BEFORE THE NATIONAL GREEN TRIBUNAL
SOUTHERN ZONE, CHENNAI

Original Application No. 256 of 2020 (SZ)

Tribunal on its own motion Suo Motu based
on the News Item in News Desk Magazine
dt. 11.11.2020, Air Pollution and Industries,
"These Six Industries in North Chennai are
polluting the air for more than half the Year"

... Applicant(s)

Versus

1. Union of India,
Ministry of Environment, Forest
and Climate Change,
Rep, by its Secretary,
indira Paryavaran Bhavan, Jorbagh Road,
New Delhi – 100 003.

2) The Chief Secretary to Govt. of Tamil Nadu
Govt. Secretariat, Fort St. George,
Chennai, Tamil Nadu – 600009

3) The Secretary to Govt. of Tamil Nadu,
Department of Environment,
Govt. Secretariat, Fort St. George
Chennai, Tamil Nadu – 600009

4) The principal Secretary to
Govt. of Tamil Nadu Industries Department,
Govt. Secretariat, Fort St. George
Chennai, Tamil Nadu – 600009

5) Additional Chief Secretary to
Govt. of Tamil Nadu, Municipal Administration
and Water Supply Department,
Govt. Secretariat, Fort St. George
Chennai, Tamil Nadu – 600009

6) Principal Secretary to Government
Health and Family Welfare Department,
Secretariat, Chennai 600 009.

7) The Chairman,
Central Pollution Control Board (CPCB),
Parivesh Bhawan, East Arjun Nagar,
Shahdara, Delhi 110 032.

8) The Chairman,
Tamil Nadu Pollution Control Board (TNPCB),
No.76, Anna Salai, Guindy,
Chennai, Tamil Nadu – 600032.

9) The Greater Chennai Corporation,
Rep. by its Commissioner,
Ripon Building, Chennai – 600 003.

25/8/2021
JOINT CHIEF ENVIRONMENTAL ENGINEER
TAMIL NADU POLLUTION CONTROL BOARD
No.76, MOUNT SALAI, GUINDY,
CHENNAI-600 032.

10) The District Collector,
Chennai District,
District Collectorate Office,
No. 62, Rajaji Salai, 4th Floor,
Chennai 600 001.

11) North Chennai Thermal Power Station
Rep by its Chairman cum
Managing Director (TANGEDCO)
Attpattu Main Road, Thiruvallur District,
Athipattu, Tamil Nadu 600 120.

12) NTPC Tamil Nadu Energy Company Limited
(NTECL) Rep, by its General manager (TS)
Vallur Thermal Power Project,
P.O: Vellivoyal Chavadi,
Ponneri Taluk, Thiruvallur District,
Chennai 600 103.

13) Chennai Petroleum Corporation Limited (CPCL)
Rep, by its Managing Director,
New No. 536, Anna Salai, Teynampet
Chennai 600018.

14) Tamil Nadu Petro products Limited (TPL)
Rep, by its Chairperson
Manali Express Highway, Manali,
Chennai 600 068, India.

15) Manali Petrochemicals Limited (MPL)
Rep, by its Chairman,
SPIC House, VI Floor,
No. 88 Mount Road, Guindy,
Chennai 600 032.

16) Madras Fertilizers Limited (MFL)
Rep by its Chairman & Managing Director,
SH 104, Harikrishna Puram, Manali,
Chennai, Tamil Nadu 600 068.

...Respondent(s)

REPORT FILED ON BEHALF OF THE 8TH RESPONDENT
TAMIL NADU POLLUTION CONTROL BOARD.

I, R. Rajamanickam , Son of P.M. Ramasamy , Hindu, aged about 57 years, having my office at 76, Mount Salai, Guindy, Chennai-600032, do hereby solemnly affirm and sincerely state as follows:-

1. I am the Joint Chief Environmental Engineer, Tamil Nadu Pollution Control Board (TNPCB), Chennai – 32, and filing this Report on behalf of the 8th

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Respondent Tamil Nadu Pollution Control Board (TNPCB) and as such I am well acquainted with the facts of the case from the records.

2. It is respectfully submitted that the Hon'ble National Green Tribunal (SZ), Chennai in the order dated 05.07.2021 passed order inter alia that

".....Para 08: The respondents who have not filed their statement are directed to complete the pleadings on or before **30.07.2021** and the committee is directed to submit a report to this Tribunal on or before 26.08.2021 respectively".

3. It is respectfully submitted that in due compliance with the directions of the Tribunal, a team of Engineers from TNPCB has inspected the following industries in question, during first week of January 2021.

1. M/s. Manali Petrochemicals Ltd Plant-I, Manali.
2. M/s. Manali Petrochemicals Ltd Plant -II, Manali.
3. M/s. Chennai Petroleum Corporation Limited Refinery I, II and III, Manali.
4. M/s. North Chennai Thermal Power Station-I, Puzhuthivakam village, Ponneri Taluk, Tiruvallur District.
5. M/s. NTPC Tamilnadu Energy Company Ltd, Vellivoil village, Ponneri Taluk, Tiruvallur District.
6. M/s. Madras Fertilizers Limited, Manali.
7. M/s. Tamilnadu Petroproducts Ltd -ECH Plant, Manali.
8. M/s. Tamilnadu Petroproducts Ltd -LAB Plant, Manali.
9. M/s. Tamilnadu Petroproducts Ltd -Heavy Chemical Division, Manali.

Based on the observations noticed during the inspection, directions were issued under section 33A of Water (Prevention &Control of Pollution) Act, 1974 as amended and under section 31A of Air (Prevention &Control of Pollution) Act, 1981 as amended vide Board Proceedings dated 11.03.2021 & 15.04.2021 to the following 8 units for implementing improvement measures.

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4. It is respectfully submitted that the details of directions issued by the TNPCB, action taken reply furnished by the units and remarks of the TNPCB are submitted below:

Sl. No	Directions Issued by the TNPCB vide Proc. Dated 11.03.2021/15.04.2021	Unit's Reply	Remarks of TNPCB
1.	**M/s. Manali Petrochemicals Ltd Plant-I, Manali.** a) The unit shall remove the Lime sludge dumped outside the earmarked area immediately.	As per Board advice removed the Lime sludge from outside the Lime storage earmarked area. We are strictly using Lime sludge yard only for storage and disposal of lime.	**Complied.** The unit has removed the lime sludge dumped outside the earmarked area. The unit is now using the earmarked area for the temporary storage of lime sludge being generated from the unit.
	b) The unit shall store the lime sludge generated from the rotary drum vacuum filter and un-burnt lime from lime slacker unit in the earmarked area only and sent to brick kiln for further beneficial use.	As per Board advice we are storing the lime sludge generated from the rotary drum vacuum filter and un burnt lime from lime slacker unit in the earmarked area only and sent to brick kiln for further beneficial use.	**Complied.** The unit is storing the lime sludge generated from the rotary drum vacuum filter and un-burnt lime from lime slacker unit in the earmarked area and disposing the same to brick kiln units for further beneficial use.
	c) The unit shall maintain records on the quantity of generation and disposal of lime sludge for further beneficial use.	We are maintaining the records for the quantity of generation and disposal of lime sludge for further beneficial use.	**Complied.** The unit is maintaining log book for the generation and disposal of lime sludge for further beneficial use.
	d) The unit shall ensure that the temporary lime storage yard and its leachate collection arrangements provided are properly maintained, so as to avoid any groundwater pollution.	Lime storage yard and its leachate collection arrangements are provided and are properly maintained. If any water is collected, the water will be pumped to ETP for further treatment. so as to avoid any groundwater pollution.	**Complied.** The unit is now maintaining the temporary lime storage yard and its leachate collection arrangements properly so as to avoid any groundwater pollution.
	e) The unit shall ensure that the OCEMS installed in the Boiler stack and the continuous ambient air	As per Board advice the OCEMS installed in the Boiler Stack for (SPM,SO2,NOX,CO) and the continuous ambient air quality monitoring(CAAQM)	**Complied.** The OCEMS (Online Continuous Emission Monitoring Sensors) installed in the Boiler

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	quality monitoring (CAAQM) sensors provided are calibrated regularly, operated continuously and connected to the CAC of the Board and CPCB servers.	sensors(PM2.5, PM 10. VOC, Cl2) provided are calibrated regularly and operated continuously and connected to the CAC of the Board and CPCB servers.	Stack for the parameters SPM, SO2, NOX & CO and the Continuous Ambient Air Quality Monitoring (CAAQM) sensors (PM2.5, PM10. VOC & Cl2) are calibrated regularly and operated continuously by the unit which is connected to the CAC (Care Air Centre) of the Board and CPCB servers.
	f) The unit shall ensure that the OCEMS installed at the outlet of the treated trade effluent holding tank (ETP) for the parameters TOC (BOD & COD), TSS, pH & Temperature and flow sensors provided are calibrated regularly, operated continuously and connected to the CAC of the Board and CPCB servers .	As per Board advice that the OCEMS installed at the outlet of the treated trade effluent holding tank (ETP) for the parameters TOC (BOD & COD),TSS, PH & Temperature and flow sensors provided are calibrated regularly and operated continuously and connected to the CAC of the Board and CPCB servers.	**Complied.** The OCEMS (Online Continuous Effluent Monitoring Sensors) installed at the outlet of the treated trade effluent holding tank of ETP for the parameters TOC (BOD & COD),TSS, PH & Temperature and flow sensors are calibrated regularly and operated continuously and connected to the CAC of the TNPC Board and CPCB servers.
	g) The unit shall ensure for the continuous data transmission from the OCEMS and CAAQM sensors to the CAC and WQW of the Board and CPCB servers.	We are ensuring the continuous data transmission from the OCEMS and CAAQM sensors to the CAC and WQW of the Board and CPCB servers. Dedicate Link for TNPCB form Airtel 10 MBPS on RF for Plant 1 Secondary link from LAN with below Links Provided via Load Balancer with auto Switching in 30 Secs <u>LAN Link Details :</u> Primary Link 20 Mbps BSNL – Fibber Link Secondary Link 10 Mbps Airtel – RF Link DedicatedUPS power supply is provided for the system and equipment's.	**Complied.** The unit is ensuring the transmission of data from the OCEMS and CAAQM sensors to the CAC and WQW(Water Quality Watch) of the Board and CPCB servers continuously.
	h) The unit shall comply with the minutes of the meeting held on 09.02.2021.	Based on 09.02.2021 minutes of the meeting all the points complied and feedback letter submitted.	The compliance details are submitted below.

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Sl. No.	Points mentioned in the TNPCB minutes of the meeting dated 09.02.2021 for compliance	Action taken by the unit
1.	The unit shall conduct marine impact study at the point where the treated trade effluent is being discharged into sea and furnish the report once in a year (since 2016) conducted through a reputed institution. The recently conducted study report shall be furnished within 28.02.2021.	**Partially Complied.** Marine water quality study carried out through NIOT, Chennai in the year 2020 as stated by the unit is based on the joint committee decision as per Hon'ble Tribunal, Southern Zone, Chennai order dated 08.02.2020, 11.06.2020 & 07.09.2020 in OA nos. 19/2013, 224/2016, 248/2016 and Appeal nos. 51/2017 & 52/2017. NIOT has suggested long term study in both the report (2015 & 2020) to assess the marine water quality and flora & fauna marine life as well as indicated the pollution from other sources also. All the three units (M/s.TPL, M/s.Kothari Petrochemical & M/s.MPL) have now accepted to carry out the marine impact study every year for which these units have given undertaking and it was reported that the impact study will be conducted from the year 2021-22.
2	The unit shall improve the temporary lime storage yard and its leachate collection arrangements provided and shall also take steps to ensure that they are properly maintained so as to curtain ground water pollution.	**Complied.** The unit has improved the temporary lime storage yard and its leachate collection arrangements and needs to be continuous maintenance.
3	The unit shall furnish the compliance of Environmental Clearance conditions with third party audit every year.	**Partially Complied.** The unit has engaged M/s.Glense Lab, Chennai to carryout the third party audit for the EC conditions compliance and the same is in progress.
4	The unit shall apply and obtain Authorization under Hazardous and Other Wastes (Management & Transboundary Movement) Rules, 2016.	**Complied.** The unit has obtained Hazardous waste Authorization vide Board's Proc. dated.28.05.2020 for 5 years.
5	The unit shall comply with the long term and short term action plan with respect to CEPI and to carry out all the mitigation measures for improvement of Air, Water, land environment as per the mechanism evolved by CPCB vide letter dated.25.10.2019 for environmental management of critically Polluted Areas. If the land area is not adequate within the premises to develop green belt, the unit may tie-	**Partially Complied.** The unit has replaced the furnace oil usage in a Boiler with LNG and to be replaced for standby Boiler. The unit shall continue to develop green belt to attain an area of 40% of the total area with indigenous native tree species either within the unit premises or outside the premises in consultation with the Zonal Officer, GCC.

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	up with local body & develop green belt up to 40% as per CEPI norms.		
2.	**M/s. Manali Petrochemicals Ltd Plant -II, Manali.** a) The unit shall maintain records on the quantity of generation and disposal of lime sludge for further beneficial use.	We are maintaining the records for the quantity of generation and disposal of lime sludge for further beneficial use.	**Complied.** The unit is maintaining log book for the generation and disposal of lime sludge for further beneficial use.
	b) The unit shall ensure that the temporary lime storage yard and its leachate collection arrangements provided are properly maintained, so as to avoid any groundwater pollution.	Lime storage yard and its leachate collection arrangements provided are properly maintained, and any water collected, will be pumped to ETP for further treatment, so as to avoid any groundwater pollution. Photo copy enclosed in the	**Complied.** The unit is maintaining the temporary lime storage yard and its leachate collection arrangements properly so as to avoid any groundwater pollution.
	c) The unit shall ensure that the OCEMS installed in the Boiler stack and the continuous ambient air quality monitoring (CAAQM) sensors provided are calibrated regularly, operated continuously and connected to the CAC of the Board and CPCB servers.	As per Board advice the OCEMS installed in the Boiler Stack for (SPM,SO2,NOX,CO) and the continuous ambient air quality monitoring(CAAQM) sensors(PM2.5, PM 10. VOC, Cl2) provided are calibrated regularly and operated continuously and connected to the CAC of the Board and CPCB servers.	**Complied.** The OCEMS installed in the Boiler Stack for the parameters SPM, SO2, NOX, & CO and the Continuous Ambient Air Quality Monitoring (CAAQM) sensors (PM2.5, PM10, VOC & Cl2) are calibrated regularly and operated continuously by the unit which are connected to the CAC of the Board and CPCB servers.
	d) The unit shall ensure that the OCEMS installed at the outlet of the treated trade effluent holding tank (ETP) for the parameters TOC (BOD & COD), TSS, pH & Temperature and flow sensors provided are calibrated regularly, operated continuously and connected to the CAC of the Board and CPCB servers.	As per Board advice that the OCEMS installed at the outlet of the treated trade effluent holding tank (ETP) for the parameters TOC (BOD & COD),TSS, PH & Temperature and flow sensors provided are calibrated regularly and operated continuously and connected to the CAC of the Board and CPCB servers.	**Complied.** The OCEMS installed at the outlet of the treated trade effluent holding tank of ETP for the parameters TOC (BOD & COD),TSS, PH & Temperature and flow sensors are calibrated regularly and operated continuously and connected to the CAC of the Board and CPCB servers.
	e) The unit shall ensure for the continuous data transmission from the	We are ensuring the continuous data transmission from the OCEMS and CAAQM sensors to	**Complied.** The unit is ensuring the transmission of data

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	OCEMS and CAAQM sensors to the CAC of the Board and CPCB servers.	the CAC and WQW of the Board and CPCB servers. Dedicate Link for TNPCB form Airtel 10 MBPS on RF for Plant 2 Secondary link from LAN with below Links Provided via Load Balancer with auto Switching in 30 Secs <u>LAN Link Details :</u> Primary Link 20 Mbps BSNL – Fibber Link Secondary Link 10 Mbps Airtel – RF Link Dedicate power supply UPS were provided for the system and equipment's.	from the OCEMS and CAAQM sensors to the CAC and WQW of the Board and CPCB servers continuously.
	f) The unit shall furnish time bound action plan to remove/clear the old accumulated lime sludge stored in the backyard of the unit.	As per Board advice we have moved approx. 6000Mt of old accumulated lime sludge for beneficial use to develop low lying area. Continuously taking steps for further disposal of old sludge for beneficial use. Lime sludge Quantity moved details submitted to TNPCB in the monthly report.	**Partially Complied.** The unit has reported that the unit has removed about 6000 MT of old accumulated lime sludge for further beneficial use. The unit has to remove the remaining accumulated sludge early for further beneficial use.
	g) The unit shall take immediate action to get supply of LNG from IOCL to switch over the fuel from furnace oil to LNG for the boiler.	MPL side LNG burners procurement action taken and ready for despatch for LNG firing. Awaiting LNG supply from IOCL. We are closely following with IOCL for pipe line laying and supply of LNG.	**Partially Complied.** The unit is yet to complete the fuel replacement from furnace oil to LNG for the boiler.
	h) The unit shall comply with the minutes of the meeting held on 09.02.2021.	Based on 09.02.2021 minutes of the meeting all the points were complied and feedback letter was submitted.	The compliance details are submitted below.

Sl. No.	Points mentioned in the minutes of the meeting dated 09.02.2021 for compliance	Action taken by the unit
1.	The unit shall conduct marine impact study at the point where the treated trade effluent is being discharged into sea and furnish the report once in a year (since 2016) conducted through a reputed institution. The recently conducted study report shall be furnished within 28.02.2021.	**Partially Complied.** Marine water quality study carried out through NIOT, Chennai in the year 2020 as stated by the unit is based on the joint committee decision as per Hon'ble Tribunal, Southern Zone, Chennai order dated 08.02.2020, 11.06.2020 & 07.09.2020 in OA nos. 19/2013, 224/2016, 248/2016 and Appeal nos. 51/2017 & 52/2017.

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				NIOT has suggested long term study in both the report (2015 & 2020) to assess the marine water quality and flora & fauna marine life as well as indicated the pollution from other sources also. All the three units (M/s.TPL, M/s.Kothari Petrochemical & M/s.MPL) have now accepted to carry out the marine impact study every year for which these units have given undertaking and it was reported that the impact study will be conducted from the year 2021-22.
	2	The unit shall improve the temporary lime storage yard and its leachate collection arrangements provided and shall also take steps to ensure that they are properly maintained so as to curtain ground water pollution.		**Complied.** The unit has improved the temporary lime storage yard and its leachate collection arrangements and needs to be continuous maintenance.
	3	The unit shall furnish the compliance of Environmental Clearance conditions with third party audit every year.		**Partially Complied.** The unit has engaged M/s.Glense Lab, Chennai to carry out the third party audit for the EC conditions compliance and the same is in progress.
	4	The unit shall apply and obtain Authorization under Hazardous and Other Wastes (Management & Transboundary Movement) Rules, 2016.		**Complied.** The unit has obtained Hazardous waste Authorization vide Board's Proc. dated.28.05.2020 for 5 years.
	5	The unit shall comply with the long term and short term action plan with respect to CEPI and to carry out all the mitigation measures for improvement of Air, Water, land environment as per the mechanism evolved by CPCB vide letter dated.25.10.2019 for environmental management of critically Polluted Areas. If the land area is not adequate within the premises to develop green belt, the unit may tie-up with local body & develop green belt up to 40% as per CEPI norms.		**Partially Complied.** The unit has replaced the furnace oil usage in a Boiler with LNG and to be replaced for standby Boiler. The unit shall continue to develop green belt to attain an area of 40% of the total area with indigenous native tree species either within the unit premises or outside the premises in consultation with the Zonal Officer, GCC.
3.	**M/s. Chennai Petroleum Corporation Limited Refinery I, II and III, Manali.** a) The unit shall improve oil water separation in the ETP for effective removal of oil.	All the three ETP's are commissioned with American Petroleum Institute (API) separator, Tilted Plate Interceptors (TPI) and Dissolved Air Floatation unit for separation of both free oil & emulsified oil. In addition to the above, in the upstream of the above said system, free oil removal is done in the feed tanks wherein the effluent water is allowed to settle and the top oil layer is removed through pipes connected to the tanks at different levels.		**Complied.** The unit has reported that the unit is operating and maintaining the oil separation units provided in all ETPs for effective removal of oil. The report of analysis of treated trade effluent samples collected from the ETPs by the TNPCB revealed that the oil & grease parameter is within the

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		CPCL is checking Oil & Grease in the Effluent Treated water on daily basis and are within the limits (<3ppm).	treated trade effluent standards notified for oil refinery under the Environment (Protection) Rules, 1996 vide SR.186 (E) dated 18.03.2008.
	b) The unit shall quantify the amount of water received from each source, Utilization of that water in process and treated water utilization and their distribution system.	Water balance diagram indicating the sources & distribution of water for the year 2019-20 and also for the month of Feb'21 are attached.	-
	c) The unit shall provide EMFM to all the inlets and outlets of STPs, ETPs, and all the treated sewage/effluent distribution system.	EMFM & Orifice meter with recorder facility is provided at the inlet & outlet of STPs and ETPs.	**Partially Complied.** The unit has provided EMFMs at the inlet and outlet of Sewage Reclamation Plant I&II and OCEMS at the outlet of the ETPs (except in ETP IV)
	d) The unit shall expedite the provision of online analyser at the outlet of ETP IV and connect the same to the WQW, TNPCB, Guindy.	CPCL has issued work order to supply online analyzer for measuring ETP-IV outlet. The work will be completed before June '21. It is to be noted that the ETP-IV effluent water is treated thro 'RO and ION Exchange process and the water is reused at CPCL Boilers.	**Partially Complied.** The unit has reported that the work order for the installation of OCEMS at the outlet of ETP-IV has been issued and the same will be installed and commissioned before August 2021.
	e) The unit shall furnish details on wet slop oil collection and utilization since it is not known whereabouts of wet slop oil from ETP.	CPCL is having a closed circuit wet slop collection system to receive slop oil from ETPs. The slop tank is closed tank and after preparation, the 100% of the oil is pumped to process unit along with Crude Oil & reprocessed. PFD/P&ID of ETP-III and ETP-IV is enclosed herewith as **Annexure-D,** depicting the removal of oil in ETP and subsequent transfer to slop tank for processing with crude. The slop recovered from ETP's from Oct'20 to Feb'21 is furnished below. ➢ Oct' 20 – 2137 KL ➢ Nov'20 – 4644 KL ➢ Dec' 20 – 3434 KL ➢ Jan' 21 – 4790 KL	**Partially Complied.** The slop oil is collected in a closed tank and the same is pumped to process unit along with crude oil and reprocessed. The unit has been instructed to maintain the records for the slop oil generation and reuse.

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		➢ Feb' 21 – 3832 KL	
	f) The unit shall take necessary action to improve the existing APC measures or provide new control measures to achieve the standards prescribed by the Board as the parameters CO, PM, SO_2 and NO_x have exceeded many times over a period of 2 years.	CPCL has implemented the following Air Pollution Control (APC) Measures: ➢ Only low Sulphur fuel oil is used as internal fuel for reducing SO2 emission. ➢ Low NOx burners are installed in all the major process heaters, Boilers & Gas Turbines to control NOx emission. ➢ Excess Oxygen control is provided in the Digital Distribution System (DCS) for complete combustion and this will suppress the formation of CO. As a major leap, CPCL has recently installed Re-gasified Liquefied Natural Gas (RLNG) in all the major process heaters, Boilers & Gas Turbines from March 2019 in a phased manner. Presently CPCL is using 30,000 MT of RLNG per month. Few excursions in stack parameters noticed are predominantly during unforeseen plant upset, during startup & due to instrument fault. Timely action is being done by CPCL to attend the instrument fault.	**Partially Complied.** The unit has implemented the following improvement measures. Low Sulphur fuel oil is used as internal fuel for reducing SO2 emission. Low NOx burners have been installed in all the major process heaters, Boilers & Gas Turbines to control NOx emission. Excess Oxygen control is provided in the Digital Distribution System (DCS) for complete combustion and to reduce the formation of CO. The unit has installed Re-gasified Liquefied Natural Gas (RLNG) in all the major process heaters, Boilers & Gas Turbines. The unit is using 30,000 MT of RLNG per month.
	g) The unit shall conduct studies regarding the emission level inside and outside the premises and take necessary effective steps to reduce the emission load let out from the premises and maintain records for the same.	In addition to the regular NABL accredited Lab survey on stack monitoring and Ambient Air Quality Monitoring, the stack emission survey and Ambient Air quality monitoring inside and outside CPCL has been entrusted to Indian Institute of Technology (IIT), Madras on 09.01.2021 vide P.O.No.26758469. IIT has completed survey of 41 stacks out of 45 and completed Ambient Air Quality monitoring at 10 stations for 4 weeks, out of which one is at CPCL Polytechnic near to Manali Bus stand. All the values are within the limit.	**Complied.** The unit has reported that the unit has conducted Ambient Air Quality (AAQ) / Stack Emission Monitoring survey through IIT, Chennai.

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<table>
<tr><td>4.</td><td colspan="4"><u>M/s. North Chennai Thermal Power Station-I, Puzhuthivakam village, Ponneri Taluk, Tiruvallur District.</u></td><td></td></tr>
<tr><td>1.</td><td colspan="5">The unit shall comply with the following findings of the committee constituted by the Hon'ble National Green Tribunal order dated.20.05.2019, communicated and agreed by the Hon'ble NGT within the time limit as reported.</td></tr>
<tr><td></td><td colspan="4">a. The unit shall remove the fly ash deposited on the land in and around the ash carrying pipeline and ash disposed inside the premises for quantity of 3,95,979 Tonnes and shall store in temporary storage area and/or sent directly for beneficial purposes.</td><td></td></tr>
<tr><td></td><td colspan="4"><table>
<tr><th rowspan="2">Action plan</th><th colspan="2">Time period of work</th><th rowspan="2">Present Status</th></tr>
<tr><th>Commencement</th><th>Completion</th></tr>
<tr><td>The Ash Deposited on the land in and around the Ash carrying pipe lines will be temporarily stored by the NCTPS in the following areas with geo thermal lining at the bottom and Bunds will be formed around the temporary storage areas as detailed below.</td><td></td><td></td><td rowspan="4">M/s. Tamil Nadu Polymer Industries Park Limited have been permitted to lift 15 lakhs m^3 of wet ash from NCTPS-I ash dyke to develop a Polymer Industries Park Project at Voyalur and Puzhudivakkam villages in Thiruvallur district in Phase-I to an extent of 180.91 acres adjacent to Ennore SEZ Project site.

It has been agreed by M/s.TPIPL for lifting of 1,67,241 m^3 from the land area (Zone I, II & III) directly at free of cost. The order for lifting the wet ash has been issued vide Lr.No.SE/C/CM/NCTPS-I/F.WA/D.60/20, Dt.16.05.2020 and work has been commenced on 01.06.2020 in Zone (I,II & III) area and lifted 1,94,543 m^3 ash till 30.06.2021.</td></tr>
<tr><td><u>Zone:(i)</u>
Southern and Northern side of Ash pipe lines from Harbor road to Pulicat bridge area.
On the southern side fly Ash spread in area of 108549 m^2 to a volume of 58508 m^3.
On the Northern side fly Ash spread in area of 28890 m^2 to a volume of 6247 m^3.</td><td></td><td></td></tr>
<tr><td><u>Zone:(ii)</u>
Southern and Northern side of Ash pipe lines from Pulicat Bridge to Railway crossing Bridge area.
On the southern side fly Ash spread in area of 108428 m^2 to a volume of 34697 m^3.
On the Northern side fly Ash spread in area of 122107 m^2 to a volume of 25032m^3.</td><td></td><td></td></tr>
<tr><td><u>Zone:(iii)</u>
Southern and Northern side of Ash</td><td></td><td></td></tr>
</table></td><td>Partially Complied.
The unit committed to comply before September 2022.</td></tr>
</table>

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	pipe lines from NCTPS stage-II pipe line to Railway crossing area. On the southern side fly Ash spread in area of 23770 m^2 to a volume of 5943m^3. On the Northern side fly Ash spread in area of 62265 m^2 to a volume of 36814m^3.				
	Zone:(iv) A). Southern and Northern side of Ash pipe lines at adjacent side of NCTPS stage-II Recovery Pump House area. On the adjacent side of recovery water pump house fly Ash spread in area of 50028 m^2 to a volume of 54530 m^3. B). Western side of Ash dyke adjacent to Ash slurry pipe lines area. On the western side of Ash dyke adjacent to Ash slurry pipe line fly Ash spread in area of 141858 m^2 to a volume of 18442 m^3. C). Western side dyke Cheppakkam ramp area. On the western side of Ash dyke adjacent to Cheppakkam ramp area fly Ash spread in area of 219221m^2 to a volume of 150166m^3.			Total ash to be removed a. 54530 m^3 b. 18442 m^3 c. 150166 m^3 Total 223138 m^3 ➢ 18,500 m^3ash removed in Zone IV area till date. ➢ Estimate submitted for removal of balance quantity of 2,04,638 m^3. Vide Lr.No. CE/NCTPS-I/ SE/M.I/EE/AHP/F .Dkt 120105/d.360/20, Dt.02.03.20 and revised proposal is also submitted vide Lr.No.CE/NCTPS -I/ SE/M.I/EE/AHP/F .NGT, D.995/20,Dt.27.05.2020 to an amount of Rs.3,32,14,500/- ➢ Further 22,000 m^3 wet ash removed in zone IV area during the month of Sep'2020	
	zone-1,2,3,4 a. Estimation, Approval, Tendering and awarding of work:				
	1. Preparation of Estimate	Aug - 2020			

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	2. Sanction at Head Quarters	Sep-2020	Aug-2021		
	3. Technical Sanction	Sep-2021			
	4. Tendering				
	i) BQR Approval	Oct-2021			
	ii) Specification Approval	Oct-2021			
	iii) Call for Tender	Nov-2021			
	5. Price Bid opening and awarding of work.	Dec-2021	Jan-2022		
	b. Formation of Temporary storage at North eastern area of 90^0bend of the pipelines in front of Zuari cement factory of size. (length 60mXWidth 40m X Height 3m)= $7200m^3$	Feb-2022	March -2022		
	C. Removal of Ash from the above Zone.(iv), Storing in the temporary storage, Lifting and utilization by beneficiaries.	March -2022	Sep-2022		
	➢ The TNRDC and NHAI have been addressed and also contacted in person to utilize the fly Ash generated from NCTPS-I and they have obliged their request. TNRDC have assured to lift 10-15 Lakh Tonnes of Ash for their upcoming project of Minjur to Kattupalli and the Ash will be utilized by June 2021. The Chief Engineer State Highways &The Project Director, Chennai peripheral ring road were also addressed for lifting the fly Ash and it will be followed up by NCTPS. Competent Agency /Institution will be addressed to test the soil quality after removal of the Ash			➢ In this regard, the Project Director, Tamil Nadu Road Sector Project-II, R.A.puram, Chennai-28 have also been addressed from CE/NCTPS-I vide Lr.no.D.1026/20, dt.07.02.20 regarding the quantity of wet ash required, details of the project and duration of time. ➢ In the meantime the lifting of wet ash is under progress from June-20 for NH 5 road work by the M/s.Keeran Traders agencies.	

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and the remedial measures will be taken as per the suggestions of the Agency /Institution.				
Work completion		**Sep'**		

b. The unit shall completely remove the ash deposited in Buckingham canal for a quantity of 93,096 m^3 Tonnes and shall store in temporary storage area and/or sent directly for beneficial purposes.

Action plan	**Time period of work**		**Present Status**	**Partially Complied.** The unit committed to comply before May 2022.
	Commencement	**Completion**		
The PWD has already commenced the dredging of the Buckingham canal and deposited the dredged Ash and silt in the Banks of the canal. Technical sanction has been accorded by NCTPS for an amount of Rs.16 lakhs for removing the deposited Ash from the banks of the Buckingham canal for a quantity of 9667m^3. Administrative approval has been accorded to transfer an amount Rs.66 lakhs to PWD on Deposit Contributory Works (DCW basis) for desilting the Buckingham canal. Fund was transferred to PWD on 13.12.2019. After the dredging work is carried out by PWD, the Ash removal work will be carried out by M/s.TANGEDCO				
Removal of 9667 m^3Ash includes storing in a temporary storage area in existing Ash dyke and used for beneficial purposes (tendering, awarding, commencement and completion).	02.03.2020	May-20	➢ For removal of 9,667 m^3 ash, work have been completed.	

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	(a) Desilting the balance quantity of 83429 m^3 for length of 2.6km at a cost of Rs.66 Lakhs by PWD (Tendering, awarding, commencement and completion).			➢ Rs.66.23lakhs paid to PWD during December 2019, PWD commenced the work and work in progress . ➢ In the mean time, on 02.11.2020 the PWD furnished additional estimate for an amount of rupees 18 lakhs for additional quantity of Ash to be de-silted in the same area.	
	i) Tendering	Sep-2020	Oct-2020		
	ii) Awarding	Nov-2020			
	iii)Commencement	Jan-2021			
	iv)Completion		June-2021		
	Work completion		**June-2021**	Desilting Work Completed	
	Removal of desilted Ash of 83429m^3 including storing in existing Ash dyke and used for beneficial purposes. (Estimate sanction, tendering, awarding, commencement and completion).			➢ The work of removal of desilting ash is under process	
	i)Estimate Sanction	April-2021	May-2021		
	ii) Tendering	May-2021			
	iii) Awarding	June-2021			
	iv)Commencement	June-2021			
	v)Completion		Sep-2021		
	(b) For removing silt from NCTPS-1 main gate to Ennore creek (1.67km), Letter has been addressed to PWD for carrying the work on DCW basis vide letter dated 16.12.19.			➢ Estimate has been requested from PWD vide letter references as furnished below, 1. Lr.No:CE/NCTPS /SE/CM/DB/EA/JE/F.NGT/D.881/19, dt:16.12.19 addressed to CE/PWD/WRO/Palar Basin/	

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					Chennai-05. 2. Lr.No:EE/CM-II/NCTPS-I /F.NGT/D.403/19, dt:20.12.19 addressed to EE/PWD/ Chennai-05. 3. Lr.No:EE/CM-II/NCTPS-I/ F.NGT/D.433/19, dt:10.01.20 addressed to EE/PWD/ Chennai-05. 4. Now M/s.CMWSSB is carrying out the work of laying TTRO water supply line under the back waters of Ennore Creek. For this work, dredging is being done along the pipeline route and the dredged materials are pumped through pipeline and dumped in the Buckingham canal and this flow is mingled with Kosasthalaiyar river also, because Buckingham canal and Kosasthalaiyar river is joining each other. This has been informed to the CE/PWD vide letter dt.14.08.2020 (Copy enclosed) with a copy marked to the JCE/TNPCB. 5. Further a letter has been addressed to JCEE/TNPCB vide Lr.No.CE/NCTPS-I/SE/ CM/DB/EA/JE/F. NGT/D.486/20,	

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				DT.22.09.2020 inturn the JCEE/TNPCB addressed a letter to CE/O&M-II/ CMWSSB vide Lr.No.048/ GMP/JCEE(M)/TNPCB/CHN ZONE/2020, dt.05.10.2020 stating that "to remove the dredged materials already pumped in the Buckingham canal and in Kosasthalaiyar river from Ennore creek to NCTPS-I main gate immediately".	
	Removal of desilted Ash of 15765m^3 by PWD for the above estimated quantity and kept on the banks of Buckingham canal including storing in existing Ash dyke and used for beneficial purposes. (Estimate sanction, tendering, awarding, commencement and completion).				
	i)Estimate Sanction		Aug-2021		
	ii) Tendering	Sep-2021			
	iii) Awarding	Oct-2021			
	iv)Commencement	Nov-2021			
	v)Completion		May-2022		
	Work completion		**May-2022**		
	c. The unit shall completely remove the ash deposited in Kosathaliyar River for a quantity of 3,25,000 Tonnes from NCTPS main gate to KPL main gate for a length of 2.4Kms for a average width of 130m and depth of 1m and shall store in temporary storage area and/ or sent directly for beneficial purposes.				
	Action plan	**Time period of work**		**Present Status**	**Partially Complied.** The unit committed to comply before

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	Commencement	**Completion**		December 2021.
Administrative approval has been accorded to transfer of amount Rs.28.5 crores to PWD on Deposit Contributory Works (DCW basis) for dredging of Kosasthalaiyar river for a quantity of 325000 Tonnes (2400 meters length and various width of 130-140 meters and depth of 1 meter) Fund was transferred to PWD on 13.12.2019.			Eventhough an amount of Rs 28.50 Crores paid to PWD during December - 2019, PWD have commenced the work only on 15.06.2020 and the work under progress.	
Desilting by PWD sanction of working estimate, Tendering, Awarding, commencement and completion Reach(i) (Ch 0 to 1.2km) and Reach (ii) (Ch 1.2 km to 2.4 km)				
i) Tendering	Mar-2020		Completed	
ii) Awarding	Jun-2020		Completed.	
iii)Commencement	Jun-2020			
iv)Completion				
Work completion				
Removal of desilted ash of 325000 m^3 including storing in existing ash dyke and used for beneficial purpose.(Estimate, Sanction, tendering, awarding, commencement and completion.			➢ The work of removal of dredged ash form the banks of kosasthalaiyar river is under progress.	
iii) Awarding				
iv)Commencement	May-2021			
v)Completion		Dec-2021		
Work completion		**Dec-**		
d. The unit shall completely remove the ash deposited in				

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	Kosathaliyar river for a quantity of 4,68,000 Tonnes form Ennore creek to NCTPS-I main gate for a distance of 1.7Km and from KPL main gate to Kattupalli downstream for a distance of 1.9 Km for a average width of 130m and depth 1m and shall store in temporary storage area and/or sent directly for beneficial purposes.	

Action plan	Time period of work		Present Status	**Partially Complied.** The unit committed to comply before December 2022.
	Commencement	Completion		
For removing silt from Ennore creek to NCTPS-I for a distance of 1.7 Km and a width of 130m and depth of 1m for a approximate quantity of 4,68,000 m^3. A letter has been addressed on 06.12.2019 to PWD for carrying out the work on Deposit Contributory Works (DCW basis). After the receipt of detailed estimate from PWD and approval from our headquarters, the funds will bearranged and transferred to PWD by NCTPS			➢ Estimate received from PWD to an amount of Rs.28 Crores for desilting the ash from Kosasthalaiyar river for a quantity of 4,68,000 m^3 from Ennore Creek to NCTPS-I main gate for a distance of 1.7 Km and submitted to TANGEDCO Head Quarters for administrative approval. Reply to remarks of Head Quarters is submitted fromCE/NCTPS-I vide Lr.No.CE/NCTPS-1/SE/CM/EE/CM2/F.NGT/D.483/20/dated: 18.09.2020 ➢ Now M/s.CMWSSB is carrying out the work of laying TTRO water supply line under the back waters of Ennore Creek. For this work, dredging is being done along the pipeline route and the dredged materials are pumped through pipeline and dumped in the	

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					Buckingham canal and this flow is mingled with Kosasthalaiyar river also, because Buckingham canal and Kosasthalaiyar river is joining each other. This has been informed to the CE/PWD vide letter dt.14.08.2020 (Copy enclosed) with a copy marked to the JCE/TNPCB. ➢ Further a letter has been addressed to JCEE/TNPCB vide Lr.No.CE/NCTPS-I/SE/ CM/DB/EA/JE/F.NGT/D.486/20, DT.22.09.2020 inturn the JCEE/TNPCB addressed a letter to CE/O&M-II/ CMWSSB vide Lr.No.048/ GMP/JCEE(M)/TNPCB/CHN ZONE/2020, dt.05.10.2020 stating that "to remove the dredged materials already pumped in the Buckingham canal and in Kosasthalaiyar river from Ennore creek to NCTPS-I main gate immediately".	
		Receipt of estimate from PWD	10.03.20			
		Administrative approval by	Oct-2020	Aug-2021		
		Payment		Sep-2021		
		Desilting by PWD 1700m length sanction of working estimate Tendering				

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i) Tendering	Oct-2021	Nov-2021		
ii) Awarding	Dec-2021			
iii)Commencement	Jan-2022			
iv)Completion		Oct-2022		
Work completion		**Oct-2022**		
Removal of desilted ash of 4,68,000 m^3including storing in existing ash dyke and used for beneficial purpose (Estimate sanction, tendering, awarding, commencement and completion).				
i)Estimate Sanction	Sep-2021			
ii) Tendering	Oct-2021	Dec-2021		
iii) Awarding	Jan-2022			
iv)Commencement	Feb-2022			
v)Completion		Dec-2022		
But the Ash and silt formation deposited in the upstream of the Kosasthalaiyar river i.e from KPL main gate to kattupalli to a distance of1.9 Km is very far away from the NCTPS-I Ash slurry pipeline crossing of the river. This area is 1.1km away from slurry line crossing on upstream side. Hence the Ash carry over in this stretch will be minimum. So, the unit is requesting restudy so as to assess the exact length, width, depth and volume of Ash deposit Accumulated Ash will be removed based on the Findings.				
Work completion		**Dec-**		
e. The unit shall replace the existing Ash Slurry pipe lines No.1,2,3&4 with new Cast Basalt Lined pipe lines for a total length of 20523m length.				

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Action Plan	Time period of the work		Present status	Partially Complied.
	Commencement	Completion		
5A) Ash slurry disposal line No:1 For line No.1 entire length of 5129 metres of Ash Slurry Disposal Line is being replaced. At present, erection of 3510metres was completed and work is under progress for the balance length of 1619 metres and it will be completed by Jan'2020.	Oct' 2019	Aug-2020.	At present, erection of 5129metres was completed and line is in service.	i) The pipelines of Stage-1 were commissioned during 1994-95 and hence more than 25 years old. They have become rustic, corroded and brittle with numerous cracks. There are total 8 Nos. of series of pipelines of which 5 Nos. carry ash slurry and 3 Nos. being used for recycling the filtered water. ii) Out of the above 5 Nos. of pipelines, Line 1 & 5 were replaced and got completed during August 2020. These pipes are old used pipelines brought from Ennore Thermal Power Station (ETPS). They are Cast Basalt-lined having an outer diameter of 406 mm and Inner diameter of 356mm. Replacement of Line 2 & 3 is in progress with new Cast Basalt pipes, but for Line 4,the unit is yet to procure new pipes. The TANGEDCO has committed a timeline for replacement of all the 5 Nos. of pipelines by December 2021. Though the unit has replaced pipeline no.1 & 5 with old pipes retrieved from ETPS, leakage may happen within short period of
5B-1) Ash slurry disposal line Nos:2 & 3 For procurement of new Ash slurry pipe lines and consumables purchase order (P.O) have been placed for a length of 10452metres vide P.O.No:174/30.11.2019 for an value of Rs.8.36 Crores&175/30.11.2019 for an value of Rs.13.88 Lakhs with a delivery period of 10 months.				
5B-2) Delivery period of pipe lines	Jan-2020	Mar - 2021 (Including 6 months Delay due to Covid 19)	7392 Metres New pipe Lines supplied as on 31.05.2021. 70% of supply completed.	
5B-3) The Erection and Commissioning of pipe lines	Sep-2020	Jun-2021 (Including 6 months Delay due to	ASDL line no 2&3 was awarded to M/s RamuEnterprises ,Chennai ASDL no.3 Pipe replacement erection work is under progress and up to 3892meters	

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		Covid 19)	was replaced. ASDL No.2 pipe erection work is under process	time. Hence, the unit shall replace all the pipelines (1 to 5) with new cast basalt pipes to arrest complete leakage of ash into B canal & back waters of Kosasthalaiyar River.
5C) Ash slurry disposal line No:4 For procurement of new Ash slurry pipe lines for a length of 4944metres for a value of Rs. 4.32 Crores. Tender floating is under process.		6 months Delay due to Covid-19	The tender has been put up for lodging due to non-acceptance of validity by thebidders, exorbitant steel rice hike and non acceptance of LD terms of TANGEDCO. Hence, fresh proposal for administrative approval is sent to TANGEDCO Head quarters on 05.03.2021 CMD Approval proceeding No.75 dt; 07.05.2021 .Procurement of pipe is under process.	
Tender processing and placing P.O.	July-2021	Aug-2021		
Delivery period for pipes (4-8 months).	Aug - 2021	Dec-2021		
The Erection and Commissioning of pipe lines	Dec-2021	Mar-2022	Erection expectedto commence in Dec'-2021	
Work completion		**Dec-2021**		

f. The unit shall provide impervious Toe drain around the Ash dyke for a length of 6000m for the collection of seepage water and to be connected to the existing Recovery Water sump and reuse for Ash slurry making.

Action Plan	**Time period of the work**		**Present status**	**Not Complied.** The unit committed to comply before June 2023.
	Commencement	**Completion**		
An amount of Rs 18.17 Lakhs has already been paid to IITM on 25.06.2019 towards the technical consultancy for the Comprehensive / Rehabilitation/Re-construction and	May -	Sep-	➢ It is confirmed from the Ennore SEZ TPP wing that the preliminary report received from IITM on 28.08.2020 and final report expected	

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	raising of NCTPS Ash dyke. The team of IITM has visited the site on 31.08.2019 and the soil exploration test also completed and IITM have confirmed to furnish the report by Dec-2019. (a) Receipt by study report from IITM/ Chennai within 31.12.2019. IITM have stated that the detailed report will be submitted on the Ash dyke strengthening works. (b) Estimation, Approval, tender specification approval ,E-tendering ,and awarding of work (c) Execution of agreement and getting necessary approvals from statutory agencies. (d) Execution of bund raising and strengtheningworks in accordance with IITM/Chennai recommendation complete including impervious Toe drain around the Ash dyke for length of 6000m.	2021 Sep-2021 Nov-2021	2021 Oct-2021 June-2023		
	Work completion		**June-2023**		
	g. The unit shall provide 6000 Nos. of trees in and around the ash dykes and grow it well so as to prevent the dust emission from the ash dyke.				
	Action Plan	**Time period of the work**		**Present status**	**Not Complied.** The unit committed to comply before December 2023.
		Commencement	**Completion**		
	In the Ash dyke area 2540 Nos. of sapling have been planted till 28.12.2020 by NCTPS-I .For further plantations,	Jan-2021	Dec-2023	For the work of mangroves bio shield in the Kosasthalaiyar river and other areas for an amount of Rs.43,24,450/- is	

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	M/s. Swaminathan Foundation have been addressed for suggesting suitable plants and they have inspected the site on 07.12.19 and they have informed to furnish the report during January 2020. However, proposal received only for management of Mangrove Bioshield in the river Kosasthalaiyar, Ennore Estuary. Based on the report, after strengthening of bund the plantation of tree will be taken up. Every year during the summer period water sprinkling arrangements was carried out through the tractor (7 trips per day, 4000 Litres per trip. Estimate amount 1 Lakh per month).			submitted to the Head quarters vide letter no. CE/NCTPS-I/SE/CM/EE/CM-II/D.1146/ dt.18.03.2020 and approval awaited. Quotation has been called from Annamalai University and the District Forest Officer for the above work vide Lr.No:CE/ NCTPS-I/SE/CM/DB/EA/JE/ F.NGT/D.121/20,Dt. 04.06.2020&Lr.No: CE/ NCTPS-I/SE/CM/DB /EA/JE/F.NGT/D.120/20, Dt.04.06.2020. Further reminders also sent vide Lr.No. CE/ NCTPS-I/SE/CM/DB /EA/JE/F.NGT/D.1002/21, Dt.22.01.2021 and Lr.No. CE/ NCTPS-I/SE/CM/DB /EA/JE/F.NGT/D.1003/21, Dt.22.01.2021	
	Work completion		**Dec-2020**		

h. The unit shall make existing ash pond impervious so as to prevent the seepages as per the technical consultancy of IITM, Chennai.

Action Plan	**Time period of the work**		**Present status**	**Not Complied.** The unit committed to comply before June 2023.
	Commencement	**Completion**		
An amount of rupees 18.17 Lakhs has already paid to IIT Madras on 25.06.2019 towards the technical consultancy for the Comprehensive / Rehabilitation/Re-construction and raising of NCTPS Ash dyke. The team of IIT Madras has visited the site on 31.08.2019 and the soil exploration test			➢ It is confirmed from the Ennore SEZ TPP wing that the preliminary report received from IITM on 28.08.2020 and final report is expected.	

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	also completed and they have confirmed to furnish their report by Dec 2019 (a) Receipt by study report from IITM/ Chennai within 31.12.2019. IITM have stated that the detailed report will be submitted on the Ash dyke strengthening works. (b) Estimation, Approval, tender specification approval, E-tendering and awarding of work (C) Execution of agreement and getting necessary approvals from statutory agencies. (D) Execution of bund raising and strengthening works in accordance with IITM/Chennai recommendations	May-2021 Sep-2021 Nov-2021	Sep-2021 Oct-2021 June-2023		
	Work completion		**June-2023**		

i. The unit shall obtain technical study report from IITM Chennai for the remedial measures such as strengthening of Ash Dyke and other related works in Ash dyke and implement the recommendations.

Action Plan	**Time period of the work**		**Present status**	**Partially Complied.** The unit committed to comply before June 2023.
	Commencement	**Completion**		
After receipt of the consultancy report from IITM, Chennai, the bund will be made impervious and other related work will be implemented as per the directions. An amount of rupees 18.17 Lakhs has already paid to IITM on 25.06.2019 towards the technical consultancy for the Comprehensive /			➢ It is confirmed from the Ennore SEZ TPP wing that the preliminary report received from IITM on 28.08.2020 and final report is expected.	

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	Rehabilitation/Re-construction and raising of NCTPS Ash dyke. The team of IITM has visited the site on 31.08.2019 and the soil exploration test also completed and the report is expected by Dec-2019. Detailed report will be submitted latter on. (a) Receipt by study report from IITM/ Chennai within 31.12.2019. IITM have stated that the detailed report will be submitted on the Ash dyke strengthening works within two weeks. A copy of the mail dt: 30.12.2019 from IITM is submitted (b) Estimation, Approval, tender specification approval, E-tendering and awarding of work (C) Execution of agreement and getting necessary approvals from statutory agencies. (D) Execution of bund raising and strengthening works in accordance with IITM/Chennai recommendations	Sep-2021 Nov-2021	Sep-2021 Oct-2021 June-2023		
	Work completion		**June-2023**		
j.	The unit shall provide sufficient number of piezometric wells/monitoring wells around the dykes and upstream of the industry to monitor the ground water quality.				
	Action Plan	**Time period of the work**		**Present status**	**Complied.**
		Commencement	**Completion**		

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The Piezometric wells have been provided at 12 locations around the ask dyke area as per the CPCB Guidelines	Work fully Completed on 09.12.2019.	Work completed Ground water tests carried out.	
Work completed	**Dec'2019**		

k. The unit shall bring back Recovery water Pump No.3 in to service and to replace the existing worn-our Recover water pipe Line.1 for a entire length of 2815 m.

Action Plan	**Time period of the work**		**Present status**	**Partially Complied.** Works are in progress and the unit committed to comply before September 2021.
	Commencement	**Completion**		
A).Recovery Water Pump No:3 Budgetary offer for a spares pump is being obtained for Administrative approval.	Apr-2021	June-2021	Procurement of spares under process	
Indent & Tender Processing.	June-2021	Aug-2021		
Purchase order and supply.	Aug-2021	Sep-2021		
Erection & Testing and commissioning.	---	**Oct-2021**		
B).Recovery Water Pump No:2 In recovery water pump no.2 minor repairs have to be attended. Purchase Order (P.O) of the above pump have been placed with a delivery period of 4 months. Delivery period of spares.	Dec-2019	Mar-2020	Completed	
Erection & Testing and Commissioning.	Apr-2020	Jun-2020	Completed and pump No.2 is in service now	
C).Recovery Water pipe line No:1(R1) The existing worn out Recovery Water Pipe line no.1 is proposed to be replaced with fabricated MS pipe of 362mm outer diameter and 12mm thickness out of	May-2020	Aug-2020	150 Tonnes of 12 mm thick MS plates have been supplied and received at NCTPS-I stores	

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	12mm thickness MS plate for the entire length of 2815 metres. For the above work, Tender was finalized and K2 Agreement has been entered with a contractor. 12mm thick MS plates are required for the above works,P.O. have been placed. Supply of MS Plates.				
	Fabrication of MS pipes.	Apr-2021	July-2021		
	Erection & commissioning of Recovery Water Pipeline No.1.	July-2021	Sep-2021		
	Work completion		**Sep-2021**		

l. The unit shall modify existing three Electrostatic precipitator attached to the 3 No. boilers vide MoEF&CC notification dated 07.12.2015.

Action Plan	**Time period of the work**		**Present status**	**Not complied.** It is reported that the preliminary works for tender opening for the installation of FGD is in progress. **MoEF&CC vide notification dated 31.03.2021 has given time limit for the installation of FGD for this type of power plant till 31.12.2022.**
	Commencement	**Completion**		
Administrative Approval is accorded for Renovation & Modernization (R&M) of Electro Static Precipitators (ESP) in Units I, II & III to achieve the desired PM level below 100 mg/Nm^3. So as to achieve the norms as per MOEF&CC.			As per the recommendation of consultant M/s. MECON, the semi dry FGD system will take care of additional dust burden. However all necessary steps are being taken to maintain the SPM level with in Norms. Tender was floated for installation of FGD and due date of tender opening on 12.08.2021	

m. The unit shall replace the worn-out boiler roof tubes in Unit-II and Unit-III so as to arrest the discharge of fugitive emission.

Action Plan	**Time period of the work**		**Complied.**
	Commencement	**Completion**	
In Unit I and II Boiler, radiant roof tubes	Work fully Completed and now there is no fugitive emission in all three		

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		along with skin casing sheets were renewed. In each unit 120 Nos of tubes of size Ø51 mm x 5mm thick, of length - 11 metres grade SA213T11 were renewed. The work was commenced on 02.01.19 and completed on 26.02.19 in Unit I and in Unit II the work was commenced on 01.08.19 and completed on 20.08.19. In unit III, the Boiler radiant roof tubes were found intact and hence only renewal of skin casing sheets was commenced on 14.09.19 and completed on 30.09.19. Now there is no discharge of fugitive emission in all the three units.	units.	
		➢ **Work completed**	**Sep'2019**	
	n.	The unit shall develop Mangroves plantations and other costal vegetation in both sides Kosasthalaiyar river banks, Buckingham canal and nearby by affected coastal areas, in consultation with M.S.Swaminathan foundation (or) Annamalai University.		

	Action Plan	**Time period of the work**		**Present status**	**Not Complied.** The unit committed to comply before December 2022.
		Commencement	**Completion**		
	Only after removal of Ash from Kosasthalaiyar River and B'Canal area, the plantation of mangroves and other vegetation's will be taken up on both sides of Kosasthalaiyarriver and Buckingham canal. M.S Swaminathan Foundation, Taramani Chennai, have been addressed to suggest suitable plants and they inspected the site on 07.12.2019 and they informed to furnish the report	Oct-2021 Oct-2021	Jan-2022 Jan - 2022	➢ M.S.Swaminathan Foundation have inspected the site on 07.12.2019 and have given a proposal for plantation of Mangrove trees along Kosasthalaiyar river and Buckingham canal. ➢ Proposal was submitted vide Lr.No.CE/NCT	

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	during Jan-2020 based on the report, the plantation of trees will be carried out to an extent of 15 Hectares along Kosasthalaiyarriver and Buckingham Canal. Buckingham canal Kosasthalaiyar river (NCTPS-I main gate to KPL main gate)	May-2022	Dec-2022	PS-I/SE/CM/ EE/CM-II/D.1146/20,dt. 18.03.2020 for getting administrative approval from the competent authority for the same. ➢ Quotation has been called from Annamalai University and the District Forest Officer for the above work vide Lr.No:CE/ NCTPS-I/SE/CM/DB/EA/JE/ F.NGT/D.121/20,Dt.04.06.2020&Lr.No:CE/ NCTPS-I/SE/CM/DB /EA/JE/F.NGT/ D.120/20, Dt.04.06.2020. ➢ Further reminders also sent vide Lr.No. CE/ NCTPS-I/SE/CM/DB /EA/JE/F.NGT/ D.1002/21, Dt.22.01.2021 and Lr.No. CE/ NCTPS-I/SE/CM/DB /EA/JE/F.NGT/ D.1003/21, Dt.22.01.2021	
	Work completion		**Dec-**		
	o. The unit shall ensure complete utilization of fly ash as per the Ministry of Environment, Forest & Climate Change fly ash notification of 2016.				
	ACTION PLAN	**Time period of the work**		**Present status**	**Being Complied.**
		Commencement	**Completion**		
	NOTE				

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		Orders have been issued for lifting of 12lakhs tonnes of fly Ash to 8 major cement companies and 6 other fly Ash based product manufactures and ready mix concrete plants and lifting of fly Ash is under progress from Feb-2019. During the year 2018-19 the fly Ash utilization is 3.19 lakh tonnes out of the total fly Ash generation of 6,05 lakh tonnes which is about 52.85%. A quantity of 6.72 lakh tonnes of total Ash utilized including the wet Ash lifted from Ash dyke have been utilized against the total Ash generation of 10.16 lakhs tonnes which is about 66%. The cement companies have been requested to increase their off take of fly Ash from NCTPS-I in order to achieve 100% fly Ash utilization (enclosed in Annexure). During the year 2019-20 up to March-2020 the fly Ash utilization is 3.42 lakh tonnes out of the total fly Ash generation of 4.90 lakhtonnes which is about 69.74%. A quantity of 10.0 lakh tonnes of total Ash (fly ash+ wet ash) have been utilized against the total Ash generation of 8.23 lakhs tonnes. which is more than 100% Efforts are on to maintain the fly Ash utilization to 100% in the coming months. In the current year 2020-21 up to Feb-2021the total Ash utilized/removed is 21.40 lakhs tones out of the stock available at ash dyke.It inclusive of all units ash generation of 7.82 lakh tonnes in the currentyear 2020-21! which is more than 100% Remarks submitted regarding Hon'ble NGT observations during the hearing held on 20.01.2020 regarding 100% fly Ash utilization or otherwise of NCTPS-I - Court Case 08 of 2016 With reference to the above, and pertained with subject, it is stated that in the matter of O.A No. 117/2014 as per directions of Honorable NGT, Principle Bench, New Delhi , The Central pollution control board , computed and levied Environmental compensation amount of Rs 91,36,815/-(Rupees Ninety one lakhs thirty six thousand eight hundred and fifty only) for non-utilization of fly ash 100% by the Thermal Power plant of NCTPS-1 for the period of 2018-19. Against this compensation claim NCTPS-I has sent a letter vide No. Lr.No.CE/SE/NCTPS-1/M.I/EE/AEE-II/AHP/F. /D.1691 /20, Dt. 25.08.2020 to central pollution control board requesting to drop the claim. Since for the same subject and period the Tamil Nadu Pollution Control Board is its proceedings No	**Complied.**	

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T2/TNPCB /NGT F.31005/RC/2019-20 dated 25.11.2019 have levied 16.461 crores as Environmental compensation for fly ash pollution to the water bodies and surroundings area. In response to the order, NCTPS-I has remitted a cheque for a value of Rs. 16.461 crores.

The Central pollution control board has sent a reply vide B.330/7/2020/IPC-II/TPP date : 04.08.2020/ SL.NO 73 and informed that these remarks have been submitted by CPCB Hon'ble NGT , Principle Bench ,New Delhi during the hearing in September 2020 .The case is pending.

Further NCTPS-I have submitted that already orders have been issued to 14companies for lifting 12 lakh tones of fly Ash for 2 years from Feb'2019 and work under progress to extended the time period by one more year due to COVID – 19 pandemic condition to enable the cement companies to lift the balance quantity of fly Ash (short fall due to COVID pandemic and less unit generation on account of backing down as per instructions of load dispatch center)

Wet Ash Utilization:

From 01.04.2020 upto 31.03.2021, the quantity of wet from the ash dyke and in the land areas are about 21,79,326m^3. The split up details are given below.

Details of wet ash lifted from Ash dyke and land area (from 01.04.2020 to 31.03.2021)

Details of lifting contractors	From Ash dyke	From l area
Local Contractors (Transporters)	810243 m^3	-
M/s TPIPL	11,86540 m^3	182543m^3
Total	19,96,783 m^3	182543m^3
Grand Total	21,79,326m^3	

The total wet ash lifted by M/s TPIPL is 13,69,083m^3 out of 15,00,000 m3 which was approved by TANGEDCO vide Lr.No.SE/C/CM/NCTPS-I/F.WA/F.230/20 dt: 13.07.2020

The total wet ash lifted in ash dyke and land areas by all the agencies are 21,79,326m^3.It is expected that a quantity of about 1.6 lakhs m^3 will be lifted by all the agencies from the ash dyke .Further for the year 2021-22, about 6.00 lakhs m3 of wet ash will be lifted from the ash

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	dyke for road works and other filling works. With the details stated above it is noted that adequate efforts are put forth by NCTPS-I to dispose of Fly ash for the current year and next year. The stock in the Ash dyke has been reduced by around 13 lakhs which is in positive side in disposing the accumulated ash from the ash dyke.		
p.	The unit shall carry out ground water, surface water monitoring once in six months through any NABL accredited laboratory in the affected areas. Further detailed study may be carried out by Ground water department or any reputed institution on the status of ground water, surface water quality once in year.		
	Action Plan	**Time period of the work** **Commencement** / **Completion**	**Not Complied.** The unit is yet to furnish the report for the year 2021.
	Ground water and surface water analysis conducted by M/s. Chennai Testing Lab, Chennai NABL accredited lab during September-2020. Test Report received.	Work Completed for the year 2020 study report already submitted. / Sep-2021 (Periodical) Under progress	
q.	The unit shall adhere to the latest consent order conditions dated 25.06.2014 issued by Tamil Nadu Pollution Control Board.		

	Conditions stipulated	**Time period of the work** **Commencement**	**Present Status**	**Date of Completion**	**Remarks of the TNPCB**
Under Air Act					
i)	The unit shall maintain the coal handling conveyer system and junction towers and ensure that no coal dust shall be accumulated in the adjacent area of coal handling conveyor and junction towers.	**Complied**	-	-	**Complied.** The unit has maintained the coal handling conveyer system and junction towers and ensures that no coal dust is accumulated in the adjacent area of coal handling conveyor and junction towers.
ii)	The unit shall operate and maintain water sprinkling and cyclone separators provided at junction towers	**Complied**	-	-	**Complied.** The unit has operated and maintained water sprinkling and cyclone separators provided at junction towers to control the dust emission at junction towers.

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		to control the dust emission.				
	iii)	The unit shall ensure the APC measures provided in the coal crushing area shall be under working condition so as to control the dust emission.	**Complied.**	-	-	**Complied.** The unit has ensured the APC measures provided in the coal crushing area is under working condition so as to control the dust emission.
	iv)	The unit shall install On line Stack monitoring system for SO_2 &NOx and CO and to connect the same to CARE Air Centre, TNPCB, Chennai within three months.	**Complied.**	-	-	**Complied.** The unit has provided Online Continuous Emission Monitoring System (OCEMS) for unit I, II, III of three stacks to monitor the parameters PM, SOx, NOx and the same is connected with CAC, TNPCB, Guindy and CPCB server.
	v)	The Unit shall provide continuous ambient air quality monitoring station and the same shall be connected to Care Air Centre TNPCB, Chennai within three months.	**Partially Complied.** CAAQMS 2 Nos provided at NCTPS-ICAAQMS 1 No is in continuous service and partly uploading data due to nil tech. support from supplier. The other CAAQMS station met with fire accident and not in service.(Tech. support not available from the supplier. Tender has been called for rectification and it also lodged after poor response from the supplier.	Under Progress	Feb-2021	**Partially Complied.** The unit has provided Continuous Ambient Air Quality Station (2Nos) for the parameters PM10, PM 2.5, SOx & NOx at the following locations which are connected with the CAC, TNPCB, Guindy and CPCB server. NCTPS – Stage-I Substation which is under operation from 05.03.2018. TNEB Staff Quarters (Vallur Camp) –Not in operation due to fire incident.
	vi)	The unit shall operate the Air	**Complied.**	-	-	**Complied.** The unit has provided the air

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		Pollution Control measures efficiently and continuously to achieve the National Ambient Air Quality Standards as per MOEF Notification.				pollution control measures such as Electrostatic Precipitator for Boiler, Dust Extraction and Dust Suppression for coal handling area which are being operated and maintained by the unit regularly so as to achieve the NAAQ standards. The unit has provided sampling port hole for the Boiler stacks to carry out the stack monitoring.
	vii	The unit shall conduct AAQ/SM survey through TNPC Board and furnish the survey report to Board within 3 months.	**Complied.**	-	-	**Complied.**
	viii	The unit shall develop green belt in and around the unit premises at the rate of 400 trees / hectare.	**Complied.**	-	-	**Not Complied.** The total area of the unit is 549.10 Acres and it was reported that the unit has planted tree sapling to an extent of 130 Acres. The green belt to be developed by the unit is 181 Acres (33% of the total area), hence, the unit shall further develop green belt of remaining 51 Acres.
	Under Water Act					
	i)	The unit shall complete and commission the common sewage treatment plant for Stage-I & Stage-II within a month time.	**Complied.**	-	-	**Complied.** STP provided at Stage-I is under operation.
	ii)	The unit shall ensure that no water shall be discharged from the Ash pond or through the canal linking the pump house and ash pond to Ennore creek either directly or indirectly under any circumstances.	Details already furnished in Point No: 11.	-	-	**Partially Complied.** Ash pond recovery water is being utilized for bottom ash slurry preparation. The unit has to improve the bottom ash slurry collection, recovery and disposal of recovery water including ash ponds as recommended by the Joint Committee constituted by the NGT.

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iii)	The unit shall reconstruct/revamp the existing spillway structure to ensure uniform distribution of water from the cooling water canal in to Ennore creek to preserve the marine eco system within 6 months time.	**Partially Complied.** The following works are being carried out to maintain the cooling water effluent temperature. The work for widening of the cooling water channel for an amount of Rs.9,20,46,378/-has been awarded vide Lr.no.CE /P/SE/C /TP/E2/A2/F. widening/WC .No.2/D.495/ 14,dt.26.04.2014,and the work .About 95% has been completed. The temperature at the outfall is maintained within the standards prescribed less than 5° Degree. A study has been conducted at the marine outfall by engaging IIT Chennai, and the design for construction of the spillway with energy dissipation including compound wall has been finalized and reported. **Tender for Rs.14 Crores,** for	Jan-2020 Oct-2020	Nov-2020 April - 2022	**Not Complied.** Tender has been awarded by Stage II for widening of Hot water channel. Proposal to reconstruct the existing spillway structure to ensure uniform distribution of water has been evolved by stage II which is under progress.	

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			construction of new spillway and compound wall, as recommended by IIT Chennai has been floated and the work has been awarded. The construction of new spill way would enable in wide and equal distribution of water with reduced temperature at the discharge point (Marine outfall).			
	Work completion			**April - 2022**		
iv)	The unit shall reconstruct/revamp the pipe line carrying the ash slurry to the ash pond and to ensure that no ash slurry shall be discharged in to creek area under any circumstance.	➢ Details already furnished in Point No: 5.	-	-	**Partially Complied.** i) The pipelines of Stage-1 were commissioned during 1994-95 and hence more than 25 years old. They have become rustic, corroded and brittle with numerous cracks. There are total 8 Nos. of series of pipelines of which 5 Nos. carry ash slurry and 3 Nos. being used for recycling the filtered water. ii) Out of the above 5 Nos. of pipelines, Line 1 & 5 were replaced and got completed during August 2020. These pipes are old used pipelines brought from Ennore Thermal Power Station (ETPS). They are Cast Basalt-lined having an outer diameter of 406 mm and Inner diameter	

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						of 356mm. Replacement of Line 2 & 3 is in progress with new Cast Basalt pipes, but for Line 4,the unit is yet to procure new pipes. The TANGEDCO has committed a timeline for replacement of all the 5 Nos. of pipelines by December 2021. Though the unit has replaced pipeline no.1 & 5 with old pipes retrieved from ETPs, leakage may happen within short period of time. Hence, the unit shall replace all the pipelines (1 to 5) with new cast basalt pipes to arrest complete leakage of ash into B canal & back waters of Kosasthalaiyar River.
	v)	The unit shall take immediate action for the removal of fly ash accumulated over the roads and around the ash dyke area.	Details already furnished in Point No: 1.	-	-	**Not Complied.** The unit has to remove the fly ash accumulated as per the Joint Committee findings.
	vi)	The unit shall conduct Marine Impact Study at where the cooling water is being discharged in to creek/sea and furnish the report within three months.	Tendering for the study is under progress.	Jan-2021	Aug-2021	**Not Complied.** Marine Impact Study not yet conducted.
	vii	The unit shall maintain the coal handling conveyer system and junction towers and ensure that no coal dust shall be accumulated in the adjacent area of coal handling conveyor and junction towers.	**Complied.**	-	-	**Complied.** The coal accumulation in the adjacent areas of coal handling conveyor and junction towers of ICHS are being cleared then and there on regular basis.
	viii	The unit shall obtain renewal	Authorization applied to	-	-	**Not Complied.** Authorization for Hazardous

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	of authorization under the Hazardous Waste (MH&T) Rules 2008.	TNPCB for renewal and got returned due to pending CTO.			waste obtained is valid up to April'2020, renewal application is yet to file.
ix)	The unit shall remit the balance Water cess immediately.	As per MOEFCC notification dated 28.10.2020 Lr no. 6604/A1/2020-1 remitting of Water cess balance dropped.	-	-	The unit has not remitted the balance water cess.
x)	The unit shall develop green belt in and around the unit premises at the rate of 400 trees/hectare.	**Complied.**	-	-	**Not Complied.** The total area of the unit is 549.10 Acres and it was reported that the unit has planted tree sapling to an extent of 130 Acres. The green belt to be developed by the unit is 181 Acres (33% of the total area), hence, the unit shall further develop green belt of remaining 51 Acres.

2. The unit shall install Flue Gas Desulphurisation (FGD) System based on Lime/Ammonia dosing to capture Sulphur in the flue gases to meet the SO2 emissions standard of 600mg/Nm^3 (Power Plants smaller than 500MW installed before 31st December 2003) as per MoEF&CC's Notification S.O. 3305(E) dated: 07.12.2015.	Regarding installation of flue gas desulphurisation, it is submitted that, Administrative approval was accorded vide Per(CMD) TANGEDCO Proceeding No:92 dt: 05.03.2019 to engage a technical consultant for feasibility study. After getting feasibility report and clarifications from Consultant, Detailed project report was requested from consultant and received the same on 30.03.2020. Administrative approval was accorded for installing semi dry flue gas desulphurisation system. After receiving Tender specification on 31.01.2021, received from consultant, Tender was floated and published on 23.02.2021.The pre bid meeting was conducted and the due date of tender has been fixed as 12.08.2021.	**Not Complied.** The unit committed to comply by December 2022 as the timeline (31.12.2022) was given by the MoEF&CC for completion of FGD for these type of power plants.
3. The unit shall install	As NOx emission level in Unit I,	**Not Complied.**

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	Selective Catalytic Reduction (SCR) system or the Selective Non-Catalytic Reduction (SNCR) system or Low NOx Burners with Over Fire Air (OFA) system to achieve NOx emission standard of 600 mg/Nm^3 (Power Plants smaller than 500MW installed before 31st December 2003) as per MoEF&CC's Notification S.O. 3305(E) dated: 07.12.2015.	II and Unit III of NCTPS I are well within the norms of 600 mg/Nm3 all the time and not exceeded even a single instant as per MoEF & CC's Notification S.O.3305(E) dated 07.12.2015, Combustion Modification/measures for control of NOx have not been proposed . A letter was sent to CPCB on 02.01.2020 in this regard.	The unit committed to comply by December 2022 as the timeline (31.12.2022) was given by the MoEF&CC for completion of Low NOx Burners for these type of power plants.
	4. The unit shall ensure that the Particulate Matter (PM) emission in each 3 boiler stacks is within the standard of 100mg/ Nm^3 at all times (Power Plants smaller than 500MW installed before 31st December 2002) as per MoEF&CC's Notification S.O. 3305(E) dated: 07.12.2015.	All necessary steps are being taken at NCTPS-I Meticulously such as Overhauling of ESP and rectification works if any needed then and there to maintain Emission level within norms. It has also been proposed for refurbishment of ESP.	**Partially Complied.** The unit has to improve the operation & maintenance of ESPs to achieve the PM Emission in each boiler stacks consistently.
	5. The unit shall ensure that the OCEMS for the emission parameters SPM, SO2 & NOx are provided to each three Boiler stacks which are calibrated regularly and operated at all times and ensure that the output of the sensors are connected to CAC, TNPCB & CPCB server at all times.	Online Continuous Emission Monitoring system for Emission parameters of SPM, SOx and NOx have been provided in all the three Boiler stacks. It is also submitted that SOx & NOx analysers are being calibrated periodically using sample cylinders. SPM analysers are being calibrated using NABL accredited external Lab facility. The stack emission data have been connected to TNPCB server.	**Complied.** The unit has to calibrate the sensors periodically so as to ensure the continuous transmission of data to TNPCB & CPCB servers.
	6. The unit shall ensure that the sensors for the parameters PM10, PM2.5, SO2 & NO2 installed in 2 Continuous Ambient Air Quality Monitoring Station (CAAQMS) are calibrated regularly and operated effectively and ensure that the output of	2 Nos. CAAQMS have been commissioned at NCTPS-I during the year 2018. Fire accident occurred on 11.07.2018 in one no. CAAQMS installed at Vallur camp site and the other one no.CAAQMS installed at 33/11 KV SS NCTPS-I location have got some repairs and need rectification works. The indent was raised for required spares	**Partially Complied.** The unit has provided Continuous Ambient Air Quality Station (2Nos) for the parameters PM10, PM 2.5, SOx & NOx at the following locations which are connected with the CAC, TNPCB, Guindy and CPCB server.

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	the sensors are connected to CAC,TNPCB at all times.	for rectification of CAAQMS and the enquiry was sent to the OEM M/s.Environment SA India Pvt.Ltd.,Mumbai- 400705 but the OEM has not responded our requests. Hence the tender was lodged and further process is this matter is underway. In this regard, it was also intimated the non response of the OEM to JCEE, Chennai – 106. Mean while, Arrangements have been made for testing Ambient Air quality in various locations in and around NCTPS-I premises by enagaging a NABL accredited external agency.	NCTPS – Stage-I Substation which is under operation from 05.03.2018. TNEB Staff Quarters (Vallur Camp) –Not in operation due to fire incident.
	7. The unit shall continue to develop green belt either within or outside the premises to attain an area of 33% of the total area with indigenous native tree species and the green belt shall inter – alia cover an entire periphery of the unit.	2540 Nos. of saplings have been planted so far.	**Not Complied.** The total area of the unit is 549.10 Acres and it was reported that the unit has planted tree sapling to an extent of 130 Acres. The green belt to be developed by the unit is 181 Acres (33% of the total area), hence, the unit shall further develop green belt of remaining 51 Acres.
5.	**M/s. NTPC Tamilnadu Energy Company Ltd, Vellivoil village, Ponneri Taluk, Tiruvallur District** a) The unit shall install Flue Gas Desulphurisation (FGD) System based on Lime/Ammonia dosing to capture Sulphur in the flue gases to meet the SO2 emissions standard of 200mg/Nm^3 (500MW and above power plants installed after 1st January 2003 up to 31st December 2016) as per MoEF&CC's Notification S.O. 3305(E) dated: 07.12.2015 as reported. (Before November 2022).	The FGD contract is already awarded to M/s TATA Projects Ltd and the construction works are in progress at NTECL. As per our earlier commitment the FGD for all the three units will be installed by Nov 2022.	**Partially Complied.** The unit has reported that the work order for the installation of Flue Gas Desulphurisation (FGD) System has been awarded, works are in progress and the same will be completed in all three units before November 2022.

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	b) The unit shall install Selective Catalytic Reduction (SCR) system or the Selective Non-Catalytic Reduction (SNCR) system or Low NOx Burners with Over Fire Air (OFA) system to achieve NOx emission standard of 300 mg/Nm^3 (500MW and above power plants installed after 1st January 2003 up to 31st December 2016) as per MoEF&CC's Notification S.O. 3305(E) dated: 07.12.2015 as reported. (Before November 2022).	The Low NO Burner with Over Fire Damper is being installed Through M/S GE Power India Ltd. Installation was completed in Unit 1 in Dec 2020 and NOx levels of Unit 1 are within limit. Installation in Unit2 and Unit3 will be completed before Nov'22. (As per MoEF&CC's Notification S.O. 3305 (E) dated 07.12.2015 the limit for NO is 450mg/Nm3 which is applicable to to NTECL Vallur)	**Partially Complied.** The unit has reported that the installation of Low NOx Burner with Over Fire Damper has been installed in unit-1 and for the remaining units (2&3), same will be completed before November 2022.
	c) The unit shall ensure that the Particulate Matter (PM) emission in each 3 boiler stacks is within the standard of 50mg/ Nm^3 at all times (Power Plants installed after 1st January 2003 up to 31st December 2016) as per MoEF&CC's Notification S.O. 3305(E) dated: 07.12.2015.	**Complied.** The emission level in all three units of NTECL are maintained within the applicable limit value of 50mg/Nm3	**Complied.** The unit is complying the PM emission level in each 3 boiler stacks.
	d) The unit shall ensure that the online continuous effluent monitoring sensors (OCEMS) provided for the parameters pH, TSS, BOD, COD, Conductivity, Turbidity & Temperature at the outlet of Central Monitoring Basin are connected to WQW, TNPCB Chennai & CPCB server at all times and calibrated regularly and also ensure the continuous online data transfer.	**Complied.** The OCEMS is already operational and parameters pH, TSS, BOD, COD, Conductivity, Turbidity & Temperature at the outlet of Central Monitoring Basin are connected to WQW, TNPCB Chennai & CPCB server at all times continuously.	**Complied.** The OCEMS installed for the parameters pH, TSS, BOD, COD, Conductivity, Turbidity & Temperature at the outlet of Central Monitoring Basin are calibrated regularly and connected to WQW, TNPCB Chennai & CPCB server and ensuring continuous data transfer.
	e) The unit shall ensure that the OCEMS for the emission parameters SPM, SO2 & NOx	**Complied.** The OCEMS for the emission parameters SPM, SO2 & NO_x provided at all the three Boiler	**Complied.** The OCEMS for the emission parameters SPM, SO2 & NOx

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	provided to each three Boiler stacks are calibrated regularly and operated at all times and ensure that the output of the sensors are connected to CAC, TNPCB & CPCB server at all times.	stacks and values are connected to CAC, TNPCB & CPCB server.	provided at all the three Boiler stacks are calibrated regularly and connected to CAC, TNPCB & CPCB server and ensuring continuous data transfer.
	f) The unit shall ensure that the EMFMs are provided at the inlet & outlet of the Sewage Treatment Plant I & II and at the outlet of Central Monitoring Basin and connected to WQW, TNPCB, Chennai for continuous monitoring.	The flow meter readings of Continuous Monitoring Basin are already connected to WQW TNPCB. STP flow meters will be installed and the reading will be connected with in the stipulated period of six months.	**Partially Complied.** The unit is yet to provide EMFMs at the inlet and outlet of STPs and it was reported that the same will be installed and commissioned within six months. The EMFMs installed at the outlet of Central Monitoring Basin is connected to WQW, TNPCB, Chennai for continuous monitoring.
	g) The unit shall ensure that the sensors for the parameters PM10, PM2.5, SO2 & NO2 installed in 4 Continuous Ambient Air Quality Monitoring Station (CAAQMS) are calibrated regularly and operated effectively and ensure that the output of the sensors are connected to CAC,TNPCB at all times.	**Complied.** Instruments are installed at installed in 4 Continuous Ambient Air Quality Monitoring Station (CAAQMS) for parameters PM10, PNA2.5, SO2 & NO2 and the output of sensors are connected to CAC, TNPCB at all times.	**Complied.** The sensors for the parameters PM10, PM2.5, SO2 & NO2 installed in 4 Continuous Ambient Air Quality Monitoring Station (CAAQMS) are calibrated regularly and connected to CAC,TNPCB for continuous data transfer.
	h) The unit shall ensure that the sewage including canteen waste water arising from the unit and colony is completely collected and treated through the STP I&II and it shall operate and maintain the Sewage Treatment Plant I&II components efficiently and continuously so as to achieve the treated sewage standards	The STP I & II are operated efficiently and the treated water values are maintained within the TNPCB prescribed limits . The output water is being used for horticulture purpose within the unit / colony	**Complied.** The unit is operating the maintaining the STP I&II to satisfy the treated sewage standards prescribed by the Board.

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	prescribed by the Board consistently and ensure that the treated sewage is completely utilized for gardening / tree plantation within the unit/colony premises without any stagnation.		
i)	The unit shall ensure that the trade effluent discharged from the Central Monitoring Basin is meeting the marine disposal standards prescribed by the Board at all times.	**Complied.** The effluent parameters of trade effluent discharged from the Central Monitoring Basin are maintained well within the standards prescribed by the Board. The values are continuously transmitted to TNPCB online.	**Complied.** The effluent parameters of trade effluent discharged from the Central Monitoring Basin are maintained well within the standards prescribed by the Board.
j)	The unit shall ensure that no water is discharged from the ash pond to creek nearby either directly and indirectly under any circumstances.	**Complied.**	**Complied.** The unit is ensuring that no water is discharged from the ash pond to creek nearby either directly and indirectly under any circumstances.
k)	The unit shall handle the ash from ash dyke with utmost care and ensure that there shall not be any spillages of ash around the ash dyke area.	**Complied.**	**Complied.** The unit is taking utmost care and ensure that there is no spillages of ash around the ash dyke area.
l)	The unit shall ensure that the fly ash is completely collected in dry form and disposed 100% for beneficial use in cement industries and hollow block brick manufacturing industries, without any accumulation within the unit premises.	NTECL has 3 ash silos where fly ash is collected in dry form and given to cement, bricks and tiles industries. Ash utilization of NTECL for the year 2020 - 21 is 122.80 %.	**Complied.** The unit has 3 ash silos where fly ash is collected in dry form and disposed to cement, bricks and tiles industries.
m)	The unit shall continue to develop green belt either within or outside the premises to attain an area of 33% of the total area with indigenous native tree species and the green belt shall inter –alia cover an entire periphery of the unit.	NTECL has planted a total of 16,260 trees inside and 23,500 trees outside NTECL area till now through Tamilnadu Forest Department. Mangrove plantation in 14 hectares of land is done through M/s M.S.Swaminthan Research Foundation, Chennai (M/s. MSSRF). NTECL shall continue to develop green belt including along the	**Complied.** The unit has planted a total of 16,260 trees inside and 23,500 trees outside area till now through Tamilnadu Forest Department. Mangrove plantation in 14 hectares of land has been done through M/s M.S.Swaminthan Research Foundation,

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		periphery of the Unit.	Chennai (M/S MSSRF). The unit has further instructed to continue to develop green belt both within and outside the unit premises.
6.	**M/s. Madras Fertilizers Limited, Manali.** a) The unit shall provide Flow meter at the inlet and outlet of STP. Provide Flow meter at the inlet and outlet of NPK plant- ETP connect the readings of flow meters at the inlet and outlet of NPK plant-ETP to the WQW centre of TNPCB.	**Job initiated. There are 12 points where the new EMFMs are going to be installed –** **(i) CWBD plant I/L and O/L (2 No.s), (ii) RO Main I/L, Permeate O/L and Reject O/L (3 No.s), (iii) ETP I/L and O/L (2 No.s) (iv) CETP I/L and O/L (2 No.s), (v) TTP I/L and O/L (2 No.s) and (vi) TTRO supply (1 No.)** **Details:** Tender floated for supply & installation on 21.12.2020. Due to the non-fulfilment of pre-bid criteria by all the vendors, the tender had to be cancelled and subsequently tender was re-floated on 09.04.2021. Technical evaluation is completed. Price bid will be opened and AOW given to the selected vendor. Due to Covid-19, procurement process is getting delayed. Expected to be completed by Dec 2021.	**Not Complied.** The unit committed to comply by December 2021.
	b) The unit shall provide flow metres, energy meters and monitoring sensors for the parameters DO, TDS pH, pressure and levels to the RO plants as per CPCB guidelines and connect the readings to the WQW centre of TNPCB.	**Job completed.** **Details:** One of the existing RO stream dedicated to treat CWBD. **New Plant:** Proposed RO plant for Cooling water Blow Down Treatment plant equipment erection job is in progress in which instruments like Flow meter, monitoring sensors for TDS and pH are part of the project. **Expected completion: Dec 31, 2021.**	**Not Complied.** Installation of RO plant is under progress. The unit is having three RO system for treatment of secondary treated sewage procured from Kodungaiyur STP. At present, the unit is partially procuring Tertiary Treated RO permeate (TTRO water) from Kodungaiyur STP, so one RO system (line A) is in standby, this line A is presently used to treat the above said wastewater generated from the unit until commencement of new dedicated RO plant.

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			The unit committed to comply by December 2021.
	c) The unit shall complete the conversion of fuel from Furnace oil to LNG in the 55 TPH boilers (2 Nos.).	**Job initiated.** **Details:** Tender floated in Feb 2021 and Bid submission time was extended based on Bidder's request. Bids opened on 30.03.2021. AOW issued on June 16, 2021 to M/s Thermax, Pune. Material supply and Installation period is 8 months. Hence, the entire process will be completed by Feb 2022.	**Not Complied.** The unit committed to comply by February 2022.
	d) The unit shall install, commission and connect the Analyser for PM, SOx & NOx for the common stack attached with Boilers 1 & 2 (55T/hr each) early.	**Job completed for** Process Condensate and 110 ATA boilers stack PM data connected to care air centre and CPCB. For boiler 1 & 2 CEMS analyser, Installation was under progress. The erection Engineer got affected with Covid-19 and work got suspended. Now with the Covid-19 situation being at ease, installation has been resumed and in progress. Expected to be completed by August 2021.	**Partially Complied.** The unit has installed PM analyser (CEMS) for the common stack attached with process condensate boiler 70T/hr & 110T/hr boiler and connected to CAC, TNPCB & CPCB servers. Installation of CEMS for the parameters PM, SOx & NOx analyser for the common stack attached with boiler 1 & 2 (55T/ hr each) are in progress and committed to comply by August 2021.
	e) The unit shall restore the remaining 4 CAAQMS stations and connect to CAC before June 2021, as committed.	ETP station (Southwest) made ready with all the 6 parameters (PM_{10}, $PM_{2.5}$, SO_2, NOx, CO and O_3) working. Meteorology parameters are also included in this station. Details: Regarding the installation of remaining three new stations at i) Near workshop (North East) ii) South Gate (South East) and iii) Ammonia watch Tower (South West), Installation of all the analysers (PM_{10}, $PM_{2.5}$, SO_2, NOx, CO , O_3 and NH_3) including Ammonia completed and calibration is in progress by the vendor M/s Environment SA. Communication to TNPCB /	**Partially Complied.** One CAAQM station near North gate with the sensors for parameters such as PM10, PM2.5, SOx, NOx, CO & O3 is in operation and connected to CAC, Chennai. Another CAAQM station near ETP in Southwest direction is made ready with all the 6 parameters (PM_{10}, $PM_{2.5}$, SO_2, NOx, CO and O_3) and is working now. Meteorology parameters are also included in this station.

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		CPCB to be established. Expected to be completed by August 2021.	Regarding the installation of remaining three new CAAQM stations at i) Near workshop (North East) ii) South Gate (South East) and iii) Ammonia watch Tower (South West), Installation of all the analysers (PM_{10}, $PM_{2.5}$, SO_2, NOx, CO , O_3 and NH_3) completed and calibration is in progress by the vendor M/s Environment SA. Communication to TNPCB / CPCB to be established. The unit committed to comply by August 2021.
	f) The unit shall plant green belt by planting native & local specific species in the old SEPs (lagoons) area.	Lagoon is being filled up with available debris inside our company premises and also action is being initiated to fill the entire lagoon area with sand. **Expected completion: Dec 2021.**	**Not Complied.** The unit committed to comply before December 2021.
	g) The unit shall dispose the accumulated hazardous wastes to the authorized facilities immediately as per the conditions stipulated in the authorization order issued under the Hazardous Waste (Management, Handling & Transboundary Movement) Rules 2008 and comply with the provisions of Hazardous & Other Wastes (Management, & Transboundary Movement) Rules, 2016.	As suggested by TNPCB, HW disposal agreements made with SPCB authorized recyclers and resubmitted the application on 08.03.2021. Application was returned back on 29.03.2021 and asked MFL to contact TNPCB office **(Annexure–5).** MFL contacted TNPCB officials for necessary clarification.	**Complied.** The unit has applied for authorization and processing of application is in progress. However, the unit is disposing the hazardous waste to the authorized recyclers.
	h) The unit shall ensure that the OCEMS installed for the parameters NH_3 in Urea Prill Tower, HF & PM in NPK train C, PM	**Complied.** All the data are uploaded continuously to both TNPCB and CPCB servers. All the analyzers are under AMC with the OEMs to avoid any disruption the data	**Complied.** The unit has provided OCEMS for the emission parameters NH3 in Urea prill tower and HF & PM in NPK

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	analyser installed for the common stack attached with process condensate boiler 70T/hr & 110T/hr Boiler, 11 Ammonia sensors within the premises and the continuous ambient air quality monitoring (CAAQM) sensors are calibrated regularly, operated continuously and connected to the CAC of the Board and CPCB servers.	uploading.	train and maintaining regularly & calibrated periodically to ensure that the output of the sensors are connected to TNPCB & CPCB server at all times. One CAAQM station near North gate with the sensors parameters such as PM10, PM2.5, SOx, NOx, CO & O3 is in operation and connected to CAC, Chennai. Another CAAQM station near ETP in Southwest direction is made ready with all the 6 parameters (PM_{10}, $PM_{2.5}$, SO_2, NOx, CO and O_3) and is working now. Meteorology parameters are also included in this station. Regarding the installation of remaining three new CAAQM stations at i) Near workshop (North East) ii) South Gate (South East) and iii) Ammonia watch Tower (South West), Installation of all the analysers (PM_{10}, $PM_{2.5}$, SO_2, NOx, CO , O_3 and NH_3) completed and calibration is in progress by the vendor M/s Environment SA. Communication to TNPCB / CPCB to be established. The unit committed to comply by August 2021. Also, the unit has installed 11 ammonia sensors.
	i) The unit shall ensure that the OCEMS	**Complied.** The EMFM is in line	**Complied.**

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	installed for the EMFM in the HSP Plant is calibrated regularly, operated continuously and connected to the CAC of the Board and CPCB servers.	continuously and data are streamed online in TNPCB and CPCB servers by TNPCB authorised vendor M/s TransTech solutions.	
	j) The unit shall ensure for the continuous data transmission from the OCEMS and CAAQM sensors to the CAC and WQW of the Board and CPCB servers.	**Complied.** MFL will ensure the data transmission to TNPCB and CPCB servers without any interruption.	**Partially Complied.**
7.	**M/s. Tamilnadu Petroproducts Ltd-ECH Plant, Manali.** a) The unit shall ensure that the online continuous effluent monitoring sensors(OCEMS) provided for the parameters pH, TSS, COD & BOD at the outlet ETP are connected to WQW, TNPCB Chennai & CPCB server and calibrated regularly and also ensure the continuous online data transfer.	Online Continuous Effluent Monitoring Sensors (OCEMS) were installed at the ETP Outlet for the parameters pH, TSS, COD, & BOD and monitoring data connected to WQW, TNPCB Chennai & CPCB server. Sensors are calibrated as per the schedule and being ensured for continuous online data transfer.	**Complied.** The Online Continuous Effluent Monitoring Sensors (OCEMS) provided for the parameters pH, TSS, COD & BOD at the outlet ETP are connected to WQW, TNPCB Chennai & CPCB server and calibrated regularly and also ensuring the continuous online data transfer.
	b) The unit shall ensure that the online continuous emission monitoring sensors (OCEMS) for the parameters PM, Sox, NOx & CO provided with a Boiler stack and Chlorine provided with a stack attached to scrubber in chlorine handling area are calibrated regularly and operated and also to ensure that the output of the sensors are connected to CAC of TNPCB/CPCB server at all times.	Online Continuous Emission Monitoring Sensors (OCEMS) were provided in the stacks attached with Boiler for the parameters PM, SOx, NOx, & CO and scrubber in chlorine handling area for the parameter Chlorine are calibrated regularly and operated at all times and being ensured. The output of the sensors is connected to CAC of TNPCB / CPCB server at all times.	**Complied.** The Online Continuous Emission Monitoring Sensors (OCEMS) for the parameters PM, SOx, NOx & CO provided with a Boiler stack and for the parameter Chlorine provided with a stack attached to scrubber in chlorine handling area are calibrated regularly and operated and also ensuring that the output of the sensors are connected to CAC of TNPCB/CPCB server at all times.

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	c) The EMFMs installed at the inlet to the ETP & RO reject from LAB Plant along with the HCD Plant treated effluent reuse to ECH Plant process shall be connected to WQW of TNPCB/CPCB web portal.	Electro Magnetic Flow Meters (EMFM) were installed at the following locations • Inlet to ETP from WTP • Inlet to ETP from Process • RO Reject from LAB Plant along with the HCD Plant treated effluent reuse to ECH plant process The above installed EMFMs will be connected to WQW of TNPCB / CPCB wed portal by September 2021.	**Partially Complied.** The installed EMFMs are yet to connect with the WQW of TNPCB / CPCB web portal and it was reported that the same will be completed by September 2021.
	d) The unit shall ensure that the EMFMs are provided at the inlet & outlet of the Common Sewage Treatment Plant, inlet to STP from ECH Plant, inlet to STP from HCD Plant and inlet to STP from LAB Plant and connected to WQW, TNPCB, Chennai for continuous monitoring.	Electro Magnetic Flow Meter (EMFM) is provided at the following locations • Inlet to STP from HCD Plant • Inlet to STP from LAB Plant • Outlet of the Common Sewage Treatment Plant. EMFM will be provided at the Inlet to STP from ECH Plant and all the flow meters will be connected to WQW, TNPCB by September 2021.	**Partially Complied.** The unit is yet to provide EMFMs at the inlet to STP from ECH plant and yet to connect EMFMs installed to the WQW, TNPCB and it was reported that the installation of EMFMs and connectivity would be completed by September 2021.
	e) The unit shall ensure that the sensors for the parameters PM2.5, PM10, Chlorine and VOC installed in 1 Continuous Ambient Air Quality Monitoring Station (CAAQMS) are calibrated regularly and operated effectively and ensure that the output of the sensors are connected to CAC,TNPCB at all times.	The sensors installed in 1 Continuous Ambient Air Quality Monitoring station (CAAQMS) for the parameters PM2.5, PM10Chlorine and VOC are calibrated regularly and operated effectively and the output of the sensors are connected to CAC, TNPCB at all times and being ensured.	**Complied.** The sensors installed in 1 Continuous Ambient Air Quality Monitoring station (CAAQMS) for the parameters PM2.5, PM10, Chlorine and VOC are calibrated regularly and operated continuously and the output of the sensors are connected to CAC, TNPCB at all times and being ensured.
	f) The unit shall ensure that the temporary lime storage yard and its leachate collection arrangements provided are properly maintained so as to curtail ground water pollution. The unit shall collect and dispose the lime sludge generated then and there to brick kilns for further beneficial.	Temporary lime storage yard with the leachate collection arrangements was provided to store lime sludge and is being properly maintained to curtail ground water pollution. The lime sludge generated is being disposed then and there to brick manufacturer for further beneficial.	**Complied.** The unit is properly maintaining the temporary lime storage yard with the leachate collection arrangements to store lime sludge to curtail ground water pollution. The lime sludge generated is being disposed then and there to brick

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			manufacturers for further beneficial use.
	g) The unit shall continue to develop green belt outside the premises by approaching Zonal Officer (Zone-II), Greater Chennai Corporation/Highways Department to attain an area of 40% of the total area with indigenous native tree species and the green belt shall inter-alia cover an entire periphery of the unit.	Green Belt is being developed in the available area within the premises. Further to the above, Green Belt is being developed in the land available in the adjacent plant M/s. TPL – Polymer plant. Total Plant Area – 38.72 Acres. Inside the plant – 12 Acres. Proposed GB Area – 5 Acres Total area - 17 Acres. Additionally, we will approach Zonal Officer (Zone II) Greater Chennai Corporation / Highways Department to allocate area outside the premises to develop green belt.	**Partially Complied.** The unit is yet to develop green belt outside the premises by approaching Zonal Officer (Zone-II), Greater Chennai Corporation/ Highways Department to attain an area of 40% of the total area.
8.	**M/s. Tamilnadu Petroproducts Ltd -LAB Plant, Manali.** a) The unit shall ensure that the online continuous effluent monitoring sensors (OCEMS) provided for the parameters pH, TSS, COD & BOD at the outlet of ETP are connected to WQW, TNPCB Chennai & CPCB server at all times and calibrated regularly and also ensure the continuous online data transfer.	Online Continuous Effluent Monitoring Sensors (OCEMS) were installed at the ETP Outlet for the parameters pH, TSS, COD, & BOD and monitoring data connected to WQW, TNPCB Chennai & CPCB server. Sensors are calibrated as per the schedule and being ensured for continuous online data transfer.	**Complied.** The Online Continuous Effluent Monitoring Sensors (OCEMS) provided for the parameters pH, TSS, COD & BOD at the outlet ETP are connected to WQW, TNPCB Chennai & CPCB server and calibrated regularly and also ensuring the continuous online data transfer.
	b) The unit shall ensure that the online continuous emission monitoring sensors (OCEMS) provided for the parameters PM, Sox, NOx & CO for stack attached with Hot Oil Heater, PACOL Heater, Hydro Treater, DG sets and Boilers are calibrated regularly and operated at all times and also to ensure that the output of the sensors are connected to CAC of	Online Continuous Emission Monitoring Sensors (OCEMS) were provided in the stacks attached with Hot oil heater, PACOl heater, Hydrotreater, DG sets and Boiler for the parameters PM, SOx, NOx, & CO are calibrated regularly and operated at all times and being ensured. The output of the sensors is connected to CAC of TNPCB / CPCB server at all times.	**Complied.** The Online Continuous Emission Monitoring Sensors (OCEMS) for the parameters PM, Sox, NOx & CO provided with Hot Oil Heater, PACOL Heater, Hydro Treater, DG sets and Boilers are calibrated regularly and operated and also ensuring that the output of the sensors are connected to CAC of TNPCB/CPCB server at all times.

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	TNPCB/CPCB server at all times.		
	c) The EMFMs installed at the RO-I feed, RO-I permeate, RO-II permeate, RO-II reject and RO-II reject & HCD Plant treated effluent reuse to ECH Plant process shall be connected to the WQW of TNPCB/CPCB web portal immediately.	Electro Magnetic Flow Meters (EMFM) were installed at the following locations • RO – 1 feed, • RO – Permeate (I & II). • RO – II Reject, • RO II Reject & HCD plant treated effluent reuse to ECH - PO plant process. The above installed EMFMs will be connected to WQW of TNPCB / CPCB portal by September 2021.	**Partially Complied.** The installed EMFMs are yet to connect with the WQW of TNPCB / CPCB web portal and it was reported that the same will be completed by September 2021.
	d) The unit shall ensure that the EMFMs are provided at the inlet & outlet of the Common Sewage Treatment Plant, inlet to STP from ECH Plant, inlet to STP from HCD Plant and inlet to STP from LAB Plant and connected to WQW, TNPCB, Chennai for continuous monitoring.	Electro Magnetic Flow Meter (EMFM) is provided at the following locations • Inlet to STP from HCD Plant • Inlet to STP from LAB Plant • Outlet of the Common Sewage Treatment Plant. EMFM will be provided at the Inlet to STP from ECH Plant and all the flow meters will be connected to WQW, TNPCB by September 2021.	**Partially Complied.** The unit is yet to provide EMFMs at the inlet to STP from ECH plant and yet to connect EMFMs installed to the WQW, TNPCB and it was reported that the installation of EMFMs and connectivity would be completed by September 2021.
	e) The unit shall ensure that the sensors for the parameters PM2.5, PM10, SO2, NOx, CO and Benzene installed in 1 Continuous Ambient Air Quality Monitoring Station (CAAQMS) are calibrated regularly and operated effectively and ensure that the output of the sensors are connected to CAC,TNPCB at all times.	The sensors installed in Continuous Ambient Air Quality Monitoring station (CAAQMS) for the parameters PM2.5, PM10, SO2, NOx, CO and Benzene are calibrated regularly and operated effectively and the output of the sensors are connected to CAC, TNPCB at all times and being ensured.	**Complied.** The sensors installed in 1 Continuous Ambient Air Quality Monitoring station (CAAQMS) for the parameters PM2.5, PM10, SO2, NOx, CO and Benzene installed are calibrated regularly and operated continuously and the output of the sensors are connected to CAC, TNPCB at all times and being ensured.
	f) The unit shall continue to develop green belt outside the premises by approaching Zonal Officer (Zone-II), Greater Chennai Corporation/Highways Department to attain an	Green Belt is being developed in the available area within the premises. Further to the above, Green Belt will be developed in the TPL land at the back side of ECH plant. Total Plant Area – 40 Acres.	**Partially Complied.** The unit is yet to develop green belt outside the premises by approaching Zonal Officer (Zone-II), Greater Chennai Corporation/ Highways

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	area of 40% of the total area with indigenous native tree species and the green belt shall inter-alia cover an entire periphery of the unit.	Inside the plant – 3 Acres. Proposed GB Area – 18 Acres. Total green belt area (existing & proposed) – 21 Acres. Additionally, we will approach Zonal Officer (Zone II) Greater Chennai Corporation / Highways Department to allocate area outside the premises to develop green belt.	Department to attain an area of 40% of the total area.

5. It is respectfully submitted that the TNPCB is pursuing the units to complete the non compliance directions early so as to upkeep of the surrounding environment.

6. It is further respectfully submitted that the Tamil Nadu Pollution Control Board is monitoring Ambient Air Quality through dedicated stations in three locations nearby the above industries locations and the results are furnished in annual average for the last three years:

2018-2019

Location	PM_{10}	$PM_{2.5}$	SO_2	NO_2
	Micro gm/ m^3	Micro gm/ m^3	Micro gm/ m^3	Micro gm/ m^3
Kathivakkam	53	32	14	17
Manali	53	33	14	18
Thiruvottiyur	59	34	13	16
Standards as per CPCB Notification Dated 18 Nov, 2009	**Annual Average - 60**	**Annual Average - 40**	**Annual Average - 50**	**Annual Average – 40**

2019-2020

Location	PM_{10}	$PM_{2.5}$	SO_2	NO_2
	Micro gm/ m^3	Micro gm/ m^3	Micro gm/ m^3	Micro gm/ m^3
Kathivakkam	59	29	14	16
Manali	65	37	14	17
Thiruvottiyur	56	28	14	16
Standards as per CPCB Notification Dated 18 Nov, 2009	**Annual Average - 60**	**Annual Average - 40**	**Annual Average - 50**	**Annual Average - 40**

2020-2021

Location	PM_{10}	$PM_{2.5}$	SO_2	NO_2

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	Micro gm/ m^3	Micro gm/ m^3	Micro gm/ m^3	Micro gm/ m^3
Kathivakkam	49	28	13	15
Manali	50	32	14	16
Thiruvottiyur	48	29	13	15
Standards as per CPCB Notification Dated 18 Nov, 2009	**Annual Average - 60**	**Annual Average - 40**	**Annual Average - 50**	**Annual Average - 40**

7. It is respectfully submitted that the above results as measured by TNPCB through dedicated stations reveals that the parameter PM_{10} alone exceeds the annual average standards in Manali during the period **2019-2020, whereas all the parameters including PM_{10} level are within the annual average standards in all locations during the period 2018-2019 & 2020-2021.**

8. It is respectfully submitted that in addition to that, the Tamil Nadu Pollution Control Board is monitoring the Ambient Air Quality in the areas nearby the above industries locations through Continuous Ambient Air Quality Monitoring Station (CAAQMS) by 24/7, 365 days in two locations and the results are furnished in annual average for the last three years:

2018-2019

Location	**PM_{10}**	**$PM_{2.5}$**	**SO_2**	**NO_2**
	Micro gm/ m^3	Micro gm/ m^3	Micro gm/ m^3	Micro gm/ m^3
Kodungaiyur	74	23	7	8.5
Royapuram	72	30	8.2	14.3
Standards as per CPCB Notification Dated 18 Nov, 2009	**Annual Average - 60**	**Annual Average - 40**	**Annual Average - 50**	**Annual Average - 40**

2019-2020

Location	**PM_{10}**	**$PM_{2.5}$**	**SO_2**	**NO_2**
	Micro gm/ m^3	Micro gm/ m^3	Micro gm/ m^3	Micro gm/ m^3
Kodungaiyur	70	21	7	11.5
Royapuram	57	22	10.7	25.7
Standards as per CPCB Notification Dated 18 Nov, 2009	**Annual Average – 60**	**Annual Average - 40**	**Annual Average - 50**	**Annual Average - 40**

2020-2021

Location	**PM_{10}**	**$PM_{2.5}$**	**SO_2**	**NO_2**
	Micro gm/ m^3	Micro gm/ m^3	Micro gm/ m^3	Micro gm/ m^3
Kodungaiyur	57	22	7.1	11.7

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Royapuram	47	20	4.7	23.3
Standards as per CPCB Notification Dated 18 Nov, 2009	**Annual Average - 60**	**Annual Average - 40**	**Annual Average - 50**	**Annual Average - 40**

9. It is respectfully further submitted that the above results as measured through Continuous Ambient Air Quality Monitoring Station (CAAQMS) by 24/7, 365 days by TNPCB reveals that the parameter PM_{10} alone exceeds the annual average standards in Kodungaiyur and Royapuram during the period **2018-2019** and the parameter PM_{10} exceeds the annual average standards in Kodungaiyur during the period **2019-2020**, **whereas all the parameters including PM_{10} level are within the annual average standards in all locations during the period 2020-2021.**

10. It is respectfully submitted that Central Pollution Control Board has notified only Thoothukudi, Trichy and Madurai cities as Non-Attainment City in terms of Air Quality with respect to parameter PM_{10}. Action plan has already been prepared and submitted to CPCB, New Delhi for the abatement of air pollution (PM_{10}) in above said cities.

11. It is respectfully submitted that the Environmental Compensation for the following industries, based on the Online Continuous Emission Monitoring System (OCEMS) data, monitored during April 2019 to December 2020, through Care Air Centre (CAC), TNPC Board Chennai, for the exceedance of stack emission levels prescribed by the Board, have been assessed and furnished below.

1. M/s. Chennai Petroleum Corporation Limited Refinery I& II and CPP, Manali.

2. M/s. Chennai Petroleum Corporation Limited Refinery III, Manali.

3. M/s. Chennai Petroleum Corporation Limited (Propylene Plant), Manali.

4. M/s. Chennai Petroleum Corporation Limited (DHDS plant), Manali.

5. M/s. Chennai Petroleum Corporation Limited Resid Upgradation Project, Manali.

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6. M/s. North Chennai Thermal Power Station-I, Puzhuthivakam Village, Ponneri Taluk, Tiruvallur District.

7. M/s. NTPC Tamilnadu Energy Company Ltd, Vellivoil Village, Ponneri Taluk, Tiruvallur District.

8. M/s. Madras Fertilizers Limited, Manali.

9. M/s Tamilnadu Petroproducts Limited (LAB Plant), Manali.

12. It is respectfully submitted that as no exceedance of parameters and no data connectivity were reported in the trend graphs for the period from April 2019 to December 2020 for the following units, EC was not assessed to those units.

1. M/s.Manali Petrochemicals Limited-I, Manali.
2. M/s.Manali Petrochemicals Limited-II, Manali.
3. M/s. Chennai Petroleum Corporation Limited-Hexane Plant, Manali.
4. M/s. Chennai Petroleum Corporation Limited, GTG (Power Plant), Manali.
5. M/s.Tamilnadu Petroproducts Limited (ECH Plant), Manali.
6. M/s.Tamilnadu Petroproducts Limited (Heavy Chemical Division), Manali.

Environmental Compensation calculation

As per the CPCB guidelines, the Environmental Compensation shall be calculated based on the following formula:

(EC) = PI x N x R x S x LF

Where,

PI = Pollution index of industrial sector - For Red Category industries it is 60 to 100. An average value of 80 has been taken.

N = Number of days of violation took place

R = A factor in Rupees for EC is minimum of 100 and maximum of 500. An average value of 250 taken for violation.

S = Factor for scale of operation (0.5 for small, 1.0 for medium and 1.5 for large scale). Hence 1.5 has been taken since all are large scale units.

LF = Location factor (Chennai City populations 7.1 million. LF value for 5 to <10 million is 1.5).

In the above factors, except N value, all are common for all the units.
Hence EC=80xNx250 x1.5x1.5= 45,000xN

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The details of Environmental Compensation assessed to the above said industries are tabulated below.

Sl. No	Name of the Industry	No of days of exceedance	Environmental Compensation levied (in Rs)
1.	M/s. Chennai Petroleum Corporation Limited Refinery I, II and CPP	334	1,50,30,000/-
2.	M/s. Chennai Petroleum Corporation Limited Refinery III	418	1,88,10,000/-
3.	M/s. Chennai Petroleum Corporation Limited (Propylene Plant)	161	72,45,000/-
4.	M/s. Chennai Petroleum Corporation Limited (DHDS Plant)	121	54,45,000/-
5.	M/s. Chennai Petroleum Corporation Limited (Resid Upgradation Plant)	352	1,58,40,000/-
6.	M/s. North Chennai Thermal Power Station Stage I	273	1,22,85,000/-
7.	M/s. National Thermal Power Corporation Limited	124	55,80,000/-
8.	M/s Madras Fertilizers Limited, Manali	1	45,000/-
9.	M/s. Tamilnadu Petroproducts Limited (Lab Plant)	228	1,02,60,000/-

Further it is submitted that all the above mentioned 9 units were issued with show cause notice under Section 5 of Environment (Protection) Act, 1986 vide Board's Proceeding dated 25.08.2021 as to why environmental compensation should not be levied for the violations caused.

Under the above circumstances, it is humbly prayed that this Hon'ble National Green Tribunal may be pleased to pass such further or other orders as this Hon'ble Tribunal may deem fit and proper in the facts and circumstance of this case and thus render justice.

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BEFORE ME

VERIFICATION

I, R. Rajamanickam , son of P.M. Ramasamy, working as Joint Chief Environmental Engineer, having office at No. 76, Anna Salai, Guindy, Chennai -600 032, do hereby submit that the above contents are true to the best of my knowledge and belief through records.

Verified at Chennai on this 25th day of August, 2021.

25/8/2021

JOINT CHIEF ENVIRONMENTAL ENGINEER
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