paras, the Respondent No. 9 has responded to the alleged non-compliances in seriatim thereby *inter alia* bringing out either the fallacy in the allegation emerging from the Report or a corresponding compliance by the Respondent No. 9 to demonstrate the shortcoming in the facts presented in the Report.
8. The Committee in its Report has broadly confirmed general compliance by the Respondent No. 9. The specific confirmation by the Committee at sporadic intervals of the Report is set out hereinbelow:
- (i) The Committee confirmed that the Respondent No. 9's Plant was operating at a capacity of 1x660 MW against the



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consented capacity of 2x660 MW by using blended coal (i.e., 70% Indian coal & 30% imported coal).

- (ii) The Committee confirmed that 'Fly Ash' generated from Respondent No.9's Plant is being disposed to the cement and brick units from the silo.
- (iii) The Committee confirmed that bottom ash from the Respondent No.9's Plant is being disposed to the ash pond in the form of slurry.
- (iv) The Committee under broad head VI (b) of the Report – *"Status of Permission/clearances obtained by the unit"* confirmed that the Respondent No. 9's Plant has obtained all requisite clearances/permissions from all respective departments.
- (v) The Committee confirmed that the Respondent No.9's Plant is meeting the emission standards with respect to the particulate matter.
- (vi) The Committee in its assessment of soil quality around the Respondent 8 and 9's Plant and the soil quality of the Applicant's i.e., Sri. Yanati Srinivasulu Reddy and Sri Magunta Krishna Reddy and broadly and unequivocally observed that *this comparison across the years says that there is no decline in soil fertility; rather an improvement was observed in several parameters and the heavy metal contents (DTPA extractable trace metals) of all the soils were below permissible limits.*



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(vii) The Committee whilst assessing the soil fertility and agricultural income in the area on the basis of the Agricultural Yield Data of Pinampuram Village and Nelaturu Village for the period between 2008 to 2010 observed the following:

“As per the Agriculture yield data of Pinapuram and Nelaturu village (nearby villages of respondent unit), no crop yield loss observed (in the year 2015-16, 2017-17, 2017-18 and 2019-20 with reference to the year of establishment of respondent units i.e., 2014-2015. But in the year 2018-19, crop yield in the Kharif season was observed 6 to 11% less due to drought in the area.”

9. The Committee in its Report has broadly alleged the following non-compliances by the Respondent No. 9:

At the outset the Respondent No. 9 submits that it is noteworthy that in its Compliance Report, the Committee has unequivocally observed the following:

“Minor non-compliances detected (not of immediate danger to health & safety of the people). Letter issued to Project authorities for taking corrective measures.”

The Alleged non-compliances as emerging from the Committee's Report in respect of conditions imposed in the EC, CRZ clearances and consents are on these broad lines:

(i) The Committee has submitted a compliance report indicating the present status of compliances / non-compliances of conditions imposed in the EC, CRZ clearances and consents



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that is marked as Annexure VII to the Report (*hereinafter referred to as the “Compliance Report”*). In this regard, whilst the said Compliance Report confirms that the Respondent No. 9 is in compliance with the conditions imposed *qua* the EC, CRZ clearances, the said Compliance Report also indicates that there are certain alleged partial compliances by the Respondent No. 9.

- (ii) The Committee has submitted a compliance report of the conditions set out in the Consent for Operation (“CFO”) issued by the APPCB indicating the present status of compliance of conditions imposed in the CFO and the Hazardous Waste and Other Waste Management Rules (“H&OW Rules”) that is marked as Annexure VIII to the Report (*hereinafter referred to as the “CFO & HWA Compliance Report”*). In this regard, the CFO & HWA Compliance Report indicates that the Respondent No. 9 is allegedly compliant with 25 out of 31 conditions imposed in the CFO issued by the APPCB. This is in fact contrary to the report of the Committee which unequivocally confirms that the Respondent No. 9 is complaint with all conditions placed upon it. The CFO & HWA Compliance Report indicates that the Respondent No. 9 has allegedly not complied with two conditions namely:

- (a) *closed shed for storage of coal and wind barrier/wind-breaking walls to the coal yard; and*



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(b) *compliance w.r.t utilization of 100% fly ash and bottom ash were found not complying.*

Separately, the CFO & HWA Compliance Report indicates that the Respondent No. 9 partially complied with the following four conditions

- (i) *providing water sprinkler around the ash pond;*
- (ii) *development of thick green belt in an area of 395 acres;*
- (iii) *compliance with Board directions issued from time to time; and*
- (iv) *compliance with standards and directions issued by CPCB/MoEF & CC w.r.t disposal of fly ash were found partially complied.*

(iii) The Committee in its Report has collated the status of Ambient Air Quality in the surrounding area of the Respondents units based on inspection carried out at the Ambient Air Quality Inspection Locations. Pursuant thereto, the Committee has broadly held that from the Ambient Air Quality Inspection, it emerges that the air quality was found to be exceeding levels that is the National Ambient Air Quality standard. The Committee also alleged that Ambient Air Quality levels exceeded the permissible limits due to inadequate fugitive emission control system in the Coal Yard and the Ash Pond.



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- (iv) The Committee in its Report has collated the status of surface water quality and ground water quality. In respect thereof, the Committee has observed the following:

“The concentration of COD in Rentamallaiah Canal confirming that discharge of effluent through storm water drain passing through the premises. Further, high TDs values in Rentamallaiah canal would be due to joining of Sea water from Buckingham Canal / Aquaculture ponds”

In this regard, the Committee in respect of the analysis result of surface water and ground water quality has also observed that the analysis result is a consequence of the samples collected from the canal and ponds that have effluents emerging from storm water passing through the premises of the Respondent No. 8 only. It is noteworthy that whilst the Rentamallaiah Canal is situated close to AP Genco’s Power Plant, it is for reasons best known to the Committee that they have chosen to make averments in this context under the broad head of Respondent No. 9.

- (v) The Committee in its Report has assessed the damage *qua* health issues emanating from the pollution caused by the Respondent No. 9’s Plant. In this regard, the Report vaguely holds that respiratory infections such as aggravation of Asthma, respiratory symptoms an increase in hospital admissions have been caused by the pollution emerging from the Respondent No. 9’s Plant. Accordingly, the Committee



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has recommended that the following apportioned damages should be recovered from the Respondents:

Sl No.	Name of the unit	Consented capacity	Contribution %	Damage recoverable
1	M/s Sri Damodaram Sanjeevaiah Thermal Power Station	1600 MW (2x800 MW)	54.8%	Rs.8,93,870/-
2	M/s Sembcorp Energy India Limited (Plant - 1)	1320 MW (2x660 MW)	45.2%	Rs.7,37,280/-
	Total	2920		

- (vi) The Committee whilst observing that in view of the major violations/non-compliances by the Respondent No. 8, suitable environmental compensation should be levied on the Respondents. It defies logic as to why the Committee whilst holding that all major non-compliances that may well lead to environmental damage are attributable to Respondent No. 8 also hold the Respondent No. 9 liable for payment of environmental compensation. Accordingly, the Committee in its Report has held that environmental compensation on account of damage to air quality, health and non-compliances



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of Respondent No. 8 should be apportioned in the following manner:

SI. No	Name of the Unit	Monetary terms for causing damage to Air quality (A)	Monetary terms for causing illness to people health (B)	Environmental compensation for Non-Compliances (C)	Total amount to be recovered D= A+B+C
1	M/s Sri Damodaram Sanjeevaiah Thermal Power Station	Rs. 1,26,01,947/-	Rs. 8,93,870/-	Rs. 49,08,750/-	Rs.1,84,04,567/-
2	M/s Sembcorp Energy India Limited (Plant-I)	Rs. 1,03,94,306/-	Rs. 7,37,280/-	-Nil-	Rs.1,11,31,586/-

Recommendations made by the Committee

(viii) The Committee under broad head XI of the Report – “Mitigations/suggestions to prevent the pollution caused” has recommended the following:

- (a) *As per the conditions of EC and CTO, respondent units are required to ensure use of blended coal of Indian wash coal of 70% and imported coal of 30% so that to reduce particulate matter emissions.*
- (b) *Both units may asked to provide closed shed and wind barriers/ wind breaking wall to Coal storage yard to reduce the fugitive emissions.*

In respect of the aforesaid suggestion (b) Respondent No. 9 submits that in terms of the revised CFO granted to it, it is not required to maintain a closed shed. The details relevant to



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this have been dealt with in detail in the below paragraphs. Besides, a 3 layered dense 'Conocarpus' trees cover of 12 mt. height has already been provided by the Respondent. No. 9 in addition to other measures to prevent any coal dust from turning fugitive.

- (c) *Both units required to Explore possibilities of utilization of 100% Flay Ash and Bottom Ash to curtail fugitive emissions and water pollution due to seepage of ash ponds.*

In this regard the Respondent No. 9 submits that firstly, it is incorrect to suggest that there was seepage from the ash ponds of the Respondent No. 9 Plant. Besides, the manner of achieving 100% disposal of fly ash has been dealt with in the below paragraphs.

- (d) *To ensure installation of Flue Gas Desulphurisation (FGD) plant to achieve SO2 norms as per timeline given by CPCB.*
- (e) *To ensure 100% recirculation of ash pond seepage to make slurry and dust suppression to prevent water pollution if any in surrounding areas of respondent units.*
- (f) *To switch over to use sweet water for ash slurry purpose instead of sea water to prevent increase of TDS in the ground water.*

The Respondent No. 9 submits that it has made several representations to APPCB regarding the viability of switching to sweet water for ash slurry. In this regard it is noteworthy that the Respondent No. 9's Plant was originally



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designed to only use salt water for ash slurry, thus it is fundamentally not viable for making design changes to a Plant at this stage.

- (g) *To switch over to use treated sewage from the Municipal corporation, Nellore instead of treating the sea water in the desalination plant and discharging the High TDS containing desalination plant rejects into Sea.*
- (h) *To ensure proper operation of Online Continuous Effluent Monitoring System, Online Continuous Emission Monitoring System and Continuous Ambient Air Quality Monitoring Stations and transmit the live data to the APPCB and CPCB server.”*

10. At the further outset, the Respondent No. 9 submits that it is apparent that the Committee has *inter alia* not complied with the procedure contemplated under the Environment Protection Act, 1986, to the extent that the Committee failed to issue any prior notice to the Respondent No. 9 before collecting samples ~~from~~ and around the Respondent No. 9's Plant. Further, the Committee ought to have allowed the Respondent No. 9 to suitably participate in the inspection, thus the Report of the Committee is defective to the extent that it does not comply with the due process contemplated under the Environment Protection Act, 1986

B. SPECIFIC REPLY TO THE ALLEGED NON-COMPLIANCES IN THE REPORT BY RESPONDENT NO. 9



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11. The Respondent No. 9 is setting out its specific reply to the alleged non compliances as emanating from the Report of the Committee read with its underlying annexures. For ease of reference and good order, the Respondent No. 9 is setting out hereinbelow its reply whilst dealing with each broad allegation independently. It is noteworthy that the Committee has sporadically dealt with the alleged non-compliances in respect of a particular condition whether under the EC or CRZ at several intervals in its Report and the underlying annexures. Thus, the answering Respondent No.9 has attempted to respond to all the observations made at different junctures of the Report by the Committee under one single broadhead relevant to each condition. The answering Respondent No. 9 submits that the absence of a specific reply to any observation made in the Committee's Report should not be deemed as an admission thereof. The answering Respondent No. 9 reserves its right to issue any further detailed response to each allegation or the entire Report at a subsequent juncture with the leave of this Hon'ble Tribunal.
12. *Reply to the alleged non-compliances in respect of Environmental Clearance issued to SEIL pertaining to the Plant, bearing number: EC No. J-13012/02/2009-IA. II (T) dated 04.11.2009 (hereinafter referred to as the "EC-1").*



Condition No.1: Respondent No.9 was required to monitor Mercury and other heavy metals (As, Hg, Cr, Pb etc.) in the effluents emanating from the existing ash pond.

- (i) Respondent No. 9 submits that it has complied with the corresponding condition and has monitored the presence of heavy metals present in effluents emanating from its existing ash pond. In this regard, an independent lab being M/s Care Labs, Hyderabad recognized by the Ministry of Environment Forest & Climate Change, Government of India and National Accreditation Board for Testing and Calibration Laboratories (“NABL”) has been appointed by SEIL to conduct the foregoing study of the presence of heavy metals in effluents emanating from its ash pond. For ease of reference of this Hon’ble Tribunal the quarterly reports issued by M/s Care Labs, Hyderabad for the preceding (4) quarters are annexed as **Annexure 1**.

Condition No.2: The Respondent No.9 was required to implement the recommendations made in the Hydrogeological study report.

- (ii) The Respondent No. 9 submits that it has implemented the recommendations in the hydrogeological study report that has been issued annually by third party experts.

Condition No. 3: The Respondent No. 9 was required to conduct hydrogeological study of the area annually and results submitted to the Ministry and concerned agency in the State Government.



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- (iii) The Respondent No. 9 submits that a hydrogeological study is being done annually by third party experts and a copy thereof has been submitted to the Ministry of Environment, Forest & Climate Change. For ease of reference of this Hon'ble Tribunal a copy of the recent hydrogeological study report dated April 18, 2022, is annexed herewith and marked as **Annexure 2**.

Condition No. 4: The Respondent No. 9 was required to earmark an amount of Rs 32.0 crores as one-time capital cost for CSR programme. Subsequently a recurring expenditure of Rs. 6.4 Crores per annum should be earmarked as recurring expenditure for CSR activities. Details of the activities to be undertaken should be submitted along with road map for implementation.

- (iv) The Respondent No. 9 submits that it has earmarked an amount of INR 32.0 crores as one-time capital cost for the CSR programme and has subsequently also annually earmarked as recurring expenditure an amount of INR 6.4 crores. In this regard, Respondent confirms that upto the year 2021-2022 it has cumulatively spent an amount of INR 71.04 crores on CSR related activities. Details of the CSR activities undertaken are collated in an internal report which is annexed herewith for ease of reference of this Hon'ble Tribunal and is marked as **Annexure 3**.

Condition No. 5: The Respondent No. 9 is required to implement CSR activities as per need-based assessment for the nearby villages to study economic measures with action plan which can help in



upliftment of poor section of society. Income generating projects consistent with the traditional skills of the people besides development of fodder farm, fruit bearing orchards, vocational training etc., can form a part of such programme.

- (v) The Respondent No. 9 submits that the details of the CSR activities undertaken by the Respondent are collated in an internal report which is attached herewith as annexure 3 set out herein above. .

Condition No. 6: During Inspection, the Respondent No. 9 has been informed that the Ministry of Environment Forest, & Climate Change vide Gazette of India Notification No. 1-5/2013- ROHQ dated 13.08.2020 has established 09 new Integrated Regional Offices (IROs) including IRO, Vijayawada. The IRO, Vijayawada is functioning with the jurisdiction of State Andhra Pradesh. Henceforth, six monthly compliance reports with all monitored data including required enclosures should be submitted to IRO, Vijayawada in soft copy (PDF format) only on regularly basis to ecompliance-ap@gov.in (only).

- (vi) The Respondent No. 9 states that pursuant to the referenced notification bearing No. 1-5/2013- ROHQ dated August 13, 2020, the Integrate Regional Office, Ministry of Environment Forest, & Climate Change has commenced operations in Vijayawada. Until October 2021 compliance reports with respect to the EC and the CRZ Clearance were being regularly submitted to (a) the Regional Office, Chennai, Ministry of Environment Forest, & Climate



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Change; and (b) the Director, IA. I (Thermal), New Delhi, Ministry of Environment Forest, & Climate Change.

- (vii) Pursuant thereto, the Respondent No. 9 is only during the course of the recent inspection carried out by the offices of Integrate Regional Office, Ministry of Environment Forest, & Climate Change on October 22, 2021, that Respondent No. 9 was informed about commencement of operations of the Integrated Regional Office, Ministry of Environment Forest, & Climate Change, Vijayawada. Immediately thereafter, Respondent has started submitting the compliance reports with respect to the EC and the CRZ Clearance, to the Integrated Regional Office, Ministry of Environment Forest, & Climate Change, Vijayawada. For ease of reference of this Hon'ble Tribunal a copy of the latest compliance reports that has been submitted with offices of Integrate Regional Office, Ministry of Environment Forest, & Climate Change vide Respondent No. 9's email dated March 18, 2022, dated November 25, 2021, are being annexed herewith and marked as **Annexure 4 (colly)**.

Condition no. 7: The Respondent No. 9 is required to submit the Environment Statement for each financial year ending 31st March in Form V IRO, Vijayawada in soft copy (PDF format) only on regularly basis to ecompliance-ap@gov.in (only).

- (viii) The Respondent No. 9 states that pursuant to the referenced notification bearing No. 1-5/2013- ROHQ dated August 13, 2020, the Integrate Regional Office, Ministry of Environment Forest, &



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Climate Change has commenced operations in Vijayawada. Until October 2021 Environmental Statements for each financial year was submitted with the Member Secretary, APPCB, Vijayawada and Regional Officer, APPCB, Nellore.

- (ix) Pursuant thereto, the Respondent No. 9 is only during the course of the recent inspection carried out by Integrate Regional Office, Ministry of Environment Forest, & Climate Change on October 22, 2021, that Respondent was informed about commencement of operations of the Integrated Regional Office, Ministry of Environment Forest, & Climate Change, Vijayawada. Immediately thereafter, Respondent has started submitting the Environmental Statements, to the Integrated Regional Office, Ministry of Environment Forest, & Climate Change, Vijayawada. For ease of reference of this Hon'ble Tribunal a copy of the latest Environmental Statement that has been submitted with the offices of Integrate Regional Office, Ministry of Environment Forest, & Climate Change vide Respondent's email dated September 30, 2021, dated September 28, 2021 is being annexed herewith and marked as Annexure 5 (colly).

Condition No. 8: The Respondent No. 9 is required to update the Environmental Statement in company's website on regular basis.

- (x) The Respondent No. 9 submits that it is regularly uploading the Environmental Statement on its website annually. The said



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Environmental Statement can be accessed by clicking on the link:

<https://www.sembcorpenergyindia.com/AboutUs/Disclosure>

Condition no. 9: The Respondent No. 9 is required to submit the detailed report regarding the expenditure incurred for implementation of environmental protection measures along with six monthly compliances to Ministry's Integrated Regional Office on regular basis.

- (xi) The Respondent No. 9 states that Information relating to expenditure towards implementation of environment protection measures are part of Environment Statement Report which is being submitted yearly by Respondent.

Condition no. 10: The Respondent No. 9 is required to submit the details regarding the date of financial closure and final approval of the Project by the concerned authorities and the dates of start of land development work and commission of the plant.

- (xii) Respondent No.9 submits that Final Loan Agreement was signed on September 13, 2010, with Power Finance Corporation, Rural Electrification Corporation, Life Insurance Corporation and Power Trading Corporation. The date of execution of the Final Loan Agreement constitutes financial closure for the Plant. It is further submitted that land development work in respect of the Plant commenced on February 17, 2011. The date of commissioning of the Plant is (a) Unit I on March 2, 2015, and (b) Unit II on September 15, 2015.



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(xiii) The Central Electricity Authority, Ministry of Power confirmed the commercial operation date of the Plant set out hereinabove in its letters dated March 16, 2015, and October 12, 2015 for Unit I and Unit II of the Plant respectively. Additionally, APPCB issued a Consent for Operation (CFO) for Unit I on February 24, 2015, and for Unit II on August 27, 2015, copies of the aforesaid documents are annexed herewith for ease of reference of this Hon'ble Tribunal and are marked as **Annexure 6 (colly)**.

13. *Reply to the alleged non-compliances in respect of Environmental Clearance issued to SEIL pertaining to the Plant, bearing number: EC No. J-13011/02/2009-IA.II (T) dated March 02, 2015 (hereinafter referred to as the "EC-2").*

Condition no. 11: The Respondent No. 9 is required to conduct long term study of radioactivity and heavy metals contents on coal to be used through a reputed institute and results thereof analysed every two year and reported along with monitoring reports. Thereafter mechanism for an in-built continuous monitoring for radio activity and heavy metals in coal and fly ash (including bottom ash) shall be put in place.

(xiv) The Respondent No. 9 submits that it is conducting a quarterly Heavy Metal Analysis of coal and ash by APPCB approved third party agency M/s Care Labs, Hyderabad and it has regularly submitted the Heavy Metal Analysis report to the Ministry of Environment, Forest & Climate Change. Respondent No. 9 further



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submits that it is regularly conducting a Radioactivity Analysis and submitting a report to the Ministry of Environment, Forest & Climate Change. Copies of the latest Heavy metal analysis report along with Radioactivity Analysis Report conducted by third party monitoring agency M/s Care Labs, Hyderabad and the Board of Radiation & Isotope Technology, (BRIT) GOI respectively are annexed herewith and marked as **Annexure 7**.

Condition No. 12: The Respondent No. 9 has been observed the CRZ clearance issued by the Ministry vide Clearance No. 11-129/2010-IA.III dated 05.12.2011 for the construction of pump house, Sea water Intake and Outfall facilities at Pynapuram Village, Near Nellore, Andhra Pradesh has been granted to M/s Thermal Power Tech Corporation India Ltd. The transfer of CRZ clearance in favour of M/s Sembcorp Energy India Limited has not been provided.

- (xv) The Respondent No. 9 submits that its name was changed from Thermal Powertech Corporation India Limited (TPCIL) to “Sembcorp Energy India Limited” with effect from February 10, 2018. Respondent No. 9 applied to Ministry of Environment, Forest & Climate Change on May 7, 2019, for change of name as reflecting in the EC i.e. from TPCIL to SEIL and the same was approved vide Ministry of Environment, Forest & Climate Change office order dated October 9, 2019. Copy of the said Order is attached herewith and annexed as **Annexure 8**. The Respondent



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No.9 submits that as directed, it has applied for change of name for CRZ Clearance i.e., from TPCIL to SEIL *vide* its application no. IA/AP/CRZ/273835/2022 dated May 19, 2022.

Condition no. 13: The Respondent No. 9 is required to submit the copy of “Consent for Establishment” granted for construction of pump house, Sea water Intake and Outfall facilities obtained from APPCB under Air and Water Act.

- (xvi) The Respondent No. 9 submits that the Consent for Establishment was granted by Andhra Pradesh Pollution Control Board *vide* Order. No. 177/PCB/CFE/RO/-NLR/ HO/2009-433 dated May 15, 2010 (*hereinafter referred to as “CFE”*). The Schedule-B of Consent for Establishment mentions the parameters in Schedule -B which pertains to Sea Water Intake [viz. Cooling Water Make-Up & Non-Cooling Water Make-Up], Sea Water Intake and Outfall [viz. Cooling Water Blowdown]. Inclusion of these parameters implies Sea Water Pump house, Sea Water Intake and Outfall facilities form part of the foregoing CFE and is included in Schedule B of the CFE. A copy of the CFE was previously shared with the office of Joint Director, IRO, Vijayawada on March 18, 2022. However, for ease of reference, a copy of the CFE is attached herewith and marked as **Annexure- 9**.

Condition no. 14: The Respondent No. 9 is required to provide the details of the implementation status of all the measures as



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committed to the Ministry vide their letter dated 01.08.2011, as a part of the clarifications submitted by the PP.

- (xvii) The Respondent No. 9 further submits that it is complying with all conditions mentioned in the Ministry of Environment, Forest & Climate Change's letter dated December 05, 2011, vide which the CRZ clearance was issued and which was issued in response to the referenced letter of August 01, 2011. For ease of reference, a copy of the latest CRZ Compliance report as submitted, is attached herewith and marked as **Annexure- 10**.

Condition no. 15: The Respondent No. 9 is required to submit the compliance status of all mitigation measures submitted in the EIA report which are to be prepared in a matrix format to Ministry's IRO, Vijayawada.

- (xviii) The Respondent No. 9 states that it has implemented the mitigation measures as set out in the Environmental Impact Assessment Report, and a compliance report thereof in matrix format is attached herewith for reference of this Hon'ble Court and is marked as **Annexure 11**.

Condition no. 16: The Respondent No. 9 is required to provide the details regarding the date of financial closure and final approval of the project by the concerned authorities and the date of start of land development work.

- (xix) The Respondent No. 9 states that the response to condition no. 10 be read as reply to condition no. 16.



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Condition no. 17: The Respondent No. 9 is required to submit the copies of newspaper advertisement to Ministry's IRO, Vijayawada for records.

- (xx) The Respondent No. 9 states that Advertisements were given in a Telugu newspaper on July 04, 2009, and in an English newspaper on July 03, 2009, copies whereof are attached herewith and marked as **Annexure 12.**

Condition no. 18: The Respondent No. 9 is required to upload the status of compliance of the stipulated CRZ clearance conditions, including results of monitored data on their website.

- (xxi) The Respondent No. 9 states that the status of compliance of the stipulated CRZ Clearance conditions along with the result of the data monitored is being regularly uploaded on Respondent's official website. For ease of reference the said website can be accessed on the link set out hereinbelow:

<https://www.sembcorpenergyindia.com/AboutUs/Disclosure>

14. Pursuant to the inspection carried out by the Committee on October 22, 2021, on April 5, 2022 the Joint Director (S), Vijayawada, Andhra Pradesh issued a letter to the Respondent No.9 *inter alia* seeking status of the compliances in respect of the conditions imposed in the EC and CRZ clearances. The Respondent No.9 *vide* its reply dated May 30, 2022, issued a response to the foregoing letter dated April 5, 2022 *inter alia* specifically demonstrating



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compliance of all the conditions imposed in the EC and CRZ clearances. For ease of reference, a copy of the reply issued by the Respondent No. 9 dated May 30, 2022, is attached herewith and marked as **Annexure- 13**.

15. In this background, it can be safely concluded that there are no significant non compliances attributable to the Respondent No.9 under this broadhead. Thus, the Committee in its Report has rightly concluded that no environmental compensation for non-compliances should be levied on the Respondent no.9.

C. SPECIFIC REPLY TO THE ALLEGED NON-COMPLIANCE IN RESPECT OF CONSENTS FOR 'AIR & WATER' AND H&OW RULES

16. The Respondent No. 9 in the below paragraphs is responding to the Committee's observation with respect to the compliance of the specific conditions under this broadheads as set out under paragraph 10 (ii) hereinabove.

Condition: The Respondent No. 9 was required to build closed shed for storage of coal and wind barrier/wind-breaking walls to the coal yard-

- (i) The Respondent No. 9 submits that the purpose for building covered shed is for preventing erosion of coal due to rain and wind. The Respondent No. 9 submits that it is a common knowledge that the Respondent No. 9's Plant is geographically located in a terrain



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that experiences limited rainfall, thus, the Respondent No. 9 has complied with the foregoing condition by *inter alia* (a) providing a three layered thick green belt all around the circumference of the coal yard comprising of tall trees of a height of more than 12 meters to act as a natural wind barrier that ensures that no fugitive dust emerges from the coal yard due to high wind; (b) additionally, the Respondent No.9 has taken further preventive measures to ensure that no fugitive coal dust travels into the environment these measures are on these broadlines. The Respondent No. 9 has provided coal yard sprinklers, dust extraction and dust suppression systems in the coal handling plant. Besides wet coal, if any, is dried by the Respondent No. 9 by using an effective mechanism involving hot primary air for drying the wet coal before it is grinded. In this manner the Respondent No.9 has ensured an efficient mechanism to control fugitive coal dust.

- (ii) It is noteworthy that in terms of the revised Consent for Operation granted to the Respondent No.9 dated November 16, 2021, the requirement for maintaining coal shed has been omitted. The revised requirements to control air pollution from coal dust is as under:

“13. *The industry shall maintain wind barriers / wind breaking walls to the coal yards as temporary arrangement to control fugitive dust emissions on immediate surroundings.*

14. *The industry shall regularly operate water sprinklers provided to control stock yard to mitigate*



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fugitive dust on the surroundings from coal handling area.

15. *The industry shall provide necessary air pollution control systems at coal transfer points in coal conveyer system from port boundary to industry premises within 3 months.*

16. *The industry shall upgrade the air pollution control systems at coal crusher within 3 months.”*

A copy of the aforesaid revised Consent for Operation dated November 16, 2021, is annexed herewith and marked as **Annexure 14.**

(iii) In this regard it is noteworthy that the Compliance Report ratifies the Respondent No. 9's compliance under this broad head. The Compliance Report confirms that the Respondent No. 9 has provided bag filters for coal crushers, dust extraction and dust suppression systems with auto mode in coal crushers and coal stack yard, dry fog dust suppression system is also installed at transfer points to minimize fugitive dust, water hydrant lines are provided to suppress to fugitive emissions whenever required, wind barriers with three to five layers of thick conocarpus trees (wind resistant plants) of 12 M height have been provided all around the coal yard which are designed to arrest spreading of fugitive dust emission. Thus, the Committee has confirmed compliance by the Respondent No. 9



- (iv) In this background, the Respondent No. 9 confirms that it is fully compliant with the condition under this broad head.

Condition: The Respondent No. 9 was required to comply with the conditions in respect of fly ash & ash ponds and was also required to ensure compliance with 100% utilization of fly ash and bottom ash.

- (v) The Respondent No. 9 submits that the Compliance Report broadly alleges the following under this broadhead.

- a) The Respondent No. 9 is partially providing water sprinklers in the ash ponds to control dust emissions from the ash pond.
- b) The Respondent No. 9 is maintaining water level in the ash pond such that over 70% of the total area of the pond is in water and water sprinklers have been provided only in 20% of the relevant area. Further, 10% of the ash pond has been left dry.
- c) Since 2015, the Respondent No. 9's Plant has generated 63,41,834 tons of fly ash, but able to utilize only 41,56,751 tons of fly ash.
- d) The Respondent No. 9's Plant is required to develop greenbelt in an area of 395 acres but has developed greenbelt in an area of 330 acres.

- (vi) The Respondent No. 9 is dealing with the foregoing allegations herein below.



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Allegations in respect of 100% utilization of fly ash.

- (vii) It is imperative to understand the underlying purpose for the utilization of fly ash and bottom ash and several surrounding circumstances to appreciate the response to this condition in its true context.
- (viii) In this regard, the Respondent No. 9 submits that 100 % utilization of the fly ash and bottom ash is primarily dependent on the demand for such fly ash and bottom ash from the manufacturers of cement and brick industries. Additionally, there are several other avenues for which the fly ash and bottom ash that is generated at the Respondent No. 9's Plant can be utilized. Some of these avenues are manufacturing ash-based products such as concrete blocks, panels or other material for construction of roads, embankments, dams, dykes, or for any other construction activity.
- (ix) It is also noteworthy that the entire issue of 100% utilization of fly ash by similarly placed Thermal Power Plant Operators, was *sub judice* before the National Green Tribunal (the "NGT") and the Hon'ble Supreme Court of India. In this regard the Hon'ble NGT *vide* its order dated February 12, 2020 in OA No. 102 of 2014 (read with all subsequent orders on the subject matter) [*the "Impugned Orders"*] in relation



to an issue pertaining to the management of fly-ash generated by Thermal Power Plants (the “TPPs”), directed that the TPPs to take prompt steps for scientific disposal of fly-ash in accordance with the statutory notification issued by the Ministry of Environment, Forest and Climate Change, dated January 27, 2016 bearing no. F.No.9-8/2005-HSMD (read with all previous notifications) requiring 100% utilization and disposal of fly ash by the TPPs (*the* “Notification”). Notably, the NGT *vide* the foregoing order had directed that the non-compliant TPPs, should pay environmental compensation to be determined w.e.f. the cut-off date, i.e., December 12, 2017, as stipulated in the Notification. Accordingly, the Central Pollution Control Board (*the* “CPCB”) was directed to compute and levy environmental compensation in accordance with the formula prescribed in the aforesaid order and submit the compliance report to the NGT.

- (x) Meanwhile, CPCB sent an action plan for compliance of the notification to several TPPs, in the year 2019.
- (xi) The Impugned Orders were *inter alia* impugned before the Hon’ble Supreme Court in the matter of Association of Power Producers & Ors. versus Sandplast (India) Ltd. & Ors. *being* CA no. 3236 of 2020 (along with all the connected matters) filed by the Association of Power Producers (APP) along with the Respondent No. 9 as a co-appellant. The



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Hon'ble Supreme Court *vide* its order dated September 08, 2020 stayed the operation of the Impugned Orders. Meanwhile the Ministry of Environment, Forest and Climate Change, during the pendency of the aforesaid appeals before the Hon'ble Supreme Court released a revised notification on the subject matter dated December 31, 2021 (the "**Revised Notification**") which superseded the earlier notification on the subject matter and provided a comprehensive framework for ash utilisation along with revised timelines based on threshold parameters set out therein. The obligations for compliance *qua* 100 percent ash utilization in terms of the Revised Notification were to be applicable April 01, 2022 onwards and in terms of the timelines contemplated therein to ensure 100 percent utilization of fly-ash is 3 years starting from April 01, 2022.

In light of the Revised Notification the Hon'ble Supreme Court *vide* its final order dated May 10, 2022 disposed of the aforesaid appeals as the Impugned Orders had been rendered infructuous. A copy of the Impugned Order, the Notification, the Revised Notification, the order of the Hon'ble Supreme Court, and the CPCB's action plan forgoing order is annexed herewith and marked as **Annexure 15 (colly)**.

- (xii) Whilst the Respondent No. 9 was required to now comply with the revised timelines for 100% utilization of fly ash in terms of the Revised Notification, applicability whereof was



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to commence from April 01, 2022, the Respondent No. 9 *per contra* achieved 100% utilization of fresh fly ash generated September 2019 onwards that is well within the aforesaid statutory timeline. Likewise, the Respondent No. 9 is taking suitable steps to ensure compliance of 100 percent utilization of the legacy ash as well, and will ensure that it complies with the timelines stipulated in the Revised Notification. Besides the Respondent No.9 has additionally provided land to a third party for setting-up of a Fly Ash Classification Unit, to aid with the utilization of ash.

- (xiii) In furtherance of its compliance of the condition under this broad head the Respondent No. 9 has exported three bulk shipments for a quantity of 1,29,082 MT (metric tonnes) to the United States of America and has additionally, exported another break bulk shipment to the United States of America for a quantity of 27,500 MT. Respondent No. 9 is the first company in southern India to ship fly ash for a quantity of 3000 MT through jumbo bags in Railway rake and has so far exported to sixteen countries through container stuffing.
- (xiv) In this regard, the Respondent No. 9 submits that it has been periodically submitting its Report on the implementation of its action plan on fly ash with the Ministry of Environment Forest & Climate Change. Its recent report was submitted on April 28, 2022, with the Regional Director, Ministry of Environment Forest & Climate Change. For the ease of



reference of this Hon'ble Tribunal the copies of the recent report have been annexed herewith and marked as **Annexure 16**.

Compliance in respect of water sprinklers

- (xv) The Respondent submits that the underlying purpose of installing water sprinklers is to ensure that the coal dust from the coal yard and ash from the ash pond does not turn fugitive such that it contaminates the environment. The Respondent No. 9 unequivocally submits that it is complying with the corresponding condition, in the manner set out hereinbelow. The Respondent submits that it has installed water sprinklers at all coal yards, rotating wheels of stacker cum reclaimers. It has separately, installed a dust extraction system and dust suppression system coupled with a 3-layer green belt to ensure that no coal dust or ash turns fugitive.
- (xvi) In this regard it is noteworthy that the Respondent No. 9, has in fact adapted a better mechanism than the water sprinklers by making provision for a water curtain that covers almost 70% to 80 % of the ash pond, thereby ensuring that coal dust does not become fugitive. Separately, water sprinklers are installed in the residual area to ensure that no fugitive ash gets into the environment.



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- (xvii) Further whilst the Committee has not alleged any non-compliance in this regard it has in its Report indicated that around 10 % of the area in the Ash Pond has been left dry. To bring the true facts into perspective, the Respondent No. 9 submits that the reason for doing so is to facilitate use of Pond Ash by excavating the pond ash for onward supply to brick manufacturers etc. Besides, the 10% area that has been left dry is effectively towards the side of the sea and not towards the village, thus there is no scope for any coal dust to turn fugitive.
- (xviii) In this background the Respondent No. 9 submits that it is well in compliance with the corresponding condition under this broad head. Separately, for ease of this Hon'ble Tribunal's reference, photographs of installation of water curtains, water sprinklers and other relevant measure under this broad head have been annexed herewith and marked as **Annexure 17**.

Compliance in respect of Development of 'Green Belt'

- (xix) The Respondent No. 9 submits that primary allegation in the context of the need for development of green belt is that as opposed to the requirement for development a green belt for a total area of 395 acres, the Respondent No. 9 has allegedly developed only 330 acres of green belt.



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(xx) To bring the correct facts into perspective the Respondent No. 9 at the outset submits that it is committed to the protection of the environment and maintenance of the ecological balance by building afforestation. It further submits that as opposed to developing a green belt of 395 acres in terms of the latest statistics available with the Respondent No. 9 it has developed a green belt in an area running into around 430 acres. The Respondent No. 9 submits that the said green belt and afforestation cover around the Respondent No. 9's Plant has been developed pursuant to in depth research and study carried out of the local geography. Further the species of the trees are selected based on their adaptability, growth characteristics, flowering pattern and canopy distribution.

(xxi) In terms of the specific data available with the Respondent No. 9, it has near its Plant planted well over 4.7 lakh trees, thus so far. It is noteworthy that approximately, each tree on an average offsets 50 pounds of carbon dioxide per year. Further, in terms of the report of the Respondent No.9 on Green Belt Area Estimation, as per the application 'Google Maps', an area of over 455 acres has been calculated as the total area forming part of the Respondent No. 9's green belt development. Separately, as per a recent physical measurement carried out by the Respondent No. 9 a total area



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of 597 Acres (using an area calculator application) was found to be part of the Respondent No.9's green belt. Furthermore, even the CAD drawings indicate the said green belt to comprise an area of 450 acres. For the ease of reference of this Hon'ble Tribunal the Respondent No. 9 is collectively, annexing herewith its internal Green Belt Area Estimation and Zone wise plantation details that are marked as **Annexure 18 Colly.**

Allegations in respect of damage to the Ambient Air Quality

(xxii) The broad alleged noncompliance under this under broad head is as under. The Committee has observed that it conducted an analysis/ inspection on October 21, 2021, of the Ambient Air Quality (the "AAQ") at the Ambient Air Quality Inspection Locations (the "**Committee's AQQ Report**"), as defined hereinabove. Pursuant thereto the Committee has observed that the AAQ levels at the Air Quality Inspection Locations was observed as following.

Table No. 9

<i>S. No.</i>	<i>Location</i>	<i>Monitoring Period</i>	<i>PM (10) (ug/m3)</i>	<i>SO2 (ug/m3)</i>	<i>NOx (ug/m3)</i>
1	<i>S. Vijay Kumar Reddy Building, Nelaturu, SPSR Nellore District</i>	<i>21.10.2021</i>	<i>106.5</i>	<i>4.2</i>	<i>16.0</i>
2	<i>MPP Primary</i>	<i>21.10.2021</i>	<i>102.0</i>	<i>4.6</i>	<i>17.2</i>



	<i>School, Dibbameda Harijanawada Colony, Pynapuram Village, Muthukuru, SPSR Nellore District</i>				
3	<i>Amamath Hatcheries, Kotepalli, T.P. Gudur, SPSR Nellore District</i>	<i>21.10.2021</i>	<i>168.5</i>	<i>4.8</i>	<i>18.0</i>

From the above table it is observed that PM 10 was found exceeding the standards of National Ambient air quality for 24 hr average i.e., 100 ug/m³ which indicates the poor control mechanism for control of fugitive emission from coal yard and ash ponds."

- (xxiii) The Committee based on the foregoing has calculated damages for non-compliance with the AQQ thresholds by vaguely applying a hypothetical formula. In this regard, the apportionment of the damages recommended by the Committee is as follows:

SI. No.	Name of the unit	Consented capacity	Contribution %	Damage recoverable
1.	M/s Sri Damodaram	1600 MW (2X800)	54.8%	Rs. 1,26,01,947/-



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	Sanjeevaiah Thermal Power Station	MW)		
2.	M/s. Sembcorp Energy India Limited (Plant-I)	1320 MW (2X660 MW)	45.2%	Rs. 1,03,94,306/-
	Total	2920 MW		Rs. 2,29,96,253/-

- (xxiv) Whilst, the Committee's AQQ Report indicates that the AQQ levels at the Ambient Air Quality Inspection Locations was above the statutory threshold of PM 10, interestingly, a Stock Monitoring Analysis Report, of the APPCB dated October 22, 2021 (the "APPCB AQQ Report") that *inter alia* analyzed the emissions emerging from the chimney's at the Respondent No. 9's Plant indicates that the AQQ level of the emissions emerging from the chimney are well within the permissible limits. In this regard it is noteworthy, that the statutory threshold, for stack emissions is 50 mg/NM³, and the **APPCB AQQ Report** indicates that the AQQ was at 40.8mg/NM³. It is further noteworthy that in view of the APPCB AQQ Report if the emissions from the chimney of the Respondent No. 9's Plant were within the permissible limits, we see no reason why the committee must refuse to concur that the AQQ could not have been damaged by the



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emissions being discharged by the chimneys at the Respondent No. 9's Plant. A copy of the APPCB AQQ Report, is attached herewith and marked as **Annexure 19**.

(xxv) Further, whilst the APPCB AQQ Report crystalizes that the AQQ could not have been contaminated by the emissions from the Respondent No. 9's Plant, in respect of the Committee's allegation that the poor AQQ could have been a result of the fugitive dust emerging from the Coal Yard and Ash Pond at the Respondent No. 9's Plant, due to poor control mechanism for control of fugitive emissions, the Respondent No. 9 submits the following.

(xxvi) Firstly, the Respondent No. 9 periodically conducts tests to monitor the AQQ levels around the nearby areas of the Plant. Likewise, a test was conducted by a government approved lab being Care Labs, for the entire period of October 2021, to *inter alia* monitor the AQQ levels in village of Painampuram and Nellaturu. A review of the said report crystallizes that the AQQ levels for the same period and the same location that were used for the APPCB AQQ Report, were well within the permissible statutory period. Thus, this fact alone prejudices the methodology adopted APPCB AQQ Report, and it should, accordingly, not be considered by this Hon'ble Tribunal in this present adjudication. A copy of the aforesaid



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reports of Care Labs is annexed herewith and marked as **Annexure 20.**

(xxvii) Besides, even for the sake of arguments, if credence could be given to the APPCB's AQQ Report, the Respondent No. 9 submits that there may well be several apparent factors that may have contributed to the contamination of the AQQ levels, specifically at the Air Quality Inspection Locations, none of which have been factored into by the Committee before making their final observation. The Respondent No. 9 submits that some of these factors are on these broad lines:

(xxviii) First, in respect of the Air Quality Inspection Locations i.e., MPP Primary School in the village of Pynapuram, it is noteworthy that the entirety of the area surrounding the village of Pynapuram, comprises of Kaccha Roads, such that it is easy for the unsettled dust on the road to turn into the air as fugitive dust. Several factors such as vehicular movements etc. Besides, the foregoing MPP School does not have a duly constructed pavement that could withstand any unsettled dust from turning fugitive.

(xxix) Additionally, there are other industries in close proximity to Painampuram village the nature of these industries that are operating well the proximity of the Air Quality Inspection Locations, that they may well be responsible for the damage



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to the AQQ, if any. It is noteworthy that the Committee's Report does not find any mention of these facilities.

(xxx) It is also apparent that, even for the sake of argument, the poor AQQ, may well be a result of the fugitive ash emitting from AP Genco's ash pond which is situated only at a distance of 1.3 km from the Air Quality Inspection Locations. Per contra the Committee has failed to consider that the Respondent No. 9's Plant is located at a arial distance of 2.6 km from the Air Quality Inspection Locations, and besides the Respondent No. 9 has ensured that all suitable emission control mechanisms are adopted are available and operational at the Ash Pond and at coal yards to avoid any fugitive dust to become airborne. The said measures adopted by the Respondent No. 9 have been discussed at length in the foregoing paragraphs, however for good order the Respondent No. 9 reiterates that it has adopted all possible measures to control the fugitive dust. Water curtains are maintained over the lagoon B of the ash pond for 80% of the area and water sprinklers are installed in the rest of the area except for the area where the ash pond is being excavated. The height of Lagoon A has been increased by 5.5 meters and free board of 4.5 meters is available and water curtain is maintained.



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- (xxxii) Importantly, the Respondent No. 9 submits that the wind direction on the day of the inspection conducted for the APPCB AQQ Report, i.e., October 21, 2021 has not been considered by the Joint Committee while preparing the AQQ Report. In this regard it is imperative to note that the APPCB or the Committee ought to have considered a graphic tool for instance a 'Wind Rose Diagram' to assess the direction of the wind on that particular day. Assessing the direction of the wind aids in understanding whether fugitive dust could travel from a particular place, in view of the wind direction reflecting on the Wind Rose Diagram. In this case factoring in a Wind Rose Diagram would have aided in identifying if the direction of the wind on the day of the inspection carried out for the APPCB AQQ Report was such that the AQQ levels were polluted as a result of the fugitive dust emitting from the Respondent No. 9's Plant.
- (xxxii) To understand this averment in its true context it is imperative to understand the working of a Wind Rose Diagram. A Wind Rose Diagram is typically, a graphic tool which is utilized by the meteorologists to give a succinct view of how wind speed and direction are typically distributed at a particular location on a particular day or during a particular period. In this background the Wind Rose Diagram prepared by Care Labs for the month of October, 2021, clearly indicates the direction of the wind for



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the testing period of the APPCB AQQ Report. The said Wind Rose Diagram in fact goes to show that the direction of the wind for the testing period was such that no fugitive dust from the Respondent No. 9's Plant or its Ash Pond could have travelled to the Air Quality Inspection Locations, where the test for the APPCB AQQ Report was conducted. This alone makes it writ large that the Respondent No. 9 was not in any manner responsible for contaminating the AQQ levels as has been alleged in the Committee's Report. In this regard a copy of the aforesaid Wind Rose Diagram for the month of October 2021 prepared by Care Labs along with an indicative and illustrative description to aid as a handholding tool for this Hon'ble Tribunal has been attached herewith and marked as Annexure 21.

(xxxiii) Importantly, in light of the foregoing it defies logic as to why the Committee has recommended that compensation be levied also on the Respondent No. 9. In this regard, from the foregoing while it comes to bear that the Respondent No. 9 is anyway complying with all the underlying conditions not just under this broad head but also all other EC and CRZ conditions, and this fact has been confirmed by the Committee itself, the apportionment of compensation on the Respondent No. 9 for damage to AQQ is irrational and against the principles of natural justice. Besides whilst, the Committee has unequivocally observed that gross violations



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and non-compliances if any are by Respondent No. 8. it is for reasons best known to the Committee that it has decided to also recommend apportionment of compensation to be paid by Respondent No. 9. Furthermore, from a bare perusal from the formula applied by the Committee makes it apparent that the said formula is based on conjectures, surmises, assumptions and hypothesis, as such no credible basis for application of the said formula has been given by the Committee. Interestingly, whilst the test period for the AQQ was only October 21, 2021, the Committee has recommended that compensation for damage to AQQ be levied for the period between May 21, 2021 to October 21, 2021. It is noteworthy that the aforesaid period is admittedly the period between which the Respondent No. 8's online monitoring system (OCEM) was not functioning. That being the case it defies logic to bring the Respondent No. 9 into the ambit of the said period as admittedly, there was no non-compliance by the Respondent No. 9 during this period, and as such no other basis for calculating compensation during the said period has been given by the Respondent No. 9. Thus, even for the sake of argument calculating compensation for the foregoing period, *qua* the Respondent No. 9 is arbitrary and against the principles of natural justice.

(xxxiv) In fact, reflecting on the original Scope of the Committee, it cannot be emphasized more that in respect of all the



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compliances that the Committee was required to discover during its inspection, the Respondent no. 9 is complaint, even as per the Committee's own finding.

- (xxxv) Also in light of the Committee's finding that there has been no damage to the soil in the Applicant's lands, the Original Application and the reliefs sought therein have in fact become infructuous, thus the Original Application deserves to be dismissed on this ground alone.
- (xxxvi) Besides, the when the Respondent no. 9 is admittedly, complying with all the norms and conditions set out by several statutory bodies, it cannot be arbitrarily penalized for the said compliance. In fact, the Committee has sought to make the recommendation for compensation qua the Respondent No. 9 in its Report, without even according an opportunity to the Respondent No. 9 to demonstrate compliance. It is therefore apparent that the Report was prepared summarily and without following the due process.
- (xxxvii) In fact the levy of compensation against Respondent No. 9 shall be against the legitimate expectations of a business enterprise, to the extent that the business enterprise, is conducting its ordinary business by following the requisite norms. It shall also be in abrogation of the Respondent No. 9's constitutional rights in as much as the levy of compensation shall be in violation of Article 19 of the Constitution.



(xxxviii) It is also emphasized that no where in the Scope of the Committee did this Hon'ble Tribunal contemplate a mechanism for the committee to identify if compensation could be levied on the Respondents, for any alleged non compliance. That being the case it is apparent that by recommending that compensation be levied on the Respondents, the Committee has exceeded the Scope of the Committee and recommendations if any should not be countenanced by this Hon'ble Tribunal.

(xxxix) In the aforesaid background this Hon'ble Tribunal is implored to strike off the recommendations made by the Committee for the reasons mentioned hereinabove.

D. SPECIFIC REPLY TO THE ALLEGED HEALTH ISSUES ASSOCIATED WITH THE ALLEGED POLLUTION CAUSED BY THE RESPONDENT NO. 9

i. The broad allegation under this broad head as set out in the Committee's report is as under:

"The major health issues associated with the pollution caused by thermal power plants are respiratory infections such as aggravation of asthma, respiratory symptoms and increase in hospital admissions. PM₁₀ and PM_{2.5} have high risk of mortality and morbidity impacts on the human population in the vicinity of thermal power plants. Accordingly, the committee obtained information of Health Statistics report from Medical Officer, PHC, Muthukur Mandal, SPSR Nellore for affected villages i.e., Muthukur Mandal



(enclosed as Annexure-IX). And also referred the Report of National Health Profile 2018 13th issue published by Central Bureau of Health Intelligence, Directorate General of Health Services.....”

- ii. The Committee has additionally, applied a vague formula to arrive at a recommendation *inter alia* recommending apportionment based on plant capacity for damage caused by health issues in the following manner:

Sl. No.	Name of Unit	Consented Capacity	Contribution	Damage Recoverable
1.	M/s Sri Damodaram Sanjeevaiah Thermal Power Station	1600 MW (2x800 MW)	54.8 %	Rs. 8,93,870/-
2.	M/s Sembcorp Energy India Limited (Plant -I)	1320 MW (2x660 MW)	45.2. %	Rs. 7,37,280/-

- iii. Additionally, the Committee has relied on the below health statistics:

Sl. No.	Particulars	No. of cases of respiratory illness reported	Cases per 100 individuals
1.	National Health Profile 2018, 13 th	3049810 respiratory illness cases in	3.42



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	Issue published by Central Bureau of Health Intelligence, Directorate General of Health Services	Andhra Pradesh. (89035000 population based on projected census 2017)	
2.	As per the Health Statistics report of Medical officer, PHC, Muthukur Mandal, SPSR Nellore district (since 2016 to 2019)	78 cases of respiratory illness cases in 58003	0.13

- iv. The aforesaid health statistics has been erroneously applied by the Committee to the instant case for the following amongst other reasons. First, the data on respiratory illness indicated by the National Health Profile is for the entire state of Andhra Pradesh and it does not in any manner pertain exclusively to the village of Nelatur where the Respondent No. 9 operates its Plant. Thus, attributing as the cause of respiratory illness for the entire state of Andhra Pradesh, to the Respondent No. 9 which merely operates a power plant in the village Nelatur, in itself defies logic and is erroneous.
- v. Second, the data on respiratory illness, Health Statistics report of Medical officer, PHC, Muthukur Mandal, SPSR Nellore district, is effectively for the period between 2016 and 2019. It will be fair to say that out of the 78 reported



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cases during the said 3-year period at best 28 cases could be attributed to each year of the said period. Thus 28 cases of respiratory illness could have several reasons for instance:

- (i) Biological factors like community acquired pneumonia, TB, H1NI, viral fungal infections etc.,
- (ii) Personal habits like tobacco smoking, chewing etc.,
- (iii) Financial and economic factors like poor nutrition, cooking by using solid fuels and
- (iv) Other exposures like exposure from dust of vehicles, agronomical firing, agronomical pesticides, brick making kilns, nearby coastal seaports causing low air quality.

And exclusively holding the Respondent No 9's Plant responsible for causing respiratory illness due to pollution, is absurd, abysmal and against the principles of natural justice.

The Respondent No. 9 urges this Hon'ble Tribunal to consider the aforesaid allegations in the background that it has not caused any damage to the AQQ and there are no emissions or dust from the Respondent No. 9's Plant that has turned fugitive such that it contaminates or pollutes the environment and could have created health issues. The Respondent No. 9 has dealt with all the measures adopted by it to control any fugitive dust or gases in the section *Allegations in respect of Ambient Air Quality*, hereinabove



and the same are not being reproduced hereinbelow to avoid prolixity.

- vi. Besides, allegations *qua* pollution at best could be attributed to the Respondent No. 8 as several non-compliances with respect to the AQQ conditions have been identified by the Committee against the Respondent No.8. Thus, the Respondent No. 9 cannot be penalized for the ill actions, if any, by the Respondent No. 8. In this background this Hon'ble Tribunal is humbly implored to strike off and not consider the findings of the Committee under this broad head.
- vii. Also, the Committee in its own Report has concluded that no serious non compliances can be attributed to the Respondent No. 9, and it also crystallizes, from the foregoing paragraphs that the Respondent No. 9 has in fact complied with the said alleged non-compliances. Thus, there is in no manner any damage to the AQQ being caused by the Respondent No. 9, therefore as a corollary there cannot be any attribution of damages caused due to pollution related ill health as the Respondent No. 9 has in the first place admittedly, caused no pollution.
- viii. In fact, under the broad head environmental compensation, the Committee has unequivocally admitted that the Respondent No. 9 is not liable to pay any environmental



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compensation for any non-compliance which goes to show that the Respondent No. 9 is compliant with all the underlying conditions relating to EC and CRZ clearance, and thus there cannot be any question of it polluting the environment, as that would only defy logic, as the norms laid down by the regulators and statutory body itself are being followed.

- ix. Thus, the Report lack any basis for attributing damages to the Respondent No. 9 under this broad head.

REPLY TO THE RECOMMENDATION FOR LEVY OF ENVIRONMENTAL COMPENSATION ON ACCOUNT OF DAMAGE TO AIR QUALITY, HEALTH AND NON-COMPLIANCE BY THE RESPONDENTS.

- x. The Committee in its Report has recommended that environmental compensation be recovered from the Respondents for damage to Air quality, health and non-compliance. The Committee has recommended apportionment of compensation in the following manner:

<i>SI. No</i>	<i>Name of the Unit</i>	<i>Monetary terms for causing damage to Air quality (A)</i>	<i>Monetary terms for causing illness to people health (B)</i>	<i>Environmental compensation for Non-Compliances (C)</i>	<i>Total amount to be recovered D = A+B+C</i>
1	M/s Sri Damodaram Sanjeevaiah Thermal Power Station	Rs. 1,26,01,947/-	Rs. 8,93,870/-	Rs. 49,08,750/-	Rs.1,84,04,567/-



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2	M/s Sembcorp Energy India Limited (Plant-I)	Rs. 1,03,94,306/-	Rs. 7,37,280/-	-Nil-	Rs. 1,11,31,586/-
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- xi. Firstly, the Committee has noted that *“the Committee observed major violations of M/s Sri Damodaram Sanjeevaiah Thermal Power Stations....”*. Therefore, it is submitted that the Committee itself has observed that the violations and non-compliances are by the Respondent No.8 and not by the Respondent No. 9.
- xii. The Respondent No. 9 has in paragraphs hereinabove has explained as to why levy of compensation for damage to AQQ and respiratory illness ought not be levied against the Respondent No. 9. The same is not being reiterated here to avoid prolixity however, this Hon’ble Tribunal is requested that the same be read as part of the response to this broad head.
- xiii. Additionally, it was also noteworthy that the Committee has itself observed that no non-compliances has been made by the Respondent No. 9. Put differently this means that the Respondent No. 9 is functioning and operating its Plant within the contours of the statutory conditions imposed on it. That being the case if the Respondent No. 9 is admittedly not non-compliant with any statutory conditions and is running



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its Plant as per the approved standards how can it in the same breath be held responsible for causing damage to AQQ and respiratory illness when in fact as per the Committee itself no pollution could have been caused by the Respondent No.9 since it is compliant with all the conditions.

xiv. Besides, allegations *qua* pollution at best could be attributed to the Respondent No.8 as several non-compliances with respect to the AQQ conditions have been identified by the Committee against the Respondent No.8. Thus, the Respondent No. 9 cannot be penalized for the ill actions, if any, by the Respondent No. 8. In this background this Hon'ble Tribunal is humbly implored to strike off and not consider the findings of the Committee under this broad head.

xv. Also, the Committee in its own report has concluded that no serious non compliances can be attributed to the Respondent No. 9, and it also crystallizes, from the foregoing paragraphs that the Respondent No.9 has in fact complied with the said alleged non-Compliances. Thus, there is in no manner any damage to the AQQ being caused by the Respondent No. 9, therefore as a corollary there cannot be any attribution of damages caused due to pollution related ill health as the Respondent No. 9 has in the first place admittedly, caused no pollution.



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xvi. The Respondent No. 9 submits that the Committee has completely ignored the doctrine of the Polluter Pays Principle ('PPP') incorporated under **Section 20** of the National Green Tribunal Act, 2010. PPP, simply put, means that the person who is responsible for creating pollution, should be made financially responsible for the damage caused to others. Thus, the Committee has erred in not applying the said principle as only those who have polluted are liable to pay damages and as per the finding of the Committee in the Report under the present Reply, no damage to the environment has been caused by the Respondent No. 9's Plant including but not limited to the agricultural yield of crops affecting the livelihood of the villagers and particularly the Applicant herein. Therefore, the Report does not bring forth evidence of any actual environmental damage to the agricultural income or loss of soil fertility, per contra it only hypothetically conducts a vague academic assessment for purpose of calculating the compensation and by erroneously placing accountability of the same on the Respondent No. 9 using theories/formulae having no recognition in the eyes of law nor does the Report cites any precedents in which such assessment has ever been recognized by this Hon'ble Tribunal or any other Courts or Tribunals in India.



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17. The Respondent No. 9 submits that it is apparent that the Report is against the principles of natural justice and biased. It is also noteworthy that the Committee has exceeded its role well defined under Para 13 of the order dated September 16, 2021, passed by this Hon'ble Tribunal and has gone on to calculate the compensation for causing damage to air quality and for causing illness to people's health.
18. Further, the Committee has not provided any logical reasoning, or actual *calculations* or quantifications as to how it arrived at and calculated the amount recoverable by the Respondent No. 9 for causing damage to air quality and for causing illness to people's health under broad head XI (V) of the Report. It is submitted that compensation has been unreasonably apportioned on the basis of the operational capacity of the Respondents Plants and not on the basis of the actual pollution being cause by each of the Respondents Plants.
19. The Respondent No. 9 further submits that the Report seems to be full of contradictions and there is no conclusive evidence in the entire Report of any actual environmental damage caused by the plant of the Respondent No. 9. Instead, the Report is focused on quantifying and collecting money under the pretext of environmental damage when there has been no non-compliance observed by the Committee, nor has there been any pollution in excess of the permissible standards.



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20. In fact, reflecting on the original Scope of the Committee, it cannot be emphasized more that in respect of all the compliances that the Committee was required to discover during its inspection, the Respondent no. 9 is complaint, even as per the Committee's own finding.
21. Also in light of the Committee's finding that there has been no damage to the soil in the Applicant's lands, and that no compensation is required to be paid on this account, the Original Application and the reliefs sought therein have in fact become infructuous, thus the Original Application deserves to be dismissed on this ground alone.
22. Besides, when the Respondent no. 9 is admittedly, complying with all the norms and conditions set out by several statutory bodies, it cannot be arbitrarily penalized for the said compliance. In fact, the Committee has sought to make the recommendation for compensation qua the Respondent No. 9 in its Report, without even according an opportunity to the Respondent No. 9 to demonstrate compliance. It is therefore apparent that the Report was prepared summarily and without following the due process.
23. In fact the levy of compensation against Respondent No. 9 shall be against the legitimate expectations of a business enterprise, to the extent that the Respondent No. is conducting its ordinary business by following the law and all statutory conditions. . The levy of compensation shall also be in abrogation of the Respondent No. 9's



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constitutional rights in as much as the levy of compensation shall be in violation of Article 19 of the Constitution.

24. Besides, the Respondent No. 9 also submits that it is a responsible business enterprise with a reputation beyond reproach and it is committed to sustainable operations by giving due consideration to climate change and protecting the environment. The Respondent No. 9 has adopted several measure and goals for “Affordable & Clean Energy” and “Climate Action”.
25. The Respondent No. 9 has filed this *bona fide* Reply to the Report and it is apparent that the balance of convenience is in favor of Respondent No. 9
26. In light of the above-mentioned facts and circumstances, it is humbly prayed before this Hon’ble Tribunal may be pleased to hold that, the Committee has erroneously levied compensation to the tune of Rs.1,11,31,586/- on Respondent No. 9; and the Report is bad in law in so far as it makes any adverse observations against the Respondent No. 9.
27. Lastly, the Respondent No. 9 reserves its right to place reliance on authorities and judgements of superior courts in India, to substantiate the aforesaid.



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IN THE INTEREST OF JUSTICE, EQUITY AND GOOD
CONSCIENCE, THE HUMBLE RESPONDENT SHALL FOREVER
DUTY BOUND PRAY



RESPONDENT NO. 9

THROUGH

M/S. GAUTAM S. RAMAN
COUNSEL FOR RESPONDENT 9

VERIFICATION

I, Pavan Kumar Rao, s/o Late Shri. J. C. Rao, the Authorized Representative of Respondent No. 9 herein, do hereby verify that the contents of this Reply have been read by me and I have understood the same. I do hereby verify that the contents of the Reply from paragraph nos. 1 to ~~27~~ are true and correct to the best of my knowledge and belief that no material fact has been concealed therefrom.

Verified at Chennai on this the 6th day of July, 2022.



RESPONDENT NO. 9

THROUGH

M/S. GAUTAM S. RAMAN
Enrl. No. 1583/2013
COUNSEL FOR RESPONDENT 9
No. 89, Kasthuri Avenue,
MRC Nagar, RA Puram,
Chennai – 600 028.

ISSUED TO:

M/s. Sembcorp Energy India Limited Project-1
 (2x660 MW Coal Based Thermal Power Plant),
 Near Pynampuram / Nelaturu (V), Muthukur (M),
 SPSR Nellore (Dist.)- 524344.

Issue Date: 07.06.2021**Sample Registration No:** 7022/06/21**Date of Sampling:** 02.06.2021**Sample Registration Date:** 03.06.2021**Analysis Starting Date:** 03.06.2021**Analysis Completed Date:** 07.06.2021**Sample Description****Discipline:** Chemical**Group:** Waste Water**Sample Particulars:** Ash Pond Effluent Water**Sample Collected By:** (Mr. Sridhar)**Lab Ref:** CL/WW/8837/12/21-001**TEST RESULTS**

S.NO	TEST PARAMETERS	UNIT	TEST METHOD	RESULT	STANDARD
1.	pH	---	IS:3025(Part-11)1983	7.9	6.5-8.5
2.	Color	Hazen	IS-3025(Part-4)2021	Colorless	Colorless
3.	Odor	---	IS-3025(Part-5)	Agreeable	Agreeable
4.	Total Suspended Solids	mg/l	IS:3025(Part-11)1983	8.0	100
5.	Chemical Oxygen Demand (COD)	mg/l	IS:3025(Part-58)-2006	70	250
6.	Biochemical Oxygen Demand (BOD) (3 days at 27 °C)	mg/l	IS:3025(Part-44)-1993	18	100
7.	Oil & Grease	mg/l	IS:3025(Part-39)-1991	2.0	10
8.	Total Arsenic as As	mg/l	IS:3025(Part-37)-1988	< 0.01	0.2
9.	Mercury as Hg	mg/l	IS:3025(Part-48)-1994	< 0.001	0.01
10.	Lead as Pb	mg/l	IS:3025(Part-47)-1994	< 0.01	2.0
11.	Cadmium as Cd	mg/l	IS:3025(Part-41)-1992	< 0.001	2.0
12.	Hexavalent Chromium as Cr ⁶⁺	mg/l	IS:3025(Part-52)-2003	< 0.001	1.0

IS-Indian Standard, APHA-American Public Health Association


 Checked By


 Authorized Signatory

ISSUED TO:

M/s. Sembcorp Energy India Limited Project-1
(2x660 MW Coal Based Thermal Power Plant),
Near Pynampuram / Nelaturu (V), Muthukur (M),
SPSR Nellore (Dist.)– 524344.

Issue Date: 21.09.2021

Sample Registration No: 8019/09/21-001

Date of Sampling: 13.09.2021

Sample Registration Date: 15.09.2021

Analysis Starting Date: 16.09.2021

Analysis Completed Date: 21.09.2021

Sample Description

Discipline: Chemical

Group: Waste Water

Sample Particulars: Ash Pond Effluent Water

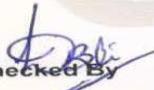
Sample Collected By: (Mr. Sridhar)

Lab Ref: CL/WW/8019/09/21-001

TEST RESULTS

S.NO	TEST PARAMETERS	UNIT	TEST METHOD	RESULT	STANDARD
1.	pH	---	IS:3025(Part-11)1983	7.8	6.5-8.5
2.	Color	Hazen	IS-3025(Part-4)2021	Color less	Color less
3.	Odor	---	IS-3025(Part-5)	Agreeable	Agreeable
4.	Total Suspended Solids	mg/l	IS:3025(Part-11)1983	14	100
5.	Chemical Oxygen Demand (COD)	mg/l	IS:3025(Part-58)-2006	50	250
6.	Biochemical oxygen demand (BOD) (3 days at 27 °C)	mg/l	IS:3025(Part-44)-1993	16	100
7.	Oil & Grease	mg/l	IS:3025(Part-39)-1991	1.0	10
8.	Total Arsenic as As	mg/l	IS:3025(Part-37)-1988	< 0.01	0.2
9.	Mercury as Hg	mg/l	IS:3025(Part-48)-1994	< 0.001	0.01
10.	Lead as Pb	mg/l	IS:3025(Part-47)-1994	< 0.01	2.0
11.	Cadmium as Cd	mg/l	IS:3025(Part-41)-1992	< 0.001	2.0
12.	Hexavalent Chromium as Cr ⁶⁺	mg/l	IS:3025(Part-52)-2003	< 0.001	1.0

IS-Indian Standard, APHA-American Public Health Association

Checked By 



Authorized Signatory 

ISSUED TO:

M/s. Sembcorp Energy India Limited Project-1
(2x660 MW Coal Based Thermal Power Plant),
Near Pynampuram / Nelaturu (V), Muthukur (M),
SPSR Nellore (Dist.)- 524344.

Issue Date: 15.12.2021

Sample Registration No: 8837/12/21

Date of Sampling: 07.12.2021

Sample Registration Date: 08.12.2021

Analysis Starting Date: 08.12.2021

Analysis Completed Date: 15.12.2021

Sample Description

Discipline: Chemical

Group: Waste Water

Sample Particulars: Ash Pond Effluent Water

Sample Collected By: (Mr. Sridhar)

Lab Ref: CL/WW/8837/12/21-001

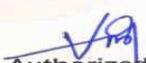
TEST RESULTS

S.NO	TEST PARAMETERS	UNIT	TEST METHOD	RESULT	STANDARD
1.	pH	---	IS:3025(Part-11)1983	7.5	6.5-8.5
2.	Color	Hazen	IS-3025(Part-4)2021	Colorless	Colorless
3.	Odor	---	IS-3025(Part-5)	Agreeable	Agreeable
4.	Total Suspended Solids	mg/l	IS:3025(Part-11)1983	8.0	100
5.	Chemical Oxygen Demand (COD)	mg/l	IS:3025(Part-58)-2006	54	250
6.	Biochemical Oxygen Demand (BOD) (3 days at 27 °C)	mg/l	IS:3025(Part-44)-1993	18	100
7.	Oil & Grease	mg/l	IS:3025(Part-39)-1991	1.0	10
8.	Total Arsenic as As	mg/l	IS:3025(Part-37)-1988	< 0.01	0.2
9.	Mercury as Hg	mg/l	IS:3025(Part-48)-1994	< 0.001	0.01
10.	Lead as Pb	mg/l	IS:3025(Part-47)-1994	< 0.01	2.0
11.	Cadmium as Cd	mg/l	IS:3025(Part-41)-1992	< 0.001	2.0
12.	Hexavalent Chromium as Cr ⁶⁺	mg/l	IS:3025(Part-52)-2003	< 0.001	1.0

IS-Indian Standard, APHA-American Public Health Association

Checked By




Authorized Signatory


ISSUED TO:

M/s. Sembcorp Energy India Limited Project-1
(2x660 MW Coal Based Thermal Power Plant),
Near Pynampuram / Nelaturu (V), Muthukur (M),
SPSR Nellore (Dist.)- 524344.

Issue Date: 11.02.2022

Sample Registration No: 0284/02/22-005

Date of Sampling: 02.02.2022

Sample Registration Date: 05.02.2022

Analysis Starting Date: 05.02.2022

Analysis Completed Date: 10.02.2022

Sample Description

Discipline: Chemical

Group: Waste Water

Sample Particulars: Ash Pond Effluent Water

Sample Collected By: (Mr. Sridhar)

Lab Ref: CL/WW/0284/02/22-005

TEST RESULTS

S.NO	TEST PARAMETERS	UNITS	TEST METHOD	RESULTS	STANDARDS
1.	pH	---	IS:3025(Part-11)1983	7.6	6.5-8.5
2.	Color	Hazen	IS-3025(Part-4)2021	colorless	colorless
3.	Odor	---	IS-3025(Part-5)	Agreeable	Agreeable
4.	Total Suspended Solids	mg/l	IS:3025(Part-11)1983	10	100
5.	Chemical Oxygen Demand (COD)	mg/l	IS:3025(Part-58)-2006	52	250
6.	Biochemical oxygen demand (3 days at 27 °C)	mg/l	IS:3025(Part-44)-1993	14	100
7.	Oil & Grease	mg/l	IS:3025(Part-39)-1991	3.0	10
8.	Total Arsenic as As	mg/l	IS:3025(Part-37)-1988	< 0.01	0.2
9.	Mercury as Hg	mg/l	IS:3025(Part-48)-1994	< 0.001	0.01
10.	Lead as Pb	mg/l	IS:3025(Part-47)-1994	< 0.01	2.0
11.	Cadmium as Cd	mg/l	IS:3025(Part-41)-1992	< 0.001	2.0
12.	Hexavalent Chromium as Cr ⁶⁺	mg/l	IS:3025(Part-52)-2003	< 0.001	1.0

IS-Indian Standard, APHA-American Public Health Association

Checked By




Authorized Signatory




SEIL P1/MoEF&CC/Chennai/2022/001
18th Apr 2022

Sembcorp Energy India Limited

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To

1. The Regional Director,
Regional Office (South Eastern Region),
Ministry of Environment, Forests & Climate Change,
1st & 2nd Floor, HEPC Building, No. 34, Cathedral Garden Road,
Nungambakkam,
Chennai – 600034.
2. The Joint Director (S),
Scientist 'D',
Ministry of Environment, Forest & Climate Change,
Integrated Regional Office (IRO),
Vijayawada- 520010.

Sub.: Submission of annually reviewed Hydrogeology Study Report for the year 2021-22 of Sembcorp Energy India Limited Project-1 (formerly known as Thermal Powertech Corporation India Limited– TPCIL), Nellore.

Ref.: EC Letter No: J 13012/02/2009— IA.II (T) dated 04-11-2009.

Dear Sir,

This has reference to the above subject and reference. We hereby submit the annually reviewed Hydrogeology study report of Sembcorp Energy India Limited Project-1 (formerly known as Thermal Powertech Corporation India Limited– TPCIL), Nellore for the year 2021-22 as per Environment Clearance Clause No. 04 (X).

Hope the above is in order.

Thanking you,

Yours faithfully,
For **M/s. Sembcorp Energy India Limited**

Pavan Kumar Rao V

Head HSE- SEIL

by E-mail

Enclosure: Hydrogeology Study report along with Annexures

Copy to:

1. The Director (IA) Thermal, MoEF&CC, New Delhi
2. The Member Secretary, APPCB, Vijayawada
3. The Regional Officer, APPCB, Nellore

HYDRGEOLOGY STUDY REPORT

70

2021



Report prepared and submitted by:

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SEMBCORP ENERGY INDIA LIMITED

PROJECT-1,

THERMAL POWER PLANT

NEAR PAINAMPURAM VILLAGE,

MUTHUKUR MANDAL,

SPSR NELLORE DISTRICT,

ANDHRA PRADESH

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1.0 INTRODUCTION

1.1. Background

Sembcorp Energy India Limited (SEIL Project-1) is leading independent power company in India, with a successful track record of identifying, developing and operating power generation assets across the thermal and renewable power sectors in India.

SEIL is promoted by Sembcorp Utilities Pte. Ltd., which is part of the Sembcorp Group and a wholly owned subsidiary of Sembcorp Industries. Sembcorp Industries is a leading energy, water and on-site logistics, marine and urban development group operating across five continents. With facilities about 11000 megawatts of gross power capacity and close to nine million cubic meters of water per day in operation and under development, Sembcorp is a trusted provider of essential energy and water solution to both industrial and municipal customers. It is also a world leader in marine and offshore engineering as well as an established brand name in urban development.

SEIL has two thermal power plants – Sembcorp Energy India Limited Project-1 (Formerly Thermal Powertech Corporation India Limited) in Painampuram village, Muthukur mandal and Sembcorp Energy India Limited Project-2 (Formerly Sembcorp Gayatri Power Limited) Ananthavaram village, Thotapalli Gudur mandal in SPSR Nellore district, Andhra Pradesh.

1.2 Project

M/s. Sembcorp Energy India Limited Project-1 (SEIL P-1), subsidiary of Sembcorp Industries, Singapore implementing a 1320 MW (2 X 660 MW) Coal Based Thermal Power Plant near Painampuram Village, Muthukur mandal, SPSR Nellore District, and Andhra Pradesh.

1.3 Scope of Work

The scope of works includes:

- Site visits to familiarize with the project areas. Identify any issues that might impact the Ground Water Scenario due to proposed industrial activities.
- To obtain, study and synthesize background information including the geology, hydrogeology for the purpose of improving the quality of assessment and preparing comprehensive hydrogeological reports.
- To carry out hydrogeological evaluation and geophysical investigations in the selected sites in order to determine potential for groundwater at project site.
- To prepare hydrogeological survey reports in conformity with the provisions of the rules and procedure outlined by the Central Ground Water Board (CGWB), by Assessment of water

quality and potential infringement of National standards, Assessment of availability of ground water and Impact of proposed activity on aquifer, water quality and other abstractors.

1.4 Location, Extent and Communication

SEIL Project-1 is located in near Painampuram village, Muthukur Mandal, SPSR Nellore District of Andhra Pradesh. The site is covered in Survey of India Topo sheet No.66 B/3, (1:50000 scale). The site falls between 80°08'0.372"-80°09'0.422" East Longitude and 14°19'05.211"-14°21'0.874" North Latitude with an average MSL of 2.70 m.

The total extent of the plant is about 1367 acres (553.205 ha) and the Coal conveyor occupies another 100 acres (40.469 Ha.). The plant site falls in the jurisdiction of the villages Painampuram & Nelaturu in Muthukur mandal allotted by the Andhra Pradesh industries Infrastructure Corporation Limited (APIIC).

SEIL Project-1 is accessible from the Nellore town, located at a distance of 26 km and the nearest railway station is Nellore railway station. The nearest airport is Tirupati International airport at Renigunta (Tirupati) at a distance of 137 km. Krishnapatnam Port is at a distance of 8 km from SEIL Project-1.

Geographically, the study area lies between 14°13'47.55"N to 14°26'33.35"N latitudes and 80°02'35.63"E to 80°15'07.65"E longitudes and is covered by Survey of India toposheet nos. 66B3 and 66B4 at 1:50000 scale. The study area encompasses the geographical area of part of Muthukur and Thotapalli Gudur mandals of SPSR Nellore district. Location of SEIL Project-1 is shown in **Figure-1** and the study area is presented in **Figure-2**.





Figure-1. Location Map of SEIL Project-1, Painampuram

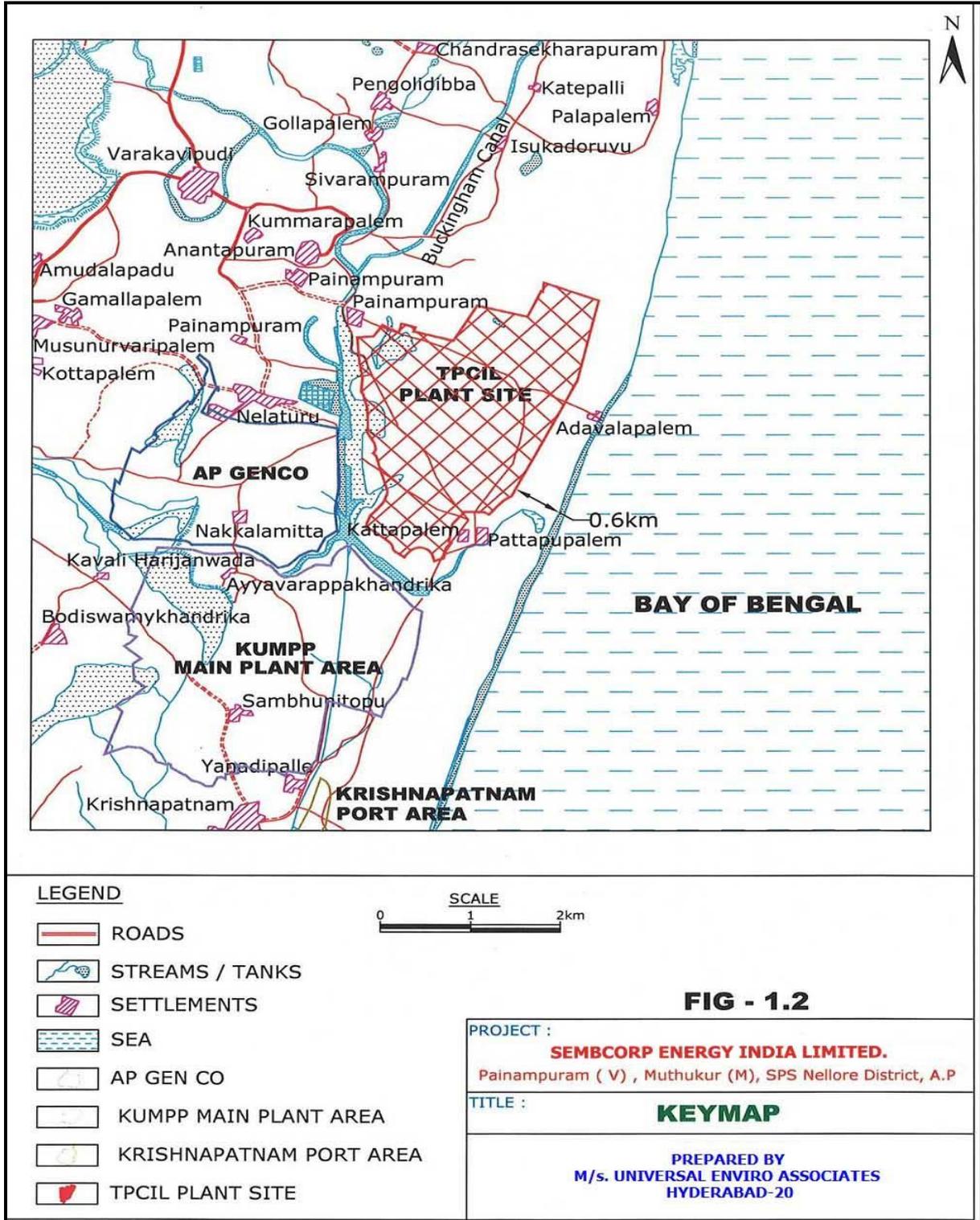


Figure-1.2. Key Map of SEIL Project-1

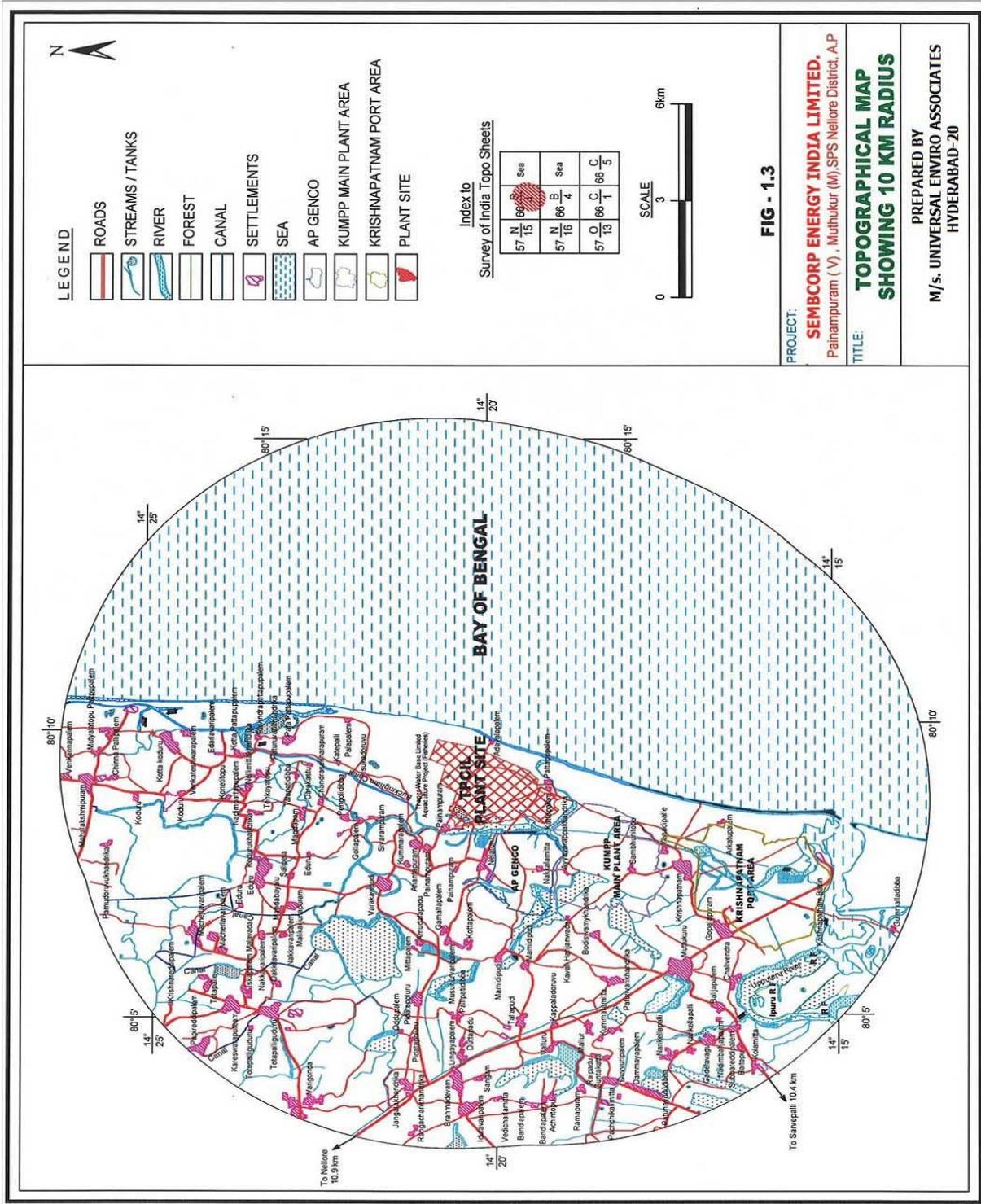


Figure-2: (Study area map - 10 Km Radius Plan)

1.5 Process

The power generating facility uses the most commonly encountered Rankine based thermodynamic cycle. This facility generates electricity by producing steam in a steam generator and expanding the steam through a turbine that is coupled to generator. The steam is then condensed in a condenser, and the condensed steam is heated again in the steam generator. The coal handling system receives coal and then crushes stacks, reclaims and conveys the same to coal bunkers is pulverized in mills and produce the steam. The steam turbine converts the steam thermal energy to rotating mechanical energy, and the generator, which is coupled the steam turbine, converts the mechanical energy to electrical energy.

Steam exhausted from the low-pressure section of the steam turbine is condensed to water in the condenser. The condensed water is removed from the condenser by condensate pumps through low pressure regenerative feed water heaters to a deaerated. Boiler feed pumps move the deaerated water through high pressure regenerative heaters to the steam generator. Extraction steam from the steam turbine is supplied to the low- and high-pressure feed water heaters for regenerative heating, which improves the thermal cycle efficiency.

Forced draft fans supply combustion air to the steam generator and the primary air fans for transport of pulverized coal in to steam generator and exhaust them into the plant stack (Chimney).

Cooling water for the condenser is supplied by the circulating water system, which takes the heat removed from the condenser to cooling tower where the water is cooled for recirculation back to condenser A COC (Cycles of Concentration) of 1.3 is envisaged as sea water is being used. The plant control system enables the operator to direct the plant operation for reliable and efficient production of electrical energy.

1.6 Water Source and Requirement

The average water consumption of the existing SEIL Project-1 is about 84000 cum/hr which is being drawn through intake from Bay of Bengal.

Detailed water balance is represented below in **Fig-3** & attached as **Annexure-I**.

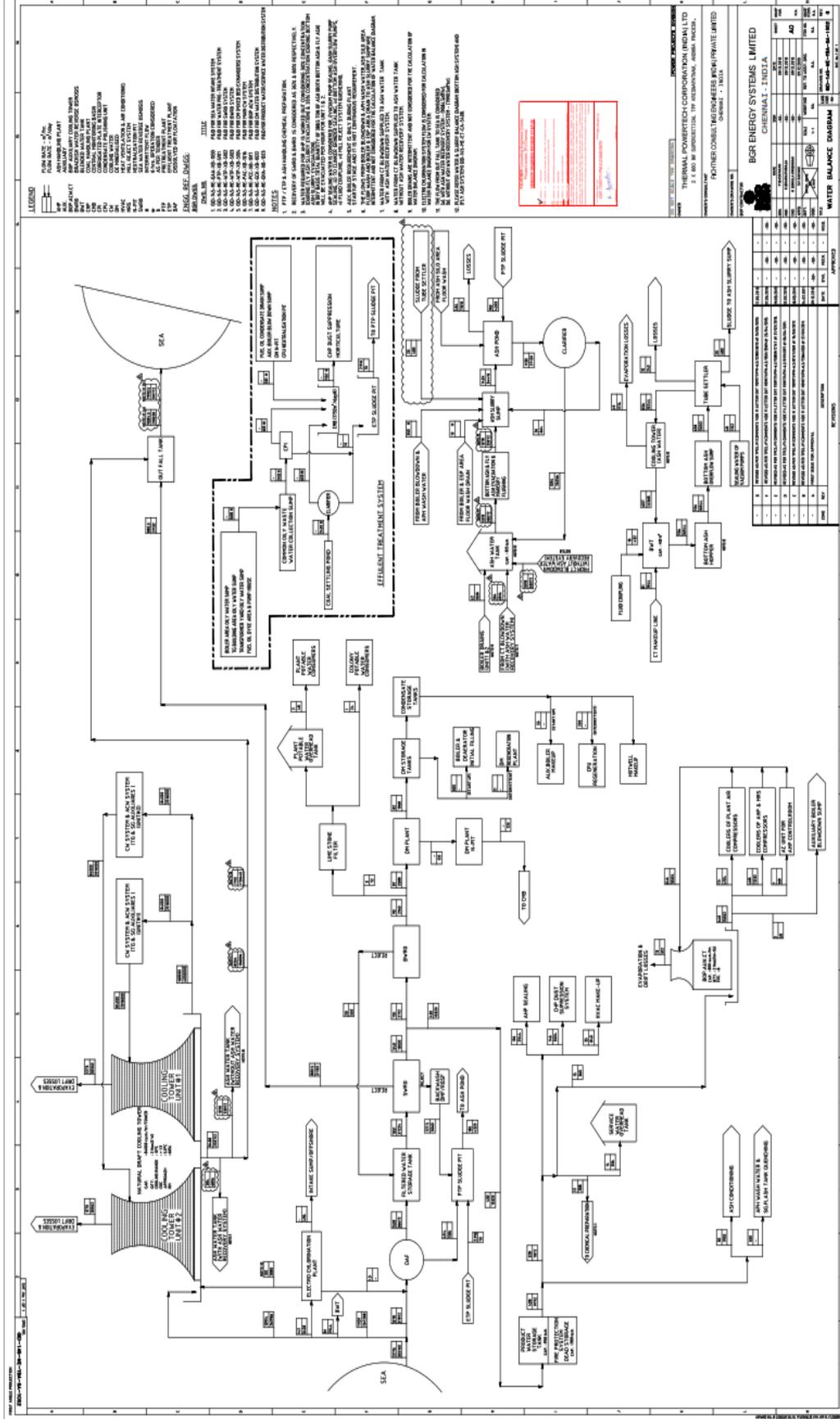


Figure-3: Water Balance Diagram of SEIL Project-1

2.0 HYDROLOGY

2.1 Climate

As per Agro-Ecological Sub Region classification of National Bureau of Soil Survey & Land Use Planning (NBSSLUP), the study area falls in Andhra Plain, hot dry sub-humid Ecological Sub Region (S7Cd5) with deep, clayey Coastal and Deltaic alluvium derived soils, low to medium Available Water Capacity (AWC) and a Length of Growing Period (LGP) 150-180 days.

The climate of the region is moderate and characterized by sub-tropical climate. The period from December to middle of February is generally season of fine weather. The summer season is from March to May. Nellore receives less rainfall from the south-west monsoon. Most of the monsoon rainfall in Nellore area occurs between the months of October and December due to north-east monsoon and the winter season from January to February.

The hottest month of the year is June with maximum temperature in the area rising up to 46.3°C during June and minimum temperature is around 15.0°C during January.

The annual normal rainfall based on IMD, Nellore station for 29 years between 1991 and 2020 is 1021.2 mm with an average number of rainy days as 48.0. The peculiarity of this area is that contribution of SW monsoon is far less than the contribution of NE monsoon rainfall. About 61.17% of the annual rainfall is contributed by the NE monsoon between October and December whereas SW monsoon contributes 30.68% of the annual rainfall. In general, the amount of rainfall increases from west to east about 900 to 1300 mm in the district. November in general received highest monthly rainfall of 287.1 mm and the heaviest rainfall.

The area experiences high humidity, which is in the range of 51-89%. January, December recorded highest humidity of 89% at 08:30 Hrs. and 88% at 17:30 Hrs. respectively whereas June during summer recorded lowest humidity of 51% at 17.30 hrs.

The maximum atmospheric pressure observed was 1013.3 mb at 08:30 Hrs. in the months of December and January and 1010.3 mb at 17:30 Hrs. in the month of December during winter season. The minimum pressure observed was 998.7 mb at 17.30 Hrs. during summer in the month of June.

Table-1: Meteorological Data, IMD, Nellore (1991-2020)

Month	Atmospheric Pressure (mb)		Temperature (°C)		Relative Humidity (%)		Rainfall (mm)	No. of Rainy Days
	08:30	17:30	Mean Max.	Mean Min.	08:30	17:30		
January	1013.3	1010	35.6	15	86	64	26	1.2
February	1011.6	1008.3	39.4	16.1	82	61	1.7	0.2
March	1009.6	1006	43.9	17.2	78	61	3.5	0.2
April	1007.1	1003.2	45.6	11.1	71	62	8.7	0.4
May	1003.8	1000	46.7	20.2	63	55	43.1	1.6
June	1002.5	998.7	46.7	21.1	64	51	28.9	3
July	1003.1	999.6	42.2	22.2	69	56	85.9	6.1
August	1004	1000.4	40.6	21.7	71	56	96	6.4
September	1005.6	1001.8	41.7	21.5	74	62	97.2	5.4
October	1008.2	1004.9	39.4	18.9	82	71	287.1	8.7
November	1010.9	1008	36.7	16.7	85	74	290.9	9.1
December	1013.3	1010.2	35.0	14.4	86	71	100.4	3.7
Range/ Total	1004.3-1007.8		27.7-31		62-76		1069.4	46

(Source: IMD, Nellore 1991-2020)

2.2 Physiography

Of the total study area of 416.24 sq km, 178.26 sq km (42.83%) of the eastern part is covered by Bay of Bengal. The inland area forms a flat alluvial plain with minor undulations and occasional isolated dunes. The elevation within the study area varies from 0.0 m above mean sea level (amsl) along the beach to around 11.0 m in northwest with isolated dunes at few places rising up to around 60.0m. The general slope in the inland area is towards Bay of Bengal in the east.

Upputeru River emptying into Bay of Bengal near Krishnapatnam Port is the major stream in the study area. Buckingham Canal, once a fresh water navigation canal runs parallel to the coast. No forest covers in the study area. Physiography of the study area is presented in **Figure-4**.

Elevation in the project site varies from 0.5 m to 7.0 m amsl in the beginning. Major part of the area is graded at present for setting up of the plant. Central and northern part of the project site is having higher elevation sloping towards Buckingham canal in the west, creek in the south and Bay of Bengal in the east.

2.3 Drainage

According to River Basin Atlas of India, Ministry of Water Resources, the study area forms part of C17PAL52 and 53 watersheds in Palar and Other Sub-basin of East Flowing Rivers between Pennar and Kanyakumari Basin.

Of the total study area of 416.24 sq km, 178.26 sq km (42.83%) of the eastern part is covered by Bay of Bengal. The principal stream in the study area is Upputeru River, which drains into Bay of Bengal in the southernmost part of the study area as Kandleru Creek. It runs as Kandleru River in the upper reaches until its tributary, Kolleru River joins it and flows as Upputeru River afterwards. Two smaller creeks with their drainage network originating within and just outside the study area joins Bay of Bengal south of SEIL Project-1 and Pathapalli respectively.

Major part of the study area is drained by the drainage network of smaller creeks intercepted by small to medium sized water bodies/tanks. The general drainage pattern in the study area is dendritic to sub-dendritic. Being an alluvial plain with near flat topography, the study area has a low dense network of drainage pattern with a drainage density of 0.17 km/sq km. There are a number of small to medium water bodies/tanks serving as local irrigation source spread in the entire study area. Of these, tanks near Kodur, Thotapalli Guduru, Amudalapadu, Mamidipudi, Valluru, Pantapalem and Muthukur are of reasonable size supporting local irrigation needs.

Buckingham Canal, once a fresh water navigation canal runs parallel to the coast. Secondary channels from Nellore Barrage on Penna River runs from west up to Muthukur in the study area with other minor channels inter-connecting bigger water bodies spread in major part of inland area.

There are no well-defined stream courses passing through the project site, but as per the original pre-project drainage, a small water body with an approximate water spread area of 19.96 ha exists in the north-western part of the project site. A natural depression is developed into a small water body in the eastern part of the project site from which, water is being used for nursery and nearby gardening.

Drainage network in the study area is attached as **Annexure-II**.

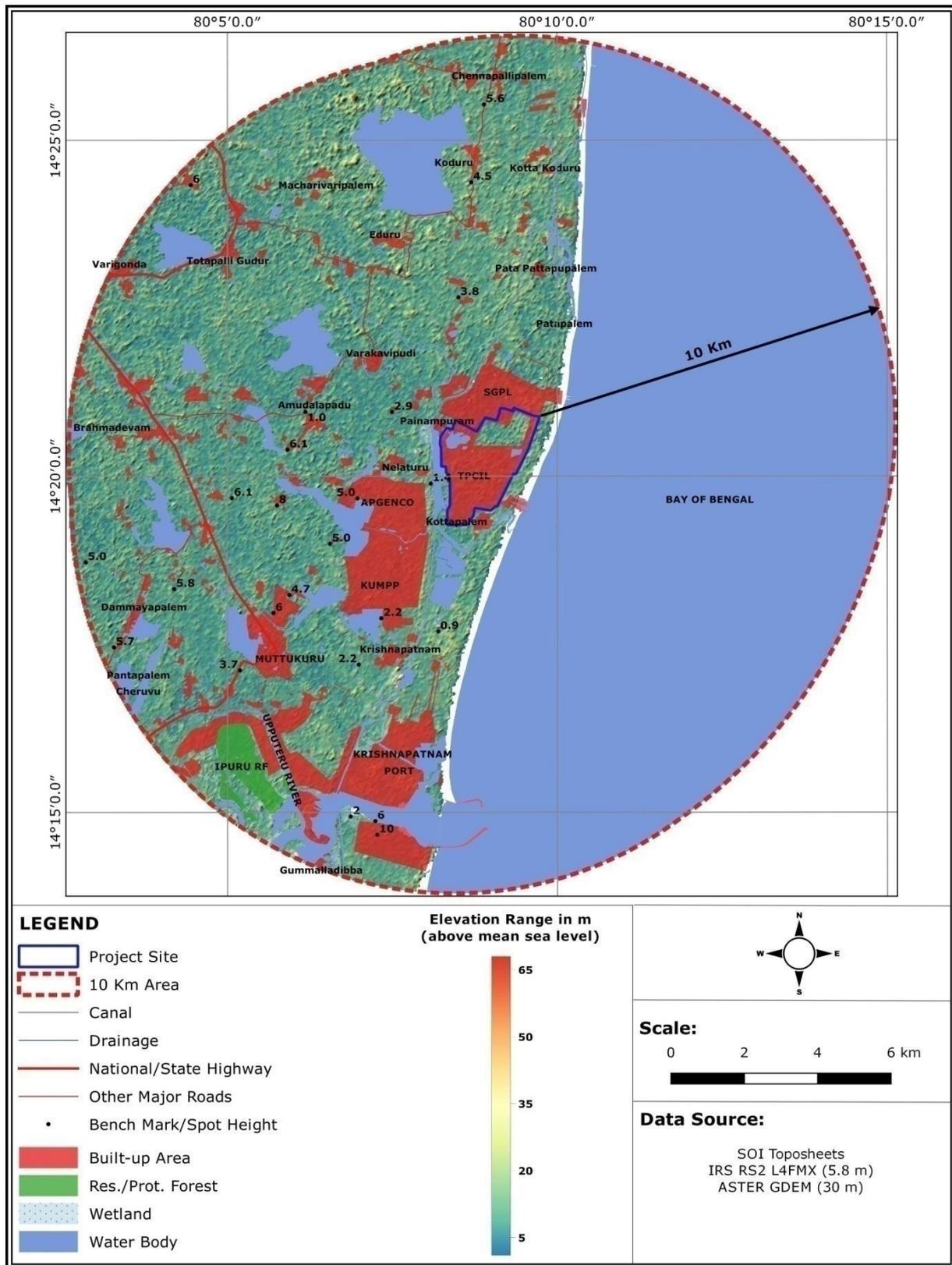


Figure-4: Physiography of the study area

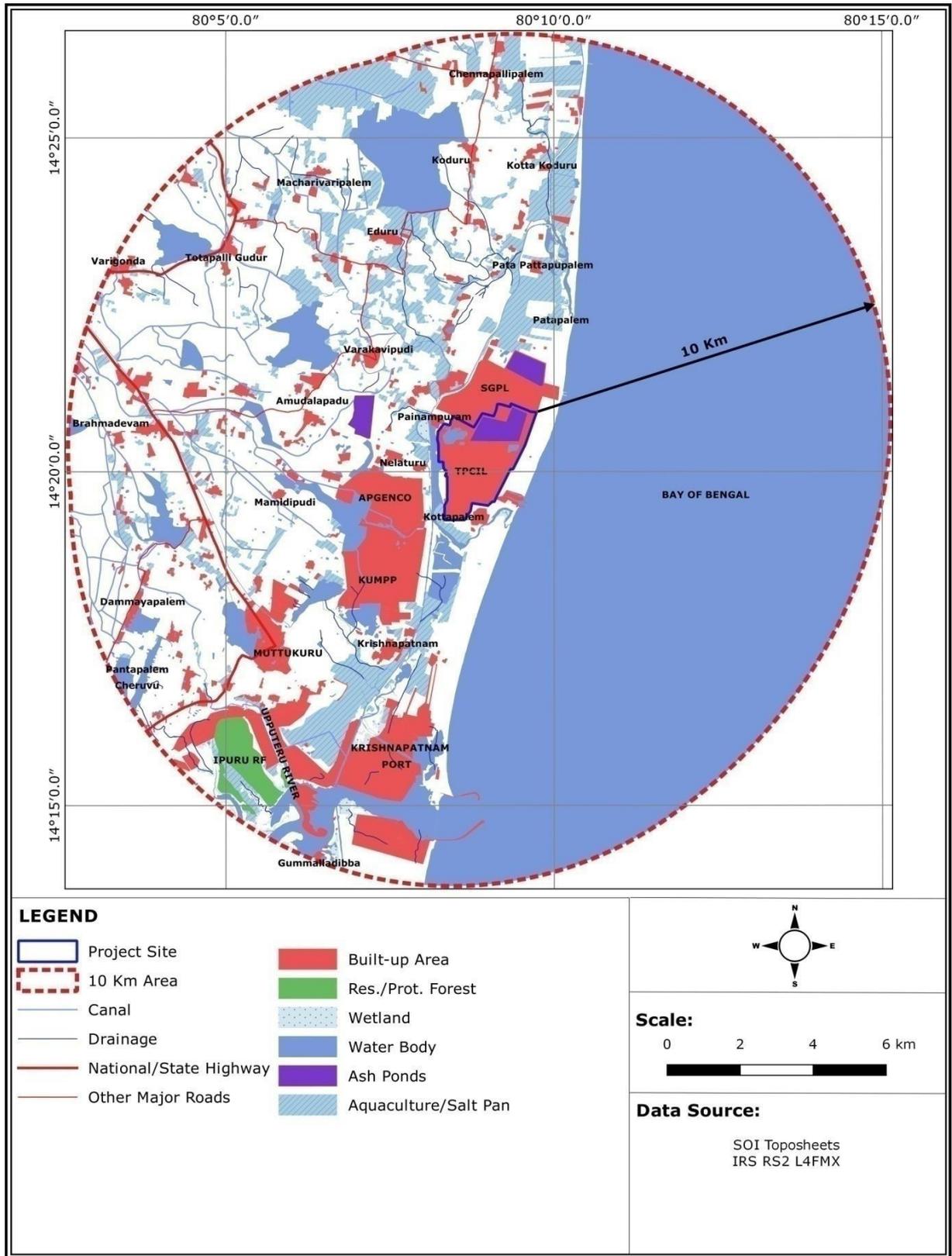


Figure-5: Drainage Map of the Study Area

3.0 GEOLOGY

3.1 Regional Geology

The district comprises older metamorphic of presumably Archaean age, Dharwar Supergroup of Archaean to lower Proterozoic age, post-Dharwar intrusives, sedimentary rocks of Cuddapah Supergroup and Cuddalore Formation of middle Miocene age and laterite/alluvium of Quaternary age.

The Archaean rocks occupy major part of the district and are represented by older metamorphic comprising migmatized garnetiferous quartz-mica schist with associated amphibolites, quartz-muscovite mica biotite schist, with kyanite/staurolite and the Peninsular Gneissic Complex comprising biotite-granite gneiss. The migmatized schist covers a large in the central part of the district from west of Kavali in the north to Suler in the south.

Quartzite is exposed as several outliers, scattered over the migmatized schists. Kyanite and staurolite bearing quartz-muscovite-biotite schist occurs as linear or circular shaped outcrops. These are exposed along the eastern boundary of the Dharwar suite of rocks to the west of Kaligiri peninsular gneiss, along the eastern margin of the Cuddapah Basin. It comprises pink to grey granite and gneiss.

The rocks of Dharwar Supergroup form a prominent NW-SE trending belt from north of Udayagiri to south of Gudur attaining a width of 25 km in a broad synformal structure. It comprises an inter-bedded sequence of metavolcanic and metasedimentary rocks. The various lithotypes present in this group are chlorite schist, hornblende schist, actinolite schist, tuff/agglomerate, quartz-sericite schist, actinolite schist, phyllite and quartzite.

The post-Dharwar intrusives correspond to the Eparchaeon interval and are represented by gabbro, anorthosite, carbonatite, granite and pegmatite. Pegmatite veins are seen mostly concentrated in the area between Degapudi and Saidapuram. Carbonatite in the district occurs as a narrow NW-SE trending band within the Dharwa rmetavolcanics, having a width of 50 to 60 m over a strike length of 8 km close to the margin of Dharwars with older schist in the northern part of the area. A north site occurs as a circular body having a width of 1 to 1.5 km near Degapudi. Gabbro is exposed as small mounds within Dharwars in the western part of the district.

The rocks of Cuddapah Supergroup, occupying the western part of the district, are exposed as an outlier, west of Udayagiri. Only upper part of the Cuddapah Supergroup, viz., Nallamalai Group, consisting of quartzites is well exposed in the district. Rocks of Cuddalore Formation consisting of sandstone, gravel bed, grit and conglomerate are exposed as isolated patches to the north, south and SE of Nellore. Remnants of these presumably show relicts of the eastern seabed of India during the Tertiary era.

Laterite cappings are seen to occur at the eastern end of the district. Deposition of beach sands by present day

sedimentation, formation of gypsum, lime, in Pullicat Lake, accumulation of alluvium along Penner and Swarnamukhi river tracts and formation soils represent recent geological activity in the district. The stratigraphic succession of the region based on GSI publication, 2001 is given in **Table-2**.

Table-2: Regional Stratigraphic Succession

Lithology	Formation/Group	Super group/Series	Age
Clay with sand	Palero channel	Fluvial	Holocene - Quaternary
Clay and silt	Flood Basin-Swarnamukhi Formation		
Fine grained silts	Paleo Flood Plain-Kalnagi Formation		
Gravel, sand with clay; fine grained silt and sand	Channel bar, Point bar-Penner Formation		
Coarse grained sand with gravel	Older alluvial terrace – Buchireddipalem Formation		
Sand with shell fragments; silt clay	Active beach; spit, mudflat, tidal flat - Pattapupalem Formation	Marine	
Silt, clay; Shell lime	Lagoon-Pulicat Formation		
Medium to coarse and with shell fragments	Younger beach-barrier ridge-Ullipalem Formation		
Fine sand	Old beach-barrier ridge-Chakicherla Formation		
Clay and silt	Old tidal flat-Uparapalem Formation		
Laterite			Pleistocene-quaternary
Sandstone	Cuddalore Formation		Mio-Pliocene
Quartzite	Cumbum Formation	Nallamalai Group Cuddapah Supergroup	Middle Proterozoic
Quartzite	Bairenkonda Formation		
Pegmatite			Lower Proterozoic
Granite			
Carbonate			
Anorthosite			
Gabbro			
Quartzite		Dharwar Supergroup	Archaean to Lower Proterozoic
Metavolcanic(Chlorite schist), hornblende schists, Tuff agglomerate, Metaandesite, Metasedimentaries (Quartz-sericite, schist phyllite)			
Biotite granite gneiss		Peninsular Gneissic Complex	Archaean
Quartz-muscovite-biotite schist		Older Metamorphics	
Quartzite			
Migmatized garniferous Quartz-mica schist with amphibolite bands			

3.2 Geology of Study Area

Of the total study area of 416.24 sq km, 178.26 sq km (42.83%) of the eastern part is covered by Bay of Bengal. The inland area forms a flat alluvial plain with minor undulations and occasional isolated dunes.

The inland area is entirely occupied by unconsolidated alluvial formations of fluvial and marine origin belonging Recent/Quaternary period. The river and flood plain alluvium of fluvial origin occurs all along the banks of major rivers and the deltaic areas formed by rivers and cover an area of 57.31 sq km. Active beach, tidal flat and other marine alluvium occurs along the coast and in the southwestern part of the study area covering 155.23 sq km.

The project site falls in Ullipalem Formation of marine origin consisting of medium to coarse sand with shell fragments. A major fault trending NW-SE and extending from north of Dagadarthi to the coast near Tammennapatnam for about 60 km passes through the study area from northwest to south. A major lineament trending SSW-ENE and extending from west of Naidupeta to Patapalem for about 62 km runs from SSW of study area to Patapalem and passes through western part of the project site.

Geology of the study area based on GSI publication 2001 is presented in **Figure-6**.

3.3 Sub-surface Lithology/Soils in the Project Site

Based on field observations and visual identification during the study, the general/average sub-surface lithology has been designated into 5 different layers as detailed below:

Layer	Description	Depth (m BGL-Below Ground Level)
Layer 1	Silty Sand	GL - 6.0 to 8.0
Layer 2	Silty soft to medium stiff Clay	6.0 to 8.0 - 25.0 to 30.0
Layer 3	Medium dense Sand	25.0 to 30.0 - 40.0
Layer 4	Stiff to hard Clay	40.0 - 50.0
Layer 5	Dense Sand	50.0 to termination depth

A review of the sub-surface lithological data from the bore hole drilling indicate that the project site has alternate layers of sand and clay with varied thickness, grain size and hardness. The sub-soil water table was observed to be at about 1.1 to 2.0 m bgl at the time of investigation.

3.4 Earthquake and Seismic Zone

The Indian subcontinent has a history of devastating earthquakes. The major reason for the high frequency and intensity of the earthquakes is that the Indian plate is driving into Asia at a rate of approximately 47 mm/year. Geographical statistics of India show that almost 54% of the land is vulnerable to earthquakes. The latest version seismic zoning map of India given in the earthquake resistant design code of India (IS 193 (Part 2) 2002) assigns four levels seismicity for India in terms of zone factors. In other words, the earthquake zoning map of India divides India into 4 seismic zones (Zone 2, 3, 4 and 5) unlike its previous version, which consisted of five or six zones for the country. According to the present zoning map, Zone 5 expects the highest-level seismicity whereas Zone 2 is associated with the lowest level of seismicity. The MSK (Medvedev-Sponheuer-Karnik) intensity broadly associated with the various seismic zones is VI (or less), VII, VIII and IX (and above) for Zone 2, 3, 4 and 5 respectively, corresponding to Maximum Considered Earthquake (MCE). Each zone indicates the effects of an earthquake at a particular place based on the observations of the affected areas and can also be described using a descriptive scale like Modified Mercalli Intensity Scale or the Medvedev-Sponheuer-Karnik Scale.

As per Earthquake Hazard Map of India, Building Materials and Technology Promotion Council (BMTPC), the study area falls in Moderate Damage Risk Zone – Zone 3 (MSK VII).

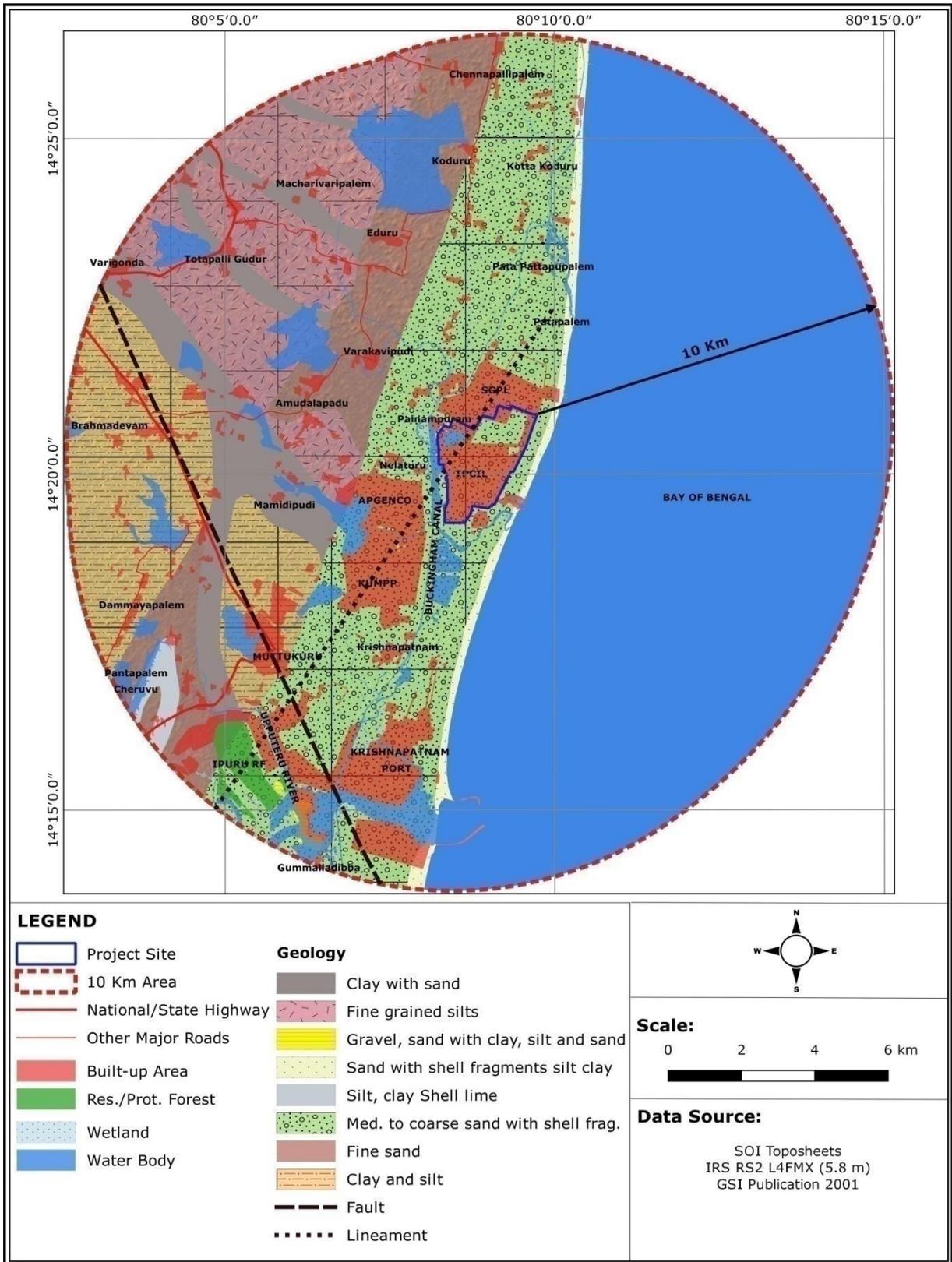


Figure-6: Geology of the Study Area

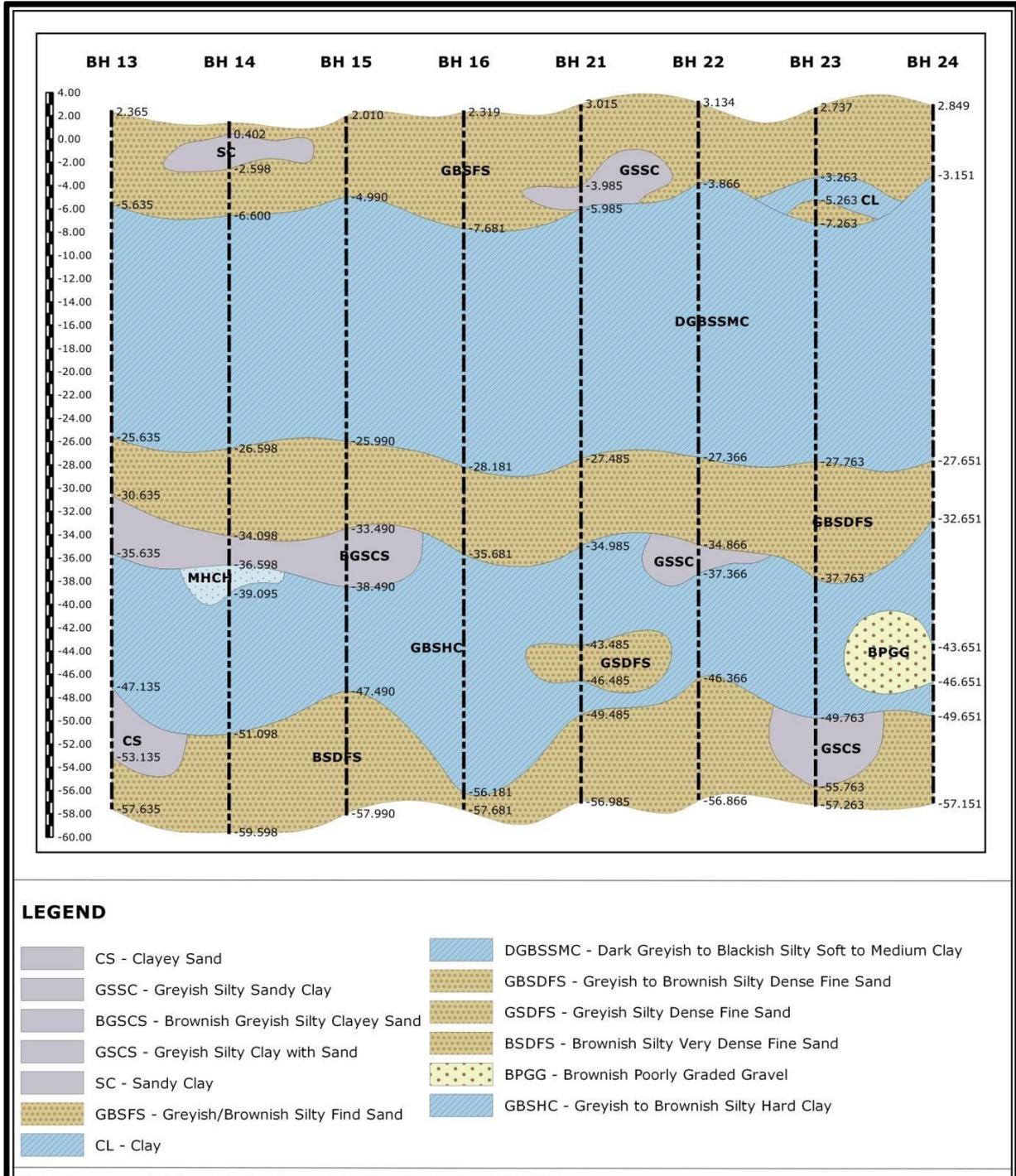


Figure-8: Lithological cross section A-A'

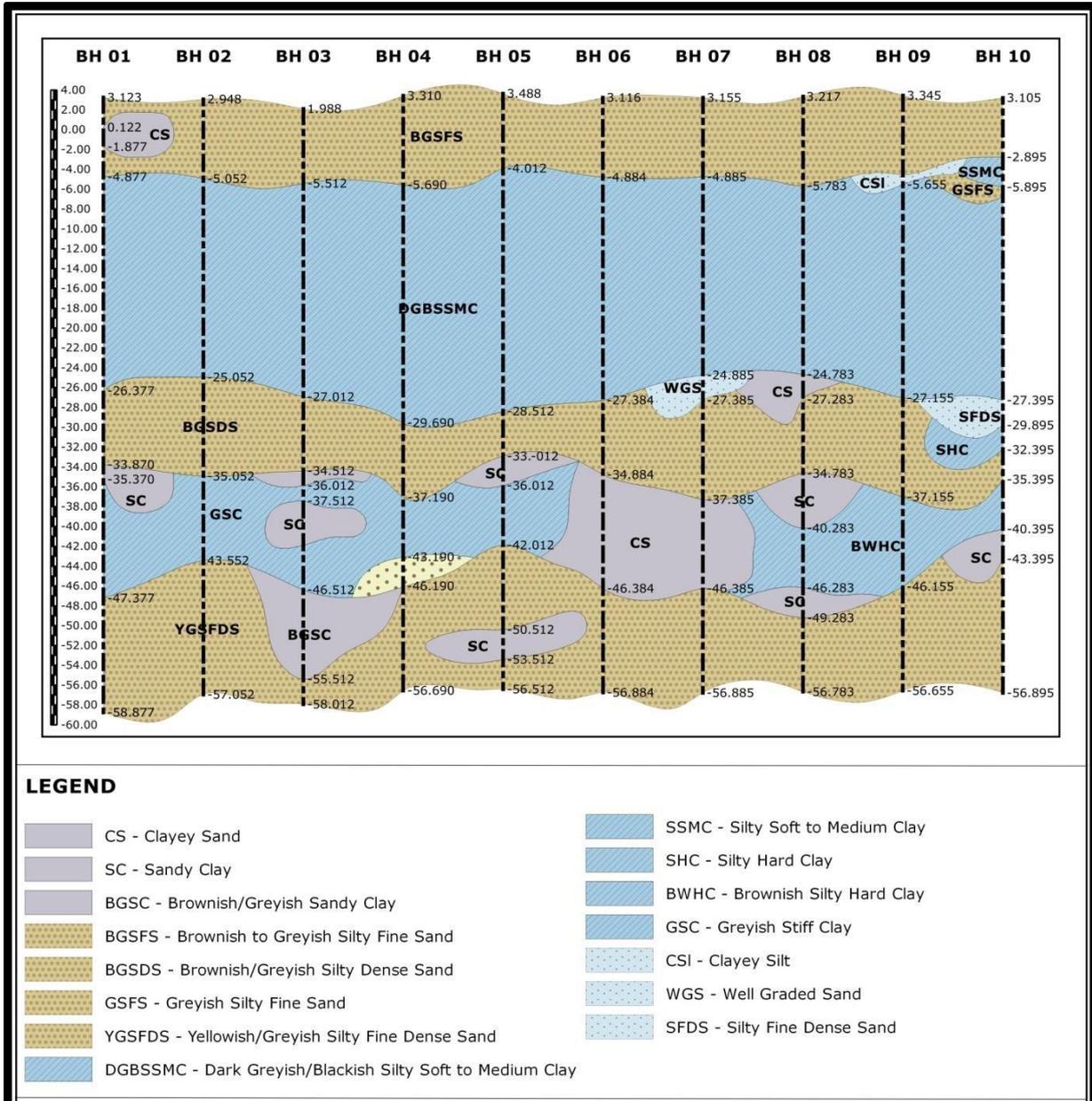


Figure-9: Lithological cross section B-B'

4.0 HYDROGEOLOGY

Hydrogeology is the area of geology that deals with the distribution and movement of ground water in the soil and rocks of earth's crust commonly in aquifers. Ground water systems are a result of the complex combination of different lithological and structural types within an area that together constitute an aquifer within which ground water accumulates and moves. Rather than describing individual lithologies and their tendencies to form aquifers or otherwise, it is useful to describe the ground water as one continuous across various lithological types (Kulkarni and Deolankar, 1995). *Hydrogeology of the study area is presented in Figure-10.*

4.1 Nature of Occurrence of Ground Water

Of the total study area of 416.24 sq km, 178.26 sq km (42.83%) of the eastern part is covered by Bay of Bengal. The inland area forms a flat alluvial plain with minor undulations and occasional isolated dunes. The inland area is entirely occupied by unconsolidated alluvial formations of fluvial and marine origin belonging Recent/Quaternary period.

Among the unconsolidated formations, river alluvium i.e., in deltaic area form potential aquifers. In deltaic area, ground water occurrence is controlled by landforms and also in this area, a lot of heterogeneity in hydrogeological conditions exist both spatially and vertically. In the delta area, fresh water is generally limited to a depth of 15 m. Most of coastal alluvium aquifers are brackish or saline. Paleochannels are favourable locations for fresh water aquifers. Wind-blown sand/sand dunes are fresh water aquifers. Ground water occurs under phreatic to confined conditions.

4.2 Wells, Water Levels and Yields

Ground water in the study area is developed through shallow dug wells, filter points and tube wells for domestic, irrigation, aquaculture and industrial purposes. Many of the dug wells in the study area have been abandoned while constructing new houses and with the increased use of filter points for domestic purpose in the recent past. Dug wells that exist at present are mainly within the premises of temples.



Latitude: 14°34'51.73"N
Longitude: 80°13'65.03"E
Painampuram Village



Latitude: 14°34'95.79"N
Longitude: 80°13'09.43"E
Nelaturu Village



Latitude: 14°32'23.41"N
Longitude: 80°14'64.44"E
Nelaturupalem Village



Latitude: 14°34'58.58"N
Longitude: 80°10'46.98"E
Musunurivari palem Village

4.2.1 Water Levels from Well Inventory

Water levels during field visit are recorded measuring depth to standing water and post monsoon water levels are recorded up to the moisture indication in the dug wells. Pre monsoon water levels are recorded through interaction with well owner or local person available at the site. Detailed Well inventory data is furnished in **Table-6**.

4.2.2 Water Levels from SEIL Project-1 Piezometers

Piezometers were installed –

Piezo Well -1- Near to CHP Control room of SEIL P-2, (East Side)

Piezo Well -2- Between SEIL P1 Periphery wall & New Ash Pond (South Side)

Piezo Well -3- Between P1 to P2 road and New Ash Pond (West Side)

Piezo Well -4 - Between SEIL P2 Periphery wall & New Ash Pond (North Side)

Piezo Well -5– Between SEIL P2 Periphery wall & New Ash Pond (North-West side)

Details of well inventory in study area is represented in **Table No.-3**.

Details of these piezo wells and water level monitoring data are given in **Table-4a** & **Table-4b** respectively.

Typical section of Piezometer well is attached as **Annexure-III**.

Table-3: Details of Well Inventory in Study Area

Sl. No.	Well No	Village	Latitude	Longitude	Well Type	Purpose	Total Depth (m)	Dia (m)	Static Water Level (m)		Fluctuation (m)	Aquifer	TDS	pH	
									Pre-Monsoon (May)	Post-Monsoon (Nov)					
1	GW1	Nelaturu Village	14.349579	80.130943	Tube Well	Domestic	1.8	1.8	1.42	1.02	0.74	Alluvium	865.0	7.5	
2	GW2	Painampuram Village	14.345173	80.136503	Tube Well	Domestic	2.5	1.64	2.2	0.93	1.22	Alluvium	980.0	7.1	
3	GW3	Nelaturupalem Village	14.322341	80.146444	Tube Well	Domestic	2.3	2.25	2.8	1.2	2.5	Alluvium	1,050.0	7.6	
4	GW4	Musunurivari Palem Village	14.345858	80.104698	Tube Well	Domestic	1.2	1.9	3.8	1.4	0.5	Alluvium	1,080.0	7.1	
5	GW5	Amudalapadu Village	14.353089	80.103195	Tube Well	Domestic	1.4	1.2	3.6	2.4	3.1	Alluvium	1,128.0	7.9	
6	GW6	Kothapalem village	14.341648	80.100746	Tube Well	Domestic	1.6	0.48	4.7	1.36	4.92	Alluvium	1,094.0	7.4	
Average							1.92	1.55	3.09	1.39	1.68				

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Table-4a: Details of Piezometers Installed in SEIL Project-1 Premises

Sl. No.	Well No.	Location
1	PW1	Piezo Well No-1- Water – EAST SIDE
2	PW2	Piezo Well No-2- Water – SOUTH SIDE
3	PW3	Piezo Well No-3- Water – WEST SIDE
4	PW4	Piezo Well No-4- Water – NORTH SIDE
5	PW5	Piezo Well No-5– NORTH WEST SIDE

Photographs of Piezometer Wells



Piezo Well No-1- Water – EAST SIDE



Piezo Well No-2- Water – SOUTH SIDE



Piezo Well No-3- Water – WEST SIDE



Piezo Well No-4- Water – NORTH SIDE

Table-4b: Water Level Monitoring Data of Piezometers

Month	Piezo Well No-1 EAST SIDE (PW-1) (m)	Piezo Well No-2 SOUTH SIDE (PW-2) (m)	Piezo Well No-3 WEST SIDE (PW-3) (m)	Piezo Well No-4 NORTH SIDE (PW-4) (m)	Piezo Well No-5 NORTH WEST SIDE (PW-5) (m)
	PW1	PW2	PW3	PW4	PW5
Dec'19	2.1 m	1.70 m	2.21 m	1.28 m	2.11m
Jan'20	1.89 m	1.64 m	2.18 m	2.2 m	2.12 m
Feb'20	2.57 m	1.12 m	2.13 m	1.45 m	1.54 m
Mar'20	2.22 m	2.21 m	2.28 m	1.39 m	1.45 m
Apr'20	2.71 m	2.28 m	2.24 m	1.48 m	1.52 m
May'20	3.71 m	2.24 m	2.12 m	1.42 m	1.47 m
Jun'20	3.69 m	2.29 m	2.22 m	1.24 m	1.75 m
Jul'20	3.7 m	2.27 m	2.31 m	1.44 m	1.23 m
Aug'20	2.62 m	2.37 m	2.19 m	1.40 m	1.78 m
Sep'20	3.5 m	2.14 m	2.25 m	1.34 m	1.32 m
Oct'20	3.21 m	2.07 m	2.39 m	1.43 m	1.45 m
Nov'20	2.5 m	1.86 m	2.37 m	1.23 m	1.34 m
Dec'20	2.2 m	1.74 m	2.12 m	1.67 m	2.04 m
Jan'21	1.6 m	1.7 m	2.42 m	2.12 m	2.13 m
Feb'21	1.45 m	1.61 m	2.45 m	2.18 m	2.14 m
Mar'21	1.23 m	1.38 m	2.24 m	2.42 m	2.13 m
Apr'21	1.27 m	1.28 m	2.25 m	2.32 m	2.23 m
May'21	1.31 m	1.42 m	2.28 m	2.31 m	2.36 m
Jun'21	1.29 m	1.36 m	2.28 m	2.39 m	2.23 m
Jul'21	1.31 m	1.20 m	2.21 m	2.36 m	2.12 m
Aug'21	1.34 m	1.28 m	2.23 m	2.14 m	2.34 m
Sep'21	1.32 m	1.23 m	2.28 m	2.31 m	2.25 m
Oct'21	1.38 m	1.46 m	2.27 m	2.22 m	2.23 m

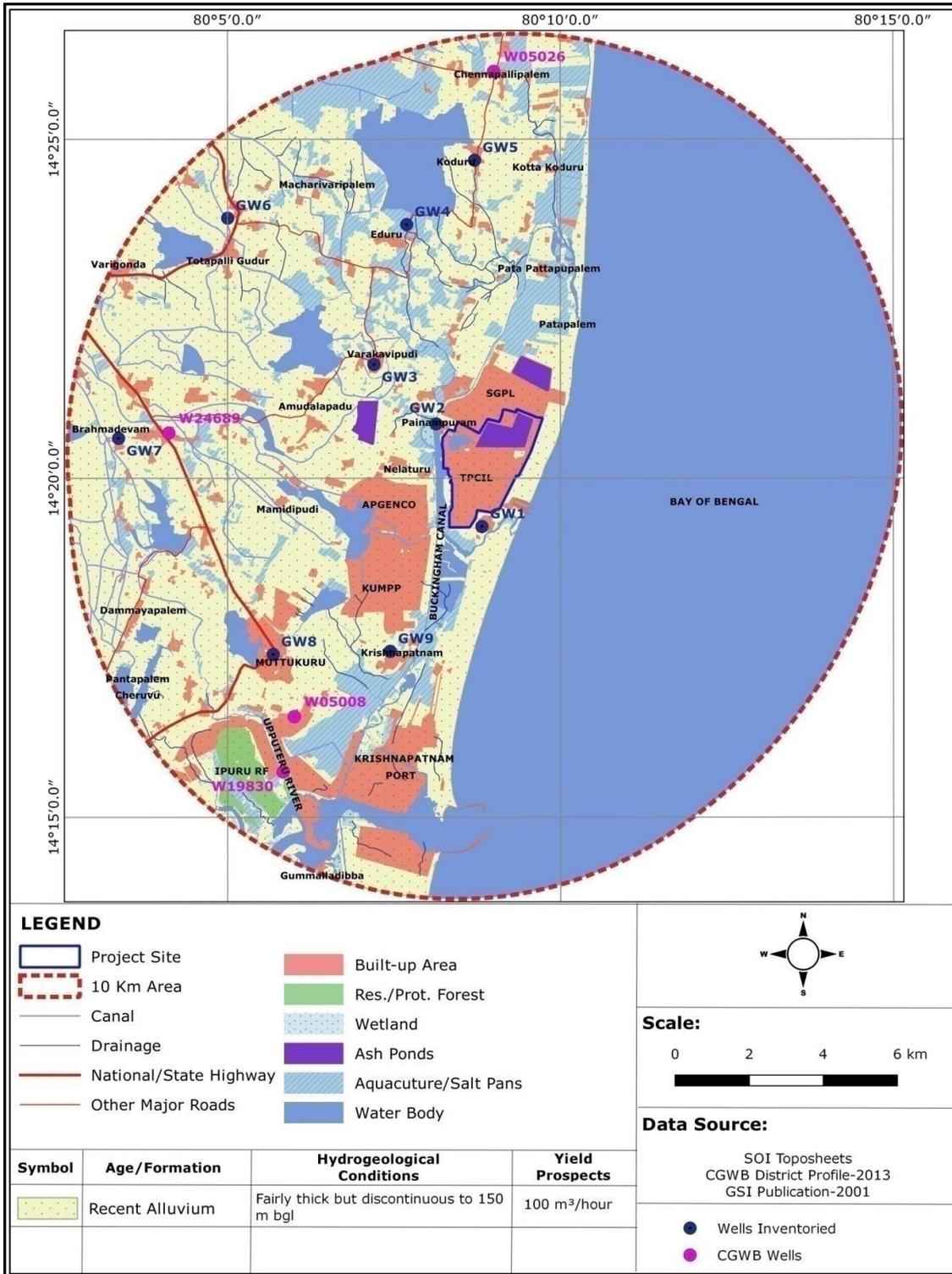


Figure-10: Hydrogeology of the study area

5.0 Movement of Ground Water

Ground water movement mainly takes place through the fractures and joints of the crystalline rocks and the ground water is transmitted through voids and interstitial openings in sedimentary rocks and unconsolidated formations. In other words, movement of ground water is controlled by the hydraulic conductivity of the aquifer and hydraulic gradient.

A review of the topography and drainage pattern reveals that Upputeru River and other creeks empties into Bay of Bengal in the east and the general slope in the inland area is towards Bay of Bengal in the east. The water table contours in the study area almost follow the topography and drainage pattern showing flow direction towards Bay of Bengal. Ground water movement within SEIL Project-1 is towards southwest towards Buckingham canal indicating that the ground water flow direction locally varies.

The hydraulic gradient in the study area in general is observed to be low and across the project site, it is around 1.087 m/km. The hydraulic gradient near coast is observed to be higher as moving away from the coastal area towards inland. Water level contours with respect to mean sea level in the study area vary from 0.0 m along coast to 9.80 amsl in the western part.

The detailed piezo well water quality monitoring data is enclosed as **Annexure-IV**.

6.0 GROUND WATER RESOURCES

6.1 Ground Water Recharge

Ground water recharge or deep drainage or deep percolation is a hydraulic process where water moves downward from surface water to ground water. Recharge is the primary method through which water enters an aquifer. This process usually occurs in the vadose zone below plant roots and is often expressed as a flux to the water table surface. Recharge occurs both naturally through the water cycle (rainfall) and through anthropogenic processes (artificial ground water recharge), where rain water and or reclaimed water is routed to the sub-surface. Most of the rainfall flows downstream as run-off and the amount of rainfall reaching ground water naturally after meeting evaporation and evapo-transpiration losses are very limited. The anthropogenic processes of ground water recharge in the area include return flow from irrigation, unlined canals etc.

Of the total study area of 416.24 sq km, 178.26 sq km (42.83%) of the eastern part is covered by Bay of Bengal. The inland area forms a flat alluvial plain with minor undulations and occasional isolated dunes. The inland area is entirely occupied by unconsolidated alluvial formations of fluvial and marine origin belonging Recent/Quaternary period. Hence only inland area of 237.97 sq km including streams and other water bodies has been considered for recharge estimation. Recharge in the study area has been worked out by rainfall infiltration and increment in ground water storage methods as per the guidelines of Ground Water Estimation Committee (GEC), 1997. Recharge by rainfall infiltration is estimated considering average rainfall of IMD, Nellore from 1991 to 2020 and rainfall infiltration factors of geological units in the study area. The average ground water fluctuation between pre and post monsoon in the study area has been considered to estimate recharge by increment in ground water storage.

7.0 WATER QUALITY

For any water body to function adequately in satisfying the desired use, it must have corresponding degree of purity. Drinking water should be highest purity. As the magnitude of demand for water is fast approaching the availability supply, the concept of management of the quality of water is becoming as important as its quantity. Each water use has specific quality need. IS 2296:1992 specifies surface water quality standards based on the following designated best uses:

- A. Drinking water source without conventional treatment but after disinfection
- B. Outdoor bathing (organized)
- C. Drinking water source after conventional treatment and disinfection
- D. Propagation of wildlife and fisheries
- E. Irrigation, industrial cooling, controlled waste disposal

Drinking water is water intended for human consumption for drinking and cooking purposes from any source. It includes water (treated or untreated) supplied by any means for human consumption. IS10500:2012, Indian Standard was formulated with the objective of assessing the quality of water resources and specified the acceptable and the permissible limits in the absence of alternate source. It is recommended that the acceptable limit is to be implemented. Values in excess of those mentioned under “acceptable” render the water not suitable. Such value may, however, be tolerated in the absence of an alternate source.

pH and TDS of both surface water and ground water from the wells inventoried was measured using portable water testing instruments. Analysis results of 2 surface and 6 ground water samples carried out by M/s Care Labs, Hyderabad. Results of Ground water quality analysis are enclosed as **Annexure-V**.

7.1 Surface Water

The average water consumption of the existing SEIL Project-1 plant is about 1,59,517.72 m³/day (58.22 MCM per year), which is being drawn through intake from Bay of Bengal and used for the plant and all other purposes after treatment in R.O plant.

A review of detailed analysis of surface water samples attached as **Annexure-VI**.

7.2 Ground Water

Total 6 No's of ground water samples were collected and tested. Analysis reports attached as **Annexure-V**.

8.0 IMPACT OF PROPOSED PROJECT ON WATER REGIME AND MITIGATION MEASURES

The construction, commissioning and expansion of any type of developmental projects have significant influence on the existing physical, biological and social components of environment.

The impact of existing SEIL Project-1 on water regime may be in different ways and on surface or ground water or both. Water environment may be affected by the existing SEIL Project-1 in terms of disturbing natural water courses or change in drainage pattern of the area, quantity and quality – due to drawl of water, discharge of polluted/waste water, by contaminated leachate from disposal/dumping of solid waste etc.

8.1 Natural Drainage and Water Bodies

There are no well-defined stream courses passing through the project site, but as per the original pre-project drainage, a small water body with an approximate water spread area of 19.96 ha exists in the north-western part of the project site. It shall be revived to its original capacity through de-silting and strengthening the bund.

A natural depression is developed into a small water body in the eastern part of the project site from which, water is being used for nursery and nearby gardening.

8.1.1 Water Availability

Use of sea water is in favour of saving fresh water resources, easing tensions in industrial water, availability in abundant quantity, scope of economy, environment etc.

As per the GEC 97 norms, areas where ground water resources assessment shows stage of ground water development at 70% or lower and there is no significant long-term decline of pre or post monsoon ground water levels are categorized as “Safe” areas with potential for development.

8.2 Water Quality

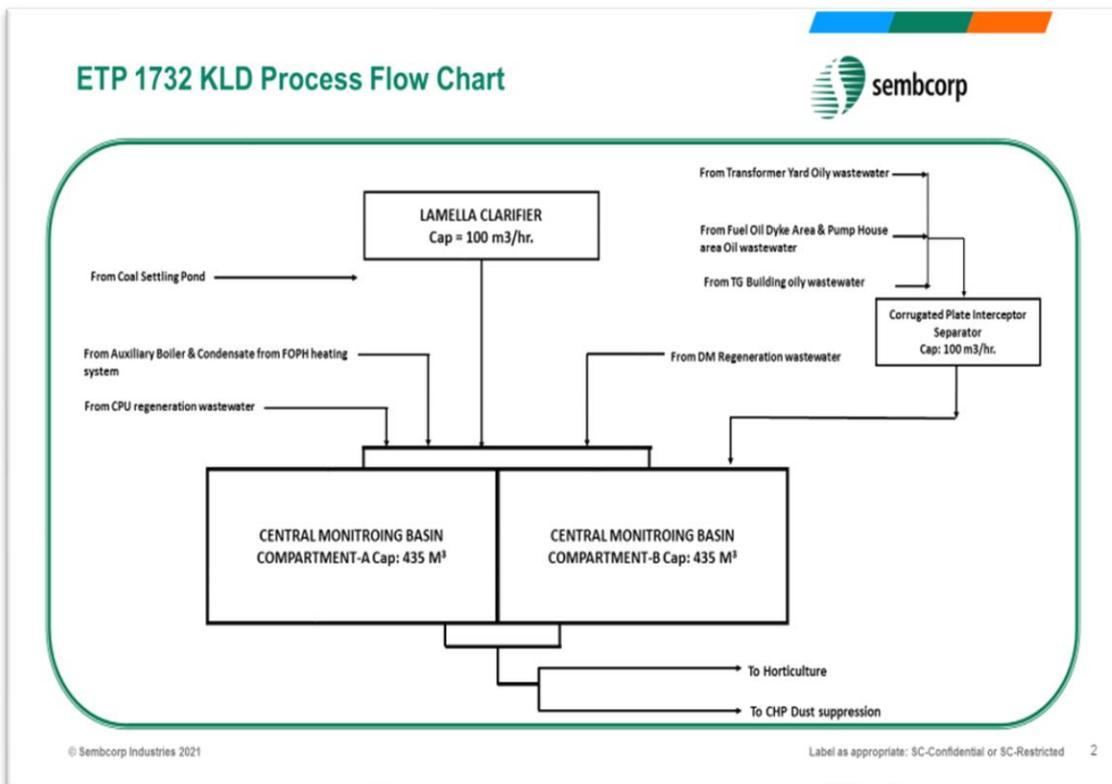
Impact on water quality during construction and operation of any industry may be due to sewage generated from the domestic facilities, waste water generated from different plant operations, waste and oil spillage from the workshop, ash or other waste disposal etc. it is important to ensure that the water discharged from the project meet the relevant disposal norms and water being used in the project meets the relevant national standards. The major consumptive units and/or waste generation units in the

existing SEIL Project-1 plant are cooling towers, DM plant, seal quenching, AC ventilation, dust suppression, miscellaneous service water, ash transport etc.

1732 KLD capacity of ETP is installed which involves treatment process of

- Sedimentation
- Aeration
- Oil water separation
- pH adjustment
- Coagulation
- Flocculation

A detailed schematic diagram is represented below:



Flow diagram of Effluent Treatment Plant

Photographs of Effluent Treatment Plant



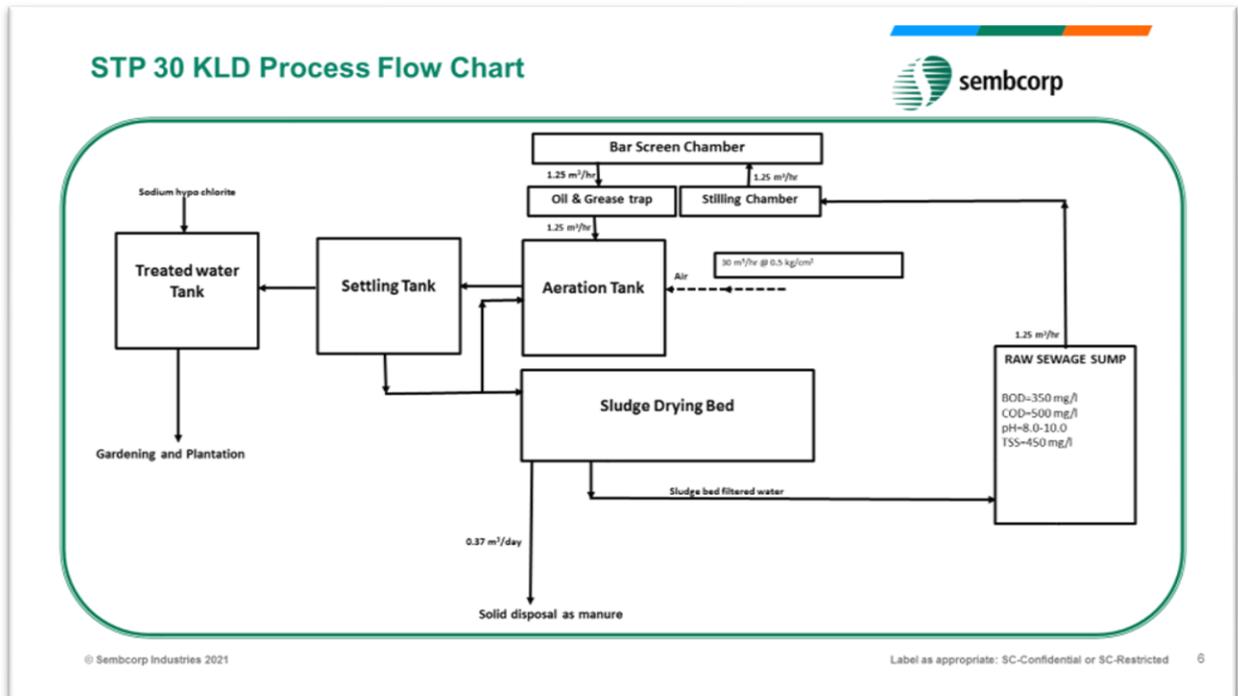


The treated water generated is used in CHP dust suppression system and green belt development.

STP Details

30 KLD capacity of STP is installed. It involves treatment process for

- Equalization
- Aerobic biological activity
- Sedimentation
- Disinfection
- Filtration
- Solid water separation



Flow Diagram of Sewage Treatment Plant

And the treated water is used for greenbelt development.

Photograph of Sewage Treatment Plant



9.0 WATER RESOURCE MANAGEMENT PLAN

9.1 Ground Water Development

No ground water is being abstracted for the plant activities. The present stage of ground water development in the study area is estimated as 52.96% and the long-term trend of water level (1999 to 2019) of CGWB monitoring wells indicates that during pre-monsoon, a raise in the range of 0.0123 to 0.1700 m/year in Kondapuram, Dagadarthi, Podalakuru, Venkatachalam, Muthukur and DF Satram area. Hence the study area can be categorized as “Safe” in terms of ground water development.

9.2 Water Conservation and Artificial Recharge

9.2.1 Rain Water Potential

To understand the quantum of water available from the project area for rain water harvesting, reuse and ground water recharge, a tentative run-off estimation based on different land uses in the area is worked out and presented in **Table-6**. A compound wall was constructed all along the plant boundary and hence no run-off from the catchment outside plant premises is expected. The annual volume of rain water available from the existing plant area spread in 1367.0 acres (553.21 ha) is estimated at 348.425 m³. Considering only 80% of the run-off as available volume after

evaporation, spillage and first flush wastage, of rain water is available for harvesting, reuse and ground water recharge.

Table-5: Annual & Monsoon Run-Off from Project Site

Sl. No.	Land Use	Area (ha)	Run-off Coefficient	Annual Rainfall (m)	Annual Run- off (m ³)
1	Buildings	8.09	0.7	1.069	6.054
2	Plant area	217.32	0.7	1.069	162.621
3	Roads & paved area	8.09	0.9	1.069	7.783
4	Open area (mostly sandy with grass)	40.47	0.3	1.069	12.979
5	Greenbelt	157.83	0.25	1.069	42.180
6	Ash Pond	121.41	0.9	1.069	116.809
					348.425

Considering the ground water scenario in the area in terms of 1) ground water development in the area is categorized as “**Safe**”, 2) there is a marginal raise in long term pre monsoon water level as per CGWB findings, 3) post monsoon water level in the project site is less than 2.50 mbgl, the water conservation and artificial recharge system in SEIL Project-1 plant area may be more on water harvesting and reuse to reduce the dependency on external water and less on artificial recharge.

9.2.2 Scope for Further Rain Water Harvesting/Recharge Measures

As discussed under 8.2.1, the water harvesting and artificial recharge system in SEIL Project-1 plant area may be more on water harvesting and reuse to reduce the dependency on external water and less on artificial recharge. Further rain water harvesting measures in SEIL Project-1 may include the following:

Roof Top Rain Water Harvesting

Buildings with RCC roof covering an area of 73600 sq m (7.36 ha) are found to be feasible to take up roof top rain water harvesting and reuse for green belt/plantation, toilets and other non-potable uses. The annual quantity of rain water expected from the roof tops of these buildings is

about 55692.03 m³ (0.056 MCM).

The volume of storage tank/sump can be determined by the following factors:

- 9.2.2.1 Average annual rainfall
- 9.2.2.2 Water requirement
- 9.2.2.3 Period of water scarcity
- 9.2.2.4 Type and size of catchment
- 9.2.2.5 Space constraint for storage tank

The storage tank/sump size may vary from the lowest in case of immediate/simultaneous use to hold at least 15-minute peak rainfall to highest in case of later use to hold at least 24- hour peak rainfall. The sump/tank capacities for 15-minute, 1 hour and 24-hour peak rainfall events for the cumulative roof area of buildings are presented in **Table-7**. A tentative roof top rain water harvesting design is shown in **Figure-11**.

Table-7: Rain Water Availability for Roof Areas and Storage Details

Sl. No.	Measure Description	Run-off Coefficient	Area (m ²)	Annual Rainfall (m)	Annual Quantity of Water Harvested (m ³)
1	Fire Station	0.80	37.56	1.069	32.121312
2	Fuel Oil Pump House	0.80	590.31	1.069	504.833112
3	RO & DM Building	0.80	2115.46	1.069	1809.141392
Total					2346.095816

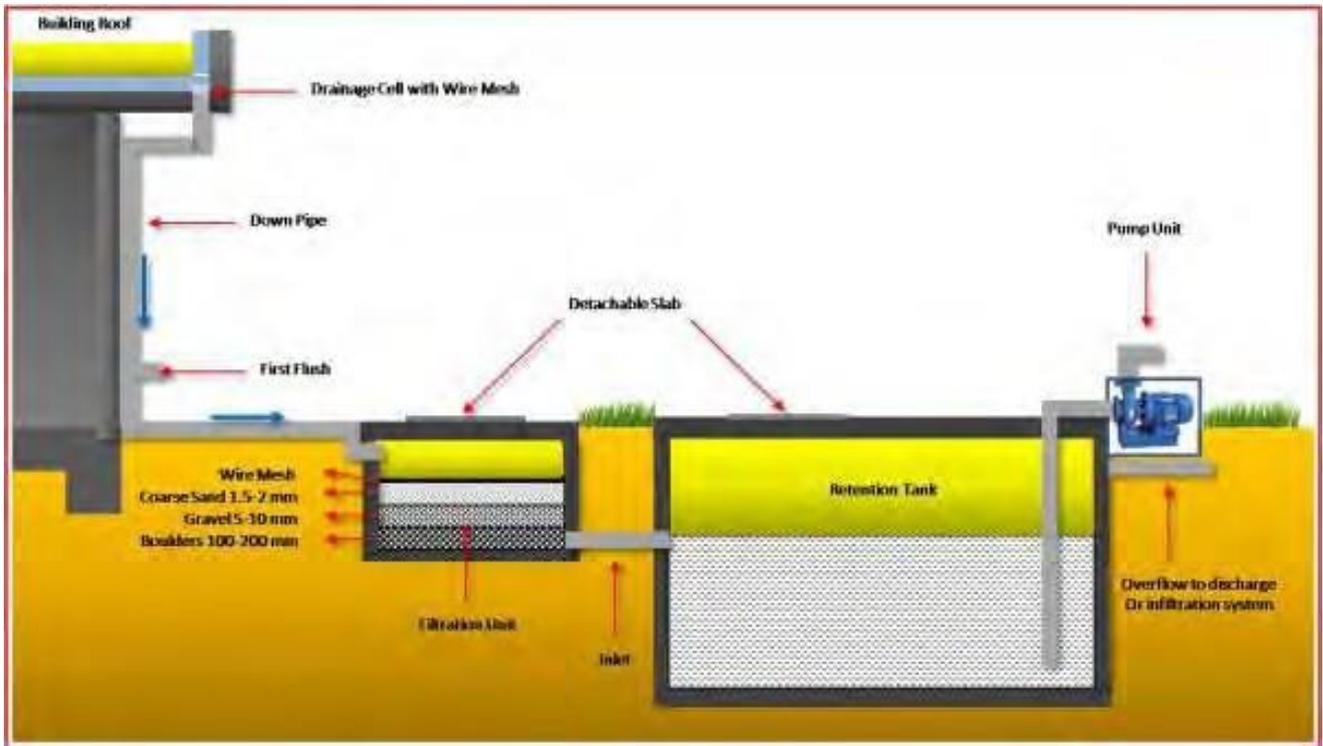


Figure-11: Roof Top Rain Water Harvesting Design

Photographs- Rainwater Harvesting



9.3 Storm Water Management

About 60 to 65% of the rainfall received in the project site is expected as run-off after rain water harvesting and recharge measures.

Storm water management is already developed by installing intercepting drains in the plant area. The storm water drain network has main and secondary drains covering 260.00 ha approximately with 7 outfalls – 6 in the western side towards Buckingham canal and one in the north-eastern side towards Bay of Bengal. Storm water from plant, coal handling and other pollution prone areas shall be separated and diverted to ETP for treatment and reused for plantation and other non-portable uses. Part of the storm water from open and non-polluted areas shall be diverted to a rain water harvesting system and used for non-potable uses.

The rain water collected in garland drain provided around the ash pond is diverted to storm water drain before it is discharged into Bay of Bengal. Water from the wet ash dumped in ash pond is drained by gradient towards south-eastern part of the ash pond and is treated in ETP and reused for plantation. Layout of storm water drains is presented in **Figure-12**.

Storm water and garland drains are observed to be silted up at some places not allowing free flow of water downstream. It is also noticed that during peak rainfall and high tidal events, storm water flow at the outlet points is restricted creating backflow into the drains. This can be reduced diverting part of storm flow from the drains to process water usage with necessary filtration arrangement.

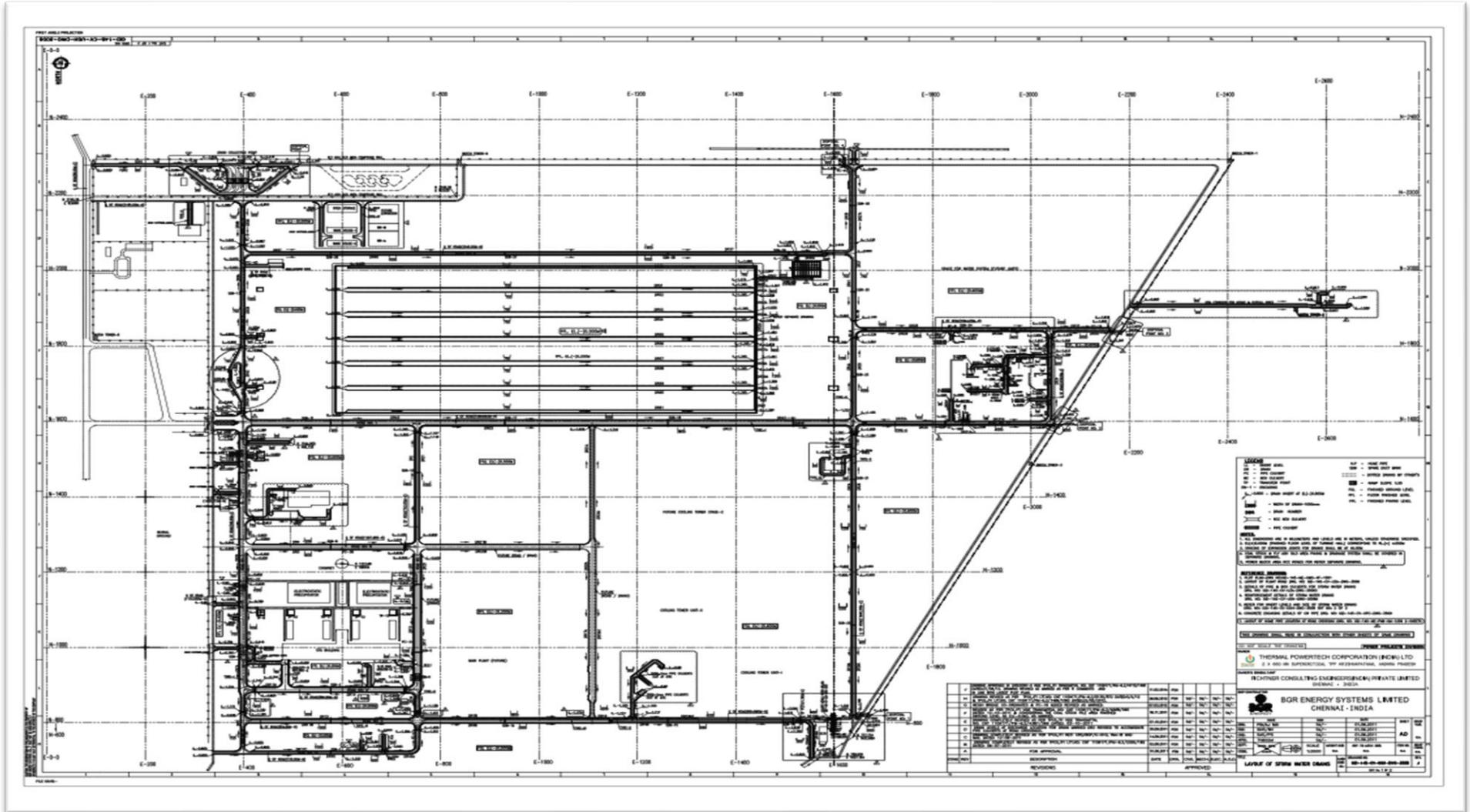


Figure-12: Layout of Storm Water Drains

Storm Water Management System

Storm water from plant, coal handling and other pollution prone areas shall be separated and diverted to ETP for treatment and reused for plantation and other non-portable uses. Part of the storm water from open and non-polluted areas shall be diverted to a rain water harvesting system and used for non-potable uses.

The rain water collected in the garland drain provided around the ash pond is diverted to storm water drain before it is discharged into Bay of Bengal. Water from the wet ash dumped in ash pond is drained by gradient in to a separate pond through a filtration system. This water collected in the water pond is treated in clarifier before discharging into sea.

SEIL Project-1 has already implemented artificial recharge measures at 7 locations with side walls pitched with cuddapah stone and cement leaving the bottom open to allow direct infiltration. Cement lined diversion channels from storm water drains are connected to these recharge ponds to get additional inflow. Gratings were installed before storm water reaches recharge ponds to remove suspended pollutants and silt from storm water diverted.

Storm water and garland drains, drains leading to rain water harvesting/recharge measures and filtration units shall be regularly monitored and maintained at least before monsoon.

10.0 CONCLUSION

Of the total study area of 416.24 sq km, 178.26 sq km (42.83%) of the eastern part is covered by Bay of Bengal. The inland area forms a flat alluvial plain with minor undulations and occasional isolated dunes. Elevation in the project site varies from 0.5 m to 7.0 m amsl in the beginning. Major part the area is graded at present for setting up of the plant. Central and northern part of the project site is having higher elevation sloping towards Buckingham canal in the west, creek in the south and Bay of Bengal in the east.

The principal stream in the study area is Upputeru River, which drains into Bay of Bengal in the southernmost part of the study area as Kandleru Creek. It runs as Kandleru River in the upper reaches until its tributary, Kolleru River joins it and flows as Upputeru River afterwards. Two smaller creeks with their drainage network originating within and just outside the study area joins Bay of Bengal south of SEIL Project-1 and Pathapalli respectively. Major part of the study area is drained by the drainage network of smaller creeks intercepted by small to medium sized water bodies/tanks. Buckingham Canal, once a fresh water navigation canal runs parallel to the coast. Secondary channels from Nellore Barrage on Pennar River runs from west up to Muthukur in the study area with other minor channels inter- connecting bigger water bodies spread in major part of inland area.

The inland area is entirely occupied by unconsolidated alluvial formations of fluvial and marine origin belonging Recent/Quaternary period. As per Earthquake Hazard Map of India, Building Materials and Technology Promotion Council (BMTPC), the study area falls in Moderate Damage Risk Zone – Zone 3 (MSK VII).

From the water quality results, it is observed that the ground water quality around aquaculture ponds is poor indicating the influence of backwaters and poor-quality ground water being used in large quantities.

The present stage of ground water development is estimated as 51.90% and the long-term trend of water level (1999 to 2019) of CGWB monitoring wells indicates that during pre- monsoon, a raise in the range of 0.0123 to 0.1700 m/year in Kondapuram, Dagadathi, Podalakuru, Venkatachalam, Muthukur and DF Satram area. Hence the study area can be categorized as “**Safe**” in terms of ground water development.

ANNEXURE- I

ANNEXURE- II

ANNEXURE- III

SEEL P-1
[TRICIL]



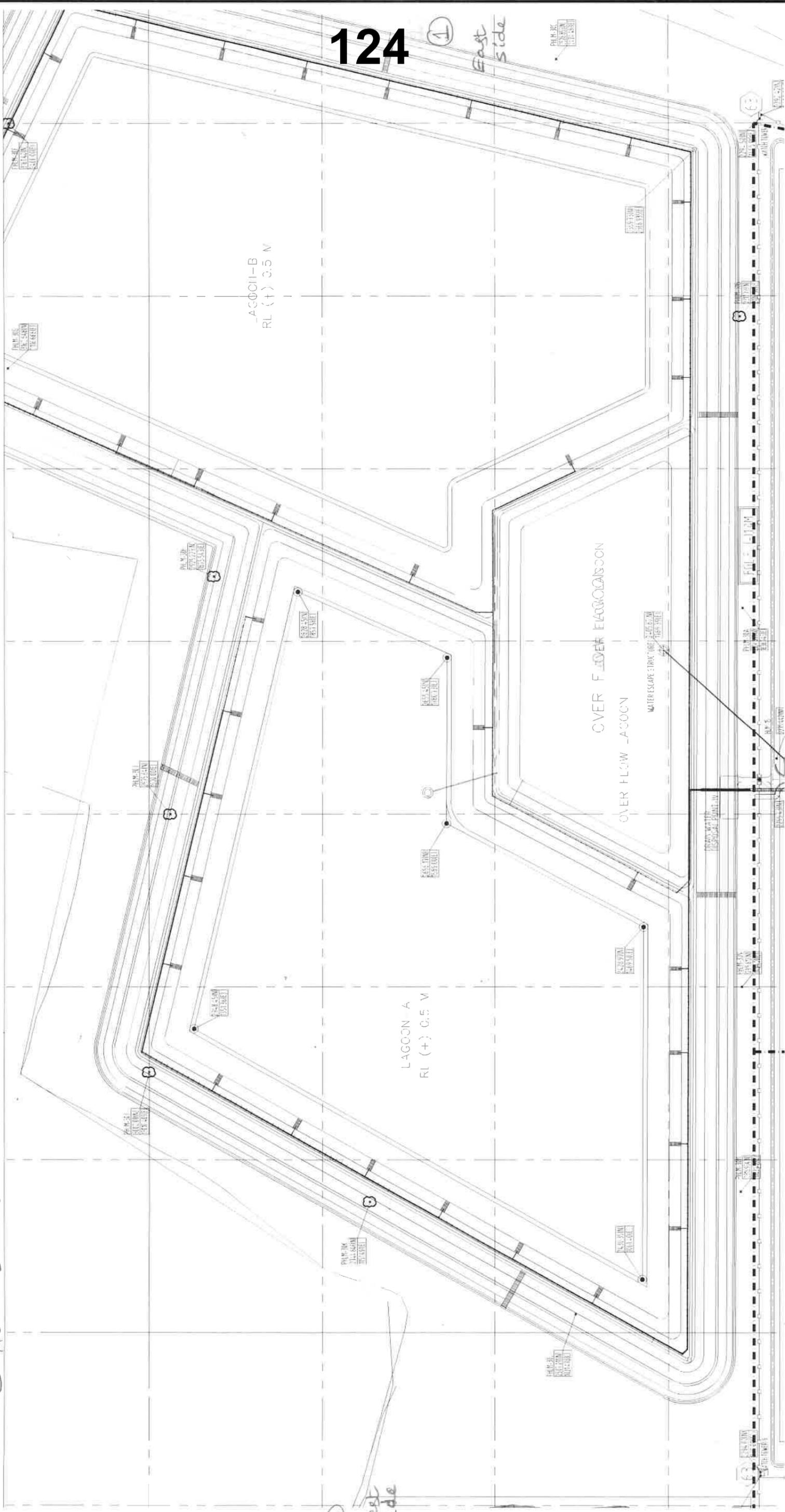
④ North side

⑤ Northwest (NW) side

③ West side

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① East side



② South side

ANNEXURE- IV

TEST REPORT

ISSUED TO:

M/s. Sembcorp Energy India Limited, Project-1
(2x660 MW Coal Based Thermal Power Plant),
Near Pynampuram/ Nelaturu (V), Muthukur (M),
SPSR Nellore (Dist.)- 524344.

Issue Date: 21.09.2021

Sample Registration No: 8019/09/21-001

Date of Sampling: 13.09.2021

Sample Registration Date: 16.09.2021

Analysis Starting Date: 16.09.2021

Analysis Completed Date: 21.09.2021

Sample Description:

Discipline: Chemical

Group: Water

Sample Particulars: Piezo Well No-1- Water – EAST SIDE (PW-1)

Sample Particulars: Piezo Well No-2- Water – SOUTH SIDE (PW-2)

Sample Collected By: (Mr. Sridhar)

Lab Ref: CL/W/8019/09/21-001&002/21

TEST RESULTS

S. NO.	TEST PARAMETERS	UNITS	TEST METHOD	RESULTS		STANDARDS AS PER IS: 10500	
				PW-1	PW-2	ACCEPTABLE	PERMISSIBLE
1.	pH	---	APHA-4500-B	7.4	7.6	6.5- 8.5	No Relaxation
2.	Color	Hazen	APHA-2120-B	1.0	1.0	1.0	5.0
3.	Turbidity	NTU	APHA-2130-B	0.4	0.6	1.0	5.0
4.	Electric Conductivity	µs/cm	APHA-2510-B	858	896	--	--
5.	Temperature	°C	--	29.2	29.4	--	--
6.	Total Suspended Solids	mg/l	APHA-2340-B	6.0	8.0	--	--
7.	Total Dissolved Solids	mg/l	APHA-2540-B	414	438	500	2000
8.	Total Hardness as CaCO ₃	mg/l	APHA-2340-B	148	162	200	600
9.	Total Alkalinity as CaCO ₃	mg/l	APHA-2320-B	174	182	200	600
10.	Calcium as Ca	mg/l	APHA-3120Ca-B	42.6	45.2	75	200
11.	Magnesium as Mg	mg/l	APHA-3120Mg-B	10.2	11.8	30	100
12.	Free Residual Chlorine	mg/l	APHA-4500-Cl-C	<0.1	<0.1	0.2	No Relaxation
13.	Boron as B	mg/l	APHA-3111-B	<0.1	<0.1	0.5	1.0
14.	Calcium Hardness as CaCO ₃	mg/l	APHA-3120Ca-B	86	94	--	--
15.	Magnesium Hardness as CaCO ₃	mg/l	APHA-3120Mg-B	62	68	--	--

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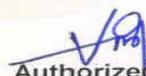

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16.	Sodium as Na	mg/l	APHA-3120Na-B	116	120	--	--
17.	Potassium as K	mg/l	APHA-3120 K-B	6.0	8.0	--	--
18.	Chloride as Cl	mg/l	APHA-4500-Cl-C	132	142	250	1000
19.	Sulphates as SO ₄	mg/l	APHA-4500SO ₄ -C	57.2	58.8	200	400
20.	Nitrates as NO ₃	mg/l	APHA-4500NO ₃ -C	22.4	24.6	45	No Relaxation
21.	Chemical oxygen demand	mg/l	APHA-5220B	<5.0	<5.0		
22.	Biochemical oxygen demand (3 days at 27°C)	mg/l	IS:3025(Part-44)-1993	<3.0	<3.0	--	--
23.	Iron as Fe	mg/l	APHA-3120-Fe-B	0.16	0.18	<0.3	No Relaxation
24.	Fluoride as F	mg/l	APHA-4500-F-E	0.60	0.68	<1.0	<1.5
25.	Copper as Cu	mg/l	APHA-3111B	<0.01	<0.01	<0.05	<1.5
26.	Manganese as Mn	mg/l	APHA-3111B	< 0.1	< 0.1	<0.1	<0.3
27.	Phenolic Compounds as C ₆ H ₅ OH	mg/l	APHA-5530-C	< 0.001	< 0.001	<0.001	<0.002
28.	Cadmium as Cd	mg/l	APHA-3111B	< 0.001	< 0.001	<0.003	No Relaxation
29.	Mercury as Hg	mg/l	APHA-3111Hg	< 0.001	< 0.001	<0.001	No Relaxation
30.	Selenium as Se	mg/l	APHA-3111Se	< 0.01	< 0.01	<0.01	No Relaxation
31.	Total Arsenic as As	mg/l	APHA-3111As	< 0.01	< 0.01	<0.01	<0.20
32.	Cyanide as CN	mg/l	APHA-3111B	< 0.01	< 0.01	<0.05	No Relaxation
33.	Lead as Pb	mg/l	APHA-3111B	< 0.01	< 0.01	<0.01	No Relaxation
34.	Zinc as Zn	mg/l	APHA-3111B	<0.01	<0.01	<5.0	<15
35.	Total Chromium as Cr ⁺⁶	mg/l	APHA-3111B	< 0.01	< 0.01	<0.005	<1.0
36.	Aluminium as Al	mg/l	APHA-3111B	<0.01	<0.01	0.5	1.0
37.	Pesticides	mg/l	As per STP	< 0.01	< 0.01	--	No Relaxation
38.	Dissolved Oxygen	mg/l	APHA-4500-C	4.4	4.8	--	--
39.	Oil & Grease	mg/l	APHA-5520-C	<1.0	<1.0	--	--
40.	Phosphates as PO ₄	mg/l	APHA-4500-A	<0.01	<0.01	--	--
41.	Percent Sodium	%	APHA-3120Na-B	38.4	39.2	--	--
42.	E-Coli	Per/100ml	ISO 9308-1	Absent	Absent	Absent/100ml	Absent/100ml
43.	Total Coliforms	Per/100ml	ISO 9308-1	Absent	Absent	Absent/100ml	Absent/100ml
44.	Fecal Coliforms	MPN/100ml		Absent	Absent	--	--

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TEST REPORT

ISSUED TO:

M/s. Sembcorp Energy India Limited, Project-1
(2x660 MW Coal Based Thermal Power Plant),
Near Pynampuram/ Nelaturu (V), Muthukur (M),
SPSR Nellore (Dist.)- 524344.

Issue Date: 21.09.2021

Sample Registration No: 8019/09/21-003&004

Date of Sampling: 13.09.2021

Sample Registration Date: 16.09.2021

Analysis Starting Date: 16.09.2021

Analysis Completed Date: 21.09.2021

Sample Description:

Discipline: Chemical

Group: Water

Sample Particulars: Piezo Well No-3- Water – WEST SIDE (PW-3)

Sample Particulars: Piezo Well No-4- Water – NORTH SIDE (PW-4)

Sample Collected By: (Mr. Sridhar)

Lab Ref: CL/W/8019/09/21-003&004/21

TEST RESULTS

S. NO.	TEST PARAMETERS	UNITS	TEST METHOD	RESULTS		STANDARDS AS PER IS: 10500	
				PW-3	PW-4	ACCEPTABLE	PERMISSIBLE
1.	pH	---	APHA-4500-B	7.2	7.3	6.5- 8.5	No Relaxation
2.	Color	Hazen	APHA-2120-B	1.0	1.0	1.0	5.0
3.	Turbidity	NTU	APHA-2130-B	0.6	0.4	1.0	5.0
4.	Electric Conductivity	µs/cm	APHA-2510-B	808	788	--	--
5.	Temperature	°C	--	29.4	29.1	--	--
6.	Total Suspended Solids	mg/l	APHA-2340-B	5.4	4.0	--	--
7.	Total Dissolved Solids	mg/l	APHA-2540-B	484	472	500	2000
8.	Total Hardness as CaCO ₃	mg/l	APHA-2340-B	142	138	200	600
9.	Total Alkalinity as CaCO ₃	mg/l	APHA-2320-B	164	158	200	600
10.	Calcium as Ca	mg/l	APHA-3120Ca-B	41.4	40.8	75	200
11.	Magnesium as Mg	mg/l	APHA-3120Mg-B	9.4	8.8	30	100
12.	Free Residual Chlorine	mg/l	APHA-4500-Cl-C	<0.1	<0.1	0.2	No Relaxation
13.	Boron as B	mg/l	APHA-3111-B	<0.1	<0.1	0.5	1.0
14.	Calcium Hardness as CaCO ₃	mg/l	APHA-3120Ca-B	82	80	--	--
15.	Magnesium Hardness as CaCO ₃	mg/l	APHA-3120Mg-B	60	58	--	--
16.	Sodium as Na	mg/l	APHA-3120Na-B	110	106	--	--
17.	Potassium as K	mg/l	APHA-3120 K-B	5.0	4.0	--	--

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18.	Chloride as Cl	mg/l	APHA-4500-Cl-C	126	122	250	1000
19.	Sulphates as SO ₄	mg/l	APHA-4500SO ₄ -C	54.0	51.8	200	400
20.	Nitrates as NO ₃	mg/l	APHA-4500NO ₃ -C	21.8	20.6	45	No Relaxation
21.	Chemical oxygen demand	mg/l	APHA-5220B	<5.0	<5.0		
22.	Biochemical oxygen demand (3 days at 27°C)	mg/l	IS:3025(Part-44)-1993	<3.0	<3.0	--	--
23.	Iron as Fe	mg/l	APHA-3120-Fe-B	0.14	0.10	<0.3	No Relaxation
24.	Fluoride as F	mg/l	APHA-4500-F-E	0.54	0.51	<1.0	<1.5
25.	Copper as Cu	mg/l	APHA-3111B	<0.01	<0.01	<0.05	<1.5
26.	Manganese as Mn	mg/l	APHA-3111B	< 0.1	< 0.1	<0.1	<0.3
27.	Phenolic Compounds as C ₆ H ₅ OH	mg/l	APHA-5530-C	< 0.001	< 0.001	<0.001	<0.002
28.	Cadmium as Cd	mg/l	APHA-3111B	< 0.001	< 0.001	<0.003	No Relaxation
29.	Mercury as Hg	mg/l	APHA-3111Hg	< 0.001	< 0.001	<0.001	No Relaxation
30.	Selenium as Se	mg/l	APHA-3111Se	< 0.01	< 0.01	<0.01	No Relaxation
31.	Total Arsenic as As	mg/l	APHA-3111As	< 0.01	< 0.01	<0.01	<0.20
32.	Cyanide as CN	mg/l	APHA-3111B	< 0.01	< 0.01	<0.05	No Relaxation
33.	Lead as Pb	mg/l	APHA-3111B	< 0.01	< 0.01	<0.01	No Relaxation
34.	Zinc as Zn	mg/l	APHA-3111B	<0.01	<0.01	<5.0	<15
35.	Total Chromium as Cr ⁺⁶	mg/l	APHA-3111B	< 0.01	< 0.01	<0.005	<1.0
36.	Aluminium as Al	mg/l	APHA-3111B	<0.01	<0.01	0.5	1.0
37.	Pesticides	mg/l	As per STP	< 0.01	<0.01	--	No Relaxation
38.	Dissolved Oxygen	mg/l	APHA-4500-C	3.8	5.8	--	--
39.	Oil & Grease	mg/l	APHA-5520-C	<1.0	<1.0	--	--
40.	Phosphates as PO ₄	mg/l	APHA-4500-A	<0.01	<0.01	--	--
41.	Percent Sodium	%	APHA-3120Na-B	40.2	36.2	--	--
42.	E-Coli	Per/100ml	ISO 9308-1	Absent	Absent	Absent/100ml	Absent/100ml
43.	Total Coliforms	Per/100ml	ISO 9308-1	Absent	Absent	Absent/100ml	Absent/100ml
44.	Fecal Coliforms	MPN/100ml		Absent	Absent	--	--

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TEST REPORT

ISSUE TO:

M/s. Sembcorp Energy India Limited, Project-1
(2x660 MW Coal Based Thermal Power Plant),
Near Pynampuram/ Nelaturu (V), Muthukur (M),
SPSR Nellore (Dist.)- 524344.

Issue Date: 21.09.2021

Sample Registration No: 8019/09/21-005&006

Date of Sampling: 13.09.2021

Sample Registration Date: 16.09.2021

Analysis Starting Date: 16.09.2021

Analysis Completed Date: 21.09.2021

Sample Description:

Discipline: Chemical

Group: Water

Sample Particulars: Piezo Well No-5- NORTH WEST SIDE (PW-5)

Sample Collected By: (Mr. Sridhar)

Lab Ref: CL/W/8019/09/21-005&006/21

TEST RESULTS

S. NO.	TEST PARAMETERS	UNITS	TEST METHOD	RESULTS	STANDARDS AS PER IS: 10500	
				PW-5	ACCEPTABLE	PERMISSIBLE
1.	pH	---	APHA-4500-B	7.5	6.5- 8.5	No Relaxation
2.	Color	Hazen	APHA-2120-B	1.0	1.0	5.0
3.	Turbidity	NTU	APHA-2130-B	0.5	1.0	5.0
4.	Electric Conductivity	µs/cm	APHA-2510-B	878	--	--
5.	Temperature	°C	--	29.8	--	--
6.	Total Suspended Solids	mg/l	APHA-2340-B	10	--	--
7.	Total Dissolved Solids	mg/l	APHA-2540-B	426	500	2000
8.	Total Hardness as CaCO ₃	mg/l	APHA-2340-B	156	200	600
9.	Total Alkalinity as CaCO ₃	mg/l	APHA-2320-B	178	200	600
10.	Calcium as Ca	mg/l	APHA-3120Ca-B	43.8	75	200
11.	Magnesium as Mg	mg/l	APHA-3120Mg-B	11.4	30	100
12.	Free Residual Chlorine	mg/l	APHA-4500-Cl-C	<0.1	0.2	No Relaxation
13.	Boron as B	mg/l	APHA-3111-B	<0.1	0.5	1.0
14.	Calcium Hardness as CaCO ₃	mg/l	APHA-3120Ca-B	92	--	--
15.	Magnesium Hardness as CaCO ₃	mg/l	APHA-3120Mg-B	66	--	--

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16.	Sodium as Na	mg/l	APHA-3120Na-B	122	--	--
17.	Potassium as K	mg/l	APHA-3120 K-B	8.0	--	--
18.	Chloride as Cl	mg/l	APHA-4500-Cl-C	144	250	1000
19.	Sulphates as SO ₄	mg/l	APHA-4500SO ₄ -C	59.2	200	400
20.	Nitrates as NO ₃	mg/l	APHA-4500NO ₃ -C	24.0	45	No Relaxation
21.	Chemical oxygen demand	mg/l	APHA-5220B	<5.0		
22.	Biochemical oxygen demand (3 days at 27°C)	mg/l	IS:3025(Part-44)-1993	<3.0	--	--
23.	Iron as Fe	mg/l	APHA-3120-Fe-B	0.26	<0.3	No Relaxation
24.	Fluoride as F	mg/l	APHA-4500-F-E	0.68	<1.0	<1.5
25.	Copper as Cu	mg/l	APHA-3111B	<0.01	<0.05	<1.5
26.	Manganese as Mn	mg/l	APHA-3111B	< 0.1	<0.1	<0.3
27.	Phenolic Compounds as C ₆ H ₅ OH	mg/l	APHA-5530-C	< 0.001	<0.001	<0.002
28.	Cadmium as Cd	mg/l	APHA-3111B	< 0.001	<0.003	No Relaxation
29.	Mercury as Hg	mg/l	APHA-3111Hg	< 0.001	<0.001	No Relaxation
30.	Selenium as Se	mg/l	APHA-3111Se	< 0.01	<0.01	No Relaxation
31.	Total Arsenic as As	mg/l	APHA-3111As	< 0.01	<0.01	<0.20
32.	Cyanide as CN	mg/l	APHA-3111B	< 0.01	<0.05	No Relaxation
33.	Lead as Pb	mg/l	APHA-3111B	< 0.01	<0.01	No Relaxation
34.	Zinc as Zn	mg/l	APHA-3111B	<0.01	<5.0	<15
35.	Total Chromium as Cr ⁺⁶	mg/l	APHA-3111B	< 0.01	<0.005	<1.0
36.	Aluminium as Al	mg/l	APHA-3111B	<0.01	0.5	1.0
37.	Pesticides	mg/l	As per STP	< 0.01	--	No Relaxation
38.	Dissolved Oxygen	mg/l	APHA-4500-C	6.0	--	--
39.	Oil & Grease	mg/l	APHA-5520-C	<1.0	--	--
40.	Phosphates as PO ₄	mg/l	APHA-4500-A	<0.01	--	--
41.	Percent Sodium	%	APHA-3120Na-B	39.2	--	--
42.	E-Coli	Per/100ml	ISO 9308-1	Absent	Absent/100 ml	Absent/100ml
43.	Total Coliforms	Per/100ml	ISO 9308-1	Absent	Absent/100 ml	Absent/100ml
44.	Fecal Coliforms	MPN/100ml		Absent	--	--

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ANNEXURE- V

TEST REPORT

ISSUED TO:

M/s. Sembcorp Energy India Limited, Project-1
(2x660 MW Coal Based Thermal Power Plant),
Near Pynampuram/ Nelaturu (V), Muthukur (M),
SPSR Nellore (Dist.)- 524344.

Issue Date: 21.09.2021

Sample Registration No: 8019/09/21-001&002

Date of Sampling: 13.09.2021

Sample Registration Date: 16.09.2021

Analysis Starting Date: 16.09.2021

Analysis Completed Date: 21.09.2021

Sample Description:

Discipline: Chemical

Group: Water

Sample Particulars: Ground Water – Nelaturu Village (GW-1)

Sample Particulars: Ground Water – Pynampuram Village (GW-2)

Sample Collected By: (Mr. Sridhar)

Lab Ref: CLW/8019/09/21-001&002/21

TEST RESULTS

S. NO.	TEST PARAMETERS	UNITS	TEST METHOD	RESULTS		STANDARDS AS PER IS: 10500	
				GW-1	GW-2	ACCEPTABLE	PERMISSIBLE
1.	pH	---	APHA-4500-B	7.3	7.2	6.5- 8.5	No Relaxation
2.	Color	Hazen	APHA-2120-B	1.0	1.0	1.0	5.0
3.	Taste	--	IS-3025(Pt-8)	Agreeable	Agreeable	Agreeable	Agreeable
4.	Odour	--	IS-3025(Pt-5)	Agreeable	Agreeable	Agreeable	Agreeable
5.	Turbidity	NTU	APHA-2130-B	0.3	0.6	1.0	5.0
6.	Electric Conductivity	µs/cm	APHA-2510-B	1,310	1,428	--	--
7.	Total Dissolved Solids	mg/l	APHA-2540-B	628	740	500	2000
8.	Total Hardness as CaCO ₃	mg/l	APHA-2340-B	260	380	200	600
9.	Total Alkalinity as CaCO ₃	mg/l	APHA-2320-B	318	324	200	600
10.	P- Alkalinity as CaCO ₃	mg/l	APHA-2320-B	Nil	Nil	---	---
11.	Calcium as Ca	mg/l	APHA-3120Ca-B	74	86	75	200
12.	Magnesium as Mg	mg/l	APHA-3120Mg-B	202	38	30	100
13.	Free Residual Chlorine	mg/l	APHA-4500-Cl-C	0.1	0.1	0.2	No Relaxation
14.	Boron as B	mg/l	APHA-3111-B	0.1	0.1	0.5	1.0

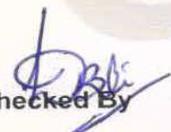
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15.	Sodium as Na	mg/l	APHA-3120Na-B	108	168	--	--
16.	Potassium as K	mg/l	APHA-3120 K-B	10	14	--	--
17.	Chloride as Cl	mg/l	APHA-4500-Cl-C	226	218	250	1000
18.	Sulphates as SO ₄	mg/l	APHA-4500SO ₄ -C	48	86	200	400
19.	Nitrates as NO ₃	mg/l	APHA-4500NO ₃ -C	25.2	30.6	45	No Relaxation
20.	Anionic Detergents as MBAS	mg/l	Annex K of IS 13428	< 0.1	< 0.1	<0.2	<1.0
21.	Mineral Oil	mg/l	IS 3025(Pt-39)	0.1	< 0.5	<0.5	No Relaxation
22.	Iron as Fe	mg/l	APHA-3120-Fe-B	0.06	0.04	<0.3	No Relaxation
23.	Fluoride as F	mg/l	APHA-4500-F-E	1.6	1.0	<1.0	<1.5
24.	Copper as Cu	mg/l	APHA-3111B	0.01	0.01	<0.05	<1.5
25.	Manganese as Mn	mg/l	APHA-3111B	< 0.1	< 0.1	<0.1	<0.3
26.	Phenolic Compounds as C ₆ H ₅ OH	mg/l	APHA-5530-C	< 0.001	< 0.001	<0.001	<0.002
27.	Cadmium as Cd	mg/l	APHA-3111B	< 0.001	< 0.001	<0.003	No Relaxation
28.	Mercury as Hg	mg/l	APHA-3111Hg	< 0.001	< 0.001	<0.001	No Relaxation
29.	Selenium as Se	mg/l	APHA-3111Se	< 0.01	< 0.01	<0.01	No Relaxation
30.	Total Arsenic as As	mg/l	APHA-3111As	< 0.01	< 0.01	<0.01	<0.20
31.	Cyanide as CN	mg/l	APHA-3111B	< 0.01	< 0.01	<0.05	No Relaxation
32.	Lead as Pb	mg/l	APHA-3111B	< 0.01	< 0.01	<0.01	No Relaxation
33.	Zinc as Zn	mg/l	APHA-3111B	0.01	0.02	<5.0	<15
34.	Hexavalent Chromium as Cr ⁺⁶	mg/l	APHA-3111B	< 0.005	< 0.005	<0.005	<1.0
35.	Silica as SiO ₂	mg/l	APHA-4500SiO ₂ -C	Nil	Nil	---	---
36.	Pesticides	mg/l	As per STP	< 0.01	<0.01	--	No Relaxation
37.	E-Coli	Per/100ml	ISO 9308-1	Absent	Absent	Absent/100ml	Absent/100ml
38.	Total Coliforms	Per/100ml	ISO 9308-1	Absent	Absent	Absent/100ml	Absent/100ml

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TEST REPORT

ISSUED TO:

M/s. Sembcorp Energy India Limited, Project-1
(2x660 MW Coal Based Thermal Power Plant),
Near Pynampuram/ Nelaturu (V), Muthukur (M),
SPSR Nellore (Dist.)- 524344.

Issue Date: 21.09.2021

Sample Registration No: 8019/09/21-003&004

Date of Sampling: 13.09.2021

Sample Registration Date: 16.09.2021

Analysis Starting Date: 16.09.2021

Analysis Completed Date: 21.09.2021

Sample Description:

Discipline: Chemical

Group: Water

Sample Particulars: Ground Water – Nelaturupalem Village (GW-3)

Sample Particulars: Ground Water – Musunuruvari palem Village (GW-4)

Sample Collected By: (Mr. Sridhar)

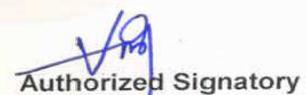
Lab Ref: CL/W/8019/09/21-003&004/21

TEST RESULTS

S. NO.	TEST PARAMETERS	UNITS	TEST METHOD	RESULTS		STANDARDS AS PER IS: 10500	
				GW-3	GW-4	ACCEPTABLE	PERMISSIBLE
1.	pH	---	APHA-4500-B	7.4	7.2	6.5- 8.5	No Relaxation
2.	Color	Hazen	APHA-2120-B	1.0	1.0	1.0	5.0
3.	Taste	--	IS-3025(Pt-8)	Agreeable	Agreeable	Agreeable	Agreeable
4.	Odour	--	IS-3025(Pt-5)	Agreeable	Agreeable	Agreeable	Agreeable
5.	Turbidity	NTU	APHA-2130-B	0.4	0.5	1.0	5.0
6.	Electric Conductivity	µs/cm	APHA-2510-B	1,620	1680	--	--
7.	Total Dissolved Solids	mg/l	APHA-2540-B	632	674	500	2000
8.	Total Hardness as CaCO ₃	mg/l	APHA-2340-B	217	206	200	600
9.	Total Alkalinity as CaCO ₃	mg/l	APHA-2320-B	195	214	200	600
10.	P- Alkalinity as CaCO ₃	mg/l	APHA-2320-B	Nil	Nil	---	---
11.	Calcium as Ca	mg/l	APHA-3120Ca-B	86	92	75	200
12.	Magnesium as Mg	mg/l	APHA-3120Mg-B	44	40	30	100
13.	Free Residual Chlorine	mg/l	APHA-4500-Cl-C	< 0.1	< 0.1	0.2	No Relaxation
14.	Boron as B	mg/l	APHA-3111-B	0.1	0.1	0.5	1.0

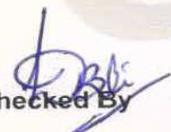
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15.	Sodium as Na	mg/l	APHA-3120Na-B	178	182	--	--
16.	Potassium as K	mg/l	APHA-3120 K-B	18	20	--	--
17.	Chloride as Cl	mg/l	APHA-4500-Cl-C	286	324	250	1000
18.	Sulphates as SO ₄	mg/l	APHA-4500SO ₄ -C	94.6	96.2	200	400
19.	Nitrates as NO ₃	mg/l	APHA-4500NO ₃ -C	32.4	33.8	45	No Relaxation
20.	Anionic Detergents as MBAS	mg/l	Annex K of IS 13428	< 0.1	< 0.1	<0.2	<1.0
21.	Mineral Oil	mg/l	IS 3025(Pt-39)	< 0.5	< 0.5	<0.5	No Relaxation
22.	Iron as Fe	mg/l	APHA-3120-Fe-B	0.04	0.06	<0.3	No Relaxation
23.	Fluoride as F	mg/l	APHA-4500-F-E	1.4	0.6	<1.0	<1.5
24.	Copper as Cu	mg/l	APHA-3111B	0.02	0.01	<0.05	<1.5
25.	Manganese as Mn	mg/l	APHA-3111B	< 0.1	< 0.1	<0.1	<0.3
26.	Phenolic Compounds as C ₆ H ₅ OH	mg/l	APHA-5530-C	< 0.001	< 0.001	<0.001	<0.002
27.	Cadmium as Cd	mg/l	APHA-3111B	< 0.001	< 0.001	<0.003	No Relaxation
28.	Mercury as Hg	mg/l	APHA-3111Hg	< 0.001	< 0.001	<0.001	No Relaxation
29.	Selenium as Se	mg/l	APHA-3111Se	< 0.01	< 0.01	<0.01	No Relaxation
30.	Total Arsenic as As	mg/l	APHA-3111As	< 0.01	< 0.01	<0.01	<0.20
31.	Cyanide as CN	mg/l	APHA-3111B	< 0.01	< 0.01	<0.05	No Relaxation
32.	Lead as Pb	mg/l	APHA-3111B	< 0.01	< 0.01	<0.01	No Relaxation
33.	Zinc as Zn	mg/l	APHA-3111B	0.02	0.02	<5.0	<15
34.	Hexavalent Chromium as Cr ⁺⁶	mg/l	APHA-3111B	< 0.005	< 0.005	<0.005	<1.0
35.	Silica as SiO ₂	mg/l	APHA-4500SiO ₂ -C	Nil	Nil	---	---
36.	Pesticides	mg/l	As per STP	< 0.01	<0.01	--	No Relaxation
37.	E-Coli	Per/100ml	ISO 9308-1	Absent	Absent	Absent/100ml	Absent/100ml
38.	Total Coliforms	Per/100ml	ISO 9308-1	Absent	Absent	Absent/100ml	Absent/100ml

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TEST REPORT

ISSUED TO:

M/s. Sembcorp Energy India Limited, Project-1
(2x660 MW Coal Based Thermal Power Plant),
Near Pynampuram/ Nelaturu (V), Muthukur (M),
SPSR Nellore (Dist.)- 524344.

Issue Date: 21.09.2021

Sample Registration No: 8019/09/21-005&006

Date of Sampling: 13.09.2021

Sample Registration Date: 16.09.2021

Analysis Starting Date: 16.09.2021

Analysis Completed Date: 21.09.2021

Sample Description:

Discipline: Chemical

Group: Water

Sample Particulars: Ground Water – Amudalapadu Village (GW-5)

Sample Particulars: Ground Water – Kothapalem Village (GW-6)

Sample Collected By: (Mr. Sridhar)

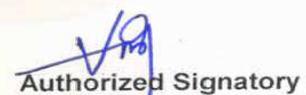
Lab Ref: CLW/8019/09/21-005&006/21

TEST RESULTS

S. NO.	TEST PARAMETERS	UNITS	TEST METHOD	RESULTS		STANDARDS AS PER IS: 10500	
				GW-5	GW-6	ACCEPTABLE	PERMISSIBLE
1.	pH	---	APHA-4500-B	7.8	7.3	6.5- 8.5	No Relaxation
2.	Color	Hazen	APHA-2120-B	1.0	1.0	1.0	5.0
3.	Taste	--	IS-3025(Pt-8)	Agreeable	Agreeable	Agreeable	Agreeable
4.	Odour	--	IS-3025(Pt-5)	Agreeable	Agreeable	Agreeable	Agreeable
5.	Turbidity	NTU	APHA-2130-B	0.5	0.6	1.0	5.0
6.	Electric Conductivity	µs/cm	APHA-2510-B	1,720	1,780	--	--
7.	Total Dissolved Solids	mg/l	APHA-2540-B	1,114	1,120	500	2000
8.	Total Hardness as CaCO ₃	mg/l	APHA-2340-B	450	428	200	600
9.	Total Alkalinity as CaCO ₃	mg/l	APHA-2320-B	412	418	200	600
10.	P- Alkalinity as CaCO ₃	mg/l	APHA-2320-B	Nil	Nil	---	---
11.	Calcium as Ca	mg/l	APHA-3120Ca-B	100	98	75	200
12.	Magnesium as Mg	mg/l	APHA-3120Mg-B	48.4	42.4	30	100
13.	Free Residual Chlorine	mg/l	APHA-4500-Cl-C	0.1	0.1	0.2	No Relaxation
14.	Boron as B	mg/l	APHA-3111-B	0.001	0.001	0.5	1.0

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15.	Sodium as Na	mg/l	APHA-3120Na-B	186	196	--	--
16.	Potassium as K	mg/l	APHA-3120 K-B	16	14	--	--
17.	Chloride as Cl	mg/l	APHA-4500-Cl-C	316	328	250	1000
18.	Sulphates as SO ₄	mg/l	APHA-4500SO ₄ -C	94.8	72.6	200	400
19.	Nitrates as NO ₃	mg/l	APHA-4500NO ₃ -C	32.3	33.4	45	No Relaxation
20.	Anionic Detergents as MBAS	mg/l	Annex K of IS 13428	< 0.1	< 0.1	<0.2	<1.0
21.	Mineral Oil	mg/l	IS 3025(Pt-39)	< 0.5	< 0.5	<0.5	No Relaxation
22.	Iron as Fe	mg/l	APHA-3120-Fe-B	0.08	0.06	<0.3	No Relaxation
23.	Fluoride as F	mg/l	APHA-4500-F-E	1.0	0.8	<1.0	<1.5
24.	Copper as Cu	mg/l	APHA-3111B	0.01	0.01	<0.05	<1.5
25.	Manganese as Mn	mg/l	APHA-3111B	< 0.1	< 0.1	<0.1	<0.3
26.	Phenolic Compounds as C ₆ H ₅ OH	mg/l	APHA-5530-C	< 0.001	< 0.001	<0.001	<0.002
27.	Cadmium as Cd	mg/l	APHA-3111B	< 0.001	< 0.001	<0.003	No Relaxation
28.	Mercury as Hg	mg/l	APHA-3111Hg	< 0.001	< 0.001	<0.001	No Relaxation
29.	Selenium as Se	mg/l	APHA-3111Se	< 0.01	< 0.01	<0.01	No Relaxation
30.	Total Arsenic as As	mg/l	APHA-3111As	< 0.01	< 0.01	<0.01	<0.20
31.	Cyanide as CN	mg/l	APHA-3111B	< 0.01	< 0.01	<0.05	No Relaxation
32.	Lead as Pb	mg/l	APHA-3111B	< 0.01	< 0.01	<0.01	No Relaxation
33.	Zinc as Zn	mg/l	APHA-3111B	0.02	0.02	<5.0	<15
34.	Hexavalent Chromium as Cr ⁺⁶	mg/l	APHA-3111B	< 0.005	< 0.005	<0.005	<1.0
35.	Silica as SiO ₂	mg/l	APHA-4500SiO ₂ -C	Nil	Nil	---	---
36.	Pesticides	mg/l	As per STP	µg/l	<0.01	--	No Relaxation
37.	E-Coli	Per/100ml	ISO 9308-1	Absent	Absent	Absent/100ml	Absent/100ml
38.	Total Coliforms	Per/100ml	ISO 9308-1	Absent	Absent	Absent/100ml	Absent/100ml

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ANNEXURE- VI

TEST REPORT

ISSUED TO:

M/s. Sembcorp Energy India Limited, Project-1
(2x660 MW Coal Based Thermal Power Plant),
Near Pynampuram/ Nelaturu (V), Muthukur (M),
SPSR Nellore (Dist.)- 524344.

Issue Date: 21.09.2021

Sample Registration No: 8019/09/21-007&008

Date of Sampling: 13.09.2021

Sample Registration Date: 16.09.2021

Analysis Starting Date: 16.09.2021

Analysis Completed Date: 21.09.2021

Sample Description:

Discipline: Chemical

Group: Water

Sample Particulars: Surface Water – Pynampuram Village (SW-1)

Sample Particulars: Surface Water – Nelaturu Village (SW-2)

Sample Collected By: (Mr. Sridhar)

Lab Ref: CLW/8019/09/21-007&008/21

TEST RESULTS

S.NO.	TEST PARAMETERS	UNITS	TEST METHOD	RESULTS		STANDARDS AS PER IS: 10500	
				SW-1	SW-2	ACCEPTABLE	PERMISSIBLE
1.	pH	---	APHA-4500-B	7.0	7.6	6.5- 8.5	No Relaxation
2.	Color	Hazen	APHA-2120-B	1.0	1.0	1.0	5.0
3.	Taste	--	IS-3025(Pt-8)	Agreeable	Agreeable	Agreeable	Agreeable
4.	Odour	--	IS-3025(Pt-5)	Agreeable	Agreeable	Agreeable	Agreeable
5.	Turbidity	NTU	APHA-2130-B	0.4	0.4	1.0	5.0
6.	Electric Conductivity	µs/cm	APHA-2510-B	1,412	1,620	--	--
7.	Total Dissolved Solids	mg/l	APHA-2540-B	920	998	500	2000
8.	Total Hardness as CaCO ₃	mg/l	APHA-2340-B	368	356	200	600
9.	Total Alkalinity as CaCO ₃	mg/l	APHA-2320-B	320	324	200	600
10.	P- Alkalinity as CaCO ₃	mg/l	APHA-2320-B	Nil	Nil	---	---
11.	Calcium as Ca	mg/l	APHA-3120Ca-B	82	86	75	200
12.	Magnesium as Mg	mg/l	APHA-3120Mg-B	40.8	32.3	30	100
13.	Free Residual Chlorine	mg/l	APHA-4500-Cl-C	0.1	0.1	0.2	No Relaxation
14.	Boron as B	mg/l	APHA-3111-B	< 0.001	< 0.001	0.5	1.0

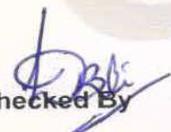
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15.	Sodium as Na	mg/l	APHA-3120Na-B	168	202	--	--
16.	Potassium as K	mg/l	APHA-3120 K-B	16	18	--	--
17.	Chloride as Cl	mg/l	APHA-4500-Cl-C	272	312	250	1000
18.	Sulphates as SO ₄	mg/l	APHA-4500SO ₄ -C	64.8	70.6	200	400
19.	Nitrates as NO ₃	mg/l	APHA-4500NO ₃ -C	32.4	33.6	45	No Relaxation
20.	Anionic Detergents as MBAS	mg/l	Annex K of IS 13428	< 0.1	< 0.1	<0.2	<1.0
21.	Mineral Oil	mg/l	IS 3025(Pt-39)	< 0.5	< 0.5	<0.5	No Relaxation
22.	Iron as Fe	mg/l	APHA-3120-Fe-B	0.08	0.06	<0.3	No Relaxation
23.	Fluoride as F	mg/l	APHA-4500-F-E	1.0	1.0	<1.0	<1.5
24.	Copper as Cu	mg/l	APHA-3111B	0.01	0.01	<0.05	<1.5
25.	Manganese as Mn	mg/l	APHA-3111B	< 0.1	< 0.1	<0.1	<0.3
26.	Phenolic Compounds as C ₆ H ₅ OH	mg/l	APHA-5530-C	< 0.001	< 0.001	<0.001	<0.002
27.	Cadmium as Cd	mg/l	APHA-3111B	< 0.001	< 0.001	<0.003	No Relaxation
28.	Mercury as Hg	mg/l	APHA-3111Hg	< 0.001	< 0.001	<0.001	No Relaxation
29.	Selenium as Se	mg/l	APHA-3111Se	< 0.01	< 0.01	<0.01	No Relaxation
30.	Total Arsenic as As	mg/l	APHA-3111As	< 0.01	< 0.01	<0.01	<0.20
31.	Cyanide as CN	mg/l	APHA-3111B	< 0.01	< 0.01	<0.05	No Relaxation
32.	Lead as Pb	mg/l	APHA-3111B	< 0.01	< 0.01	<0.01	No Relaxation
33.	Zinc as Zn	mg/l	APHA-3111B	0.01	0.01	<5.0	<15
34.	Hexavalent Chromium as Cr ⁺⁶	mg/l	APHA-3111B	< 0.005	< 0.005	<0.005	<1.0
35.	Silica as SiO ₂	mg/l	APHA-4500SiO ₂ -C	1.0	1.0	---	---
36.	Pesticides	mg/l	As per STP	µg/l	<0.01	--	No Relaxation
37.	E-Coli	Per/100ml	ISO 9308-1	Absent	Absent	Absent/100ml	Absent/100ml
38.	Total Coliforms	Per/100ml	ISO 9308-1	Absent	Absent	Absent/100ml	Absent/100ml

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Compilation of CSR Reports

FY 2010-15

Education:

- Construction of School Compound Wall & Toilets at Pynampuram Wagardha
- Providing the evening bus facility for school children – Nelaturu Gramapanchayat (Nelaturupalem, Nelaturu and Nelaturu Harizanawada)
- Distribution of School bags, T-shirts and Geometry Boxes to M. V Palem and other 16 hamlets
- Sponsoring for Talent Driven Competition for 10th Class Students of Fishermen Families at District Level, Nellore

Health:

- Distribution of Uniforms to Aanganwadi Children at Nelaturu Palem
- Conducting of Free Medical Camps
- Construction of School Compound Wall & Toilets at Pynampuram Wagardha
- Construction of Aanganwadi Building at Musunurivaripalem
- Construction of Kitchen Room and Toilets for Aanganwadi Center in Musunurivaripalem
- Conducting of Free medical camps in Inner ring road villages – Pynapuram Wagardha, DHW, Devaradibba, Nelaturu Harizanawada, TPCIL Labor Colony and Nelaturupalem
- Distribution of Uniforms to the Aanganwadi Children – Nelaturu palem
- Distribution of Soaps, Shampoos and Coconut oil to primary school children – Devaradibba

Water Provision:

- Supplying of Household water to Nelathuru Harizanawada Village People.
- Supplying of R.O. Drinking Water to Nelaturupalem
- Supply of Drinking Water – Pynapuram (Pynapuram Wagardha, Debbamida Harizanawada and Chinna Sangam)

Infrastructure:

- Laying of C.C Roads and Drainages in Krishnapattnam Village
- Leveling of Land in Nelathuru Harizanawada
- Renovation of Veterinary Building, Musunurivaripalem

Livelihood:

- Sponsoring for Talent Driven Competition for 10th Class Students of Fishermen Families at District Level
- Livelihood support to Fishing folk families for Damage of Fishing Nets
- Support to Fishermen families of Nelaturupalem through Rice and Cash
- Support to District administration for the construction of Nelaturupalem Fishermen Houses

FY 2015-16

Education:

- Three Anganwadi centres constructed/ Renovated at Ananthavaram, Nelaturu Harijana Wada and Dibbameeda Harijanawada
- Two additional Classrooms, Compound Wall and site Levelling (Playground) made at Musunurivaripallem ZP High School

- Regular conveyance Facility made to students from surrounding villages to Two Major High Schools Made Zero dropouts in the Surrounding Communities. 240 School children were Provided this Conveyance facility
- Evening tuition centres were Conducted at 2 Locations to benefit the student to obtain merit in the examinations, subject teachers teach to the students at evening tuition centres
- Education Kits In the form of school Bags, Books, T. Shirts, Benches provided to schools and School children. The education material is provided to all schools surrounding to the Project site. This intervention is carried out in all Schools on August 15th of Every Year
- Evening Snacks were provided to around 2000 Students after school hours before appearing for Final SSC Examination for a duration of 45 days every year. This enhances pass percentage
- 25 poor and meritorious students were provided with Scholarships through Saraswathi Nidhi Programme taken up by District Collector SPSR Nellore, SembCorp is the Major Contributor for this programme
- Supported another 55 students with Scholarships enable them to continue their education
- Supported 100 Anganwadis (Pre School) Children and 200 Pregnant and lactating Mothers by providing quality Infrastructure Facilities

Health Care:

- Mobile medical Clinic Operates in all the Villages by SEIL. SembCorp Conducts specialised medical Camps with support from Apollo and Narayan Hospitals. reached 1800 families with basic Health care and free Medicine
- Ten RO Plants were installed and being operated by Sembcorp to provide Safe Drinking water to 2,800 Families
- RO Plant at iskon play pivotal Role in supplying Food to 25,000 School children through Akshaya Patra Programme
- Sembcorp collaborated with Naandhi Community Water services for operation and Maintenance of all RO Plants and Community water awareness and Health awareness on waterborne Diseases in community
- Drinking water is being supplied through Nine water tankers in Four Villages
- 600 Live stocks were reached through para veterinarian services
- Installation of RO Water Plant in Nalaturu, Pynapuram , Pynapuram (DH Wada).
- Installation of R.O Mineral Water Plant Nelaturu Girijana Colony
- Installation of R.O Mineral Water Plant at Pynampuram Wagardha

Village infrastructure:

- To develop Infrastructure in the Social context SEIL Undertook Canal works, repairing school buildings, Laying of Internal roads, Multiple Pond deepening works, rainwater harvesting,
- Reached 2500 schoolchildren by improving educational Infrastructure in 25 schools
- Renovation of Bridge at Varakavipudi Improved Transportation Facility
- Complete CC Roads in the Krishnapatnam Panchayat
- BT Road Increased access to Nelaturupalem Village

Skill Development and Sustainable Livelihood:

- Provided Training to Locals in Different trades Like Fire& safety, Security, Housekeeping, Green Belt, Electrical, Mechanical, IT and provided employment to locals at the SEIL Project
- Involved women SHG In Green Plantation development and paid the loan amount of Rs 12 Lacs to women SHG of Nelaturupalem which are loan waivers and made SHG in active state and initiated Entrepreneurship Training Programmes to women of Nelaturupalem

Other CSR Activities

- To promote Tradition and Culture women were provided Competitions in the villages During Festivals
- Employee engagement programmes on environment sustainability in villages and schools
- Mana Vooru Mana Sabratha is a Flagship Programme in SEIL Community Villages brings Awareness on Village Cleaning and Development. All Sembcorp Employees involve in this Volunteering intervention in the community Villages
- During 2015 Floods CSR Team responded swiftly 32000 Food Packets supplied for 3 days and 4000 Flood relief family Kits
- National Highway restored within 4 Days of record time with the support from SEIL
- Nellore City Cleaned with Dozers, dumpers, and earth movers in record time
- This Initiative well appreciated by district administration
- 423 Individual Household toilets supported in the Pynapuram Gram Panchayats to support the Government Open defecation Free Programme
- Implemented Clean drive campaigns in 4 villages reaching around 600 Families
- Loan waived off to 40 women SHG of 400 women of Nelaturupalem Village
- Benefitted 1000 Families by repairs of Internal roads during floods
- More than 300 Company employees have Volunteered for CSR Works in the Villages Contributing more than 1,000 Manhours
- Rice & Cash to Nelaturu fishermen provided for 6 Months to all families, Cash amount was also Disbursed
- Money Deposited for Fishermen houses to the District Administration , District Collector, SPSR Nellore District
- Distribution of Blankets and Sanitation Kit to Hostel children
- Support to District administration for the construction of Nelaturupalem Fishermen Houses
- Distribution of Blankets and Other Material to Hostel children, Muthukuru Boys & Girls Hostel; Brahamadevi Boys Hostel; T.P. Gudur Girls, B.C & ST Hostels; Nellore Orphan School
- Construction of Dining Hall and Toilets at Z.P.High School at M V Palem.
- Distribution of Blankets and Sanitation Kit to Hostel children, Muthukuru

FY 2016-17

Education:

- During the year, scholarships and study materials were provided to deserving children from surrounding villages. We also worked on improving the living conditions of 640 students residing at the Muthukur Government Girls' Social Welfare Hostel.
- Regarding healthcare, we installed four drinking water plants in the surrounding villages and while another at Varigonda village near the SGPC Township is being readied. TPCIL, in partnership with Naandi Community Water Services, maintains these plants and provides clean drinking water to 1,150 families in these surrounding villages, thereby improving their health and overall quality of life.

- People in the villages around TPCIL have been receiving free medical consultations and medicines through health camps that are organised in partnership with Narayana Hospitals and Apollo Hospitals.
- Through Mana Vooru, Mana Subrata (a cleanliness drive) programme, our volunteers work with the neighbouring villagers to drive home the message and encourage them to dispose of their garbage in designated areas outside the villages.
- TPCIL has also supported the Nellore District administration in the construction of 667 Individual Household Latrines (IHHLs) under the Prime Minister's Swachh Bharat Yojana. Through the Vanam Manam Programme (a green initiative), 4,000 saplings of fruit bearing trees were distributed and planted in the surrounding villages
- Skill Development
- During the year, TPCIL continued its efforts towards ensuring gainful employment to the local villagers and is further working towards establishing entrepreneurship Development Programme in the surrounding villages
- Other CSR activities
- Providing Rice and Cash for 6 Months to Nelaturupalem villagers to support Livelihood
- Year 2017-18

Education:

- We contributed towards several school renovations, renovation of library, setting up computer laboratories, providing safe drinking water, constructing toilets, conducting medical camps and planted trees in the school vicinity. We also provided electrical fittings, benches, desks and other basic infrastructure in these classrooms. To encourage children living far away to come to school, we have continued facilitating transportation to schools in and around our Nellore operational site. These efforts have resulted in more youngsters gaining access to better education.
- Provided Scholarships: -Affordability continues to be a hurdle in rural areas for Students to pursue an education. Low disposable income of parents prevents deserving students from pursuing higher education. A survey undertaken by our team in Nellore identified 52 such meritorious students from Nelaturu Palem village who have financial constraints. These students were given scholarships to pursue higher studies in reputed educational institutes in the academic years 2015-16 and 2016-17. The impact is as follows. Engineering 8students, BSC Science/ Arts- 12 Students, PG- 5 students, ITI 11 students, 2 Nursing and 16 vocational students

Health

- Providing RO Water through 10 RO Plants to the surrounding Communities
- Medical camps with Narayana Medical College and Hospitals

Other CSR activities:

- Providing Rice and Cash for 6 Months to Nelaturupalem villagers to support Livelihood

FY 2017-18

Education:

- We contributed towards several school renovations, renovation of library, setting up computer laboratories, providing safe drinking water, constructing toilets, conducting medical camps and planted trees in the school vicinity. We also provided electrical fittings, benches, desks and other basic infrastructure in these classrooms. To encourage children living far away to come to school, we have continued facilitating transportation to schools in and around our Nellore operational site. These efforts have resulted in more youngsters gaining access to better education.
- Provided Scholarships: -Affordability continues to be a hurdle in rural areas for Students to pursue an education. Low disposable income of parents prevents deserving students from pursuing higher education. A survey undertaken by our team in Nellore identified 52 such meritorious students from Nelaturu Palem village who have financial constraints. These students were given scholarships to pursue higher studies in reputed educational institutes in the academic years 2015-16 and 2016-17. The impact is as follows. Engineering 8students, BSC Science/ Arts- 12 Students, PG- 5 students, ITI 11 students, 2 Nursing and 16 vocational students

Health

- Providing RO Water through 10 RO Plants to the surrounding Communities
- Medical camps with Narayana Medical College and Hospitals

Other CSR activities:

- Providing Rice and Cash for 6 Months to Nelaturupalem villagers to support Livelihood

FY 2018-19

Skill Development

- As part of Skill Development Programs in SEDC, 7 batches of women have completed their course. 200 Women in tailoring, 80 women in beautician and 18 Numbers In Basic Computers Course in Which 7 Boys and 11 Girls Completed the Course.

Education Highlights

- School toilet repairs done in SEIL P1 Schools to ensure 100% running water in Government school toilets.
- RO drinking water Supplied through Naandhi regularly to SEIL side Government schools.
- SEIL sponsored State Level Kabaddi Championship by Partnering with District Sports Authority benefitted around 400 state level Kabaddi Players at Muthukuru.
- Celebrated School annualdays, National fire safety Days, Republic Day and other national festivals in the schools benefitting around 650 School children.
- School beautification works done in ZPH School, MV Palem Benefiting 350 Students, infrastructure support and all school needs fulfilled.
- Sports kits were distributed to youth from Nelaturu Panchayat benefiting 120 Youth.

- Botany lab renovated in Muthukur Social welfare girls high school benefiting 320 Girls.
- Scholarships were Provided to the 13 Numbers students of Academic Year 2016-18 Sponsored by District Collector, Nellore.
- Project 'Parivartan' Conducted in 2 Schools and one college from Jan to March 2019. The Main objective of 'Parivartan' is bringing the behavioural change among the young students.
- Awareness sessions were conducted on Personality Development & Personal hygiene and women health by Eminent in the field of Education, Counsellors and Doctors benefiting 1150 students in which 700 Girl and 450 are boys.
- Awareness programme conducted for the children on importance of Hand washing and prevention of water borne diseases benefiting 120 School Children.
- Conveyance of school Bus Facility was provided to the students benefiting around 120 members of SEIL Side.

Healthcare

- Periodical medical camps conducted in the villages of SEIL P1 as part of Preventive health care benefitted around 800 villagers.
- Door to door Health awareness done and have reached about 450 households with behaviour change communication material. All Schools in the Vicinity of project operations were also covered in this project.
- Solid waste Management introduced in Pynapuram and Nelaturu Panchayats to prevent unhygienic conditions in the village benefitting 900 Families. Concrete dust Bins Provided in the panchayath and Daily waste Management Measures taken up by SEIL to keep the village clean and prevent health issues from seasonal fevers.
- Ensured uninterrupted protected drinking water to 1040 families through 3 RO plants of SEIL P1 side.
- New pipelines laid for providing quality raw water to RO Plant Nelaturu Palem.

FY 2019-20

Education

- Providing conveyance to school children to prevent dropouts. Due to zero dropouts Govt. Schools retain students & achieved 98% pass in SSC with Good Grading. This initiative is being implemented with the support from SEIL Admin and CSR benefiting 120 students.
- Providing Education Kits to students on the Eve of Independence Day. SC&ST Students Benefited by this initiative and APPCB appreciated this CSR Gesture benefiting 60 School children.
- Providing Evening Snacks to students appearing for SSC Examinations in Five Mandal's covering 2387 Students. Students studying in the extra hours got refreshed and leading to Achieve Excellent pass percentages in Government Schools.

- Corona Awareness Preventive Measures Conducted in Schools by CSR Team of Project surrounding area. Pamphlets with Pictures and Description in Native Language Distributed with awareness to the school children benefiting 600 school children of SEIL P1 side.

Skill Development

- Tailoring-98
- Beautician-21
- AcandRefrigeration-20
- SanitaryNapkinmaking-22
- JuteBagmaking-30
- BangleMaking-80

FY 2020-21

Education

- Poly Carbonate roofing sheets were provided to Muthukur Girls Hostel open places.
- Conveyance of school children arranged with Covid protocols from SEIL P1.

Health

- Community Emergency Health Ambulance services by SEIL to
- Community Villages of SEIL P1 shifting 36 needy to nearest hospitals.
- 14 Community Sanitization drives Conducted in SEIL P1 Community Villages.
- 9 numbers Haematology Analysers were donated to Nellore District hospitals.
- Medical equipment's were provided to COVID Care Centre located at Krishnapatnam.
- Covid containment through testings.
- Maintenance of 3 RO Plants by providing safe drinking water to Community.
- Covid -19 health safety awareness in the Villages & Schools of SEIL P1.

Skill Development

- 10,000 masks stitching program by 20 SEDC trained women.
- Virtual Computer skills training program for 22 members.

Albert Peter

Head-CSR

SEIL

From: Ashok Kumar Tangudu <ashok.tangudu@sembcorp.com>
Sent: 18 March 2022 18:09
To: suresh.pasupuleti@gov.in
Cc: Pavan Kumar Rao Vemulapalli <pavan.vemulapalli@sembcorp.com>
Subject: FW: Half Yearly EC Compliance report for the period of April 2021 to September 2021 of Sembcorp Energy India Limited Project-1 (Formerly TPCIL)
Importance: High

Dear Sir,

Please find the attached latest Half Yearly compliance report submitted for the period of April 2021 to September 2021.

Supporting hard copies of annexures have been already sent.

Thanks & Regards,

Ashok Kumar Tangudu
Environment Manager



Sembcorp Energy India Limited
Project-2 Office:
Ananthavaram Village| Varakavipudi Panchayat
TP Gudur Mandal, SPSR Nellore - 524 344, India
Mob: (91) 7995333537
www.sembcorpenergyindia.com

From: Environment SEILP1 <environment.seilp1@sembcorp.com>
Sent: 30 November 2021 20:02
To: ro.moefccc@gov.in
Cc: mscb.cpcb@nic.in; ronlr-ee1@appcb.gov.in; dirind-moefcc@gov.in; Pavan Kumar Rao Vemulapalli <pavan.vemulapalli@sembcorp.com>; Ramesh Raman <ramesh.raman@sembcorp.com>
Subject: Half Yearly EC Compliance report for the period of April 2021 to September 2021 of Sembcorp Energy India Limited Project-1 (Formerly TPCIL)
Importance: High

To
The Regional Director,
Regional Office (South Eastern Region),
Ministry of Environment, Forests & Climate Change,
1st & 2nd Floor, HEPC Building, No. 34,
Cathedral Garden Road, Nungambakkam,
Chennai- 600034.

Sub: Submission of Half Yearly EC Compliance report for the period of April 2021 to September 2021 of Sembcorp Energy India Limited Project-1 (Formerly TPCIL)

Ref: EC Letter No. J 13012/02/2009- IA.II (T) dated 04-11-2009, amended 02.03.2015

Dear Sir,

We are here with submitting Half Yearly compliance to the conditions of above referred Environment Clearance issued to Sembcorp Energy India Limited Project-1 (Formerly TPCIL) in soft copy through E-mail. Please find the attached file.

Supporting hard copies of Annexures have been sent along with the letter submitted against the compliance.

Thanks & Regards,

Ashok Kumar Tangudu
Environment Manager



Sembcorp Energy India Limited

Project-2 Office:

Ananthavaram Village| Varakavipudi Panchayat
TP Gudur Mandal, SPSR Nellore - 524 344, India

Mob: (91) 7995333537

www.sembcorpenergyindia.com

Pavan Kumar Rao Vemulapalli

Head - Health Safety and Environment

Health Safety and Environment, Thermal Business, India

SEMBCORP ENERGY INDIA LTD

Ananthavaram- Village / Varkavipudi Panchayat, TP Gudur- Mandal, SPSR Nellore - 524344, Andhra Pradesh, India

DID :+91 8613501512

FAX :+91 8613501304

This e-mail is confidential and may also be privileged. If you are not the intended recipient, please delete it and notify us immediately. You should not copy or use it for any purpose, nor disclose its contents to any other person. Thank you.



SEIL P1/MoEF&CC/Chennai/2021/004
25th November 2021

Sembcorp Energy India Limited

CIN: U40103HR2008PLC095648

Regd. Office: 5th Floor, Tower C, Building No 8

DLF Cybercity, Gurgaon - 122002, Haryana, India

Tel (91) 124 389 6700 / 01

Fax (91) 124 389 6710

E-mail: cs.india@sembcorp.com

Website: www.sembcorpenergyindia.com

To
The Regional Director,
Regional Office (South Eastern Region),
Ministry of Environment, Forests & Climate Change,
1st & 2nd Floor, HEPC Building, No. 34, Cathedral Garden Road,
Nungambakkam,
Chennai – 600034.

Sub.: Submission of Half Yearly EC Compliance Report of SEIL Project-1 (formerly known as Thermal Powertech Corporation India Limited— TPCIL) for the period from April 2021 to September 2021

Ref.: EC Letter No: J 13012/02/2009— IA.II (T) dated 04-11-2009, amended dated 02.03.2015

Dear Sir,

As per the provision of Environment Clearance and EIA Notification 2006, we are herewith submitting the half yearly compliance status report for the period of April 2021 to September 2021 along with supporting documents to the conditions specified with respect to Environmental Clearance issued to SEIL Project-1 (Formerly known as Thermal Powertech Corporation India Limited— TPCIL), Nellore.

Hope the above is in order.

Thanking you,

Yours faithfully,
For Sembcorp Energy India Limited,

Pavan Kumar Rao V
Head HSE- SEIL

Copy To:

1. The Director, IA.I, MoEF&CC, New Delhi
2. The Joint Director (S), Scientist 'D', MoEF&CC, IRO, Vijayawada
3. The Environmental Engineer, APPCB, Nellore

152
COMPLIANCE STATUS REPORT
OF

Sembcorp Energy India Limited Project-1

(Formerly Known as THERMAL POWERTECH CORPORATION INDIA LTD)

1980 MW COAL FIRED SUPERCRITICAL THERMAL POWER PLANT

(STAGE I - 2 X 660 MW & STAGE II - 1 X 660 MW)

AT PAINAMPURAM & NELATURU VILLAGES, MUTHUKUR MANDAL

SPSR NELLORE DISTRICT

ANDHRA PRADESH

INDIA



Compliance to Environment Clearance Conditions

Period: April 2021 to September 2021

01. Background:

153

Sembcorp Energy India Ltd (SEIL) Project-1 [formerly known as Thermal Powertech Corporation India Limited (TPCIL)] is a leading independent power company in India. SEIL is promoted by Sembcorp Utilities Pvt. Ltd., which is part of the Singapore based Sembcorp Group.

At SEIL currently, Stage-I power plant consisting of 2x660 MW is under operation since October 2015.

The location map and key map are shown in Figure-1 & Figure-2 respectively. The 10 km radius topographical map around the project is shown in Figure-3. The latitude & longitude of **North South extremes of Site are 80°08'35.956"E & 14°19'5.211"N and 80°09'16.325"E & 14°21'0.874"N respectively.**

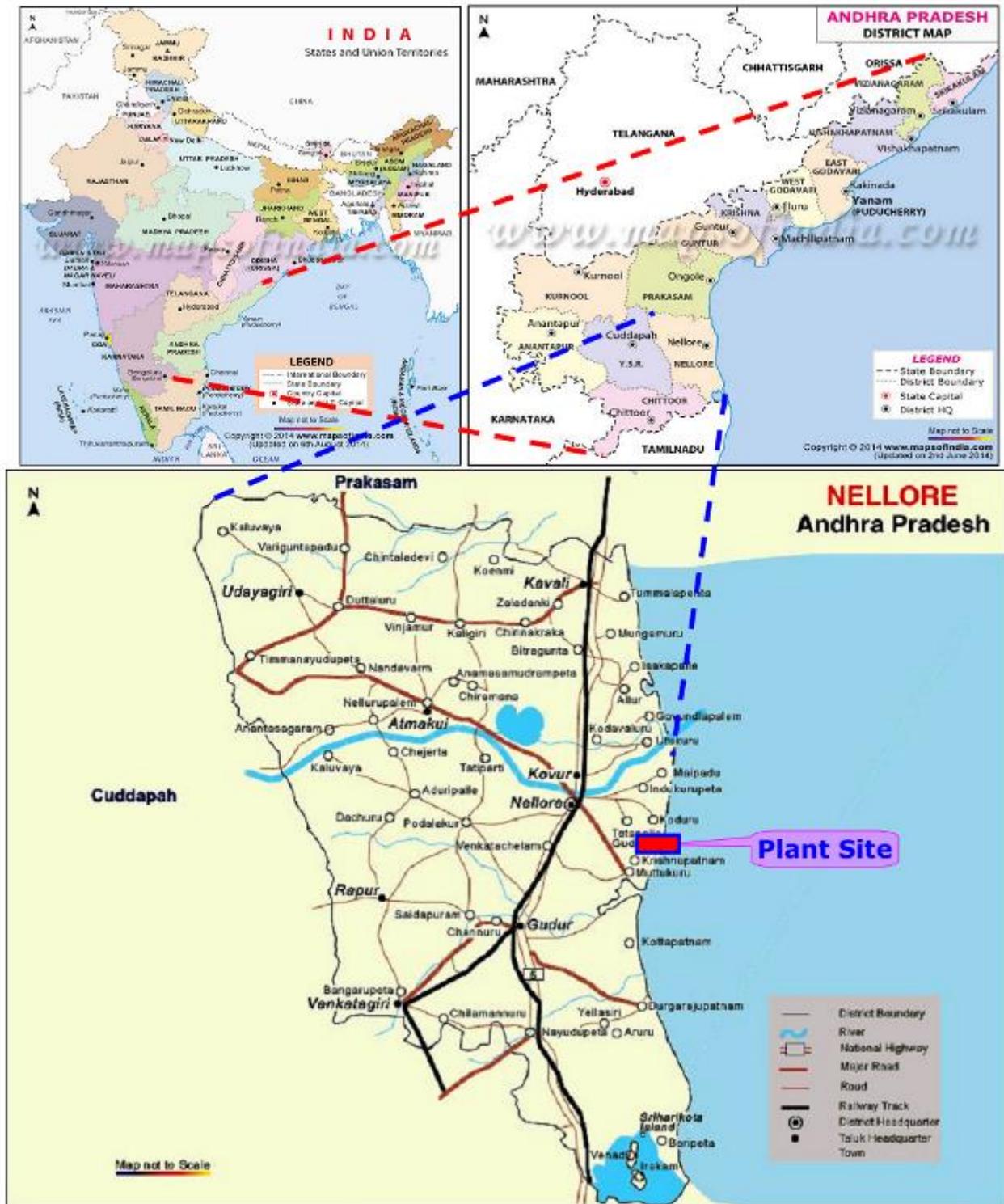
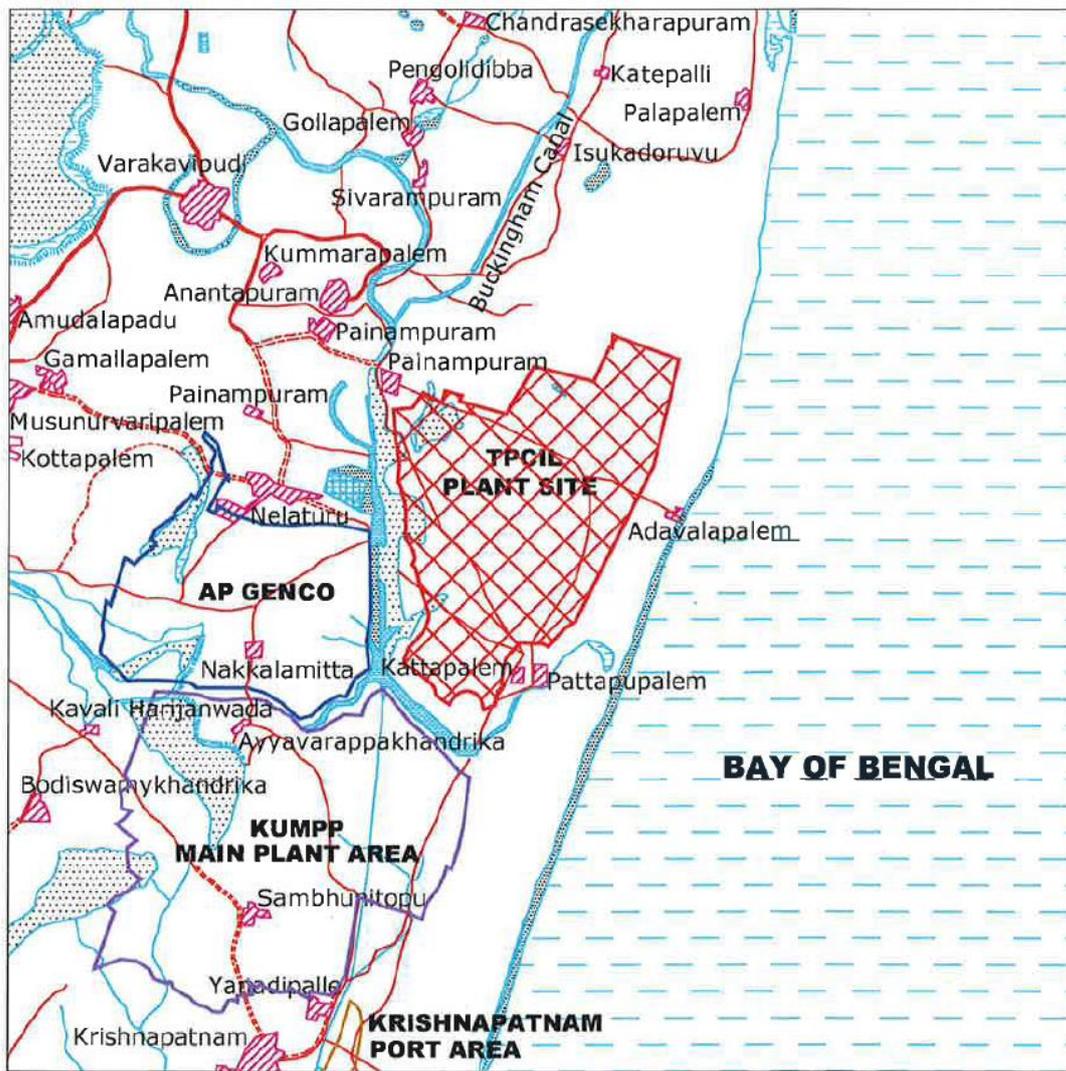


FIGURE- 1
LOCATION MAP



LEGEND

-  ROADS
-  STREAMS / TANKS
-  SETTLEMENTS
-  SEA
-  AP GEN CO
-  KUMPP MAIN PLANT AREA
-  KRISHNAPATNAM PORT AREA
-  TPCIL PLANT SITE

SCALE



FIGURE- 2
KEY MAP OF PROJECT SITE



LEGEND

- ROADS**
- STREAMS / TANKS**
- RIVER**
- FOREST**
- CANAL**
- SETTLEMENTS**
- SEA**
- AP GENCO**
- KUMPP MAIN PLANT AREA**
- KRISHNAPATNAM PORT AREA**
- PLANT SITE**

Index to
Survey of India Topo Sheets

57° N	66° 13'	Sea
57° N	66° 4'	Sea
57° O	66° 1'	C
57° O	66° 5'	C



FIG - 3

PROJECT: **THERMAL POWERTECH CORP. (INDIA) LTD,**

Painampuram (V), Muthukur (M), SPS Nellore District, A.P

TITLE: **TOPOGRAPHICAL MAP
SHOWING 10 KM RADIUS**

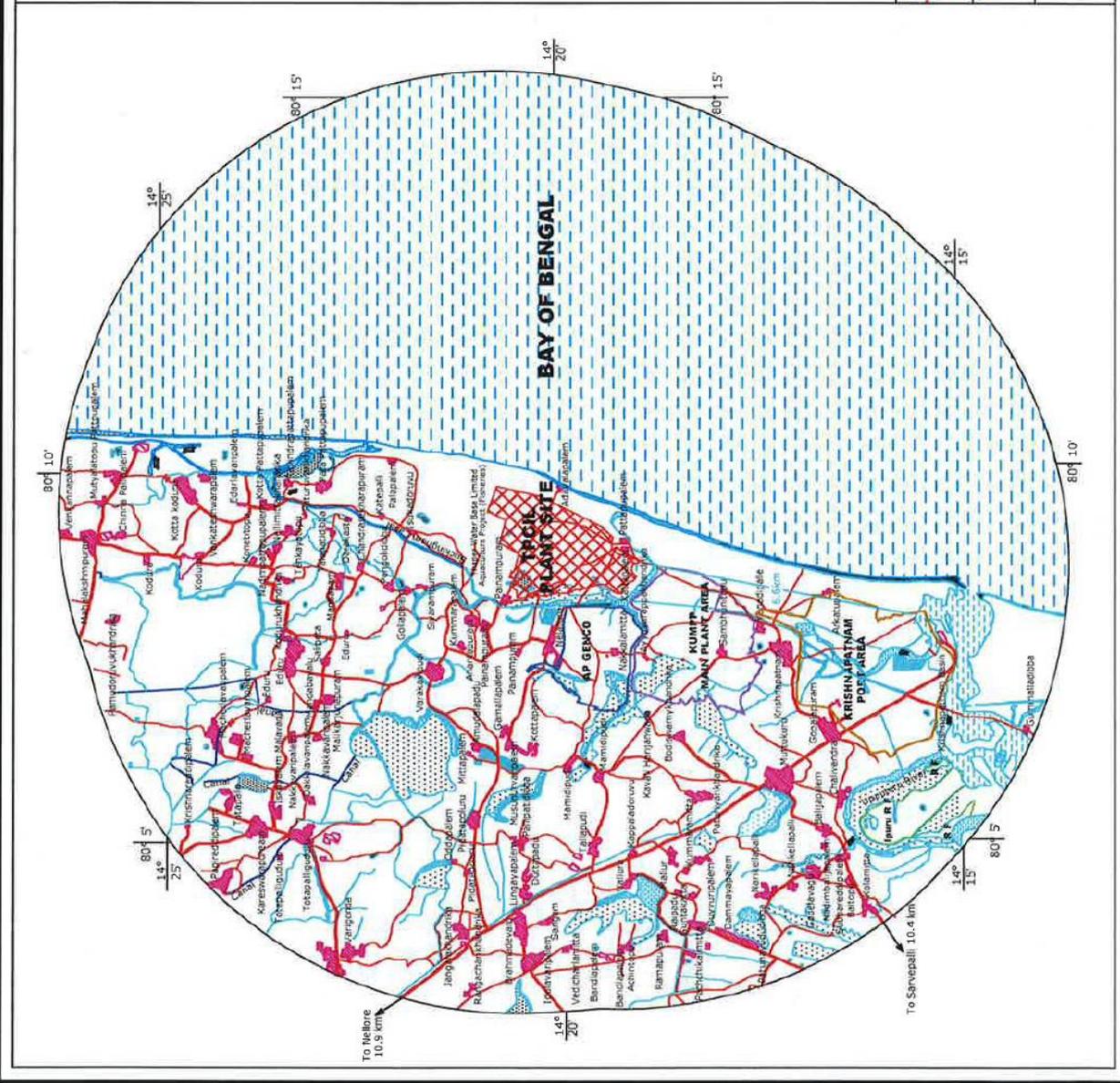
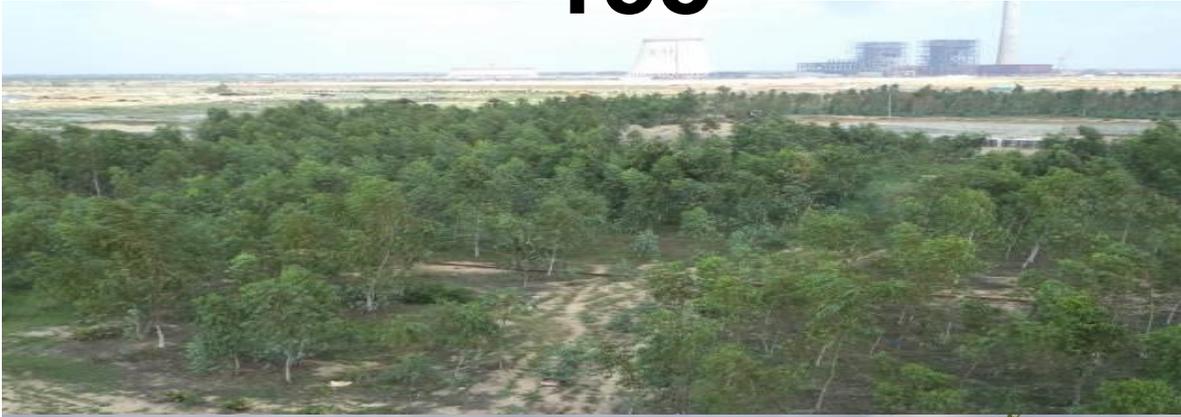


FIGURE-3
TOPOGRAPHICAL MAP OF 10 RADIUS AREA

02. Statutory Approvals/Clearances: 157

The following statutory approvals and clearances were received for the Project:

S. No.	Authorization	Accorded By	Validity
1	Environment Clearance	Ministry of Environment & Forests, Govt. of India	MoEF Letter dated 4/11/2009. The validity of EC is extended to 7 years by MoEF notification to start operations. Accordingly, SEIL commenced its operations by Sept 2015, well within due date.
2	CRZ Clearance	Ministry of Environment & Forests, GOI	F.No. 11-129/2010-IA.III. Dated: 5 th December, 2011
3	Combined Consent for Operation (CFO) for two units	AP Pollution Control Board, Hyderabad	Order No. APPCB/VJA/VJA/930/HO/CFO/2016 Dated: 16 th Nov 2021. Renewed and is valid till Nov 2026.



GREEN BELT/ GREEN COVER DEVELOPMENT IN SITE



159



GREEN COVER AROUND PERIPHERY



GREEN COVER ALONG THE PLANT ROADS

160



GREEN COVER ALONG PIPE RACK & INTERNAL ROADS



GREEN COVER INSIDE THE PLANT

161



GREEN COVER ALONG MAIN PLANT ROAD



AVENUE PLANTATION

162



GREEN COVER NEAR PLANT SERVICE BUILDING



GREEN COVER NEAR SERVICE BUILDING

163



GREEN COVER IN NORTH EAST AREA



COAL YARD WATER SPRINKLING

164



CONTINUOUS AMBIENT AIR QUALITY MONITORING STATION INSIDE THE PLANT

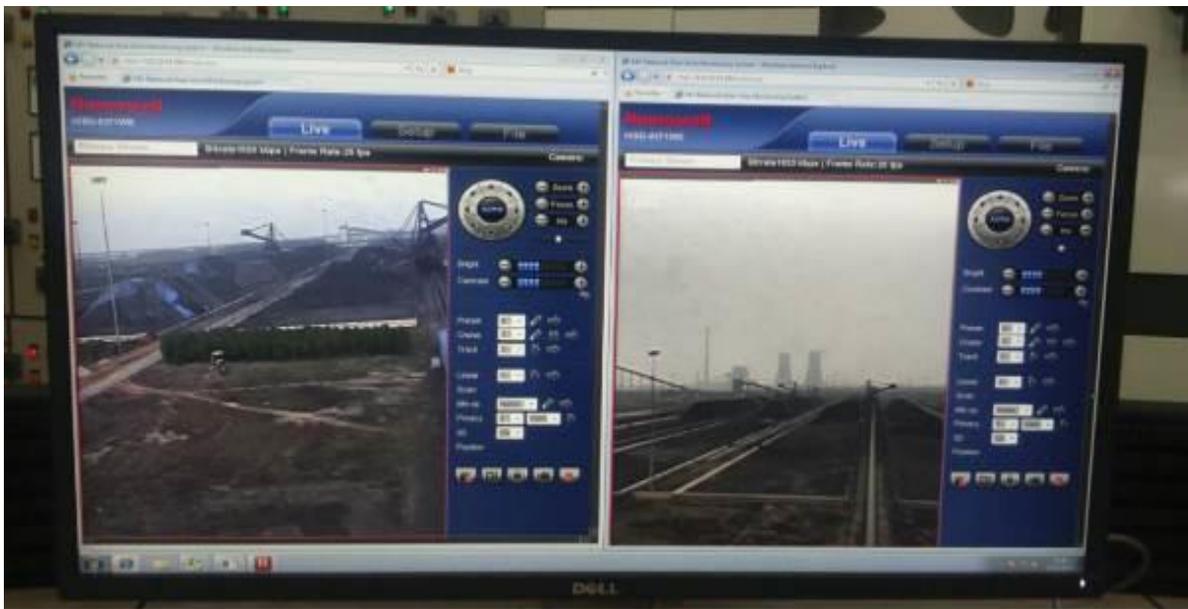


CONTINUOUS AMBIENT AIR QUALITY MONITORING STATION INSIDE THE PLANT

165



WIND BREAK PLANTATION AROUND COAL YARD



CONTINUOUS MONITORING OF DUST SUPPRESSION SYSTEM AT COAL YARD USING PTZ CAMERAS



DUST EXTRACTION SYSTEM AT TRANSFER POINTS



MAIN GATE DISPLAY BOARD - AMBIENT AIR QUALITY & EMISSIONS DATA DISPLAY

CONDITION 167 COMPLIANCE TO ACCORDED ENVIRONMENT CLEARANCE

Sr. No.	Condition	Compliance
4. i	Status of implementation of 100% utilisation of Fly Ash generated shall be submitted to the Ministry within six months of operation of the plant.	<p>Complying.</p> <p>SEIL (formerly known as Thermal Powertech Corporation India Limited - TPCIL) is achieving 100% fly ash utilization since September 2019.</p> <p>Attached letter submitted to CPCB on Annual Fly Ash utilization for FY2020-2021 vide letter no. SEIL P1/CPCB /Delhi/2021/001 dated 15th April 2021 as Annexure- I</p>
ii	Stacks of 275 m height (Bi-Flue for Stage -1 and Single Flue for Stage II) shall be provided with continuous online monitoring equipment for SO _x , NO _x and PM. Exit Velocity of flue gases shall not be less than 25 m/sec. Mercury emissions from stack shall also be monitored on periodic basis.	<p>Complying.</p> <p>One Bi-Flue gas chimney of 275 m height (Stage-I) is provided along with continuous online emission monitoring equipment for measuring SO_x, NO_x and Particulate Matter.</p> <p>Mercury is being monitored on quarterly basis.</p> <p>Exit velocity of flue gas is well with in prescribed norms.</p> <p>Stack Emission Monitoring Reports performed by third Party consultant which is approved by APPCB are attached as Annexure- II.</p>
iii	Possibility for installation of combined intake with neighbouring Power Plants shall be examined and in the event of non-feasibility adequate justification shall be submitted with a period of six months.	<p>Compliance submitted through Ltr. No: TPICL/MoEF/007 on dated: 7th March 2011.</p>

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Complying.

Electrostatic Precipitators (ESPs) with more than 99.9% efficiency (72 fields each) are installed to limit the Particulate Matter Emission to limit less than 50 mg/Nm³.

iv

High Efficiency Electrostatic Precipitators (ESPs) shall be installed to ensure that particulate emission does not exceed 50 mg/Nm³.



Complying.

Bag filters are provided for coal crusher, transfer points, ash silos and mill bunker etc.



Dust extraction and dust suppression systems with auto mode are provided in coal crusher and coal stack yard.



Dry Fog Dust Suppression System is being installed to further minimize fugitive dust.

Additional water hydrant lines are provided to suppress fugitive emissions, whenever required.

SEIL has also provided wind barriers with 3-5 layers of thick Conocarpus trees (wind resistant plants) all around coal yard, which are designed to arrest spreading of fugitive dust emissions.



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

v

170

vi

Fly ash shall be collected in dry form and storage facility (silos) shall be provided (as applicable). 100% fly ash utilisation shall be ensured from 4th year onwards. Unutilized fly ash shall be disposed off in the ash pond in the form of slurry form. Mercury and other heavy metals (As, Hg, Cr, Pb etc.) will be monitored in the bottom ash as also in the effluents emanating from the existing ash pond. No ash shall be disposed off in low lying area.

Fly ash is collected in dry form and stored in silos of 3x2000 cum capacity for disposal to various users. Unutilised fly ash is being disposed to the ash pond in lean slurry form.



SEIL Project-1 (formerly known as Thermal Powertech Corporation India Limited - TPCIL) is achieving 100% fly ash utilization since September 2019.

Attached letter submitted to CPCB on Annual Fly Ash utilization for FY2020-2021 vide letter no. SEIL P1/CPCB /Delhi/2021/001 dated 15th April 2021 as Annexure- I

SEIL has installed and commissioned fly ash classification unit of 5 Lakh Tonne per annum within the site.

Bottom Ash heavy metals analysis reports and Piezo Wells ground water quality reports are attached as Annexure- III.

vii

Ash Pond shall be lined with HDP/LDP lining. Adequate safety measures shall also be implemented to protect the ash dyke from breached.

Complying.

Ash pond is lined with impervious HDPE liner.



The dyke is designed and incorporated adequate safety measures.

viii	<p>Closed cycle cooling system with natural draft cooling towers shall be provided. The Effluents shall be treated as per the prescribed norms.</p>	<p>Complying.</p> <p>Natural Draft Cooling Towers are installed at the site.</p> <p>ETP consists of Flash Mixer, Lamella Clarifier, Sludge Pit, Oily Water Separation Unit, Oily water collection tank and Central Monitoring Basin & Dosing system is used to treat the effluent to meet the prescribed norms.</p> 
ix	<p>No ground water shall be extracted for the project work at any stage.</p>	<p>Complied.</p> <p>No ground water was extracted for the project work.</p> <p>Entire water requirement of the plant is being met from seawater.</p>
x	<p>Hydrogeological study of the area shall be reviewed annually and results to be submitted to the Ministry and concerned agency in the State Government. In case adverse impact on ground water quality and quantity is observed, immediate mitigating steps to contain any adverse impact on ground water shall be undertaken.</p>	<p>Complying.</p> <p>Ground water is not being used at SEIL.</p> <p>Periodic hydrogeology studies are carried out for the site and surroundings.</p> <p>Hydrogeology Study is being reviewed annually and submitted.</p>
xi	<p>Minimum required environmental flow suggested by the Competent Authority of the State Government shall be maintained in the Channel/rivers even in lean season.</p>	<p>Not applicable.</p> <p>Not applicable as SEIL is not extracting any River/ canal water. Entire water requirement for plant operations is being met through seawater.</p>

xii	The treated effluents conforming to the prescribed standards should be only discharged. Arrangement shall be made that effluents and storm water do not get mixed.	<p>Complying.</p> <p>ETP and STP are in operation for treating waste water generated in the plant to meet the prescribed standards. Treated water is being used for Dust suppression and Green Belt.</p> <p>Storm water system is adequately designed to avoid mixing with effluents and has a separate disposal system.</p> <p>ETP treated effluent and Marine water analysis reports are attached as Annexure- IV.</p>
xiii	A sewage treatment plant shall be provided and the treated sewage shall be used for raising greenbelt/plantation.	<p>Complying.</p> <p>Sewage Treatment Plant (STP) is provided and operational for treating the domestic sewage generated.</p> <p>The treated domestic wastewater is used for greenbelt development.</p> <p>STP Treated effluent analysis reports are attached as Annexure- V.</p>
xiv	Rainwater harvesting should be adopted. Central Groundwater Authority/Board shall be consulted for finalization of appropriate rainwater harvesting technology within a period of three months from the date of clearance and details shall be furnished.	<p>Complying.</p> <p>Approved Third party studies are carried out and rainwater harvesting pits are constructed and maintained along the storm water drains.</p> <p>The rainwater from storm water drains is collected in RWH ponds and is reused. Photo provided in this report.</p>
xv	Adequate safety measures shall be provided in the plant area to check /minimize spontaneous fires in coal yard, especially during summer season. Copy of these measures with full details along with location plant layout shall be submitted to the Ministry as well as to the Regional Office of the Ministry.	<p>Complying.</p> <p>The coal yard is provided with fire hydrant system and water sprinklers arrangement to control spontaneous combustion of coal. Photos provided in the report.</p>

xvi	Storage facilities for auxiliary liquid fuel such as LDO and HFO/LSHS shall be made in the plant areas in consultation with Department of Explosives, Nagpur. Sulphur content in the liquid fuel will not exceed 0.5%. Disaster Management plan shall be prepared to meet any eventuality in case of an accident taking place due to storage of oil.	<p>Complying.</p> <p>SEIL has provided storage facilities for LDO and HFO.</p> <p>These facilities are certified by the Chief Controller of Explosives, Nagpur. Adequate firefighting systems are provided.</p> <p>Onsite Emergency Management Plan is in place to meet any eventuality.</p>
xvii	Regular monitoring of ground water in and around the ash pond area including heavy metals (Hg, Cr, As, Pb) shall be carried out, records maintained and six monthly reports shall be furnished to the Regional office of this Ministry. The data so obtained should be compared with the baseline data so as to ensure that the ground water quality is not adversely affected due to the Project.	<p>Complying.</p> <p>Piezometer wells are provided around ash pond site.</p> <p>Regular monitoring of ground water in and around the ash pond area is being carried out. Piezo well Analysis Reports are attached as Annexure-III.</p>
xviii	Shelter Belt consisting of 3 tiers of plantation around the plant of 100 m width and adequate tree density shall be developed.	<p>Complying.</p> <p>SEIL is developing scientifically designed greenbelt with adequate tree density. Native species have been chosen for plantation. An area of about 450 acres area is being brought under green cover in phased manner.</p> <p>Photos are provided in this report.</p>
xix	First Aid and sanitation arrangement shall be made for the drivers and other contract workers during construction phase.	<p>Complied.</p> <p>Necessary facilities have been provided during construction period.</p> <p>Currently, there are no constructional activities and the labour camp is not operational.</p>

xx	<p>Noise levels emanating from turbines shall be so controlled such that the noise in the work zone shall be limited to 75 dBA. For people working in the high noise area requisite personal protective equipment like earplugs /ear muffs etc. shall be provided. Workers engaged in noisy areas such as turbine area, air compressors etc., shall be periodically examined to maintain audiometric record and for treatment for any hearing loss including shifting to non-noisy/less noisy areas.</p>	<p>Complying.</p> <p>SEIL has ensured that the ambient noise level at the plant boundary shall comply with National ambient noise standards. Quarterly monitoring of noise level data is Complying the standards.</p> <p>Workers are provided with adequate personal protective equipment.</p> <p>Necessary medical examinations are conducted and records are being maintained.</p> <p>APPCB approved third party Noise Quality Monitoring Reports are attached as Annexure- VI.</p>
xxi	<p>Regular monitoring of ground level concentration of SO_x, NO_x, RSPM and Hg shall be carried out in the impact zone and records maintained. If at any stage these levels are found to exceed the prescribed limits, necessary control measures shall be provided immediately. The location of the monitoring stations and the frequency of monitoring shall be decided in consultation with SPCB. Periodic reports shall be submitted to the Regional office of this Ministry. The data shall also be put on the website of the company.</p>	<p>Complied.</p> <p>Continuous AAQM stations (with online analysers) are provided at 4 locations. The data is continuously uploaded to CPCB & APPCB websites on real time basis.</p> <p>In addition, manual air quality monitoring is carried out by engaging third party laboratory (approved by state PCB). The locations and monitoring are in consultation with PCB.</p> <p>APPCB approved third party Ambient Air Quality Monitoring Reports are attached as Annexure- VII.</p> <div style="display: flex; justify-content: space-around;">   </div>

xxii

A good action plan for R&R (if applicable) with package for the project affected persons be submitted and implemented as per prevalent R&R policy within three months from the date of issue of this letter.

Complying.

An amount of Rs. 25 crores paid as R&R package for shifting of fisher man of Nelaturupalem. Also, as per the directives by Dist. Administration, we are providing Rs. 2500 to 504 identified families of fisher man for 6 months which is a cost of Rs. 75,60,000.

In Addition to that Sembcorp is providing 30 Kg rice to 504 fisherman families at the rate of Rs.50 for 6 months which is cost of Rs. 45,36,000.

xxiii

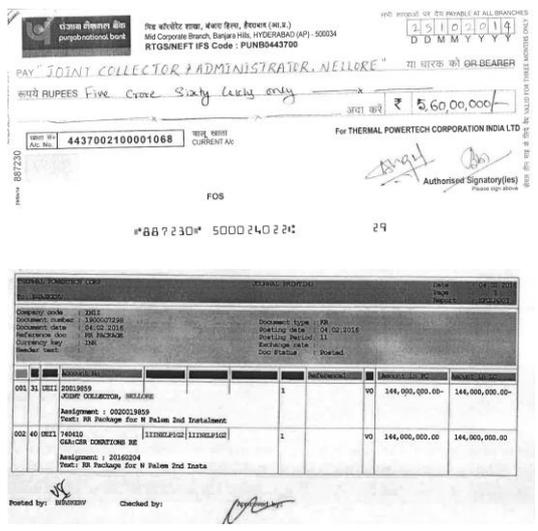
An amount of Rs 32.0 crores shall be earmarked as one time capital cost for CSR programme. Subsequently a recurring expenditure of Rs. 6.4 Crores per annum shall be earmarked as recurring expenditure for CSR activities. Details of the activities to be undertaken shall be submitted within one month along with road map for implementation.

Complying.

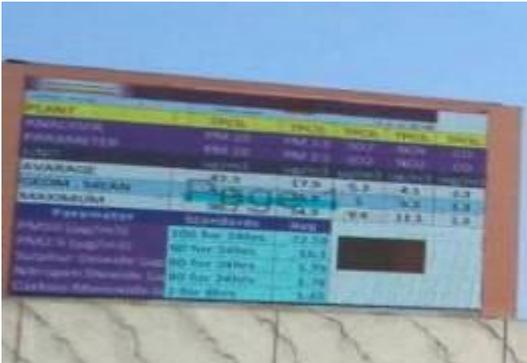
An amount of Rs. 20 crores deposited with District Administration in (Rs. 5.6 crores in 2014 & Rs. 14.4 crores in 2016) for shifting of Fishermen Village of Nelaturupalem.

In addition, an amount of Rs. 22 crores spent in surrounding area during Project Period.

The details of CSR activities being implemented by SEIL are attached as Annexure- VIII.



xxiv	<p>As part of CSR programme the company shall conduct need based assessment for the nearby villages to study economic measures with action plan which can help in upliftment of poor section of society. Income generating projects consistent with the traditional skills of the people besides development of fodder farm, fruit bearing orchards, vocational training etc., can form a part of such programme. Company shall provide separate budget for community development activities and income generating programmes. This will be in addition to vocational training for individuals imparted to take up self-employment and jobs.</p>	<p>Complying.</p> <p>CSR Update from April 2021 to September 2021 in Annexure- VIII.</p> <ul style="list-style-type: none"> • 40 No's of Oxygen concentrators and 2600 Home Isolation Medical Kits for Covid patients donated to District Administration • 19 Community sanitation drives conducted in 25 villages benefitting 2589 families. • Uninterrupted safe drinking water supply has been provided through 9 RO Plants. • Conveyance facility is being provided to govt. schools for 240 children • Covid vaccination awareness competitions conducted in schools to 2000 school children • Covid vaccination awareness conducted through Red FM and Act Channel (Through Digital Media)
xxv	<p>Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project</p>	<p>Complied.</p>
xxvi	<p>The Project proponent shall advertise in at least two local newspapers widely circulated in the region around the project, one of which shall be in the vernacular language of the locality concerned within seven days from the date of this clearance letter, informing that the project has been accorded environmental clearance and copies of clearance letter are available with the State Pollution Control Board/Committee and may also be seen at the Website of the Ministry of Environment and Forests at http://envfor.nic.in.</p>	<p>Complied.</p> <p>Advertisements have been given in Telugu newspaper on dated: 04th July-2009 and in English newspaper on dated: 03rd July 2009.</p>

xxvii	<p style="text-align: center; font-size: 2em; font-weight: bold;">177</p> <p>A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zilla Parishad /Municipal corporation, urban local body and the local NGO, if any from whom suggestions/representations, if any, received while processing the proposal. The Clearance letter shall also be put on the website of the Company by the Proponent.</p>	<p>Complied.</p> <p>Clearance letter was sent to concerned Panchayat, Zilla Parishad/ Municipal Corporation, urban local body. Clearance letters are also uploaded in Sembcorp website at https://www.sembcorpenergyindia.com/AboutUs/Disclosure</p>
xxviii	<p>A dedicated Environment Management Cell with suitable qualified personnel shall be set up under the control of a Senior executive who will report directly to the head of the organization.</p>	<p>Complied.</p> <p>SEIL has established an Environment Management Cell with suitable qualified personnel under the supervision of Head-HSE, who reports directly to the Station Head.</p>
xxix	<p>The proponent shall upload the status of compliance of the stipulated EC conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of MOEF, the respective Zonal Office of CPCB and the SPCB. The criteria pollutant levels namely: SPM, RSPM, SOx, NOx (ambient levels as well as stack emissions) shall be displayed at a convenient location near the main gate of the company in the public domain.</p>	<p>Complied.</p> <p>Regular compliance reports are submitted to ministry. SEIL has uploaded the status reports including the monitored data in the Sembcorp website at https://www.sembcorpenergyindia.com/AboutUs/Disclosure</p> <p>The environmental monitored data including Ambient Air Quality for criteria pollutants and stack emission are displayed at the main gate.</p>  <p style="text-align: center;"><u>Main Gate display of AAQ data</u></p>
xxx	<p>The project proponent shall also submit six monthly reports on the status of compliance of the stipulated EC conditions including results of monitored data to the respective Regional Office of MOEF, the respective Zonal office of CPCB and SPCB.</p>	<p>Complying.</p> <p>Six Monthly reports against EC compliance is being submitted to MOEF&CC, the respective Zonal office of CPCB and SPCB.</p>

xxxix	<p>The Environment Statement for each financial year ending 31st March in Form V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of EC conditions and shall also be sent to the respective Regional Offices of the Ministry.</p>	<p>Complying.</p> <p>Environment Statement (Form V) for FY2020-21 has been submitted to APPCB (Ref. No.: SEIL P1/APPCB/BZA/2021/006 dated 28th September 2021).</p>
xxxii	<p>The project proponent shall submit six monthly reports on the status of the implementation of the stipulated environmental safeguards to the Ministry of Environment and Forests, its Regional Office, Central Pollution Control Board and State Pollution Control Board. The project proponent shall upload the status of compliance of the environmental clearance conditions on their website and update the same periodically and simultaneously send the same by e-mail to the Regional Office, Ministry of Environment and Forests.</p>	<p>Complying.</p> <p>SEIL is submitting the six monthly reports on status of compliance and the monitored data to the concerned regulatory authorities.</p> <p>The reports are being uploaded on APPCB & Sembcorp website.</p> <p>https://www.sembcorpenergyindia.com/AboutUs/Disclosure</p> <p>https://pcb.ap.gov.in/UI/Submission_Comppliance_of_EC_CFE_CFO_Direction.aspx</p>
xxxiii	<p>Regional Office of the Ministry of Environment and Forests will monitor the implementation of the stipulated conditions. A complete set of documents including Environmental Impact Assessment Report and Environment Management Plan along with the additional information submitted from time to time shall be forwarded to the Regional Office for their use during monitoring. Project proponent will upload the compliance status in their website and update the same from time to time at least six monthly basis. Criteria pollutants levels including NO_x (from Stack and ambient air) shall be displayed at the main gate of the power plant.</p>	<p>Noted. Being complied.</p> <p>The compliance reports are also uploaded in Sembcorp website.</p> <p>https://www.sembcorpenergyindia.com/AboutUs/Disclosure</p> <p>The environmental monitored data including Ambient Air Quality for criteria pollutants and stack emission data is being displayed at the main gate.</p>  <p><u>Main Gate display of AAQ data</u></p>

xxxiv	Separate funds shall be allocated for implementation of environmental protection measures along with item wise break up. These costs shall be included as part of the project cost. The funds earmarked for the environment protection measures shall not be diverted for other purposes and year wise expenditure should be reported to the Ministry.	Complied.
xxxv	The project authorities shall inform the Regional Office as well as the Ministry regarding the date of financial closure and final approval of the Project by the concerned authorities and the dates of start of land development work and commission of Plant.	Complied and communicated.
xxxvi	Full cooperation shall be extended to the Scientists/Officers from the Ministry /Regional Office of the Ministry at Bangalore/CPCB/SPCB.	Noted for compliance.
xxxvii	Harnessing Solar Power within the premises of the plant particularly at available roof tops shall be carried out and status of implementation including actual generation of solar power shall be submitted along with half yearly monitoring reports.	Complying. Solar panels have been installed above canteen roof and solar power light fixtures are installed at plant and township.
xxxviii	Long term study of radioactivity and heavy metals contents on coal to be used shall be carried out through a reputed institute and results thereof analysed every two year and reported along with monitoring reports. Thereafter mechanism for an in-built continuous monitoring for radio activity and heavy metals in coal and fly ash (including bottom ash) shall be put in place.	Complying. Quarterly Coal heavy metal analysis reports are attached as Annexure-IX.

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Xxxix	Fugitive emissions shall be controlled to prevent impact on agricultural or non-agricultural land.	<p>Complying.</p> <p>Stock Pile Dust Suppression system around coal yards, Dry Fog dust suppression System along conveyor belts, Cyclone separators & bag filters at crusher house, Vacuum truck for road dust cleaning are implemented to avoid fugitive dust emissions and prevent the impact on agricultural or non-agricultural land.</p>  
xl	Space for FGD shall be provided for future installation as may be required.	<p>Complying.</p> <p>Adequate space provision is done.</p>
Xli	No ground water shall be extracted for use in operation of the power plant even in lean season. No water bodies including natural drainage system in the area shall be distributed due to activities associated with the setting up / operation of the power plant.	<p>Complying.</p> <p>Plant water requirement is met with Sea Water treated at WTP.</p>

Xlii	Fly ash is not to be used for agricultural purpose. No mine void filling will be undertaken as an option for ash utilization without adequate lining of mine with suitable media such that no leachate shall take place at any point of the time. In case, the option of mine void filling is to be adopted, prior detailed study of soil characteristics of the mine area shall be undertaken from an institute of repute and adequate clay lining shall be ascertained by the State Pollution Control Board and implementation done in close coordination with the State Pollution Control Board.	Complying.
Xliii	Green belt shall also be developed around the ash pond over and above the green belt around the plant boundary.	Complying.
Xliv	A Common Green Endowment Fund shall be created and the interest earned out of it shall be used for the development and management of green cover of the area.	Complied. Separate fund centre has been earmarked for Green belt development and maintenance.

Complied.

CSR Committee has been formed and is working. CSR committee stake holders meetings conducted.



RO Plant Maintenance as part of CSR activity

- 40 No's of Oxygen concentrators and 2600 Home Isolation Medical Kits for Covid patients donated to District Administration
- 19 Community sanitation drives conducted in 25 villages benefitting 2589 families.



- Uninterrupted safe drinking water supply has been provided through 9 RO Plants.
- Conveyance facility is being provided to govt. schools for 240 children
- Covid vaccination awareness competitions conducted in schools to 2000 school children
- Covid vaccination awareness conducted through Red FM and Act Channel (Through Digital Media)

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

Xlv

Xlvi	An Environment Cell comprising of at least one expert in environmental science / engineering, ecology, occupational health and social science, shall be created preferably at the project site itself and shall be headed by an officer of appropriate superiority and qualification. It shall be ensured that the Head of the Cell shall directly report to the Head of the Plant who would be accountable for implementation of environmental regulations and social impact improvement / mitigation measures.	<p>Complying.</p> <p>SEIL has established an Environment Management Cell with suitable qualified personnel under the supervision of Head-HSE, who reports directly to the Station Head.</p> <p>Services of Marine biologist & ecologist will be hired based on the requirement.</p>
Xlvii	The project proponent shall formulate a well laid Corporate Environment Policy and identify and designate responsible officers at all levels of its hierarchy for ensuring adherence to the policy and compliance with the conditions stipulated in this clearance letter and other applicable environmental laws and regulations.	<p>Complied.</p> <p>Environmental Policy has been incorporated in the QHSE Policy.</p> <p>QHSE Policy is attached as Annexure- X.</p>
5	The Ministry of Environment and Forests reserves the right to revoke the clearance if conditions stipulated are not implemented to the satisfaction of the Ministry. The Ministry may also impose additional environmental conditions or modify the existing ones, if necessary.	Noted.
6	The environmental clearance accorded shall be valid for a period of 5 years to start operations by the Power Plant.	<p>Noted.</p> <p>The validity of EC is extended to 7 years by MoEF notification.</p> <p>The 2x660 MW project has already commenced operations since 2015.</p>
7	Concealing factual data or submission of false /fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act 1986.	Noted.

8	In case of any deviation or alteration in the project proposed including the transportation system from those submitted to this Ministry for clearance, a fresh reference should be made to the Ministry to assess the adequacy of the condition(s) imposed to add additional environmental protection measures required, if any	Noted for compliance.
9	The above stipulations would be enforced among others under the Water (Prevention and Control of Pollution) Act 1974, the Air (Prevention and Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, and rules there under, Hazardous Wastes (Management and Handling) Rules, 1989 and its amendments, the Public Liability Insurance Act, 1991 and its amendments.	Noted.
10	Any appeal against this environmental clearance shall lie with the National Environmental Appellate Authority, if preferred, within 30 days as prescribed under Section 11 of National Environmental Appellate Act, 1997.	Noted.

SEIL P1/MoEF&CC/Chennai/2021/005
27th December 2021

Sembcorp Energy India Limited

CIN: U40103HR2008PLC095648

Regd. Office: 5th Floor, Tower C, Building No 8

DLF Cybercity, Gurgaon - 122002, Haryana, India

Tel (91) 124 389 6700 / 01

Fax (91) 124 389 6710

E-mail: cs.india@sebcorp.com

Website: www.sebcorpenergyindia.com

To

The Regional Director,
Regional Office (South Eastern Region),
Ministry of Environment, Forests & Climate Change,
1st & 2nd Floor, HEPC Building, No. 34, Cathedral Garden Road,
Nungambakkam,
Chennai- 600034

**Sub.: Submission of Half Yearly CRZ Compliance Report of Sembcorp Energy India Limited
Project-1 (formerly known as Thermal Powertech Corporation India Limited— TPCIL)
for the period from April 2021 to September 2021**

Ref.: CRZ clearance Letter No. F.No. 11-129/2010—IA – III dated 5th December 2011

Dear Sir,

This has reference to the above subject, we are hereby submitting the Half Yearly compliance status report for the period from April 2021 to September 2021 along with supporting documents to the conditions specified under CRZ Clearance issued to Sembcorp Energy India Limited Project-1 (Formerly known as Thermal Powertech Corporation India Limited— TPCIL), Nellore.

Hope the above is in order.

Thanking you,

Yours faithfully,

For **Sembcorp Energy India Limited****Pavan Kumar Rao V**

Head HSE- SEIL

Copy To: 1. The Director, IA.I, MoEF & CC, New Delhi
2. The Environmental Engineer, APPCB, Nellore

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SIX-MONTHLY CRZ CLEARANCE COMPLIANCE REPORT OF

Sembcorp Energy India Limited Project-1

(Formerly Known as THERMAL POWERTECH CORPORATION INDIA LIMITED)

2 X 660 MW COAL BASED SUPERCRITICAL THERMAL POWER PLANT

(STAGE I - 2 X 660 MW)

AT PAINAMPURAM & NELATURU VILLAGES, MUTHUKUR MANDAL

SPSR NELLORE DISTRICT

ANDHRA PRADESH

INDIA



Period: April 2021 to September 2021

Background:

Sembcorp Energy India Ltd Project-1 [formerly known as Thermal Powertech Corporation India Limited (TPCIL)] is a leading independent power company in India. SEIL is promoted by Sembcorp Utilities Pvt. Ltd., which is part of the Singapore based Sembcorp Group.

SEIL Project-1 is currently consisting of 2x660 MW is under operation since March 2015.

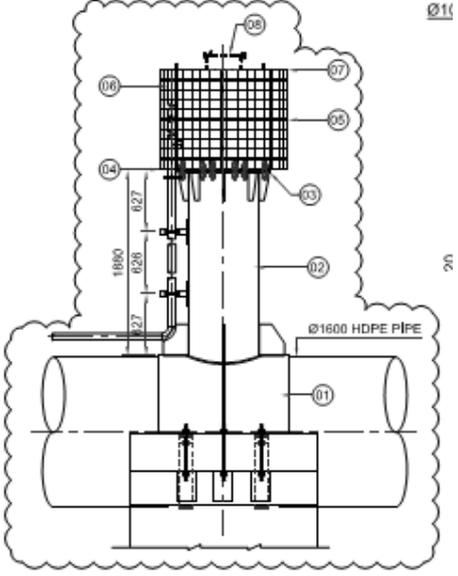
The latitude & longitude of North South extremes of Site are 80°08'35.956"E & 14°19'5.211"N and 80°09'16.325"E & 14°21'0.874"N respectively.

CRZ Clearance for the project is obtained from Ministry of Environment & Forests, Vide F.No.11-129/2010-IA.III Dated: 5th Dec 2011. The condition wise compliance to the clearance letter is detailed below.

CONDITION WISE COMPLIANCE AGAINST CRZ CONDITIONS

S. No.	CRZ CONDITIONS	COMPLIANCE STATUS
<u>SPECIFIC CONDITIONS:</u>		
i.	“Consent For Establishment” shall be obtained from state pollution control board under air and water act and a copy shall be submitted to the Ministry before start of any construction work at the site.	<p>Complied.</p> <p>Consent For Establishment (CFE) from AP Pollution Control Board has been obtained vide Order. No. 177/PCB/CFE/RO/-NLR/HO/2009-433, Dated: 15/05/2010.</p>
ii.	Cutter suction dredging shall be adopted instead of grab technology so as to control the sediments during dredging.	<p>Complied.</p> <p>Cutter suction dredging was adopted during the said activities.</p>
iii.	Top of the pipeline buried shall be minimum 2 m below the sea bed. The PP shall obtain a certificate of compliance from the agency executing the pipeline, with supporting documentation and shall submit to RO of MoEF and to state PCB.	<p>Complied.</p> <p>Pipeline is buried at 2 m below the seabed. The compliance certificate submitted to RO of MoEF and APPCB. Copy of the same is given here.</p> <div style="text-align: right;">  </div> <p>Date: 24th June' 2014 Sub.: Sea Water Intake Pipeline Installation Certificate</p> <p style="text-align: center;"><u>TO WHOMSOEVER IT MAY CONCERN</u></p> <p>Dear Sir,</p> <p>Vide Order No. TPCIL/INFRA-01/SWI & EXT CHP/SUPPLY/001 & TPCIL/INFRA-01/SWI & EXT CHP/SERVICES/002 dated 29-12-10 from TPCIL we have executed the work of laying the sea water intake and outfall pipelines including offshore Intake System and Diffusers for their 2X660MW Coal based Thermal Power Project at Painapuram and Nelatur Villages, Muthukuru Mandal, SPSR Nellore district.</p> <p>Entire offshore intake pipeline and Outfall pipeline of length 2000Mtrs and 1200Mtrs respectively are installed and buried in the sea bed with a minimum back fill of 2Mtrs from top of the pipeline. This is ensured through conducting post pipeline laying and post backfilling offshore depth survey through Ecosounder (Bathymetry survey). Cross section profiles for offshore chainage from LFP to Intake Header and Outfall diffuser has been attached for your reference.</p> <p>Thanking You.</p> <p style="text-align: center;">For GAYATRI PROJECTS LIMITED</p> <div style="text-align: center;">  <p>I. S. N. MURTHY DGM - Projects, GPL (EPC-PP).</p> </div> <div style="text-align: center; font-size: small;"> <p>Gayatri Projects Limited, B1, 6-3-1090, TSI Towers The Shree Road, Somajigutta, Hyderabad 500 092 CIN: L90990AP1809PLC057289</p> <p>T: +91 40 2331 0330/4284/4286 F: +91 40 2330 0458 E: gg.phy@gayatri.co.in www.gayatri.co.in</p> </div>

iv.	No effluent from fly ash system is permitted to discharge into the marine system as committed by PP. The effluent from fly ash shall be treated and the entire quantity shall be recycled in the cooling tower makeup etc., and suitable meter shall be installed to record the quantity of effluent recycled.	<p>Complying.</p> <p>No effluent from fly ash system is discharged into marine water. The entire effluent water from ash pond is collected and recycled. Flow Meters are installed for recording the quantity.</p>
v.	Shall implement all the measures as committed to the Ministry as a part of the clarifications submitted by the PP. A copy of these submissions shall be submitted to RO of MoEF.	<p>Complied.</p> <p>SEIL has implemented all the measures as committed to the Ministry.</p>
vi.	A suitable STP shall be used for green belt, dual plumbing system etc., measuring meters shall be provided to record the treated effluent used for different purposes.	<p>Complied.</p> <p>STP is provided to treat the domestic sewage generated at the site. The treated water is being used for greenbelt development.</p>
vii.	All the mitigation measures submitted in the EIA report shall be prepared in a matrix format and the compliance for each mitigation plan shall be submitted to MoEF-RO.	<p>Complying.</p> <p>The mitigation measures along with compliance are being followed at SEIL.</p>

<p>viii.</p>	<p>The proponent shall commit himself to be one of the partners / proponents (who have undertaken / will be undertaking similar power projects in the close proximity of site) as and when instructed by the MoEF/State Government Authorities in preparing an overall EIA report comprising both terrestrial / marine EIA components for the region and share the cost of the study and proposed mitigation measures for the coastal stretch as decided by the authorities in the best interest of protecting the environment.</p>	<p>Noted for compliance.</p>
<p>ix.</p>	<p>Appropriate screens and trash bars shall be put in place at the intake to avoid fish entering into the pipe due to heavy quantity of water drawl by once through water intake system.</p>	<p>Complied.</p> <p>Appropriate screens and trash bars are provided to avoid fish entering into the pipe.</p>  <p style="text-align: center;">INTAKE VELOCITY CAP UNIT TYP. DETAIL</p>

x.	Temperature and salinity level shall be monitored regularly by providing on-line monitoring system at the appropriate location on the outfall system.	<p>Complying.</p> <p>The parameters are being monitored regularly by providing online EQMS which is connected to APPB/CPCB on real time basis.</p>
xi.	Periodic monitoring of coastal water shall be carried out at outfall location.	<p>Complying.</p> <p>Monthly joint sampling of coastal water is being practiced along with state PCB office.</p>
xii.	No construction work other than those permitted in coastal regulation zone notification shall be carried out in coastal regulation zone area.	<p>Complied.</p>
xiii.	The project proponent shall set up separate environmental management cell for effective implementation of the stipulated environmental safeguards under the supervision of a senior executive.	<p>Complied.</p> <p>SEIL established an Environment Management Cell with suitable qualified personnel under the supervision of Head-HSE.</p>
xiv.	The funds earmarked for environment management plan shall be included in the budget and this shall not be diverted for any other purposes.	<p>Complied.</p>

S. No.	CRZ CONDITIONS	COMPLIANCE STATUS
<u>GENERAL CONDITIONS:</u>		
i.	Appropriate measures must be taken while undertaking digging activities to avoid any likely degradation of water quality.	Noted for compliance.
ii.	Full support shall be extended to the officers of this Ministry / regional office at Bangalore by the project proponent during inspection of the project for monitoring purposes by furnishing full details and action plan including action taken reports in respect of mitigation measures and other environmental protection activities.	Noted for compliance.
iii.	A six – monthly monitoring report shall need to be submitted by the project proponents to the Regional Office of this Ministry at Bangalore regarding the implementation of the stipulated conditions.	Complying. Latest Half Yearly compliance report submitted vide Letter No: SEIL P1/MoF&CC/Chennai/2021/003 dated 08 th June 2021.
iv.	Ministry of Environment & Forests or any other competent Authority may stipulate any additional conditions or modify the existing ones, if necessary in the interest of environment and the same shall be complied with.	Noted and shall be complied.
v.	The Ministry reserves the right to revoke this clearance if any of the conditions stipulated are not complied with satisfaction of the Ministry.	Noted.

vi.	In the event of change in project profile or change in the implementation agency, a fresh reference shall be made to the Ministry of Environment and Forests.	Noted for compliance.
vii.	The project proponents shall inform the regional office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of start of land development work.	Complied and Communicated.
viii.	A copy of the clearance letter shall be marked to concerned Panchayat / local NGO, if any, from whom any suggestions / representation has been made received while processing the proposal.	Complied.
ix.	Tamil Nadu Pollution Control Board shall display a copy of the clearance letter at the Regional Office, district industries centre and Collector's Office/ Tahsildar's office for 30 days.	Noted. Copy of compliance has been submitted to APPCB.
x.	These stipulations would be enforced among others under the provisions of water (prevention and control of pollution) Act 1974, the air (prevention and control of pollution) Act 1981, the environment (protection) Act, 1986, the public liability (Insurance) Act 1991 and EIA notification 1994, including the amendments and rules made thereafter.	Noted.
xi.	All other statutory clearances such as the approvals for storage of diesel from chief controller of explosives, fire department, civil aviation department, forest conservation Act, 1980 and wild life (Protection) Act, 1972 etc., shall be obtained, as applicable by project proponents from the respective competent authorities.	Complied and all the necessary approvals are obtained from respective authorities.

Xii.	The project proponent shall advertise in at least two local newspapers widely circulated in the region, one of which shall be in the vernacular language informing that the project has been accorded environmental clearance and copies of clearance letters are available with the state pollution control board and may also be seen on the website of the Ministry of Environment and Forest at http://www.envfor.nic.in . The advertisement should be made within 10 days from the date of receipt of the clearance letter and a copy of the same should be forwarded to the regional office of this Ministry at Bangalore.	Complied and Communicated.
xiii.	Environmental Clearance is subject to final order of the Hon'ble Supreme Court of India in the matter of Goa Foundation Vs. Union of India in writ Petition (civil)No.460 of 2004 as may be applicable to this project.	Noted.
xiv.	Status of compliance to the various stipulated environmental conditions and environmental safeguards will be uploaded by the project proponent in its website.	Noted and compliance statement is being uploaded on Sembcorp website at https://www.sembcorpenergyindia.com/AboutUs/Disclosure
xv	A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zilla Parishad / Municipal corporation, urban local body and local NGO, if any from whom suggestions / representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the company by the proponent.	Complied.

xvi.	The proponent shall upload the status of compliance of the stipulated EC conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of MoEF, the respective zonal office of CPCB and the SPCB.	Noted and uploaded on the Sembcorp website. The reports are being sent to concern regulatory bodies.
xvii.	The proponent shall also submit six monthly reports on the status of compliance of the stipulated EC conditions including results of monitored data to the respective Regional Office of MoEF, the respective zonal office of CPCB and the SPCB.	Complied. Six monthly EC Compliance reports are being submitted to concern regulatory bodies.
xviii.	The Environmental statement for each financial year ending 31 st March in form-V as is mandated to be submitted by the project proponent to the concerned state pollution control board as prescribed under the environment (protection) rules, 1986 as amended subsequently, shall also be put on the website of the company along with the status of compliance of EC conditions and shall also be sent to the respective Regional Offices of MoEF by e-mail.	Complied. Environmental Statement (Form-V) for each financial year is being submitted to APPCB and the same is uploaded on company Website. Reports are being submitted to respective regulatory bodies.

From: Environment SEILP1 <environment.seilp1@semcorp.com>
Sent: 30 September 2021 19:24
To: APPCB RO Nellore <ronlr-ee1@appcb.gov.in>; membersecy@appcb.gov.in
Cc: Ramesh Raman <ramesh.raman@semcorp.com>; Pavan Kumar Rao Vemulapalli <pavan.vemulapalli@semcorp.com>
Subject: Submission of Environment Statement (Form V) of SEIL P-1 for FY2020-21
Importance: High

Dear Sir,

Please find the attached Environment Statement (Form V) submitted of SEIL Project-1 for FY2020-21.

This is for your record please.

Thanks & Regards,

Ashok Kumar Tangudu
Environment Manager



Sembcorp Energy India Limited
Project-2 Office:
Ananthavaram Village| Varakavipudi Panchayat
TP Gudur Mandal, SPSR Nellore - 524 344, India
Mob: (91) 7995333537
www.semcorpenergyindia.com

Pavan Kumar Rao Vemulapalli
Head - Health Safety and Environment
Health Safety and Environment, Thermal Business, India
SEMBCORP ENERGY INDIA LTD
Ananthavaram- Village / Varkavipudi Panchayat, TP Gudur- Mandal, SPSR Nellore - 524344, Andhra Pradesh, India
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FAX :+91 8613501304

This e-mail is confidential and may also be privileged. If you are not the intended recipient, please delete it and notify us immediately. You should not copy or use it for any purpose, nor disclose its contents to any other person. Thank you.

**Sembcorp Energy India Limited**

CIN: U40103HR2008PLC095648

Regd. Office: 5th Floor, Tower C, Building No 8

DLF Cybercity, Gurgaon - 122002, Haryana, India

Tel (91) 124 389 6700 / 01

Fax (91) 124 389 6710

E-mail: cs.india@sembcorp.com

Website: www.sembcorpenergyindia.com

SEIL P1/APPCB/BZA/2021/006

28th September 2021

To
The Member Secretary
Andhra Pradesh Pollution Control Board
D. No. 33-26-14 D/2, Near Sunrise Hospital
Pushpa Hotel Centre, Chelamavari Street
Kasturibaipet
Vijayawada– 520010.

Sub.: **Submission of Environment Statement for the year 2020-21 of Sembcorp Energy India Limited Project-1 (formerly known as Thermal Powertech Corporation India Limited–TPCIL), Nellore.**

Ref: CFO order issued to TPCIL vide Ref: APPCB/VJA/NLR/930/HO/CFO/2018 dated 23.03.2018 valid till 30.11.2021.

Dear Sir,

This has reference to captioned subject and the cited reference. Please find enclosed herewith Environment Statement of Sembcorp Energy India Limited Project-1 (formerly known as Thermal Powertech Corporation India Limited– TPCIL), Nellore for the year 2020-21 duly filled in Form V.

Thanking you,

Yours faithfully,
For M/s. Sembcorp Energy India Limited

Pavan Kumar Rao V

Head HSE- SEIL

Encl: Environment Statement in Form-V along with Annexures

Copy To: The Regional Officer, APPCB, Nellore

**ENVIRONMENTAL STATEMENT
FOR THE YEAR 2020-21**

Of

**2x660 MW
Super Critical Coal Based Thermal Power Plant**

At

***Painampuram & Nelaturu villages
Muthukur Mandal
SPSR Nellore District
Andhra Pradesh***

Submitted By

Sembcorp Energy India Limited Project-1
(Formerly known as Thermal Powertech Corporation India Ltd)
SPSR NELLORE, ANDHRA PRADESH

September 2021

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FORM V
(See Rule 14)

Environmental Statement Report for the financial year ending the 31st March 2021

PART- A

- (i) Name and address of the Owner/Occupier of the Industry, Operation or process : Mr. Ramesh Raman
Plant Manager
Sembcorp Energy India Limited
Project-1
(Formerly known as Thermal Powertech Corporation India Ltd)
Pyanampuram / Nelaturu Village
Muthukur Mandal, SPSR Nellore
524 344
0861-3052311
0861-3052309
- (ii) Industry Category : -
(Coal based thermal power plant)
- (iii) Production capacity : 1320 MW (2X660 MW)
- (iv) Year of Establishment : 2015
- (V) Date of the last Environmental statement Submitted : 15th May 2020

PART- B

Water and Raw Material consumption

1. Water Consumption, m³/d:

- Plant Process : 15,645 m³/Day
Cooling : 146640 m³/Day
Domestic : 53 m³/Day

Name of Product	Process Water Consumption per Unit of Product Output	
	During the Previous Financial Year (2019-20)	During the Current Financial Year (2020-21)
Electricity	0.585 m ³ /MWH (Excl. Cooling Tower makeup) 6.0 m ³ /MWH (Incl. Cooling Tower makeup)	0.64 m ³ /MWH (Excl. Cooling Tower makeup) 6.6 m ³ /MWH (Incl. Cooling Tower makeup)

2. Raw Material Consumption

Name of Products	Name of Raw Materials	Unit	Consumption of raw material per unit of output	
			During the Previous Financial year (2019-20)	During the current Financial year (2020-21)
Electricity	Coal	MT/MWH	0.57	0.59
	Fuel Oil	ML/KWH	0.05	0.17

*Industry may use codes if disclosing details of raw materials would violate contractual obligations, otherwise all industries have to name the raw material used.

PART- C

Pollution Discharged to Environment/Unit of Output
(Parameters as specified in the consent issued)

(i) Pollution	Quantity of pollutants discharged	Concentrations of pollutants in discharges (mass/volume)	Percentage of variation from prescribed standards with reasons
a) Water	Please refer Annexure-I (Effluent Water Quality Monitoring third party reports)		
b) Air	Please refer Annexure-II (Stack Emission Monitoring third party reports)		

PART- D

Hazardous Wastes

(As specified under Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016)

(a) From Process:

S.No.	Hazardous Wastes	Total Quantity	
		During the Previous Financial year (2019-20)	During the Current Financial year (2020-21)
1	Expired Paints/ Paint Waste/ Empty Paint Cans	-	0
2	Expired Chemicals/ Chemical Waste/ Empty Chemical	-	0.10 MT
3	Spent Ion Exchange Resins	-	7.50 MT
4	Oil Soaked or Chemicals coated Cotton waste	-	0
5	Used Oil Filters/ Damaged Filters	-	0
6	ETP Sludge/ Oil Sludge	-	0
7	Used Lubricant Oil	25 MT	45.48 MT
8	Waste Oil from DG Sets	-	0
9	Aerosol Cans	-	0.07 MT
10	Used Empty Chemical Jar/	-	0

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	Bottles		
11	Used Empty PVC oil sample Bottles	-	0.03 Kg
12	Used Grease	-	-
13	Lead Acid Batteries	-	154 No's
14	E-Waste	1.266 MT	2.433 MT

PART- E Solid Wastes

(b) From pollution control facilities:

S.No.	Solid Wates	Total Quantity (MT)	
		During the Previous Financial year (2019-20)	During the Current Financial year (2020-21)
1	Ash (Fly Ash+ Bottom Ash)	12,26,543	13,39,535

(c)

(1) Quantity recycled or re-utilized with in the plant:

S.No.	Solid Wates	Total Quantity (MT)	
		During the Previous Financial year (2019-20)	During the Current Financial year (2020-21)
1	Ash (Fly Ash+ Bottom Ash)	70,136	3,24,355

(2) Sold:

S.No.	Solid Wates	Total Quantity (MT)	
		During the Previous Financial year (2019-20)	During the Current Financial year (2020-21)
1	Ash (Fly Ash+ Bottom Ash)	9,00,880	10,65,368

(3) Disposed:

S.No.	Solid Wates	Total Quantity (MT)	
		During the Previous Financial year (2019-20)	During the Current Financial year (2020-21)
1	Ash (Fly Ash+ Bottom Ash)	-	-

PART- F

Please specify the characterization (in terms of composition and quantum) of hazardous as well as solid wastes and indicate disposal practice adopted for both these categories of wastes.

Characteristics of Solid Wastes

Fly Ash

Parameter	Unit	Fly Ash
Chromium (as Cr ⁺⁶)	mg/kg	BDL (DL:1.0)
Chloride (as Cl)	%(w/w)	0.01
Arsenic (as As)	mg/kg	ND (DL:0.5)
Selenium (as Se)	mg/kg	ND (DL:0.5)
Lead (as Pb)	%(w/w)	0.0059
Mercury (as Hg)	mg/kg	ND (DL:0.1)
1,4-Dioxane	mg/kg	BDL (DL: 1.0)

Disposal practice of Solid Waste:

(a) Disposal Practice of Hazardous Waste:

S.No.	Name of Hazardous Waste	Disposal Practice
1	Expired Paints/ Paint Waste/ Empty Paint Cans	Disposal to Authorized recyclers/ Reprocessors/ Incinerators
2	Expired Chemicals/ Chemical Waste/ Empty Chemical	Disposal to Authorized recyclers/ Reprocessors/ Incinerators
3	Spent Ion Exchange Resins	Disposal to Authorized recyclers/ Reprocessors/ Incinerators
4	Oil Soaked or Chemicals coated Cotton waste	Disposal to Authorized recyclers/ Reprocessors/ Incinerators
5	Used Oil Filters/ Damaged Filters	Disposal to Authorized recyclers/ Reprocessors/ Incinerators
6	ETP Sludge/ Oil Sludge	Disposal to Authorized recyclers/ Reprocessors/ Incinerators
7	Used Lubricant Oil	Disposal to Authorized recyclers/ Reprocessors/ Incinerators/ Pre-processors
8	Waste Oil from DG Sets	Disposal to Authorized recyclers/ Reprocessors/ Incinerators/ Pre-processors
9	Aerosol Cans	Disposal to Authorized recyclers/ Reprocessors/ Incinerators
10	Used Empty Chemical Jar/ Bottles	Disposal to Authorized recyclers/ Reprocessors/ Incinerators
11	Used Empty PVC oil sample Bottles	Disposal to Authorized recyclers/ Reprocessors/ Incinerators
12	Used Grease	Disposal to Authorized recyclers/ Reprocessors/ Incinerators
13	Lead Acid Batteries	Return to manufacturers/dealers on buyback basis/ Authorized recyclers
14	E-Waste	Authorized recyclers/ Reprocessors

(b) Disposal Practice of Solid Waste:

S.No.	Name of Solid Waste	Disposal Practice
1	Ash (Fly Ash+ Bottom Ash)	Utilization in Cement/ AAC blocks/ Brick Industry/ RMC/ Export to other countries/ Disposal in Ash pond/ Filling of Low lying Areas

PART- G

Impact of the pollution control measures on conservation of natural resources and on the cost of production.

- Bulk chemical storage areas are having dykes to handle any chemical leakages and avoid contamination to the ground.

Energy Conservation Initiatives

1. Replacement of existing lighting system with Energy efficient LED bulbs- 85 KW
2. Through Prudent O&M Practices like below the energy savings are up to 12 Kcal/Kwh
 - a) Overhauling of Turbines
 - b) Improvement of Turbine Efficiency
 - c) Condenser Tube cleaning
 - d) Enhancement of Heat energy drain passing valves and thermal insulations
3. Through Prudent O&M Practices like below savings of up to 1000 KW
 - a) Due to Boiler sides improvement during overhauling
 - b) Corrocoating of CW & ACW pumps
 - c) Water resistant coating on Fire hydrant pumps
4. Heat rate reduction of Approx. 5 Kcal/Kwh because of SPARK (Smart Performance Analysis for Real-time KPI) – Online cloud based performance monitoring system implemented to improve performance by tracking critical parameters like THR, Boiler Efficiency, GHR, Equipment performance and their loss breakups/gaps etc.,) and to control the various controllable losses on real time.
5. Boiler Computational Fluid Dynamics (CFD) modelling developed to analyze boiler performance and resulting in optimized performance.
 - Field log sheets replaced by Mobile app in order to digitalize in our internal operations. This enhances reduction in paper consumption.
 - A total of about Rs. 28 Lakh is spent on Environment monitoring, Waste disposal, Maintenance of Pollution Control Monitoring equipment like CEMS, CAAQMS & EQMS for the financial year 2020-21.
 - Regular monitoring of Ambient Air Quality, Stack emissions and Effluent quality have been taken up to evaluate the efficiency of the pollution control systems and control measures. Both CEMS, CAAQMS & EQMS are connected to APPCB / CPCB websites and data is being transmitted on real time basis.

PART- H

Additional measures/ investment proposal for environmental protection including abatement of pollution, prevention of pollution

Capital investment on Energy conservation equipment

- a) Installation of additional Thermo Couples in Final Super Heater (FSH) incurred a cost of Rs. 1,00,000,00
- SEIL has erected the structural platform for container stuffing (jumbo bags stuffing into container) for export purpose of Ash.
 - SEIL has hired two JCBs for free loading of pond ash to supply customers.
 - Bulk shipment and Break Bulk shipment done to USA around 70,000 MT (44K MT +26K MT)
 - Exploring the international markets.
 - Finding other modes of transportation of fly ash to the customers. (one Rake sent to Cement factory at Kerala around 3000 MT)
 - R&D study conducted on boiler tube failure reduction, chemical regime improvement and Oxide growth & exfoliation reduction by M/s Structural Integrity Associates Incorporation, USA, cost incurred around Rs. 23,11,000.
 - 407 acres of massive tree plantation done inside as well as outside of the Plant premises. Lawns/ gardens also are developed inside the plant premises to enhance aesthetics.
 - Conocarpus plantation is done all around the coal stack area to suppress the wind borne coal dust.
 - Upgraded DFDS System installed for dust suppression
 - All internal roads are either concreted or black topped to reduce the fugitive dust emission inside the plant premises.
 - Rainwater harvesting ponds are constructed in the site.
 - Good Housekeeping practices and 5S system has been implemented in the company by deploying approx. 200 No. of manpower.

PART- I

Any other particulars for improving the quality of environment

- Sembcorp Energy India Limited certified with ISO 9001:2015 (QMS), ISO 14001:2015 (EMS) & ISO 45001:2018 (OHS)
- More than **450 acres** of Greenbelt development completed inside & all along the periphery of the plant boundary
- World Environment Day celebrated to build up environmental awareness among employees and community



Pavan Kumar Rao
Head-HSE
On Behalf of Plant Head

Mr. Ramesh Raman
Plant Manager
Sembcorp Energy India Limited
Date: 28-09-2021



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ANDHRA PRADESH POLLUTION CONTROL BOARD
PARYAVARAN BHAVAN, A-3, INDUSTRIAL ESTATE,
SANATHNAGAR, HYDERABAD - 500 018.

Phone: 040-23887500
Fax: 040- 23815631
Grams : Kalusya Nivarana
Website : appcb.ap.nic.in

**BY REGD. POST WITH ACKN. DUE
CONSENT & AUTHORIZATION ORDER**

Consent Order No : APPCB/VJA/NLR/HO/CFO/2015- 1675

Date :24.02.2015

Consent Order for Existing/New or altered discharge of sewage and/or trade effluents/outlet under Section 25/26 of the Water (Prevention & Control of Pollution) Act, 1974 and amendments thereof, Operation of the plant under section 21 of Air (Prevention & Control of Pollution) Act 1981 and amendments thereof and Authorisation / Renewal of Authorisation under Rule 5 of the Hazardous Wastes (Management, Handling & Transboundary, Movement) Rules 2008 & Amendments thereof.

CONSENT is hereby granted under section 25/26 of the Water (Prevention & Control of Pollution) Act, 1974, under section 21 of Air (Prevention & Control of Pollution) Act 1981 and Authorisation under the provisions of HW (MH & TM) Rules (hereinafter referred to as 'the Acts', 'the Rules') and the rules and orders made thereunder to

M/s. Thermal Powertech Corporation India Ltd.,
Painampuram & Nelaturu (Villages),
Muthukur (M),
SPSR Nellore District – 524 344.
E-Mail: infor@tpecil.com

(Hereinafter referred to as 'the Applicant') authorizing to operate the industrial plant to discharge the effluents from the outlets and the quantity of emissions per hour from the chimneys as detailed below:

i) Out lets for discharge of effluents:

S.No	Outlet discription	Max daily discharge Qty in m ³ /day (For 1 x 660 MW Unit)	Point of disposal
1.	Cooling Water Blow down	58,000.0	144890.0 M ³ /day of waste water shall be discharged into sea marine outfall facility.
2.	First pass RO reject	11,112.0	
3.	Ash pond outlet	3333.0	
4.	Clarifier blow down	558.0	To ash pond
5.	DM Plant regeneration	56.0	Shall be reused within plant premises for green belt development after treatment.
6.	Boiler blow down	40.0	
7.	Misc. Service water (floor wash)	40.0	
8.	Domestic (Plant)	20.0	After treatment in STP, shall be used for greenbelt development within the plant premises & colony area.

ii) Emissions from chimneys:

No.	Description of Chimney
1.	Attached to Super Critical Boiler of capacity 1 x 2016 TPH
2.	Attached to Auxiliary Boiler of capacity 1 x 50 TPH
3.	Attached to DG set of capacity 1 x 1000 KVA
4.	Attached to DG set of capacity 1 x 1000 KVA
5.	Attached to DG set of capacity 1 x 1000 KVA

iii) HAZARDOUS WASTE AUTHORISATION (FORM – II) [See Rule 5 (4)]

M/s. Thermal Powertech Corporation India Ltd., Painampuram & Nelaturu (Villages), Muthukur (M), SPS Nellore District., is hereby granted an authorization to operate a facility for collection, reception, storage, treatment, transport and disposal of Hazardous Wastes namely:

• **Hazardous wastes with recycling option:**

S. No.	Name of hazardous waste	Stream	Quantity	Disposal Option
1.	Used lubricant oil	5.1 of schedule – I	15 KL/annum	Reprocessors / Recyclers authorized by APPCB

This consent order is valid for power generation of following quantity only:

S.No.	Activity	Capacity
1	Electric Power generation	1 x 660 MW (Stage – I)

This order is subject to the provisions of 'the Acts' and the Rules' and orders made thereunder and further subject to the terms and conditions incorporated in the schedule A, B & C enclosed to this order.

This combined order of consent & Hazardous Waste Authorisation shall be valid for a period ending with the **30th day of November, 2015.**

**Sd/-
MEMBER SECRETARY**

Encl: Schedule A, B & C.

To
M/s. Thermal Powertech Corporation India Ltd.,
Painampuram & Nelaturu (Villages),
Muthukur (M), SPS Nellore District – 524 344.

//T.C.F.B.O//

K. Rao
23/12/15
JOINT CHIEF ENVIRONMENTAL ENGINEER
UNIT HEAD - IV

SCHEDULE - A

1. The applicant should make application through online for renewal of Consent (under Water and Air Acts) and Authorization under HWM Rules at least 120 days before the date of expiry of this order, along with prescribed fee under Water and Air Acts for obtaining Consent & HW Authorization of the Board.
2. This order is issued in line with Board's CFE order dated 15.05.2010. Concealing the factual data or submission of false information/ fabricated data and failure to comply with any of the conditions mentioned in this order may result in withdrawal of this order and attract action under the provisions of relevant pollution control Acts.
3. Any person aggrieved by an order made by the State Board under Section 25, Section 26, Section 27 of Water Act, 1974 or Section 21 of Air Act, 1981 may within thirty days from the date on which the order is communicated to him, prefer an appeal as per Andhra Pradesh Water Rules, 1976 and Air Rules 1982, to such authority (hereinafter referred to as the Appellate Authority) constituted under Section 28 of the Water (Prevention and Control of Pollution) Act, 1974 and Section 31 of the Air (Prevention and Control of Pollution) Act, 1981.
4. The project occupier should immediately submit the revised application for consent to this Board in the event of any change in the building and site specifications, quantity of trade effluents & quantity of emissions etc.
5. The applicant should not change or alter either the quality or the quantity or the rate of the discharge or the route of discharge and should not change or alter either the prescribed quality or the rate of emission without the previous written permission of the Board.

6. The applicant should, not later than 30 days from the date of issue of this consent order, certify in writing to the Board that the applicant has installed or provided for an alternative electric power source sufficient to operate all facilities installed by the applicant, to comply with the terms and conditions of this consent. In absence of alternative electric power source sufficient to operate all facilities installed by the applicant, to comply with the terms and conditions of this consent, production should be stopped.
7. Any up-set condition in the project, which results in increased effluent discharge and/ or violation of standards stipulated in this order or the emission of any Air Pollutant into the environment in excess of the standards laid down by the Board occurs or is apprehended to occur due to accident, or other unforeseen act or event, the person-in-charge of the premises, from where such discharge / emission occurs or is apprehended to occur should forthwith intimate the fact of such occurrence or the apprehension of such occurrence to this Board, by fax / email under intimation to the Collector and District Magistrate.
8. In case of such episodal discharges / emissions mentioned in item 5 above, the project should take immediate action to bring down the discharge / emission below the limits prescribed in this order.
9. A good housekeeping should be maintained in the premises. All hoods, pipes, valves, sewers and drains should be leak proof. Floor washings should be admitted into the effluent collection system only and should not be allowed to find their way into storm drains or open areas.
10. a) The project should carryout analysis of waste water discharges or emissions through chimneys, for the parameters mentioned in Schedule – B of this Order at regular intervals.
b) The project should maintain following records for access to the Board, whenever required.
 - a) Analysis reports of waste water/ emissions.
 - b) Log book for operation of pollution control systems.
 - c) Inspection book
11. Separate power connection with energy meter should be provided for the Pollution Control Equipments and record of power consumption and chemicals consumption for the operation of pollution control equipment should be maintained separately.
12. The applicant should comply with the directives/orders issued by the Board in this order and at all subsequent times without any negligence on his part. The applicant should be liable for such legal action against him as per provisions of the Law/Act in case of non-compliance of any order/directive issued at any time and/or violation of the terms and conditions of this consent order.
13. The applicant should furnish to the visiting officer and / or the Board any information regarding the construction, installation or operation of the effluent treatment system / air pollution control equipment / secured storage area of Hazardous Waste and such other particulars as may be pertinent for preventing and controlling pollution.
14. The project is liable to pay compensation for any environmental damage caused by it, as fixed by the Collector and District Magistrate as Civil liability.
15. All the rules & regulations notified by Ministry of Environment and Forests, Government of India in respect of management, handling, transportation and storage of hazardous chemicals and wastes should be followed.
16. All the rules & regulations notified by Ministry of Law and Justice, Government of India regarding Public Liability Insurance Act, 1991 should be followed.
17. The occupier should educate the workers and nearby public of possible accidents and remedial measures.
18. For any accident or spillage of hazardous wastes causing damage to the Environment, the occupier or the transporter as the case should be held responsible.
19. The occupier should prepare/update Emergency preparedness plan for safe handling of hazardous waste from time to time and submit the same to APPCB. Emergency preparedness plan must be implemented immediately whenever there is fire, explosion or release of hazardous waste or hazardous waste constituents, which could endanger to human health or environment.

20. Packaging, labeling and transportation of Hazardous Wastes should be in accordance with the provisions of the rules issued by the Central Govt. under the Motor Vehicles Act, 1988 and other guidelines issued from time to time. The packaging and labeling should be based on the composition and hazardous constituent of the waste, however all Hazardous Waste containers should be provided with a general label.
21. The driver who transports Hazardous Waste should be well acquainted about the procedure to be followed in case of an emergency during transit. The transporter should carry a Transport Emergency (TREM) Card (as given in the guidelines for management and handling of hazardous wastes) duly filled by the Hazardous Waste generator.
22. No Hazardous Wastes should be mixed with any other wastes or should be discharged to a common, other internal, external sewerage or other drainage system without prior approval of APPCB.
23. If MS/HDPE bags or drums are used for storing Hazardous Wastes, these drums / bags should be ensured that they are perfectly sealed.
24. The project should comply with the provisions of Batteries (Management & Handling) Rules, 2001.
25. The project should put up two sign boards (6x4 ft. each) at publicly visible places at the main gate. The first sign board should provide information on specific conditions of CFO and Hazardous Waste Authorisation. The second sign board should display waste water, air emissions and solid waste generated within the factory premises.
26. The applicant should exhibit the Consent & HW Authorisation order of the Board in the factory premises at a prominent place for the information of the inspecting officers of the different departments.
27. Notwithstanding anything contained in this conditional letter or consent, the Board hereby reserves the right and powers under Section 27(2) of the Water (Prevention & Control of Pollution) Act, 1974 and its amendments thereof and under Section 21 of the Air (Prevention & Control of Pollution) Act, 1981 and its amendments thereof to review any and/or all the conditions imposed herein above and to make such variations as deemed fit for the purpose of the Acts by the Board.
28. The authorisation issued under Hazardous Waste (Management, Handling & Transboundary Movement) Rules, 2008 and its amendments thereof, should comply with the provision of the Environment (Protection) Act, 1986.
29. The facility may explore the possibility of tapping the solar energy for their energy requirements.
30. The Board reserves its right to modify above conditions or stipulate any further conditions and to take action including revoke of this order in the interest of protection of public health and environment.

SC H E D U L E - B

1. The industry shall take steps to reduce water consumption to the extent possible and consumption shall NOT exceed the quantities mentioned below:

S.No.	Purpose	Quantity in (M ³ /day) (For 1 x 660 MW Unit)
1.	For cooling tower make up (saline water)	99,128.0
2.	Non-cooling water – RO First pass	
	i) Ash handling sealing	1120.0
	ii) Coal handling plant dust suppression	2384.0
	iii) High Vacuum AC make up	830.0
	iv) Misc. services (for fire fighting etc.)	256.0
	v) RO Reject	11112.0
	vi) Clarifier blow down	528.0
	RO Second pass	
	i) DM Plant	1040.0
	ii) Domestic (Plant)	25.0
	Total	1,16,423.0

2. The industry shall provide Separate digital water meters with totalizer, for assessing the quantity of water used for each of the purposes mentioned above and maintain records for the same.

3. The industry shall file the water cess returns in Form-I as required under section (5) of Water (Prevention and Control of Pollution) Cess Act, 1977 on or before the 5th of every calendar month, showing the quantity of water consumed in the previous month along with water meter readings. The industry shall remit water cess as per the assessment orders as and when issued by Board.
4. The effluent discharged shall not contain constituents in excess of the tolerance limits mentioned below.

Outlet No.	Parameter	Limiting Standards
1 to 3	p ^H	5.5 to 9
	Suspended Solids	100.0 mg/l
	Oil & Grease	20.0 mg/l
	Temperature	Shall not exceed 5 ^o C above the receiving water temperature.
	Biochemical Oxygen demand (3 days at 27 ^o C)	100 mg/l
	Chemical Oxygen Demand (COD)	250 mg/l
	Arsenic	0.2 mg/l
	Mercury	0.01 mg/l
	Lead	2.0 mg/l
	Cadmium	2.0 mg/l
	Hexavalent Chromium	1.0 mg/l
Bio assay test	90% survival fish after 96 hours in 100% effluents	
4	p ^H	6.5–8.5
	Suspended Solids	100.0 mg/l
	Oil & Grease	20.0 mg/l
5 to 8	p ^H	5.5 – 9.0
	Suspended Solids	200.0 mg/l
	Oil & Grease	10.0 mg/l
	Biochemical Oxygen Demand (BOD)	100.0 mg/l

5. The emissions shall not contain constituents in excess of the prescribed limits mentioned below:

Chimney No.	Parameter	Emission Standards
1 & 2	Particulate matter	50 mg/Nm ³

6. The industry shall maintain interlocking facility between APC equipment (ESP) and fuel feeding system for the boilers, so that the feeding of the fuel will be stopped automatically, in case, the ESP fails / tripping's are occurred.
7. The industry shall comply with emission limits for DG sets upto 800 KW as per the Notification G.S.R.520 (E), dated 01.07.2003 under the Environment (Protection) Amendment Rules, 2003 and G.S.R.448(E), dated 12.07.2004 under the Environment (Protection) Second Amendment Rules, 2004. In case of DG sets more than 800 KW shall comply with emission limits as per the Notification G.S.R.489 (E), dated 09.07.2002 at serial no.96, under the Environment (Protection) Act, 1986.
8. The industry shall comply with ambient air quality standards of PM₁₀ (Particulate Matter size less than 10 μm) - 100 μg/ m³; PM_{2.5} (Particulate Matter size less than 2.5 μm) - 60 μg/ m³; SO₂ - 80 μg/ m³; NO_x - 80 μg/m³, outside the factory premises at the periphery of the industry.
Standards for other parameters as mentioned in the National Ambient Air Quality Standards CPCB Notification No.B-29016/20/90/PCI-I, dated 18.11.2009
Noise Levels: Day time (6 AM to 10 PM) - 75 dB (A)
Night time (10 PM to 6 AM) - 70 dB (A).
9. The industry shall not increase produce the power generation beyond the permitted capacity mentioned in this order, without obtaining CFO of the Board.

10. The industry shall provide online temperature recording facility to record the temperature of water before discharging into sea marine outfall and maintain required temperature before discharging into sea marine outfall.
11. The industry shall not provide any pipeline arrangements into the Buckingham canal in future as per the instructions of Irrigation & CAD Department, Govt. A.P vide letter No.487 Dt.04.08.2014
12. The industry shall provide transit storage facility for storage of fly ash.
13. The industry shall not store fly ash within the premises openly in dry condition. Efforts shall be taken to dispose all fly ash in dry form as much as possible instead of diverting it to wet ash pond. Dry ash collection system shall be maintained properly.
14. The industry shall achieve 100% disposal of Fly ash as per MoE&F Fly Ash Notification, 1999 and amendments thereof.
15. The industry shall provide the garland drain to the ash pond with collection tank to pump the water for ash slurry preparation.
16. The industry shall take measures around the ash pond area to avoid entry of animals in order to prevent accidents, breakage of emergency ponds and protection of greenbelt.
17. The industry shall submit the agreements made with the cement plants & brick units to dispose the boiler ash to the Regional office, Nellore.
18. The industry shall provide Piezometric wells around the ash pond as per the CPCB guidelines.
19. The industry shall monitor all ground water pezo wells and submit report to RO, Nellore every three months indicating trends.
20. Garland canal shall be maintained around the fly ash pond to collect water that is expected to leach out and monitoring of such leachates shall be carried out.
21. The industry shall construct the closed shed for storage of coal and provide water sprinklers to control fugitive emissions.
22. The industry shall submit the actual coal consumption for 660 MW unit to the Regional office, Nellore once the commercial production commenced.
23. The industry shall relocate the 3 nos. of online AAQM stations from the existing locations to the following locations as directed by the regional officer, Nellore:
 - a) One AAQM station at coal yard
 - b) One station at ash handling area
 - c) One at security gate.
24. The industry shall maintain the following records and the same shall be made available to the Board Officials during the inspection.
 - a) Daily power generation details.
 - b) Quantity of Effluents generated, disposed.
 - c) Log Books for pollution control systems.
 - d) Daily Fly ash generated and disposed.
25. The industry shall develop the thick green belt in an area of 396 acres all along the periphery of the industry and ash pond area.
26. The industry shall maintain good housekeeping in the plant premises.
27. The industry shall maintain energy meters to the air pollution control equipment. The industry shall maintain separate power consumption records pertaining to pollution control equipment.
28. The industry shall comply with the conditions stipulated in the CFE order dt.15.05.2010.
29. The applicant shall submit Environment statement in Form V before 30th September of every year as per Rule No.14 of E(P) Rules, 1986 & amendments thereof.
30. The industry shall comply with directions issued by Board from time to time.

31. The conditions stipulated are without prejudice to the rights and contentions of this Board in any Hon'ble Court of Law.

SCHEDULE - C

[See rule 5(4)]

[CONDITIONS OF AUTHORISATION FOR OCCUPIER OR OPERATOR HANDLING HAZARDOUS WASTES]

1. The industry should give top priority for waste minimization and cleaner production practices.
2. The industry should not store hazardous waste for more than 90 days as per the Hazardous Wastes (Management, Handling and Transboundary Movement) Rules, 2008 and amendments thereof.
3. The industry should store Used / Waste Oil and Used Lead Acid Batteries in a secured way in their premises till its disposal.
4. The industry should not dispose Waste oils to the traders and the same should be disposed to the authorized Reprocessors/ Recyclers.
5. The industry should dispose Used Lead Acid Batteries to the manufacturers / dealers on buyback basis.
6. The industry should take necessary practical steps for prevention of oil spillages and carry over of oil from the premises.
7. The industry should maintain 6 copy manifest system for transportation of waste generated and a copy should be submitted to Board Office and concerned Regional Office.
8. The industry should maintain good house keeping & maintain proper records for Hazardous Wastes stated in Authorisation.
9. The industry should maintain proper records for Hazardous Wastes stated in Authorisation in FORM-3 i.e., quantity of Incinerable waste, land disposal waste, recyclable waste etc., and file annual returns in Form- 4 as per Rule 22(2) of the Hazardous Wastes (Management, Handling & Transboundary Movement) Rules, 2008 and amendments thereof.
10. The industry should dispose of e-waste to the authorised recyclers only.
11. The unit should submit the condition wise compliance report of the conditions stipulated in Schedule A, B & C of this Authorisation on half yearly basis to Board Office, Hyderabad and concerned Regional Office.

**Sd/-
MEMBER SECRETARY**

To
M/s. Thermal Powertech Corporation India Ltd.,
Painampuram & Nelaturu (Villages),
Muthukur (M),
SPSR Nellore District – 524 344.

//T.C.F.B.O//

10/11/15
JOINT CHIEF ENVIRONMENTAL ENGINEER
UNIT HEAD - IV

A



ANDHRA PRADESH POLLUTION CONTROL BOARD
PARYAVARAN BHAVAN, A-3, INDUSTRIAL ESTATE,
SANATHNAGAR, HYDERABAD - 500 018.

Phone: 040-23887500
Fax: 040- 23815631
Grams : Kalusya Nivarana
Website : appcb.ap.nic.in

BY REGD. POST WITH ACKN. DUE
CONSENT ORDER

Consent Order No : APPCB/VJA/NLR/HO/CFO/2015- 3594

Date : 27.08.2015

Consent Order for Existing/New or altered discharge of sewage and/or trade effluents/outlet under Section 25/26 of the Water (Prevention & Control of Pollution) Act, 1974 and amendments thereof, Operation of the plant under section 21 of Air (Prevention & Control of Pollution) Act 1981 and amendments thereof.

CONSENT is hereby granted under section 25/26 of the Water (Prevention & Control of Pollution) Act, 1974 and under section 21 of Air (Prevention & Control of Pollution) Act 1981 (hereinafter referred to as 'the Acts', 'the Rules') and the rules and orders made thereunder to

M/s. Thermal Powertech Corporation India Ltd.,
Painampuram & Nelaturu (Villages),
Muthukur (M),
SPSR Nellore District – 524 344.
E-Mail: infor@tcpcil.com

(Hereinafter referred to as 'the Applicant') authorizing to operate the industrial plant to discharge the effluents from the outlets and the quantity of emissions per hour from the chimneys as detailed below:

i) Out lets for discharge of effluents:

S.No	Outlet discription	Max daily discharge Qty in m ³ /day (For 2 nd Unit of 660 MW Power plant of Stage-I)	Point of disposal
1.	Cooling Water Blow down (saline water)	58,000.0	72445 M ³ /day of waste water shall be discharged into sea marine outfall i.e. Bay of Bengal through marine out fall.
2.	First pass RO reject	11,112.0	
3.	Ash pond outlet	3333.0	
4.	Clarifier blow down	558.0	To ash pond
5.	DM Plant regeneration	56.0	After treatment shall be reused within plant premises for green belt development
6.	Boiler blow down	40.0	
7.	Misc. Service water (floor wash)	40.0	
8.	Domestic (Plant)	20.0	After treatment in STP, shall be used for greenbelt development within the plant premises & colony area.

ii) Emissions from chimneys:

No.	Description of Chimney
1.	Attached to Super Critical Boiler of capacity 1 x 2016 TPH (By flue)

This consent order is valid for power generation of following quantity only:

S.No.	Activity	Capacity
1	Electric Power generation	1 x 660 MW (2 nd Unit of Stage – I)

This order is subject to the provisions of 'the Acts' and the Rules' and orders made thereunder and further subject to the terms and conditions incorporated in the schedule A & B enclosed to this order.

This combined order of consent shall be valid for a period ending with the 31st day of July, 2016.

Sd/-
MEMBER SECRETARY

Encl: Schedule A & B.

To
M/s. Thermal Powertech Corporation India Ltd.,
Painampuram & Nelaturu (Villages),
Muthukur (M), SPS Nellore District – 524 344.

Copy to:

1. The JCEE, Zonal Office, Vijayawada for information and necessary action. He is directed to closely monitor the Units for ensuring compliance of the conditions and submit the compliance report to the Board.
2. The JCEE (Cess), APPCB, Hyderabad for information.
3. The Environmental Engineer, Regional Office, Nellore for information and necessary action. He is directed to closely monitor the Units for ensuring compliance of the conditions and submit the compliance report to the Board.

//T.C.F.B.O//

W. Rao
27/8/15
JOINT CHIEF ENVIRONMENTAL ENGINEER
(UH-IV)
AR

SCHEDULE - A

1. The applicant shall make application through online for renewal of Consent (under Water and Air Acts) and Authorization under HWM Rules at least 120 days before the date of expiry of this order, along with prescribed fee under Water and Air Acts for obtaining Consent & HW Authorization of the Board.
2. This order is issued in line with Board's CFE orders dated 15.05.2010, 17.06.2015 and CFO order dt.24.02.2015. Concealing the factual data or submission of false information/fabricated data and failure to comply with any of the conditions mentioned in this order may result in withdrawal of this order and attract action under the provisions of relevant pollution control Acts.
3. Any person aggrieved by an order made by the State Board under Section 25, Section 26, Section 27 of Water Act, 1974 or Section 21 of Air Act, 1981 may within thirty days from the date on which the order is communicated to him, prefer an appeal as per Andhra Pradesh Water Rules, 1976 and Air Rules 1982, to such authority (hereinafter referred to as the Appellate Authority) constituted under Section 28 of the Water (Prevention and Control of Pollution) Act, 1974 and Section 31 of the Air (Prevention and Control of Pollution) Act, 1981.
4. The project occupier shall immediately submit the revised application for consent to this Board in the event of any change in the building and site specifications, quantity of trade effluents & quantity of emissions etc.
5. The applicant shall not change or alter either the quality or the quantity or the rate of the discharge or the route of discharge and shall not change or alter either the prescribed quality or the rate of emission without the previous written permission of the Board.
6. The applicant shall, not later than 30 days from the date of issue of this consent order, certify in writing to the Board that the applicant has installed or provided for an alternative electric power source sufficient to operate all facilities installed by the applicant, to comply with the terms and conditions of this consent. In absence of alternative electric power source sufficient to operate all facilities installed by the applicant, to comply with the terms and conditions of this consent, production shall be stopped.

7. Any up-set condition in the project, which results in increased effluent discharge and/ or violation of standards stipulated in this order or the emission of any Air Pollutant into the environment in excess of the standards laid down by the Board occurs or is apprehended to occur due to accident, or other unforeseen act or event, the person-in-charge of the premises, from where such discharge / emission occurs or is apprehended to occur shall forthwith intimate the fact of such occurrence or the apprehension of such occurrence to this Board, by fax / email under intimation to the Collector and District Magistrate.
8. In case of such episodal discharges / emissions mentioned in item 5 above, the project shall take immediate action to bring down the discharge / emission below the limits prescribed in this order.
9. A good housekeeping shall be maintained in the premises. All hoods, pipes, valves, sewers and drains shall be leak proof. Floor washings shall be admitted into the effluent collection system only and shall not be allowed to find their way into storm drains or open areas.
10. a) The project shall carryout analysis of waste water discharges or emissions through chimneys, for the parameters mentioned in Schedule – B of this Order at regular intervals.
b) The project shall maintain following records for access to the Board, whenever required.
 - a) Analysis reports of waste water/ emissions.
 - b) Log book for operation of pollution control systems.
 - c) Inspection book
11. Separate power connection with energy meter shall be provided for the Pollution Control Equipments and record of power consumption and chemicals consumption for the operation of pollution control equipment shall be maintained separately.
12. The applicant shall comply with the directives/orders issued by the Board in this order and at all subsequent times without any negligence on his part. The applicant shall be liable for such legal action against him as per provisions of the Law/Act in case of non-compliance of any order/directive issued at any time and/or violation of the terms and conditions of this consent order.
13. The applicant shall furnish to the visiting officer and / or the Board any information regarding the construction, installation or operation of the effluent treatment system / air pollution control equipment / secured storage area of Hazardous Waste and such other particulars as may be pertinent for preventing and controlling pollution.
14. The project is liable to pay compensation for any environmental damage caused by it, as fixed by the Collector and District Magistrate as Civil liability.
15. All the rules & regulations notified by Ministry of Environment and Forests, Government of India in respect of management, handling, transportation and storage of hazardous chemicals and wastes shall be followed.
16. All the rules & regulations notified by Ministry of Law and Justice, Government of India regarding Public Liability Insurance Act, 1991 shall be followed.
17. The occupier shall educate the workers and nearby public of possible accidents and remedial measures.
18. The project shall comply with the provisions of Batteries (Management & Handling) Rules, 2001.
19. The project shall put up two sign boards (6x4 ft. each) at publicly visible places at the main gate. The first sign board shall provide information on specific conditions of CFO. The second sign board shall display waste water, air emissions and solid waste generated within the factory premises.
20. The applicant shall exhibit the Consent order of the Board in the factory premises at a prominent place for the information of the inspecting officers of the different departments.
21. Not withstanding anything contained in this conditional letter or consent, the Board hereby reserves the right and powers under Section 27(2) of the Water (Prevention & Control of Pollution) Act, 1974 and its amendments thereof and under Section 21 of the Air (Prevention & Control of Pollution) Act, 1981 and its amendments thereof to review any and/or all the conditions imposed herein above and to make such variations as deemed fit for the purpose of the Acts by the Board.

22. The facility may explore the possibility of tapping the solar energy for their energy requirements.
23. The Board reserves its right to modify above conditions or stipulate any further conditions and to take action including revoke of this order in the interest of protection of public health and environment.

SCHEDULE - B

1. The industry shall take steps to reduce water consumption to the extent possible and consumption shall NOT exceed the quantities mentioned below:

S.No.	Purpose	Quantity in (M ³ /day) (For 2 nd Unit of 660 MW Power plant of Stage-I)
1.	For cooling tower make up (saline water)	99,128.0
2.	Non-cooling water – RO First pass	
	i) Ash handling sealing	1120.0
	ii) Coal handling plant dust suppression	2384.0
	iii) High Vacuum AC make up	830.0
	iv) Misc. services (for fire fighting etc.)	256.0
	v) RO Reject	11112.0
	vi) Clarifier blow down	528.0
	RO Second pass	
	i) DM Plant	1040.0
	ii) Domestic (Plant)	25.0
Total		1,16,423.0

2. The industry shall provide Separate digital water meters with totalizer, for assessing the quantity of water used for each of the purposes mentioned above and maintain records for the same.
3. The industry shall file the water cess returns in Form-I as required under section (5) of Water (Prevention and Control of Pollution) Cess Act, 1977 on or before the 5th of every calendar month, showing the quantity of water consumed in the previous month along with water meter readings. The industry shall remit water cess as per the assessment orders as and when issued by Board.
4. The effluent discharged shall not contain constituents in excess of the tolerance limits mentioned below.

Outlet No.	Parameter	Limiting Standards
1 to 3	p ^H	6.5 to 8.5
	Suspended Solids	100.0 mg/l
	Oil & Grease	20.0 mg/l
	Temperature	Shall not exceed 5 ^o C above the receiving water temperature
	Biochemical Oxygen demand (3 days at 27 ^o C)	100 mg/l
	Chemical Oxygen Demand (COD)	250 mg/l
	Arsenic	0.2 mg/l
	Mercury	0.01 mg/l
	Lead	2.0 mg/l
	Cadmium	2.0 mg/l
	Chromium(Total)	0.2 mg/l
	Phosphate	5.0 mg/l
	Zinc	1.0 mg/l
	Free available chlorine	0.5
Bio assay test	90% survival fish after 96 hours in 100% effluents	
4	p ^H	6.5– 8.5
	Suspended Solids	100.0 mg/l

5 to 8	Oil & Grease	20.0 mg/l
	p ^H	5.5 – 9.0
	Suspended Solids	200.0 mg/l
	Oil & Grease	10.0 mg/l
	Copper (Total)	1.0
	Iron (Total)	1.0
	Biochemical Oxygen Demand (BOD)	100.0 mg/l

5. The emissions shall not contain constituents in excess of the prescribed limits mentioned below:

Chimney No.	Parameter	Emission Standards
1	Particulate matter	50 mg/Nm ³

6. The industry shall maintain interlocking facility between APC equipment (ESP) and fuel feeding system for the boilers, so that the feeding of the fuel will be stopped automatically, in case, the ESP fails / tripping's are occurred.
7. The industry shall comply with ambient air quality standards of PM₁₀ (Particulate Matter size less than 10 µm) - 100 µg/ m³; PM_{2.5} (Particulate Matter size less than 2.5 µm) - 60 µg/ m³; SO₂ - 80 µg/ m³; NO_x - 80 µg/m³, outside the factory premises at the periphery of the industry.
Standards for other parameters as mentioned in the National Ambient Air Quality Standards CPCB Notification No.B-29016/20/90/PCI-I, dated 18.11.2009
Noise Levels: Day time (6 AM to 10 PM) - 75 dB (A)
Night time (10 PM to 6 AM) - 70 dB (A).
8. The industry shall not increase the power generation beyond the permitted capacity mentioned in this order, without obtaining CFO of the Board.
9. The industry shall provide online temperature recording facility to record the temperature of water before discharging into sea marine outfall and maintain required temperature before discharging into sea marine outfall.
10. The industry shall not provide any pipeline arrangements into the Buckingham canal in future as per the instructions of Irrigation & CAD Department, Govt. A.P vide letter No.487 Dt.04.08.2014
11. The industry shall provide transit storage facility for storage of fly ash.
12. The industry shall not store fly ash within the premises openly in dry condition. Efforts shall be taken to dispose all fly ash in dry form as much as possible instead of diverting it to wet ash pond. Dry ash collection system shall be maintained properly.
13. The industry shall achieve 100% disposal of Fly ash as per MoE&F Fly Ash Notification, 1999 and amendments thereof and shall submit time bound action plan before 30.09.2015 for 100% disposal of Fly ash generated from both generation units of Stage-I.
14. The industry shall provide the garland drain to the ash pond with collection tank to pump the water for ash slurry preparation.
15. The industry shall take measures around the ash pond area to avoid entry of animals in order to prevent accidents, breakage of emergency ponds and protection of greenbelt.
16. The industry shall submit the agreements made with the cement plants & brick units to dispose the boiler ash to the Regional office, Nellore within one month.
17. The industry shall provide Piezometric wells around the ash pond as per the CPCB guidelines.
18. The industry shall monitor all ground water pezo wells and submit report to RO, Nellore every three months indicating trends.
19. Garland canal shall be maintained around the fly ash pond to collect water that is expected to leach out and monitoring of such leachates shall be carried out.
20. The industry shall construct the closed shed for storage of coal and provide water sprinklers to control fugitive emissions.

21. The industry shall submit the actual coal consumption for 660 MW unit to the Regional office, Nellore once the commercial production commenced.
22. The industry shall establish and maintain the 3 nos. of online AAQM stations at the following location:
 - a) One AAQM station at coal yard
 - b) One station at ash handling area
 - c) One at security gate.
23. The industry shall install online continuous stack monitoring equipment for all the stacks for the parameters prescribed in this consent order and connect the same to the website of the Board within two months from the date of issue of this order. They shall submit purchase order within one month.
24. The industry shall maintain the following records and the same shall be made available to the Board Officials during the inspection.
 - a) Daily power generation details.
 - b) Quantity of Effluents generated, disposed.
 - c) Log Books for pollution control systems.
 - d) Daily Fly ash generated and disposed.
25. The industry shall develop the thick green belt in an area of 396 acres all along the periphery of the industry and ash pond area.
26. The industry shall maintain good housekeeping in the plant premises.
27. The industry shall maintain energy meters to the air pollution control equipment. The industry shall maintain separate power consumption records pertaining to pollution control equipment.
28. The industry shall comply with all the conditions stipulated in the CFE order No.177/PCB/CFE/RO-NLR/HO/2009-433, dt.15.05.2010 and in the CFO order No.APPCB/VJA/NLR/HO/CFO/2015-1675 dt. 24.02.2015 (1st Unit of Stage-I of 2 x 660 MW) within one month, otherwise the Board will be constrained to withdraw the consent issued to the Unit without any further notice.
29. The industry shall comply with directions issued by Board from time to time.
30. The applicant shall submit Environment statement in Form V before 30th September of every year as per Rule No.14 of E(P) Rules, 1986 & amendments thereof.
31. The conditions stipulated are without prejudice to the rights and contentions of this Board in any Hon'ble Court of Law.
32. The industry shall comply with CPCB directions dated 05.02.2014 and 02.03.2015 regarding installation of online monitoring systems.

Sd/-

MEMBER SECRETARY

To
M/s. Thermal Powertech Corporation India Ltd.,
Painampuram & Nelaturu (Villages),
Muthukur (M),
SPSR Nellore District – 524 344.

//T.C.F.B.O//

10/08/15

JOINT CHIEF ENVIRONMENTAL ENGINEER
(UH-IV)

A1

**ISSUED TO:**

Issue Date: 15.12.2021

M/s. Sembcorp Energy India Limited, Project-1
 (2x660 MW Coal Based Thermal Power Plant),
 Near Pynampuram/ Nelaturu (V), Muthukur (M),
 SPSR Nellore (Dist.)- 524344.

Sample Registration No: 8837/12/21-001

Date of Sampling: 06.12.2021

Analysis Starting Date: 08.12.2021

Analysis Completed Date: 15.12.2021

Sample Particulars: Heavy Metal Analysis of Coal- Dec 2021

Sampling Location: Coal Feeder - 2

Lab Ref: CL/HM/8837/12/21-001/21

TEST RESULTS

S.NO	TEST PARAMETERS	TEST METHOD	UNITS	RESULTS	STANDARDS
1.	Arsenic as As	USEPA-3050B Dec-1996(Rev.2)	ppm	0.45	5.0
2.	Mercury as Hg	USEPA-3050B Dec-1996(Rev.2)	ppm	<0.02	0.2
3.	Chromium as Cr	USEPA-3050B Dec-1996(Rev.2)	ppm	1.30	5.0
4.	Lead as Pb	USEPA-3050B Dec-1996(Rev.2)	ppm	0.65	5.0

Note: USEPA- Environmental Protection Agency

Checked By



Authorized Signatory

ISSUED TO:

Issue Date: 15.12.2021

M/s. Sembcorp Energy India Limited, Project-1
(2x660 MW Coal Based Thermal Power Plant),
Near Pynampuram/ Nelaturu (V), Muthukur (M),
SPSR Nellore (Dist.)- 524344.

Sample Registration No: 8837/12/21-001
Date of Sampling: 06.12.2021
Analysis Starting Date: 08.12.2021 **Analysis Completed Date:** 15.12.2021
Sample Particulars: Heavy Metal Analysis of Fly Ash- DEC 2021
Lab Ref: CL/HM/8837/12/21-001/21

TEST RESULTS

S.NO	TEST PARAMETERS	TEST METHOD	UNITS	RESULTS	STANDARD
1.	Arsenic as As	UDECA-3050B Dec-1996(Rev.2)	ppm	0.40	5.0
2.	Mercury as Hg	UDECA-3050B Dec-1996(Rev.2)	ppm	<0.02	0.2
3.	Chromium as Cr	UDECA-3050B Dec-1996(Rev.2)	ppm	1.10	5.0
4.	Lead as Pb	UDECA-3050B Dec-1996(Rev.2)	ppm	0.40	5.0

Note: UDECA- Environmental Protection Agency

Checked By




Authorized Signatory


ISSUED TO:

Issue Date: 15.12.2021

M/s. Sembcorp Energy India Limited, Project-1
(2x660 MW Coal Based Thermal Power Plant),
Near Pynampuram/ Nelaturu (V), Muthukur (M),
SPSR Nellore (Dist.)- 524344.

Sample Registration No: 8837/12/21-001

Date of Sampling: 06.12.2021

Analysis Starting Date: 08.12.2021

Analysis Completed Date: 15.12.2021

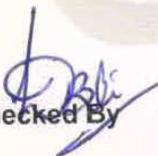
Sample Particulars: Heavy Metal Analysis of Bottom Ash- DEC 2021

Lab Ref: CL/HM/8837/12/21-001/21

TEST RESULTS

S.NO	TEST PARAMETERS	TEST METHOD	UNITS	RESULTS	STANDARD
1.	Arsenic as As	UDECA-3050B Dec-1996(Rev.2)	ppm	0.35	5.0
2.	Mercury as Hg	UDECA-3050B Dec-1996(Rev.2)	ppm	<0.02	0.2
3.	Chromium as Cr	UDECA-3050B Dec-1996(Rev.2)	ppm	0.80	5.0
4.	Lead as Pb	UDECA-3050B Dec-1996(Rev.2)	ppm	0.36	5.0

Note: UDECA- Environmental Protection Agency

Checked By




Authorized Signatory




क्रम सं. / SL NO. : 522 A 52189

विआप्रौबो / वीएआरसी वाशी कॉम्प्लेक्स,
BRIT/BARC Vashi Complex,
सेक्टर-20, वाशी / Sec-20, Vashi,
नवी मुंबई / Navi Mumbai-400 703
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भारत सरकार / GOVERNMENT OF INDIA

परमाणु ऊर्जा विभाग / DEPARTMENT OF ATOMIC ENERGY

विकिरण एवं आइसोटोप प्रौद्योगिकी बोर्ड / BOARD OF RADIATION & ISOTOPE TECHNOLOGY

रेडियोसक्रियता परीक्षण प्रमाण-पत्र / RADIOACTIVITY TEST CERTIFICATE

Page 1 of 1

RADIOANALYTICAL LABORATORY

Ref: BRIT/RAL/D/665-88/MISC/588-611/21-22

OCT 27, 2021

TO

M/S. CARE LABS

PLOT NO. 1, 3RD FLOOR, SAI SADAN COMPLEX

ABOVE PUNJAB NATIONAL BANK,

SHIVA GANGA COLONY, L.B. NAGAR,

HYDERABAD-500074.

This is regarding the **SAMPLES** sent by you vide your letter dated 13.10.2021, for radioactivity analysis with the following details as shown in italics :

SAMPLE NO.	SAMPLE DESCRIPTION	DATE OF SAMPLING
1.	COAL SAMPLE 1	15.09.2021
2.	COAL SAMPLE 2	15.09.2021
3.	FLY ASH SAMPLE 1	15.09.2021
4.	FLY ASH SAMPLE 2	15.09.2021
5.	BOTTOM ASH SAMPLE 1	15.09.2021
6.	BOTTOM ASH SAMPLE 2	15.09.2021

The samples were analysed for U-238, Ra-226, Th-232 and K-40 and the values obtained are as follows:

SR. NO.	SAMPLE DESCRIPTION	U-238 (Bq/Kg)	Ra-226 (Bq/Kg)	Th-232 (Bq/Kg)	K-40 (Bq/Kg)
1	COAL SAMPLE 1	34.4 ± 2.1	29.2 ± 3.0	46.6 ± 5.1	134.7 ± 9.9
2	COAL SAMPLE 2	5.7 ± 0.6	MDL 1.23	2.7 ± 0.3	39.6 ± 3.6
3	FLY ASH SAMPLE 1	87.2 ± 3.2	103 ± 6.7	129.6 ± 5.2	304.5 ± 15.9
4	FLY ASH SAMPLE 2	69.1 ± 2.1	66 ± 4.8	94.7 ± 9.6	308.9 ± 15.3
5	BOTTOM ASH SAMPLE 1	71.7 ± 2.3	68.6 ± 5.1	108.1 ± 4.4	288.4 ± 15.4
6	BOTTOM ASH SAMPLE 2	66.3 ± 3.3	77.4 ± 6.3	94.4 ± 4.1	312.5 ± 18.7

Date of receipt of sample: 22.10.2021

Date of completion of test: 23.10.2021

The measurement values are below the clearance level for radionuclides of natural origin in bulk solid materials, as per AERB directive 01/2010 (table-3) dated 26/11/2010.

Note: (i)The report pertains to the given sample only. (ii)The sample will be retained in this laboratory for a period of one month from certificate date and thereafter it will be disposed off. (iii)This report shall not be reproduced except in full, without written approval of the laboratory. (iv) The sampling is not done by this laboratory.

checked by:

Authorized Signatory

****End of Report****

अजय एन. ठमके / Ajay N. Thamke
प्रभारी अधिकारी / Officer-In-Charge
रेडियोसक्रियता प्रयोगशाला / Radioanalytical Laboratory
विकिरण एवं आइसोटोप प्रौद्योगिकी बोर्ड
Board of Radiation & Isotope Technology
सेक्टर - 20 / वाशी संकुल / Vashi Complex
नवी मुंबई, नवी मुंबई - 400 703



No. J-13012/2/2009-IA.I (T)
Government of India
Ministry of Environment, Forests and Climate Change

3rd Floor, Vayu Block,
Indira Paryavaran Bhawan, Jor Bagh Road,
Aliganj, New Delhi-110003

Dated: 09.10.2019

OFFICE ORDER

Sub: 2x660 MW (Stage-I) Super Critical Coal Based TPP at Village Painampuram & Nelaturu, in Muthukur Mandal, in SPSR Nellore Distt., in Andhra Pradesh by M/s Thermal Powertech Corporation (India) Ltd.-reg. Transfer of EC

The undersigned is directed to refer the online application No. **IA/AP/THE/10458/2009** submitted by M/s Sembcorp Energy India Ltd. for transferring the Environmental Clearance dated 4.11.2009.

2. The Environmental Clearance for establishing 3x660 MW Thermal Power Project in Nellore District near Krishnapatnam Port has been issued to M/s Thermal Powertech Corporation (India) Ltd. vide Ministry's letter dated 4.11.2009 and valid for 5 years (till 3.11.2014). The EC validity was extended for another year (till 3.11.2015) vide Ministry's letter dated 2.3.2015. As the EC was valid on the date of EIA Amendment Notification (29.4.2015) which changed the validity of EC from 5 to 7 years, the validity of this EC has also become seven years (till 3.11.2016).

3. It has been noted that the first two units (2x660 MW) were commissioned and in operation since March, 2015 and September, 2015, respectively. Since the third unit is in the design stage and proposed to be implemented in future, M/s Thermal Powertech Corporation (India) Ltd. vide online application dated 27.10.2016 applied for extension of validity of EC for further period of 05 years. The EAC (Thermal Power) in its meeting held on 20.1.2017, recommended for extension of validity of EC for a period of two years (till 3.11.2018) subject to submission of certified compliance report from Regional Office and details of coal linkage from Ms/ MCL and Power Purchase Agreement (PPA). The Ministry vide letter dated 6.3.2017 communicated to M/s Thermal Powertech Corporation (India) Ltd. to submit the additional information sought by the EAC. However, M/s Thermal Powertech Corporation (India) Ltd. has not responded to the Ministry's letter even after 6 months. As the additional information was pending for more than 06 months, the proposal was de-listed from the pendency with the approval of Competent Authority.

4. In the present application, M/s Sembcorp Energy India Limited vide their online application sought transfer of EC to their name. It is mentioned that the company name has been changed from M/s Thermal Powertech Corporation (India) Ltd. to M/s Sembcorp Energy India Limited and this does not affect any rights and obligations of the company and company remains to be same entity for all practical purposes with same rights, privileges and liabilities as before.

5. The pattern of Shareholding of the company asset between M/s Thermal Powertech Corporation (India) Ltd. and M/s Sembcorp Energy India Ltd. from the date of EC till date.

SK

Details	Date	% of shareholding	
		Parent Company:	Parent Company:
		M/s Gayatri Energy Ventures Pvt. Ltd. Subsidiary Company: M/s Thermal Powertech Corporation (India) Ltd.	M/s Sembcorp Utilities Pte Ltd. Subsidiary Company: M/s Sembcorp Energy India Limited
EC issued	4.11.2009	100%	Nil
Current shareholding pattern	11.3.2019	6.27%	93.73%

6. The Registrar of the Companies has issued the certificate under Companies (Incorporation) Rules, 2014 for changing the name of the company from M/s Thermal Power tech Corporation India Limited to M/s Sembcorp Energy India Limited vide dated 20.2.2018.

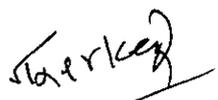
7. It has been noted that the construction of unit-3 (660 MW) has not been commenced and established till date, the validity of EC has not been extended beyond 7 years (beyond 3.11.2016), the EC transfer/name change is applicable only for two units (2x660 MW) which are currently under operation.

8. The Ministry has examined the application. In view of the information/clarification furnished by you, and as per the para 11 of EIA Notification, 2006, **the Ministry hereby transfers the Environmental Clearance dated 4.11.2009 and its validity extension letter dated 2.3.2015 in favour of M/s Sembcorp Energy India Ltd. subject to the following additional conditions:**

- The Environmental Clearance is valid only for 2x660 MW (Stage-I).
- Revised emission standards (PM: 50 mg/Nm³; SO₂: 200 mg/Nm³; NO_x: 300 mg/Nm³; Mercury: 0.03 mg/Nm³) and the specific water consumption as per the Ministry's notification dated 07.12.2015, 28.6.2018 and subsequent amendments notified from time to time shall be complied with.

9. All other conditions mentioned in this Ministry's EC letter dated 4.11.2009 and validity extension letter dated 2.3.2015 shall remain same, as applicable.

This issues with the approval of the Competent Authority.


(Dr. S. Kerketta)
Director, IA.I

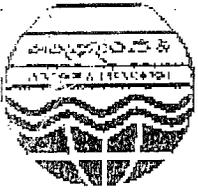
M/s Sembcorp Energy India Ltd.
(Formerly Thermal Powertech Corporation India Ltd)
Pyanampuram / Nelaturu Village
Muthukur Mandal, SPSR Nellore-524344.

Copy to:-

- The Secretary, Ministry of Power, Shram Shakti Bhawan, Rafi Marg, New Delhi 110001.
- The Chairman, Central Electricity Authority, Sewa Bhawan, R.K. Puram, New Delhi-110066.
- The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-cum-Office Complex, East Arjun Nagar, Delhi-110032.

4. The Deputy Director General of Forests (C), Ministry of Environment, Forest and Climate Change, Regional Office (SEZ), Ist and IInd Floor, Handloom Export Promotion Council, 34, Cathedral Garden Road, Nungambakkam, Chennai – 34.
5. The Principal Secretary, Environment, Science and Technology, Government of Andhra Pradesh, Secretariat Office, 4th Block, Ground Floor, Room no.187, Velagapudi, Amaravathi-522238, Andhra Pradesh.
6. The Chairman, Andhra Pradesh State Pollution Control Board, D.No. 33-26-14 D/2, Near Sunrise Hospital, Pushpa Hotel Centre, Chalamvari Street, Kasturibaipet, Vijayawada – 520008.
7. The District Collector, SPSR Nellore District, Govt. of Andhra Pradesh, Achari Street, Nellore, Andhra Pradesh-524001.
8. Guard file/Monitoring File.
9. Website of MoEF&CC.


Director, IA. I



REGD.POST WITH ACK.DUE

CONSENT ORDER FOR ESTABLISHMENT

Order No.177/PCB/CFE/RO-NLR/HO/2009 433

Dt.15.05.2010

Sub: PCB – CFE - M/s. Thermal Powertech Corporation (India) Ltd., Painampuram (V), Nelatur (V), Muthukur (M), SPSR Nellore District – Consent for Establishment of the Board under Sec.25 of Water (P & C of P) Act, 1974 and Under Sec.21 of Air (P&C of P) Act, 1981 - Issued - Reg.

Ref:

- 1) Public hearing conducted on 7.8.2009 at MPP School, Painampuram (V), Muthukur (M), SPSR Nellore District.
- 2) Environmental Clearance dt. 4.11.2009 issued by MOE&F, GOI.
- 3) Industry's application received through SWCC on 14.12.2009
- 4) R.O's inspection report dt. 22.12.2009
- 5) CFE Committee meeting held 10.3.2010 & 8.4.2010
- 6) Industry's Ir.dt. 5.4.2010
- 7) CFE Committee meeting held on 17.4.2010
- 8) Industry's Ir.dt. 28.4.2010
- 9) CFE Committee meeting held on 01.05.2010
- 10) Industry's Ir.dt. 3.5.2010

1. In the reference 3rd cited, an application was submitted to the Board seeking Consent for Establishment (CFE) to establish Super Critical Coal Based thermal power plant with installed capacities as mentioned below, with a project cost of Rs. 10874.00 crores

Sl. No.	Product / Activity	Capacity
1	Generation of Electrical Power Fuel - Blended coal (70% indigenous coal and 30% imported coal)	1980 MW (Stage - I - 2 x 660 MW + Stage - II - 1 x 660 MW)

2. As per the application, the above activity is to be located at Sy. Nos Painampuram village : 282, 290,278/1,279/1,280/1,281, 283 to 289, 291, 292, 293, 327, etc. Nelatur Village :247,258,273A &B, 308, 244/2, 245/2, 254/1/2,255/1/2/4/5/6/7, 256/2/3/5, 257/1/2, etc. of Muthukur (M), SPSR Nellore District in an area of 1367.0 Acres
3. The above site was inspected by the Environmental Engineer, Regional office, Nellore, A.P Pollution Control Board on 22.12.2009 and found that the site is surrounded by

North : Part of proposed site of M/s. Nelcast Energy Corpn, Ltd. and dry lands.

South : Creek followed by part of proposed site of M/s. Coastal Andhra Power Corpn. Ltd.,

East : Vacant land (CRZ area) followed by sea

West : CRZ area followed by Buckingham canal.

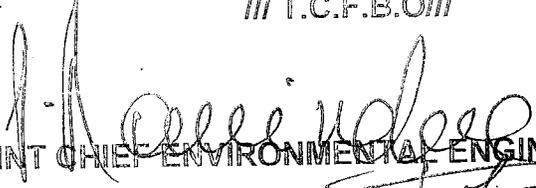
4. The Board, after careful scrutiny of the application and verification report of Regional Officer, hereby issues CONSENT FOR ESTABLISHMENT to your unit Under Section 25 of Water (Prevention & Control of Pollution) Act 1974 and Section 21 of Air (Prevention & Control of Pollution) Act, 1981 and the rules made there under. This order is issued to manufacture the products as mentioned at para (1) only.
5. This Consent Order now issued is subject to the conditions mentioned in Schedule 'A' and Schedule 'B'.
6. This order is issued from pollution control point of view only. Zoning and other regulations are not considered.

Encl: Schedule 'A'
Schedule 'B'

Sd/-
MEMBER SECRETARY

✓To
M/s. Thermal Powertech Corporation (India) Ltd.,
6-3-1090, TSR Towers, Somajiguda,
Hyderabad – 500 082.

/// T.C.F.B.O ///


JOINT CHIEF ENVIRONMENTAL ENGINEER (CFE)

17/3/10

SCHEDULE - A

1. Progress on implementation of the project shall be reported to the concerned Regional Office, A.P. Pollution Control Board once in six months.
2. Separate energy meters shall be provided for Effluent Treatment Plant (ETP) and Air pollution Control equipments to record energy consumed.
3. The proponent shall obtain Consents for Operation (CFO) from APPCB, as required Under Sec.25/26 of the Water (P&C of P) Act, 1974 and under sec. 21/22 of the Air (P&C of P) Act, 1981, before commencement of the activity.
4. Notwithstanding anything contained in this conditional letter or consent, the Board hereby reserves its right and power Under Sec.27(2) of Water (Prevention and Control of Pollution) Act, 1974 and Under Sec.21(4) of Air (Prevention and Control of Pollution) Act, 1981 to review any or all the conditions imposed herein and to make such alternation as deemed fit and stipulate any additional conditions by the Board.
5. The consent of the Board shall be exhibited in the factory premises at a conspicuous place for the information of the inspecting officers of different departments.
6. Compensation is to be paid for any environmental damage caused by it, as fixed by the Collector and District Magistrate as civil liability.
7. Floor washing shall be admitted into the effluent collection system only and shall not be allowed to find their way in storm drains or open areas. The industry shall maintain a good housekeeping. All pipe valves, sewers, drains shall be leak proof. Dyke walls shall constructed around storage of chemicals.
8. Rain Water Harvesting (RWH) structure (s) shall be established on the plant site. The proponent shall ensure that effluent shall not enter the Rain Water harvesting structure.
9. The rules and regulations notified by Ministry of Law and Justice, GOI, regarding the Public Liability Insurance Act, 1991 shall be followed.
10. This order is valid for period of 5 years from the date of issue.

SCHEDULE - BWater:

1. The source of water is Sea Water from Bay of Bengal and the maximum permitted water consumption is 3,34.464KLD

S. No.	Source	Quantity
1.	Cooling Water Make up (Saline water)	282384.0 KLD
2.	Non-cooling water	
	RO First Pass	
	i. Ash handling Sealing	3360.0 KLD
	ii. Coal Handling Plant dust suppression	7152.0 KLD
	iii. High Vacuum AC makeup	2640.0 KLD
	iv. Misc. Services (for fire fighting, etc)	768.0 KLD

v.	R.O Rejects	33336.0 KLD
vi.	Clarifier bow down	1584.0 KLD
RO Second pass		
i.	DM Plant	3120.0 KLD
ii.	Domestic (Plant)	48.0 KLD
iii.	Domestic (Colony)	72.0 KLD
Total		334464. 0 KLD

2. The maximum Waste Water Generation (KLD) shall not exceed the following:

S. No.	Source	Quantity
1.	Cooling tower blow down	174000.0 KLD
2.	Ash pond outlet	10000.0 KLD
3.	Clarifier blow down	1584.0 KLD
4.	First pass RO reject	33336.0 KLD
5.	DM plant regeneration	168.0 KLD
6.	Boiler blow down	120.0 KLD
7.	Domestic (plant)	38.4 KLD
8.	Domestic (colony)	57.6 KLD
9.	Misc. service water (Floor wash)	120.0 KLD
Total		219424.0 KLD

Treatment & disposal:

	Source of Effluent	Treatment	Mode of final disposal
1	◦ DM Plant Back wash (168 KLD)	Neutralization followed by dilution at Common Monitoring Basin (CMB)	384 KLD for greenbelt development.
	◦ Boiler blow down (120 KLD)	Common Monitoring Basin (CMB)	
	◦ Domestic plant & colony (96 KLD)	Sewage treatment plant	
	◦ Misc. service water (120 KLD)	Oil & Grease trap fol. by CMB	120 KLD for horticulture
	◦ Clarifier blow down (1584 KLD)	-	To Ash pond
2	Cooling tower blow down (174000 KLD)	-	217336.0 KLD of waste water shall be discharged into sea marine outfall facility.
	First pass RO reject (33336 KLD)	-	
	Ash Pond outlet (10000 KLD)	-	

3. The Effluent Treatment Plant (ETP) and Sewage Treatment Plant (STP) shall be constructed and commissioned along with the commissioning of the activity. All the units of the ETP & STP shall be impervious to prevent ground water pollution.

4. The effluents shall be treated to the onland for irrigation / marine water standards as applicable, stipulated under Environment (Protection) Rules, 1986, notified and published by Ministry of Environment and Forests, Government of India as specified in Schedule VI vide G.S.R.422 (E), dt.19.05.1993 and its amendments thereof, and additional standards / conditions stipulated by APPCB.
5. Separate meters with necessary pipe-line shall be provided for assessing the quantity of water used for each of the purposes mentioned below.
 - a) Industrial cooling, boiler feed.
 - b) Domestic purposes.
 - c) Processing, whereby water gets polluted and pollutants are easily bio-degradable.
 - d) Processing, whereby water gets polluted and the pollutants are not easily bio-degradable.
6. The treated effluents conforming to the prescribed standards only shall be discharged from cold water side in the sea. The temperature of the discharge effluents shall not exceed 5°C over and above the ambient water temperature of the sea.
7. On line monitoring to marine discharge water temperature shall be provided at the point of entry into the marine outfall and records shall be maintained.

Air:

8. The Air pollution Control equipment shall be installed along with the commissioning of the activity and shall comply with the following for controlling air pollution.

Sl. No	Details of stack	Stack 01	Stack 2
a)	Attached to	Super critical boilers.	Super critical boiler.
b)	Capacity	2 x 2016 TPH	1 x 2016 TPH
c)	Fuel	Coal	Coal
d)	Fuel quantity	2x308.84 TPH	1x308.84 TPH
e)	Stack height (above GL)	275 m Bi-flue stack	275 m
f)	Diameter	5.5 m dia	5.5 m dia
g)	Control equipment.	2 ESPs followed by bag filters designed for outlet concentration of 50 mg/NM ³	ESP followed by bag filters for outlet concentration of 50 mg/NM ³

9. The industry shall install stacks of 275 m height with online continuous monitoring equipment for Sox, NOx, Particulate matter and Hg. Exit velocity of the gases shall not be less than 24 m/sec.
10. The industry shall install high efficiency Electrostatic Precipitators (ESP) to ensure that the SPM in the stack does not exceed 50 mg/Nm³ and shall provide additional chamber (s) as spare to meet emergency requirement.

11. The industry shall provide adequate space for installation of flue gas desulphurization (FGD) with Mercury removal system now itself, if required at later stage, as stipulated by MOE&F, GOI.
12. Regular monitoring of ground level concentration of SO₂; NO_x, Hg, SPM and RSPM shall be carried out in the impact zone and records shall be maintained. If at any state these levels are found to exceed the prescribed limits, necessary control measures shall be provided immediately. The location of the monitoring stations and frequency of monitoring shall be decided in consultation of the Board. Periodic reports shall be submitted to the concerned Regional Officer.
13. A sampling port with removable dummy of not less than 15 cm diameter shall be provided in the stack at a distance of 8 times the diameter of the stack from the nearest constraint such as bends etc. A platform with suitable ladder shall be provided below 1 meter of sampling port to accommodate three persons with instruments. A 15 AMP 250 V plug point shall be provided on the platform.
14. The generator and turbines shall be installed in a closed area with suitable noise absorption systems. The ambient noise level shall not exceed 75 dB(A) during day time and 70 dB(A) during night time.

Solid Waste:

15. The proponent shall comply with the following:

	Blend Coal (70% indigenous coal and 30% Imported Coal)
Total Coal Consumption	6.90 MTPA
Total Ash	1.79
Fly Ash (@ (80%))	1.43
Bottom Ash (@20%)	0.36

16. Dry bottom ash collection system shall be adopted to the maximum extent possible and shall be sent to cement manufacturing units and brick manufacturing units etc. For unutilized bottom ash, as ash slurry system is to be provided for disposing ash to ash ponds in slurry mode.
17. Mercury and other heavy metals (Hg, Cr, As, Pb) shall be monitored in the bottom ash and also in the effluents emanating from the ash pond.
18. The ash slurry is to be conveyed to the ash pond by ash slurry pumps & pipes. The ash pond is to be constructed in compartments such that the dyke is formed to contain the ash slurry.
19. Ash pond shall be lined with impervious lining. Adequate safety measures shall also be implemented to protect the ash dyke from getting breached. After settlement of slurry, the overflow shall be collected in settling tank form where the treated wastewater shall be pumped back to the plant for reuse.
20. Regular monitoring of ground water in and around the ash pond area including heavy metals (Hg, Cr, As, Pb) shall be carried out, records maintained and six monthly reported shall be furnished to the concerned Regional Officer. The data obtained shall be compared with the baseline data so as to ensure that the ground water quality is not adversely affected due to the project.

21. The industry shall install appropriate and adequate dust extraction system and water spray system in coal handling areas, ash handling points, transfer areas and other dusty areas to control dust emissions.
22. The industry shall implement 100% dry fly ash collection and the entire dry fly ash shall be utilized for cement manufacturing & brick manufacturing.
23. Adequate safety measures shall be provided in the plant area to check / minimize spontaneous fires in coal yard, especially during summer season.
24. Storage facilities for auxiliary liquid fuel such as LDO /HFO/LSHS shall be made in the plant area where risk is minimum to the storage facilities. Disaster Management Plan shall be prepared to meet any eventuality in case of an accident taking place. Mock drills shall be conducted regularly and based on the same, modifications required, if any shall be incorporated in the Disaster Management Plan. Sulphur content in the liquid fuel shall not exceed 0.5 %.
25. The industry shall utilize bottom ash to the maximum extent possible for cement manufacturing, brick manufacturing etc. The unutilized bottom ash shall be disposed off in the ash pond in the form of slurry mode.
26. The following rules and regulations notified by the MOE&F, GOI shall be implemented.
 - a) Hazardous waste (Management, Handling and Transboundary Movement), Rules, 2008.
 - b) Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989.
 - c) Fly Ash Notification, 1999 & amendments thereof.
 - d) Coastal Regulatory Zone (CRZ) Notification, 1991.

Other Conditions:

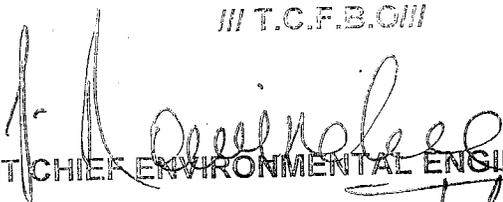
27. Green belt of width 25 m shall be developed along the boundary of the industry. Green belt development shall be started along with the construction activity. As committed, Greenbelt shall be developed in minimum of 396 acres.
28. The recommendations / commitments made during the Public Hearing held on 7.8.2009 at Painampuram (V) & Nelaturu (V), Muthukur (M), SPSR Nellore District shall explicitly be followed from pollution control point of view.
29. The Board will constitute External Technical Committee to monitor the pollution problems during the construction and also post monitoring for a period of 3 years as 8 Nos. of Thermal Power Plants are coming up within 20 km radius of Krishnapatnam Port. Depending upon the outcome of the monitoring results, necessary directions will be issued from time to time for taking additional pollution control measures to meet the norms prescribed by the Board.
30. The industry shall strictly implement all the recommendations made in CREP for Thermal Power plants.

31. The industry shall comply with the relevant standards stipulated for Thermal Power Plants under Schedule I of E (P) Rules, 1986, amended from time to time.
32. The industry shall comply with all the conditions stipulated in the Environmental Clearance issued vide order dt. 4.11.2009 issued by MOE&F, GOI.

Sd/-
MEMBER SECRETARY

To
M/s. Thermal Powertech Corporation (India) Ltd.,
6-3-1090, TSR Towers, Somajiguda,
Hyderabad – 500 082.

/// T.C.F.B.O ///

3/5
28/8

JOINT CHIEF ENVIRONMENTAL ENGINEER (CFE)
17/5/10



SEIL P1/MoEF&CC/Chennai/2021/005
27th December 2021

To
The Regional Director,
Regional Office (South Eastern Region),
Ministry of Environment, Forests & Climate Change,
1st & 2nd Floor, HEPC Building, No. 34, Cathedral Garden Road,
Nungambakkam,
Chennai- 600034

Sembcorp Energy India Limited

CIN: U40103HR2008PLC095648

Regd. Office: 5th Floor, Tower C, Building No 8

DLF Cybercity, Gurgaon - 122002, Haryana, India

Tel (91) 124 389 6700 / 01

Fax (91) 124 389 6710

E-mail: cs.india@sembcorp.com

Website: www.sembcorpenergyindia.com

**Sub.: Submission of Half Yearly CRZ Compliance Report of Sembcorp Energy India Limited
Project-1 (formerly known as Thermal Powertech Corporation India Limited— TPCIL)
for the period from April 2021 to September 2021**

Ref.: CRZ clearance Letter No. F.No. 11-129/2010—IA – III dated 5th December 2011

Dear Sir,

This has reference to the above subject, we are hereby submitting the Half Yearly compliance status report for the period from April 2021 to September 2021 along with supporting documents to the conditions specified under CRZ Clearance issued to Sembcorp Energy India Limited Project-1 (Formerly known as Thermal Powertech Corporation India Limited— TPCIL), Nellore.

Hope the above is in order.

Thanking you,

Yours faithfully,

For **Sembcorp Energy India Limited**

Pavan Kumar Rao V

Head HSE- SEIL

Copy To: 1. The Director, IA.I, MoEF & CC, New Delhi
2. The Environmental Engineer, APPCB, Nellore

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SIX-MONTHLY CRZ CLEARANCE COMPLIANCE REPORT OF

Sembcorp Energy India Limited Project-1

(Formerly Known as THERMAL POWERTECH CORPORATION INDIA LIMITED)

2 X 660 MW COAL BASED SUPERCRITICAL THERMAL POWER PLANT

(STAGE I - 2 X 660 MW)

AT PAINAMPURAM & NELATURU VILLAGES, MUTHUKUR MANDAL

SPSR NELLORE DISTRICT

ANDHRA PRADESH

INDIA



Period: April 2021 to September 2021

Background:

Sembcorp Energy India Ltd Project-1 [formerly known as Thermal Powertech Corporation India Limited (TPCIL)] is a leading independent power company in India. SEIL is promoted by Sembcorp Utilities Pvt. Ltd., which is part of the Singapore based Sembcorp Group.

SEIL Project-1 is currently consisting of 2x660 MW is under operation since March 2015.

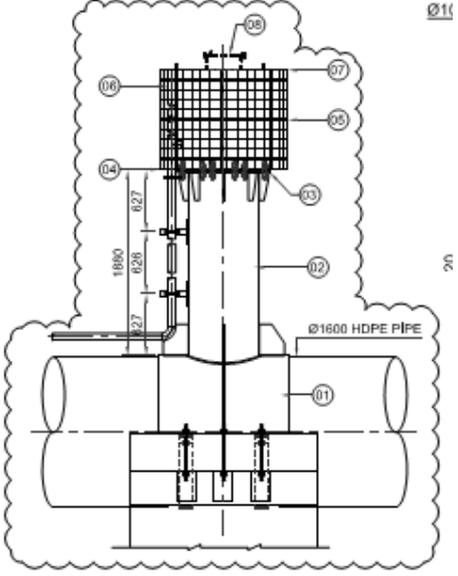
The latitude & longitude of North South extremes of Site are 80°08'35.956"E & 14°19'5.211"N and 80°09'16.325"E & 14°21'0.874"N respectively.

CRZ Clearance for the project is obtained from Ministry of Environment & Forests, Vide F.No.11-129/2010-IA.III Dated: 5th Dec 2011. The condition wise compliance to the clearance letter is detailed below.

CONDITION WISE COMPLIANCE AGAINST CRZ CONDITIONS

S. No.	CRZ CONDITIONS	COMPLIANCE STATUS
<u>SPECIFIC CONDITIONS:</u>		
i.	“Consent For Establishment” shall be obtained from state pollution control board under air and water act and a copy shall be submitted to the Ministry before start of any construction work at the site.	<p>Complied.</p> <p>Consent For Establishment (CFE) from AP Pollution Control Board has been obtained vide Order. No. 177/PCB/CFE/RO/-NLR/HO/2009-433, Dated: 15/05/2010.</p>
ii.	Cutter suction dredging shall be adopted instead of grab technology so as to control the sediments during dredging.	<p>Complied.</p> <p>Cutter suction dredging was adopted during the said activities.</p>
iii.	Top of the pipeline buried shall be minimum 2 m below the sea bed. The PP shall obtain a certificate of compliance from the agency executing the pipeline, with supporting documentation and shall submit to RO of MoEF and to state PCB.	<p>Complied.</p> <p>Pipeline is buried at 2 m below the seabed. The compliance certificate submitted to RO of MoEF and APPCB. Copy of the same is given here.</p> <div style="text-align: right;">  </div> <p>Date: 24th June' 2014 Sub.: Sea Water Intake Pipeline Installation Certificate</p> <p style="text-align: center;"><u>TO WHOMSOEVER IT MAY CONCERN</u></p> <p>Dear Sir,</p> <p>Vide Order No. TPCIL/INFRA-01/SWI & EXT CHP/SUPPLY/001 & TPCIL/INFRA-01/SWI & EXT CHP/SERVICES/002 dated 29-12-10 from TPCIL we have executed the work of laying the sea water intake and outfall pipelines including offshore Intake System and Diffusers for their 2X660MW Coal based Thermal Power Project at Painapuram and Nelatur Villages, Muthukuru Mandal, SPSR Nellore district.</p> <p>Entire offshore intake pipeline and Outfall pipeline of length 2000Mtrs and 1200Mtrs respectively are installed and buried in the sea bed with a minimum back fill of 2Mtrs from top of the pipeline. This is ensured through conducting post pipeline laying and post backfilling offshore depth survey through Ecosounder (Bathymetry survey). Cross section profiles for offshore chainage from LFP to Intake Header and Outfall diffuser has been attached for your reference.</p> <p>Thanking You.</p> <p style="text-align: center;">For GAYATRI PROJECTS LIMITED</p> <div style="text-align: center;">  </div> <p>I. S. N. MURTHY DGM - Projects, GPL (EPC-PP).</p> <div style="font-size: small; text-align: center;"> <p>Gayatri Projects Limited, B1, 6-3-1090, TSI Towers The Shree Road, Somajigutta, Hyderabad 500 092 CIN: L90990AP1609PLC057269</p> <p>T: +91 40 2331 0330/4284/4286 F: +91 40 2330 0436 E: gg.phy@gayatri.co.in www.gayatri.co.in</p> </div>

iv.	No effluent from fly ash system is permitted to discharge into the marine system as committed by PP. The effluent from fly ash shall be treated and the entire quantity shall be recycled in the cooling tower makeup etc., and suitable meter shall be installed to record the quantity of effluent recycled.	<p>Complying.</p> <p>No effluent from fly ash system is discharged into marine water. The entire effluent water from ash pond is collected and recycled. Flow Meters are installed for recording the quantity.</p>
v.	Shall implement all the measures as committed to the Ministry as a part of the clarifications submitted by the PP. A copy of these submissions shall be submitted to RO of MoEF.	<p>Complied.</p> <p>SEIL has implemented all the measures as committed to the Ministry.</p>
vi.	A suitable STP shall be used for green belt, dual plumbing system etc., measuring meters shall be provided to record the treated effluent used for different purposes.	<p>Complied.</p> <p>STP is provided to treat the domestic sewage generated at the site. The treated water is being used for greenbelt development.</p>
vii.	All the mitigation measures submitted in the EIA report shall be prepared in a matrix format and the compliance for each mitigation plan shall be submitted to MoEF-RO.	<p>Complying.</p> <p>The mitigation measures along with compliance are being followed at SEIL.</p>

<p>viii.</p>	<p>The proponent shall commit himself to be one of the partners / proponents (who have undertaken / will be undertaking similar power projects in the close proximity of site) as and when instructed by the MoEF/State Government Authorities in preparing an overall EIA report comprising both terrestrial / marine EIA components for the region and share the cost of the study and proposed mitigation measures for the coastal stretch as decided by the authorities in the best interest of protecting the environment.</p>	<p>Noted for compliance.</p>
<p>ix.</p>	<p>Appropriate screens and trash bars shall be put in place at the intake to avoid fish entering into the pipe due to heavy quantity of water drawl by once through water intake system.</p>	<p>Complied.</p> <p>Appropriate screens and trash bars are provided to avoid fish entering into the pipe.</p>  <p style="text-align: center;">INTAKE VELOCITY CAP UNIT TYP. DETAIL</p>

x.	Temperature and salinity level shall be monitored regularly by providing on-line monitoring system at the appropriate location on the outfall system.	<p>Complying.</p> <p>The parameters are being monitored regularly by providing online EQMS which is connected to APPB/CPCB on real time basis.</p>
xi.	Periodic monitoring of coastal water shall be carried out at outfall location.	<p>Complying.</p> <p>Monthly joint sampling of coastal water is being practiced along with state PCB office.</p>
xii.	No construction work other than those permitted in coastal regulation zone notification shall be carried out in coastal regulation zone area.	<p>Complied.</p>
xiii.	The project proponent shall set up separate environmental management cell for effective implementation of the stipulated environmental safeguards under the supervision of a senior executive.	<p>Complied.</p> <p>SEIL established an Environment Management Cell with suitable qualified personnel under the supervision of Head-HSE.</p>
xiv.	The funds earmarked for environment management plan shall be included in the budget and this shall not be diverted for any other purposes.	<p>Complied.</p>

S. No.	CRZ CONDITIONS	COMPLIANCE STATUS
<u>GENERAL CONDITIONS:</u>		
i.	Appropriate measures must be taken while undertaking digging activities to avoid any likely degradation of water quality.	Noted for compliance.
ii.	Full support shall be extended to the officers of this Ministry / regional office at Bangalore by the project proponent during inspection of the project for monitoring purposes by furnishing full details and action plan including action taken reports in respect of mitigation measures and other environmental protection activities.	Noted for compliance.
iii.	A six – monthly monitoring report shall need to be submitted by the project proponents to the Regional Office of this Ministry at Bangalore regarding the implementation of the stipulated conditions.	Complying. Latest Half Yearly compliance report submitted vide Letter No: SEIL P1/MoF&CC/Chennai/2021/003 dated 08 th June 2021.
iv.	Ministry of Environment & Forests or any other competent Authority may stipulate any additional conditions or modify the existing ones, if necessary in the interest of environment and the same shall be complied with.	Noted and shall be complied.
v.	The Ministry reserves the right to revoke this clearance if any of the conditions stipulated are not complied with satisfaction of the Ministry.	Noted.

vi.	In the event of change in project profile or change in the implementation agency, a fresh reference shall be made to the Ministry of Environment and Forests.	Noted for compliance.
vii.	The project proponents shall inform the regional office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of start of land development work.	Complied and Communicated.
viii.	A copy of the clearance letter shall be marked to concerned Panchayat / local NGO, if any, from whom any suggestions / representation has been made received while processing the proposal.	Complied.
ix.	Tamil Nadu Pollution Control Board shall display a copy of the clearance letter at the Regional Office, district industries centre and Collector's Office/ Tahsildar's office for 30 days.	Noted. Copy of compliance has been submitted to APPCB.
x.	These stipulations would be enforced among others under the provisions of water (prevention and control of pollution) Act 1974, the air (prevention and control of pollution) Act 1981, the environment (protection) Act, 1986, the public liability (Insurance) Act 1991 and EIA notification 1994, including the amendments and rules made thereafter.	Noted.
xi.	All other statutory clearances such as the approvals for storage of diesel from chief controller of explosives, fire department, civil aviation department, forest conservation Act, 1980 and wild life (Protection) Act, 1972 etc., shall be obtained, as applicable by project proponents from the respective competent authorities.	Complied and all the necessary approvals are obtained from respective authorities.

Xii.	The project proponent shall advertise in at least two local newspapers widely circulated in the region, one of which shall be in the vernacular language informing that the project has been accorded environmental clearance and copies of clearance letters are available with the state pollution control board and may also be seen on the website of the Ministry of Environment and Forest at http://www.envfor.nic.in . The advertisement should be made within 10 days from the date of receipt of the clearance letter and a copy of the same should be forwarded to the regional office of this Ministry at Bangalore.	Complied and Communicated.
xiii.	Environmental Clearance is subject to final order of the Hon'ble Supreme Court of India in the matter of Goa Foundation Vs. Union of India in writ Petition (civil)No.460 of 2004 as may be applicable to this project.	Noted.
xiv.	Status of compliance to the various stipulated environmental conditions and environmental safeguards will be uploaded by the project proponent in its website.	Noted and compliance statement is being uploaded on Sembcorp website at https://www.sembcorpenergyindia.com/AboutUs/Disclosure
xv	A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zilla Parishad / Municipal corporation, urban local body and local NGO, if any from whom suggestions / representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the company by the proponent.	Complied.

xvi.	The proponent shall upload the status of compliance of the stipulated EC conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of MoEF, the respective zonal office of CPCB and the SPCB.	Noted and uploaded on the Sembcorp website. The reports are being sent to concern regulatory bodies.
xvii.	The proponent shall also submit six monthly reports on the status of compliance of the stipulated EC conditions including results of monitored data to the respective Regional Office of MoEF, the respective zonal office of CPCB and the SPCB.	Complied. Six monthly EC Compliance reports are being submitted to concern regulatory bodies.
xviii.	The Environmental statement for each financial year ending 31 st March in form-V as is mandated to be submitted by the project proponent to the concerned state pollution control board as prescribed under the environment (protection) rules, 1986 as amended subsequently, shall also be put on the website of the company along with the status of compliance of EC conditions and shall also be sent to the respective Regional Offices of MoEF by e-mail.	Complied. Environmental Statement (Form-V) for each financial year is being submitted to APPCB and the same is uploaded on company Website. Reports are being submitted to respective regulatory bodies.

Sembcorp Energy India Limited Project-1
Impact on Air Environment and Control Measures

S.No	Particulars	Notation	Compliance Status	Mitigation Plan/Remarks
	Emission Details		Complied	-
	PM		Complied	With in the emission norms i.e. 50 mg/Nm ³
1	SO _x		In progress	Based on the permissible sulphur level in coal which is 0.59%. The SO _x range is 1600 mg/Nm ³ which will be brought down to within 200 mg/Nm ³ after installation of FGD by 31.12.2024.
	NO _x		Complied	With in the emission norms i.e. 450 mg/Nm ³
2	Stack Height		Complied	Stack with a height 275 m provided
3	Meteorological Data		Complied	Weather station installed in the site for hourly measures of weather parameters
4	Estimation of Ground Level Concentration		Complied	Estimated during EIA preparation
5	Application of ISGST3		Complied	During EIA Study
6	Maximum Ground Level Concentrations		Complied	Estimated during EIA preparation
7	Post Project Scenario		Complied	Stack Monitoring is being conducted by APPCB approved third party
8	Impact on Forests		Complied	As Ipuru reserve forest is 7.8 km away from the site and is located in upwind direction. Hence there is no impact.
9	Air Pollution Control Measures		Complying	<ul style="list-style-type: none"> i) Water sprinkling is being done & Vacuum truck is deployed for maintaining good housekeeping practices ii) Silo's provided for collection of Ash and will be given to users iii) High efficiency ESP provided iv) Dust Extraction (DE) and Dry Fog Dust Suppression (DFDS) system implemented to mitigate fugitive emissions v) Low Nox Burners provided in stacks vi) Coal Transfer Points are provided with Dust Extraction System/Dry Fog Dust Suppression (DFDS)

Sembcorp Energy India Limited Project-1				
Impact on Land Environment and Control Measures				
S.No	Particulars	Notation	Compliance Status	Mitigation Plan/Remarks
1	Impact on Terrestrial Ecology		Complied	i) A greenbelt in an area of 396 acres developed ii) Impervious HDPE liner was given in Ash Pond to avoid leaching
2	Impact on Aquatic Ecology		Complying	i) The water from ash pond if any, is being adjusted for pH (matching to ph of sea water), clarified and then discharged ii) The location of the outfall was located at 950 meters from the coast to ensure proper dilution and minimize the impact on marine ecology
3	Greenbelt Development Plan		Complied	i) A greenbelt of 396 acres developed to control dust/noise pollution ii) Established our own nursery with the help of forest department to develop the greenbelt
4	Solid Waste Generation and Management		Complying	i) Achieving 100% Fly Ash Utilization since 32 months

Notation-

	Low	Medium	High	

Sembcorp Energy India Limited Project-1

Impact on Noise Environment and Control Measures

S.No	Particulars	Notation	Compliance Status	Mitigation Plan/Remarks
1	Noise Pollution Control Measures		Complied	i) Onsite workers working in noise prone areas was provided with earmuffs & ear plugs as per the requirement ii) All high noise making equipments were provided with acoustic enclosures. iii) Proper encasement of noise generating sources was done to control the noise levels iv) The steam turbine generators were provided with acoustic enclosures. v) Thick greenbelt of 396 acres developed all around the palant, which acting as noise barrier

Notation-

	Low
	Medium
	High

Sembcorp Energy India Limited Project-1

Impact on Water Environment and Control Measures

S.No	Particulars	Notation	Compliance Status	Mitigation Plan/Remarks
1	Pretreatment of Sea Water		Complied	Desalination plant installed to meet all the sweet water requirements
2	Waste Water Generation		Complied	-
3	Water Pollution Control Measures		Complying	i) Toilet facilities were provided ii) Adequate arrangements to ensure proper drainage of water was made.
4	Wastewater Treatment and Disposal		Complying	i) DM plant regeneration wastewater is being neutralized and routed to the Central Monitoring Basin for use in horticulture/greenbelt ii) Wastewater streams except domestic wastewater is being routed to Central Monitoring Basin. Water from this is being fully utilized for greenbelt and horticulture development iv) Part of the cooling tower blowdown is being used for ash handling and balance is being discharged into the sea.
5	Impact on Ground Water		Complying	Ash pond was made impervious with HDPE liner to prevent any leaching out of it
6	Storm Water Management		Complying	Rain water harvesting pits constructed

Notation-

	Low
	Medium
	High

A.P. POLLUTION CONTROL BOARD
 Hyderabad - 500002
 No. 10-1, Saradha Nagar, Hyderabad - 500002

ENVIRONMENTAL PUBLIC HEARING NOTIFICATION

In accordance with the Notification no. G.O. Ms. 1533/CE, Dt. 14.09.2008 of Ministry of Environment & Forests, Government of India, We hereby notify for a Public Hearing on the proposed establishment of coal based power project by M/s. Thermal Powercoth Corporation India Ltd. in Pyrampuram (Pyrampuram) and Nalaturu villages of Mulakur Mandal, SPS Nellore Dist.

The details of the project are as follows:

1. Name of the Company : M/s. THERMAL POWERCOTH CORPORATION
 NOX 112, 6-3-1030, B-1, T.S.R Towers,
 Rajbhawan Road, Sarajuguda,
 Hyderabad-500 082

2. Reason of the activity : Pyrampuram (Pyrampuram) and
 Nalaturu Villages

Pyrampuram (Pyrampuram) Village Survey numbers			
278/1/2	279/1/2	280/1/2	281
284	285	286	287
290	291	292	293
308	309	310	311
322	323	324	325
330	331	332	333
341	342	343	344
352	353	354	355
378	379	380	381
398	399	400	401
410	411	412	413
438	439	440	441

Nalaturu Village Survey Nos			
242	243	244/1/2	245/1/2
258	259	260	261
270	271	272	273
284/1/2	285/1/2	286/1/2	287/1/2
298	299	300/1/2	301/2
322/1/2	323/2	324/4/8	325/3/4
338/1/2	339/1/2	340/1/2	341/2
358	359/1/2	360/1/2	361/1

3. Name of the Promoter & Address : M/s. Dayan Projects Ltd.,
 6-3-1030, B-1,
 T.S.R. Towers, Rajbhawan Road,
 Sarajuguda, Hyderabad-500 082

4. Name of the Authorized person to be contacted with address & phone No. : Mr. S. S. Haja
 Vice-President
 M/s. Thermal Powercoth Corp. India Ltd
 6-3-1030, B-1, T.S.R. Towers,
 Rajbhawan Road, Sarajuguda,
 Hyderabad-500082
 Tel No. 080 0821020/4284228

5. Capital cost of the Project : Rs. 13,874 Cr

6. Line of activity / capacity : Thermal Power - 1680 MW

7. Date : 7th August 2009
 Time : 11.00 A.M.
 Venue : New Vandal Parthasarathy Primary School
 Heamrao Pyrampuram (Pyrampuram)
 Village, Mulakur Mandal,
 S.P.S. Nellore Dist.

8. Place of availability of the details of above project :

a) District Collector Office, Nellore. b) District Industries Centre, Nellore. c) Office of the CEO, 2 (a) District, Nellore. d) M.O. District, Secunderabad. e) District Office, A.P. Pollution Control Board, Sanghvi Nagar Hyderabad. f) Zonal Office, A.P. Pollution Control Board, Mysorepet, g) District Officer, Nellore. h) M.P.D. Office, Sarajuguda Mandal, Nellore. i) Regional Office, A.P. Pollution Control Board, A.K. Nagar, Nellore. j) M.O. District, Southern Region, Bangalore. k) Gram Panchayat office, Pyrampuram (Pyrampuram), Nalaturu Villages, Mulakur Mandal, SPS Nellore Dist.

Suggestions, views, comments and objections of the public if any are invited within 30 days from the date of the publication of the Notification from all persons, including landless residents, displaced persons and Environmental Groups, who are affected by the project etc / sites. All the above persons may also make written suggestions to the undersigned officer of A.P. Pollution Control Board. All these persons can participate in the public hearing on the date and venue specified above.

Sd/- XXXX
 Environmental Engineer
 A.P. Pollution Control Board
 Regional Office, Nellore

Date: 09/07/2009

ANNEXURE - 20

PUBLIC HEARING NOTIFICATION
 DECLAN CHRONICLE
 03/07/2009.

BY REGD. AD/SPEED POST/EMAIL**Sembcorp Energy India Limited**

CIN: U40103HR2008PLC095648

Regd. Office: 5th Floor, Tower C, Building No 8
 DLF Cybercity, Gurgaon - 122002, Haryana, India
 Tel (91) 124 389 6700 / 01

Fax (91) 124 389 6710

E-mail: cs.india@sembcorp.com

Website: www.sembcorpenergyindia.com

Date: May 31^s, 2022

To,

Dr. Suresh Babu Pasupuleti,
 Joint Director (S),
 Integrated Regional Office,
 Ministry of Environment, Forest & Climate Change,
 Green House Complex, Gopal Reddy Road, Vijayawada,
 Andhra Pradesh-520010

RE:

- (a) Letter dated April 5, 2022, issued to M/s Sembcorp Energy India Limited (*hereinafter referred to as "SEIL"*) by the Joint Director (S), Vijayawada, Andhra Pradesh bearing file number: IRO/VIJ/EPA/MISC/111-01/2021 (*hereinafter referred to as the "Letter under Reply"*); and
- (b) Interim reply to the Letter under Reply issued by SEIL dated May 02, 2022 (*hereinafter referred to as the "Interim Reply"*), that is annexed herewith and marked as **Annexure-I**).

SUBJECT: Reply to the Letter under Reply by SEIL issued to Joint Director (S), Vijayawada, Andhra Pradesh.

Dear Sir,

We refer to the referenced letters *viz.* the Letter under Reply and the Interim Reply and are replying to it as under:

- a) At the outset SEIL submits that nothing contained in this present reply should be construed as an admission of any alleged circumvention/non-contravention of any applicable law. Nothing contained herein should be deemed to be an admission for absence of specific non traverse.

- b) At the further outset, SEIL submits that it is issuing this Letter under Reply in respect of the 2 X 660 MW (Stage I) Super Critical Coal Based Thermal Power Plant at village Painampuram, in Muthukur Mandal, in Nellore Distt., in Andhra Pradesh (*hereinafter referred to as the “Plant”*).
- c) For the sake of brevity SEIL in this present reply is only specifically issuing its response to the specific queries raised in the Letter under Reply with respect to the aforesaid compliance pertaining to the plant.
- d) The queries raised in the Letter under Reply have been paraphrased in this present reply and are being responded to *in seriatim* hereinbelow:

Response to the enquiry made in the Letter under Reply in respect of Environmental Clearance issued to SEIL in respect of the Plant, bearing number: EC No. J-13012/02/2009-IA. II (T) dated 04.11.2009 (*hereinafter referred to as the “EC”*).

Query No. 1: *SEIL was required to monitor Mercury and other heavy metals (As, Hg, Cr, Pb etc.) in the effluents emanating from the existing ash pond.*

Response by SEIL:

(a) SEIL submits that it has complied with the corresponding condition and has monitored the presence of heavy metals present in effluents emanating from its existing ash pond. In this regard, an independent lab being M/s Care Labs, Hyderabad recognised by the Ministry of Environment Forest & Climate Change, Government of India and National Accreditation Board for Testing and Calibration Laboratories (“NABL”) was appointed by SEIL for FY 2021-22 to conduct the foregoing study of the presence of heavy metals in effluents emanating from its ash pond. For ease of reference, we are annexing quarterly reports issued by M/s Care Labs, Hyderabad for the preceding (4) quarters as **Annexure-II** colly.

Query No. 2: *SEIL was required to implement the recommendations made in the Hydrogeological study report*

Response by SEIL:

(a) SEIL submits that recommendations, if any, made in Hydrogeological Study Report for the year 2021, are being complied with. A copy of the Hydrogeological Study Report for the year 2021, has been submitted to your office on April 18, 2022. However, a copy of the same is annexed herewith and is attached as **Annexure-III**.

Query No. 3: *SEIL was required to conduct hydrogeological study of the area annually and results submitted to the Ministry and concerned agency in the State Government.*

Response by SEIL:

(a) SEIL submits that a Hydrogeological study is being done annually by third party experts and a copy thereof has been submitted to the Ministry of Environment, Forest & Climate Change.

Query No. 4: *SEIL was required to earmark an amount of Rs 32.0 crores as one-time capital cost for CSR programme. Subsequently a recurring expenditure of Rs. 6.4 Crores per annum should be earmarked as recurring expenditure for CSR activities. Details of the activities to be undertaken should be submitted along with road map for implementation.*

Response by SEIL:

(a) SEIL confirms that from the year 2010-11 up to the year 2021-2022, it has cumulatively spent an amount of INR 70.98 crores on CSR related activities. Details of the CSR activities undertaken from the year 2010-11 up to the year 2021-2022, are collated in an internal report which is attached herewith for ease of your reference and is marked as **Annexure-IV**.

Query No. 5: *SEIL is required to implement CSR activities as per need-based assessment for the nearby villages to study economic measures with action plan which can help in upliftment of poor section of society. Income generating projects consistent with the traditional skills of the people besides development of fodder farm, fruit bearing orchards, vocational training etc., can form a part of such programme. Company shall provide separate budget for community development activities*

and income generating programmes. This will be in addition to vocational training for individuals imparted to take up self-employment and jobs.

Response by SEIL:

(a) In compliance with the foregoing query, details of the CSR activities undertaken are collated in an internal report which is attached herewith for ease of your reference and is marked as **Annexure-IV**.

Query No. 6: *During Inspection, it has been informed that the Ministry of Environment Forest, & Climate Change vide Gazette of India Notification No. 1-5/2013-ROHQ dated 13.08.2020 has established 09 new Integrated Regional Offices (IROs) including IRO, Vijayawada. The IRO, Vijayawada is functioning with the jurisdiction of State Andhra Pradesh. Henceforth, six monthly compliance reports with all monitored data including required enclosures should be submitted to IRO, Vijayawada in soft copy (PDF format) only on regularly basis to ecompliance-ap@gov.in (only).*

Response by SEIL:

SEIL submits that it was only during the recent inspection carried out by your good offices on October 22, 2021, that SEIL was informed about commencement of operations of the Integrated Regional Office, Ministry of Environment Forest, & Climate Change, Vijayawada *vide* notification bearing No. 1-5/2013- ROHQ dated August 13, 2020. Immediately thereafter, SEIL has started submitting the compliance reports with respect to the EC and the CRZ Clearance, to the Integrated Regional Office, Ministry of Environment Forest, & Climate Change, Vijayawada. Until, October 2021, compliance reports with respect to the EC and the CRZ Clearance were being regularly submitted to (a) the Regional Office, Chennai, Ministry of Environment Forest, & Climate Change; and (b) the Director, IA.I (Thermal), New Delhi, Ministry of Environment Forest, & Climate Change. For ease of your reference—a copy of the latest compliance reports that has been submitted with your good offices *vide* our email dated March 18, 2022, dated November 25, 2021 are being annexed herewith as **Annexure-V**[colly].

Query No. 7: *SEIL is required to submit the Environment Statement for each financial year ending 31st March in Form V IRO, Vijayawada in soft copy (PDF format) only on regularly basis to ecompliance-ap@gov.in (only).*

Response by SEIL:

SEIL submits that it is only during the recent inspection carried out by your good offices on October 22, 2021, that SEIL was informed about commencement of operations of the Integrated Regional Office, Ministry of Environment Forest, & Climate Change, Vijayawada *vide* notification bearing No. 1-5/2013- ROHQ dated August 13, 2020. Immediately thereafter, SEIL has started submitting the Environmental Statements, to the Integrated Regional Office, Ministry of Environment Forest, & Climate Change, Vijayawada. Until, October 2021, Environmental Statements for each financial year, were being regularly submitted to the Member Secretary, APPCB, Vijayawada, and regional officer, APPCB, Nellore. For ease of your reference proof of submission of the recent report for the year **2021**, along with a copy thereof is being annexed herewith as **Annexure-VI [colly]**.

Query No. 8: *SEIL is required to update the Environmental Statement in company's website on regular basis.*

Response by SEIL:

SEIL submits that it is regularly uploading the Environmental Statement on its website annually. The said Environmental Statement can be accessed by clicking on the link:

<https://www.sembcorpenergyindia.com/AboutUs/Disclosure>

Query No. 9: *SEIL is required to submit the detailed report regarding the expenditure incurred for implementation of environmental protection measures along with six monthly compliances to Ministry's Integrated Regional Office on regular basis.*

Response by SEIL:

SEIL submits that information relating to expenditure towards implementation of environment protection measures are part of Environment Statement Report which is being submitted yearly by SEIL. A copy of the Environmental Statement Report is annexed herewith and is marked as **Annexure-VI**.

Query No. 10: *SEIL is required to submit the details regarding the date of financial closure and final approval of the Project by the concerned authorities and the dates of start of land development work and commission of the plant.*

Response by SEIL:

SEIL submits that Final Loan Agreement was signed on September 13, 2010, with Power Finance Corporation, Rural Electrification Corporation, Life Insurance Corporation and Power Trading Corporation. The date of execution of the Final Loan Agreement constitutes financial closure for the Plant. It is further submitted that land development work in respect of the Plant commenced on February 17, 2011. The date of commissioning of the Plant is (a) Unit I on March 2, 2015, and (b) Unit II on September 15, 2015.

The Central Electricity Authority, Ministry of Power confirmed the commercial operation date of the Plant set out hereinabove in its letters dated March 16, 2015 and October 12, 2015 for Unit I and Unit II of the Plant respectively. Additionally, APPCB issued a Consent for Operation (CFO) for Unit I on February 24, 2015 and for Unit II on August 27, 2015, copies of the aforesaid documents are annexed herewith and marked as **Annexure-VII** colly.

Response to the enquiry made in the Letter under Reply in respect of the extended Environmental Clearance issued to SEIL in respect of the Plant, bearing number: EC No. J-13011/02/2009-IA.II (T) dated March 02, 2015 (hereinafter referred to as the "EC Extension").

Query No. 11: *SEIL is required to conduct long term study of radioactivity and heavy metals contents on coal to be used through a reputed institute and results thereof analysed every two year and reported along with monitoring reports. Thereafter*

mechanism for an in-built continuous monitoring for radio activity and heavy metals in coal and fly ash (including bottom ash) shall be put in place.

Response by SEIL:

(a) SEIL submits that it is conducting a quarterly Heavy Metal Analysis of coal and ash by APPCB approved third party agency M/s Care Labs, Hyderabad and it has regularly submitted its Heavy Metal Analysis report to the Ministry of Environment, Forest & Climate Change. SEIL further submits that it is regularly conducting a Radioactivity Analysis and is submitting a report to the Ministry of Environment, Forest & Climate Change. Proof of submission of the foregoing reports from the along with copies of the latest Heavy metal analysis report along with Radioactivity Analysis Report conducted by third party monitoring agency M/s Care Labs, Hyderabad and the Board of Radiation & Isotope Technology, (BRIT) GOI respectively are annexed herewith and marked as **Annexure-VIII [colly]**.

Response to the enquiry made in the Letter under Reply in respect of CRZ Clearance issued to SEIL in respect of the Plant, bearing number: Clearance No. 11-129/2010-IA.III dated December 05, 2011 (hereinafter referred to as the “CRZ Clearance”).

Query No. 12: *It has been observed the CRZ clearance issued by the Ministry vide Clearance No. 11-129/2010-IA.III dated 05.12.2011 for the construction of pump house, Sea water Intake and Outfall facilities at Pynapuram Village, Near Nellore, Andhra Pradesh has been granted to M/s Thermal Power Tech Corporation India Ltd. The transfer of CRZ clearance in favour of M/s Sembcorp Energy India Limited has not been provided.*

Response by SEIL:

(a) SEIL submits that its name was changed from Thermal Powertech Corporation India Limited (TPCIL) to “Sembcorp Energy India Limited” with effect from February 10, 2018. SEIL applied to Ministry of Environment, Forest & Climate Change on May 7, 2019, for change of name as reflecting in the EC i.e. from TPCIL to SEIL and the same was approved vide Ministry of Environment, Forest & Climate Change office order dated October 9, 2019. Copy of the said Order is attached herewith and annexed as **Annexure-IX**. As directed, we have applied for change of

name for CRZ Clearance i.e., from TPCIL to SEIL vide our application no. IA/AP/CRZ/273835/2022 Dtd. 19th May'2022. and is annexed as **Annexure-X**.

Query No. 13: *SEIL is required to submit the copy of "Consent for Establishment" granted for construction of pump house, Sea water Intake and Outfall facilities obtained from APPCB under Air and Water Act.*

Response by SEIL:

(a) SEIL submits that the Consent for Establishment was granted by Andhra Pradesh Pollution Control Board *vide Order. No. 177/PCB/CFE/RO/-NLR/ HO/2009-433* dated May 15, 2010 (*hereinafter referred to as "CFE"*). The Schedule-B of Consent for Establishment mentions the parameters in Schedule -B which pertains to Sea Water Intake [viz. Cooling Water Make-Up & Non-Cooling Water Make-Up], Sea Water Intake and Outfall [viz. Cooling Water Blowdown]. Inclusion of these parameters implies Sea Water Pump house, Sea Water Intake and Outfall facilities form part of the foregoing CFE and is included in Schedule B of the CFE. A copy of the CFE was previously shared with your good offices on March 18, 2022. However, for ease of reference, a copy of the CFE is attached herewith and marked as **Annexure-XI**.

Query No. 14: *SEIL is required to provide the details of the implementation status of all the measures as committed to the Ministry vide their letter dated 01.08.2011, as a part of the clarifications submitted by the PP.*

Response by SEIL:

(a) SEIL submits that it is complying with all conditions mentioned in the Ministry of Environment, Forest & Climate Change's letter dated December 05, 2011 *vide* which the CRZ clearance was issued, in response to the referenced letter of August 01, 2011. A detailed implementation status of the foregoing conditions of CRZ is attached herewith and marked as **Annexure-XII**.

Query No. 15: *SEIL is required to submit the compliance status of all mitigation measures submitted in the EIA report which are to be prepared in a matrix format to Ministry's IRO, Vijayawada.*

Response by SEIL:

(a) SEIL submits that it has implemented the mitigation measures as set out in the Environmental Impact Assessment Report, and a compliance report thereof in matrix format is attached herewith for your reference and is marked as **Annexure-XIII**.

Query No. 16: *SEIL is required to provide the details regarding the date of financial closure and final approval of the project by the concerned authorities and the date of start of land development work.*

Response by SEIL:

(a) Response to Query 10 be read as response to Query 16.

Query No. 17: *SEIL is required to submit the copies of newspaper advertisement to Ministry's IRO, Vijayawada for records.*

Response by SEIL:

(a) SEIL submits that Advertisements were given in a Telugu newspaper on July 04, 2009, and in an English newspaper on July 03, 2009, copies whereof are attached herewith and marked as **Annexure-XIV**.

Query No. 18: *SEIL is required to upload the status of compliance of the stipulated CRZ clearance conditions, including results of monitored data on their website.*

Response by SEIL:

(a) The status of compliance of the stipulated CRZ Clearance conditions along with the result of the data monitored is being regularly uploaded on SEIL's official website. For ease of reference the said website can be accessed on the link set out hereinbelow.

<https://www.sembcorpenergyindia.com/AboutUs/Disclosure>

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Without prejudice to the aforesaid, or otherwise, SEIL submits that should there be any need for clarification or any further information in respect of the foregoing or otherwise it will be available to aid your good offices, at your earliest convenience.

Assuring you of our support, and best efforts.

Thanking you,

Sincerely,



Pavan Kumar Rao

Head-HSE, SEIL

Sembcorp Energy India Limited



ANDHRA PRADESH POLLUTION CONTROL BOARD
D.No.33-26-14D/2, Near Sunrise Hospital, Pushpa Hotel Centre,
Chalamalavari Street, Kasturibaipet, Vijayawada – 520 010
Phone. No.0866-2463200, Website : https://pcb.ap.gov.in

**RED CATEGORY
 CONSENT & AUTHORIZATION ORDER**

Consent Order No APPCB/ VJA/ NLR/ 930/HO/CFO/2016- 16/11/2021

CONSENT is hereby granted for Operation under section 25/26 of the Water (Prevention & Control of Pollution) Act, 1974 and under section 21 of Air (Prevention & Control of Pollution) Act 1981 and amendments thereof and Authorisation under Rule 5 of the Hazardous Wastes (Management, Handling & Transboundary, Movement) Rules, 2008 & Amendments thereof and the rules and orders made there under (hereinafter referred to as 'the Acts', 'the Rules') to:

**M/s. Sembcorp Energy India Limited (Project -1) (formerly
 M/s. Thermal Powertech Corporation (India) Ltd.)
 Painampuram & Nelaturu Villages, Muthukur Mandal,
 SPSR Nellore District.
 E Mail: vemulapalli@sembcorp.com**

(Hereinafter referred to as 'the Applicant') authorizing to operate the industrial plant to discharge the effluents from the outlets and the quantity of emissions per hour from the chimneys as detailed below:

i) Out lets for discharge of effluents:

Outlet No.	Outlet Description	Max Daily Discharge in (M3/day)	Point of Disposal
1.	Cooling Water Blow down	116000.0	Shall be discharged into sea through marine out fall
2.	First pass RO reject	22224.0	
3.	Ash pond outlet (excess during rainy season)	6666.0	
4.	Clarifier blow down	1116.0	Most of the water shall be recycled back & remaining if any shall be discharged through marine outfall.
5.	DM Plant regeneration	112.0	Shall be reused within plant premises for green belt development after treatment,
6.	Boiler blow down	80.0	
7.	Misc. Service water (floor wash)	80.0	
8.	Domestic (Plant)	40.0	After treatment in STP, shall be utilized for green belt development.

ii. Emissions from chimneys:

Chimney No.	Description of Chimney	Quantity of Emissions at peak flow m ³ /hr

1	Common Stack with twin flues attached to coal fired boilers of 2 x 2016 TPH capacity	-
2	Stack attached to HSD fired Auxiliary Boiler 1 x 50 TPH capacity	-
3	DG sets capacity of 3 x 1000 KVA	-

iii) HAZARDOUS WASTE AUTHORISATION (FORM – II) [See Rule 5 (4)]:

M/s.Sembcorp Energy India Limited (Project -1) (formerly M/s. Thermal Powertech Corporation (India) Ltd.) Painampuram & Nelaturu Villages, Muthukur Mandal SPSR Nellore District is hereby granted an authorization to operate a facility for collection, reception, storage, treatment, transport and disposal of Hazardous Wastes namely:

S. No	Name of the Hazardous waste	Stream	Quantity of Hazardous waste	Disposal Option
1	Expired Paints/ Paint Waste/ Empty paint cans	21.1 of Schedule-1	5 Ton/ Annum	Shall be routed through APEMC, so as to dispose the same to authorized recyclers / re-processors / Incinerators
2	Expired Chemicals/ Chemical Waste/ Empty Chemical	35.2 of Schedule-1	10 KL/ Annum	Shall be routed through APEMC, so as to dispose the same to authorized recyclers / re-processors / Incinerators
3	Spent Ion Exchange Resins	35.2 of Schedule-1	20 Ton/ Annum	Shall be routed through APEMC, so as to dispose the same to authorized recyclers / re-processors / Incinerators
4	Oil Soaked or Chemicals coated Cotton Waste	33.2 of Schedule-1	1 Ton/ Annum	Shall be routed through APEMC, so as to dispose the same to authorized recyclers / re-processors / Incinerators
5	Used Oil Filters/ Damaged Filters	3.3 of Schedule-1	1 Ton/ Annum	Shall be routed through APEMC, so as to dispose the same to authorized recyclers / re-processors / Incinerators
6	ETP Sludge/ Oil Sludge	34.2 of Schedule-1	1 Ton/ Annum	Shall be routed through APEMC, so as to dispose the same to authorized recyclers / re-processors / Incinerators
7	Used Lubricant Oil	5.1 of Schedule-1	50 KL/A nnum	Shall be routed through APEMC, so as to dispose the same to authorized recyclers / re-processors / Incinerators/ Pre-processors
8	Waste Oil from DG Sets	5.1 of Schedule-1	2 KL/ Annum	Shall be routed through APEMC, so as to dispose the same to authorized recyclers / re-processors / Incinerators/ Pre-processors
9	Aerosols Cans	33.1 of Schedule-1	100 Kgs/ Annum	Shall be routed through APEMC, so as to dispose the same to authorized recyclers / re-processors
10	Used Empty Chemical Jar/ Bottles	33.1 of Schedule-1	1000 Nos./ Annu	Authorized recylcers/ Reprocessors/ Incinerators
11	Used empty PVC oil sample bottle	33.1 of Schedule-1	200 Kgs/Annum	Shall be routed through APEMC, so as to dispose the same to authorized recyclers / re-processors / Incinerators

12	Used Grease	35.4 of Schedule-1	1 Ton/ Annum	Shall be routed through APEMC, so as to dispose the same to authorized recyclers / re-processors / Incinerators
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Other Wastes:

13	Lead Acid Batteries	-- -	200 Nos./ Annum	Return to manufacturers/ dealers on buyback basis / Authorized recyclers
14	E-Waste	--	3 Ton/ Annum	Shall be routed through APEMC, so as to dispose the same to authorized recyclers / re-processors

This consent order is valid to manufacturing the following products along with quantities indicated only.

S. No.	Products	Capacity
1.	Electric Power Generation (Fuel : Blended coal 70% indigenous and 30% imported coal)	1320MW (1 st Unit of Stage- I - 1 x 660 MW) (2 nd Unit of Stage- I – 1 x 660 MW)

This order is subject to the provisions of 'the Acts' and the Rules' and orders made there under and further subject to the terms and conditions incorporated in the schedule A, B & C enclosed to this order.

This order of consent & Hazardous Waste Authorization shall be valid for a period ending with the 30th November, 2026.

BATCHU SIVA PRASAD, CEE(BSP), O/o CHIEF ENVIRONMENTAL ENGINEER-APPCB

To

**M/s. Sembcorp Energy India Limited (Project -1),
(formerly M/s. Thermal Powertech Corporation (India) Ltd.)
Painampuram & Nelaturu Villages, Muthukur Mandal,
SPSR Nellore District.
E Mail: vemulapalli@sembcorp.com**

Copy to:

1. The JCEE, Zonal Office, Vijayawada for information and necessary action.
2. The EE, Regional Office, Nellore for information and necessary action.

SCHEDULE-A

1. Any up-set condition in any industrial plant / activity of the industry, which result in, increased effluent / emission discharge and/ or violation of standards stipulated in this order shall be informed to this Board, under intimation to the Collector and District Magistrate and take immediate action to bring down the discharge / emission below the limits.
2. The industry should carryout analysis of waste water discharges or emissions through chimneys for the parameters mentioned in this order on quarterly basis and submit to the Board.
3. All the rules & regulations notified by Ministry of Law and Justice, Government of India regarding Public Liability Insurance Act, 1991 should be followed as applicable.
4. Notwithstanding anything contained in this consent order, the Board hereby reserves the right and powers to review / revoke any and/or all the conditions imposed herein above and to make

- such variations as deemed fit for the purpose of the Acts by the Board.
5. The industry shall ensure that there shall not be any change in the process technology, source & composition of raw materials and scope of working without prior approval from the Board.
 6. The applicant shall submit Environment statement in Form V before 30th September every year as per Rule No.14 of E(P) Rules, 1986 & amendments thereof.
 7. The applicant should make applications through Online for renewal of Consent (under Water and Air Acts) and Authorization under HWM Rules at least 120 days before the date of expiry of this order, along with prescribed fee under Water and Air Acts and detailed compliance of CFO conditions for obtaining Consent & HW Authorization of the Board.
 8. The industry should immediately submit the revised application for consent to this Board in the event of any change in the raw material used, processes employed, quantity of trade effluents & quantity of emissions. Any change in the management shall be informed to the Board. The person authorized should not let out the premises / lend / sell / transfer their industrial premises without obtaining prior permission of the State Pollution Control Board.
 9. Any person aggrieved by an order made by the State Board under Section 25, Section 26, Section 27 of Water Act, 1974 or Section 21 of Air Act, 1981 may within thirty days from the date on which the order is communicated to him, prefer an appeal as per Andhra Pradesh Water Rules, 1976 and Air Rules 1982, to Appellate authority constituted under Section 28 of the Water(Prevention and Control of Pollution) Act, 1974 and Section 31 of the Air(Prevention and Control of Pollution) Act, 1981.
 10. The industry shall be liable to pay Environmental Compensation / Other Environmental Taxes, if any environmental damage caused to the surroundings, as fixed by the Collector & District Magistrate or any other competent authority as per the Rules in vogue.
 11. The industry may explore the possibility of tapping the solar energy for their energy requirements.
 12. The industry should educate the workers and nearby public of possible accidents and remedial measures.

SCHEDULE – B

Special Conditions:

1. The industry shall provide FGD system to meet the SO₂ emission standard of 200 mg/Nm³ by 31.12.2024, as per MoEF&CC, GoI notification GSR No.243 (E), dt.31.03.2021.
2. The industry shall maintain water sprinklers around the ash pond area to control fugitive emissions in the surrounding area within 2 months and report compliance to RO, Nellore.

WATER POLLUTION:

3. The industry shall comply with the following effluents standards based on the disposal points permitted:

Outlet No.	Parameter	Limiting standards
1 to 3	pH	6.5 to 8.5
	Suspended solids	100.0 mg/l
	Oil & Grease	10.0 mg/l
	Temperature	Shall not exceeded 50 C above the receiving water temperature
	Biochemical oxygen demand (3 days at 270 C)	100 mg/l
	Chemical Oxygen Demand (COD)	250 mg/l
	Arsenic	0.2 mg/l

	Mercury	0.01 mg/l
	Lead	2.0 mg/l
	Cadmium	2.0 mg/l
	Hexavalent Chromium	1.0 mg/l
	Bio essay test	90% survival fish after 96 hours in 100% effluents
5 to 8	pH	5.5 – 9.0
	Suspended solids	100.0 mg/l
	Oil & Grease	10.0 mg/l
	Biochemical oxygen demand (3 days at 270 C)	100.0 mg/l
	Arsenic (as As)	0.2 mg/l
	Cynide (as CN)	0.2 mg/l
	Bio easy test	90% survival fish after 96 hours in 100% effluents
	Copper (Total)	1 mg/l
	Iron (Total)	1 mg/l

4. The source of water is sea water. The following is the permitted water consumption:

Sl.No	Purpose	Quantity in (M3/day)
1.	For cooling tower make up (saline water)	1,98,256.0
2.	Non-cooling water - RO First pass	
	i) Ash handling sealing	2240.0
	ii) Coal handling plant dust suppression	4768.0
	iii) High Vaccum AC make up	1660.0
	iv) Misc. services (for fire fighting etc.)	512.0
	v) RO Reject	22224.0
	vi) Clarifier blow down	1056.0
	RO Second pass	
	i. DM Plant	2080.0
ii. Domestic (Plant)	32.0	
Total		2,32,846.0

5. The industry shall maintain Separate digital water meters in the intake point of sea water (i.e. at sea coast) with totalizer facility unit wise with to asses daily water consumption quantity instead of cumulative water consumptions.
6. The industry shall maintain flow meter preferably Electro Magnetic Flow Meters with totalizers for water and effluent quantity measurements for different streams of effluents and different categories of water usage stipulated in this order.
7. The industry shall maintain leachate collection tank to collect the leachate from garland drain of ash pond.
8. The industry shall maintain provision to collect the excess water from the ash pond into sea to control overflow of saline water from ash pond and to prevent irrigation tanks being polluted.

AIR POLLUTION:

9. The emissions shall not contain constituents in excess of the prescribed limits mentioned below:

Chimney No.	Parameter	Emission standards in mg/Nm ³
1 – 2	Particulate Matter	50

10. The industry shall comply with ambient air quality standards of PM₁₀ (Particulate Matter size less than 10 μ m) - 100 g/ m³; PM_{2.5} (Particulate Matter size less than 2.5 μ m) - 60 g/ m³; SO₂ - 80 g/ m³; NO_x - 80 g/m³, outside the factory premises at the periphery of the industry.

Standards for other parameters as mentioned in the National Ambient Air Quality Standards CPCB Notification No.B-29016/20/90/PCI-I, dated 18.11.2009.

Noise Levels: Day time (6 AM to 10 PM) - 75 dB (A)

Night time (10 PM to 6 AM) - 70 dB (A)

11. The emissions shall not contain constituents in excess of the prescribed limits mentioned below:

Chimney No.	Parameter	Emission Standards
1 & 2	Particulate matter	50 mg/Nm ³
	SO ₂	*200 mg/Nm ³
	NO _x	450 mg/Nm ³
	Mercury (Hg)	*0.03 mg/Nm ³

*The industry shall meet the SO₂ emission standard of 200 mg/Nm³ by 31.12.2024, as per MoEF&CC, GoI notification GSR No.243 (E), dt.31.03.2021.

12. The industry shall comply with emission limits for DG sets of capacity upto 800 KW as per the Notification G.S.R.520 (E), dated 01.07.2003 and ~S.R.448(E), dated 12.07.2004 under the Environment (Protection) Act Rules. In case of DG sets of capacity more than 800 KW shall comply with emission limits as per the Notification G.S.R.489 (E), dated 09.07.2002 at serial no.96, under the Environment (Protection) Act, 1986.

13. The industry shall maintain wind barriers/ wind breaking walls to the coal yards as temporary arrangement to control fugitive dust emissions on immediate surroundings.

14. The industry shall regularly operate water sprinklers provided to control stock yard to mitigate fugitive dust on the surroundings from coal handling area.

15. The industry shall provide necessary air pollution control systems at coal transfer points in coal conveyer system from port boundary to industry premises within 3 months.

16. The industry shall upgrade the air pollution control systems at coal crusher within 3 months.

17. The industry shall provide separate energy meters along with totalizer facility for each ESP.

18. The industry shall comply with the MoEF&CC Notification S.O.No.3305 dt.07.12.2015 and S.O. 682 (E)dt.07.03.2016 as applicable and report compliance to RO, Nellore.

GENERAL:

19. The industry shall handover the original consent dated 15.02.2016 to the RO, Nellore after receipt of this order.

20. The industry shall maintain the following records and the same shall be made available to the inspecting officers of the Board:

- Daily production details (ER-1 Central Excise Returns).
- Quantity of Effluents generated, treated, recycled/reused and disposed.
- Log Books for pollution control systems.
- Characteristics of effluents and emissions.
- Hazardous/non hazardous solid waste generated and disposed.
- Inspection book. G. Manifest copies of hazardous

21. The industry shall dispose solid waste (Non-Haz) as follows:

S. No.	Name of the solid waste	Quantity	Disposal
1	Fly ash	0.96 Million Tons/ Annum	To cement / brick units
2	Bottom Ash	0.24 Million Tons/ Annum	To Cement, brick Manufacturing units. Utilized bottom ash to ash pond in slurry mode

22. The industry shall relocate the CAAQM stations provided at sea intake point to suitable location in consultation with RO, Nellore.
23. The industry shall operate CAAQM stations for monitoring SPM, SO₂ and NO_x with recording facility and maintain connectivity to PCB server.
24. The industry shall install online effluent and stack monitoring systems for specified parameters as per CPCB directions dated 05.02.2014 & 02.03.2015 and maintain connectivity to APPCB/CPCB websites
25. The industry shall carry out regular calibration for the on-line stack monitoring systems and CAAQM stations with tamper proof mechanism.
26. The industry shall dispose 100% of fly ash generated as per the Fly ash Notification
27. The industry shall develop the thick green belt in an area of 395 acres all along the periphery of the industry and ash pond area.
28. The industry shall submit a copy of policy of PLI duly indicating the amount contributed towards ERF to the RO once in six months.
29. The industry shall comply with Board directions issued from time to time.
30. The industry shall comply with standards and directions issued by CPCB/ MoEF&CC as and when notifications are issued.
31. The industry shall submit compliance report on the conditions mentioned in the consent order every six months i.e. on 1st of January and July of every year to the RO/ZO.

SCHEDULE – C

[See rule 6 (2)]

**[CONDITIONS OF AUTHORISATION FOR OCCUPIER OR OPERATOR
HANDLING HAZARDOUS WASTES]**

1. The authorised person shall comply with the provisions of the Environment (Protection) Act, 1986, and the rules made there under.
2. The authorisation shall be produced for inspection at the request of an officer authorised by the State Pollution Control Board.
3. The person authorised shall not rent, lend, sell, transfer or otherwise transport the hazardous and other wastes except what is permitted through this authorisation.
4. Any unauthorised change in personnel, equipment or working conditions as mentioned in the application by the person authorised shall constitute a breach of his authorisation.
5. The person authorised shall implement Emergency Response Procedure (ERP) for which this authorisation is being granted considering all site specific possible scenarios such as spillages, leakages, fire etc. and their possible impacts and also carry out mock drill in this regard at regular interval of time;
6. The person authorised shall comply with the provisions outlined in the Central Pollution Control Board guidelines on “Implementing Liabilities for Environmental Damages due to Handling and Disposal of Hazardous Waste and Penalty”.
7. It is the duty of the authorised person to take prior permission of the State Pollution Control Board to close down the facility.
8. The hazardous and other waste which gets generated during recycling or reuse or recovery or pre-processing or utilisation of imported hazardous or other wastes shall be treated and

disposed of as per specific conditions of authorisation.

9. An application for the renewal of an authorisation shall be made as laid down under these Rules.
10. Any other conditions for compliance as per the Guidelines issued by the Ministry of Environment, Forest and Climate Change or Central Pollution Control Board from time to time.
11. Annual return shall be filed by June 30th for the period ensuring 31st March of the year.
12. The industry shall not store hazardous waste for more than 90 days as per the Hazardous and Other Wastes (Management & Transboundary Movement) Rules, 2016.
13. The industry shall store Used / Waste Oil and Used Lead Acid Batteries in a secured way in their premises till its disposal to the manufacturers / dealers on buyback basis.
14. The industry shall maintain 7 copy manifest system for transportation of waste generated and a copy shall be submitted to concerned Regional Office of APPCB. The driver who transports Hazardous Waste should be well acquainted about the procedure to be followed in case of an emergency during transit. The transporter should carry a Transport Emergency (TREM) Card.
15. The industry shall maintain proper records for Hazardous and Other Wastes stated in Authorisation in Form-3 i.e., quantity of Incinerable waste, land disposal waste, recyclable waste etc., and file annual returns in Form-4 as per Rule 20 (2) of the Hazardous and Other Wastes (Management & Transboundary Movement) Rules, 2016.

BATCHU SIVA PRASAD, CEE(BSP), O/o CHIEF ENVIRONMENTAL ENGINEER-APPCB

To

**M/s. Sembcorp Energy India Limited (Project -1),
(formerly M/s. Thermal Powertech Corporation (India) Ltd.),
Painampuram & Nelaturu Villages, Muthukur Mandal,
SPSR Nellore District.
E Mail: vemulapalli@sembcorp.com**

Reportable

**IN THE SUPREME COURT OF INDIA
CIVIL APPELLATE JURISDICTION**

Civil Appeal Nos 1692-1693 of 2020

M/s Aravali Power Co Pvt Ltd

Appellant

Versus

Vedprakash and Another

Respondents

W I T H

Civil Appeal No 3236 of 2020

Civil Appeal Nos 3171-3172 of 2020

Civil Appeal No 3231 of 2020

Civil Appeal Nos 3229-3230 of 2020

Civil Appeal No 2947 of 2020

Civil Appeal No 3235 of 2020

Civil Appeal No 3237 of 2020

Civil Appeal No 3398 of 2020

Civil Appeal No 2838 of 2020

Signature Not Verified


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Chetan Kumar
Date: 2020.05.19
18:56:09 IST
Reason: 

Civil Appeal No 3040 of 2020

Civil Appeal No 2713 of 2020

Civil Appeal No 2760 of 2020

Civil Appeal No 2803 of 2020

Civil Appeal Nos 3232-3233 of 2020

Civil Appeal No 2946 of 2020

Civil Appeal Nos 3038-3039 of 2020

Civil Appeal No 3234 of 2020

Civil Appeal Diary No 17940 of 2020

Civil Appeal No 3173 of 2020

Civil Appeal No 3575 of 2020

Civil Appeal Diary No 22073 of 2020

Civil Appeal Nos 3971-3972 of 2020

Civil Appeal No 225 of 2021

&

Civil Appeal Diary No 8142 of 2021

J U D G M E N T

Dr Dhananjaya Y Chandrachud, J

- 1 Permission to file the civil appeal is granted.
- 2 This batch of connected appeals has arisen from the judgments of the National Green Tribunal¹ pertaining to the utilization and disposal of fly ash by thermal power plants. Among the orders of the NGT are orders dated 24 October 2019, 22 November 2019, 12 February 2020, 21 August 2020, 16 September 2020 (rejecting a review of the order dated 21 August 2020) and 28 September 2020 (rejecting a review of the order dated 12 February 2020). A tabulated chart indicating the civil appeals and the corresponding orders of the NGT is set out below:

Case Particulars	Particulars of impugned order	Gist of the impugned order
CA No 1692-1693/2020	Order dated 24.10.2019 passed by NGT in OA No 834/2018	The matter pertained to the issue of the handling of accumulated fly-ash at the units of M/s NTPC Aravali Power Co. (P) Ltd. and M/s Jhajjar Power Ltd. (CLP India) in District Jhajjar, Haryana.

1“NGT”

	<p>Order dated 22.11.2019 passed by NGT in MA No 231/2019 in OA No. 834/2018</p>	<p>The NGT directed that the evacuation of the fly-ash stored in the ash ponds of M/s. Indira Gandhi Super Thermal Power Project, Jhajjar, Haryana, was to be completed by 31.12.2020.</p> <p>Haryana Pollution Control Board was directed to ensure compliance. It was further directed to take the Performance Guarantee of Rs. 50 Lakhs to ensure compliance.</p> <p>Since Aravali Power Co. was not a party in the proceedings before the NGT, the MA was filed by Aravali Power Co. Pvt. Ltd. for impleadment and modification was dismissed.</p>
<p>CA No 3236/2020</p>	<p>Order dated 12.02.2020 passed by NGT in OA No 102/2014.</p>	<p>The issue pertained to the management of fly-ash generated by Thermal Power Plants.</p> <p>The TPPs to take prompt steps for scientific disposal of fly-ash in accordance with the statutory notification issued by the MoEF & CC under the provision of Environmental Protection of Act, requiring 100% utilization and disposal of fly-ash [based on the Notification dated 27.01.2016 and its predecessor</p>

		<p>Notifications].</p> <p>For the non-compliant TPPs, environmental compensation needs to be determined w.e.f. the cut-off date, i.e., 31.12.2017, as stipulated in the Notification dated 27.01.2016.</p> <p>CPCB may accordingly compute and levy Environmental Compensation in accordance with the formula prescribed in the impugned order and submit the compliance report to the NGT.</p>
CA No 3171-3172/2020	Common order dated 12.02.2020 passed by NGT in OA Nos 102/2014 & 117/2014.	Same as in CA No 3236/2020
CA No 3231/2020	Order dated 12.02.2020 passed by NGT in OA No 102/2014.	Same as in CA No 3236/2020
CA No 3229-3230/2020	Common order dated 12.02.2020 passed by NGT in	Same as in CA No 3236/2020

	OA Nos 102/2014 & 117/2014.	
CA No 2947/2020	Order dated 12.02.2020 passed by NGT in OA No 102/2014.	Same as in CA No 3236/2020
CA No 3235/2020	Order dated 12.02.2020 passed by NGT in OA No 102/2014.	Same as in CA No 3236/2020
CA No 3237/2020	Order dated 12.02.2020 passed by NGT in OA No 102/2014.	Same as in CA No 3236/2020
CA No 3398/2020	Order dated 12.02.2020 passed by NGT in OA No 117/2014.	Same as in CA No 3236/2020
CA No 2838/2020	Order dated 12.02.2020 passed by NGT in OA No 102/2014.	Same as in CA No 3236/2020

CA No 3040/2020	Order dated 12.02.2020 passed by NGT in OA No 102/2014.	Same as in CA No 3236/2020
CA No 2713/2020	Order dated 12.02.2020 passed by NGT in OA No 102/2014.	Same as in CA No 3236/2020
CA No 2760/2020	Order dated 12.02.2020 passed by NGT in OA No 102/2014.	Same as in CA No 3236/2020
CA No 2803/2020	Order dated 12.02.2020 passed by NGT in OA No 102/2014.	Same as in CA No 3236/2020
CA No 3232-3233/2020	Common order dated 12.02.2020 passed by NGT in OA Nos 102/2014 & 117/2014	Same as in CA No 3236/2020
CA No 2946/2020	Order dated	Same as in

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CA 1692-1693/2020

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	12.02.2020 passed by NGT in OA No 102/2014.	CA No 3236/2020
CA No 3038- 3039/2020	Common order dated 12.02.2020 passed by NGT in OA Nos 102/2014 & 117/2014.	Same as in CA No 3236/2020
CA No 3234/2020	Order dated 12.02.2020 passed by NGT in OA No 102/2014.	Same as in CA No 3236/2020
CA Diary No. 17940-2020	Order dated 12.02.2020 passed by NGT in OA No 117/2014.	Same as in CA No 3236/2020
CA No 3173/2020	Order dated 12.02.2020 passed by NGT in OA No 102/2014.	Same as in CA No 3236/2020

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CA 1692-1693/2020

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CA No 3575/2020	Order dated 12.02.2020 passed by NGT in OA No 117/2014.	Same as in CA No 3236/2020
CA Diary No. 22073-2020	Common order dated 12.02.2020 passed by NGT in OA Nos 102/2014 & 117/2014.	Same as in CA No 3236/2020
CA Nos 3971-3972/2020	Order dated 21.08.2020 passed by NGT in OA No172/2020	<p>The application sought remedial action against Aravali Power Company Private Limited, Jhajjar, Haryana, for not properly disposing-off the fly ash generated by it on the ground that it adversely affected the Agricultural land in the area.</p> <p>The application was disposed-off in light of the Order dated 24.10.2019 passed by NGT in O.A. No. 834/2018.</p>

	Order dated 16.09.2020 passed by NGT in RA No. 25/2020 in OA No 172/2020.	[Challenged in CA Nos. 1692-1693/2020] Review of the order dated 21.08.2020 passed by NGT in O.A. No 172/2020 was sought. The application was dismissed.
CA No 225/2021	Order dated 28.09.2020 passed by NGT in RA No 27/2020 in OA No 102/2014.	Review of the order dated 12-02-2020 passed by NGT in OA No 102/2014 & other connected matters were sought. The Application was dismissed. [The order dated 12-02-2020 passed by NGT in O.A. No. 102/2014 & other connected matters has been challenged in the appeal at Sl. No. 1.1 and other matters].
CA Diary No. 8142-2021	Order dated 12.02.2020 passed by NGT in O.A. No. 102/2014	Same as in CA No 3236/2020

- 3 The NGT was seized of the issue pertaining to the handling of accumulated fly ash at the units of several thermal power producers. In the course of its analysis in the above orders, the NGT came to the conclusion that the

Thermal Power Plants² had failed to take adequate steps for the scientific disposal of fly ash in accordance with the statutory notifications issued by the Ministry of Environment and Forest and Climate Change³ under the provisions of the Environment Protection Act 1986.

- 4 The MoEF & CC issued a Notification dated 14 October 1999 requiring manufacturers of clay bricks, tiles, blocks or construction activities to mix at least 25% of ash. By a notification dated 27 August 2003, amendments were made to the above notification requiring construction agencies to use 100% of the fly ash in a phased manner up to 3 August 2007. A further amendment was made by a notification dated 27 January 2016 which extended the time period to achieve 100% utilization of fly ash until 31 December 2017. The NGT directed that for non-compliant TPPs', the environmental compensation must be determined with effect from 31 December 2017, which is the cut-off date stipulated in the Notification dated 27 January 2016. The Central Pollution Control Board⁴, was accordingly directed to compute environmental compensation in accordance with the formula accepted by the NGT and to report compliance. Consequential directions have been issued in pursuance of the above directions.

- 5 During the pendency of the proceedings before this Court, a notification was

2"TPP"

3"MoEF & CC"

4"CPCB"

issued by the MoEF&CC on 31 December 2021 in exercise of powers conferred by Section 3 of the Environment (Protection) Act 1986.⁵ This notification was issued in supersession of Notification No 763(E) dated 14 September 1999. By the notification, the Union Government has formulated parameters for ash utilization from coal or lignite thermal power plants. Paragraph A(5) of the said notification provides a timeline for the utilization of 'legacy ash', that is unutilized accumulated ash which was stored before the publication of the notification:

“The unutilized accumulated ash i.e. legacy ash, which is stored before the publication of this notification, shall be utilized progressively by the thermal power plants in such manner that the utilization of legacy ash shall be completed fully within ten years from the date of publication of this notification and this will be over and above the utilization targets prescribed for ash generation through current operations of that particular year:

Provided that the minimum quantity of legacy ash in percentages as mentioned below shall be utilized during the corresponding year and the minimum quantity of legacy ash is to be calculated based on the annual ash generation as per installed capacity of thermal power plant.

Year from date of publication	1 st	2 nd	3 rd -10 th
Utilisation of legacy ash (in percentage of Annual ash)	At least 20 per cent	At least 35 per cent	At least 50 per cent

⁵ Notification No. 5481(E)

Provided further that the legacy ash utilisation shall not be required where ash pond or dyke has stabilised and the reclamation has taken place with greenbelt or plantation and the concerned State Pollution Control Board shall certify in this regard. Stabilisation and reclamation of an ash pond or dyke including certification by the Central Pollution Control Board (CPCB) or State Pollution Control Board (SPCB) or Pollution Control Committee (PCC) shall be carried out within a year from the date of publication of this notification. The ash remaining in all other ash ponds or dykes shall be utilised in progressive manner as per the above mentioned timelines.

Note: The obligations under sub-paragraph (4) and (5) above for achieving the ash utilisation targets shall be applicable from 1st April, 2022.

[...]"

- 6 The consequence of the notification dated 31 December 2021 is that the earlier notifications would get subsumed by the terms of the notification. The NGT in the impugned orders had found fault with the TPPs due to their failure to comply with the notification dated 25 January 2016 and the extended deadline which was fixed for the utilization of fly ash. In view of the subsequent development which has taken place, the basis of the order of the NGT would be fundamentally altered by the modalities and time-lines which are prescribed by the notification dated 31 December 2021. In view of the latest notification, the orders of the NGT would have to be set aside together with the imposition of the measure of compensation as directed in the impugned orders.
- 7 During the course of the hearing, counsel appearing on behalf of some of the contesting parties have fairly alluded to certain deficiencies in the

notification dated 31 December 2021, particularly in the context of the loading, unloading, transport, storage and disposal of fly ash in an environmentally sound manner to ensure that it does not cause air and water pollution. Mr Tapesh Kumar Singh, learned AAG who appears for the State of Jharkand submitted a note of submissions to assist the court, in his personal capacity as an officer of the court. In this context, reliance has been placed on an order dated 24 September 2013 of a two-Judge Bench of this Court in SLP(C) No 30381 of 2011 when the Court was seized of a tender dispute relating to transportation of fly ash. While dealing with the dispute, the following directions were issued by the Court:

“Allotment of the contract and transportation work shall, however, be subject to the following further conditions:

1. The contractor shall abide by the directions issued by the Government of India, if any, under Section 5 of the Act, or the requirement of any Rules that may be framed by the Government of India under Section 6 of the Act, or instructions/circulars, if any, issued by the Central Pollution Control Board as to nuisance free transportation of ash, including Pond Ash from the Thermal Power Stations to abandoned mines and to other destinations, as the case may be;
2. Pending issue of any directions or framing of any Rules by the Government of India or issuance of any instructions/circulars by the Central Pollution Control Board, the transportation work shall be undertaken by the contractors who emerge successful only by using mechanized steel covered container trucks which would ensure that after the Pond Ash is loaded into the truck, it has no opportunity to fly out of the container to cause any kind of environmental hazard. We leave the details of

specifications, if any, of such trucks to the Corporation and its Engineers to be specified in the course of negotiations to be conducted with the bidders.”

- 8 By an earlier order dated 13 August 2013 in the above proceedings, this Court had impleaded CPCB in order to ascertain whether it had prescribed any standards or framed any rules regarding the loading, unloading, utilization and nuisance free transportation of all types of ash including fly ash, bottom ash and pond ash generated by TPPs. During the pendency of those proceedings, certain steps were taken by this Court to scrutinize whether any standards or measures have been prescribed by the CPCB. However, on 22 January 2016, SLP(C) No 30381 of 2011 and the connected matters were dismissed on the ground that they had been rendered infructuous.
- 9 Apart from the above proceedings, during the course of the hearing, this Court has been apprised of the regulatory provisions contained in the Hazardous and Other Wastes (Management and Transboundary Movement) Rules 2016⁶ including rules 3(17), 3(23), 3(33) and 3(34) of the Rules. In this context, it has been submitted that the Union Government is duty bound to formulate rules to guarantee that the loading, unloading, utilization and transportation of fly ash takes place in a manner to prevent environmental hazards.

⁶“Rules of 2016”

- 10 At this stage, it would be material to note the provisions of paragraph A(7) of the notification dated 31 December 2021 which reads as follows:

“(7) Every coal or lignite based thermal power plant shall ensure that loading, unloading, transport, storage and disposal of ash is done in an environmentally sound manner and that all precautions to prevent air and water pollution are taken and status in this regard shall be reported to the concerned State Pollution Control Board (SPCB) or Pollution Control Committee (PCC) in Annexure attached to this notification.”

- 11 Paragraph E of the notification deals with enforcement, monitoring, audit and reporting. Paragraphs (3) and (5) of paragraph E are extracted below:

“(3) For the purpose of monitoring the implementation of the provisions of this notification, a committee shall be constituted under the Chairperson, Central Pollution Control Board (CPCB) with members from Ministry of Power, Ministry of Coal, Ministry of Mines, Ministry of Environment, Forest and Climate Change, Ministry of Road Transportation and Highways, Department of Heavy Industry as well as any concerned stakeholder(s), to be nominated by the Chairman of the committee. The committee may make recommendations for effective and efficient implementation of the provisions of the notification. The committee shall meet at least once in six months and review annual implementation reports and the

committee shall also hold stakeholder consultations for monitoring of ash utilisation as mandated by this notification by inviting relevant stakeholder(s) at least once in six months. The committee shall submit the six monthly report to Ministry of Environment, Forest and Climate Change (MoEFCC).

- (5) The compliance audit for ash disposal by the thermal power plants and the user agency shall be conducted by auditors, authorised by Central Pollution Control Board (CPCB) and audit report shall be submitted to Central Pollution Control Board (CPCB) and concerned State Pollution Control Board (SPCB) or Pollution Control Committee (PCC) by 30th November every year. Central Pollution Control Board (CPCB) and concerned State Pollution Control Board (SPCB) or Pollution Control Committee (PCC) shall initiate action against non-compliant thermal power plants within fifteen days of receipt of audit report.”

- 12 In view of the above background, it would be necessary for the MoEF&CC to revisit whether the parameters which have been prescribed by the notification dated 31 December 2021 must be modified taking into account the provisions of the Rules of 2016, to the extent to which the applicability of the Rules is attracted to the utilization, transportation and disposal of fly ash. Besides conducting this exercise, MoEF&CC shall ensure that the enforcement, monitoring, audit and reporting mechanism which is envisaged

in paragraphs E(3) and E(5) of the notification dated 31 December 2021 is duly put into place and enforced scrupulously. Unless steps have already been taken to enforce the precautionary steps envisaged in the notification, MoEF&CC shall do so within a period of three months from the date of this judgment. In doing so the precautionary principle shall be followed. The MoEF&CC shall also determine upon due analysis whether any further modification of the notification is necessary to comply with the provisions of the Rules of 2016 noticed above and other cognate legislation, including subordinate legislation bearing on the utilization, transport and disposal of fly ash in an environmentally sustainable manner.

- 13 In view of the above discussions, and having regard to the notification dated 31 December 2021, the impugned orders of the National Green Tribunal shall stand set aside.
- 14 The appeals shall stand disposed in terms of the above directions.
- 15 We clarify that this judgment shall not be construed as a decision on merits upholding the validity of the notification dated 31 December 2021. Any party aggrieved by the terms of the notification would be at liberty to pursue the remedies which are available in law before the appropriate forum.

16 IA No 111919 of 2020 in Civil Appeal Nos 3171-3172 of 2020 for impleadment stands allowed.

17 Pending applications, if any, stand disposed of.

.....J.
[Dr Dhananjaya Y Chandrachud]

.....J.
[Pamidighantam Sri Narasimha]

New Delhi;
May 10, 2022
CKB

ITEM NO.13

COURT NO.4

SECTION XVII

S U P R E M E C O U R T O F I N D I A
R E C O R D O F P R O C E E D I N G S

Civil Appeal Nos.1692-1693/2020

M/S ARAVALI POWER CO. PVT. LTD.

Appellant(s)

VERSUS

VEDPRAKASH & ANR.

Respondent(s)

(With IA No.134670/2021 - APPROPRIATE ORDERS/DIRECTIONS, IA No.128136/2020 - APPROPRIATE ORDERS/DIRECTIONS, IA No.129240/2020 - EARLY HEARING APPLICATION, IA No.23615/2020 - EX-PARTE STAY and IA No.5533/2022 - PERMISSION TO FILE ADDITIONAL DOCUMENTS/FACTS/ANNEXURES)

WITH C.A. No.3236/2020 (XVII)

(With IA No.87564/2020 - EX-PARTE STAY, IA No.87565/2020 - EXEMPTION FROM FILING AFFIDAVIT, IA No.161912/2021 - EXEMPTION FROM FILING O.T., IA No.66164/2021 - EXEMPTION FROM FILING O.T. and IA No.89318/2020 - PERMISSION TO FILE ADDITIONAL DOCUMENTS/FACTS/ANNEXURES)

C.A. No.3171-3172/2020 (XVII)

(With IA No.84524/2020 - CLARIFICATION/DIRECTION, IA No.25634/2022 - CLARIFICATION/DIRECTION, IA No.97880/2020 - EX-PARTE STAY, IA No.84528/2020 - EX-PARTE STAY, IA No.84108/2020 - EXEMPTION FROM FILING AFFIDAVIT, IA No. 84107/2020 - EXEMPTION FROM FILING C/C OF THE IMPUGNED JUDGMENT, IA No.66109/2021 - EXEMPTION FROM FILING O.T., IA No.161872/2021 - EXEMPTION FROM FILING O.T., IA No.111919/2020 - INTERVENTION/IMPLEADMENT and IA No.111933/2020 - STAY APPLICATION)

C.A. No.3231/2020 (XVII)

(With IA No.161908/2021 - COMPROMISE R.3 O.23, IA No.66122/2021 - EXEMPTION FROM FILING O.T. and IA No.86566/2020 - STAY APPLICATION)

C.A. Nos.3229-3230/2020 (XVII)

(With IA No.81426/2020 - EX-PARTE STAY, IA No.81427/2020 -

EXEMPTION FROM FILING C/C OF THE IMPUGNED JUDGMENT and IA No.161860/2021 - EXEMPTION FROM FILING O.T.)

C.A. No.2947/2020 (XVII)

(With IA No.73066/2020 - EX-PARTE AD-INTERIM RELIEF, IA No.121720/2020 - EXEMPTION FROM FILING AFFIDAVIT, IA No.73068/2020 - EXEMPTION FROM FILING C/C OF THE IMPUGNED JUDGMENT and IA No.73069/2020 - PERMISSION TO FILE ADDITIONAL DOCUMENTS/FACTS/ANNEXURES)

C.A. No.3235/2020 (XVII)

(With IA No.91413/2020 - APPLICATION FOR PERMISSION, IA No.87581/2020 - EX-PARTE STAY, IA No.161880/2021 - EXEMPTION FROM FILING O.T. and IA No.66178/2021 - EXEMPTION FROM FILING O.T.)

C.A. No.3237/2020 (XVII)

(With IA No.87550/2020 - EX-PARTE STAY, IA No.87552/2020 - EXEMPTION FROM FILING AFFIDAVIT, IA No.161896/2021 - EXEMPTION FROM FILING O.T., IA No.66092/2021 - EXEMPTION FROM FILING O.T. and IA No.54823/2021 - PERMISSION TO FILE ADDITIONAL DOCUMENTS/FACTS/ANNEXURES)

C.A. No.3398/2020 (XVII)

(With IA No.90240/2020 - EXEMPTION FROM FILING C/C OF THE IMPUGNED JUDGMENT and IA No.90239/2020 - STAY APPLICATION)

C.A. No.2838/2020 (XVII)

(With IA No.161902/2021 - EXEMPTION FROM FILING O.T., IA No.141090/2021 - EXEMPTION FROM FILING O.T., IA No.66101/2021 - EXEMPTION FROM FILING O.T. and IA No.71022/2020 - STAY APPLICATION)

C.A. No.3040/2020 (XVII)

(With IA No.114323/2020 - CONDONATION OF DELAY IN FILING THE SPARE COPIES, IA No.161838/2021 - EXEMPTION FROM FILING O.T., IA No.66135/2021 - EXEMPTION FROM FILING O.T. and IA No.78881/2020 - STAY APPLICATION)

C.A. No.2713/2020 (XVII)

(With IA No.107268/2020 - APPLICATION FOR PERMISSION, IA No.59150/2020 - EXEMPTION FROM FILING AFFIDAVIT, IA No.59148/2020 - EXEMPTION FROM FILING C/C OF THE IMPUGNED JUDGMENT, IA No.66173/2021 - EXEMPTION FROM FILING O.T., IA No.64390/2020 - STAY APPLICATION and IA No.59147/2020 - STAY APPLICATION)

C.A. No.2760/2020 (XVII)

(With IA No.59960/2020 - EX-PARTE AD-INTERIM RELIEF and IA No.59961/2020 - EXEMPTION FROM FILING C/C OF THE IMPUGNED JUDGMENT)

C.A. No.2803/2020 (XVII)

(With IA No. 66117/2021 - EXEMPTION FROM FILING O.T. and IA No.67828/2020 - STAY APPLICATION)

C.A. Nos.3232-3233/2020 (XVII)

(With IA No.82790/2020 - EX-PARTE STAY, IA No.82791/2020 - EXEMPTION FROM FILING C/C OF THE IMPUGNED JUDGMENT, IA No.161831/2021 - EXEMPTION FROM FILING O.T. and IA No.66142/2021 - EXEMPTION FROM FILING O.T.)

C.A. No.2946/2020 (XVII)

(With IA No.71609/2020 - EX-PARTE AD-INTERIM RELIEF, IA No.121787/2020 - EXEMPTION FROM FILING AFFIDAVIT, IA No.71610/2020 - EXEMPTION FROM FILING C/C OF THE IMPUGNED JUDGMENT and IA No.71611/2020 - PERMISSION TO FILE ADDITIONAL DOCUMENTS/FACTS/ANNEXURES)

C.A. Nos.3038-3039/2020 (XVII)

(With IA No.76921/2020 - EXEMPTION FROM FILING AFFIDAVIT, IA No.76919/2020 - EXEMPTION FROM FILING C/C OF THE IMPUGNED JUDGMENT, IA No.66088/2021 - EXEMPTION FROM FILING O.T. and IA No.76918/2020 - STAY APPLICATION)

C.A. No.3234/2020 (XVII)

(With IA No.121767/2020 - EXEMPTION FROM FILING AFFIDAVIT, IA No.83649/2020 - EXEMPTION FROM FILING C/C OF THE IMPUGNED JUDGMENT, IA No.83648/2020 - GRANT OF INTERIM RELIEF and IA No.83652/2020 - PERMISSION TO FILE ADDITIONAL DOCUMENTS/FACTS/ANNEXURES)

Diary No.17940/2020 (XVII)

(With IA No.103036/2020 - EX-PARTE STAY, IA No.66154/2021 - EXEMPTION FROM FILING O.T. and IA No.103035/2020 - PERMISSION TO FILE APPEAL)

C.A. No.3173/2020 (XVII)

(With IA No.121716/2020 - EXEMPTION FROM FILING AFFIDAVIT, IA No.86737/2020 - EXEMPTION FROM FILING AFFIDAVIT, IA No.86736/2020 - EXEMPTION FROM FILING C/C OF THE IMPUGNED JUDGMENT, IA No.86738/2020 - PERMISSION TO FILE ADDITIONAL DOCUMENTS/FACTS/ANNEXURES and IA No. 86734/2020 - STAY APPLICATION)

C.A. No.3575/2020 (XVII)

(With IA No.105951/2020 - EX-PARTE STAY, IA No.105952/2020 - EXEMPTION FROM FILING C/C OF THE IMPUGNED JUDGMENT and IA No.66130/2021 - EXEMPTION FROM FILING O.T.)

Diary No.22073/2020 (XVII)

(With IA No.105908/2020 - EX-PARTE STAY, IA No.105907/2020 - EXEMPTION FROM FILING C/C OF THE IMPUGNED JUDGMENT, IA

No.161889/2021 - EXEMPTION FROM FILING O.T., IA No.66084/2021 - EXEMPTION FROM FILING O.T. and IA No.105906/2020 - PERMISSION TO FILE APPEAL)

C.A. Nos.3971-3972/2020 (XVII)

(With IA No.127787/2020 - EXEMPTION FROM FILING C/C OF THE IMPUGNED JUDGMENT)

C.A. No.225/2021 (XVII)

(With IA No.29764/2021 - EX-PARTE STAY, IA No.29766/2021 - EXEMPTION FROM FILING AFFIDAVIT, IA No.11885/2021 - EXEMPTION FROM FILING C/C OF THE IMPUGNED JUDGMENT, IA No.66112/2021 - EXEMPTION FROM FILING O.T. and IA No.11884/2021 - EXEMPTION FROM FILING O.T.)

Diary No.8142/2021 (XVII)

(With IA No.49137/2021 - EX-PARTE STAY, IA No.63604/2021 - EXEMPTION FROM FILING AFFIDAVIT, IA No.49138/2021 - EXEMPTION FROM FILING AFFIDAVIT, IA No.49136/2021 - EXEMPTION FROM FILING C/C OF THE IMPUGNED JUDGMENT and IA No.49135/2021 - PERMISSION TO FILE APPEAL)

Date : 10-05-2022 These matters were called on for hearing today.

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असाधारण

EXTRAORDINARY

भाग II—खण्ड 3—उप-खण्ड (ii)

PART II—Section 3—Sub-section (ii)

प्राधिकार से प्रकाशित

PUBLISHED BY AUTHORITY

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नई दिल्ली, शुक्रवार, दिसम्बर 31, 2021/पौष 10, 1943

No. 5075]

NEW DELHI, FRIDAY, DECEMBER 31, 2021/PAUSHA 10, 1943

पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय

अधिसूचना

नई दिल्ली, 31 दिसम्बर, 2021

का.आ. 5481(अ).—केन्द्रीय सरकार ने भारत सरकार के तत्कालीन पर्यावरण और वन मंत्रालय की अधिसूचना सं. का.आ. 763 (अ) तारीख 14 सितम्बर, 1999 द्वारा कोयला या लिग्नाइट आधारित ताप विद्युत संयंत्रों से तीन सौ किलोमीटर के विनिर्दिष्ट व्यास के भीतर ईंटों के विनिर्माण के लिए उपजाऊ मिट्टी के उत्खनन को प्रतिबंधित करने के लिए और भवन निर्माण सामग्री के विनिर्माण में और संनिर्माण क्रियाकलाप में फ्लाई-राख के उपयोग को बढ़ावा देने के लिए निदेश जारी किए हैं;

और, प्रदूषणकर्ता भुगतान सिद्धांत (पीपीपी) के आधार पर, ऐसा करके कोयला या लिग्नाइट आधारित ताप विद्युत संयंत्रों द्वारा फ्लाई-राख का 100 प्रतिशत उपयोग सुनिश्चित करते हुए और फ्लाई-राख प्रबंधन प्रणाली की संधारणीयता के लिए पूर्वोक्त अधिसूचना को और अधिक प्रभावकारी ढंग से कार्यान्वित करने हेतु, केंद्रीय सरकार ने मौजूदा अधिसूचना की समीक्षा की;

और प्रदूषणकर्ता भुगतान सिद्धांत के आधार पर पर्यावरणीय प्रतिकर निर्धारित किए जाने की आवश्यकता है;

और, विनिर्माण को बढ़ावा देकर तथा निर्माण कार्य के क्षेत्र में राख आधारित उत्पादों तथा भवन निर्माण सामग्रियों के प्रयोग को अनिवार्य करके उपजाऊ मिट्टी को संरक्षित करने की आवश्यकता है;

और, सड़क बनाने, सड़क एवं फ्लाई ओवर के रेलिंग बनाने, तटरेखा की सुरक्षा का उपाय करने, अनुमोदित परियोजनाओं के निचले क्षेत्रों को भरने, खनित स्थलों को फिर से भरने में मिट्टी की सामग्रियों से भरने के विकल्प के रूप में राख उपयोग को बढ़ावा देकर उपजाऊ मिट्टी और प्राकृतिक संसाधनों को संरक्षित करने की आवश्यकता है;

और, पर्यावरण को सुरक्षित करना तथा कोयला अथवा लिग्नाइट आधारित ताप विद्युत संयंत्रों से सृजित फ्लाई राख के निक्षेपण तथा निपटान की रोकथाम करना आवश्यक है;

और, उक्त अधिसूचना में जो 'राख' शब्द का प्रयोग किया गया है उसमें कोयला या लिग्नाइट आधारित ताप विद्युत संयंत्रों से सृजित फ्लाई-राख और बॉटम-राख दोनों शामिल हैं;

और, केंद्रीय सरकार प्रदूषणकर्ता भुगतान सिद्धांत के आधार पर, पर्यावरणीय प्रतिकर की प्रणाली सहित राख के उपयोग के लिए एक व्यापक ढांचा लाना चाहती है;

अतः पर्यावरण (संरक्षण) नियम, 1986 के नियम (5) के उप-नियम (3) के खंड (घ) के साथ पठित पर्यावरण (संरक्षण) अधिनियम, 1986 (1986 का 29) की धारा 3 की उप-धारा (1) और उप-धारा (2) के खंड (v) द्वारा प्रदत्त शक्तियों का प्रयोग करते हुए, भारत सरकार के पर्यावरण एवं वन मंत्रालय की अधिसूचना जो का.आ. 763 (अ) तारीख 14 सितम्बर, 1999 द्वारा भारत के राजपत्र, असाधारण भाग II, खंड 3, उप खंड (i) में प्रकाशित का अधिक्रमण करते हुए, कोयला या लिग्नाइट आधारित ताप विद्युत संयंत्रों द्वारा राख के उपयोग के संबंध में प्रारूप अधिसूचना जो सा.का.नि. 285 (अ) तारीख 22 अप्रैल, 2021 द्वारा भारत के राजपत्र, असाधारण, भाग-2, धारा 3, उप धारा (i) में प्रकाशित की गई थी जिसमें उन सभी व्यक्तियों से जिनका इससे प्रभावित होना सामान्य है उस तारीख से, जिसको उक्त प्रारूप उपबंधों की शासकीय राजपत्र में अंतर्विष्ट प्रतियां जनता को उपलब्ध करा दी गई थी, साठ दिनों के अवसान से पूर्व आक्षेप और सुझाव आमंत्रित किए गए थे।

और उक्त प्रारूप अधिसूचना के संबंध में उससे संभावित तौर पर प्रभावित होने वाले सभी व्यक्तियों से प्राप्त आक्षेपों और सुझावों पर केंद्रीय सरकार द्वारा सम्यक रूप से विचार कर लिया गया है;

अतः पर्यावरण (संरक्षण) नियम, 1986 के नियम (5) के उप-नियम (3) के खंड (घ) के साथ पठित पर्यावरण (संरक्षण) अधिनियम, 1986 (1986 का 29) की धारा 3 की उप-धारा (1) और उप-धारा (2) के खंड (v) द्वारा प्रदत्त शक्तियों का प्रयोग करते हुए और अधिसूचना का.आ. 763 (अ) तारीख 14 सितम्बर, 1999 का उन बातों के सिवाय अधिकृत करते हुए जिन्हें ऐसे अधिक्रमण से पूर्व किया गया है या करने का लोप किया गया है, केंद्रीय सरकार कोयलों या लिग्नाइट आधारित ताप विद्युत संयंत्रों से राख के उपयोग के संबंध में निम्नलिखित अधिसूचना जारी करती है, जो इस अधिसूचना के प्रकाशन की तिथि से प्रवृत्त होगी, अर्थात्

क. फ्लाई-राख और बॉटम-राख का निपटान करने हेतु ताप विद्युत संयंत्रों (टीपीपी) के उत्तरदायित्व.-

(1) प्रत्येक कोयला या लिग्नाइट आधारित ताप विद्युत संयंत्र (जिनमें कैप्टिव और/या सह-उत्पादन केंद्र शामिल हैं या दोनों) की यह प्राथमिक जिम्मेदारी होगी कि वह अपने द्वारा सृजित राख (फ्लाई-राख और बॉटम-राख) का उप पैरा (2) में दिए गए पारि-अनुकूल तरीके से 100 प्रतिशत उपयोग सुनिश्चित करे;

(2) कोयला या लिग्नाइट आधारित ताप विद्युत संयंत्रों से सृजित राख का उपयोग केवल निम्नलिखित पारि-अनुकूल प्रयोजनों के लिए किया जाएगा, अर्थात्:-

- (i) फ्लाई राख पर आधारित उत्पाद अर्थात्: ईट ब्लॉक टाइल, फाइबर सीमेंट शीट, पाइप, बोर्ड, पैनल का विनिर्माण;
- (ii) सीमेंट विनिर्माण, रेडी-मिक्स कंक्रीट;

- (iii) सड़क निर्माण और फ्लाई-ओवर के रेलिंग का निर्माण, राख और जिओ-पॉलीमर आधारित निर्माण सामग्री;
- (iv) बांध का निर्माण;
- (v) निचले क्षेत्र को भरना;
- (vi) खनन कार्य से रिक्त हुए स्थान को भरना;
- (vii) सिंटेड या शीत-बद्ध राख संचय का विनिर्माण;
- (viii) मृदा परीक्षण के आधार पर नियंत्रित तरीके से कृषि;
- (ix) तटीय जिलों में तटरेखा संरक्षण संरचनाओं का निर्माण;
- (x) अन्य देशों को राख का निर्यात;
- (xi) समय-समय पर यथाधिसूचित किसी अन्य पारि-अनुकूल प्रयोजन के लिए।
- (3) अध्यक्ष, केंद्रीय प्रदूषण नियंत्रण बोर्ड (सीपीसीबी) की अध्यक्षता में एक समिति गठित की जाएगी जिसमें पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय (एमओईएफसीसी), विद्युत मंत्रालय, खान मंत्रालय, कोयला मंत्रालय, सड़क परिवहन और राजमार्ग मंत्रालय, कृषि अनुसंधान एवं शिक्षा विभाग, सड़क कांग्रेस संस्थान तथा राष्ट्रीय सीमेंट एवं भवन सामग्री परिषद के प्रतिनिधियों को सदस्यों के रूप में शामिल किया जाएगा, जिसका प्रयोजन राख के उपयोग के पारि-अनुकूल तौर-तरीकों की जांच करना, उनकी समीक्षा एवं अनुशंसा करना तथा प्रौद्योगिकीय विकासों तथा पणधारी से प्राप्त अनुरोधों के आधार पर उप-पैरा (2) में यथोल्लिखित ऐसे तौर-तरीकों की सूची में समिति द्वारा सुझाए गए तौर-तरीकों को शामिल करना या किसी तौर-तरीके को सूची से हटाना या उसमें संशोधन करना है। जब भी इस प्रयोजन के लिए अपेक्षित हो, यह समिति राज्य प्रदूषण नियंत्रण बोर्ड या प्रदूषण नियंत्रण समिति, ताप विद्युत संयंत्र और खानों के प्रचालकों को आमंत्रित कर सकती है। इस समिति सिफारिश के आधार पर, पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय ऐसे पारि-अनुकूल प्रयोजन प्रकाशित करेगा।
- (4) प्रत्येक कोयला या लिग्नाइट आधारित ताप विद्युत संयंत्र उस वर्ष के दौरान सृजित राख (फ्लाई-राख और बॉटम-राख) का 100 प्रतिशत उपयोग करने हेतु उत्तरदायी होगा; तथापि, किसी भी स्थिति में, किसी वर्ष में राख का उपयोग 80 प्रतिशत से नीचे नहीं होगा और साथ ही, उस ताप विद्युत संयंत्र को तीन वर्ष की अवधि में 100 प्रतिशत औसत राख के उपयोग का लक्ष्य प्राप्त करना होगा :

परंतु, यह और कि पहली बार के लिए लागू तीन वर्ष के चक्र को ऐसे ताप विद्युत संयंत्रों, जहां राख का उपयोग 60-80 प्रतिशत के बीच होता है, एक वर्ष के लिए और ऐसे संयंत्रों, जहां राख का उपयोग 60 प्रतिशत से कम है, दो वर्ष के लिए बढ़ाया जा सकता है, और राख के उपयोग की प्रतिशतता की गणना के प्रयोजन के लिए वर्ष 2021-2022 में उपयोग की प्रतिशत प्रमात्रा को नीचे दी गई तालिका के अनुसार ध्यान में रखा जाएगा:

तापीय विद्युत संयंत्रों के उपयोग की प्रतिशतता	100 प्रतिशत उपयोगिता प्राप्त करने के लिए प्रथम अनुपालन चक्र	100 प्रतिशत उपयोगिता प्राप्त करने के लिए द्वितीय अनुपालन चक्र
>80 प्रतिशत	3 वर्ष	3 वर्ष
60-80 प्रतिशत	4 वर्ष	3 वर्ष
<60 प्रतिशत	5 वर्ष	3 वर्ष

परन्तु, ताप विद्युत संयंत्रों के लिए 80 प्रतिशत न्यूनतम उपयोग प्रतिशतता, क्रमशः 60-80 प्रतिशत और <60 प्रतिशत की उपयोगिता की श्रेणी के तहत आने वाले ताप विद्युत संयंत्रों के लिए प्रथम अनुपालन चक्र के पहले वर्ष और पहले दो वर्षों पर लागू नहीं होगी।

परन्तु, अनुपालन चक्र के अंतिम वर्ष में सृजित 20 प्रतिशत राख को अगले चक्र में भी ले जाया जाएगा जिसका उपयोग उस अनुपालन चक्र के दौरान सृजित राख के साथ अगले तीन वर्षों में किया जाएगा।

- (5) अप्रयुक्त संचित राख अर्थात् लीगेसी राख, जिसका इस अधिसूचना के प्रकाशन से पहले भंडारण किया गया है, को ताप विद्युत संयंत्र (टीपीपी) द्वारा इस रीति से क्रमिक रूप से उपयोग में लाया जाएगा, कि लीगेसी राख को इस अधिसूचना के प्रकाशन की तिथि से दस वर्षों के भीतर पूरी तरह उपयोग कर लिया जाएगा और यह उस विशिष्ट वर्ष के चालू संचालनों के माध्यम से राख उत्सर्जन के लिए निर्धारित उपयोग लक्ष्यों से अतिरिक्त होगा।

परन्तु, निम्नलिखित प्रतिशतताओं में यथा उल्लिखित लीगेसी राख की न्यूनतम मात्रा का उपयोग तास्थानी वर्ष के दौरान कर लिया जाएगा और लीगेसी राख की न्यूनतम मात्रा की ताप विद्युत संयंत्र की संस्थापित क्षमता के अनुसार वार्षिक राख उत्सर्जन के आधार पर की जानी है।

प्रकाशन की तिथि से वर्ष	पहला	दूसरा	तीसरा-दसवां
लीगेसी राख का उपयोग (वार्षिक राख की प्रतिशतता)	कम से कम 20 प्रतिशत	कम से कम 35 प्रतिशत	कम से कम 50 प्रतिशत

परन्तु, यह और कि लीगेसी राख का उपयोग वहां अपेक्षित नहीं है, जहां राख के तालाब या डाइक स्थिर हो गए हैं और हरित पट्टी के निर्माण या पौध रोपण से पुनरुद्धार किया गया है और संबंधित राज्य प्रदूषण नियंत्रण बोर्ड इस संबंध में प्रमाणित करेगा। किसी राख तालाब या डाइक के स्थिरीकरण और भूमि-उद्धार का कार्य, जिसमें केन्द्रीय प्रदूषण नियंत्रण बोर्ड या राज्य प्रदूषण नियंत्रण बोर्ड द्वारा प्रमाणन शामिल है, इस अधिसूचना के प्रकाशन की तारीख से एक वर्ष के भीतर किया जाएगा। अन्य सभी राख के कुंड या डाइक में शेष बचे राख का उपयोग ऊपर उल्लिखित समय-सीमाओं के अनुसार क्रमिक रूप से किया जाएगा।

टिप्पण: राख के उपयोग के लक्ष्यों को हासिल करने के लिए उप पैरा (4) और (5) के अधीन दायित्व 01 अप्रैल, 2022 की तारीख से लागू होंगे।

- (6) किसी भी नए तापीय विद्युत संयंत्र (टीपीपी) में 0.1 हेक्टेयर प्रति मेगावाट (एमडब्ल्यू) क्षेत्रफल के साथ आपातकालीन या अस्थायी राख कुंड की अनुमति दी जा सकती है। राख के तालाब या डाइकों का तकनीकी विनिर्देश, केन्द्रीय विद्युत प्राधिकरण (सीईए) के परामर्श से केन्द्रीय प्रदूषण नियंत्रण बोर्ड द्वारा बनाए गए दिशानिर्देशों के अनुसार होगा और ये दिशानिर्देश राख के कुंड या डाइक के संबंध में इसकी सुरक्षा, पर्यावरणीय प्रदूषण, उपलब्ध प्रमात्रा, निपटान का तरीका, निपटान में जल की खपत या संरक्षण, राख जल पुनर्चक्रण और ग्रीन बेल्ट आदि के वार्षिक प्रमाणन के लिए कार्यविधि भी निर्धारित करेंगे और इस अधिसूचना के प्रकाशन की तारीख से तीन महीनों के भीतर प्रस्तुत किए जाएंगे।
- (7) प्रत्येक कोयला या लिग्नाइट आधारित ताप विद्युत संयंत्र यह सुनिश्चित करेगा कि राख की लदाई, उतराई, ढुलाई, भंडारण और निपटान पर्यावरणीय दृष्टि से अनुकूल रीति से किया गया है और वायु और जल प्रदूषण की रोकथाम के लिए सभी ऐहितयात किए गए हैं और इस संबंध में स्थिति की सूचना इस अधिसूचना में संलग्न अनुबंध में संबंधित राज्य प्रदूषण नियंत्रण बोर्ड (एसपीसीबी) या प्रदूषण नियंत्रण समिति (पीसीसी) को दी जाएगी।
- (8) प्रत्येक कोयला या लिग्नाइट आधारित तापीय विद्युत संयंत्र, संस्थापित क्षमता पर आधारित राख के कम से कम 16 घंटों के भंडारण के लिए समर्पित शुष्क फ्लाई राख साइलोस प्रतिष्ठापित करेगा, जिनके पास पृथक पहुंच मार्ग होंगे, जिससे कि राख पहुंचाने के कार्य को सुगम बनाया जा सके। इसकी सूचना संबंधित राज्य प्रदूषण नियंत्रण बोर्ड (एसपीसीबी) या प्रदूषण नियंत्रण समिति (पीसीसी) को उपाबंध में दी जाएगी और केन्द्रीय प्रदूषण नियंत्रण

बोर्ड (सीपीसीबी) या राज्य केन्द्रीय प्रदूषण नियंत्रण बोर्ड (एसपीसीबी) या प्रदूषण नियंत्रण समिति द्वारा समय-समय पर निरीक्षण किया जाएगा।

- (9) प्रत्येक कोयला या लिग्नाईट आधारित तापीय विद्युत संयंत्र (जिसके अंतर्गत कैप्टिव या सह उत्पादन केन्द्र भी है या दोनों), वास्तविक उपयोगकर्ता (उपयोगकर्ताओं) के हित के लिए केन्द्रीय प्रदूषण नियंत्रण बोर्ड के वेब पोर्टल या मोबाईल फोन एप्प का लिंक उपलब्ध कराकर ताप विद्युत संयंत्र के पास राख की उपलब्धता के वास्तविक आंकड़े प्रदान करेगा।
- (10) राख के 100 प्रतिशत उपयोग का वैधानिक दायित्व, जहां भी लागू हो, विधि में बदलाव के रूप में माना जाएगा।

ख. राख के उपयोग के प्रयोजनार्थ, उत्तरवर्ती उप पैराग्राफ लागू होंगे :-

- (1) ऐसे सभी अभिकरण (सरकारी, अर्द्धसरकारी और निजी), जो सड़क बिछाने, सड़क और फ्लाई ओवर के किनारों, तटीय जिलों में तटरेखा की सुरक्षा संरचनाओं और लिग्नाईट या कोयला आधारित ताप विद्युत संयंत्र से 300 किमी के भीतर बांधों जैसे निर्माण संबंधी कार्यकलापों में लगे हुए हैं, इन कार्यकलापों में अनिवार्य रूप से राख का उपयोग करेंगे :

परंतु इसको परियोजना स्थल पर निशुल्क पहुंचाया जाए और परिवहन लागत, ऐसे कोयला या लिग्नाईट आधारित ताप विद्युत संयंत्रों द्वारा वहन की जाए।

परंतु यह और कि ताप विद्युत संयंत्र पारस्परिक सहमत हुई शर्तों के अनुसार राख की लागत और परिवहन के लिए शुल्क ले सकता है उस मामले में जहां ताप विद्युत संयंत्र अन्य माध्यम से राख का निपटान करने में समर्थ है और ये अभिकरण इसके लिए प्रार्थना कर सकते हैं और बिना लागत और बिना परिवहन शुल्क के राख उपलब्ध कराने के प्रावधान तभी लागू होंगे यदि उसके लिए ताप विद्युत संयंत्र उस निर्माण अभिकरण को नोटिस जारी करता है।

- (2) उक्त कार्यकलापों में राख का उपयोग भारतीय मानक ब्यूरो, भारतीय रोड कांग्रेस, केन्द्रीय भवन अनुसंधान संस्थान, रूडकी, केन्द्रीय सड़क अनुसंधान संस्थान, दिल्ली, केन्द्रीय लोक निर्माण विभाग, राज्य लोक निर्माण विभागों और अन्य केन्द्रीय और राज्य सरकार के अभिकरणों द्वारा निर्धारित किए गए विनिर्देशों और दिशानिर्देशों के अनुसार किया जाएगा।
- (3) तापीय विद्युत संयंत्र की 300 किलोमीटर की परिधि के भीतर अवस्थित सभी खानों के लिए विस्तारित उत्पादक उत्तरदायित्व (ईपीआर) के तहत खुली आवर्त खानों में राख का पृष्ठ भंडारण करना या अधिक भार के ढेरों के साथ राख का मिश्रण करना बाध्यकारी होगा। सभी खान के स्वामी या प्रचालक (चाहे सरकारी, सार्वजनिक और निजी क्षेत्र के हो) कोयला या लिग्नाईट आधारित तापीय विद्युत संयंत्रों से तीन सौ किलोमीटर (सड़क द्वारा) के भीतर, महानिदेशक, खान सुरक्षा (डीजीएमएस) के दिशानिर्देशों के अनुसार ओवर बर्डन के बाह्य निक्षेप खान की बैकफिलिंग अथवा स्टोर्विंग (प्रचालित या छोड़ी गई खानों, जैसा भी मामला हो) के लिए उपयोग की गई सामग्रियों के भार-दर-भार के आधार पर कम से कम 25 प्रतिशत राख को मिश्रित करने के लिए उपाय करेंगे :

परंतु ऐसे तापीय विद्युत केन्द्र निःशुल्क राख प्रदान करके और परिवहन की लागत को वहन करके या पारस्परिक सहमत हुई शर्तों पर लिए गए निर्णय के अनुसार लागत या परिवहन व्यवस्था करके राख की अपेक्षित मात्रा की उपलब्धता को सुकर बनायेंगे और खानों के खाली स्थानों और ढेरों में अधिकभार के साथ राख को मिश्रित करना, सृजित अधिभार के लिए इस अधिसूचना के प्रकाशन की तिथि से लागू होगा और उक्त कार्यकलापों में राख का उपयोग, केन्द्रीय प्रदूषण नियंत्रण बोर्ड, महानिदेशक खान सुरक्षा और भारतीय खदान ब्यूरो द्वारा निर्धारित दिशानिर्देशों के अनुसार किया जाएगा।

स्पष्टीकरण :- इस उप-पैरा के प्रयोजन के लिए यह भी स्पष्ट किया जाता है कि लागत मुक्त राख और निःशुल्क परिवहन के उपबंध केवल तभी लागू होंगे यदि ताप विद्युत संयंत्र इसके लिए खान मालिक को नोटिस देते हैं और अधिभार वाले ढेर के साथ मिश्रित करने और खान में खाली स्थान को भरने के लिए राख के 25 प्रतिशत हिस्से के उपयोग का अधिदेश तब तक लागू नहीं होगा जब तक कि ताप विद्युत संयंत्र द्वारा खान मालिक को नोटिस न दिया गया हो।

- (5) (i) सभी खान मालिकों को खान में खाली स्थानों में राख को समायोजित करने के लिए खान बंद योजना (प्रगामी और अंतिम) तैयार करनी होगी और खान में खाली स्थानों में राख के निपटान और अधिभार वाले ढेर के साथ राख को मिश्रित करने के लिए खान योजनाओं को संबंधित प्राधिकारी अनुमोदित करेगा। पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय द्वारा ताप विद्युत संयंत्रों और कोयला खदानों की पर्यावरणीय मंजूरी की अपेक्षा से छूट देने के साथ-साथ ऐसे निपटान के लिए अपनाए जाने वाले दिशानिर्देशों के संबंध में तारीख 28 अगस्त, 2019 को दिशानिर्देश जारी किए गए।
- (ii) मंत्रालय, केन्द्रीय प्रदूषण नियंत्रण बोर्ड, महानिदेशक, खान सुरक्षा (डीजीएमएस) और भारतीय खान ब्यूरो (आईबीएम) के साथ परामर्श करके, खानों में खाली स्थानों में राख के निपटान करने तथा अधिभार वाले ढेरों में इसे मिश्रित करना सुगम बनाने के लिए समय-समय पर आगे भी दिशानिर्देश जारी कर सकता है और यह खान मालिकों की जिम्मेदारी होगी कि वे ऐसी खानों को अभिज्ञात करने की तिथि से एक वर्ष के भीतर विभिन्न विनियामक प्राधिकरणों द्वारा जारी की गई अनुमतियों में आवश्यक संशोधन या परिवर्तन प्राप्त करेंगे।
- (6) (i) पर्यावरणीय प्रदूषण के संदर्भ में सुरक्षा, व्यवहार्यता (आर्थिक व्यवहार्यता नहीं) और पहलुओं की जांच सहित राख से खान में खाली स्थान को वापस भरने/अधिभार वाले ढेर के साथ राख को मिश्रित करने के लिए खानों की पहचान करने के लिए पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय, विद्युत मंत्रालय, खान मंत्रालय, कोयला मंत्रालय, महानिदेशक खान सुरक्षा और भारतीय खान ब्यूरो से प्रतिनिधियों को शामिल करते हुए अध्यक्ष, केन्द्रीय प्रदूषण नियंत्रण बोर्ड (सीपीसीबी) की अध्यक्षता में एक समिति का गठन किया जाएगा और यह समिति पणधारी मंत्रालयों या विभागों के लिए अभिज्ञात खानों (भूमिगत और खुली, दोनों) के संबंध में तैयार की गई तिमाही रिपोर्टों को अद्यतन करेगी और यह समिति, इस अधिसूचना के प्रकाशन के तुरंत पश्चात उपयुक्त खानों की पहचान करना आरंभ करेगी।
- (ii) ताप विद्युत संयंत्र या खानें, उपरोक्त अनुसार अधिदेशित उपयोग लक्ष्यों को पूरा करने के लिए उपर्युक्त समिति द्वारा पहचान किए जाने तक राख के निपटान हेतु प्रतीक्षा नहीं करेंगी।
- (7) राख से निचले क्षेत्र को भरने का कार्य, अनुमोदित परियोजनाओं के लिए राज्य प्रदूषण नियंत्रण बोर्ड की पूर्व अनुमति से और केन्द्रीय प्रदूषण नियंत्रण बोर्ड द्वारा निर्धारित दिशा-निर्देशों के अनुसार किया जाएगा और राज्य प्रदूषण नियंत्रण बोर्ड या प्रदूषण नियंत्रण समिति द्वारा अनुमोदित स्थलों, अवस्थान, क्षेत्र और अनुमत मात्रा को अपनी वेबसाइट पर प्रतिवर्ष प्रकाशित किया जाएगा।
- (8) केन्द्रीय प्रदूषण नियंत्रण बोर्ड, संगत पणधारी के साथ मिलकर, राज्य प्रदूषण नियंत्रण बोर्ड (एसपीसीबी) या प्रदूषण नियंत्रण समिति (पीसीसी) द्वारा अनुमति प्रदान करने के लिए समयबद्ध ऑनलाइन आवेदन प्रक्रिया प्रस्तुत करने के साथ-साथ इस अधिसूचना के अधीन परिकल्पित सभी प्रकार के कार्यकलापों के लिए एक वर्ष के भीतर दिशानिर्देश प्रस्तुत करेगा।
- (9) कोयला या लिग्नाइट आधारित तापीय ऊर्जा संयंत्र से तीन सौ किलोमीटर के दायरे में स्थित सभी भवन निर्माण परियोजनाएं (केंद्रीय, राज्य और स्थानीय प्राधिकरणों सरकारी उपक्रमों, अन्य सरकारी अभिकरणों तथा सभी निजी अभिकरणों) राख की ईटों, टाईल्स, धातुमल राख अथवा अन्य राख आधारित उत्पादों का उपयोग करेंगी बशर्ते कि वे वैकल्पिक उत्पादों की कीमत से अधिक कीमत पर उपलब्ध न हो।
- (10) राख आधारित उत्पादों के विनिर्माण और ऐसे उत्पादों में राख के उपयोग में भारतीय मानक ब्यूरो, भारतीय सड़क कांग्रेस और केन्द्रीय प्रदूषण नियंत्रण बोर्ड द्वारा निर्धारित विनिर्देशों और दिशानिर्देशों की अनुपालना होगी।
- ग. गैर-अनुपालन के लिए पर्यावरणीय प्रतिकर .-**
- (1) तीन वर्ष के चक्र के प्रथम दो वर्षों में, यदि कोयला या लिग्नाइट आधारित तापीय ऊर्जा संयंत्र (कैप्टिव और/ या सह-उत्पादक स्टेशनों या दोनों सहित) ने कम-से-कम 80 प्रतिशत राख (फ्लाइ-राख और बॉटम-राख) उपयोग नहीं की है तो ऐसे गैर-अनुपालन ताप विद्युत संयंत्रों पर प्रस्तुत की गई वार्षिक रिपोर्टों के आधार पर वित्तीय वर्ष के

अंत में अप्रयुक्त राख पर 1000 रुपए प्रति टन की दर से पर्यावरणीय प्रतिकर लगाया जाएगा और यदि यह तीन वर्ष के चक्र के तीसरे वर्ष में 100 प्रतिशत राख का उपयोग करने में असमर्थ रहता है, तो वह अप्रयुक्त मात्रा पर 1000 रुपए प्रति टन की दर से पर्यावरणीय प्रतिकर के भुगतान का पात्र होगा, जिस पर पहले पर्यावरणीय प्रतिकर नहीं लगायी गयी है।

परंतु पर्यावरणीय प्रतिकर को पैरा क के उप-पैरा (4) में उल्लिखित विभिन्न उपयोगी श्रेणियों के अनुसार प्रथम अनुपालन चक्र के अंतिम वर्ष के अंत में अनुमान लगाया जाएगा और अधिरोपित किया जाएगा।

- (2) अधिकारियों द्वारा एकत्रित पर्यावरणीय प्रतिकर को केन्द्रीय प्रदूषण नियंत्रण बोर्ड के निर्दिष्ट खाते में जमा किया जाएगा।
- (3) लैगोसी राख के मामले में, यदि कोयला या लिग्नाइट आधारित तापीय ऊर्जा संयंत्र (कैप्टिव या सह-उत्पादक स्टेशनों या दोनों सहित) ने स्थापित क्षमता पर आधारित उत्पन्न राख का कम-से-कम 20 प्रतिशत (प्रथम वर्ष के लिए), 35 प्रतिशत (द्वितीय वर्ष के लिए), 50 प्रतिशत (तीसरे से दसवें वर्ष तक) उपयोग के बराबर लक्ष्य प्राप्त नहीं किया है तो उस वित्तीय वर्ष के दौरान अप्रयुक्त लैगोसी राख पर 1000 रुपए प्रति टन की दर से पर्यावरणीय प्रतिकर लगाया जाएगा और यदि 10 वर्ष के अंत में लैगोसी राख का उपयोग नहीं किया जाता है तो 1000 रुपए प्रति टन की दर से शेष अप्रयुक्त मात्रा पर पर्यावरणीय प्रतिकर लगाया जाएगा जिस पर पहले पर्यावरणीय प्रतिकर नहीं लगाया गया है।
- (4) अधिकृत खरीददारों या उपभोक्ता अभिकरणों तक राख भेजने की जिम्मेदारी परिवहकों या वाहन मालिक की जिम्मेदारी है और यदि इसका अनुपालन नहीं किया जाता है, तो अनधिकृत उपयोगकर्ताओं अथवा गैर-अधिकृत उपयोगकर्ताओं को ऐसी मात्रा गलत तरीके से वितरित करने पर 1500 रुपए प्रति टन की दर से पर्यावरणीय प्रतिकर लगायी, इसके अतिरिक्त राज्य प्रदूषण नियंत्रण बोर्ड (एसपीसीबी) या प्रदूषण नियंत्रण समिति (पीसीसी) द्वारा गैर अनुपालनकर्ता परिवहकों पर अभियोजन लागू होगा।
- (5) इस अधिसूचना के पैरा ख में विहित पर्यावरण अनुकूल तरीके में राख के उपयोग की जिम्मेदारी खरीददार या उपभोगकर्ता एजेंसियों की है और ऐसा नहीं करने पर केन्द्रीय प्रदूषण नियंत्रण बोर्ड (एसपीसीबी) या प्रदूषण नियंत्रण समिति (पीसीसी) द्वारा 1500 रुपए प्रति टन की दर से पर्यावरणीय प्रतिकर लगाया जाएगा।
- (6) यदि उपयोगकर्ता अधिकरण पैरा ख के अधीन निर्धारित सीमा तक अथवा पैरा घ के उप-पैरा (1) के अधीन, दिए गए नोटिस के माध्यम से सूचित की गई सीमा, इनमें से जो भी कम हो, तक राख का उपयोग नहीं करती है, वे अतिरिक्त राख की मात्रा का 1500 रुपए प्रति टन की दर से भुगतान करने के लिए उत्तरदायी होंगी।
परंतु भवन निर्माण के संबंध में पर्यावरणीय प्रतिकर निर्मित क्षेत्र के 75 रुपये प्रति वर्ग फीट की दर से वसूल किया जाएगा।
- (7) (i) ताप विद्युत संयंत्रों अन्य बकायादारों से केन्द्रीय प्रदूषण नियंत्रण बोर्ड द्वारा लगायी गई का पर्यावरणीय प्रतिकर उपयोग अप्रयुक्त राख के सुरक्षित निपटान हेतु किया जाएगा और राख आधारित उत्पादों सहित राख के उपयोग के संबंध में और अधिक अनुसंधान करने के लिए भी निधि का उपयोग किया जा सकता है।
(ii) अप्रयुक्त मात्रा पर लगाए गए पर्यावरणीय प्रतिकर के पश्चात भी राख के उपयोग का उत्तरदायित्व ताप विद्युत संयंत्रों की होगी और यदि पश्चातवती चक्रों में पर्यावरणीय प्रतिकर लगाने के पश्चात ताप विद्युत संयंत्र, किसी विशेष चक्र की राख के उपयोग के लक्ष्य को प्राप्त करता है तो अगले चक्र के दौरान अप्रयुक्त मात्रा पर एकत्र की गई पर्यावरणीय प्रतिकर में 10 प्रतिशत कटौती के पश्चात उक्त रकम ताप विद्युत संयंत्र को वापस कर दी जाएगी और पश्चातवती चक्रों में राख के उपयोग के मामले में एकत्र की गई पर्यावरणीय प्रतिकर की 20 प्रतिशत, 30 प्रतिशत और उसी क्रम में कटौती की जानी है।

घ. राख या राख आधारित उत्पादों की आपूर्ति हेतु प्रक्रिया .-

- (1) ताप विद्युत संयंत्रों के स्वामी अथवा राख की ईंटों या टाईल्स या धातुमल आधारित राख के विनिर्माता उन व्यक्तियों या अभिकरणों को लिखित सूचना देंगे जो बिक्री या परिवहन या दोनों के लिए प्रस्तुत राख या राख आधारित उत्पादों के उपयोग के लिए उत्तरदायी हैं।
- (2) ऐसे व्यक्ति या उपयोगकर्ता अभिकरणों जिन्हें ताप विद्युत संयंत्रों के स्वामी द्वारा या राख की ईंटों या टाईल्स या धातुमल आधारित राख के उत्पादकों द्वारा सूचना दी गई है, यदि वे पहले ही राख या राख उत्पादों के उपयोग के प्रयोजन से अन्य अभिकरणों के साथ जुड़े हुए हैं, यदि वे किसी भी राख/राख उत्पादों का उपयोग नहीं कर सकते हैं अथवा कम मात्रा का उपयोग कर सकते हैं, तदनुसार ताप विद्युत संयंत्र को सूचित करेंगे।

ड. प्रवर्तन, निगरानी, लेखा परीक्षा और प्रतिवेदन करना

- (1) केंद्रीय प्रदूषण नियंत्रण बोर्ड (सीपीसीबी) और संबंधित राज्य प्रदूषण नियंत्रण बोर्ड (एसपीसीबी) या प्रदूषण नियंत्रण समिति (पीसीसी), उपबंधों के अनुपालना सुनिश्चित करने के लिए प्रवर्तन और निगरानी प्राधिकरण होंगे। सीपीसीबी या एसपीसीबी या पीसीसी तिमाही आधार पर राख के उपयोग की निगरानी करेंगे और सीपीसीबी इस प्रयोजन के लिए अधिसूचना की प्रकाशन की तारीख से छः माह के भीतर एक पोर्टल विकसित करेगा। संबंधित जिला अधिकारी के पास इस अधिसूचना के उपबंधों को लागू करने और निगरानी करने के लिए समवर्ती अधिकारिता होगी।
- (2) (i) ताप विद्युत संयंत्र, राख उत्सर्जन और उपयोग से संबंधित मासिक सूचना वेब पोर्टल पर अगले महीने की 5 तारीख तक अपलोड करेगा। कोयला या लिग्नाइट आधारित ताप ऊर्जा संयंत्रों द्वारा केंद्रीय प्रदूषण नियंत्रण बोर्ड, संबंधित राज्य प्रदूषण नियंत्रण बोर्ड या प्रदूषण नियंत्रण समिति (पीसीसी), केंद्रीय विद्युत प्राधिकरण (सीईए) और पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय के संबंधित एकीकृत क्षेत्रीय कार्यालयों को इस अधिसूचना के उपबंधों के अनुपालन संबंधी सूचना उपलब्ध कराते हुए वार्षिक कार्यान्वयन रिपोर्ट प्रत्येक वर्ष (1 अप्रैल से 31 मार्च तक की अवधि के लिए) अप्रैल माह के 30वें दिन तक प्रस्तुत की जाएगी। सीपीसीबी और सीईए द्वारा सभी ताप विद्युत संयंत्रों द्वारा प्रस्तुत वार्षिक रिपोर्टों का समेकन किया जाएगा और उसे पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय को 31 मई तक प्रस्तुत किया जाएगा।
- (ii) सभी अन्य उपयोगकर्ता अधिकरण पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय या राज्य स्तरीय पर्यावरण प्रभाव आकलन प्राधिकरण (एसईआईएए) द्वारा जारी पर्यावरणीय मंजूरी (ईसी) अथवा राज्य प्रदूषण नियंत्रण बोर्ड (एसपीसीबी) या प्रदूषण नियंत्रण समिति (पीसीसी) द्वारा जारी संचालन की सहमति (सीटीओ), जो भी लागू हो, की अनुपालना रिपोर्ट में इस अधिसूचना में आज्ञापकता के अनुसार राख के उपभोग या उपयोग या निस्तारण तथा राख आधारित उत्पादों के उपयोग संबंधी सूचना प्रस्तुत करेंगे। केंद्रीय प्रदूषण नियंत्रण बोर्ड (सीपीसीबी) या राज्य प्रदूषण नियंत्रण बोर्ड (एसपीसीबी) या प्रदूषण नियंत्रण समिति (पीसीसी) अधिसूचना के उपबंधों के प्रभावी कार्यान्वयन की समीक्षा करने हेतु ताप विद्युत संयंत्रों के अतिरिक्त अन्य सभी अधिकरणों की राख उपयोग की वार्षिक रिपोर्ट प्रकाशित करेंगे।
- (3) इस अधिसूचना के उपबंधों की निगरानी और कार्यान्वयन के प्रयोजन के लिए केंद्रीय प्रदूषण नियंत्रण बोर्ड (सीपीसीबी) की अध्यक्षता में एक समिति का गठन किया जाएगा जिसके सदस्य विद्युत मंत्रालय, कोयला मंत्रालय, खनन मंत्रालय, पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय, सड़क परिवहन और राजमार्ग मंत्रालय और भारी उद्यम विभाग से होने के साथ-साथ समिति के अध्यक्ष द्वारा नामित किए जाने वाले कोई संबंधित पणधारी होंगे। यह समिति संगत पणधारी को आमंत्रित कर सकती है। यह समिति इस अधिसूचना के उपबंधों के प्रभावी और दक्ष कार्यान्वयन के लिए सिफारिशें कर सकती है। यह समिति छः माह में कम से कम एक बार एक बैठक करेगी और वार्षिक कार्यान्वयन रिपोर्टों की समीक्षा करेगी और यह समिति, इस अधिसूचना द्वारा आज्ञापक किए गए अनुसार छः महीनों में कम से कम एक बार संगत पणधारी (को) को आमंत्रित करके राख के उपयोग की निगरानी करने के लिए पणधारी से साथ परामर्शदात्री बैठकें आयोजित करेगी। यह समिति पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय (एमओईएफसीसी) को छः मासिक रिपोर्ट प्रस्तुत करेगी।

- (4) ताप विद्युत संयंत्रों और राख के उपयोगकर्ताओं या राख आधारित उत्पादों के विनिर्माताओं के बीच के विवाद का समाधान करने के प्रयोजन से राज्य सरकारें या संघ राज्यक्षेत्र की सरकारें इस अधिसूचना के प्रकाशन की तारीख से तीन माह के भीतर राज्य प्रदूषण नियंत्रण बोर्ड (एसपीसीबी) या प्रदूषण नियंत्रण समिति (पीसीसी) की अध्यक्षता में एक समिति का गठन करेंगी जिसमें विद्युत विभाग के प्रतिनिधि और एक प्रतिनिधि उस विभाग का होगा, जो विवाद वाले संबंधित अभिकरण का कार्य देख रहे हैं।
- (5) केन्द्रीय प्रदूषण नियंत्रण बोर्ड (सीपीसीबी) द्वारा प्राधिकृत लेखा परीक्षकों द्वारा ताप विद्युत संयंत्रों और उपयोगकर्ता अभिकरणों द्वारा किए गए राख के निपटान की अनुपालन लेखा परीक्षा संचालित की जाएगी और लेखा परीक्षा की रिपोर्ट प्रत्येक वर्ष 30 नवम्बर तक केन्द्रीय प्रदूषण नियंत्रण बोर्ड (सीपीसीबी) और संबंधित राज्य प्रदूषण नियंत्रण बोर्ड (एसपीसीबी) या प्रदूषण नियंत्रण समिति (पीसीसी) को प्रस्तुत की जाएगी। केन्द्रीय प्रदूषण नियंत्रण बोर्ड (सीपीसीबी) और संबंधित राज्य प्रदूषण नियंत्रण बोर्ड (एसपीसीबी) या प्रदूषण नियंत्रण समिति (पीसीसी) लेखा परीक्षा की रिपोर्ट प्राप्त होने के पंद्रह दिनों के भीतर अनुपालन न करने वाले ताप विद्युत संयंत्रों के विरुद्ध कार्रवाई प्रारंभ करेंगे।

[फा. सं. एचएसएम-9/1/2019-एचएसएम]

नरेश पाल गंगवार, संयुक्त सचिव

उपाबंध

31 मई तक अथवा उससे पहले प्रस्तुत की जाने वाली राख संबंधी उपबंधों की अनुपालन रिपोर्ट (01 अप्रैल से 31 मार्च की अवधि के लिए)।

क्र.सं.	ब्यौरा	
1.	विद्युत संयंत्र का नाम	
2.	कंपनी का नाम	
3.	जिला	
4.	राज्य	
5.	पत्राचार के लिए डाक का पता :	
6.	ई-मेल :	
7.	विद्युत संयंत्र की संस्थापित क्षमता (मेगा वॉट) :	
8.	संयंत्र लोड फैक्टर (पीएलएफ) :	
9.	उत्पादित यूनिटों की संख्या (एमडब्ल्यूएच) :	
10.	विद्युत संयंत्र के अंतर्गत कुल क्षेत्र (हेक्टेयर) (राख कुंडों के अधीन क्षेत्र सहित) :	
11.	रिपोर्टिंग की अवधि के दौरान कोयला खपत की मात्रा (प्रति वर्ष मीट्रिक टन) :	
12.	औसत राख सामग्री प्रतिशतता में (%) :	
13.	रिपोर्टिंग की अवधि के दौरान वर्तमान में उत्पादित राख की मात्रा (प्रति वर्ष मीट्रिक टन) : फ्लाय राख (प्रति वर्ष मीट्रिक टन) : बॉटम राख (प्रति वर्ष मीट्रिक टन) :	
14.	ड्राई फ्लाय राख भंडारण गड्ढा (गड्ढों) की क्षमता (मीट्रिक टन) :	
15.	रिपोर्टिंग की अवधि के दौरान वर्तमान में उत्पादित राख के उपयोग का ब्यौरा: (क) रिपोर्टिंग की अवधि के दौरान वर्तमान में उपयोग की गई राख की	

	<p>कुल मात्रा (एमटीपीए) :</p> <p>(ख) उपयोग की गई फ्लाई राख की मात्रा (एमटीपीए) :</p> <ol style="list-style-type: none"> i. फ्लाई-एश आधारित उत्पाद (ईट या ब्लॉक या टाइल्स या फाइबर सीमेंट शीट या पाइप या बोर्ड/पैनल) : ii. सीमेंट विनिर्माण : iii. रेडी मिक्स कंक्रीट : iv. राख और जीओ-पॉलिमर आधारित निर्माण सामग्री : v. सिंटेड या कोल्ड बॉन्डेड राख एग्रीगेट का निर्माण : vi. सड़कों, सड़क और फ्लाई ओवर के पुशतों का निर्माण : vii. बांधों का निर्माण : viii. निम्न भू-क्षेत्र का भराव : ix. खनिज क्षेत्रों का भराव : x. अधिभार वाले डम्पों में उपयोग : xi. कृषि : xii. तटीय जिलों में तटरेखा सुरक्षा संरचनाओं का निर्माण : xiii. अन्य देशों को राख का निर्यात : xiv. अन्य (कृपया विनिर्दिष्ट करें) : <p>(ग) उपयोग किए गए तल के राख की मात्रा (एमटीपीए) :</p> <ol style="list-style-type: none"> i. फ्लाई-एश आधारित उत्पाद (ईट या ब्लॉक या टाइल्स या फाइबर सीमेंट शीट या पाइप या बोर्ड या पैनल) : ii. सीमेंट विनिर्माण : iii. रेडी मिक्स कंक्रीट : iv. राख और जीओ-पॉलिमर आधारित निर्माण सामग्री : v. सिंटेड या कोल्ड बॉन्डेड राख एग्रीगेट का निर्माण : vi. सड़कों, सड़क और फ्लाईओवर के पुशतों का निर्माण : vii. बांधों का निर्माण : viii. निम्न भू-क्षेत्र का भराव : ix. खनिज क्षेत्रों का भराव : x. अधिभार वाले डम्पों में उपयोग : xi. कृषि : xii. तटीय जिलों में तटरेखा सुरक्षा संरचनाओं का निर्माण : xiii. अन्य देशों को राख का निर्यात : xiv. अन्य (कृपया विनिर्दिष्ट करें) : <p>रिपोर्टिंग की अवधि के दौरान वर्तमान में अप्रयुक्त राख की कुल मात्रा (एमटीपीए) :</p>	
16.	रिपोर्टिंग की अवधि के दौरान वर्तमान में उत्पादित राख का प्रतिशतता उपयोग (%) :	
17.	<p>राख कुंडों में राख के निपटान का ब्यौरा</p> <p>क) तारीख 31 मार्च तक (रिपोर्टिंग की अवधि को छोड़कर) राख कुण्ड (कुण्डों) में निपटान किए गए राख की कुल मात्रा (मीट्रिक टन):</p>	

	<p>ख) रिपोर्टिंग की अवधि के दौरान राख कुण्ड (कुण्डों) में निपटान किए गए राख की मात्रा (मीट्रिक टन):</p> <p>ग) रिपोर्टिंग की अवधि के दौरान राख कुण्डों में गारा निस्सरण हेतु खपत हुए जल की कुल मात्रा (मी³):</p> <p>घ) राख कुण्डों की कुल संख्या:</p> <p>(i) सक्रिय:</p> <p>(ii) खाली किए गए (पुनः भरा जाना है)</p> <p>(iii) पुनः भरे गए:</p> <p>ड.) राख कुण्डों के अधीन कुल क्षेत्र (हेक्टेयर):</p>	
18.	<p>अलग-अलग राख कुण्ड का ब्यौरा</p> <p>राख कुण्ड 1,2 आदि (यदि राख कुण्डों की संख्या एक से अधिक हो, तो कृपया निम्नलिखित ब्यौरा अलग से उपलब्ध कराएं)</p> <p>क) स्थिति: निर्माणाधीन या सक्रिय या खाली किया गया या पुनः भरा गया</p> <p>ख) राख कुण्ड में राख का निपटान शुरू करने की तारीख/महीना/वर्ष या महीना/वर्ष):</p> <p>ग) राख कुण्ड की क्षमता पूर्ण किए जाने के पश्चात् उसमें राख निपटान रोकने की तारीख</p> <p>(तारीख/महीना/वर्ष या महीना/वर्ष):</p> <p>(सक्रिय राख कुण्डों के लिए लागू नहीं)</p> <p>ग) क्षेत्र (हेक्टेयर):</p> <p>घ) डाइक की ऊंचाई (मी.):</p> <p>घ) आयतन (मी³):</p> <p>ड.) तारीख 31 मार्च तक निपटान किए गए राख की मात्रा (मीट्रिक टन):</p> <p>च) उपलब्ध आयतन का प्रतिशत (%) और आगे निपटान किए जा सकने वाले राख की मात्रा (मीट्रिक टन):</p> <p>छ) राख कुण्ड के भरे जाने की अनुमानित अवधि (वर्षों और महीनों की संख्या):</p> <p>ड.) निर्देशांक (अक्षांश और देशान्तर):</p> <p>(कृपया न्यूनतम 4 निर्देशांकों को विनिर्दिष्ट करें)</p> <p>ज) राख कुण्ड में की गई लाइनिंग का प्रकार: एचडीपीई लाइनिंग या एलडीपीई लाइनिंग या क्ले लाइनिंग या कोई लाइनिंग नहीं</p> <p>छ) निपटान की विधि: शुष्क निपटान या नम गारा (नम गारा के मामले में कृपया विनिर्दिष्ट करें कि क्या एचसीएसडी या एमसीएसडी या एलसीएसडी है)</p> <p>ज) राख का अनुपात: गारा मिश्रण में जल (1:___):</p> <p>झ) संस्थापित और कार्यशील राख जल पुनर्चक्रण प्रणाली (एडब्ल्यूआरएस): हां या नहीं</p> <p>ञ) जमीन के अंदर या जल निकाय में राख कुण्ड से निस्सरित अपशिष्ट जल की मात्रा (मी³):</p> <p>ट) डाइक की स्थिरता का अध्ययन कराए जाने की पिछली तारीख और उस संगठन का नाम जिसने अध्ययन किया:</p> <p>ठ) लेखा-परीक्षा किए जाने की पिछली तारीख और उस संगठन का नाम जिसने लेखा-परीक्षा की:</p>	
19.	<p>उपयोग किए गए पुराने राख की मात्रा (एमटीपीए):</p> <p>i. फ्लाई-एश आधारित उत्पाद (ईट या ब्लॉक या टाइल्स या फाइबर</p>	

	सीमेंट शीट या पाइप या बोर्ड या पैनल):			
	ii. सीमेंट विनिर्माण:			
	iii. रेडी मिक्स कंक्रीट:			
	iv. राख और जीओ-पॉलिमर आधारित निर्माण सामग्री:			
	v. सिंटर्ड या कोल्ड बॉन्डेड राख एग्रीगेट का निर्माण:			
	vi. सड़कों, सड़क और फ्लाई ओवर के पुशतों का निर्माण:			
	vii. बांधों का निर्माण:			
	viii. निम्न भू-क्षेत्र का भराव:			
	ix. खनिज क्षेत्रों का भराव:			
	x. अधिभार वाले डम्पों में उपयोग:			
	xi. कृषि:			
	xii. तटीय जिलों में तटरेखा सुरक्षा संरचनाओं का निर्माण:			
	xiii. अन्य देशों को राख का निर्यात			
	xiv. अन्य (कृपया विनिर्दिष्ट करें):			
20.	सार :			
	व्यौरा	सृजित मात्रा (एमटीपी)	उपयोग की गई मात्रा (एमटीपी) और (%)	शेष मात्रा (एमटीपी)
	रिपोर्टिंग की अवधि के दौरान राख			
	पुरानी राख			
	कुल			
21.	कोई अन्य सूचना : वार्षिक अनुपालन रिपोर्ट, और विद्युत संयंत्रों और राख कुण्डों की शेष फाइलों की सॉफ्ट कॉपी ई-मेल:- moefcc- coalash@gov.in पर भेजी जाए।			
22.	प्राधिकृत हस्ताक्षरकर्ता के हस्ताक्षर			

MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE

NOTIFICATION

New Delhi, the 31st December, 2021

S.O. 5481(E).—Whereas by notification of the Government of India in the erstwhile Ministry of Environment and Forests *vide* S.O.763 (E), dated the 14th September, 1999, as amended from time to time, the Central Government, issued directions for restricting the excavation of top soil for manufacturing of bricks and promoting the utilisation of fly ash in the manufacturing of building materials and in construction activity within a specified radius of three hundred kilometres from the coal or lignite based thermal power plants;

And whereas, to implement the aforesaid notification more effectively based on the polluter pays principle (PPP) thereby ensuring 100 per cent utilisation of fly ash by the coal or lignite based thermal power plants and for the sustainability of the fly ash management system, the Central Government reviewed the existing notification; and whereas environmental compensation needs to be introduced based on the polluter pays principle;

And whereas, there is a need to conserve top soil by promoting manufacture and mandating use of ash based products and building materials in the construction sector;

And whereas, there is a need to conserve top soil and natural resources by promoting utilisation of ash in road laying, road and flyover embankments, shoreline protection measures, low lying areas of approved projects, backfilling of mines, as an alternative for filling of earthen materials;

And whereas, it is necessary to protect the environment and prevent the dumping and disposal of fly ash discharged from coal or lignite based thermal power plants on land;

And whereas, in the said notification the phrase 'ash', has been used which includes both fly ash as well as bottom ash generated from the Coal or Lignite based thermal power plants;

And whereas, the Central Government intends to bring out a comprehensive framework for ash utilisation including system of environmental compensation based on polluter pays principle;

And whereas, a draft notification on ash utilisation by coal or lignite thermal power plants in supersession of the notification of the Government of India, Ministry of Environment and Forests published in the Gazette of India, Extra Ordinary part II, section 3, sub-section (i) *vide* S.O.763 (E), dated the 14th September, 1999, by notification in exercise of the powers conferred under sub-section (1) and clause (v) of sub-section (2) of section 3 of the Environment (Protection) Act, 1986 (29 of 1986) read with clause (d) of sub-rule (3) of rule (5) of the Environment (Protection) Rules, 1986, was published in the Gazette of India, Extraordinary, Part II, section 3, sub-section (i), *vide* G.S.R. 285(E), dated the 22nd April, 2021 inviting objections and suggestions from all persons likely to be affected thereby before the expiry of sixty days from the date on which copies of the Gazette containing the said draft provisions were made available to the public;

And, whereas all the objections and suggestions received from all persons likely to be affected thereby in respect of the said draft notification have been duly considered by the Central Government;

Now, therefore, in exercise of the powers conferred by sub-section (1) and clause (v) of sub-section (2) of section 3 of the Environment (Protection) Act, 1986 (29 of 1986) read with clause (d) of sub-rule (3) of rule (5) of the Environment (Protection) Rules, 1986, and in supersession of the Notification S.O.763 (E), dated the 14th September, 1999 except as respect things done or omitted to be done before such supersession, the Central Government hereby issues the following notification on ash utilisation from coal or lignite thermal power plants which shall come into force on the date of the publication of this notification, namely:-

A. Responsibilities of thermal power plants to dispose fly ash and bottom ash.—

- (1) Every coal or lignite based thermal power plant (including captive or co-generating stations or both) shall be primarily responsible to ensure 100 per cent utilisation of ash (fly ash, and bottom ash) generated by it in an eco-friendly manner as given in sub-paragraph (2);
- (2) The ash generated from coal or lignite based thermal power plants shall be utilised only for the following eco-friendly purposes, namely:-
 - (i) Fly ash based products viz. bricks, blocks, tiles, fibre cement sheets, pipes, boards, panels;
 - (ii) Cement manufacturing, ready mix concrete;
 - (iii) Construction of road and fly over embankment, Ash and Geo-polymer based construction material;
 - (iv) Construction of dam;
 - (v) Filling up of low lying area;
 - (vi) Filling of mine voids;
 - (vii) Manufacturing of sintered or cold bonded ash aggregate;
 - (viii) Agriculture in a controlled manner based on soil testing;
 - (ix) Construction of shoreline protection structures in coastal districts;

- (x) Export of ash to other countries;
- (xi) Any other eco-friendly purpose as notified from time to time.
- (3) A committee shall be constituted under the chairmanship of Chairman, Central Pollution Control Board (CPCB) and having representatives from Ministry of Environment, Forest and Climate Change (MoEFCC), Ministry of Power, Ministry of Mines, Ministry of Coal, Ministry of Road Transport and Highways, Department of Agricultural Research and Education, Institute of Road Congress, National Council for Cement and Building Materials, to examine and review and recommend the eco-friendly ways of utilisation of ash and make inclusion or exclusion or modification in the list of such ways as mentioned in Sub-paragraph (2) based on technological developments and requests received from stakeholders. The committee may invite State Pollution Control Board or Pollution Control Committee, operators of thermal power plants and mines, cement plants and other stakeholders as and when required for this purpose. Based on the recommendations of the Committee, Ministry of Environment, Forest and Climate Change (MoEFCC) may publish such eco-friendly purpose.
- (4) Every coal or lignite based thermal power plant shall be responsible to utilise 100 per cent ash (fly ash and bottom ash) generated during that year, however, in no case shall utilisation fall below 80 per cent in any year, and the thermal power plant shall achieve average ash utilisation of 100 per cent in a three years cycle:

Provided that the three years cycle applicable for the first time is extendable by one year for the thermal power plants where ash utilisation is in the range of 60-80 per cent, and two years where ash utilisation is below 60 per cent and for the purpose of calculation of percentage of ash utilisation, the percentage quantity of utilisation in the year 2021- 2022 shall be taken into account as per the table below:

Utilisation percentages of thermal power plants	First compliance Cycle to meet 100 per cent utilisation	Second compliance cycle onwards, to meet 100 per cent utilisation
>80 per cent	3 years	3 years
60-80 per cent	4 years	3 years
<60 per cent	5 years	3 years

Provided further that the minimum utilisation percentage of 80 per cent shall not be applicable to the first year and first two years of the first compliance cycle for the thermal power plants under the utilisation category of 60-80 per cent and <60 per cent, respectively.

Provided also that 20per cent of ash generated in the final year of compliance cycle may be carried forward to the next cycle which shall be utilised in the next three years cycle along with the ash generated during that cycle.

- (5) The unutilised accumulated ash i.e. legacy ash, which is stored before the publication of this notification, shall be utilised progressively by the thermal power plants in such a manner that the utilization of legacy ash shall be completed fully within ten years from the date of publication of this notification and this will be over and above the utilisation targets prescribed for ash generation through current operations of that particular year:

Provided that the minimum quantity of legacy ash in percentages as mentioned below shall be utilised during the corresponding year and the minimum quantity of legacy ash is to be calculated based on the annual ash generation as per installed capacity of thermal power plant.

Year from date of publication	1 st	2 nd	3 rd -10 th
Utilisation of legacy ash (in percentage of Annual ash)	At least 20 per cent	At least 35 per cent	At least 50 per cent

Provided further that the legacy ash utilisation shall not be required where ash pond or dyke has stabilised and the reclamation has taken place with greenbelt or plantation and the concerned State Pollution Control Board shall certify in this regard. Stabilisation and reclamation of an ash pond or dyke including certification by the Central Pollution Control Board (CPCB) or State Pollution Control Board (SPCB) or Pollution Control Committee (PCC) shall be carried out within a year from the date of publication of this notification. The ash remaining in all other ash ponds or dykes shall be utilised in progressive manner as per the above mentioned timelines.

Note: The obligations under sub-paragraph (4) and (5) above for achieving the ash utilisation targets shall be applicable from 1st April, 2022.

- (6) Any new as well as operational thermal power plant may be permitted an emergency or temporary ash pond with an area of 0.1 hectare per Mega Watt (MW). Technical specifications of ash ponds or dykes shall be as per the guidelines of Central Pollution Control Board (CPCB) made in consultation with Central Electricity Authority (CEA) and these guidelines shall also lay down a procedure for annual certification of the ash pond or dyke on its safety, environmental pollution, available volume, mode of disposal, water consumption or conservation in disposal, ash water recycling and greenbelt, etc., and shall be put in place within three months from the date of publication of this notification.
- (7) Every coal or lignite based thermal power plant shall ensure that loading, unloading, transport, storage and disposal of ash is done in an environmentally sound manner and that all precautions to prevent air and water pollution are taken and status in this regard shall be reported to the concerned State Pollution Control Board (SPCB) or Pollution Control Committee (PCC) in Annexure attached to this notification.
- (8) Every coal or lignite based thermal power plant shall install dedicated silos for storage of dry fly ash silos for at least sixteen hours of ash based on installed capacity and it shall be reported upon to the concerned State Pollution Control Board (SPCB) or Pollution Control Committee (PCC) in the Annexure and shall be inspected by Central Pollution Control Board (CPCB) or State Pollution Control Board (SPCB) or Pollution Control Committee (PCC) from time to time.
- (9) Every coal or lignite based thermal power plant (including captive or co-generating stations or both) shall provide real time data on daily basis of availability of ash with Thermal Power Plant (TPP), by providing link to Central Pollution Control Board's web portal or mobile phone App for the benefit of actual user(s).
- (10) Statutory obligation of 100 per cent utilisation of ash shall be treated as a change in law, wherever applicable.

B. For the purpose of utilisation of ash, the subsequent sub-paras shall apply.—

- (1) All agencies (Government, Semi-government and Private) engaged in construction activities such as road laying, road and flyover embankments, shoreline protection structures in coastal districts and dams within 300 kms from the lignite or coal based thermal power plants shall mandatorily utilise ash in these activities:

Provided that it is delivered at the project site free of cost and transportation cost is borne by such coal or lignite based thermal power plants.

Provided further that thermal power plant may charge for ash cost and transportation as per mutually agreed terms, in case thermal power plant is able to dispose the ash through other means and those agencies makes a request for it and the provisions of ash free of cost and free transportation shall be applicable, if thermal power plant serves a notice on the construction agency for the same.

- (2) The utilisation of ash in the said activities shall be carried out in accordance with specifications and guidelines laid down by the Bureau of Indian Standards, Indian Road Congress, Central Building Research Institute, Roorkee, Central Road Research Institute, Delhi, Central Public Works Department, State Public Works Departments and other Central and State Government Agencies.

- (3) It shall be obligatory on all mines located within 300 kilometres radius of thermal power plant, to undertake backfilling of ash in mine voids or mixing of ash with external Overburden dumps, under Extended Producer Responsibility (EPR). All mine owners or operators (Government, Public and Private Sector) within three hundred kilometres (by road) from coal or lignite based thermal power plants, shall undertake measures to mix at least 25 per cent of ash on weight to weight basis of the materials used for external dump of overburden, backfilling or stowing of mine (running or abandoned as the case may be) as per the guidelines of the Director General of Mines Safety (DGMS):

Provided that such thermal power stations shall facilitate the availability of required quantity of ash by delivering ash free of cost and bearing the cost of transportation or cost of transportation arrangement decided on mutually agreed terms and mixing of ash with overburden in mine voids and dumps shall be applicable for the overburden generated from the date of publication of this notification and the utilisation of ash in the said activities shall be carried out in accordance with guidelines laid down by the Central Pollution Control Board, Director General of Mines Safety and Indian Bureau of Mines.

Explanation.- For the purpose of this sub-paragraph, it is also clarified that the provisions of ash free of cost and free transportation shall be applicable, if thermal power plants serve a notice on the mine owner for the same and the mandate of using 25 per cent of ash for mixing with overburden dump and filling up of mine voids shall not be applicable unless a notice is served on the mine owner by thermal power plant.

- (4) (i) All mine owners shall get mine closure plans (progressive and final) to accommodate ash in the mine voids and the concerned authority shall approve mine plans for disposal of ash in mine voids and mixing of ash with overburden dumps. The Ministry of Environment, Forest and Climate Change (MoEFCC) has issued guidelines on 28th August, 2019 regarding exemption of requirement of Environmental Clearance of thermal power plants and coal mines along with the guidelines to be followed for such disposal.
- (ii) The Ministry in consultation with Central Pollution Control Board (CPCB), Director General of Mine Safety (DGMS) and Indian Bureau of Mines (IBM) may issue further guidelines time to time to facilitate ash disposal in mine voids and mixing with overburden dumps and it shall be the responsibility of mine owners to get the necessary amendments or modifications in the permissions issued by various regulatory authorities within one year from the date of identification of such mines.
- (5) (i) There shall be a committee headed by Chairperson, Central Pollution Control Board (CPCB) with representatives from Ministry of Environment, Forest and Climate Change, Ministry of Power, Ministry of Mines, Ministry of Coal, Director General of Mine Safety and Indian Bureau of Mines for identification of mines for backfilling of mine voids with ash or mixing of ash with overburden dump including examination of safety, feasibility (not economic feasibility) and aspects of environmental contamination and the committee shall get updated quarterly reports prepared regarding identified mines (both underground and opencast) for the stakeholder Ministries or Departments and the committee shall start identifying the suitable mines immediately after the publication of this notification.
- (ii) Thermal power plants or mines shall not wait for disposal of ash till the identification is done by the above mentioned committee, to meet the utilisation targets mandated as above.
- (6) Filling of low lying areas with ash shall be carried out with prior permission of the State Pollution Control Board or Pollution Control Committee for approved projects, and in accordance with guidelines laid down by Central Pollution Control Board (CPCB) and the State Pollution Control Board or Pollution Control Committee (PCC) shall publish approved sites, location, area and permitted quantity annually on its website.
- (7) Central Pollution Control Board after engaging relevant stakeholders, shall put in place the guidelines within one year for all types of activities envisaged under this notification including putting in place time bound online application process for the grant permission by State Pollution Control Boards (SPCBs) or Pollution Control Committees (PCCs).

- (8) All building construction projects (Central, State and Local authorities, Govt. undertakings, other Govt. agencies and all private agencies) located within a radius of three hundred kilometres from a coal or lignite based thermal power plant shall use ash bricks, tiles, sintered ash aggregate or other ash based products, provided these are made available at prices not higher than the price of alternative products.
- (9) Manufacturing of ash based products and use of ash in such products shall be in accordance with specifications and guidelines laid down by the Bureau of Indian Standards, Indian Road Congress, and Central Pollution Control Board.

C. Environmental compensation for non-compliance.—

- (1) In the first two years of a three years cycle, if the coal or lignite based thermal power plant (including captive or co-generating stations or both) has not achieved at least 80 per cent ash (fly ash and bottom ash) utilisation, then such non-compliant thermal power plants shall be imposed with an environmental compensation of Rs. 1000 per ton on unutilised ash during the end of financial year based on the annual reports submitted and if it is unable to utilise 100 per cent of ash in the third year of the three years cycle, it shall be liable to pay an environmental compensation of Rs. 1000 per ton on the unutilised quantity on which environmental compensation has not been imposed earlier:

Provided that the environmental compensation shall be estimated and imposed at the end of last year of the first compliance cycle as per the various utilisation categories as mentioned in sub-paragraph (4) of Para A.

- (2) Environmental compensation collected by the authorities shall be deposited in the designated account of Central Pollution Control Board.
- (3) In case of legacy ash, if the coal or lignite based thermal power plant (including captive or co-generating stations or both) has not achieved utilisation equivalent to at least 20 per cent (for the first year), 35 per cent (for the second year), 50 per cent (for third to tenth year) of ash generated based on installed capacity, an environmental compensation of Rs. 1000 per ton of unutilised legacy ash during that financial year shall be imposed and if the utilization of legacy ash is not completed at the end of 10 years, an environmental compensation of Rs.1000 per ton shall be imposed on the remaining unutilised quantity which has not been imposed earlier.
- (4) It shall be the responsibility of the transporters or vehicle owner to deliver ash to authorised purchaser or user agency and if it is not complied, then an environmental compensation of Rs. 1500 per ton on such quantity as mis-delivered to unauthorised users or non- delivered to authorised users will be imposed besides prosecution of such non-compliant transporters by State Pollution Control Board (SPCB) or Pollution Control Committee (PCC).
- (5) It is the responsibility of the purchasers or user agencies to utilise ash in an eco-friendly manner as laid down at para B of this notification and if it is not complied, then an environmental compensation of Rs. 1500 per ton shall be imposed by State Pollution Control Board (SPCB) or Pollution Control Committee (PCC).
- (6) If the user agencies do not utilise ash to the extent obligated under para B or the extent to which they have been intimated through Notice(s) served under sub-paragraph (1) of para D, whichever is lower, they shall be liable to pay Rs. 1500 per ton of ash for the quantity they fall short off:

Provided that the environmental compensation on building constructions shall be levied at Rs.75/- per square feet of built up area of construction.

- (7) (i) The environmental compensation collected by Central Pollution Control Board from the thermal power plants and other defaulters shall be used towards the safe disposal of the unutilised ash and the fund may also be utilised for advancing research on use of ash including ash based products.

(ii) The liability of ash utilisation shall be with thermal power plants even after imposition of environmental compensation on unutilised quantities and in case thermal power plant achieves the ash utilisation of any

particular cycle after imposition of environmental compensation in subsequent cycles, the said amount shall be returned to thermal power plant after deducting 10 per cent of the environmental compensation collected on the unutilised quantity during the next cycle and deduction of 20 per cent, 30 per cent, and so on, of the environmental compensation collected is to be made in case of utilisation of ash in subsequent cycles.

D. Procedure for supply of ash or ash based products.—

- (1) The owner of thermal power plants or manufacturers of ash bricks or tiles or sintered ash aggregate shall serve written notice to persons or agencies who are liable to utilise ash or ash based products, offering for sale, or transport or both.
- (2) Persons or user agencies who have been served notices by owner of thermal power plants or manufacturers of ash bricks or tiles or sintered ash aggregate, if they have already tied up with other agencies for the purpose of utilisation of ash or ash products, shall inform the thermal power plant accordingly, if they cannot use any ash or ash products or use reduced quantity.

E. Enforcement, Monitoring, Audit and Reporting.—

- (1) The Central Pollution Control Board (CPCB) and the concerned State Pollution Control Board (SPCB) or Pollution Control Committee (PCC) shall be the enforcing and monitoring authority for ensuring compliance of the provisions and shall monitor the utilisation of ash on quarterly basis. Central Pollution Control Board shall develop a portal for the purpose within six months of date of publication of the notification. The concerned District Magistrate shall have concurrent jurisdiction for enforcement and monitoring of the provisions of this notification.
- (2) (i) Thermal power plants shall upload monthly information regarding ash generation and utilisation by 5th of the next month on the web portal. Annual implementation report (for the period 1st April to 31st March) providing information about the compliance of provisions in this notification shall be submitted by the 30th day of April, every year to the Central Pollution Control Board, concerned State Pollution Control Board or Pollution Control Committee (PCC), Central Electricity Authority (CEA), and concerned Integrated Regional Office of Ministry of Environment, Forest and Climate Change by the coal or lignite based thermal power plants. Central Pollution Control Board and Central Electricity Authority shall compile the annual reports submitted by all the thermal power plants and submit to Ministry of Environment, Forest and Climate Change by 31st May.

(ii) All other user agencies shall submit consumption or utilisation or disposal of ash and use of ash based products as mandated in this notification in the compliance report of Environmental Clearance (EC) issued by Ministry of Environment, Forest and Climate Change or State Level Environment Impact Assessment Authority (SEIAA) or Consent to Operate (CTO) issued by State Pollution Control Board (SPCB) or Pollution Control Committee (PCC), whichever is applicable. The Central Pollution Control Board (CPCB) or State Pollution Control Board (SPCB) or Pollution Control Committee (PCC) shall publish annual report of ash utilisation of all other agencies except thermal power plants to review the effective implementation of the provisions of the notification.
- (3) For the purpose of monitoring the implementation of the provisions of this notification, a committee shall be constituted under the Chairperson, Central Pollution Control Board (CPCB), with members from Ministry of Power, Ministry of Coal, Ministry of Mines, Ministry of Environment, Forest and Climate Change, Ministry Road Transportation and Highways, Department of Heavy Industry as well as any concerned stakeholder(s), to be nominated by the Chairman of the committee. The committee may make recommendations for effective and efficient implementation of the provisions of the notification. The committee shall meet at least once in six months and review annual implementation reports and the committee shall also hold stakeholder consultations for monitoring of ash utilisation as mandated by this notification by inviting relevant stakeholder(s) at least once in six months. The committee shall submit the six monthly report to Ministry of Environment, Forest and Climate Change (MoEFCC).

- (4) For the purpose of resolving disputes between thermal power plants and users of ash or manufacturer of ash based products, the State Governments or Union territory administration constitute a Committee within three months from the date of publication of this notification under the Chairman, State Pollution Control Board (SPCB) or Pollution Control Committee (PCC) with representatives from Department of Power, and one representative from the Department which deals with the subject of concerned agency with which dispute is made.
- (5) The compliance audit for ash disposal by the thermal power plants and the user agency shall be conducted by auditors, authorised by Central Pollution Control Board (CPCB) and audit report shall be submitted to Central Pollution Control Board (CPCB) and concerned State Pollution Control Board (SPCB) or Pollution Control Committee (PCC) by 30th November every year. Central Pollution Control Board (CPCB) and concerned State Pollution Control Board (SPCB) or Pollution Control Committee (PCC) shall initiate action against non-compliant thermal power plants within fifteen days of receipt of audit report.

[F. No. HSM-9/1/2019-HSM]

NARESH PAL GANGWAR, Jt. Secy.

AnnexureAsh Compliance Report (for the period 1st April-31st March) to be submitted on or before 31st May.

Sl. No.	Details	
1.	Name of Power Plant	
2.	Name of the company	
3.	District	
4.	State	
5.	Postal address for communication:	
6.	E-mail:	
7.	Power Plant installed capacity (MW):	
8.	Plant Load Factor (PLF):	
9.	No. of units generated (MWh):	
10.	Total area under power plant (ha): (including area under ash ponds)	
11.	Quantity of coal consumption during reporting period (Metric Tons per Annum):	
12.	Average ash content in percentage (per cent):	
13.	Quantity of current ash generation during reporting period (Metric Tons per Annum): Fly ash (Metric Tons per Annum): Bottom ash (Metric Tons per Annum):	
14.	Capacity of dry fly ash storage silo(s) (Metric Tons) :	
15.	Details of utilisation of current ash generated during reporting period (a) Total quantity of current ash utilised (MTPA) during reporting period: (b) Quantity of fly ash utilised (MTPA): (i) Fly ash based products (bricks or blocks or tiles or fibre cement sheets or pipes or boards or panels) (ii) Cement manufacturing:	

	<ul style="list-style-type: none"> (iii) Ready mix concrete: (iv) Ash and Geo-polymer based construction material: (v) Manufacturing of sintered or cold bonded ash aggregate: (vi) Construction of roads, road and fly over embankment: (vii) Construction of dams: (viii) Filling up of low lying area: (ix) Filling of mine voids: (x) Use in overburden dumps: (xi) Agriculture: (xii) Construction of shoreline protection structures in coastal districts; (xiii) Export of ash to other countries: (xiv) Others (please specify): <p>(c) Quantity of bottom ash utilised (MTPA):</p> <ul style="list-style-type: none"> (i) Fly ash based products (bricks or blocks or tiles or fibre cement sheets or pipes or boards or panels): (ii) Cement manufacturing: (iii) Ready mix concrete: (iv) Ash and Geo-polymer based construction material: (v) Manufacturing of sintered or cold bonded ash aggregate: (vi) Construction of roads, road and flyover embankment: (vii) Construction of dams: (viii) Filling up of low lying area: (ix) Filling of mine voids: (x) Use in overburden dumps: (xi) Agriculture: (xii) Construction of shoreline protection structures in coastal districts: (xiii) Export of ash to other countries: (xiv) Others (please specify): <p>Total quantity of current ash unutilised (MTPA) during reporting period:</p>	
16.	Percentage utilisation of current ash generated during reporting period (per cent):	
17.	<p>Details of disposal of ash in ash ponds</p> <p>(a) Total quantity of ash disposed in ash pond(s) (Metric Tons) as on 31st March (excluding reporting period):</p> <p>(b) Quantity of ash disposed in ash pond(s) during reporting period (Metric Tons):</p> <p>(c) Total quantity of water consumption for slurry discharge into ash ponds during reporting period (m³):</p> <p>(d) Total number of ash ponds:</p> <ul style="list-style-type: none"> (i) Active: (ii) Exhausted (yet to be reclaimed): (iii) Reclaimed: <p>(e) total area under ash ponds (ha):</p>	
18.	<p>Individual ash pond details</p> <p><i>Ash pond-1,2, etc (please provide below mentioned details separately, if number of ash ponds is more than one)</i></p> <p>(a) Status: Under construction or Active or Exhausted or</p>	

	<p>Reclaimed</p> <p>(b) Date of start of ash disposal in ash pond (DD/MM/YYYY or MMYYYY):</p> <p>(c) Date of stoppage of ash disposal in ash pond after completing its capacity (DD/MM/YYYY or MM/YYYY): (Not applicable for active ash ponds)</p> <p>(c) area (hectares):</p> <p>(d) dyke height (m):</p> <p>(d) volume (m³):</p> <p>(e) quantity of ash disposed as on 31st March (Metric Tons):</p> <p>(f) available volume in percentage (per cent) and quantity of ash can be further disposed (Metric Tons):</p> <p>(g) expected life of ash pond (number of years and months):</p> <p>(e) co-ordinates (Lat and Long): (please specify minimum 4 co-ordinates)</p> <p>(f) type of lining carried in ash pond: HDPE lining or LDPE lining or clay lining or No lining</p> <p>g) mode of disposal: Dry disposal or wet slurry (in case of wet slurry please specify whether HCSD or MCSD or LCSD)</p> <p>(h) Ratio of ash: water in slurry mix (1:___):</p> <p>(i) Ash water recycling system (AWRS) installed and functioning: Yes or No</p> <p>(j) Quantity of wastewater from ash pond discharged into land or water body (m3):</p> <p>(k) Last date when the dyke stability study was conducted and name of the organisation who conducted the study:</p> <p>(l) Last date when the audit was conducted and name of the organisation who conducted the audit:</p>									
19.	<p>Quantity of legacy ash utilised (MTPA):</p> <ol style="list-style-type: none"> i. Fly ash based products (bricks or blocks or tiles or fibre cement sheets or pipes or boards or panels): ii. Cement manufacturing: iii. Ready mix concrete: iv. Ash and Geo-polymer based construction material: v. Manufacturing of sintered or cold bonded ash aggregate: vi. Construction of roads, road and flyover embankment: vii. Construction of dams: viii. Filling up of low lying area: ix. Filling of mine voids: x. Use in overburden dumps: xi. Agriculture: xii. Construction of shoreline protection structures in coastal districts; xiii. Export of ash to other countries: xiv. Others (please specify): 									
20.	<table border="1"> <tr> <td colspan="4" data-bbox="268 1937 1436 1982">Summary:</td> </tr> <tr> <td data-bbox="268 1982 566 2054">Details</td> <td data-bbox="566 1982 869 2054">Quantity generated (MTP)</td> <td data-bbox="869 1982 1157 2054">Quantity utilised (MTP) and (per cent)</td> <td data-bbox="1157 1982 1436 2054">Balance quantity (MTP)</td> </tr> </table>	Summary:				Details	Quantity generated (MTP)	Quantity utilised (MTP) and (per cent)	Balance quantity (MTP)	
Summary:										
Details	Quantity generated (MTP)	Quantity utilised (MTP) and (per cent)	Balance quantity (MTP)							

	Current ash during reporting period			
	Legacy ash			
	Total			
21.	Any other information: Soft copy of the annual compliance report, and shape files of power plant and ash ponds may be e-mailed to:- moefcc-coalash@gov.in			
22.	Signature of Authorised Signatory			

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From: Aditya Narayan Singh <aditya.narayan@nic.in>

Sent: 23 July 2019 16:14

To: praneshkumar@ntpc.co.in; pradeepkumar06@ntpc.co.in; sanjay.jain@lancogroup.com; manojkumar.panda@lancogroup.com; cegenchandrapur@mahagenco.in; envcellcstps@mahagenco.in; vijay.yeul@gmail.com; exechemistkpkd@gmail.com; cegenkpkd@mahagenco.in; cegenkoradi@mahagenco.in; cgmparas@mahagenco.in; exechemparas@rediffmail.com; cgmparas@rediffmail.com; Santosh.dubey@hpppl.in; kishor.bhardwaj@hpppl.in; Kishore Babu Kolla <kishorebabu.kolla@sembcorp.com>; Raghunatha Shetty K <raghunath.shetty@sembcorp.com>; Pavan Kumar Rao Vemulapalli <pavan.vemulapalli@sembcorp.com>; susobhan.patra@rp-sg.in; avijit.hazra@rp-sg.in; avijit.hazra@rp-sg.in; debanjan.basak@rp-sg.in; Kaushik.chaudhuri@rp-sg.in; avijit.hazra@rp-sg.in; Rp.mali@vedanta.co.in; ASP.Mishra@vedanta.co.in; Sandeep.jain@essar.com; rajmohan.t@essarpower.co.in

Cc: m.gangeya@gov.in

Subject: Urgent : Submission of action plan to achieve 100% fly ash utilization by the TPPs -reg.

F. No. 11/3/2018- HSMD

Government of India

Ministry of Environment, Forest and Climate Change

(HSM Division)

Indira Paryavaran Bhawan

Jorbagh Road

New Delhi- 110 003

Date: 23rd July, 2019

Office Memorandum

Subject: Action plan to achieve 100% fly ash utilization by the TPPs -reg.

This has in reference to the meeting of Joint Committee (JC) under the Chairmanship of Shri Ritesh Kumar Singh, Joint Secretary, MoEF&CC held on 17th - 18th July, 2019 at Indira Paryavaran Bhawan, Jorbagh Road, Aliganj, New Delhi-110003 to discuss the action plan to achieve 100% fly ash utilization by the TPPs. During the meeting, it was decided that TPPs which have not attended the said meeting and also not submitted the action plan to achieve

100 % fly ash utilization of their TPPs should be communicated to submit the action plan as per enclosed format by 26th July, 2019.

2. It is, therefore, requested to kindly submit the action plan of 100 % fly ash utilization of your TPPs to the Ministry latest by 26th July, 2019.

(A. N. Singh)

Scientist 'E'/Additional Director

24695325 (O)

To:

- (i) TPPs (As per List)

Copy to :

- i) PS to Joint Secretary (HSMD)
- ii) PS to Director (HSMD)

List of Thermal Power Plants (not attended meeting on 17.07.2019 and 18.07.2019)

Sl. No.	Power Utility	Name of TPS
1	Bharatiya Rail Bijlee Company Limited (Bihar)	NABINAGAR
2	LANCO AMARKANTAK POWER LIMITED (Chhattisgarh)	AMARKANTAK TPS
3	M.P.P.G.C.L. (Maharashtra)	CHANDRAPUR
		KHAPARKHEDA
		KORADI
		PARAS
		ANUPPUR TPS
4	SEMBCORP ENERGY INDIA Ltd. (Formerly Thermal Powertech Corporation India Ltd) (Andhra Pradesh)	SEMBCORP ENERGY INDIA Ltd.
5	CESC Limited, Eastern Building, 4th Floor, 15/1, Chowringhee Square, Kolkata-700 069	
6	M/s Vedanta Ltd. Jharsuguda, Odisha	
7	Essar Power MP Ltd	
8	JHPL (Haryana)	MAHATMA GANDHI

Sl. No.	Power Utility	Name of TPS
9	LALITPUR POWER GENERATION COMPANY LIMITED (UP)	LALITPUR
10	NLC LTD. (Tamil Nadu)	NEYVELI -I
11	PRAYAGRAJ POWER GENERATION COPMANY LTD. (U.P)	PRAYAGRAJ TPS
12	SPECTRUM COAL & POWER LTD	RATIZA TPS

	(Chhattisgarh)	
13	T.S.G.E.N.C.O (Telangana)	KAKATIA (Stage-I)
14	TENUGHAT VIDHYUT NIGAM LIMITED (Jharkhand)	TENUGHAT TPS
15	TALWANDI SABO POWER LTD (PUNJAB)	M/s TALWANDI SABO POWER LTD
16	TSPGCL (Telangana)	KOTHAGUDEM-VI
17	DPL (West Bengal).	D.P.P.S.
18	Dhariwal Infrastructure Ltd. (Maharashtra)	DHARIWAL INFRASTRUCTURE Ltd.
19	JSW Energy Limited (Karnataka)	VIJAYANAGAR
20	JINDAL INDIA THERMAL POWER LIMITED (Odisha)	DERANG TPP
21	NLC LTD (Tamilnadu)	NEYVELI-I EXPN
22	R.K.M. POWERGEN PVT. LTD (PGCIL) Chhattisgarh)	UNCHHPINDA
23	RATTANINDIA POWER LTD. (Maharashtra)	AMRAVATI TPS
24	TAQA NEYVELLY POWER CO. PVT. LTD. (Tamil Nadu)	CUDDALORE
25	Bilt Graphic Paper Products Ltd, Paudwadi, Bhigwan, Indapur, Pune, Maharashtra	
26	NLC Tamil Nadu Power Limited, Tuticorin, Tamil Nadu.	
27	DR. NTR (Vijawada)	

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Format for Ash Utilisation Action Plan

1. Name of the Unit:
2. Power Generation Capacity:
3. Fly ash generation and utilisation in previous two years (2017-18 and 2018-19):
4. Fly Ash Utilisation Action Plan (quarter wise) * 2019-20 and 2020-21:

S.N.	Description	Unit	Q1	Q2	Q3	Q4	Total Fly Ash Utilisation in FY 2019-20
A	Ash Generation (Fly Ash + Bed Ash)	MT					
B	Ash Utilisation	MT					
i)	Brick Manufacturing	MT					
ii)	Ready Mix Concrete	MT					
iii)	Low Lying area filling/ Area Development	MT					
iv)	Road Construction	MT					
v)	Filling of abandoned stone quarry	MT					
vi)	Mines void filling	MT					
vii)	Agriculture Utilisation	MT					
viii)	If any other area (specify)	MT					
	Total Ash Utilisation	MT					
C	Ash Utilisation percentage	%					

Name of the Authorised Person:.....

Signature:.....

E-mail id :

Phone no. :

***Note :**

TPPs having fly ash utilisation less than 85 % will be given two years time period and TPPs having utilisation more than 85% will be given one year time period to achieve 100 % fly ash utilisation.

Item No. 06

Court No. 1

**BEFORE THE NATIONAL GREEN TRIBUNAL
PRINCIPAL BENCH, NEW DELHI**

M.A. No. 1798/2018, M.A. No. 1799/2018,
M.A. No. 1802/2018 & M.A. No. 1803/2018

IN

Original Application No. 117/2014

Shantanu Sharma

Applicant(s)

Versus

Union of India & Ors.

Respondent(s)

Date of hearing: 03.01.2019

**CORAM: HON'BLE MR. JUSTICE ADARSH KUMAR GOEL, CHAIRPERSON
HON'BLE MR. JUSTICE S.P. WANGDI, JUDICIAL MEMBER
HON'BLE MR. JUSTICE K. RAMAKRISHNAN, JUDICIAL MEMBER
HON'BLE DR. NAGIN NANDA, EXPERT MEMBER**

For Applicant(s): Mr. A.R. Takkar, Mr. Nishtha Kumar, Mr. Sondesh Shrivastava, Mr. Amarjeet, Ms. Shriya Takkar and Mr. Vikas Maini, Advocates
Mr. Deepak Anand, Advocate

ORDER

M.A. No. 1798/2018

1. These applications seek recall of order of this Tribunal dated 20.11.2018. By the said order, this Tribunal directed compliance of notification issued by MoEF&CC on 25.01.2016 requiring 100% utilization of fly ash upto 31.12.2017. With a view to comply with the said notification, a Committee of representatives of MoEF&CC, CPCB, IIT Roorkee and any other Members considered necessary by MoEF&CC was directed to be constituted to ensure scientific disposal of fly ash and to determine amount of damages for environment restoration to be paid for violation of the statutory norms. Pending submission of the report of the Committee, the thermal power stations who have failed to comply with the norms were required to pay such damages.

2. Grievance in this application is the applicant M/s MB Power (Madhya Pradesh) Ltd. was commissioned on 07.04.2016, though Environmental Clearance (EC) was granted on 28.05.2010. As per notification of the Ministry of Environment and Forest & Climate Change (MoEF&CC) dated 03.11.2009, five years time is available for 100% utilization of fly ash from the date of commissioning. As per EC dated 28.05.2010 also, five years time is available for utilisation of fly ash from the date of commission.

3. We are of the view that the notification dated 25.01.2016 supersedes the notification dated 03.11.2009 or the EC dated 28.05.2010, being later and requirement to utilise fly ash by 31.12.2017 applies to units covered by 2009 notification or 2010 E.C. irrespective of date of commissioning. The earlier notification or EC conditions are subject to any notification which may be issued from time to time in exercise of power under Environment (Protection) Act, 1986. The notification dated 25.01.2016 reads the following amendments:

“1 to 4...xx.....xx.....xx

5. The time period to comply with the above provisions by all concerned authorities is 31st December, 2017. The coal or lignite based thermal power plants shall comply with the above provision in addition to 100% utilization of fly ash generated by them before 31st December, 2017.”

4. Key to understand the object of the notification dated 25.01.2016 is the recital in the notification dated 25.03.2015 inviting objections and suggestions to the notification which finally led to the notification dated 25.01.2016, proposing deadline of 31.12.2017 as the terminus point for requiring 100% utilization of fly ash. The said recital is as follows:

“And whereas, it is observed that the thermal power plants are yet to achieve the target of hundred percent utilisation of fly ash and the unutilised fly ash quantum is continuously increasing;
And whereas, it is observed that the construction agencies are not using fly ash and fly ash based products in their construction projects;

And whereas, it is felt that there is an urgent need to provide additional measures for utilization of fly ash and fly ash based products in the country;

And whereas the issue has been examined by the Government of India in the Ministry of Environment and Forests and the Central Government is of the opinion that the said notification needs to be amended;”

Thus, the submission that the notification dated 25.01.2016 is not applicable to the units commissioned within less than five years prior to 31.12.2017 on account of 2009 notification or 2010 E.C. cannot be accepted

5. We have also heard the learned counsel for Association of Power Producers, in view of the order passed by Hon'ble Supreme Court on 13.12.2018 in *Diary No. 46100/2018* in the matter of *Association of Power Producers v. Sandplast (India) Ltd. & Ors.* The fact remains that applicants are covered by the notification issued by MoEF&CC on 25.01.2016 requiring the applicants and other thermal power plants to dispose of fly ash within the specified time. The said notification is not under challenge. In this view of the matter, we do not find any ground not to apply the directions of this Tribunal to similar power plants represented by the Association of Power Producers.
6. We thus, do not find any merit in these Misc. Applications and the same are accordingly dismissed.

Adarsh Kumar Goel, CP

S.P. Wangdi, JM

K. Ramakrishnan, JM

Dr. Nagin Nanda, EM

January 03, 2019
M.A. No. 1798/2018, M.A. No. 1799/2018,
M.A. No. 1802/2018 & M.A. No. 1803/2018
IN
Original Application No. 117/2014
A

Format for Ash Utilisation Action Plan

1. **Name of the Unit:** Sembcorp Energy India Limited [formerly known as Thermal Powertech Corporation India Limited], Nellore, AP
2. **Power Generation Capacity:** 1320 MW [2 x 660 MW]
3. Fly ash generation and utilisation in previous two years (2017-18 and 2018-19):

Year	Total Ash Generation	Total Ash Utilization
2017-18	1250002 MT	308472 MT
2018-19	1032777 MT	778022 MT

4. Fly Ash Utilisation Action Plan (quarter wise) * 2019-20 and 2020-21:

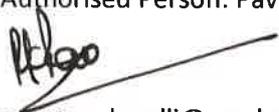
S.N.	Description	Unit	2019-20 Q1	2019-20 Q2	2019-20 Q3	2019-20 Q4	Total Fly Ash Utilisation in FY 2019- 20
A	Ash Generation (Fly Ash + Bed Ash)	MT	3,49,148	1,70,632	2,97,786	3,91,886	12,09,452
B	Ash Utilisation	MT	1,76,743	1,23,282	2,27,806	3,16,448	8,44,279
i)	Brick Manufacturing	MT	2032.9	5000	6500	8500	22,032.9
ii)	Ready Mix Concrete	MT	2161.04	6000	10000	11500	29,661.04
iii)	Low Lying area filling/ Area Development	MT	0	0	0	0	0
iv)	Road Construction	MT	0	0	0	0	0
v)	Filling of abandoned stone quarry	MT	0	0	0	0	0
vi)	Mines void filling	MT	0	0	0	0	0
vii)	Agriculture Utilisation	MT	0	0	0	0	0
viii)	If any other area (specify)						
	Cement Plants	MT	1,72,549.06	1,12,282	2,11,306	2,96,448	7,92,585.06
	Export	MT					
	Total Ash Utilisation	MT	1,76,743	1,23,282	2,27,806	3,16,448	8,44,279
C	Ash Utilisation percentage	%	51%	72%	77%	81%	70%

S.N.	Description	Unit	2020-21 Q1	2020-21 Q2	2020-21 Q3	2020-21 Q4	Total Fly Ash Utilisation in FY 2020-21
A	Ash Generation (Fly Ash + Bed Ash)	MT	3,59,625	3,09,991	3,57,206	3,87,450	14,14,272
B	Ash Utilisation	MT	3,05,682	2,63,493	3,03,625	3,29,333	12,02,133
i)	Brick Manufacturing	MT	15,000	10,000	13000	17,000	55,000
ii)	Ready Mix Concrete	MT	20,000	17,000	21000	24,000	82,000
iii)	Low Lying area filling/ Area Development	MT	0	0	0	0	0
iv)	Road Construction	MT	0	0	0	0	0
v)	Filling of abandoned stone quarry	MT	0	0	0	0	0
vi)	Mines void filling	MT	0	0	0	0	0
vii)	Agriculture Utilisation	MT	0	0	0	0	0
viii)	If any other area (specify)						
	Cement Plants	MT	2,70,682	2,36,493	2,69,625	2,88,333	10,65,133
	Export	MT					
	Total Ash Utilisation	MT	3,05,682	2,63,493	3,03,625	3,29,333	12,02,133
C	Ash Utilisation percentage	%	85%	85%	85%	85%	85%

Remarks

Currently there is no technology available to utilise bottom ash mixed with seawater. Our total ash utilisation depends up on the availability of new technology for bottom ash utilisation.

Name of the Authorised Person: Pavan Kumar Rao

Signature: 

E-mail Id: pavan.vemulapalli@sembcorp.com

Phone no. : +91 7032967480

***Note:**

TPPs having fly ash utilisation less than 85 % will be given two years' time period and TPPs having utilisation more than 85% will be given one year time period to achieve 100 % fly ash utilisation.



भारत का राजपत्र The Gazette of India

असाधारण

EXTRAORDINARY

भाग II—खण्ड 3—उप-खण्ड (ii)

PART II—Section 3—Sub-section (ii)

प्राधिकार से प्रकाशित

PUBLISHED BY AUTHORITY

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नई दिल्ली, बुधवार, जनवरी 27, 2016/माघ 7, 1937

No. 225]

NEW DELHI, WEDNESDAY, JANUARY 27, 2016/MAGHA 7, 1937

पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय

अधिसूचना

नई दिल्ली, 25 जनवरी, 2016

का.आ. 254(अ).—भारत सरकार, पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय की अधिसूचना सं. का.आ. 763(अ), तारीख 14 सितंबर, 1999 (जिसे इसमें इसके पश्चात् उक्त अधिसूचना कहा गया है) में कतिपय संशोधनों का प्रारूप, जिन्हें केन्द्रीय सरकार पर्यावरण (संरक्षण) नियम, 1986 के नियम 5 के उप-नियम (3) के खंड (घ) के साथ पठित पर्यावरण (संरक्षण) अधिनियम, 1986 (1986 का 29) की धारा 3 की उप-धारा (1) और उप-धारा (2) के खंड (v) के अंतर्गत करने का प्रस्ताव करती है, भारत के राजपत्र, असाधारण, भाग II, खंड 3, उप-खंड (ii) में अधिसूचना सं. का.आ. 1396(अ), तारीख 25 मई, 2015 द्वारा प्रकाशित किया गया था, जिसके द्वारा ऐसे सभी व्यक्तियों से, जिनके उनसे प्रभावित होने की संभावना थी, उस तारीख से, जिसको उक्त प्रारूप संशोधनों को अंतर्विष्ट करने वाली राजपत्र की प्रतियां जनता को उपलब्ध करा दी जाती हैं, साठ दिनों के अवसान से पूर्व आक्षेप और सुझाव आमंत्रित किए गए थे;

और उक्त राजपत्र की प्रतियां 25 मई, 2015 को जनता को उपलब्ध करा दी गई थी;

और उक्त प्रारूप अधिसूचना के संबंध में, ऐसे सभी व्यक्तियों से, जिनके उनसे प्रभावित होने की संभावना थी, प्राप्त सभी आक्षेपों और सुझावों पर केन्द्रीय सरकार द्वारा सम्यक् रूप से विचार कर लिया गया है;

अतः, अब, केन्द्रीय सरकार पर्यावरण (संरक्षण) नियम, 1986 के नियम 5 के उप-नियम (3) के खंड (घ) के साथ पठित पर्यावरण (संरक्षण) अधिनियम, 1986 (1986 का 29) की धारा 3 की उप-धारा (1) और उप-धारा (2) के खंड (v) द्वारा प्रदत्त शक्तियों का प्रयोग करते हुए उक्त अधिसूचना में निम्नलिखित संशोधन करती है, अर्थात् :-

1. उक्त अधिसूचना के पैरा 1 में-

- (क) उप पैरा 1(क) में "सौ किलोमीटर" शब्दों के स्थान पर "तीन सौ किलोमीटर" शब्द रखें जाएंगे;
- (ख) उप पैरा 3 में "100 कि.मी." अंकों और शब्दों के स्थान पर "तीन सौ किलोमीटर" शब्द रखें जाएंगे;
- (ग) उप पैरा 5 में "सौ किलोमीटर" शब्दों के स्थान पर "तीन सौ किलोमीटर" शब्द रखें जाएंगे;
- (घ) उप पैरा 7 में "सौ किलोमीटर" शब्दों के स्थान पर "तीन सौ किलोमीटर" शब्द रखें जाएंगे;

2. उक्त अधिसूचना के पैरा 2 में:-**(क) उप पैरा (1) के पश्चात् निम्नलिखित परंतुक अंतःस्थापित किया जाएगा, अर्थात्:-**

“परंतु यह और कि शुष्क ईएसपी फ्लाई ऐश के 20 प्रतिशत का निःशुल्क प्रदाय करने का निर्बंधन उन तापीय विद्युत संयंत्रों पर लागू नहीं होगा, जो विहित रीति में सौ प्रतिशत फ्लाई ऐश का उपयोग करने में समर्थ हैं।”

(ख) उप पैरा (7) के पश्चात् निम्नलिखित उप पैरा अंतःस्थापित किए जाएंगे, अर्थात् :-

- “(8) प्रत्येक कोयला या लिग्नाइट आधारित तापीय विद्युत संयंत्र (जिसके अंतर्गत कैपिटिव और/या सह उत्पादन केन्द्र भी हैं), अधिसूचना की तारीख से तीन मास के भीतर उनके पास उपलब्ध प्रत्येक किस्म की ऐश के स्टॉक के ब्यौरे अपनी वेबसाइट पर अपलोड करेगा और उसके पश्चात् मास में कम से कम एक बार स्टॉक की स्थिति को अद्यतन करेगा।
- (9) प्रत्येक कोयला या लिग्नाइट आधारित तापीय विद्युत संयंत्र समर्पित शुष्क ऐश साइलस प्रतिष्ठापित करेगा, जिनके पास पृथक् पहुंच मार्ग होंगे, जिससे कि फ्लाई ऐश के परिदान को सुगम बनाया जा सके।
- (10) कोयला या लिग्नाइट आधारित तापीय विद्युत संयंत्र से 100 किलोमीटर की परिधि के भीतर सड़क संनिर्माण परियोजनाओं या ऐश आधारित उत्पादों के संनिर्माण के लिए या कृषि संबंधित क्रियाकलापों में मृदा अनुकूलक के रूप में उपयोग के लिए ऐश के परिवहन की लागत ऐसे कोयला या लिग्नाइट आधारित तापीय विद्युत संयंत्र द्वारा वहन की जाएगी और 100 किलोमीटर की परिधि से परे और 300 किलोमीटर की परिधि के भीतर ऐसे परिवहन की लागत को उपयोक्ता और कोयला या लिग्नाइट आधारित तापीय विद्युत संयंत्र के बीच समान रूप से अंश भाजित की जाएगी।
- (11) कोयला या लिग्नाइट आधारित तापीय विद्युत संयंत्र अपने परिसरों के भीतर या अपने परिसरों के आस-पास ऐश आधारित उत्पाद संनिर्माण सुविधाओं का संवर्धन करेंगे, उन्हें अपनाएंगे और उनकी स्थापना करेंगे (वित्तीय और अन्य सहबद्ध अवसंरचना)।
- (12) नगरों के आस-पास बने कोयला या लिग्नाइट आधारित तापीय विद्युत संयंत्र ऐश आधारित उत्पाद विनिर्माण इकाइयों का संवर्धन करेंगे और उनकी स्थापना का समर्थन और उसमें सहायता करेंगे ताकि ईंटों और अन्य भवन संनिर्माण सामग्रियों की अपेक्षाओं की पूर्ति की जा सके और साथ ही परिवहन में कमी की जा सके।
- (13) यह सुनिश्चित करने के लिए कि किसी सड़क संनिर्माण का संविदाकार सड़क निर्माण में ऐश का उपयोग करता है, सड़क संनिर्माण के लिए संबद्ध प्राधिकारी संविदाकार को किए जाने वाले संदाय को तापीय विद्युत संयंत्र से ऐश के प्रदाय के प्रमाणीकरण के साथ जोड़ेगा।
- (14) कोयला या लिग्नाइट आधारित तापीय विद्युत संयंत्र, 300 किलोमीटर की परिधि के भीतर प्रधानमंत्री ग्रामीण सड़क योजना के अधीन सड़क संनिर्माण परियोजनाओं और भवनों, सड़कों, बांधों और तटबंधों के संनिर्माण को अंतर्वलित करने वाले सरकार के आस्ति सृजन कार्यक्रमों के स्थल तक ऐश के परिवहन की संपूर्ण लागत का वहन करेगा।”।

3. उक्त अधिसूचना के पैरा (2) के उप-पैरा (2क) को उप-पैरा (15) के रूप में पढ़ा जाए और उक्त उप-पैरा के अंत में निम्नलिखित उप-पैरा जोड़ा जाएगा, अर्थात् :-

“और तटीय जिलों में अवस्थित कोयला या लिग्नाइट आधारित तापीय विद्युत संयंत्र तटरेखा सुरक्षा उपायों का समर्थन करेंगे, उनके संनिर्माण में सहायता करेंगे या उसमें प्रत्यक्ष रूप से सम्मिलित होंगे।”

4. उक्त अधिसूचना के पैरा 3 में उप-पैरा (7) के पश्चात् निम्नलिखित अंतःस्थापित किया जाएगा, अर्थात् :-

- “(8) विभिन्न संनिर्माण परियोजनाओं का अनुमोदन करने वाले सभी राज्य प्राधिकारियों का यह उत्तरदायित्व होगा कि वे यह सुनिश्चित करें कि फ्लाई ऐश का उपयोग करने या फ्लाई ऐश आधारित उत्पादों के लिए तापीय विद्युत संयंत्रों और संनिर्माण अभिकरण या संविदाकारों के बीच परस्पर समझ ज्ञापन या कोई अन्य ठहराव किया जाता है।
- (9) राज्य प्राधिकारी, दस लाख या अधिक की जनसंख्या वाले नगरों की भवन निर्माण संबंधी उप विधियों का संशोधन करेंगे ताकि भार वहन करने वाली संरचनाओं हेतु तकनीकी अपेक्षाओं के अनुसार आवश्यक विनिर्देशों को ध्यान में रखते हुए ऐश आधारित ईंटों के आज्ञापक उपयोग को सुनिश्चित किया जा सके।

- (10) संबद्ध प्राधिकारी सभी सरकारी स्कीमों या कार्यक्रमों में, उदाहरणार्थ महात्मा गांधी राष्ट्रीय ग्रामीण रोजगार गारंटी अधिनियम, 2005 (मनरेगा), स्वच्छ भारत अभियान, शहरी और ग्रामीण आवासन स्कीम, जहां संनिर्मित क्षेत्र एक हजार वर्ग फुट से अधिक है और अवसंरचना संबंधी संनिर्माण में, जिसके अंतर्गत अभिहित औद्योगिक संपदाओं या पार्कों या विशेष आर्थिक जोनों में भवन निर्माण भी है, ऐश आधारित ईटों या उत्पादों के आज्ञापक उपयोग को सुनिश्चित करेंगे।
- (11) कृषि मंत्रालय कृषि क्रियाकलापों में ऐश के मृदा अनुकूलक के रूप में उपयोग का संवर्धन करने पर विचार कर सकेगा।”

5. सभी संबद्ध प्राधिकारियों द्वारा उपरोक्त उपबंधों का अनुपालन करने की समयावधि 31 दिसंबर, 2017 है। कोयला या लिग्नाइट आधारित तापीय विद्युत संयंत्र, उनके द्वारा उत्पादित फ्लाई ऐश के 100 प्रतिशत उपयोग के अतिरिक्त उपरोक्त उपबंधों का अनुपालन 31 दिसंबर, 2017 से पूर्व करेंगे।

[फा. सं. 9-8/2005-एचएसएमडी]

विश्वनाथ सिन्हा, संयुक्त सचिव

टिप्पणः- मूल अधिसूचना भारत के राजपत्र, असाधारण, भाग II, खंड 3, उप-खंड (ii) में अधिसूचना सं. का.आ. 763(अ), तारीख 14 सितंबर, 1999 द्वारा प्रकाशित की गई थी और इसमें पश्चातवर्ती संशोधन अधिसूचना सं. का.आ. 979(अ), तारीख 27 अगस्त, 2003 और का.आ. 2804(अ), तारीख 3 नवंबर, 2009 द्वारा किए गए थे।

MINISTRY OF ENVIRONMENT, FORESTS AND CLIMATE CHANGE

NOTIFICATION

New Delhi, the 25th January, 2016

S.O. 254(E).—Whereas a draft of certain amendments to the Government of India in the Ministry of Environment, Forests and Climate Change number S.O. 763(E), dated the 14th September, 1999 (hereinafter referred to as the said notification) which the Central Government proposes to make under sub-section (1) and clause (v) of sub-section (2) of section 3 of the Environment (Protection) Act, 1986 (29 of 1986) read with clause (d) of sub-rule (3) of rule 5 of the Environment (Protection) Rules, 1986, was published in the Gazette of India, Extraordinary, Part II, section 3, Sub-section (ii), vide S.O. 1396(E), dated the 25th May, 2015 inviting objections and suggestions from all persons likely to be affected thereby before the expiry of sixty days from the date on which copies of the Gazette containing the said draft amendments were made available to the public.

And, whereas copies of the said Gazette were made available to the public on 25th May, 2015;

And, whereas all the objections and suggestions received from all persons likely to be affected thereby in respect of the said draft notification have been duly considered by the Central Government;

Now, therefore, in exercise of the powers conferred by sub-section (1) and clause (v) of sub-section (2) of section 3 of the Environment (Protection) Act, 1986 (29 of 1986) read with clause (d) of sub-rule (3) of rule 5 of the Environment (Protection) Rules, 1986, the Central Government hereby makes the following amendments to the said notification, namely: —

1. In the said notification, in paragraph 1,-

- in sub-paragraph 1(A), for the words “hundred kilometers”, the words “three hundred kilometers” shall be substituted;
- in sub-paragraph (3), for the figures and letters “100 km”, the words “three hundred kilometers” shall be substituted;
- in sub-paragraph (5), for the words “hundred Kilometers”, the words “three hundred Kilometers” shall be substituted;
- in sub-paragraph (7), for the words “hundred Kilometers”, the words “three hundred Kilometers” shall be substituted.

2. In the said notification, in paragraph 2:-**(a) after sub-paragraph (1), the following proviso shall be inserted, namely:-**

“provided further that the restriction to provide 20 % of dry ESP fly ash free of cost shall not apply to those thermal power plants which are able to utilise 100 % fly ash in the prescribed manner.”

(b) after sub-paragraph (7), the following sub-paragraphs shall be inserted, namely:-

- “(8) Every coal or lignite based thermal power plants (including captive and or co-generating stations) shall, within three months from the date of notification, upload on their website the details of stock of each type of ash available with them and thereafter shall update the stock position at least once a Month.
- (9) Every coal or lignite based thermal power plants shall install dedicated dry ash silos having separate access roads so as to ease the delivery of fly ash.
- (10) The cost of transportation of ash for road construction projects or for manufacturing of ash based products or use as soil conditioner in agriculture activity within a radius of hundred kilometers from a coal or lignite based thermal power plant shall be borne by such coal or lignite based thermal power plant and the cost of transportation beyond the radius of hundred kilometers and up to three hundred kilometers shall be shared equally between the user and the coal or lignite based thermal power plant.
- (11) The coal or lignite based thermal power plants shall promote, adopt and set up (financial and other associated infrastructure) the ash based product manufacturing facilities within their premises or in the vicinity of their premises so as to reduce the transportation of ash.
- (12) The coal or lignite based thermal power plants in the vicinity of the cities shall promote, support and assist in setting up of ash based product manufacturing units so as to meet the requirements of bricks and other building construction materials and also to reduce the transportation.
- (13) To ensure that the contractor of road construction utilizes the ash in the road, the Authority concerned for road construction shall link the payment of contractor with the certification of ash supply from the thermal power plants.
- (14) The coal or lignite based thermal power plants shall within a radius of three hundred kilometers bear the entire cost of transportation of ash to the site of road construction projects under Pradhan Mantri Gramin Sadak Yojna and asset creation programmes of the Government involving construction of buildings, road, dams and embankments”.

3. In the said notification, in paragraph 2, sub-paragraph (2A) be read as sub-paragraph (15) and at the end of the said sub-paragraph, the following sub-paragraph shall be added, namely:-

“and the coal or lignite based thermal power plants located in coastal districts shall support, assist or directly engage into construction of shore line protection measures.”

4. In the said notification, in paragraph 3, after sub-paragraph (7), the following shall be inserted, namely:-

- “(8) It shall be the responsibility of all State Authorities approving various construction projects to ensure that Memorandum of Understanding or any other arrangement for using fly ash or fly ash based products is made between the thermal power plants and the construction agency or contractors.
- (9) The State Authorities shall amend Building Bye Laws of the cities having population One million or more so as to ensure the mandatory use of ash based bricks keeping in view the specifications necessary as per technical requirements for load bearing structures.
- (10) The concerned Authority shall ensure mandatory use of ash based bricks or products in all Government Scheme or programmes e.g. Mahatma Gandhi National Rural Employment Guarantee Act, 2005 (MNREGA), SWACHH BHARAT ABIYAN, Urban and Rural Housing Scheme, where built up area is more than 1000 square feet and in infrastructure construction including buildings in designated industrial Estates or Parks or Special Economic Zone.

(11) The Ministry of Agriculture may consider the promotion of ash utilisation in agriculture as soil conditioner.”

5. **The time period to comply with the above provisions by all concerned authorities is 31st December, 2017. The coal or lignite based thermal power plants shall comply with the above provision in addition to 100 % utilization of fly ash generated by them before 31st December, 2017.**

[F. No. 9-8/2005-HSMD]

BISHWANATH SINHA, Jt. Secy.

Note:- The principal notification was published in the Gazette of India, Extraordinary, Part II, section 3, Sub-section (ii) *vide* notification S.O. 763(E), dated the 14th September, 1999 and was subsequently amended *vide* notification S.O. 979(E), dated the 27th August, 2003 and S.O. 2804(E), dated the 3rd November, 2009.

SEIL P1/MoEF&CC/Chennai/2021/002
28th April 2022

Sembcorp Energy India Limited

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Regional Office (South Eastern Region),
Ministry of Environment, Forest & Climate Change,
1st & 2nd Floor, HEPC Building, No. 34,
Cathedral Garden Road, Nungambakkam,
Chennai- 600034.

Sub: Submission of annual implementation report of ash for the period from 01.04.2021 to 31.03.2022 for Sembcorp Energy India Limited Project-1 [formerly known as Thermal Powertech Corporation India Limited – TPCIL], Nellore.

Ref: 1. Fly ash Notification S.O 763(E) dated 14th September 1999
2. CFO issued Vide Order No: APPCB/VJA/NLR/930/HO/CFO/2016 dated 16.11.2021, valid till 30.11.2026.

Dear Sir,

This has reference to the captioned subject and cited reference. Please find the annual implementation report of ash for Sembcorp Energy India Limited Project-1 [formerly known as Thermal Powertech Corporation India Limited– TPCIL], Nellore for the period from 01.04.2021 to 31.03.2022 in duly filled in prescribed proforma.

Hope the above is in order.

Thanking you,

Yours Faithfully,

For **M/s. Sembcorp Energy India Limited**
(Formerly known as Thermal Powertech Corporation India Limited)



Pavan Kumar Rao V
Head HSE- SEIL

Encl: Annual Fly Ash Utilization Report

Copy to:

1. The Joint Director (S), Scientist 'D', MoEF&CC, IRO, Vijayawada
2. The Divisional Head, IPC-II, CPCB, Delhi
3. The Member Secretary, APPCB, Vijayawada
4. The Regional Officer, APPCB, Nellore

**Fly Ash Notification S.O. 2804(E), 3rd November 2009 -
Statutory Compliance Report for the period 01.04.2021 to 31.03.2022**

S. No.	Item	Reply
1	Name of Thermal Power Station	Sembcorp Energy India Limited Project-1 – SEIL P-1 (Formerly known as Thermal Powertech Corporation India Limited - TPCIL)
2	Full address including Pin code	Sembcorp Energy India Limited Project-1 – SEIL P-1 (Formerly known as Thermal Powertech Corporation India Limited - TPCIL) Pyanampuram/Nelaturu Villages, Muthukur Mandal, SPSR Nellore - 524344, Andhra Pradesh, India
3	E-mail address	siva.ramakrishna@sembcorp.com
4	Name of the Nodal Officer (not below the rank of DGM / Dy. CE / or equivalent) dealing with ash/environment management and designation	D. Sivaramakrishna (General Manager)
5	Contact No.	8008400478
6	Fax No. Email:	siva.ramakrishna@sembcorp.com
7	Capacity of the Thermal Power Station (MW)	1320 MW
8	Details of Number of Units and capacity of each unit	2 Units x 660 MW
9	Coal / Lignite Consumption in 2021-2022 (in Million Tonnes)	5.6517 Million Tonnes

A. Ash Generation in 2021-2022 (in tonnes).

10	Bottom Ash	1,54,190
11	Fly Ash	15,45,183
	Total A (10 to 11)	16,99,373

B. Ash unutilised (in tonnes)

12	Ash Pond disposal	Nil
13	Ash yard	Nil
14	Ash Dump	Nil
	Total B (12 to 14)	Nil

C. Ash utilization in 2021-2022 (in tonnes)

	Purpose for which ash is utilized	Target (as per action plan)	Actual			
			From ESP Dry Ash (1)	From Pond Ash (2)	From Bottom Ash (3)	Total (1+2+3)
15	Ash dyke raising (if applicable)	100%	-	36,929	1,08,331	1,45,260
16 *	Cement industry		12,22,553	-	-	12,22,553
17	Land fill		-	96,119	-	96,119



18	Own Brick Unit	-	-	-	-
19 *	Outside brick Units other than brick kilns	1,67,891	750	-	1,68,641
20 *	Brick Kilns	-	-	-	-
21	Own ash based products (other than bricks)	-	-	-	-
22	Ash based products (outside)	-	-	-	-
23 *	Road and Flyover Embankments	-	4,517	-	4,517
24 *	Back filling of mines	-	-	-	-
25	Agriculture	-	-	-	-
26	Ready mix concrete	19,580	-	-	19,580
27	Asbestos	-	-	-	-
28 *	Exports	43,242	-	-	43,242
29	Others (please specify)	-	-	-	-
	Total C (15 to 29)	14,53,266	1,38,315	1,08,331	G. Total: 16,99,912

D. Reasons for variation from the target

1. Achieved 100% utilization target

E. Remedial Measures taken

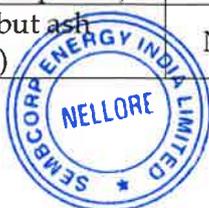
1. Regular follow-ups with Cement & Brick industries to increase the offtake of fly ash.
2. Exploring export opportunities. Bulk shipment of 43,242 MT done to USA & Sri Lanka.
3. Common Ash Classification Unit is commissioned and in operational since March 2021.

F. Quantity in ash pond

30.	Estimated quantity of Pond ash in active ash pond (pond in use) as on 31.03.2022 (in Million Tonnes)	2.831 Million Tonnes
-----	--	----------------------

G. Ash Pond Details

31	Total area ear marked for ash ponds (ha)	Forest Area	Non Forest Area	Total
32	Ash ponds already filled up and reclaimed (ha)	Nil	99 (including overflow lagoon)	99 (including overflow lagoon)
33	Ash ponds already filled up but yet to be reclaimed (ha)	Nil	Nil	Nil
34	Ash ponds in use (ha) (Active ash ponds)	Nil	Nil	90 ha
35	Area earmarked for ash ponds but ash ponds yet to be constructed (ha)	Nil	Nil	Nil



H. Dry ash collection facilities

36	Dry fly ash collection facility available	Yes
37	If yes, how many units	3 No's Silos, Capacity 2000 m ³ Each

I. Dry fly ash storage

38	Daily Ash Generation (TPD)	Capacity of storage as on 31.03.2022 (tonnes)	Capacity proposed if any in 2021-2022 (tonnes)
	4,656	3 No's Silos, Capacity 2000 m ³ Each	-

J. Capital Expenditure (Rs. Lakhs)

	Item	Item Expenditure in 2021-2022 (Rs. Lakhs)	Budgetary provision in 2021-2022 (tonnes)
39	Bottom Ash collection facility	Nil	Nil
40	Dry fly ash storage	Nil	Nil

K. Dispute Settlement Committee

41	No. of meetings held in 2021-2022	If no meetings were held, reason for the same
	4 meetings held with brick manufacturers. Their difficulties were discussed and resolved.	Not Applicable

L. Provision regarding supply to the brick kilns

42	Whether the Thermal Power Station is maintaining month-wise records of ash made available to each brick kiln	Yes		
43	If yes, how many brick kilns have been supplied with fly ash	15		
	Mode of transport of Ash: Truck / Trailer / Closed Container / Covered with Tarpaulin / Open	44	Dry ash	Closed Container
		45	Wet Ash	Open Truck with Covered with Tarpaulin



M. Promotional Measures

		No. of meetings / workshops exhibition held during 2021-2022	Amount spent in 2021-2022 (Rs. Lakhs)	Outlay for 2021-2022 (Rs. Lakhs)
46	Public Awareness Campaign	Nil	Nil	Nil
47	Exhibitions	Nil	Nil	Nil
48	Seminars / Workshops	2	3.30 lakhs	Nil
49	Advertisement in Newspapers	Nil	Nil	Nil
50	TV / Radio Advertisements	Nil	Nil	Nil
51	TV / Radio Advertisements	Nil	Nil	Nil
	Total M (46 to 51)	2	3.30 lakhs	Nil

52. Administrative Measure taken

S. No.	Administrative Measure	Outcome
(i)	Meeting with brick manufacturers	4 meetings held with brick manufacturers. Their difficulties were shared and resolved.
(ii)	Meeting with State Government / Agencies	3 meetings held with APPCB, Vijayawada
(iii)	Any other measure (please specify)	-




Pavan Kumar Rao
 Head -HSE
 On Behalf of Plant Head

Name: K. Ramesh Raman
 Designation: Head - O&M
 Date: 28-04-2022













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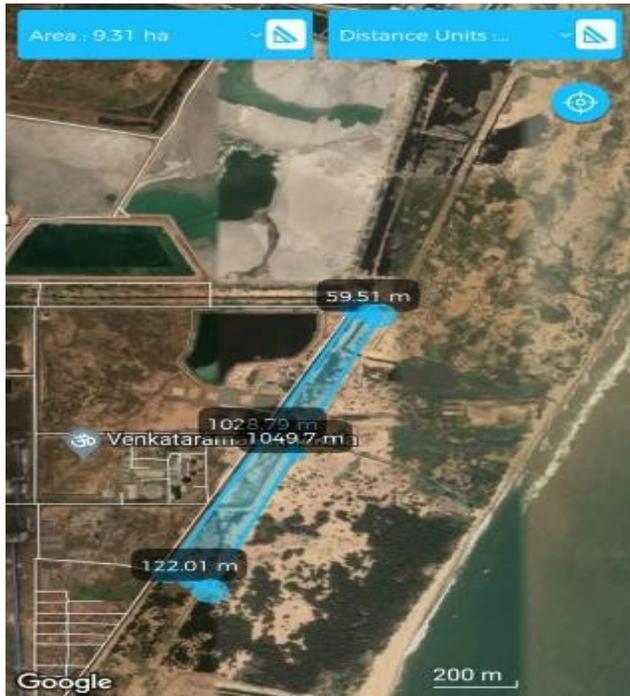
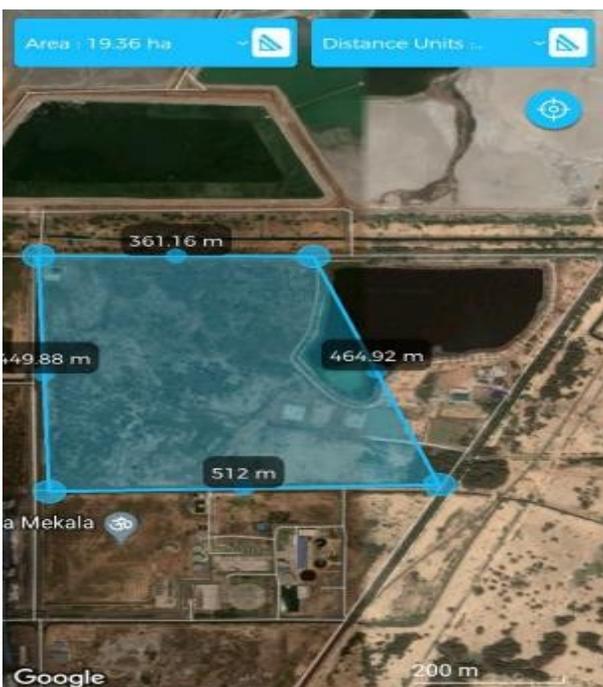
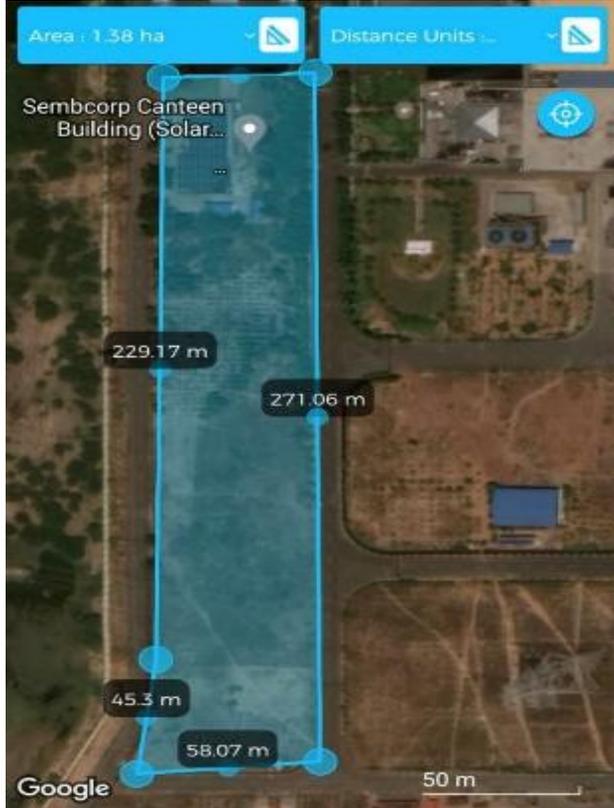
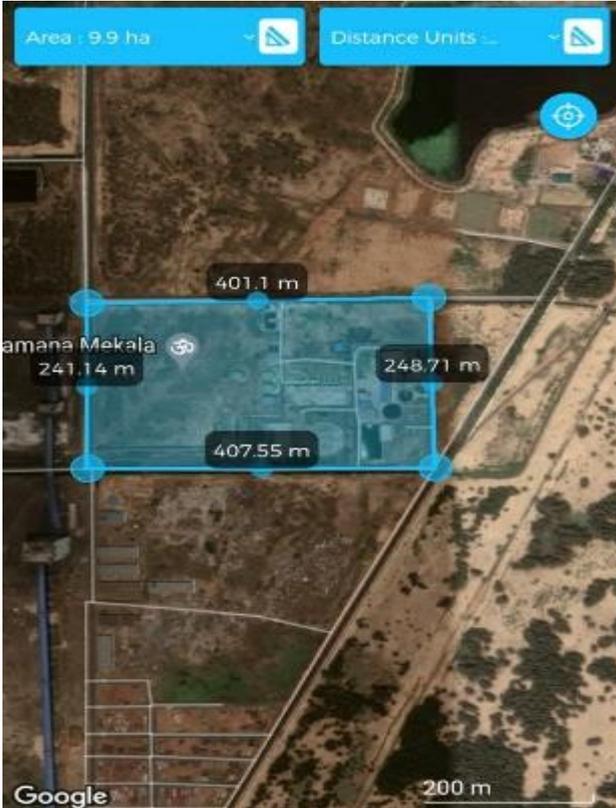
P1 GREEN BELT AREA ESTIMATION

347

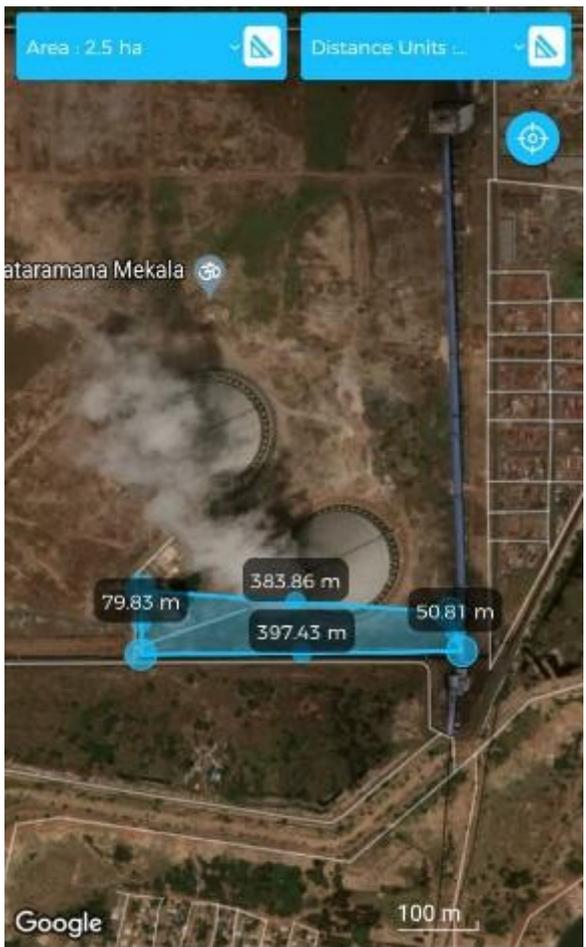
- 1. As per Google Map - 455 Acres (by using GPS area calculator app)
- 2. As per Physical measurement - 507 Acres (using area calculator app with physical walk)
- 3. As per CAD drawing marking - 450 Acres

Method-1 : PLANTATION AREA MEASURED – As per Google Map

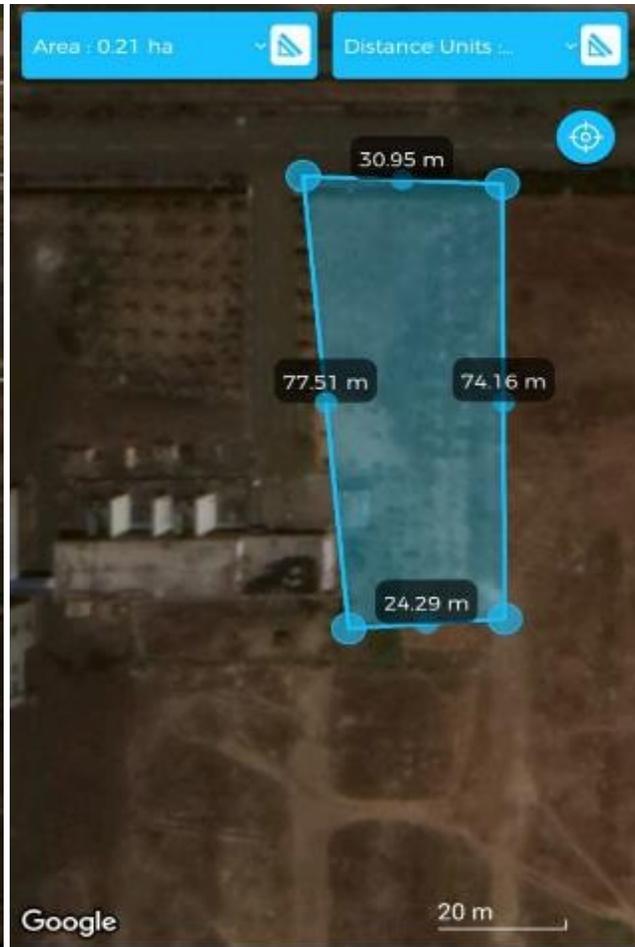
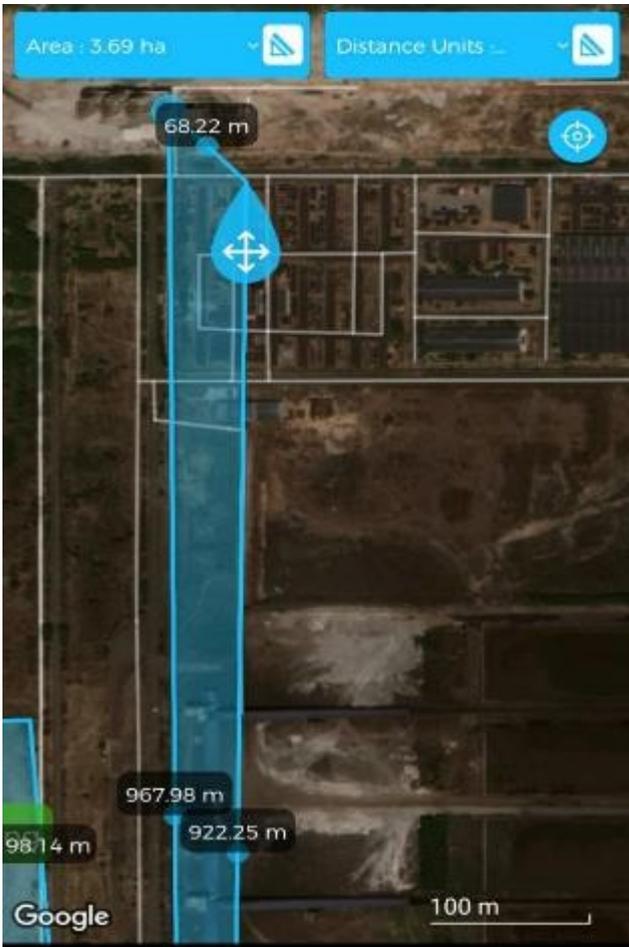
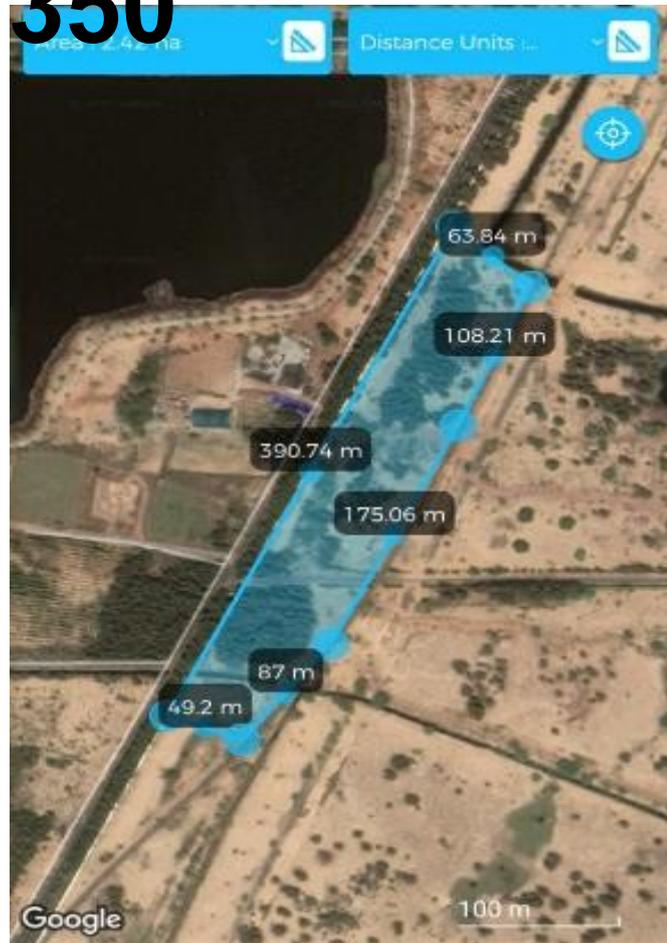
TOTAL EXTENT - 184.4 Hectares (455.40 Acres)

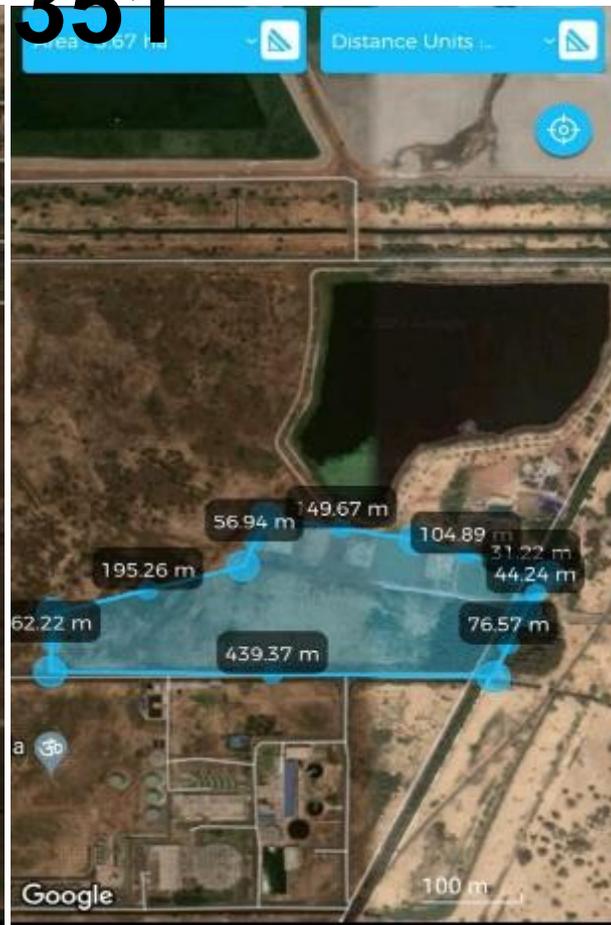
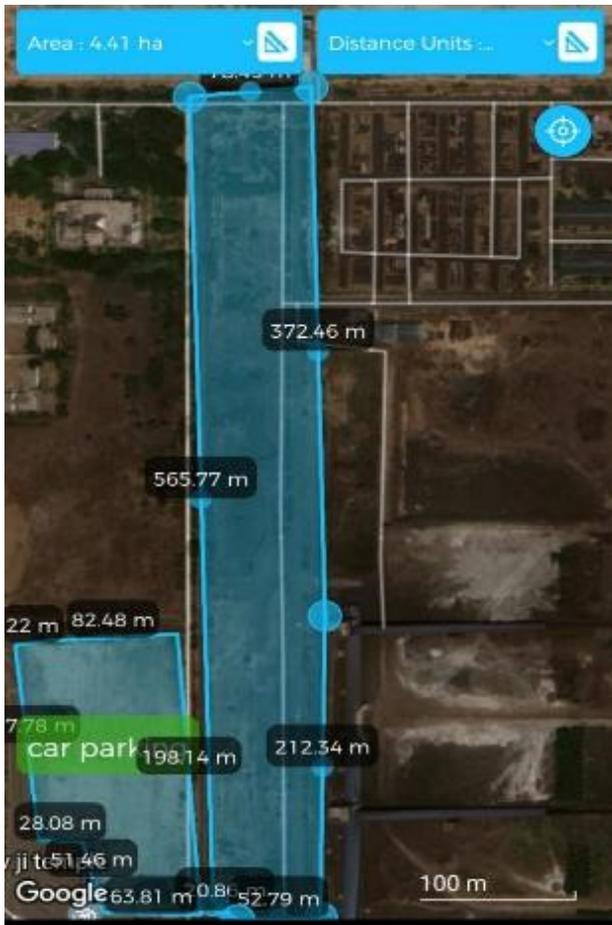






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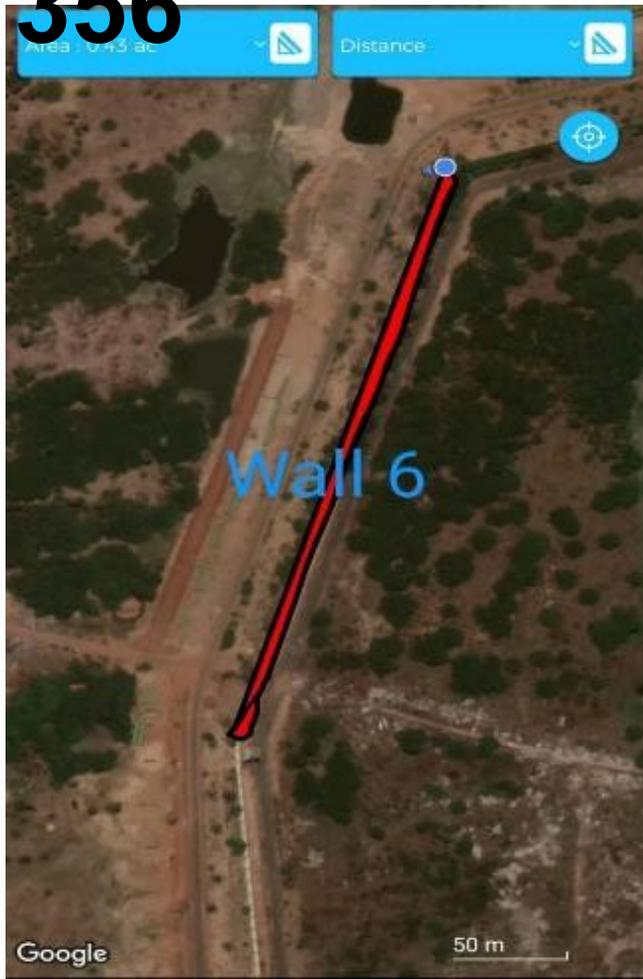




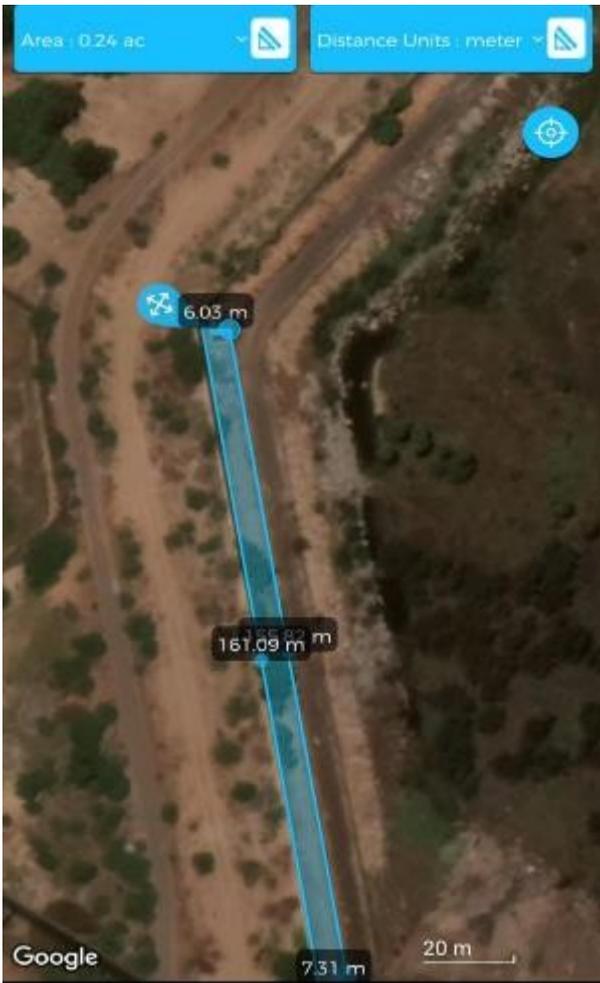


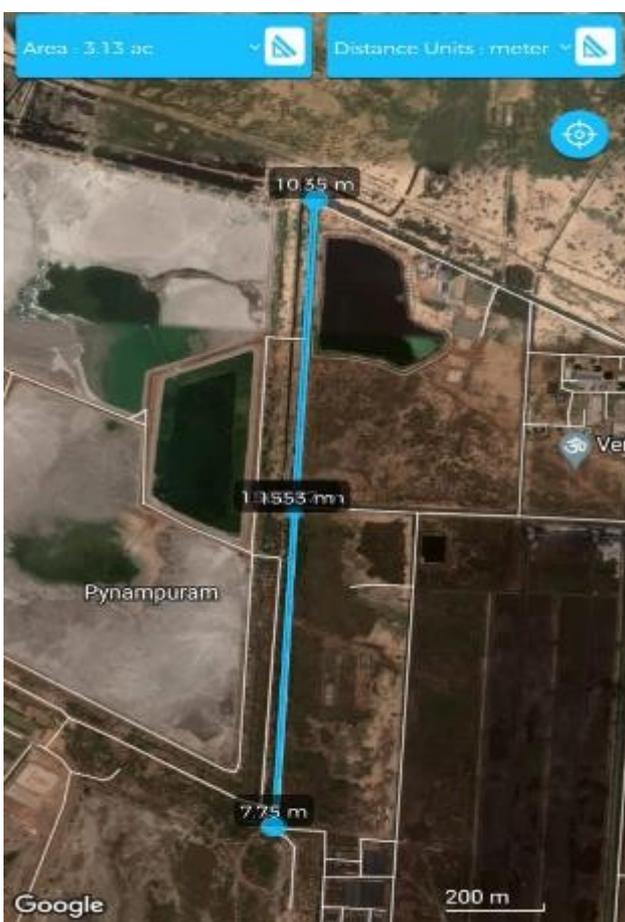
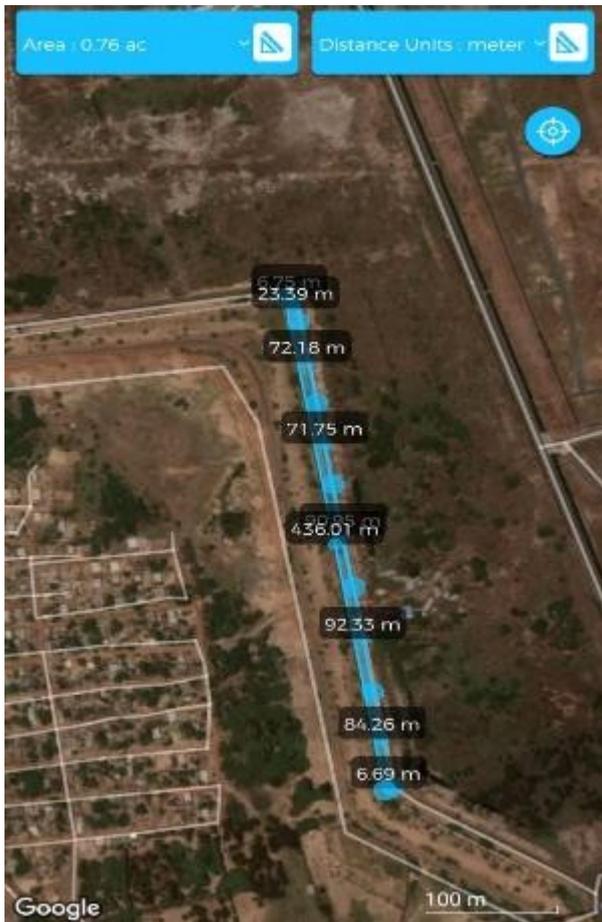
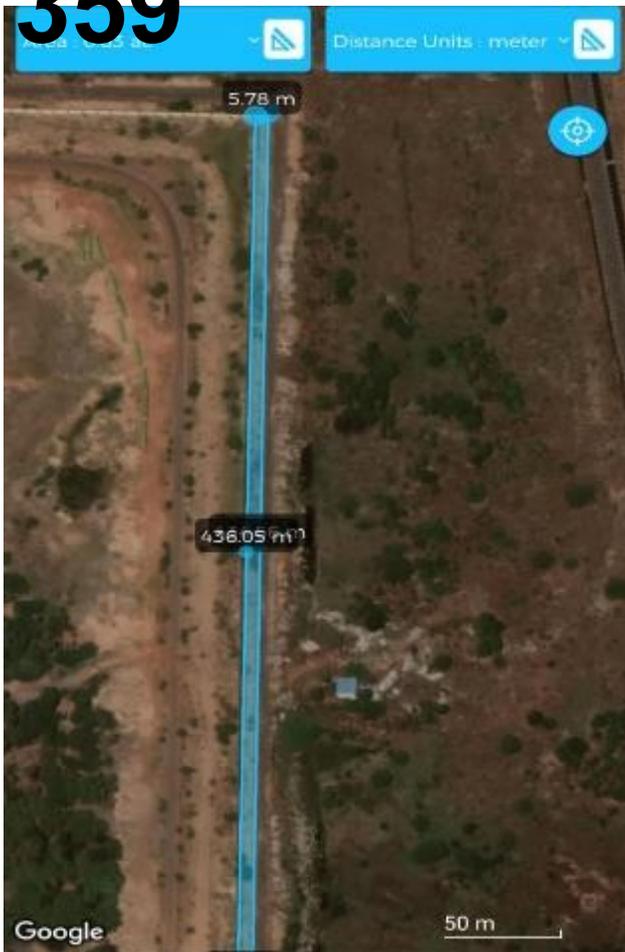










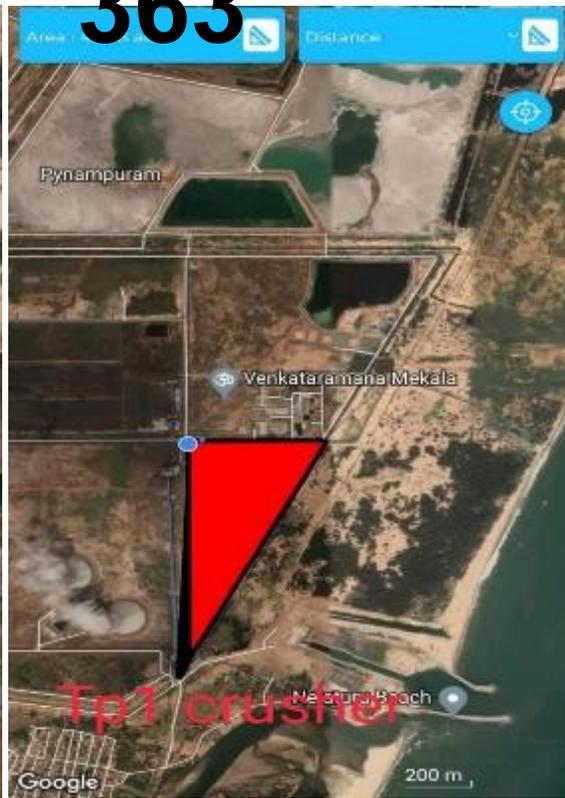


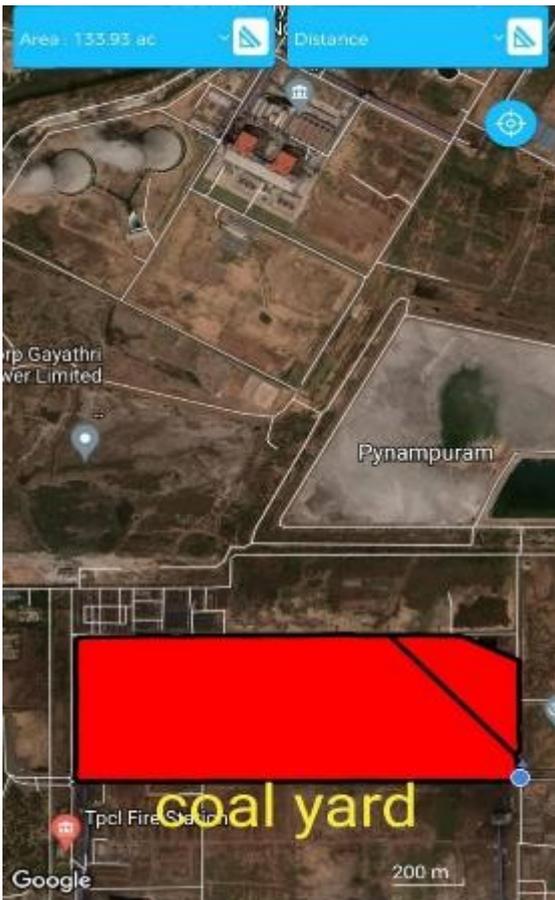
360



SNO	AREA	EXTENT
1	TEMPLE	0.32
2	OUTSIDE MAIN GATE	4.97
3	GATE TO ADMIN COMPOUND WALL	0.77
4	MAIN GATE TO ADMIN	8.39
5	ADMIN BLDG AREA	5.07
6	ADMIN BLDG COMPOUND ASH SILO (TOTAL COMPOUND WALL)	11.2
7	FIELD HOSTEL	9.8
8	STORE FRONT SIDE	0.7
9	DOZER SHED	2.32
10	COAL YARD BACK SIDE WTP OPPST 1	73
11	CHP CONTROL ROOM	5.15
12	ROAD NO 1	18.41
13	TP1 TO CRUSHER	4.24
14	MAIN GATE TO CANTEEN	6.95
15	CANTEEN TO H2 SHED BACK SIDE	4.68
16	TG AREA AND SERVICE BUILDING	3.56
17	TG OPPST AREA	14.7
18	CHIMNEY AREA	2.55
19	UNIT 2 ROAD TO NO.1 ROAD	1.92
20	UNIT 2 AREA	0.2
21	GS OPPST AREA	14.12
22	SCRAP YARD FRONT SIDE(Crusher oppst)	18.3
23	BGR CANTEEN TO NDCT AREA	6.05
24	GS TO NDCT UNIT 2 ROAD SIDE AREA	4.03
25	SOUTH SIDE	52.59
26	SCRAP YARD FRONT SIDE(canteen)	4
27	STP	4.11
28	WTP FRONT	1.19
29	WTP TANK	1.2
30	WTP BACK	2.96
31	WTP TRIANGLE	4.17
32	WTP COCONUT	9.85
33	COCONUT OPPST TO HELIPAD	6.56
34	HELIPAD	3.16
35	NURSERY	4.74
36	ASH WATER RECOVERY PUMP HOUSE	69.62
37	POND TO ASH GATE COMPOUND WALL	0.43
38	ASH POND GATE TO STORE COMPOUND	6.39
39	STORE AREA	61.57
40	STORE TO ADMIN COMPOUND WALL	0.29
41	FOPH AREA	2.43
42	SWPH AREA	1.37
43	SWPH GATE RIGHT SIDE	2.31
44	SWPH GATE LEFT SIDE	3.68
45	ASH POND	26
46	TP1 GATE TO NURSERY COMPOUND WALL	1.43
47	PYLON AREA	2
48	CHP CONTROL ROOM BACK SIDE	5
49	ROAD NO 1 TO WTP ROADSIDE	0.43
50	TP1 GATE OUTSIDE	0.27
51	WORKSHOP	8.76
	TOTAL Acres	507.91





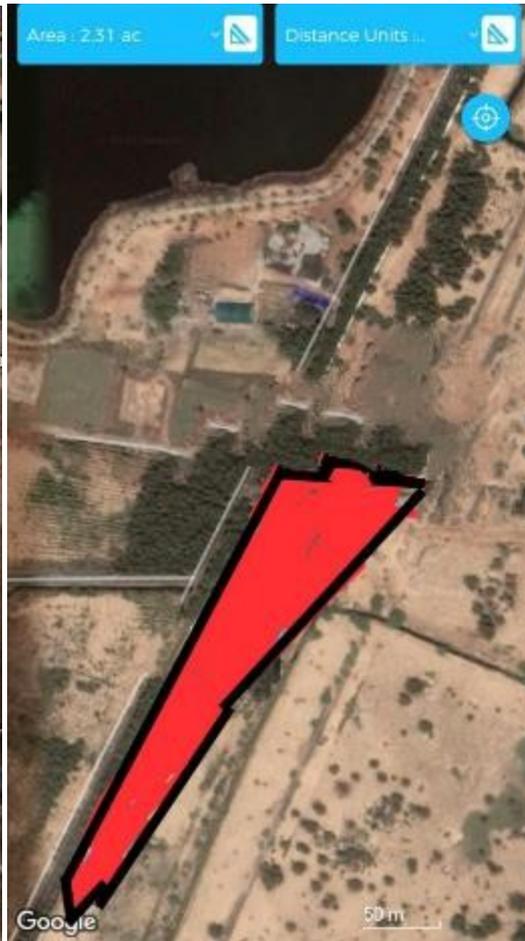












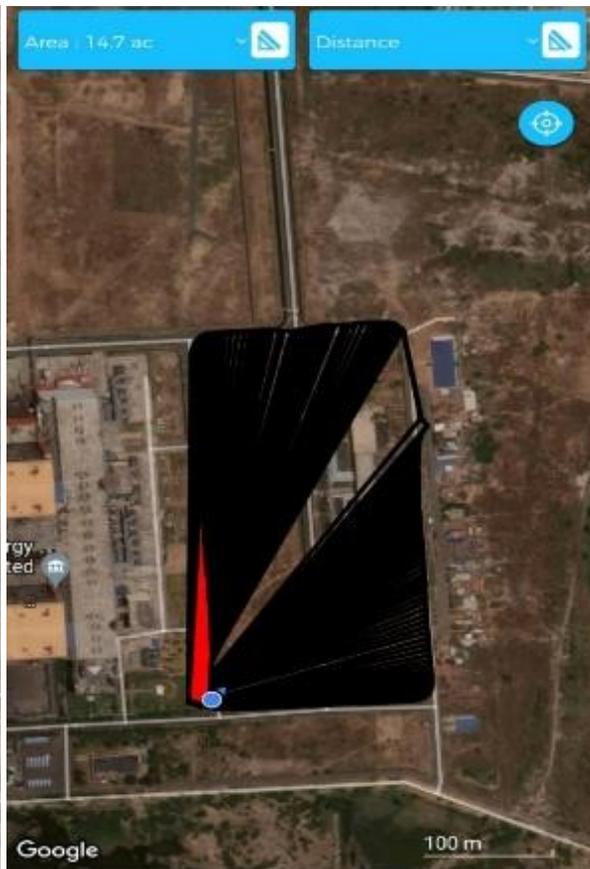
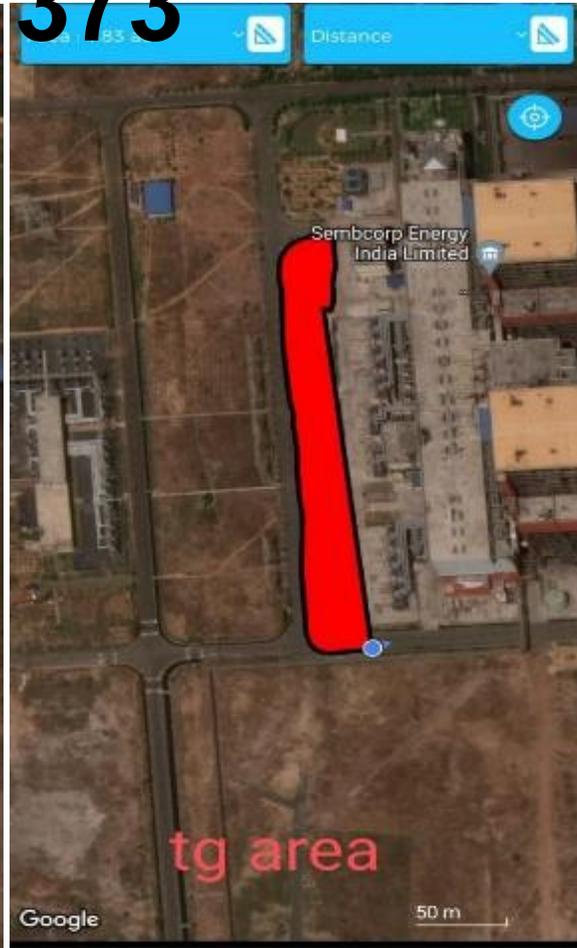
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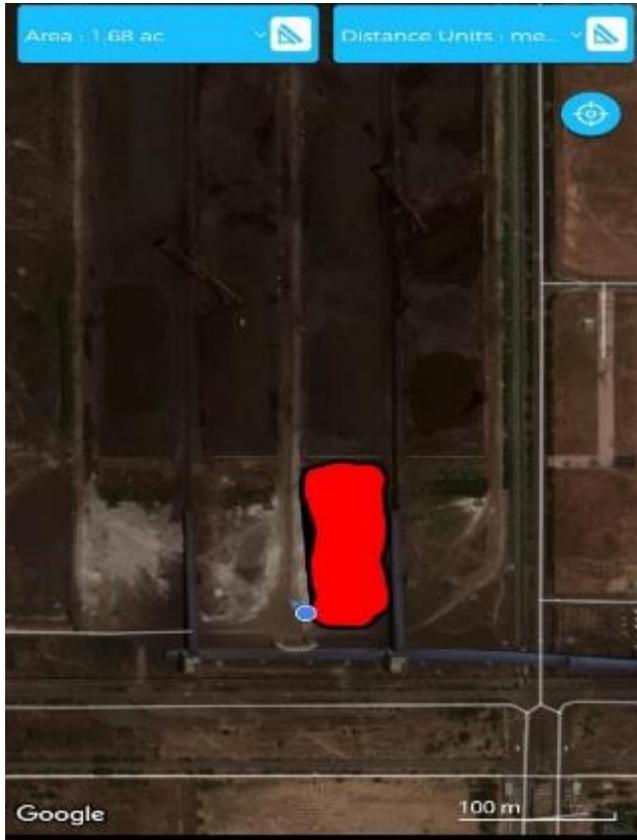
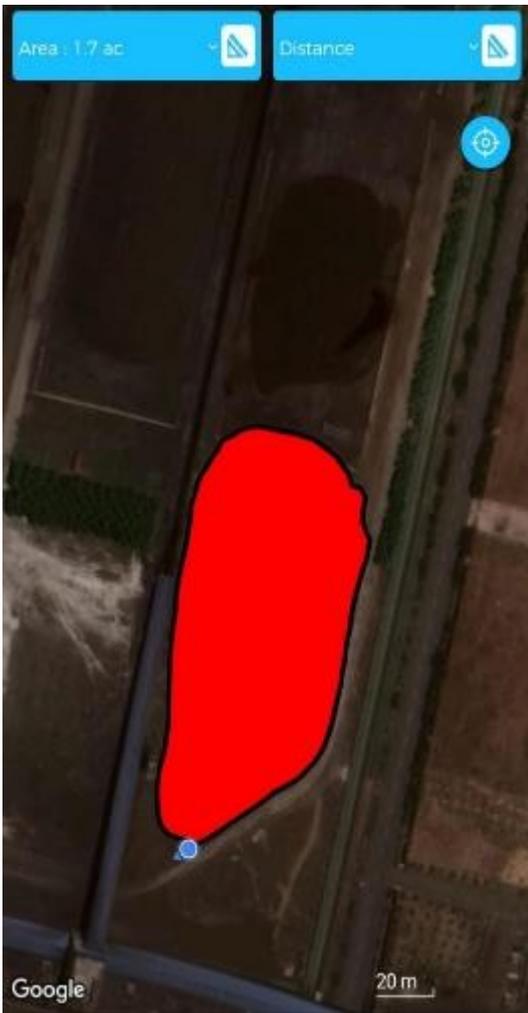


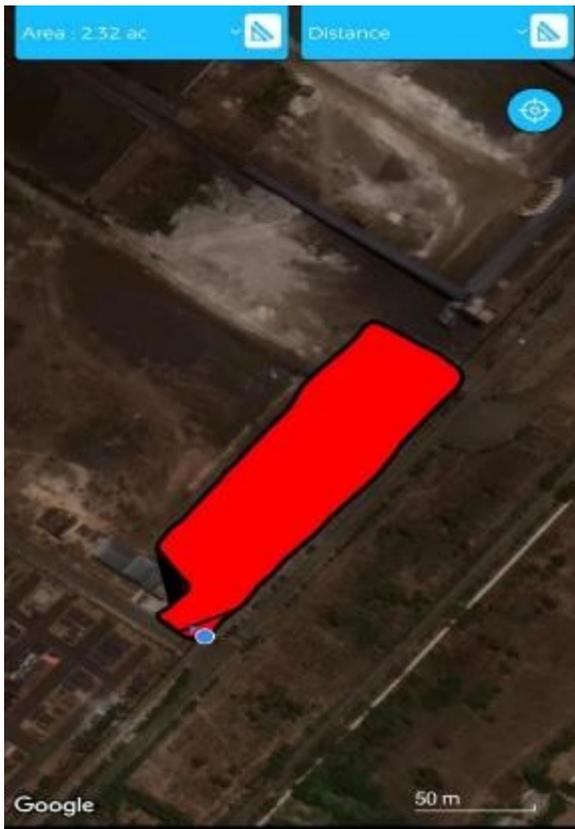
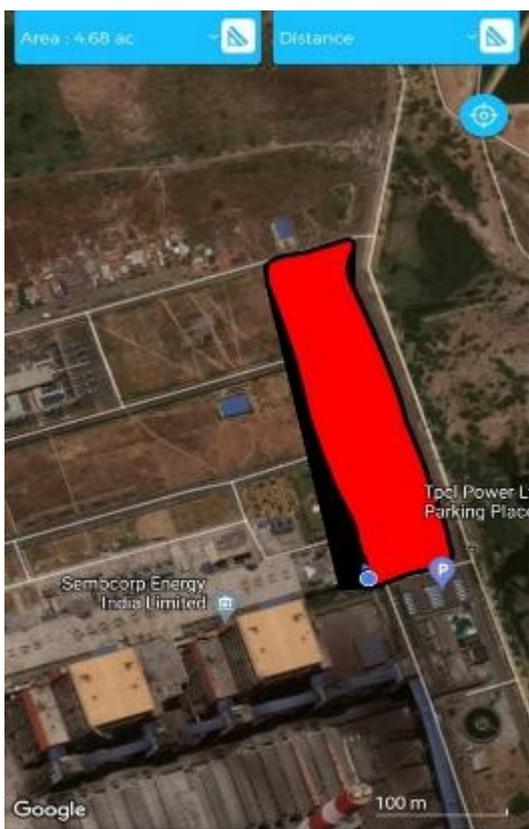
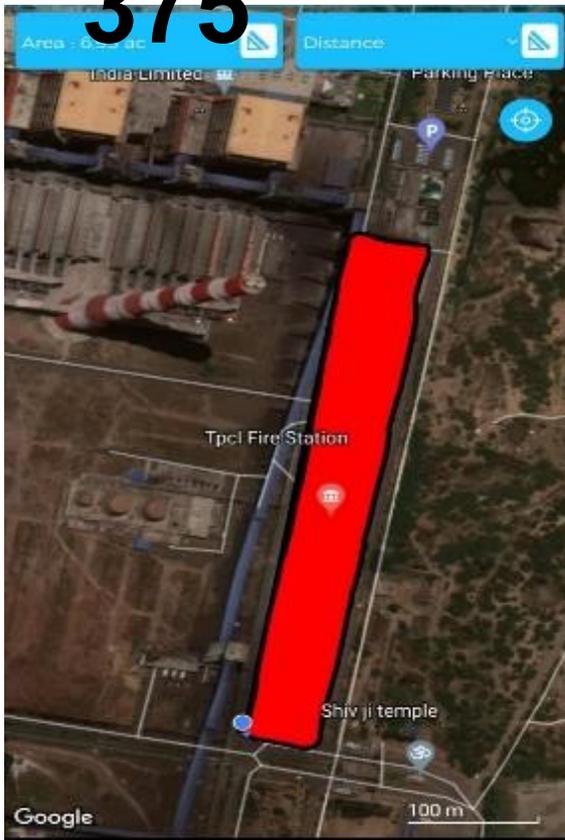
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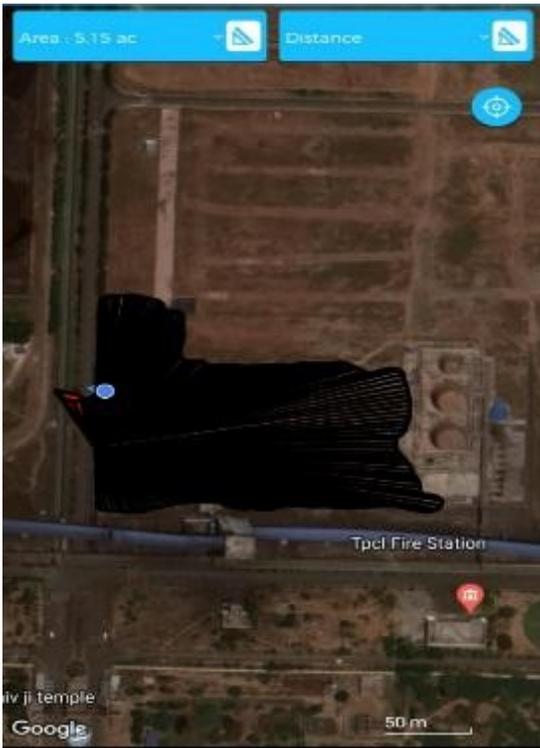








376



Method-3 As per CAD drawing marking - 450 Acres





377
ANDHRA PRADESH POLLUTION CONTROL BOARD
ZONAL LABORATORY - VIJAYAWADA

Plot No.41, Sri Kanakadurga Officers' Colony,
Gurunanak Road, Vijayawada-520008

Accredited by NABL as per ISO/IEC: 17025:2017



TC - 7304

K.SRINIVAS, M.Sc., M.Tech.,
Senior Environmental Scientist

e.mail: zovjalab-ses1@appcb.gov.in
Tel No: 0866-2546218

TEST REPORT

Date: 11.11.2021

ULR - TC730419002101

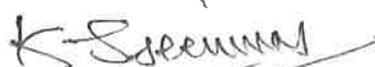
Report No : 2110S003
Sample code : Y2110S006
Sample Collected : Analyst, Regional Office - Nellore.
Name & Address of the Customer : Environmental Engineer, RO - Nellore.
Sample Reference : M/s. Sembcorp Energy India Limited
(Project - I), Nelatur & Pynapuram (V),
Muthukur (M), SPSR Nellore District.
Description of Sample : Y2110S006 - Stack attached to 2016 TPH
super critical Boiler(Unit-I).
Sample Collected Date : 22.10.2021
Sample Received Date : 23.10.2021
Test Completion Date : 03.11.2021

S.No	Parameter (s) / Name of Test	Test Method	Units in	Value	APPCB Standard
				Y2110S006	
1	Suspended Particulate Matter	IS: 11255 (Part I) 1985 (Reaffirmed 2003)	mg/nm ³	40.8	50.0

Note:

- ❖ The contents of the report shall not be reproduced either in full or in part without prior written consent of the issuing authority.

End of Test Report


SENIOR ENVIRONMENTAL SCIENTIST

ISSUED TO:

M/s. Sembcorp Energy India Limited, Project-2
(2X660 MW Coal Based Thermal Power Plant),
Near Ananthavaram (V), Thotapalli Gudur (M),
SPSR Nellore (Dist.)- 524344.

Issue Date: 02.11.2021

Sample Registration No: 8246A/10/21
Sample Registration Date: 31.10.2021
Sample Particulars: AMBIENT AIR QUALITY MONITORING- OCTOBER 2021
Sampling location-2: Painampuram Village Lab Ref: CL/AAQ/8246A/10/21-002/21

TEST RESULTS

Date of Sampling	POLLUTANTS												
	µg/m ³				mg/m ³	µg/m ³				ng/m ³			
	PM ₁₀	PM _{2.5}	SO ₂	NO ₂	CO	Pb	O ₃	NH ₃	C ₆ H ₆	BaP	As	Ni	Hg
01.10.2021	47.4	31.4	9.2	11.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
07.10.2021	45.2	28.8	8.4	10.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
08.10.2021	42.8	26.6	8.6	11.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
14.10.2021	38.2	25.8	7.2	9.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
15.10.2021	40.8	24.6	8.0	10.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
21.10.2021	39.8	26.4	7.6	9.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
22.10.2021	36.4	27.4	6.8	9.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
28.10.2021	43.4	26.8	7.2	9.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
29.10.2021	41.8	25.4	7.6	9.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Min	36.4	24.6	6.8	9.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Max	43.4	27.4	8.6	11.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Avg.	40.5	26.1	7.6	9.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
NAAQ Standards	<100	<60	< 80	< 80	< 2.0	< 1.0	< 100	< 400	< 5.0	< 1.0	< 6.0	< 20	--

Note: NAAQS: National Ambient Air Quality Standards.

Instrument Details:-

Instrument : Fine Particulate sampler
Model / SI No : 320-DTE-2010
Make : Envirotech
Calibration Due : 18.02.2022

Checked By 



Authorized Signatory 

ISSUED TO:

Issue Date: 02.11.2021

M/s. Sembcorp Energy India Limited, Project-2
(2X660 MW Coal Based Thermal Power Plant),
Near Ananthavaram (V), Thotapalli Gudur (M),
SPSR Nellore (Dist.)- 524344.

Sample Registration No: 8246A/10/21
Sample Registration Date: 31.10.2021
Sample Particulars: AMBIENT AIR QUALITY MONITORING- OCTOBER 2021
Sampling location-3: Nelaturu Village **Lab Ref:** CL/AAQ/8246A/10/21-003/21

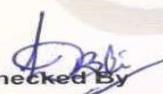
TEST RESULTS

Date of Sampling	POLLUTANTS												
	µg/m ³				mg/m ³	µg/m ³				ng/m ³			
	PM ₁₀	PM _{2.5}	SO ₂	NO ₂	CO	Pb	O ₃	NH ₃	C ₆ H ₆	BaP	As	Ni	Hg
01.10.2021	45.6	30.2	8.8	10.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
07.10.2021	44.8	29.6	9.2	11.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
08.10.2021	42.4	28.4	8.6	10.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
14.10.2021	40.6	27.2	9.4	12.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
15.10.2021	38.2	29.8	8.2	13.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
21.10.2021	39.4	25.4	7.8	9.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
22.10.2021	41.8	29.2	8.4	10.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
28.10.2021	42.4	27.2	8.6	11.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
29.10.2021	39.8	26.6	9.4	12.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Min	38.2	25.4	7.8	9.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Max	42.4	29.8	9.4	13.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Avg.	40.7	27.7	8.6	11.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
NAAQ Standards	<100	<60	< 80	< 80	< 2.0	< 1.0	< 100	< 400	< 5.0	< 1.0	< 6.0	< 20	--

Note: NAAQS: National Ambient Air Quality Standards.

Instrument Details:-

Instrument : PM2.5/10 sampler
Model / SI No : AAS-127/11-J-2007
Make : Ecotech
Calibration Due : 18.02.2022

Checked By 



Authorized Signatory 

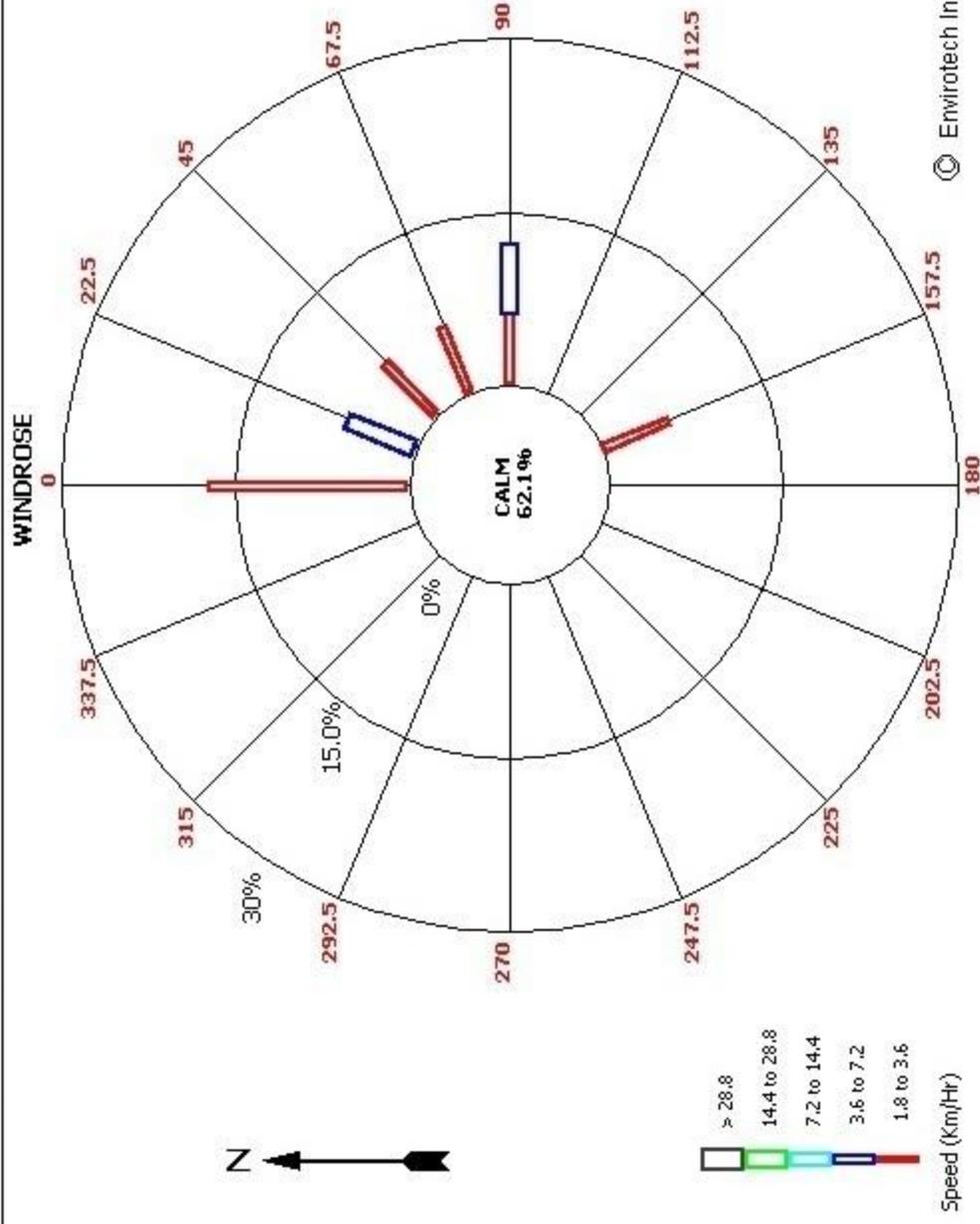
Time : 00:00 - 23:00

Date : 01/10/21 - 31/10/21

OCTOBER 2021

Care Labs
Hyderabad

380



BEFORE THE HON'BLE NATIONAL
GREEN TRIBUNAL
(SOUTHERN ZONE)
CHENNAI

O.A. No. 105 of 2015 (SZ)

Yanati Srinivasulu & Anr.

... Applicant

Versus

The Chief Secretary, Govt. of AP
And others

... Respondents

**REPLY ON BEHALF OF NINETH
RESPONDENT TO THE JOINT
COMMITTEE REPORT DATED
MARCH 22, 2022**

M/s. Kapil Arora (D/1421/03),
Juvraj Singh Bindra,
Gautam S.Raman (Ms.1583/13)&
Palak Nagar (D/5755/18)

COUNSEL FOR 9TH RESPONDENT

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