JSWSL/Envt/MoEF&CC/HYR/2020-21/71
29th September 2020

The Director
Ministry of Environment, Forest and Climate Change
Regional Office (SEZ)
Ist and IInd Floor, Handloom Export Promotion Council,
34, Cathedral Garden Road, Nungambakkam,
Chennai – 600034.

Dear Sir,

Sub: Half Yearly Compliance Report to the period January 2020 to June 2020 – Reg.
Ref: Environmental Clearances F.No. J-11011/281/2006-IA. II(I) dated 07.07.2017 and 10.02.2020

With reference to the above subject, please find enclosed the half yearly compliance report (EC dated 10.02.2020 & 07.07.2017) for the period of January 2020 to June 2020, as per the conditions given in the Environmental Clearance by Ministry of Environment, Forest & Climate Change, New Delhi.

We would like to inform your good office is that an Environment Clearance obtained dated 07.07.2017 to the expansion of special steel production from 1.0 to 1.3 MTPA and recently one more Environmental Clearance obtained dated 10.02.2020 under para 7(ii) of the EIA notification 2006, for installation of 0.8 MTPA slag grinding unit and new facilities related to value addition and technological upgradation within the existing 1.3 MTPA ISP premises.

We would like to kindly bring your information that, we have communicated the following information to your good office via mail dated.26.09.2020.

I. ESC fund allocation & timeline for execution to the EC dated. 07.07.2017 (the details are given in Annexure –I of this letter).
II. Representation to the few general conditions mentioned in the EC dated 10.02.2020 (the details are given in Annexure –II of this letter).

Receipt of this letter may please be acknowledged for our record purpose.

Thanking you,

Yours faithfully,
For JSW Steel Limited

29/9/2020

B. N. S. Prakash Rao
Sr. Vice President

Encl: Annexure –I & II, EC Compliance status with Annexures.

Salem Works
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JINDAL
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Cc: Central Pollution Control Board, Zonal Office Bangalore, 1st & 2nd Floors,
Nisarga Bhavan, A-Block, Thimmaiah Main Road, 7th D Cross,
Shivanagar, Opp., Pushpanjali Theatre,
Bangalore –560 010.

The Member Secretary, Tamil Nadu Pollution Control Board,
100, Anna Salai, Guindy,
Chennai – 600 032.

The Joint Chief Environmental Engineer (M),Tamil Nadu Pollution Control Board,
Salem Region, No # 9, 4th Cross Street, Brindhavan road,
Fairlands,
Salem -16

The Member Secretary
Ministry of Environment, Forest and Climate Change
Indira Paryavaran Bhawan
Jor Bagh Road, Aliganj,
New Delhi - 110003

Annexure –I

ESC fund allocation & timeline for execution to the EC dated. 07.07.2017

JSWSL/Envt/MoEF&CC/CER/2020-21/70
26th September 2020

The Member Secretary
Ministry of Environment, Forest and Climate Change,
Indira Paryavaran Bhavan,
Jor Bagh Road, Aliganj,
New Delhi – 110003

Kind Attn: Mr. R. Sundar, Additional Director

Dear Sir,

Sub: Specific Condition – ii of EC dated 07.07.2017 - Corporate Environment Responsibility (CER) –reg

Ref: Environmental Clearance (EC) F.No. J-11011/281/2006-IA. II(I) dated 07.07.2017

We have been accorded an Environment Clearance dated 07.07.2017 for the expansion of special steel production from 1.0 MTPA to 1.3 MTPA along with installation of additional 1x 30 MW Captive Power Plant. The Consent to Establishment (CTE dated 23.09.2017) has been obtained from TNPCB to the expansion of 1.3 MTPA special steel production.

The proposed expansion activity is planned in a phased manner (Viz Phase-I: 1.0 MTPA to 1.15 MTPA and Phase-II: 1.15 MTPA to 1.3 MTPA) at an estimated cost of Rs 1025 Cr. The erection and commissioning of Phase-I expansion activities were completed with an estimated expenditure of Rs 650 Cr, and Consent To Operate (CTO dated 25.06.2019) was obtained from TNPCB. The plant is under continuous operations with a production capacity of 1.15 MTPA special steel.

Due to the steel market condition and the present pandemic (COVID19) situation the phase-II expansion activity is postponed and the same will be established with in the time line of EC validity.

One of the specific condition (specific condition: ii) in the EC wrt to the spend of Rs 13 Cr towards CER (as per EC dated 07.07.2017 it is ESC) has been mentioned and accordingly this amount is included in the CAPEX for the Project. Till date the amount spent towards CER (ESC) is about 4.0 Crs.

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In view of the rescheduling of the remaining facilities installation in Phase-II expansion activities, we have accordingly rescheduled the activities towards CER (ESC) and the detail is enclosed in **Annexure-1**. JSW assures that the CER fund of Rs.13 Cr shall be spent as per the rescheduling plan in phase-II expansion activities.

The letter is submitted to your good office for your kind information and records please.

Thanking you,

Yours faithfully,
For JSW Steel Limited

26/9/2020

B. N. S. Prakash Rao
Sr. Vice President

Encl: **Annexure – I and copy of EC dated 07.07.2017**

Cc:
The Director
Ministry of Environment, Forest & Climate Change, Regional Office (SEZ),
Ist and IInd Floor, Handloom Export Promotion Council,
34, Cathedral Garden Road, Nungambakkam, Chennai – 600034

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Annexure –1

CER (ESC as per EC dated 07.07.2017) - Fund Allocation as per EC dated 07.07.2017 (Rs.in Cr.)								
S.No	**Description of activities**	**No's**	**Year I**	**Year II**	**Year III**	**Year IV**	**Year V**	**Total Rs . (in Crs)**
1	Toilets	2000	0.5	0.75	0.75	0.5	0.5	**3**
2	Health center	1	0.25	0.25	0.25	0.25	0	**1**
3	Community hall	2	0	0.5	0.5	0	0	**1**
4	Hospital	1	0.5	0.5	0.5	0.25	0.25	**2**
5	Modern school New with GYM and Play ground	1	0	0	1	0.5	0.5	**2**
6	Watershed program	1	0	0.25	0.25	0.25	0.25	**1**
7	Water body strengthening/ Drinking water bore well drilling		0	0.25	0.25	0.25	0.25	**1**
8	Drainage		0.25	0.25	0.25	0.25	0	**1**
9	Government school improvement	1	0	0.25	0.25	0.25	0.25	**1**
Total			**1.5**	**3**	**4**	**2.5**	**2**	**13**

CER (ESC) - Fund Allocation & Spent till June 2020 (in Crs.)													
S.No	Description of activities	No's	Year I (Jul'17 to Dec'17)		Year II (Jan'18 to Dec'18)		Year III (Jan'19 to Dec'19)		Year IV (Jan'20 to Jun'20)		Year V	Total Rs . (in Crs)	
			Committed	Spent	Committed	Spent	Committed	Spent	Committed	Spent	Committed	Committed	Spent
1	Toilets	2000	0.5	0.32	0.75	0.19	0.75	0.04	0.5	0	0.5	3	0.55
2	Health center	1	0.25	0	0.25	0	0.25	0.22	0.25	0.21	0	1	0.43
3	Community hall	2	0	0	0.5	0	0.5	0	0	0	0	1	0
4	Hospital	1	0.5	0	0.5	0	0.5	0	0.25	0.25	0.25	2	0.25
5	Modern school New with GYM and Play ground	1	0	0	0	0	1	0	0.5	0	0.5	2	0
6	Watershed program	1	0	0.24	0.25	0	0.25	0.21	0.25	0	0.25	1	0.45
7	Water body strengthening / Drinking water bore well drilling		0	0	0.25	0.2	0.25	0.2	0.25	0.11	0.25	1	0.51
8	Drainage		0.25	0	0.25	0.39	0.25	0.1	0.25	0	0	1	0.49
9	Government school improvement	1	0	0.47	0.25	0.34	0.25	0.17	0.25	0.02	0.25	1	1
Total			1.5	1.03	3	1.12	4	0.94	2.5	0.593	2	13	3.68

CER (ESC) – Reschedule and fund allocation (shall be spent during phase-II expasin activity)			
S.No	**SECTORS**	**Details**	**Total Rs . (in Cr.) Commitment**
1	Health	Health & Eye Camps to public and school students , Hospital improvement	1.22
2	Education	School library support , career guidance , sports support , Anganvadi support , standard toppers prize to school students, School Technology improvement	1.22
3	Infrastructure Development	School and Educational institution infrastructure improvement , village infrastructure improvement , toilet construction in schools and villages , village library support , Drainage improvement , road improvement , water body improvement , desilting of channels, pond and reservoir	4.7
4	Livelihood support	Need based training (Eg Tailoring , ARI , Zardoshi) to women , Spoken English training to unemployed youth to increase their employability level, organic training to farmers , agricultural inputs to Farmers , exposures trips to farmers , sponsorship to farmers for various training	1.18
5	Others	Waste Management support , sports related support in schools and Villages, awareness creation programs in schools and villages and other need based activities	1
Total in Rs. Crs (shall be spent)			**9.32**
Total spent Crs. Till June 2020			**3.68**
Total in Rs. Crs (as the comittment made)			**13.00**

Annexure –II

Representation to the few general conditions mentioned in the EC dated 10.02.2020

JSW Steel Limited

JSWSL/Envt/MoEF&CC/EC-R/2020-21/54
03th August 2020

To

The Member Secretary
Ministry of Environment, Forest and Climate Change,
Indira ParyavaranBhavan,
JorBagh Road, Aliganj,
New Delhi – 110003

Dear Sir,

Sub: **Information regarding EC issued (F.No. J-11011/281/2006-IA. II (I) dated: 10.02.2020 for the approval of installation of 0.80 MTPA slag grinding unit and new facilities within the existing 1.3 MTPA Integrated Steel Plant Premises, JSW Salem works - reg.**

We have very thankfully received the above said Environmental Clearance for our proposed installation of 0.80 MTPA slag grinding unit, new facilities related to value addition and technological upgradation within the existing 1.3 MTPA Integrated Steel Plant Premises. The Environment Clearance has issued under para 7(ii) of EIA 2006 and the proposed expansion activity is towards value addition, installation of minor facilities to improve the work area environment. There was no enhancement of capacity of steel making and also no increase in pollution load. Further it is kindly bringing your information that many of the main plant facilities have been installed in line with the approved EC of 07.07.2007.

The environment clearance issued vide 10.02.2020 mentions some of the general conditions related to main facilities, which are not applicable in the current EC (dated 10.02.2020). The details are given below to your kind perusal as representation.

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General Conditions - II. Air quality monitoring and preservation			
Sl.No	**GC number**	**General Condition**	**Representation**
1	iv	The cameras shall be installed at suitable locations for 24x7 recording of battery emissions on the both sides of coke oven batteries and videos shall be preserved for at least one-month recordings	There are three non-recovery type coke oven batteries which are installed adjacent to each other. One camera with PAN facility shall be installed on either side of coke ovens. It may be noted that the camera may not be very effective in the nighttime.
2	xv	Land-based APC system shall be installed to control coke pushing emissions.	The coke oven plant was installed in the year 2007.These are heat recovery coke ovens which are operating in negative suction, with no emission of toxic volatile matter. Further, the rate of pushing coke and the height of fall on to the quenching tower is relatively lower (< 3 mtr), resulting in very low dust emissions. It is not possible to install the dust control systems in the existing coke ovens.
3	xvi	Monitor CO, HC and O2 in flue gases of the coke oven battery to detect combustion efficiency and cross leakages in the combustion chamber	The requirement of monitoring of HC, CO and O2 were intended for recovery type of coke ovens where in the cross over leakage exists. our coke oven plant is non-recovery type. The heat for carbonization is provided by the radiation heat by burning of evolved gases from the bottom and top of the of the coal mass. The coke oven plant is designed and installed such way that to minimize the burning loss to improve the coke yield and environmental performance. Thus the monitoring of these parameters are not applicable to non-recovery type coke ovens.
4	Xxii	The project proponent shall install Dry Gas Cleaning Plant with bag filter for Blast Furnace and SMS converter.	The existing plants (BF & EOF of SMS) are installed in the year 1998 & 2007 in line with the EC approval for these facilities in 23.11.1998 and 02.01.2007 respectively. Further there is no modification proposed now in the above facilities. It is not feasible and viable for installation of Dry gas

Sl.No	GC number	GC condition	Representation
			cleaning systems in to the existing BF1, EOF# 1,2 wet gas cleaning system. Whereas, at BF#2 Dry gas cleaning system is provided during the establishment stage itself.
5	xxiii	Dry quenching (CDQ) system shall be installed along with power generation facility from waste heat recovery from hot coke.	The non-recovery type coke oven plant was installed in the year 2007. There is no modification proposed in the existing coke ovens in the recently approved EC. The installation of CDQ in the existing capacity (0.5 MTPA) coke oven is not technically feasible and viable
General Conditions - V. Energy Conservation measures			
Sl.No	**GC number**	**General Condition**	**Representation**
1	i	The project proponent shall provide TRTs to recover energy from top gases of Blast Furnaces	The capacity of the existing furnaces is very small and operating at low top pressure of < 1.3 bar and temperature is < 120 deg" c. it is not technically feasible & viable to install TRT in the existing blast furnaces.
2	ii	Coke Dry quenching (CDQ) shall be provided for coke quenching for both recovery and non-recovery type coke ovens	The non-recovery type coke oven plant was installed in the year 2007. There is no modification proposed in the existing coke ovens in the recently approved EC. The installation of CDQ in the existing capacity (0.5 MTPA) coke oven is not technically feasible.

Receipt of this letter may please be acknowledged for our record purpose.

Regards

Yours sincerely
JSW Steel Limited

BNS Prakash Rao

Sr. Vice President

Encl: EC copy dated 10.02.2020

JSW STEEL LTD., Salem Works

Pottaneri, M. Kalipatti Village, Mecheri
Mettur Taluk, Salem – Tamilnadu

Half Yearly Compliance Report for the Environmental Clearance
(F.No.J-11011/281/2006-IA.II (I) dated 10.02.2020 & 07.07.2017)
for the period of January 2020 to June 2020

Contents

COMPLIANCE STATUS REPORT TO ENVIRONMENTAL CLEARANCE (EC)

(i) F.No.J-11011/281/2006-IA.II (I) Dated.10.02.2020
(ii) F.No.J-11011/281/2006-IA.II (I) dated 07.07.2017

SIX MONTHLY COMPLIANCE STATUS REPORT

PRESENT STATUS OF THE PROJECT WITH RESPECT TO THE EC DATED.10.02.2020

An Environmental Clearance accorded dated 10.02.2020 for our proposed installation of 0.80 MTPA slag grinding unit, new facilities related to value addition and technological upgradation within the existing 1.3 MTPA Integrated Steel Plant Premises. The Environment Clearance has been issued under para 7(ii) of EIA 2006 and the proposed expansion activity is towards value addition, installation of minor facilities to improve the work area environment. Subsequently CTE has been applied to TNPCB and awaiting the same. The environment clearance issued vide 10.02.2020 mentions some of the general conditions related to main facilities, which are not applicable in the current EC (dated 10.02.2020) and the relevant details related to the general conditions are given in the EC compliance status report.

PRESENT STATUS OF THE PROJECT WITH RESPECT TO THE EC DATED.07.07.2017

With respect to the EC F.No.J-11011/281/2006-IA.II (I) dated 7th July 2017, Consent to Establish (CTE) has been obtained from Tamil Nadu Pollution Control Board (Consent Order#170629163265 dated 23.09.2017) with validity up to 31.03.2024. Establishment activities are planned in phased manner (Phase-I: 1.0 to 1.15 MTPA and Phase-II: 1.15 to 1.3 MTPA) and after establishment of phase-I activities, Consent to Operate (Consent Order#1907222515438 dated 25.06.2019) has been obtained for 1.15 MTPA Steel production with validity up to 31.03.2022 and the balance establishment activities (Phase –II) will be executed based on the steel market condition and present pandemic situation. JSW assures that the balance establishment activity will be completed before the validity period of EC. The details of the existing units and balance expansion units along with the present status is given in the table below.

S.No	Manufacturing facilities	UOM	Existing capacity	Proposed Expansion as per EC 2017	Total Capacity after Expansion	Present status
1	Coke Oven Plant (Non – Recovery type)	MTPA	0.5	-	0.5	In operation
2	Sinter Plant - 1 (20 m^2)	MTPA	0.175	-	0	In operation
3	Sinter Plant - 2 (90 m^2)	MTPA	1.06	-	1.06	In operation
4	Sinter Plant - 3 (90 m^2)	MTPA	-	1.06	1.06	Yet to be installed
5	Blast Furnace - 1 (402 to 650 m^3)	MTPA	0.367	0.316	0.683	Yet to be installed
6	Blast Furnace - 2 (550 to 650 m^3)	MTPA	0.578	0.105	0.683	Expansion completed & in operation

S.No	Manufacturing facilities	UOM	Existing capacity	Proposed Expansion as per EC 2017	Total Capacity after Expansion	Present status
7	Energy Optimizing Furnace-1 (65 T)	MTPA	0.41	0.23	0.64	Expansion completed & in operation
8	Energy Optimizing Furnace- 2 (65 T)	MTPA	0.62	0	0.62	In operation
9	Ladle Furnace - 1 (65 T)	Tons/ heat	45	20	65	Expansion completed & in operation
10	Ladle Furnace - 2 (65 T)	Tons/ heat	65	-	65	In operation
11	Ladle Furnace - 3 (65 T)	Tons/ heat	65	-	65	In operation
12	Ladle Furnace - 4 (65 T)	Tons/ heat	65	-	65	In operation
13	Continuous Casting Machine - 1	MTPA	0.35	-	0.35	In operation
14	Continuous Casting Machine - 2	MTPA	0.5	-	0.5	In operation
15	Continuous Casting Machine - 3	MTPA	-	0.45	0.45	Expansion completed & in operation
16	Bar & Rod Mill augmentation	MTPA	0.4	0.08	0.48	Expansion completed & in operation
17	Blooming Mill augmentation	MTPA	0.36	0.12	0.48	Expansion completed & in operation
18	Pickling & Annealing steel unit	MTPA	-	0.06	0.06	Annealing unit is in operation. Pickling unit establishment completed and awaiting CTO.
19	Peeled & ground	MTPA	-	0.04	0.04	0.01 MTPA unit is in operation. 0.03 MTPA installation is under progress
20	Air Separation Plant - 1 (150 T/day)	Tons/ day	150	-	150	In operation
21	Air Separation Plant - 2 (390 T/day)	Tons/ day	390	-	390	In operation
22	Air Separation Plant - 3 (250 T/day)	Tons/ day	-	250	250	Yet to be installed
23	Captive power plant - 1	MW	7	-	7	In operation
24	Captive power plant - 2	MW	2 x 30	-	2 x 30	In operation
25	Captive power plant - 3	MW	-	1 x 30	1 x 30	Expansion completed & in operation

The production details for the period January 2020 to June 2020 is given in **Annexure –A.**

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Compliance status report to the EC dated.10.02.2020

A.	SPECIFIC CONDITIONS:	COMPLIANCE STATUS
i.	Particulate emission from the rod mill of slag grinding unit shall be less than 10 mg/Nm^3	Appropriate air pollution control measures will be installed to meet the emission level.
ii.	Green belt shall be developed in an area of 85 ha (210 acres) in and around the plant in a time frame of two years.	The existing greenbelt developed area is about 79.52 and the same will be further developed up to 85 hectares within 2 years' period.

B. GENERAL CONDITIONS

I. Statutory compliance:

S. No	CONDITION	COMPLIANCE STATUS
i.	The project proponent shall obtain Consent to Establish / Operate under the provisions of Air (Prevention & Control of Pollution) Act, 1981 and the Water (Prevention & Control of Pollution) Act, 1974 from the concerned State Pollution Control Board / Committee.	Abide by the order
ii.	The project proponent shall obtain the necessary permission from the Central Ground Water Authority, in case of drawl of ground water / from the competent authority concerned in case of drawl of surface water required for the project.	Abide by the order.
iii.	The project proponent shall obtain authorization under the Hazardous and other Waste Management Rules, 2016 as amended from time to time	Abide by the order

II. Air quality monitoring and preservation

S.No	CONDITION	COMPLIANCE STATUS
i.	The project proponent should install 24x7 continuous emission monitoring system at process stacks to monitor stack emission with respect to standards prescribed in Environment (Protection) Rules 1986 vide G.S.R. 277(E) dated 31st March 2012 (Integrated iron & Steel); G.S.R. 414 (E) dated 30th May 2008 (Sponge Iron) as amended from time to time; S.O. 3305 (E) dated 7th December 2015 (Thermal Power Plant) as amended from time to time and connected to SPCB and CPCB online servers and calibrate these system from time to time according to equipment supplier specification through labs recognized under Environment (Protection) Act, 1986 or NABL accredited laboratories.	There are 29 nos. of Process stacks. Dust & Gaseous emission monitoring systems are installed as per CTO condition and the real time data of SPM, SO_2 & NO_x are transmitted to the Care Air Centre of TNPCB and CPCB servers. There are 26 nos. of Non-process stacks. Dust emission monitoring systems are installed as per CTO condition and the real time data of SPM are transmitted to the Care Air Centre of TNPCB and CPCB servers. Apart from the above, TNPCB is conducting bi-annual survey and Manual monitoring is being conducted by a NABL accredited external laboratory on a monthly basis. The monitoring results are well within the permissible limits. The latest TNPCB survey results of stack emission is given in **Annexure – B**.
ii.	The project proponent shall monitor fugitive emissions in the plant premised at least once in every quarter through labs recognized under Environment (Protection) Act, 1986.	Fugitive emissions in the plant are being monitored by a NABL accredited external laboratory and the reports are being submitted to TNPCB on monthly basis.

S.No	CONDITION	COMPLIANCE STATUS
iii.	The project proponent shall install system to carryout Continuous Ambient Air Quality monitoring for common/criterion parameters relevant to the main pollutants released (e.g. PM_{10} and $PM_{2.5}$ in reference to PM emission, and SO_2 and NO_x in reference to SO_2 and NO_x emissions) within and outside the plant area at least at four locations (one within and three outside the plant area at an angle of 120° each), covering upwind and downwind directions.	Continuous Ambient Air Quality monitoring stations of four numbers are installed in the plant peripheral covering upwind & downwind directions. One station is installed to monitor PM_{10}, $PM_{2.5}$, SO_2, NO_x and CO and other 3 stations are installed to monitor PM_{10}, $PM_{2.5}$, SO_2 as per the CTO condition. The real time parameters are connected to Care Air Centre of TNPCB.
iv.	The cameras shall be installed at suitable locations for 24x7 recording of battery emissions on the both sides of coke oven batteries and videos shall be preserved for at least one-month recordings.	Our coke oven plant is non-recovery type. The coke oven process works on negative pressure and stamped wet coal is being charged to the ovens which is side loading and thereby no visible emission is noticed. There are Three coke oven batteries which are installed adjacent to each other. One camera with PAN facility shall be installed on either side of coke ovens. It may be noted that the camera may not be very effective in the night time when the light is not visible. The same has been communicated to your good office through mail dated 26.09.2020.
v.	Sampling facility at process stacks and at quenching towers shall be provided as per CPCB guidelines for manual monitoring of emissions.	Sampling facilities at process stacks and quenching towers are provided for manual monitoring of emissions as per the guidelines.
vi.	The project proponent shall submit monthly summary report of continuous stack emission and air quality monitoring and results of manual stack monitoring and manual monitoring of air quality/fugitive emissions to Regional Office of MoEF&CC, Zonal Office of CPCB and Regional Office of SPCB along with six-monthly monitoring report.	Monthly summary report of continuous stack emission and air quality monitoring and results of manual stack monitoring and manual monitoring of air quality/fugitive emissions are submitted to Regional Office of MoEF&CC, Zonal Office of CPCB and Regional Office of SPCB. The six-monthly continuous stack emission & air quality monitoring report is given in **Annexure -C** and the manual stack emission monitoring results are given in **Annexure –B**.
vii.	Appropriate Air Pollution Control (APC) system shall be provided for all the dust generating points including fugitive dust from all vulnerable sources, so as to comply prescribed stack emission and fugitive emission standards.	Adequate Air Pollution Control measures are installed in the respective processes and raw material handling areas. Water sprinklers, dry fog systems, GI sheets (as dust barrier) are provided in raw material handling areas to control fugitive emission. The stack emission and fugitive emission values are well within the standards.
viii.	The project proponent shall provide leakage detection and mechanized bag cleaning facilities for better maintenance of bags.	Appropriate leakage detection systems and mechanized bag cleaning facilities are provided in all the bag filter systems.
ix.	Secondary emission control system shall be provided at SMS converters.	Dedicated secondary de-dusting systems are provided at EOF & LRF processes for control of fugitive emission.

S.No	CONDITION	COMPLIANCE STATUS
x.	Pollution control system in the steel plant shall be provided as per the CREP guidelines of CPCB.	As per the CREP guidelines of CPCB, Pollution control systems are provided.
xi.	Sufficient number of mobile or stationery vacuum cleaners shall be provided to clean plant roads, shop floors, roofs regularly.	Road sweeping machines are deployed for road cleaning applications and Mobile vacuum cleaners are provided to clean shop floors, roofs regularly.
xii.	Recycle and reuse iron ore fines, coal and coke fines, lime fines and such other fines collected in the pollution control devices and vacuum cleaning devices in the process after briquetting/agglomeration.	Iron ore fines, coal and coke fines, lime fines, and such other fines collected in the pollution control devices are being reused in the sinter plant for agglomeration processes which is replacement of Iron ore.
xiii.	The project proponent use leak proof trucks/dumpers carrying coal and other raw materials and cover them with tarpaulin.	Trucks/dumpers carrying coal and other raw materials are covered with tarpaulin. Leak proof trucks are used for fly ash transportation and other materials.
xiv.	Facilities for spillage collection shall be provided for coal and coke on wharf of coke oven batteries (Chain conveyors, land based industrial vacuum cleaning facility).	Coking coal is transferred through closed conveyor system to stamping station. The stamped coal (wet condition) is charged into coke oven batteries through a dedicated coal charging system. Hence spillage of coal is not anticipated. While coke pushing to wharf, there will be a minimum spillage of coke which is periodically cleaned.
xv.	Land-based APC system shall be installed to control coke pushing emissions.	The coke oven plant was installed in the year 2007. These are heat recovery coke ovens which are operating in negative suction, with no emission of toxic volatile matter. Further, the rate of pushing coke and the height of fall on to the quenching tower is relatively lower, resulting in very low dust emissions. It is not possible to install the dust control systems in the existing coke ovens. The same has been communicated to your good office through mail dated 26.09.2020.
xvi.	Monitor CO, HC and O2 in flue gases of the coke oven battery to detect combustion efficiency and cross leakages in the combustion chamber.	Our coke oven plant is non-recovery type. The heat for carbonisation is provided by the radiation heat by burning of evolved gases from the bottom and top of the of the coal mass. The requirement of monitoring of HC, CO and O_2 were intended for recovery type of coke ovens where in the cross over leakage exists. Thus the monitoring of these parameters are not applicable to heat recovery type coke ovens. The same has been communicated to your good office through mail dated 26.09.2020.
xvii.	Vapor absorption system shall be provided in place of vapor compression system for cooling of coke oven gas in case of recovery type coke ovens.	Not applicable since our Coke oven is non-recovery type.
xviii.	In case concentrated ammonia liquor is incinerated, adopt high temperature incineration to destroy Dioxins and Furans, Suitable NOx control facility shall be provided to meet the prescribed standards.	Not applicable since our Coke oven is non-recovery type.

S.No	CONDITION	COMPLIANCE STATUS
xix.	The coke oven gas shall be subjected to desulphurization if the Sulphur content in the coal exceeds 1%.	The coal usage in coke oven contains Sulphur content less than 1%.
xx.	Wind shelter fence and chemical spraying shall be provided on the raw material stock piles.	GI sheets cover (as dust barrier), wind nets, water sprinkler systems and dry/wet fog systems are provided on the raw material stock piles.
xxi.	Design the ventilation system for adequate air changes as per ACGIH document for all tunnels, motor houses, Oil cellars.	Abide by the order.
xxii.	The project proponent shall install Dry Gas Cleaning Plant with bag filter for Blast Furnace and SMS converter.	The existing plants (BF & EOF of SMS) are installed in the year 1998 & 2007 in line with the EC approved for these facilities in 23.11.1998 and 02.01.2007 respectively. Further there is no modification proposed now in these facilities. It is not feasible and viable to installation of Dry gas cleaning systems in to the existing BF#1, EOF# 1,2 wet gas cleaning system. Whereas, BF#2 Dry gas cleaning system is provided during the establishment stage itself. The same has been communicated to your good office through mail dated 26.09.2020.
xxiii.	Dry quenching (CDQ) system shall be installed along with power generation facility from waste heat recovery from hot coke.	The coke ovens were installed in line with the EC approved in 2007. There is no modification proposed in the existing coke ovens in the recently approved EC. The installation of CDQ in the existing capacity (0.5 MTPA) coke oven is not technically feasible. The same has been communicated to your good office through mail dated 26.09.2020.
III. Water quality monitoring and preservation		
S.No	**CONDITION**	**COMPLIANCE STATUS**
i.	The project proponent shall install 24x7 continuous effluent monitoring system with respect to standards prescribed in Environment (Protection) Rules 1986 vide G.S.R. 277(E) dated 31st March 2012 (Integrated iron & Steel); G.S.R. 414 (E) dated 30th May 2008 (Sponge Iron) as amended from time to time; S.O. 3305 (E) dated 7th December 2015 (Thermal Power Plant) as amended from time to time and connected to SPCB and CPCB online servers and calibrate these system from time to time according to equipment supplier specification through labs recognized under Environment (Protection) Act, 1986 or NABL accredited laboratories. The project proponent shall monitor regularly ground water quality at least twice a year (pre and post monsoon) at sufficient numbers of piezometers/sampling wells in the plant and adjacent areas through labs recognized under Environment (Protection) Act, 1986 and NABL accredited laboratories.	Flow meters for continuous monitoring system of effluent flow are provided at the Guard pond inlet & outlet and the real time values are connected to TNPCB & CPCB server. A dedicated EMFM is installed in the ETP discharge point along with IP camera (with PTZ option). Analysers are installed with respect to the standards related to Iron & Steel and Thermal Power Plant and the real time parameters are connected to TNPCB/CPCB servers from Aug'2020. EMFM and sensors are being calibrated from time to time according to equipment supplier specification. Apart from this, treated waste water quality is also monitored by NABL accredited laboratory on monthly basis and reports are periodically submitted to TNPCB. Ground water quality around the peripheral of the plant is being monitored by TNPCB and NABL accredited laboratory on quarterly basis. Piezo metric sampling bore well is provided inside the plant premises and the water quality is being monitored on monthly basis.

S.No	CONDITION	COMPLIANCE STATUS
ii.	The project proponent shall submit monthly summary report of continuous effluent monitoring and results of manual effluent testing and manual monitoring of ground water quality to Regional Office of MoEF&CC, Zonal Office of CPCB and Regional Office of SPCB along with six-monthly monitoring report.	Monthly summary reports of continuous effluent monitoring, results of manual effluent testing and manual monitoring of ground water quality by TNPCB & NABL accredited laboratory are being submitted to the Regional Office of MoEF&CC, Zonal Office of CPCB and Regional Office of SPCB. The six-monthly monitoring report is given in **Annexure -D.**
iii.	The project proponent shall provide the ETP for coke oven and by-product to meet the standards prescribed in G.S.R. 277(E) dated 31st March 2012 (Integrated iron & Steel); G.S.R. 414 (E) dated 30th May 2008 (Sponge Iron) as amended from time to time; S.O. 3305 (E) dated 7th December 2015 (Thermal Power Plant) as amended from time to time.	Our Coke Oven plant is non-recovery type. Not applicable. Sponge iron plant not installed in our plant. Not applicable. Thermal Power plant ZLD provided to the additional 1 x 30 MW which was installed in the FY 2018-19.
iv.	Adhere to 'Zero Liquid Discharge'	Waste water generated from the various process is collected in a guard pond and after pretreatment (clarification), the treated water is 100 % reused in steel plant process to the application of Slag Granulation plant of BF, gas cleaning plant of BF & EOF, slag quenching, coke quenching, dust suppression systems and green belt development. No effluent is discharged outside the plant premises and to ensure the same, dedicated EMFM and IP camera are installed in the waste water treatment facility and the real time details are connected to TNPCB & CPCB server.
v.	Sewage Treatment Plant shall be provided for treatment of domestic wastewater to meet the prescribed standards.	Sewage Treatment Plants are provided for treatment of domestic wastewater and treated water is meeting the prescribed standards. Treated water sample is being collected by TNPCB on monthly basis and the six months monitoring result is given in **Annexure –E.**
vi.	Garland drains and collection pits shall be provided for each stock pile to arrest the run-off in the event of heavy rains and to check the water pollution due to surface run off.	Various collection pits are provided to arrest the run-off and ensure there is no water pollution due to surface run off.
vii.	Tyre washing facilities shall be provided at the entrance of the plant gates	Tyre washing unit is provided at the entrance of the plant gate to control the fugitive emission from vehicular movement.
viii.	CO_2 injection shall be provided in GCP of SMS to reduce pH in circulating water to ensure optimal recycling of treated water for converter gas cleaning.	Alkalinity of existing circulating water of GCP is the range of 250 to 300 mg/L. Due to the minimum alkalinity, addition of CO_2 injection is not feasible to maintain the pH in the recycling water and it may lead to severe corrosion. Hence, optimum level of Soda ash is being used to control pH in the GCP cooling water circuit.

S.No	CONDITION	COMPLIANCE STATUS
ix.	The project proponent shall practice rainwater harvesting to maximum possible extent.	Three rainwater harvesting ponds are existing with the total capacity about 19,250 m^3 and rain water harvesting will be practiced to maximum possible extent.
x.	Treated water from ETP of COBP shall not be used for coke quenching.	Not Applicable as our Coke Oven is of non-recovery type.
xi.	Water meters shall be provided at the inlet to all unit processes in the steel plants.	Water meters are provided at the inlet to all unit processes in our steel plant
xii.	The project proponent shall make efforts to minimize water consumption in the steel plant complex by segregation of used water, practicing cascade use and by recycling treated water.	Segregation of used water according to the quality characteristics, treated and utilized accordingly. As a continual improvement efforts are being taken to maximize cooling water COC to minimize fresh water consumption in the steel plant.

IV. Noise monitoring and preservation

S.No	CONDITION	COMPLIANCE STATUS
i.	Noise level survey shall be carried as per the prescribed guidelines and report in this regard shall be submitted to Regional Officer of the Ministry as a part of six-monthly compliance report.	Noise level is being monitored on regular basis by a NABL accredited laboratory and the results are being submitted to the Regional Officer of the Ministry as a part of six-monthly compliance report. The details are given in **Annexure -F** of the report.
ii.	The ambient noise levels should conform to the standards prescribed under E(P)A Rules, 1986 viz. 75 dB(A) during day time and 70 dB(A) during night time.	The ambient noise levels are being monitored monthly basis and the results are well within the prescribed limit of limits 75 dB(A) during day time and 70 dB(A) during night time. The details are given in **Annexure –F**.

V. Energy Conservation measures

S.No	CONDITION	COMPLIANCE STATUS
i.	The project proponent shall provide TRTs to recover energy from top gases of Blast Furnaces.	The capacity of the existing furnaces is very small and operating at low top pressure (< 1.3 bar). it is not technically feasible to install TRT in the existing blast furnaces. There is no modification in the existing BFs in the EC approved now. The same has been communicated to your good office via mail dated 26.09.2020.
ii.	Coke Dry quenching (CDQ) shall be provided for coke quenching for both recovery and non-recovery type coke ovens.	The coke ovens were installed in line with the EC approved in 2007. There is no modification proposed in the existing coke ovens in the recently approved EC. The installation of CDQ in the existing capacity (0.5 MTPA) coke oven is not technically feasible. The same has been communicated to your good office via mail dated 26.09.2020.
iii.	Waste heat shall be recovered from Sinter Plants coolers and Sinter Machines.	Waste heat from Sinter plant cooler is planned to be diverted to the proposed BF Slag grinding unit to recover sensible heat.
iv.	Use torpedo ladle for hot metal transfer as far as possible. If ladles not used, provide covers for open top ladles.	Usage of torpedo ladle is mostly applicable to bigger size capacity of BF and our BF capacity is smaller one. Ladle covering is done by means of heat insulating compounds such as dry rice husk.
v.	Use hot charging of slabs and billets/blooms as far as possible.	Based on the product specification, hot charging and cold charging is being done as far as possible hot charging will be done.

S.No	CONDITION	COMPLIANCE STATUS
vi.	Waste heat recovery systems shall be provided in all units where the flue gas or process gas exceeds 300°C.	Waste heat recovery boilers are in operation to recover maximum heat from flue gas and produce energy. It is proposed to utilize the sinter cooler waste heat to the BF slag grinding unit and flue gas will be utilized where ever the temperature is more than 300°C.
vii.	Explore feasibility to install WHRS at Waste Gases from BF stoves; Sinter Machine; Sinter Cooler, and all reheating furnaces and if feasible shall be installed.	As mentioned earlier waste gas utilization from BF stoves not feasible and sinter machine waste heat being utilized. Sinter cooler waste heat will be reused for BF slag grinding unit and BF gas is utilized in Mills operations.
viii.	Restrict Gas flaring to < 1%	Online monitoring system (SCADA) is installed to maximize the BF gas utilization and efforts are being taken continuously to reduce gas flaring and conserve energy.
ix.	Provide solar power generation on roof tops of buildings, for solar light system for all common areas, street lights, parking around project area and maintain the same regularly.	Solar panel is installed with the capacity of 5 KW for common areas and parking area. Further implementation are under progress for street lights and township in phased manner.
x.	Provide LED lights in their officers and residential areas.	LED based lightings are provided in offices and township area and the replacement of sodium vapour lamp to LED is increased from 350 KW to 750 KW. Further installations are under progress in the process zones.
xi.	Ensure installation of regenerative type burners on all reheating furnaces.	BF gas is used as fuel and regenerative type burners are installed in reheating furnaces (Mills).

VI. Waste Management

S.No	CONDITION	COMPLIANCE STATUS
i.	An attrition grinding unit to improve the bulk density of BF granulated slag from 1.0 to 1.5 kg/l shall be installed to use slag as river sand in construction industry.	It is proposed to install BF slag grinding unit to produce Ground granulated BF slag which will be blended with cement for construction purposes.
ii.	In case of Non-Recovery coke ovens, the gas main carrying hot flue gases to the boiler, shall be insulated to conserve heat and to maximize heat recovery.	The gas main carrying hot flue gases to the boilers is completely insulated to conserve heat and to maximize heat recovery.
iii.	Tar Sludge and waste oil shall be blended with coal charged in coke ovens (applicable only to recovery coke ovens).	Not applicable as our coke oven is of recovery type.
iv.	Carbon recovery plant to recover the elemental carbon present in GCP slurries for use in Sinter plant shall be installed.	After clarification and thickener treatment GCP slurry is treated in sludge handling unit and reuse in sinter plant.
v.	Waste recycling Plant shall be installed to recover scrap, metallic and flux for recycling to sinter plant and SMS.	Scrap and metallic contents are recovered and recycled in the SMS.
vi.	Used refractories shall be recycled as far as possible.	Refractories are selected to withstand high temperature whose shelf life is longer and generation of used refractories are lesser. The same will be recycled in downstream applications.
vii.	SMS slag after metal recovery in waste recycling facility shall be conditioned and used for road making, railway track ballast and other	SMS slag is sent for metal recovery system and the crushed slag is reused in internal applications like

	applications. The project proponent shall install a waste recycling facility to recover metallic and flux for recycle to sinter plant. The project proponent shall establish linkage for 100% reuse of rejects from Waste Recycling Plant.	sinter plant, EOF as hearth layer and cooling media respectively and to cement industries.
S.No	**CONDITION**	**COMPLIANCE STATUS**
viii.	100% utilization of fly ash shall be ensured. All the fly ash shall be provided to cement and brick manufacturers for further utilization and Memorandum of Understanding in this regard shall be submitted to the Ministry's Regional Office.	Fly ash is being 100% utilized and provided to fly ash brick manufacturers.
ix.	Oil collection pits shall be provided in oil cellars to collect and reuse/recycle spilled oil. Oil collection trays shall be provided under coils on saddles in cold rolled coil storage area.	Oil collection pits are provided in oil cellars to collect and reuse the spilled oil. Cold rolled products are not applicable to our plant.
x.	The waste oil, grease and other hazardous waste like acidic sludge from pickling, galvanizing, chrome plating mills etc. shall be disposed of as per the Hazardous & Other waste (Management & Transboundary Movement) Rules, 2016. Coal tar sludge / decanter shall be recycled to coke ovens.	The waste oil, grease and other hazardous waste like acidic sludge from pickling will be disposed as per the Hazardous & Other waste (Management & Transboundary Movement) Rules, 2016. Our coke oven plant is Non Recovery Type. Hence, Coal tar sludge / decanter not applicable.
xi.	Kitchen waste shall be composted or converted to biogas for further use.	Biogas plant is installed and kitchen waste is being converted in to biogas.

VII. Green Belt

S.No	CONDITION	COMPLIANCE STATUS
i.	Green belt shall be developed in an area equal to 33% of the plant area with native tree species in accordance with CPCB guidelines. The greenbelt shall inter alia cover the entire periphery of the plant.	The total plant area is 237.38 ha and Green belt development is established about 79.52 ha which is 33.5 % and 221194 trees exist throughout the plant (till June 2020) with the survival rate of 90 - 95%. The greenbelt is covered the entire periphery of the plant.
ii.	The project proponent shall prepare GHG emissions inventory for the plant and shall submit the programme for reduction of the same including carbon sequestration including plantation.	GHG emissions inventory for the plant and carbon sequestration including plantation are prepared and being submitted every year.

VIII. Public Hearing and Human health issues

S.No	CONDITION	COMPLIANCE STATUS
i.	Emergency prepared plan based on the Hazard identification and Risk Assessment (HIRA) and Disaster Management Plan shall be implemented.	Emergency prepared plan based on the Hazard identification and Risk Assessment (HIRA) and Disaster Management Plan is being implemented.
ii.	The project proponent shall carry out heat stress analysis for the workmen who work in high temperature work zone and provide Personal Protection Equipment (PPE) as per the norms of Factory Act.	Heat stress analysis for the workmen working in high temperature work zone are being conducted and suitable Personal Protection Equipment (PPE)s and other adequate requirements are provided as per the norms of Factory Act.
iii.	Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as	Provisions are made for the expansion project activities and as per the condition temporary

	fuel for cooking, mobile toilets, mobile STP, Safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.	structure will be removed after the completion of expansion activities.
iv.	Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.	Health surveillance (Annual Health Check-up) is being conducted for all employees on yearly basis and records are being maintained in the Occupational Health Centre.

IX. Corporate Environmental Responsibility

S.No	CONDITION	COMPLIANCE STATUS
i.	The project proponent shall comply with the provisions contained in this Ministry's OM vide F.No. 22-65/2017-IA.III dated 1st May 2018, as applicable, regarding Corporate Environmental Responsibility.	Being complied.
ii.	The company shall have a well laid down environmental policy duly approved by the Board of Directors. The environmental policy should prescribe for standard operating procedures to have proper checks and balances and to bring into focus any infringements/deviation/violation of the environmental/forest/wildlife norms/conditions. The company shall have defined system of reporting infringements/deviation/violation of the environmental / forest / wildlife norms / conditions and / or shareholders' / stake holders. The copy of the board resolution in this regard shall be submitted to the MoEF&CC as a part of six-monthly report.	Environmental policy duly approved by the Board of Directors is in place. System for reporting deviation / violation of environmental norms/conditions exists and are being followed.
iii.	A separate Environmental Cell both at the project and company head quarter level, with qualified personnel shall be set up under the control of senior Executive, who will directly to the head of the organization.	Environmental cell is in place with qualified personnel under the control of Senior Executive, who is reporting directly to the head of the organization.
iv.	Action plan for implementing EMP and environmental conditions along with responsibility matrix of the company shall be prepared and shall be approved by competent authority. The year wise funds earmarked for environmental protection measures shall be kept in separate account and not to be diverted for any other purpose. Year wise progress of implementation of action plan shall be reported to the Ministry/Regional office along with the Six Monthly Compliance Report.	EMP implementation with action plan and environmental conditions along with responsibility matrix is prepared. The year wise funds earmarked for environmental protection measures are kept as separate account and not be diverted for any other purpose.
v.	Self-environmental audit shall be conducted annually. Every three years third party environmental audit shall be carried out.	Self-environmental audit is being conducted monthly/annually. Environment Audit is being carried out by external agencies once in six months and confirm the standard of ISO 14001:2015

S.No	CONDITION	COMPLIANCE STATUS
vi.	All the recommendations made in the Charter on Corporate Responsibility for Environment Protection (CREP) for the Iron and Steel plants shall be implemented.	All the recommendations of the Charter on the Corporate Responsibility for the Environmental Protection (CREP) issued for the steel plants are implemented. The compliance status report is given in **Annexure –G.**

X. Miscellaneous

S.No	CONDITION	COMPLIANCE STATUS
i.	The project proponent shall make public the environmental clearance granted for their project along with the environmental conditions and safeguards at their cost by prominently advertising in at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days and in addition, this shall also be displayed in the project proponent 's website permanently.	Environmental Clearance accorded from MoEF&CC dated on 10.02.2020 and the same was advertised in two local newspapers on 14.02.2020 (Dinamani and The New Indian Express) which are widely circulated in the region of which Tamil is the vernacular language of the locality concerned. EC accorded is displayed in our website permanently. Copy of the same is attached as **Annexure –H.**
ii.	The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.	Copy of the environmental clearance dated.10.02.2020 is submitted to the Heads of local bodies on 30.05.2020 and Panchayats on 20.02.2020. Copy of the same is attached as **Annexure –I.**
iii.	The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same on half-yearly basis.	The compliance of the stipulated environment clearance conditions including results of monitored data is uploaded on our website at half-yearly basis.
iv.	The project proponent shall monitor the criteria pollutants level namely; PM_{10}, SO_2, NO_X (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the projects and display the same at a convenient location for disclosure to the public and put on the website of the company.	The criteria pollutant levels namely; PM_{10}, $PM_{2.5,}$ SO_2, $NO_{X,}$ CO are displayed near the entrance of main gates of our company in the public domain.
v.	The project proponent shall submit six-monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the of ministry of Environment, Forest & Climate Change at environmental clearance portal.	Abide by the order.
vi.	The project proponent shall submit the environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company.	The environmental statement as prescribed under the Environment (Protection) Rules, 1986, for each financial year ending 31st March in Form-V is being submitted every year and displayed on the website of the company. To the FY 2019-20 the report has been submitted on 23.07.2020.
vii.	The Project authorities shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities, commencing the	Date of financial closure and land development work will be informed to the Regional Office as well after obtaining CTE.

	land development work and start of production operation by the project.	
S.No	**CONDITION**	**COMPLIANCE STATUS**
viii.	The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.	Abide by the order.
ix.	The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP report, commitment made during Public Hearing and also that during their presentation to the Expert Appraisal Committee.	Abide by the order.
x.	No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forests and Climate Change (MoEF&CC).	Abide by the order.
xi.	Concealing factual data or submission of false/fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.	Abide by the order.
xii.	The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.	Abide by the order.
xiii.	The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.	Abide by the order.
xiv.	The Regional Office of this Ministry shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information / monitoring reports	Abide by the order.
S.No	**CONDITION**	**COMPLIANCE STATUS**
xv.	The above conditions shall be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 and the Public Liability Insurance Act, 1991 along with their amendments and Rules and any other orders passed by the Hon'ble Supreme Court of India / High Courts and any other Court of Law relating to the subject matter.	Abide by the order.
xvi.	Any appeal against this EC shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010	Abide by the order.

Compliance status to the EC dated 07.07.2017

A.	SPECIFIC CONDITIONS	COMPLIANCE STATUS
i.	The occupational health survey of the active workmen involved shall be carried as per the ILO guidelines and all the employees shall cover in every 5 years @ 20% every year.	Occupational health survey of the active workmen involved is being carried out as per the ILO guidelines and all the employees are being covered in health survey by 100% every year. All the medical records are available in OHC for ready reference.
ii.	The amount allocated for ESC i.e. Rs.13 Crores shall be provided as CAPEX and the ESC shall be treated as project and monitored annually and the report of same shall be submitted to Regional office of MoEF&CC.	The amount allocated for ESC i.e. Rs.13 Crores is provided as CAPEX and as the action plans are being implemented. The proposed expansion activity is planned in a phased manner (Viz Phase-I: 1.0 MTPA to 1.15 MTPA and Phase-II: 1.15 MTPA to 1.3 MTPA) at an estimated cost of Rs. 1025 Cr. Phase-I expansion activities were completed and the cost involvement is about Rs.650 Crs and till date the amount spent towards ESC is about 4.0 Crs. Due to the steel market condition and the present pandemic (COVID19) situation the phase-II expansion activity is postponed and the same will be established with in the time line of EC validity. Based on the above, Phase II activities are rescheduled towards ESC. JSW assures that the commitments made shall be fulfilled. The details are attached in **Annexure –J** of this report. The same has been communicated to your good office via mail dated 26.09.2020.
iii.	The project proponent shall provide for solar light system for all common areas, street lights, villages, parking around project area and maintain the same regularly.	Solar panel is installed with the capacity of 5 KW for common areas and parking area. Further implementation are under progress for street lights and township in phased manner.
iv.	The project proponent shall provide for LED lights in their offices and residential areas.	LED based lightings are provided in offices and township area and the replacement of sodium vapour lamp to LED is increased from 350 KW to 750 KW. Further installations are under progress in the process zones.
v.	The project proponent should install 24X7 air monitoring devices to monitor air emission and submit report to Ministry and its Regional Office.	There are 29 nos. of Process stacks. Dust & Gaseous emission monitoring systems are installed as per CTO condition and the real time data of SPM, SO_2 & NO_x are transmitted to the Care Air Centre of TNPCB and CPCB servers. There are 26 nos. of Non-process stacks. Dust emission monitoring systems are installed as per CTO condition and the real time data of SPM are transmitted to the Care Air Centre of TNPCB and CPCB servers. Apart from the above, TNPCB is conducting bi-annual survey and manual monitoring is being conducted by a NABL accredited external laboratory on a monthly basis. The monitoring results are well within the permissible limits. The six monthly monitoring results of stack emissions is given in **Annexure – B**.

A.	SPECIFIC CONDITIONS	COMPLIANCE STATUS
vi.	The ETP for Blast furnace effluent should be designed to meet Cyanide standards as notified by the MoEF&CC.	There are two blast furnaces in our plant. BF#1 is having wet type gas cleaning plant and BF#2 is having dry type GCP. Presence of Cyanide level is not detected in Blast Furnace #1 effluent and the same is periodically ensured with external NABL accredited lab analysis. Sources for cyanide not anticipated in the input material.
vii.	No effluent shall be discharged outside the plant premises and 'zero' discharge shall be adopted.	Waste water generated from the various process is collected in a guard pond and after pretreatment (clarification), the treated water is 100 % reused in steel plant process to the application of Slag Granulation plant of BF, gas cleaning plant of BF & EOF, slag quenching, coke quenching, dust suppression systems and green belt development. No effluent is discharged outside the plant premises and to ensure the same, dedicated EMFM and IP camera are installed in the waste water treatment facility and the real time details are connected to TNPCB & CPCB server.
viii.	The ETP for coke oven by-product should be designed to meet EPA notified standards especially the cyanide and phenol.	Our Coke Oven plant is non-recovery type. Hence, ETP plant is not envisaged.
ix.	Coke oven plant should meet visible emission standards notified by the MoEF&CC.	As per EPA notification, visible emissions are prescribed to by-product type coke oven. Our plant is non recovery type and also the coke oven process works on i) negative pressure ii) stamped wet coal is being charged to the ovens which is side loading and thereby no visible emission is noticed.
x.	The standards issued by the Ministry vide G.S.R. 277(E) dated 31st March 2012 shall be strictly adhered to and the standards prescribed for the Coke oven plant shall be monitored and the report should be submitted along with the six-monthly compliance report.	The standards issued by the Ministry vide G.S.R. 277(E) dated 31st March 2012 are related to emission standards of Iron and Steel plant. As per the standard the emission related to coke oven plant is applicable to by product type and our Coke Oven plant is of non-recovery type. Emission standards with respect to stack (COP waste gas is used for steam generation and COP stacks are functioning as emergency stack) and fugitive emissions to the COP are being monitored and the results are submitted along with the six-monthly compliance report. The details are given in the part of **Annexure -A**. Since, our plant is non-recovery type ETP is not anticipated for COP. All other emissions & effluent parameters related to sinter plant, blast furnace, steel making shop, mills are being monitored monthly and the values are well within the standard prescribed. The six months monitoring results (maximum, minimum and average) by Advanced Environmental Laboratory of TNPCB and NABL accredited laboratory for stack emissions are given in the **Annexure -A** and Effluent quality monitoring results are given in **Annexure-D**.

A.	SPECIFIC CONDITIONS	COMPLIANCE STATUS
xi.	The emission standards specified in the Environmental (Protection) Amendment Rules, 2015 issued by vide S.O. 3305 (E) dated 7th December 2015 for the Thermal Power Plant shall be strictly adhered to.	At present CPP-II power generation capacity is 90 MW (2x30 MW and additional 1x30 MW). The emission standards specified in the Environmental (Protection) Amendment Rules, 2015 issued by vide S.O. 3305 (E) dated 7th December 2015 for Thermal Power Plant is applicable to coal-based boiler which is installed in CPP II. The boiler was installed in the year 2006 and the parameters of SPM, SO_2, Mercury are in the range of 35-40, 400-450, BDL against the norms of 50, 600, 0.03 mg/Nm^3 respectively. Specific water consumption is 3.1 m^3/Mwh against the norms of 3.5 m^3/Mwh. To comply NO_x emissions, actions are being initiated and the same will be complied before the time line. Fly ash generated is 100% disposed to local fly ash brick manufacturers. In the additional 1 x 30 MW CPP, an air cooled condenser is installed and specific water consumption is about 0.3 m^3/Mwh and ZLD ETP is installed to meet the norms of TPP.
xii.	The National Ambient Air Quality Emission Standards issued by the Ministry vide G.S.R. No. 826(E) dated 16th November 2009 shall be followed.	To meet the National Ambient Air Quality Emission Standards issued by the Ministry vide G.S.R. No. 826(E) dated 16th November 2009 Continuous Ambient Air Quality monitoring stations of four numbers are installed in the plant peripheral. One station is installed to monitor PM_{10}, $PM_{2.5}$, SO_2, NO_x and CO and other 3 stations are installed to monitor PM_{10}, $PM_{2.5}$, SO_2 as per the CTO condition. The real time data are connected to Care Air Centre of TNPCB & CPCB. Apart from this, ambient air quality is monitored in the surrounding villages by TNPCB during the bi- annual survey and also monitored by a NABL accredited laboratory to the defined locations to the parameters issued by the Ministry vide G.S.R. No. 826(E) dated 16th November 2009. The monitored results (maximum, minimum & average) from January 2020 to June 2020 is enclosed in **Annexure -C.**
xiii.	On-line ambient air quality monitoring and continuous stack monitoring facilities for all the stacks shall be provided and sufficient air pollution control devices viz. Electrostatic precipitator (ESP), and bag filters etc. shall be provided.	Continuous Ambient Air Quality monitoring stations of four numbers are installed in the plant peripheral. One station is installed to monitor PM_{10}, $PM_{2.5}$, SO_2, NO_x and CO and other 3 stations are installed to monitor PM_{10}, $PM_{2.5}$, SO_2 as per the CTO condition. The real time data are connected to Care Air Centre of TNPCB & CPCB. Online continuous monitoring systems are installed in process and non-process stacks as per the CTO condition to monitor SPM, SO_2 & NO_x. The real time data is connected with TNPCB & CPCB servers. Adequate Air Pollution Control measures are installed in the respective processes and to control the fugitive emissions secondary de-dusting

		systems are installed in BF & SMS. The details are given in **Annexure -K.**
A.	**SPECIFIC CONDITIONS**	**COMPLIANCE STATUS**
xiv.	A statement on carbon budgeting including the quantum of equivalent CO_2 being emitted by the existing plant operations, the amount of carbon sequestered annually by the existing green belt and the proposed green belt and the quantum of equivalent CO_2 that will be emitted due to the proposed expansion shall be prepared by the project proponent and submitted to the Ministry and the Regional Office of the Ministry. This shall be prepared every year by the project proponent. The first such budget shall be prepared within a period of 6 months and subsequently it should be prepared every year.	A statement on carbon budgeting is prepared as per the condition and detailed report is submitted to Ministry dated on 15.02.2018, 11.06.2019 and 23.09.2020. The quantum of equivalent CO_2 being emitted by the existing plant operations FY20 is 2632951 MT/year. The amount of carbon sequestered annually by the existing green belt is 3644.2 MT/year. The proposed green belt for FY21 is 10000 Nos. The quantum of equivalent CO_2 that will be emitted due to the proposed expansion would be calculated during phase II expansion. As per the condition the compliance report is submitted periodically.
xv.	For the employees working in high temperature zones falling in the plant operation areas, the total shift duration will be 4 hrs or less per day where the temperature is more than 50^oC. Moreover, the jobs of these employees will be alternated in such a way that no employee is subjected to working in high temperature area for more than 1 hr continuously. Such employees would be invariably provided with proper protective equipment, garments and gears such as head gear, clothing, gloves, eye protection etc. There should also be an arrangement for sufficient drinking water at site to prevent dehydration etc.	Employees working in high temperature zones are in the range of 45 deg C and of those employees are alternated to other jobs and ensure that no employee is subjected to work in high temperature area for more than 1 hr continuously. They are provided with proper protective equipment, garments and gears such as head gear, clothing, gloves, eye protection, etc and arrangements are made for sufficient drinking water, butter milk and lime juice at plants to prevent dehydration.
xvi.	In-plant control measures and dust suppression system shall be provided to control fugitive emissions from all the vulnerable sources. Dust extraction and suppression system shall be provided at all the transfer points, coal handling plant and coke sorting plant of coke oven plant. Bag filters shall be provided to hoods and dust collectors to coal and coke handling to control dust emissions. Water sprinkling system shall be provided to control secondary fugitive dust emissions generated during screening, loading, unloading, handling and storage of raw materials etc.	Dust suppression systems are provided to control fugitive emissions from all the vulnerable sources like raw material unloading and storage yards. Bag filters and Dry & Wet fog systems are provided in raw material transfer points, coal handling and coke sorting plant of coke oven. To control dust emission bag filters are provided in coal handling area of COP. Water sprinkler systems are provided in various locations to control secondary fugitive dust emissions generated during screening, loading, unloading, handling and storage of raw materials. A tyre washing unit is installed in the main gate entry to control vehicular movement dust emission.
xvii.	Gaseous emission levels including secondary fugitive emissions from all the sources shall be controlled within the latest permissible limits issued by the Ministry vide G.S.R. 414(E) dated 30^{th} May, 2008 and regularly monitored. Guidelines / Code of Practice issued by the CPCB shall be followed.	The G.S.R. 414(E) dated 30th May, 2008 is related to sponge iron plant. Hence, it is not applicable. In this connection, a representation is submitted to MoEF&CC dated 22.07.17.

A.	SPECIFIC CONDITIONS	COMPLIANCE STATUS
xviii.	Hot gases from DRI Kiln should be passed through dust settling chamber (DSC) to remove coarse solids and After Burning Chamber (ABC) to burn CO completely and used in Waste Heat Recovery (WHRB). The gas then shall be cleaned in ESP before dispersion out into the atmosphere through ID fan and stack. ESP shall be installed to control the particulate emission from WHRB.	The existing and expansion of the steel plant is following blast furnace route and there is no DRI process in our operations. Hence, it is not applicable. In this connection, a representation is submitted to MoEF&CC dated 22.07.17.
xix.	Efforts shall further be made to use maximum water from the rain water harvesting sources. If needed, capacity of the reservoir shall be enhanced to meet the maximum water requirement.	Three rainwater harvesting ponds are existing with the total capacity about 19,250 m^3 and rain water harvesting will be practiced to maximum possible extent.
xx.	Risk and Disaster Management Plan along with the mitigation measures shall be prepared and a copy submitted to the Ministry's Regional Office, SPCB and CPCB within 3 months of issue of environment clearance letter.	Study on Risk and Disaster Management Plan was conducted and the detailed report with summary is submitted to Ministry's Regional Office, SPCB, and CPCB on 01.02.2018.
xxi.	All the blast furnace (BF) slag shall be granulated and provided to cement manufacturers for further utilization. Flue dust from sinter plant and SMS and sludge from BF shall be re-used in sinter plant. Coke breeze form coke oven plant shall be used in sinter and pellet plant. SMS slag shall be given for metal recovery and properly utilized. All the other solid waste including broken refractory mass shall be properly disposed-off in environment-friendly manner.	All the Blast Furnace Slag is converted to Granulated slag and sold to cement industries. Flue dust from blast furnace, sludge from BF & EOF, Coke breeze from coke oven plant are re-used in sinter plant. Pellet plant is not installed in our process. SMS slag is sent for metal recovery system and the crushed slag is reused in internal applications like sinter plant, EOF as hearth layer and cooling media respectively and to cement industries. Based on the R&D initiative trail runs are being conducted to make paver from crushed EOF slag. Refractories are selected to withstand high temperature whose self-life is longer and generation of used refractories are lesser. The same will be recycled in downstream applications/disposed to recycling vendors.
xxii.	Coal and coke fines shall be recycled and reused in the process. The breeze coke and dust from the air pollution control system shall be reused in sinter plant. The waste oil shall be properly disposed of as per the Hazardous and Other Waste (Management and Transboundary Movement) Rules, 2016.	Coal and coke fines are recycled and reused in the Sinter plant and Blast Furnace. Coke breeze and dust from the air pollution control systems are collected and reused in the Sinter Plant. The waste oil generated from the process is being disposed to authorized vendor as per the Hazardous and Other Waste (Management and Transboundary Movement) Rules, 2016.
xxiii.	Green belt shall be developed in 33 % of plant area. Selection of plant species shall be as per the CPCB guidelines in consultation with the DFO.	The total plant area is 237.38 ha and Green belt development is established about 79.52 ha which is 33.5 % and 221194 trees exist throughout the plant (till June 2020) with the survival rate of 90 - 95%. The species are planted in consultation with DFO and some of the important species are Gulmohar, Bamboo, Pungan, Nawar pazham, Neem,

		Eucalyptus, Ficus, Mahogany, Vaagai, Teak, Puvarasu, Baniyan, Vila, Banana, Casuarina, Fabaceae, tectona, saraca asoca. Bamboo,etc. The tree plantation details are given in **Annexure – L.**
A.	**SPECIFIC CONDITIONS**	**COMPLIANCE STATUS**
xxiv.	All the recommendations made in the Charter on Corporate Responsibility for Environment Protection (CREP) for the Steel plants and Coke Oven Plants shall be implemented.	Complied. All the recommendations of the Charter on the Corporate Responsibility for the Environmental Protection (CREP) issued for the steel plants are implemented. Compliance report of CREP is enclosed vide **Annexure – G.**
xxv.	At least 2.5% of the total cost of the project shall be earmarked towards the Enterprise Social Commitment based on Public Hearing issues, locals need and item-wise details along with time bound action plan shall be prepared and submitted to the Ministry's Regional Office. Implementation of such program shall be ensured by constituting a Committee comprising of the proponent, representatives of village Panchayat and District Administration. Action taken report in this regard shall be submitted to the Ministry's Regional Office.	As per the EC Specific condition ii, Rs.13 Crores is allotted towards ESC have been earmarked. Public Hearing issues, locals need and item-wise details along with time bound action plan is prepared and actions are being taken in a time bound manner. The proposed expansion activity is planned in a phased manner (Viz Phase-I: 1.0 MTPA to 1.15 MTPA and Phase-II: 1.15 MTPA to 1.3 MTPA) at an estimated cost of Rs. 1025 Cr. Phase-I expansion activities were completed and the cost involvement is about Rs.650 Crs and till date the amount spent towards ESC is about 4.0 Crs. Due to the steel market condition and the present pandemic (COVID19) situation the phase-II expansion activity is postponed and the same will be established with in the time line EC validity. Based on the above, Phase II activities are rescheduled towards ESC. JSW assures that the commitments made shall be fulfilled. The details are attached in **Annexure –J** of this report. The same has been communicated to your good office via mail dated 26.09.2020.
xxvi.	The proponent shall prepare a detailed CSR plan for every year for the next 5 years for the existing-cum-expansion project, which includes village-wise, sector-wise (Health, Education, Sanitation, Health, Skill Development and infrastructure requirements such as strengthening of village roads, avenue plantation, etc) activities in consultation with the local communities and administration. The CSR plan will include the amount of 2% retain annual profits as provided for in Clause 135 of the Companies Act, 2013 which provides for 2% of the average net profits of previous 3 years towards CSR activities for life of the project. A separate budget head shall be created and the annual capital and revenue expenditure on various activities of the plan shall be submitted as part of the compliance report to	CSR plan for 5 years (from 2017 to 2022) is prepared which includes village-wise, sector-wise (Health, Education, Sanitation, Health, Skill Development and infrastructure requirements such as strengthening of village roads, avenue plantation, etc,.) activities in consultation with the local communities and administration considering and actions are initiated for compliance. As per the Companies Act, 2013 under clause 135, 2% of the average net profits of previous 3 years is earmarked as separate budget head towards CSR activities. The various activities of the plan are submitted to Ministry's Regional Office as part of the RO compliance report and the details of the CSR plan is uploaded in our company website and also provided in our company Annual Report.

	RO. The details of the CSR plan shall also be uploaded on the company website and shall also be provided in the Annual Report of the company. The plan so prepared shall be based on SMART (Specific, Measurable, Achievable, Relevant and Time bound) concept. The expenditure should be aimed at sustainable development and direct free distribution and temporary relief should not be included.	All the activities are planned and prepared based on SMART (Specific, Measurable, Achievable, Relevant and Time bound) concept. The expenditures are aimed at sustainable development and direct free distribution. The details are enclosed vide **Annexure -M.**
A.	**SPECIFIC CONDITIONS**	**COMPLIANCE STATUS**
xxvii	All the commitments made to the public during the Public Hearing /Public Consultation meeting shall be satisfactorily implemented and a separate budget for implementing the same shall be allocated and information submitted to the Ministry's Regional Office at Chennai.	Commitments made to the public during the Public Hearing is satisfactorily implemented.
xxviii.	Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, Safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.	Provisions are made for the expansion project activities and as per the condition temporary structure will be removed after the completion of expansion activities.
B.	**GENERAL CONDITIONS**	**COMPLIANCE STATUS**
i.	The project authorities must strictly Adhere to the stipulations made by the concerned State Pollution Control Board and the State Government.	Stipulations made by the Tamil Nadu Pollution Control Board and the State Government is strictly adhered to compliance.
ii.	No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forests and Climate Change (MoEF&CC).	There is no further expansion or modification in the plant is carried out without prior approval of Ministry of Environment, Forests and Climate Change (MoEF&CC)
iii.	At least four ambient air quality monitoring stations should be established in the downward direction as well as where maximum ground level concentration of PM_{10}, $PM_{2.5}$, SO_2 and NO_X are anticipated in consultation with the SPCB. Data on ambient air quality and stack emission shall be regularly submitted to this Ministry including its Regional Office at Chennai and the SPCB/CPCB once in six months.	With the consultation of TNPCB four numbers of Continuous Ambient Air Quality monitoring stations are installed in the plant premises where maximum ground level concentration of PM_{10}, $PM_{2.5}$, SO_2 and NO_x is taking place. Data on Ambient Air Quality and Stack emission reports are being submitted to Ministry, MoEF&CC, Regional Office at Chennai and the SPCB/CPCB once in six months.

iv.	Industrial waste water shall be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19th May, 1993 and 31st December 1993 or as amended from time to time. The treated waste water shall be utilized for plantation purpose.	Industrial waste water is being collected, treated and reused 100 % in the processes for cooling application and plantation purpose. Quality parameters are conformed to the prescribed standards under GSR 422 (E) dated 19th May, 1993 and 31st December 1993. The treated waste water analysis report given by TNPCB & NABL accredited laboratory is given in **Annexure -D.**
B.	**GENERAL CONDITIONS**	**COMPLIANCE STATUS**
v.	The overall noise levels in and around the plant shall be kept well within the standards (85 dB(A)) by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels should conform to the standards prescribed under EPA Rules, 1989 viz. 75 dB(A) during day time and 70 dB(A) during night time.	Source and Ambient noise levels are measured in and around the plant areas on monthly basis and control measures like acoustic hoods, silencers, and enclosures are provided wherever required. The noise levels of source and ambient are well within the standards prescribed under EPA Rules, 1989. Apart from this visual display boards are displayed to wear earplug, ear muff as PPE wherever required. The noise monitoring results by NABL accredited laboratory is enclosed in **Annexure –F.**
vi.	Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.	Health surveillance (Annual Health Check-up) is being conducted for all employees on yearly basis and records are being maintained in the Occupational Health Centre.
vii.	The company shall develop rain water harvesting structures to harvest the rain water for utilization in the lean season besides recharging the ground water table.	Rain water harvesting structures are provided to harvest rainwater for utilization in the lean season for recharging the ground water table.
viii.	The project proponent shall also comply with all the environmental protection measures and safeguards recommend in the EIA/EMP report. Further, the company must undertake socio-economic development activities in the surrounding villages like community development programmes, educational programmes, drinking water supply and health care etc.	To comply the environmental protection measures and safeguards as per the recommendation of EIA/EMP report, dust suppression systems like water sprinklers and dry fog systems for control of fugitive emissions arising from material handling. Bag filters are provided in the Sinter plant for dust control during crushing of raw materials. ESPs are provided for dust control in the Sintering process and Coal based boiler. Cast house de-dusting systems are installed in both the Blast Furnace I & II for fugitive dust control in the casting process. Wet Gas cleaning systems are provided in Blast Furnace I and Dry Gas cleaning systems are provided in Blast Furnace II. Quenching tower with grit arrestor is provided to control emission during coke quenching (wet type). Secondary de-dusting system (bag filters) are provided in Energy Optimizing Furnaces I & II, Ladle Refining Furnaces. Apart from the above we undertake socio-economic development activities in the surrounding villages like community development programmes, educational programmes, drinking water supply and health care etc. The details are given the six months' report of CSR.

ix.	Requisite funds shall be earmarked towards capital cost and recurring cost/annum for environment pollution control measures to implement the conditions stipulated by the Ministry of Environment, Forest and Climate Change (MoEF&CC) as well as the State Government. An implementation schedule for implementing all the conditions stipulated herein shall be submitted to the Regional Office of the Ministry at Chennai. The funds so provided shall not be diverted for any other purpose.	For environment pollution control measures capital cost and recurring cost/annum for environment pollution control measures are being implemented to the completed projects. Till June 2020 the cost of Rs.70.64 crores (appx) has been spent for environment pollution control measures as capital cost. Recurring cost/annum to the environment pollution control measures of Rs.9.59 crores (appx) has been spent. The funds provided will not be diverted for any other purposes. The details are given in **Annexure -N.**
x.	A copy of clearance letter shall be sent by the proponent to concerned Panchayat, Zila Parishad/ Municipal Corporation, Urban Local Body and the local NGO, if any, from whom suggestions/representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the company by the proponent.	Copy of clearance letter is submitted to local administration on 14.07.2017. The copy of clearance letter is uploaded in our website.
B.	**GENERAL CONDITIONS**	**COMPLIANCE STATUS**
xi.	The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of the MoEF&CC at Chennai. The respective Zonal Office of CPCB and the SPCB. The criteria pollutant levels namely; PM_{10}, SO_2, NO_X (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the projects shall be monitored and displayed at a convenient location near the main gate of the company in the public domain.	The compliance of the stipulated environment clearance conditions including results of monitored data is uploaded in our website once in six months. Simultaneously the compliance reports are being submitted (email) to the Regional Office of the Mo EF&CC at Chennai and the Zonal Office of CPCB, Bangalore and the TNPCB, Chennai. The criteria pollutant levels namely; PM_{10}, $PM_{2.5}$, SO_2, NO_X, CO (real time values) and stack emissions (manually monitored values) are displayed near both entrance of our company in the public domain.
xii.	The project proponent shall also submit six monthly reports on the status of the compliance of the stipulated environmental conditions including results of monitored data (both in hard copies as well as by e-mail) to the Regional Office of MoEF&CC, the respective Zonal Office of CPCB and the SPCB. The Regional Office of this Ministry at Chennai/CPCB/SPCB shall monitor the stipulated conditions.	Environmental conditions and compliance status report including results of monitored data is being submitted once in six months to the Regional Office of MoEF&CC, Chennai (by email), and Zonal Office of CPCB, Bangalore and TNPCB, Chennai.
xiii.	The environmental statement for each financial year ending 31st March in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of environmental conditions and shall also be sent to the respective Regional Office of the MoEF&CC at Chennai by e-mail.	As prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, the environmental statement for each financial year ending 31st March in Form-V and status of compliance of environmental conditions is being submitted to the Regional Office of the MoEF&CC at Chennai. To the FY 2019-20 the report has been submitted on 23.07.2020. The same is put on our company website.

xiv	The project proponent shall inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the SPCB and may also be sent at website of the Ministry of Environment, Forests, and Climate Change (MoEF&CC) at http:/envfor.nic.in. This shall be advertised within seven days from the date of issue of the clearance letter, at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same should be forwarded to the Regional office at Chennai.	Environmental Clearance accorded from MoEF&CC dated on 07.07.2017 and the details have been advertised in Dinamani and The Indian Express on 14.07.2017. The same was advertised two local newspapers (Dinamani and The Indian Express) which are widely circulated in the region of which Tamil is the vernacular language of the locality concerned. A copy of the same is submitted to the MoEF&CC Regional office at Chennai on 15.07.2017.
xv	Project authorities shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of commencing the land development work.	Date of financial closure and land development work is informed to Regional Office vide letter dated 12.10.2017.

Annexure –A

Production details for the period of Jan’20 – Jun’20

Annexure -A

Production details for the period of Jan'20 – Jun'20

Month	Steel Plant			CPP-II
	Pig Iron	Steel production	Power generation in CPP-I	Power generation
UoM	**MT**	**MT**	**MW (Avg load)**	**MW (Avg load)**
Jan-20	2441	92447	2.74	64.46
Feb-20	1107	88477	3.06	66.22
Mar-20	44	78659	2.67	51.70
Apr-20	818	12842	0.76	11.21
May-20	1281	61809	3.22	48.54
Jun-20	5494	70260	2.66	56.02
Total	**11185**	**404494**	**2.52**	**49.69**
UoM	**MTPA**	**MTPA**	**MW**	**MW**
Consented quantity per Annum	**0.3**	**1.15**	**7.0**	**90.0**
Production (Jan'20 to Jun'20)	**0.01**	**0.40**	**2.52**	**49.69**

Note:

- **MTPA – Million Ton Per Annum**
- **MT – Million Ton**
- **MW – Mega watt**

Annexure –B

Stack emission monitoring report of TNPCB & NABL accredited laboratory for the period Jan’20 to Jun’20

Annexure -B

Stack emission monitoring report of TNPCB & NABL accredited laboratory for the period Jan'20 to Jun'20.

I. Stack emission monitoring results of TNPCB

Sl. No	Stack attached to	Discharge rate in (Nm^3/Hr)	Pollutants Concentration (mg/Nm^3)		
			PM	SO_2	NO_x
1	Sinter Plant - I - Sinter Machine	81795	67	43	14.2
2	Sinter Plant – I - Cooling System	73335	42	14.2	7.3
3	Sinter Plant – I - Dedusting System	520563	57	-	-
4	Sinter Plant - I - Dust Extraction system for RMHS	22916	76	-	-
5	Sinter plant - II - Sinter Machine	405994	79	50.6	4.7
6	Sinter Plant – II - Cooling & De-dusting System	511735	56	-	-
7	Sinter plant – II - RMHS	111200.7	72	-	-
8	Blast Furnace - I - Hot stove	78732	36	34.6	8.3
9	Blast Furnace - I - Stock House dedusting system	49216	62	-	-
10	Blast Furnace - I - RMHS	17645.5	71	-	-
11	Blast Furnace - I - Cast House dedusting system	202287	92	-	-
12	Blast Furnace - II - Hot stove	113768	32	29.3	21.6
13	Blast Furnace - II - Stock House dedusting system	118945	49	-	-
14	Blast Furnace - II - Cast House dedusting system	276278	97	10.6	4.9
15	Blast Furnace - II - Pulverized Coal Injection mill	27379	86	29	4.9
16	CPP-I Boiler – (25 TPH x 2 No's) Common stack	62207	34	45.3	5.1
17	Vacuum Degassing Unit (Boiler)	9954	32	40.8	21.1
18	Energy optimizing furnace (SMS I)	36902	62	61.3	14.5
19	Energy Optimizing Furnace (SMS II)	29539	77	66.6	9.2
20	Secondary De-dusting System of EOF I to II (Common stack)	130512	78	-	-
21	Ladle Furnaces (LF-SMS-1)	27901	42	35	11.7
22	Ladle Furnaces (common stack) SMS –II	88772	65	29	8.6
23	Continuous Casting Machine (Billet cast) (SMS I)	15956	87	-	-
24	CCM-III Steam Exhaust system	51342	79	-	-
25	CCM-II Steam Exhaust System – II	16655	96	-	-
26	CCM-II Cut Fumes Exhaust System	32914	64	-	-
27	BRM - Reheating Furnace	39615	51	74.6	12.9
28	BLM - Reheating Furnace	34616	67	56	8.3
29	Coke oven WHRB – I	36147	45	184	6.1
30	Coke oven WHRB – III	32767	48	186.6	5.6
31	Coke oven WHRB – IV	34273	49	210.6	8.4
32	LRF-Sec. De-dusting I to IV	336845	49	26.6	2.3
33	BF Gas Fired Boiler	32309	34	157	9.4
34	1250 KVA (DG SET)	2360	44	16	5.2
35	CPP-II - AFBC – Boiler	161605	32	195	27

II. Stack emission monitoring report of NABL accredited Laboratory					
Stack No.	Source name	Stack emission Average (mg/Nm^3)			Discharge (Nm^3/hr)
		SPM	SO_2	NO_x	
1	Sinter Machine (Sinter Plant I)	94.7	56.8	48.7	78650
2	Cooling System (Sinter Plant I)	52.4	29.1	27.1	70755
3	Dedusting System (Sinter Plant I)	51.0	-	-	94471
4	Dust Extraction System For RMHS (Sinter Plant I)	36.5	-	-	13733
5	Hot Stove (Blast Furnace I)	30.3	46.6	43.1	52122
6	GCP Flare (Blast Furnace I) -Emergency stack	-	-	-	-
7	Stock House Dedusting System (Blast Furnace I)	46.4	-	-	53932
8	Dust Extraction System for RMHS (Blast Furnace I)	41.7	-	-	14343
9	Cast House Dedusting System (Blast Furnace I)	36.3	-	-	219220
10	CPP I Boiler 2 Nos of 25 TPH each (Common Stack)	30.7	49.8	44.1	62817
11	Energy Optimizing Furnace (Steel Melting Shop I)	45.7	49.5	42.0	38189
12	Ladle Furnaces (Steel Melting Shop I)	47.5	38.4	34.9	22642
13	Continuous Casting Machine (Steel Melting Shop I)	33.1	-	-	24964
14	Energy Optimizing Furnace (Steel Melting Shop II)	47.9	48.7	40.3	58885
15	Secondary Dedusting System EOF I&II (Combined SMS II)	50.3	-	-	374741
16	Sec. Dedusting System of LRF IV(Common) (SMS II)	45.8	-	-	348121
17	Ladle Furnaces(Common Stack) (Steel Melting Shop II)	46.0	41.6	36.5	49601
18	Vacuum Degasing Unit (Boiler) (Steel Melting Shop II)	30.0	36.4	32.8	22574
19	Steam Exhaust System (2 Nos) (Bloom Caster	33.2	-	-	22147
20	Cut Fumes Exhaust System (Bloom Caster)	37.7	-	-	54687
21	Reheating Furnace (Furnace 1 No2 Chimney) (BLM)	30.2	43.5	37.4	20081
22	Reheating Furnace (Furnace 1 No1 Chimney) (BLM)	26.0	42.3	36.0	20402
23	Coke Oven Chimney I (Coke Oven) -Emergency stack	-	-	-	-
24	Coke Oven Chimney II (Coke Oven) -Emergency stack	-	-	-	-
25	Coke Oven Chimney III (Coke Oven) -Emergency stack	-	-	-	-
26	Waste Heat Recovery Boiler I (Coke Oven)	29.7	271.8	197.3	49824
27	Waste Heat Recovery Boiler II (Coke Oven)	30.3	272.4	196.0	50455
28	Waste Heat Recovery Boiler III (Coke Oven)	30.5	262.3	185.2	61826
29	Waste Heat Recovery Boiler IV (Coke Oven)	30.1	259.5	183.1	55768
30	Waste Heat Recovery Boiler V (Coke Oven)	29.0	254.6	183.4	54873
31	BF Gas Fired Boiler	27.7	21.9	16.7	37422
32	Reheating Furnace (Bar & Rod Mill)	31.3	50.9	42.7	26480
33	Sinter Machine (Sinter Plant II)	123.1	52.7	44.2	466223
34	Plant Dedusting and Cooling (Sinter Plant II)	49.2	-	-	421337
35	Crushing of Fuel & Raw Materials (Sinter Plant II)	45.2	-	-	100031
36	Hot Stove (Blast Furnace II)	26.2	49.7	42.9	87007
37	GCP Flare (Blast Furnace II) -Emergency stack	-	-	-	-
38	Stock House Dedusting & RMHS (Blast Furnace II)	58.5	-	-	239979
39	Cast House Dedusting System (Blast Furnace II)	45.2	-	-	494925
40	Pulverized Coal Injection (Blast Furnace)	56.4	33.0	30.0	37241
41	Steam Exhaust System - CCM-III	32.2	-	-	22977
42	CPPII-AFBC Boiler	24.5	354.9	352.1	152777

Annexure –C

Online stack emission monitoring & Ambient air quality monitoring report for the period Jan’20 to Jun’20

Annexure -C

Online stack emission monitoring & Ambient air quality monitoring report for the period Jan'20 to Jun'20

I. Online stack emission monitoring summary report (Jan'20 to Jun'20)

Stack No.	Source name	Parameter	UoM	Stack emission monthly average					
		Month		Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20
1	Sinter Machine (Sinter Plant I)	SPM	mg/m^3	55.58	44.7	26.4	Plant shut down due to COVID 19 Pandemic	Plant shut down due to COVID 19 Pandemic	23.2
		SO_2	mg/m^3	68.61	72.7	58.9			74.2
2	Cooling System (Sinter Plant I)	SPM	mg/m^3	23.5	22.7	20.2			36.4
3	Dedusting System (Sinter Plant I)	SPM	mg/m^3	38.6	33.4	16.2			26.5
4	Dust Extraction System For RMHS (Sinter Plant I)	SPM	mg/m^3	24.7	28.4	15.5			20.7
5	Hot Stove (Blast Furnace I)	SPM	mg/m^3	25.6	23.1	22.2			35.1
		SO_2	mg/m^3	33.8	25.8	23.6			74.1
		NOx	mg/m^3	21.2	36.1	34.4			28.0
		CO	ppm	914.0	1253.6	1769.8			456.9
6	GCP Flare (Blast Furnace I) -Emergency stack	SPM	mg/m^3	0.0	0.0	0.0			0.0
		SO_2	mg/m^3	0.0	0.0	0.0			0.0
7	Stock House Dedusting System (Blast Furnace I)	SPM	mg/m^3	53.4	23.8	41.7			31.7
		SO_2	mg/m^3	6.0	3.0	4.2			4.3
8	Dust Extraction System for RMHS (Blast Furnace I)	SPM	mg/m^3	29.0	37.6	17.1			20.1
		SO_2	mg/m^3	10.0	12.0	10.3			15.3
9	Cast House Dedusting System (Blast Furnace I)	SPM	mg/m^3	41.4	21.7	29.3			31.8
		SO_2	mg/m^3	7.0	11.8	6.1			13.9
10	CPP I Boiler 2 Nos of 25 TPH each (Common Stack)	SPM	mg/m^3	29.2	35.7	38.1		24.1	30.6
		SO_2	mg/m^3	61.4	32.3	24.0		40.4	72.4
11	Energy Optimizing Furnace (Steel Melting Shop I)	SPM	mg/m^3	59.1	83.5	72.5	69.1	73.8	33.5
12	Ladle Furnaces (Steel Melting Shop I)	SPM	mg/m^3	31.0	21.7	20.5	33.2	Shut down	Shut down
13	Continuous Casting Machine (Steel Melting Shop I)	SPM	mg/m^3	34.0	23.4	24.9	Plant shut down due to COVID 19 Pandemic	21.4	23.3
14	Energy Optimizing Furnace (Steel Melting Shop II)	SPM	mg/m^3	39.2	58.3	39.5		44.7	45.3
15	Secondary Dedusting System EOF I&II (Combined SMS II)	SPM	mg/m^3	35.0	21.2	21.3	26.8	28.5	61.7
16	Sec. Dedusting System of LRF IV(Common) (SMS II)	SPM	mg/m^3	47.0	14.7	30.7	Plant shut down due to COVID 19 Pandemic	18.1	28.2
17	Ladle Furnaces(Common Stack) (Steel Melting Shop II)	SPM	mg/m^3	36.4	20.1	20.0		44.7	45.4
18	Vacuum Degasing Unit (Boiler) (Steel Melting Shop II)	SPM	mg/m^3	26.9	20.3	18.1		24.8	16.4
19	Steam Exhaust System 1 (Bloom Caster	SPM	mg/m^3	30.4	14.9	20.9		14.2	12.9
19	Steam Exhaust System 2 (Bloom Caster	SPM	mg/m^3	10.7	12.7	15.0		19.7	14.8
20	Cut Fumes Exhaust System (Bloom Caster)	SPM	mg/m^3	19.7	11.3	23.1		14.8	16.3
21	Reheating Furnace (Furnace 1 No2 Chimney) (BLM)	SPM	mg/m^3	19.1	36.7	21.7		24.0	34.0
		SO_2	mg/m^3	25.7	17.6	35.2		33.9	43.9
22	Reheating Furnace (Furnace 1 No1 Chimney) (BLM)	SPM	mg/m^3	16.5	14.8	25.1		13.4	21.4
		SO_2	mg/m^3	27.6	33.3	39.5		32.5	38.7
23	Coke Oven Chimney I (Coke Oven) -Emergency stack	SPM	mg/m^3	0.0	0.0	0.0		0.0	0.0
		SO_2	mg/m^3	0.0	0.0	0.0		0.0	0.0
24	Coke Oven Chimney II (Coke Oven) -Emergency stack	SPM	mg/m^3	0.0	0.0	0.0		0.0	0.0
		SO_2	mg/m^3	0.0	0.0	0.0		0.0	0.0
25	Coke Oven Chimney III (Coke Oven) -Emergency stack	SPM	mg/m^3	0.0	0.0	0.0		0.0	0.0
		SO_2	mg/m^3	0.0	0.0	0.0		0.0	0.0

Stack No.	Source name	Parameter	UoM	Stack emission monthly average					
		Month		Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20
26	Waste Heat Recovery Boiler I (Coke Oven)	SPM	mg/m^3	21.0	26.3	31.1	Plant shut down due to COVID 19 Pandemic	22.0	26.3
		SO_2	mg/m^3	278.7	298.6	360.1		349.5	381.4
27	Waste Heat Recovery Boiler II (Coke Oven)	SPM	mg/m^3	30.1	27.3	24.8		25.3	25.9
		SO_2	mg/m^3	280.7	142.8	253.1		255.9	272.6
28	Waste Heat Recovery Boiler III (Coke Oven)	SPM	mg/m^3	19.8	21.8	24.9		20.1	27.7
		SO_2	mg/m^3	118.1	135.0	131.5		126.3	196.5
29	Waste Heat Recovery Boiler IV (Coke Oven)	NA	NA	-	-	-		-	-
		NA	NA	-	-	-		-	-
30	Waste Heat Recovery Boiler V (Coke Oven)	NA	NA	-	-	-		-	-
		NA	NA	-	-	-		-	-
31	BF Gas Fired Boiler	SPM	mg/m^3	20.3	17.1	18.5		22.3	25.3
32	Reheating Furnace (Bar & Rod Mill)	SPM	mg/m^3	20.7	22.3	24.8		30.4	32.6
		SO_2	mg/m^3	17.8	9.0	17.0		16.7	30.9
33	Sinter Machine (Sinter Plant II)	SPM	mg/m^3	24.2	36.0	31.7	22.7	33.0	32.1
		SO_2	mg/m^3	68.9	92.1	90.4	72.4	98.1	95.9
34	Plant Dedusting and Cooling (Sinter Plant II)	SPM	mg/m^3	37.0	30.8	26.7	19.1	22.8	24.5
35	Crushing of Fuel & Raw Materials (Sinter Plant II)	SPM	mg/m^3	13.2	19.5	36.2	37.1	42.7	35.0
36	Hot Stove (Blast Furnace II)	SPM	mg/m^3	10.0	22.3	26.1	23.6	21.5	24.1
		SO_2	mg/m^3	43.0	40.1	54.8	53.3	74.1	48.7
		NOx	mg/m^3	35.0	27.9	36.5	27.1	96.3	18.3
		CO	ppm	1554.0	1023.0	1292.4	1081.2	876.5	1853.1
37	GCP Flare (Blast Furnace II) -Emergency stack	SPM	mg/m^3	0.0	0.0	0.0	0.0	0.0	0.0
		SO_2	mg/m^3	0.0	0.0	0.0	0.0	0.0	0.0
38	Stock House Dedusting & RMHS (Blast Furnace II)	SPM	mg/m^3	51.0	44.6	23.5	26.8	22.7	19.2
		SO_2	mg/m^3	4.0	3.2	3.1	5.2	7.4	6.5
39	Cast House Dedusting System (Blast Furnace II)	SPM	mg/m^3	30.0	23.9	21.1	33.8	32.6	30.5
		SO_2	mg/m^3	6.0	4.0	7.1	4.2	5.6	4.4
40	Pulverized Coal Injection (Blast Furnace)	SPM	mg/m^3	34.7	30.7	26.6		22.5	41.2
		SO_2	mg/m^3	11.0	6.8	11.5		6.3	9.4
41	Steam Exhaust System - CCM-III	NA	NA	-	-	-	Plant shut down due to COVID 19 Pandemic	-	-
		NA	NA	-	-	-		-	-
42	CPPII-AFBC Boiler	SPM	mg/m^3	21.9	19.4	21.4		22.0	24.8
		SO_2	mg/m^3	372.9	330.0	261.7		258.0	225.2
		NOx	mg/m^3	316.6	311.8	285.8		239.8	340.7

II. Continuous Ambient Air Quality Monitoring Results (Jan'20 to Jun'20)

Month	CAAQMS#1					CAAQMS#2		
	PM_{10}	$PM_{2.5}$	SO_2	NO_x	CO	PM_{10}	$PM_{2.5}$	SO_2
UoM	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	mg/m^3	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$
Jan-20	59.20	45.39	15.05	12.98	0.56	32.94	29.13	12.85
Feb-20	57.92	29.08	12.98	7.27	0.41	40.06	37.57	21.49
Mar-20	36.80	16.88	9.37	6.76	0.34	28.70	25.01	5.97
Apr-20	21.88	18.55	6.23	5.91	0.31	30.94	22.09	6.69
May-20	31.02	24.08	12.21	9.67	0.36	25.58	24.01	15.57
Jun-20	34.40	29.42	13.29	10.53	0.68	38.41	27.33	11.23

Month	CAAQMS#3			CAAQMS#4		
	PM_{10}	$PM_{2.5}$	SO_2	PM_{10}	$PM_{2.5}$	SO_2
UoM	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$
Jan-20	25.40	21.21	11.42	33.20	18.72	11.34
Feb-20	36.58	25.62	7.52	25.77	21.83	12.69
Mar-20	51.76	36.32	9.20	33.97	14.88	9.07
Apr-20	29.70	27.63	14.17	29.27	21.19	7.54
May-20	33.74	24.35	11.84	31.37	29.21	8.38
Jun-20	34.17	26.01	9.11	34.79	25.99	13.19

Tolerance limit: PM10: 100 $\mu g/m^3$, PM2.5: 60 $\mu g/m^3$, NOx: 80 $\mu g/m^3$, SO_2: 80 $\mu g/m^3$,
CO: 1 hr avg - 4 mg/m^3 , 8 hr avg - 2 mg/m^3

The results are well within the prescribed standards.

III. Ambient Air Quality Monitoring results of NABL Accredited laboratory

Month	AQ-1				AQ-2			
	PM_{10}	$PM_{2.5}$	SO_2	NO_x	PM_{10}	$PM_{2.5}$	SO_2	NO_x
Jan-20	52.80	22.10	5.86	16.38	45.60	17.70	6.43	16.40
Feb-20	53.90	23.30	6.30	15.81	47.60	16.90	5.90	14.91
Mar-20	53.60	23.30	6.59	16.17	45.90	17.40	6.17	15.56
Apr-20	38.00	16.63	4.48	13.90	33.60	13.25	4.10	13.00
May-20	43.10	18.90	5.46	14.97	38.30	15.40	5.31	14.58
Jun-20	49.30	21.30	6.11	15.90	42.00	19.00	5.80	15.13

Month	AQ-3				AQ-4			
	PM_{10}	$PM_{2.5}$	SO_2	NO_x	PM_{10}	$PM_{2.5}$	SO_2	NO_x
Jan-20	54.80	23.30	6.69	16.16	52.80	22.90	6.82	16.61
Feb-20	53.40	22.00	6.35	16.18	58.70	23.00	6.03	15.39
Mar-20	54.70	24.40	6.83	16.56	52.70	23.00	6.23	16.66
Apr-20	40.90	18.10	5.00	14.50	40.60	19.00	5.00	14.60
May-20	43.70	19.20	5.81	15.38	43.60	18.80	5.53	15.39
Jun-20	48.00	21.60	6.77	16.46	49.60	21.70	6.63	15.93

Month	AQ-5				AQ-6			
	PM_{10}	$PM_{2.5}$	SO_2	NO_x	PM_{10}	$PM_{2.5}$	SO_2	NO_x
Jan-20	56.20	25.10	6.61	16.42	46.30	16.60	5.79	15.98
Feb-20	62.40	24.40	5.78	15.88	46.00	17.80	5.95	15.24
Mar-20	56.30	26.30	6.77	16.51	45.60	17.60	5.97	15.77
Apr-20	42.10	20.10	5.60	14.80	34.90	14.40	4.90	13.80
May-20	45.90	21.80	5.79	15.40	40.10	16.20	5.29	14.50
Jun-20	48.90	24.10	6.61	16.37	51.50	18.70	5.84	15.69

Month	AQ-7				AQ-8			
	PM_{10}	$PM_{2.5}$	SO_2	NO_x	PM_{10}	$PM_{2.5}$	SO_2	NO_x
Jan-20	53.20	23.60	6.69	16.33	50.00	18.90	6.46	15.46
Feb-20	50.60	21.90	6.20	15.23	53.10	24.80	6.16	15.40
Mar-20	53.40	23.60	6.69	16.33	55.10	24.10	6.64	16.43
Apr-20	41.50	18.90	5.60	14.60	41.90	19.50	5.70	15.10
May-20	45.00	21.40	5.99	15.38	45.10	22.00	5.96	15.60
Jun-20	55.80	25.20	6.77	16.57	54.90	25.10	6.79	16.72

Tolerance limit: PM10: 100 µg/m^3, PM2.5: 60 µg/m^3, NOx: 80 µg/m3, SO_2: 80 µg/m^3

AQ1- Udayanur, AQ2-Temple Gate, AQ3-Township STP, AQ4- Kuttapattipudur

AQ5- Parry Nagar, AQ6- Guest House, AQ7- Pottaneri, AQ8- Pump House

IV. Analysis of Ambient Air Quality Monitoring results

PM_{10} in µg/m^3								
Location	**AQ-1**	**AQ-2**	**AQ-3**	**AQ-4**	**AQ-5**	**AQ-6**	**AQ-7**	**AQ-8**
Minimum	38.00	33.60	40.90	40.60	42.10	34.90	41.50	41.90
Maximum	53.90	47.60	54.80	58.70	62.40	51.50	55.80	55.10
Average	48.45	42.17	49.25	49.67	51.97	44.07	49.92	50.02
Standard deviation	6.54	5.36	6.00	6.63	7.60	5.76	5.53	5.46
98th Percentile	53.87	47.43	54.79	58.11	61.79	50.98	55.56	55.08
$PM_{2.5}$ in µg/m^3								
Location	**AQ1**	**AQ-2**	**AQ-3**	**AQ-4**	**AQ-5**	**AQ-6**	**AQ-7**	**AQ-8**
Minimum	16.63	13.25	18.10	18.80	20.10	14.40	18.90	18.90
Maximum	23.30	19.00	24.40	23.00	26.30	18.70	25.20	25.10
Average	20.92	16.61	21.43	21.40	23.63	16.88	22.43	22.40
Standard deviation	2.66	2.02	2.40	2.00	2.28	1.51	2.20	2.71
98th Percentile	23.30	18.87	24.29	23.00	26.18	18.61	25.04	25.07
SO_2 in µg/m^3								
Location	**AQ-1**	**AQ-2**	**AQ-3**	**AQ-4**	**AQ-5**	**AQ-6**	**AQ-7**	**AQ-8**
Minimum	4.48	4.10	5.00	5.00	5.60	4.90	5.60	5.70
Maximum	6.59	6.43	6.83	6.82	6.77	5.97	6.77	6.79
Average	5.80	5.62	6.24	6.04	6.19	5.62	6.32	6.29
Standard deviation	0.75	0.83	0.72	0.68	0.52	0.43	0.47	0.42
98th Percentile	6.56	6.40	6.82	6.80	6.75	5.97	6.76	6.78
NO_x in µg/m^3								
Location	AQ-1	AQ-2	AQ-3	AQ-4	AQ-5	AQ-6	AQ-7	AQ-8
Minimum	13.90	13.00	14.50	14.60	14.80	13.80	14.60	15.10
Maximum	16.38	16.40	16.56	16.66	16.51	15.98	16.57	16.72
Average	15.52	14.93	15.87	15.76	15.90	15.16	15.74	15.79
Standard deviation	0.93	1.14	0.79	0.80	0.68	0.85	0.78	0.64
98th Percentile	16.36	16.32	16.55	16.66	16.50	15.96	16.55	16.69

Tolerance limit: PM10: 100 µg/m^3, PM2.5: 60 µg/m^3, NOx: 80 µg/m3, SO_2: 80 µg/m^3

AQ1- Udayanur, AQ2-Temple Gate, AQ3-Township STP, AQ4- Kuttapattipudur
AQ5- Parry Nagar, AQ6- Guest House, AQ7- Pottaneri, AQ8- Pump House

The results are within the norms prescribed by CPCB.

Annexure –D

Online effluent monitoring report and effluent & ground water quality manual monitoring report of TNPCB & NABL accredited laboratory

Annexure -D

Online effluent monitoring report and effluent & ground water quality manual monitoring report of TNPCB & NABL accredited laboratory

I. Online effluent monitoring report

S.No	Description	UoM	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20
1	Effluent Inlet flow	m^3	65215.63	65795.25	58515.25	13597.88	70455.13	70381.25
2	Treated effluent water reuse in process	m^3	60930.00	60139.13	61635.88	20093.50	66525.00	64176.75
3	ETP outlet discharge flow	m^3	0	0	0	0	0	0

II. Treated trade effluent of Steel by NABL Accredited laboratory

S.No	Parameter	Unit	TNPCB Tolerance Limit	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20
1	pH @ 25°C	--	5.5 - 9.0	7.78	7.55	7.81	7.43	7.61	7.29
2	Colour	Hazen	--	20	30	35	25	30	25
3	Odour	--	--	Unobjectionable	Unobjectionable	Unobjectionable	Unobjectionable	Unobjectionable	Unobjectionable
4	Temperature	°C	Shall not exceed 5 °C above the receiving water temperature	29	29	29	29	29	29
5	Particle size of suspended solids	--	Shall pass 850 u I.S Sieve	passes through 850 u I.S Sieve	passes through 850 u I.S Sieve	passes through 850 u I.S Sieve	passes through 850 u I.S Sieve	passes through 850 u I.S Sieve	passes through 850 u I.S Sieve
6	Dissolved solids (Inorganic)	mg/l	2100	816	1498	1612	1085	1210	1326
7	Suspended solids	mg/l	100	11	33	24	14	16	20
8	Chloride as Cl	mg/l	1000	292	296	344	301	343	371
9	Sulphate as SO_4	mg/l	1000	190	418	497	168	175	188
10	BOD @ 27°C for 3 Days	mg/l	30	15	16	21	4	5	7
11	Oil & Grease	mg/l	10 (DL: 1.0)	BDL	BDL	BDL	BDL	BDL	BDL
12	COD	mg/l	250	124	140	155	19	23	32
13	Arsenic as As	mg/l	0.2 (DL : 0.005)	BDL	BDL	BDL	BDL	BDL	BDL
14	Mercury as Hg	mg/l	0.01 (DL : 0.001)	BDL	BDL	BDL	BDL	BDL	BDL
15	Lead as Pb	mg/l	0.1 (DL : 0.01)	BDL	BDL	BDL	BDL	BDL	BDL
16	Zinc as Zn	mg/l	1.0 (DL : 0.005)	BDL	BDL	BDL	BDL	BDL	BDL
17	Copper as Cu	mg/l	3.0 (DL : 0.01)	BDL	BDL	BDL	BDL	BDL	BDL
18	Cadmium as Cd	mg/l	2.0 (DL : 0.005)	BDL	BDL	BDL	BDL	BDL	BDL
19	Nickel as Ni	mg/l	3.0 (DL : 0.01)	BDL	BDL	BDL	BDL	BDL	BDL
20	Cyanide as CN	mg/l	0.2 (DL : 0.01)	BDL	BDL	BDL	BDL	BDL	BDL
21	Phenolic compounds as C_6H_5OH	mg/l	1.0 (DL : 0.01)	BDL	BDL	BDL	BDL	BDL	BDL
22	Percent Sodium	%	--	30	29	31	27	28	29
23	Residual Sodium Carbonate	mg/l	--	NIL	NIL	NIL	NIL	NIL	NIL
24	Sulphide as S	mg/l	2.0 (DL : 0.5)	BDL	BDL	BDL	BDL	BDL	BDL
25	Boron as B	mg/l	2.0 (DL : 0.1)	BDL	BDL	BDL	BDL	BDL	BDL
26	Total Chromium as Cr	mg/l	2.0 (DL : 0.03)	BDL	BDL	BDL	BDL	BDL	BDL
27	Hexavalent Chromium (Cr^{6+})	mg/l	0.1 (DL : 0.03)	BDL	BDL	BDL	BDL	BDL	BDL
28	Fluoride as F	mg/l	2.0 (DL : 0.1)	BDL	BDL	BDL	BDL	BDL	BDL
29	Dissolved Phosphate as P	mg/l	5.0	1.64	0.91	0.73	0.58	0.64	0.75
30	Total Residual Chlorine	mg/l	1.0 (DL : 0.1)	BDL	BDL	BDL	BDL	BDL	BDL
31	Free ammonia as NH_3	mg/l	5.0	2.01	0.75	69	0.58	0.62	0.58
32	Ammonical Nitrogen as N	mg/l	50	6.18	8.01	7.28	2.93	2.41	2.96
33	Total kjeldahl Nitrogen as N	mg/l	100	8.42	12.56	10.4	4.01	3.75	4.31

III. Treated trade effluent of CPPII by NABL accredited laboratory

S.No	Parameter	Unit	TNPCB Tolerance Limit	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20
1	pH @ 25°C	--	5.5 - 9.0	6.9	7.96	7.25	7.36	7.48	7.56
2	Colour	Hazen	--	10	30	25	20	25	20
3	Odour	--	--	Unobjectionable	Unobjectionable	Unobjectionable	Unobjectionable	Unobjectionable	Unobjectionable
4	Temperature	°C	Shall not exceed 5 °C above the receiving water temperature	29	29	29	29	29	29
5	Particle size of suspended solids	--	Shall pass 850 u I.S Sieve	passes through 850 u I.S Sieve	passes through 850 u I.S Sieve	passes through 850 u I.S Sieve	passes through 850 u I.S Sieve	passes through 850 u I.S Sieve	passes through 850 u I.S Sieve
6	Dissolved solids (Inorganic)	mg/l	2100	1842	1843	1723	1356	1402	1324
7	Suspended solids	mg/l	100	14	42	31	18	21	25
8	Chloride as Cl	mg/l	1000	332	456	408	341	376	338
9	Sulphate as SO_4	mg/l	1000	256	651	576	410	438	405
10	BOD @ 27°C for 3 Days	mg/l	30	13	14	17	14	16	17
11	Oil & Grease	mg/l	10 (DL: 1.0)	BDL	BDL	BDL	BDL	BDL	BDL
12	COD	mg/l	250	155	169	136	83	92	99
13	Arsenic as As	mg/l	0.2 (DL : 0.005)	BDL	BDL	BDL	BDL	BDL	BDL
14	Mercury as Hg	mg/l	0.01 (DL : 0.001)	BDL	BDL	BDL	BDL	BDL	BDL
15	Lead as Pb	mg/l	0.1 (DL : 0.01)	BDL	BDL	BDL	BDL	BDL	BDL
16	Zinc as Zn	mg/l	1.0 (DL : 0.005)	BDL	BDL	BDL	BDL	BDL	BDL
17	Copper as Cu	mg/l	3.0 (DL : 0.01)	BDL	BDL	BDL	BDL	BDL	BDL
18	Cadmium as Cd	mg/l	2.0 (DL : 0.005)	BDL	BDL	BDL	BDL	BDL	BDL
19	Nickel as Ni	mg/l	3.0 (DL : 0.01)	BDL	BDL	BDL	BDL	BDL	BDL
20	Cyanide as CN	mg/l	0.2 (DL : 0.01)	BDL	BDL	BDL	BDL	BDL	BDL
21	Phenolic compounds as C_6H_5OH	mg/l	1.0 (DL : 0.01)	BDL	BDL	BDL	BDL	BDL	BDL
22	Percent Sodium	%	--	28.5	31	30	26	29	27
23	Residual Sodium Carbonate	mg/l	--	NIL	NIL	NIL	NIL	NIL	NIL
24	Sulphide as S	mg/l	2.0 (DL : 0.5)	BDL	BDL	BDL	BDL	BDL	BDL
25	Boron as B	mg/l	2.0 (DL : 0.1)	BDL	BDL	BDL	BDL	BDL	BDL
26	Total Chromium as Cr	mg/l	2.0 (DL : 0.03)	BDL	BDL	BDL	BDL	BDL	BDL
27	Hexavalent Chromium (Cr^{6+})	mg/l	0.1 (DL : 0.03)	BDL	BDL	BDL	BDL	BDL	BDL
28	Fluoride as F	mg/l	2.0 (DL : 0.1)	BDL	BDL	BDL	BDL	BDL	BDL
29	Dissolved Phosphate as P	mg/l	5.0	1.01	1.68	1.42	0.95	0.83	0.77
30	Total Residual Chlorine	mg/l	1.0 (DL : 0.1)	BDL	BDL	BDL	BDL	BDL	BDL
31	Free ammonia as NH_3	mg/l	5.0	0.58	0.83	0.7	0.61	0.69	0.65
32	Ammonical Nitrogen as N	mg/l	50	5.12	9.47	8.23	4.98	4.01	4.87
33	Total kjeldahl Nitrogen as N	mg/l	100	6.86	12.68	11.39	6.53	6.18	6.63

IV. Result of analysis of treated trade effluent by TNPCB

S.No	Parameter	Unit	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20
1	pH @ 25°C	Number	7.81	7.91	**Report yet to be received**			
2	TSS at 103°C - 105°C	mg/l	4	16				
3	Total Dissolved Solids at 180°C	mg/l	1148	1228				
4	Chloride as Cl	mg/l	325	385				
5	Sulphates as SO4	mg/l	91	228				
6	Oil & Grease	mg/l	<4	<4				
7	BOD (at 27°C for 3 days)	mg/l	10	5.5				
8	COD	mg/l	112	32				
9	Phenolic compounds	mg/l	<0.05	<0.05				
10	Ammonical Nitrogen as NH_3-N	mg/l	2.8	2.24				
11	Cyanide	mg/l	<0.05	<0.05				

V. Result of analysis of ground water by NABL accredited laboratory

S.No	Parameter	Unit	Desirable Limits as for IS : 10500: 1991	Permissable Limits as for IS : 10500: 1991 R.2012	Jan-20		Feb-20		Mar-20		
					Open well mr. Rajamani /Kuttapattipudur, Kattuvalavu	Govt bore well Moorthipatti	Govt bore well, Kavundanur	Govt bore well Ervadi	Govt bore well Karapattipallam	Open well mr.Venkatesan house, Pottaneri	Govt bore well, Pari nagar
1	Colour	Hazen	--	15	BDL[DL:1.0]	BDL[DL:1.0]	BDL[DL:1.0]	BDL[DL:1.0]	BDL[DL:1.0]	BDL[DL:1.0]	BDL[DL:1.0]
2	Odour	--	--	Unobjectionable	Unobjectionable	Unobjectionable	Unobjectionable	Unobjectionable	Unobjectionable	Unobjectionable	Unobjectionable
3	Taste	--	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
4	Turbidity	NTU	5	5	BDL (DL : 0.5)	BDL (DL : 0.5)	BDL (DL : 0.5)	BDL (DL : 0.5)	BDL (DL : 0.5)	BDL (DL : 0.5)	BDL (DL : 0.5)
5	$_p$H @ 25^{o}C	--	6.5--8.5	6.5--8.5	7.54	7.3	7.05	7.75	7.28	7.91	7.35
6	Chloride as Cl	mg/l	250	1000	498	305	384	468	213	148	381
7	Total Hardness as CaCO3	mg/l	300	600	340	404	289	510	417	562	542
8	Calcium as CA	mg/l	75	200	79	59	398	121	58	61	109
9	Magnesium as Mg	mg/l	30	100	34	61	47	50	52	98	65
10	Dissolved solids (Inorganic)	mg/l	500	2000	1598	895	984	1594	1094	1312	1510
11	Sulphate as SO_4	mg/l	200	400	210	70	55	272	223	317	318
12	Copper as Cu	mg/l	0.05	1.50	BDL (DL : 0.05)	BDL (DL : 0.05)	BDL (DL : 0.05)	BDL (DL : 0.05)	BDL (DL : 0.05)	BDL (DL : 0.05)	BDL (DL : 0.05)
13	Iron as Fe	mg/l	0.3	0.3	0.11	0.13	0.12	0.15	0.09	0.08	0.07
14	Manganese as Mn	mg/l	0.1	0.3	BDL (DL : 0.05)	BDL (DL : 0.05)	BDL (DL : 0.05)	BDL (DL : 0.05)	BDL (DL : 0.05)	BDL (DL : 0.05)	BDL (DL : 0.05)
15	Nitrate as NO_3-N	mg/l	45	45	3.75	3.73	4.23	4.08	4.25	1.93	7.13
16	Fluoride as F	mg/l	1	1.5	0.44	0.48	0.59	0.55	0.53	0.86	0.7
17	phenolics	mg/l	0.001	0.002	BDL (DL : 0.001)	BDL (DL : 0.001)	BDL (DL : 0.001)	BDL (DL : 0.001)	BDL (DL : 0.001)	BDL (DL : 0.001)	BDL (DL : 0.001)
18	Mercury as Hg	mg/l	0.001	0.001	BDL (DL : 0.001)	BDL (DL : 0.001)	BDL (DL : 0.001)	BDL (DL : 0.001)	BDL (DL : 0.001)	BDL (DL : 0.001)	BDL (DL : 0.001)
19	Cadmium as Cd	mg/l	0.0	0.0	BDL (DL : 0.001)	BDL (DL : 0.001)	BDL (DL : 0.001)	BDL (DL : 0.001)	BDL (DL : 0.001)	BDL (DL : 0.001)	BDL (DL : 0.001)
20	Selenium as Se	mg/l	0.01	0.01	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)
21	Arsenic as As	mg/l	0.05	0.05	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)
22	Cyanide as CN	mg/l	0.05	0.05	BDL (DL : 0.05)	BDL (DL : 0.05)	BDL (DL : 0.05)	BDL (DL : 0.05)	BDL (DL : 0.05)	BDL (DL : 0.05)	BDL (DL : 0.05)
23	Lead as Pb	mg/l	0.05	0.01	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)
24	Zinc as Zn	mg/l	5.0	15.0	BDL (DL : 0.01)	BDL (DL : 0.01)	2.05	3.14	BDL (DL : 0.01)	BDL (DL : 0.01)	1.86
25	Total Chromium as Cr	mg/l	0.05	0.05	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)
26	Total Residual Chlorine	mg/l	0.2	1.0	BDL (DL : 0.1)	BDL (DL : 0.1)	BDL (DL : 0.1)	BDL (DL : 0.1)	BDL (DL : 0.1)	BDL (DL : 0.1)	BDL (DL : 0.1)
27	Alkalinity	mg/l	200.0	600.0	349.0	270.0	380.0	481.0	461.0	502.0	342.0
28	Aluminium as AL	mg/l	0.03	0.20	BDL (DL : 0.03)	BDL (DL : 0.03)	BDL (DL : 0.03)	BDL (DL : 0.03)	BDL (DL : 0.03)	BDL (DL : 0.03)	BDL (DL : 0.03)
29	Boron as B	mg/l	1.0	1.0	BDL (DL : 0.1)	BDL (DL : 0.1)	BDL (DL : 0.1)	BDL (DL : 0.1)	BDL (DL : 0.1)	BDL (DL : 0.1)	BDL (DL : 0.1)
30	Free ammonia as NH_3	mg/l	--	0.5	0.2	0.2	0.2	0.2	0.21	0.3	0.3
31	Nickel as Ni	mg/l	--	0.0	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)
32	Sulphide as S	mg/l	--	0.1	BDL (DL : 0.05)	BDL (DL : 0.05)	BDL (DL : 0.05)	BDL (DL : 0.05)	BDL (DL : 0.05)	BDL (DL : 0.05)	BDL (DL : 0.05)

S.No	Parameter	Unit	Desirable Limits as for IS : 10500: 1991	Permissable Limits as for IS : 10500: 1991 R.2012	Apr-20		May-20		Jun-20	
					Govt bore well Moorthipatti	Open well mr.Rajamani / Kuttapatti pudur	Govt hand pump Eravati	Open well mr. vellaiyan moorthipatti	Govt bore well /Kavadanur	Open well mr.Balan/ Pudurpanankadu
1	Colour	Hazen	--	15	BDL[DL:1.0]	BDL[DL:1.0]	BDL[DL:1.0]	BDL[DL:1.0]	BDL[DL:1.0]	BDL[DL:1.0]
2	Odour	--	--	Unobjectionable	Unobjectionable	Unobjectionable	Unobjectionable	Unobjectionable	Unobjectionable	Unobjectionable
3	Taste	--	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
4	Turbidity	NTU	5	5	BDL (DL : 0.5)	BDL (DL : 0.5)	BDL (DL : 0.5)	BDL (DL : 0.5)	BDL (DL : 0.5)	BDL (DL : 0.5)
5	$_p$H @ 25^{o}C	--	6.5--8.5	6.5--8.5	7.41	7.15	7.68	7.56	7.89	7.29
6	Chloride as Cl	mg/l	250	1000	390	436	1320	397	455	698
7	Total Hardness as CaCO3	mg/l	300	600	528	984	2215	583	828	1156
8	Calcium as CA	mg/l	75	200	102	210	328	78	90	55
9	Magnesium as Mg	mg/l	30	100	66	110	334	93	145	244
10	Dissolved solids (Inorganic)	mg/l	500	2000	1310	1913	4024	1549	1810	2358
11	Sulphate as SO_4	mg/l	200	400	159	421	1189	192	168	305
12	Copper as Cu	mg/l	0.05	1.50	BDL (DL : 0.05)	BDL (DL : 0.05)	BDL (DL : 0.05)	BDL (DL : 0.05)	BDL (DL : 0.05)	BDL (DL : 0.05)
13	Iron as Fe	mg/l	0.3	0.3	0.08	0.09	0.06	0.07	0.07	0.06
14	Manganese as Mn	mg/l	0.1	0.3	BDL (DL : 0.05)	BDL (DL : 0.05)	BDL (DL : 0.05)	BDL (DL : 0.05)	BDL (DL : 0.05)	BDL (DL : 0.05)
15	Nitrate as NO_3-N	mg/l	45	45	3.96	2.54	18.4	2.98	5.4	1.86
16	Fluoride as F	mg/l	1	1.5	1.95	0.81	1.72	1.95	1.98	1.81
17	phenolics	mg/l	0.001	0.002	BDL (DL : 0.001)	BDL (DL : 0.001)	BDL (DL : 0.001)	BDL (DL : 0.001)	BDL (DL : 0.001)	BDL (DL : 0.001)
18	Mercury as Hg	mg/l	0.001	0.001	BDL (DL : 0.001)	BDL (DL : 0.001)	BDL (DL : 0.001)	BDL (DL : 0.001)	BDL (DL : 0.001)	BDL (DL : 0.001)
19	Cadmium as Cd	mg/l	0.0	0.0	BDL (DL : 0.001)	BDL (DL : 0.001)	BDL (DL : 0.001)	BDL (DL : 0.001)	BDL (DL : 0.001)	BDL (DL : 0.001)
20	Selenium as Se	mg/l	0.01	0.01	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)
21	Arsenic as As	mg/l	0.05	0.05	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)
22	Cyanide as CN	mg/l	0.05	0.05	BDL (DL : 0.05)	BDL (DL : 0.05)	BDL (DL : 0.05)	BDL (DL : 0.05)	BDL (DL : 0.05)	BDL (DL : 0.05)
23	Lead as Pb	mg/l	0.05	0.01	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)
24	Zinc as Zn	mg/l	5.0	15.0	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)
25	Total Chromium as Cr	mg/l	0.05	0.05	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)
26	Total Residual Chlorine	mg/l	0.2	1.0	BDL (DL : 0.1)	BDL (DL : 0.1)	BDL (DL : 0.1)	BDL (DL : 0.1)	BDL (DL : 0.1)	BDL (DL : 0.1)
27	Alkalinity	mg/l	200.0	600.0	285.0	318.0	190.0	287.0	565.0	409.0
28	Aluminium as AL	mg/l	0.03	0.20	BDL (DL : 0.1)	BDL (DL : 0.1)	BDL (DL : 0.1)	BDL (DL : 0.1)	BDL (DL : 0.1)	BDL (DL : 0.1)
29	Boron as B	mg/l	1.0	1.0	BDL (DL : 0.1)	BDL (DL : 0.1)	BDL (DL : 0.1)	BDL (DL : 0.1)	BDL (DL : 0.1)	BDL (DL : 0.1)
30	Free ammonia as NH_3	mg/l	--	0.5	0.2	0.2	0.2	0.2	0.2	0.2
31	Nickel as Ni	mg/l	--	0.0	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)
32	Sulphide as S	mg/l	--	0.1	BDL (DL : 0.05)	BDL (DL : 0.05)	BDL (DL : 0.05)	BDL (DL : 0.05)	BDL (DL : 0.05)	BDL (DL : 0.05)

VI. Result of analysis of ground water by TNPCB

S.No	Parameter	Unit	Kaliyammal house	Govt bore well kavandanur	Govt bore well Moorthipatti	Balan house Panankadu
			Feb'20			
1	Turbidity	NTU	4.6	4.9	2	3.1
2	Colour	ml	<5	<5	<5	<5
3	Conductivity at 25°c	umhos/cm	2030	2050	3840	2090
4	$_{P}$H @ 25^{o}C	Number	8.35	8.51	8.38	8.23
5	Total Suspended Solids at 103°c- at 105°c	mg/l	16	8	8	12
6	TDS at 180°c	mg/l	1436	1452	2688	1504
7	Chloride as Cl	mg/l	323	337	770	352
8	sulphates as SO4	mg/l	102	143	579	184
9	Oil & Grease	mg/l	<4	<4	<4	<4
10	BOD (at 27°c for 3 days)	mg/l	<2	<2	<2	<2
11	COD	mg/l	16	16	16	16
12	Manganese	mg/l	<0.1	<0.1	<0.1	<0.1
13	Ammonical Nitrogen as NH_3-N	mg/l	<2	<2	<2	<2
14	Total Kjeldahl Nitrogen	mg/l	2.24	2.24	3.36	2.24
15	Fluoride as F	mg/l	0.842	0.928	0.715	1.148
16	PH. Compound	mg/l	<0.05	<0.05	<0.05	<0.05
17	% Sodium	mg/l	42	45	50	42
18	Total Hardness as $CaCo_3$	mg/l	590	580	970	600
19	Alkalinity as $CaCO_3$	mg/l	576	480	576	396
20	Ph. Alkalinity	mg/l	68	48		
21	Nitrate Nitrogen as NO_3	mg/l	2.15	1.17	0.272	0.743
22	Nitrate Nitrogen as NO_2	mg/l			0.034	0.023
23	Phosphate as PO_4	mg/l	0.042	0.056	0.129	0.171
24	Cyanide	mg/l	<0.05	<0.05	<0.05	<0.05
25	Calcium as Ca	mg/l	60	68	96	84
26	Magnesium as Mg	mg/l	107	100	177	95
27	sodium as Na	mg/l	199	222	439	199
28	Potassium as K	mg/l	4.2	6.5	5.1	10.3
29	Iron Total as Fe	mg/l	<0.05	<0.05	<0.05	<0.05
30	Free Ammonia	mg/l	0.595	0.595	0.892	0.595
31	Boron	mg/l	<0.002	<0.002	<0.002	<0.002
32	Hexavalent chlorine	mg/l	<0.05	<0.05	<0.05	<0.05
33	Total Residual Chlorine	mg/l	<1		<1	<1
34	SAR	mg/l	3.6	4	6.1	3.5
35	Residual Sodium Carbonte	mg/l	-	-	-	-
36	Total Chromium	mg/l	<0.05	<0.05	<0.05	<0.05
37	Copper	mg/l	<0.0015	<0.0015	<0.0015	<0.0015
38	Zinc	mg/l	<0.0015	<0.0015	<0.0015	<0.0015
39	Lead	mg/l	<0.015	<0.015	<0.015	<0.015
40	Cadmium	mg/l	<0.0008	<0.0008	<0.0008	<0.0008
41	Nickel	mg/l	<0.006	<0.006	<0.006	<0.006

Note: Report yet to be received for the month of Mar'20 to Jun'20

Annexure –E

Treated sewage quality monitoring report of NABL accredited laboratory for the period of Jan’20 to Jun’20

Annexure -E

Treated sewage quality monitoring report of TNPCB & NABL accredited laboratory for the period of Jan'20 to Jun'20

I.a. Result of analysis of treated sewage by TNPCB (Plant STP)

S.No	Parameter	Unit	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20
1	pH @ 25°C	Number	7.73	7.87	Report yet to be received			
2	TSS at 103°C - 105°C	mg/l	16	12				
3	BOD (at 27°C for 3 days)	mg/l	<2	<2				
4	COD	mg/l	16	16				
5	Ammonical Nitrogen as NH_3N	mg/l	<2	2.24				
6	Total Nitrogen	mg/l	3.25	7.74				
7	Feacal Coliform	MPN/100ML	14	17				
8	Total Coliform	MPN/100ML	39	34				

I.b. Result of analysis of treated sewage by TNPCB (Township STP)

S.No	Parameter	Unit	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20
1	pH @ 25°C	Number	7.7	7.92	Report yet to be received			
2	TSS at 103°C - 105°C	mg/l	12	12				
3	BOD (at 27°C for 3 days)	mg/l	<2	<2				
4	COD	mg/l	16	16				
5	Ammonical Nitrogen as NH_3N	mg/l	2.24	2.24				
6	Total Nitrogen	mg/l	3.43	8.37				
7	Feacal Coliform	MPN/100ML	17	21				
8	Total Coliform	MPN/100ML	39	38				

II.a. Result of analysis of treated sewage by NABL accredited laboratory (Plant STP)

S.No	Parameter	Unit	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20
1	pH @ 25°C	--	7.53	7.46	7.21	7.35	7.24	7.56
2	Total Dissolved solids	mg/l	559	525	590	644	575	514
3	Total uspended solids	mg/l	7	19	22	17	14	13
4	BOD at 27 C for 3 days	mg/l	9	13	16	3	4	5
5	COD	mg/l	48	69	88	19	21	25
6	Ammonical Nitrogen as N	mg/l	4.97	4.05	3.74	2.48	2.75	2.96
7	Total Kjeldhal Nitrogen as N	mg/l	7.05	5.98	5.09	3.51	3.86	4.12
8	Fecal Coliform	MPN/100ml	*94*	*59*	*77*	*35*	*37*	*39*

II.b. Result of analysis of treated sewage by NABL accredited laboratory (Township STP)

S.No	Parameter	Unit	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20
1	pH @ 25°C	--	7.75	7.31	7.05	7.25	7.18	7.33
2	Total Dissolved solids	mg/l	421	410	502	575	486	407
3	Total uspended solids	mg/l	5	18	14	10	12	10
4	BOD at 27 C for 3 days	mg/l	8	11	13	4	3	4
5	COD	mg/l	41	61	75	21	18	22
6	Ammonical Nitrogen as N	mg/l	4.01	3.12	2.87	2.55	2.34	2.81
7	Total Kjeldhal Nitrogen as N	mg/l	5.76	5.26	4.71	3.63	3.21	3.59
8	Fecal Coliform	MPN/100ml	86	47	68	39	34	36

Annexure –F

Ambient & Source Noise level monitoring report of NABL accredited laboratory for the period of Jan’20 to Jun’20

Annexure -F

Ambient & Source Noise level monitoring report of NABL accredited laboratory for the period of Jan'20 to Jun'20

I. Ambient Noise Monitoring results (Jan'20 to Jun'20)

S.No	Location	Day Time Noise Level in dB(A)									
		Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Maximum	Minimum	Average	STD Deviation
1	Main gate	66.8	67.0	68.4	63.2	66.4	67.8	68.4	63.2	66.6	1.82
2	Guest house	64.3	68.5	68.9	65.1	65.9	62.3	68.9	62.3	65.8	2.53
3	Ground hopper BF II	68.2	66.8	65.3	62.8	64.7	66.5	68.2	62.8	65.7	1.88
4	ASP I & II	66.9	67.4	67.0	64.3	66.1	67.2	67.4	64.3	66.5	1.16
5	Temp gate	64.0	65.6	68.1	60.9	56.8	64.5	68.1	56.8	63.3	3.96
6	New Reservoir	65.8	66.3	64.8	61.2	63.5	65.0	66.3	61.2	64.4	1.85
7	RS Gate	69.7	69.1	69.2	63.8	67.0	67.8	69.7	63.8	67.8	2.19
8	Raw water pump house	64.5	66.8	67.5	62.0	66.7	63.4	67.5	62.0	65.2	2.19
9	Railway Quarters	67.3	65.9	66.4	61.4	59.3	62.9	67.3	59.3	63.9	3.17
10	South East corner	66.1	67.5	68.6	60.3	63.6	64.6	68.6	60.3	65.1	2.98
11	Near rail end	67.4	69.2	69.7	63.5	65.2	66.5	69.7	63.5	66.9	2.37

S.No	Location	Night Time Noise Level in dB(A)									
		Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Maximum	Minimum	Average	STD Deviation
1	Main gate	56.7	58.3	59.1	52.9	57.3	59.0	59.1	52.9	57.2	2.32
2	Guest House	52.9	54.7	54.0	51.6	53.8	51.6	54.7	51.6	53.1	1.30
3	BF II Ground hopper	60.3	57.9	57.5	52.1	56.4	54.9	60.3	52.1	56.5	2.80
4	ASP I & II	56.8	59.1	58.3	50.8	55.9	56.4	59.1	50.8	56.2	2.91
5	Temp gate	55.3	56.8	59.0	52.5	53.0	54.3	59.0	52.5	55.2	2.45
6	New Reservoir	57.1	55.3	56.2	50.7	54.2	57.2	57.2	50.7	55.1	2.44
7	RS Gate	60.4	54.6	53.9	49.3	51.7	54.8	60.4	49.3	54.1	3.72
8	Raw water pump house	56.4	58.1	57.4	51.2	54.5	52.1	58.1	51.2	55.0	2.84
9	Railway Quarters	56.2	54.3	54.8	48.2	51.2	53.5	56.2	48.2	53.0	2.89
10	South East corner	58.9	60.2	59.7	52.0	55.3	56.7	60.2	52.0	57.1	3.13
11	Near rail end	54.5	56.4	60.2	53.5	54.8	56.3	60.2	53.5	56.0	2.36

Standard limit for Ambient noise level at Daytime is 75 dB (A), Standard limit for Ambient noise level at Nighttime is 70 dB (A).
The ambient noise level monitoring results are within the CPCB norms.

II. Source Noise Monitoring Results (Jan'20 to Jun'20)

S.No	Plant	Location	Unit	Std	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Average
1	SP-1	Mixing & Nodulizing Drum area	dB	90	86.1	85.8	86.3	--	--	86.0	86.1
2		Waste Gas fan area	dB	90	85.5	84.6	84.9	--	--	84.2	84.8
3		Cooling air fan area	dB	90	85.9	86.1	86.7	--	--	86.5	86.3
4		RMHS	dB	90	83.2	85.4	86.2	--	--	83.4	84.6
5	SP-2	Near de-dusting fan area	dB	90	86.3	85.4	83.5	80.6	82.5	84.9	83.9
6		Near circular cooler area	dB	90	87.0	82.9	85.8	82.1	83.7	85.0	84.4
7		Near Crusher house area	dB	90	87.4	87.0	86.4	81.6	84.0	84.8	85.2
8		Near waste gas fan area	dB	90	86.1	87.4	87.2	84.2	86.8	86.2	86.3
9		Product Screen House Area	dB	90	85.3	86.8	87.5	83.8	85.5	86.4	85.9
10	BF-1	Stock House area	dB	90	85.4	86.3	86.9	--	84.8	85.9	85.9
11		Furnace area	dB	90	87.6	87.7	87.1	--	85.3	85.1	86.6
12		Snort Valve area	dB	90	85.9	85.4	84.3	--	82.0	83.6	84.2
13		GCP area	dB	90	86.5	84.0	85.2	--	86.7	87.2	85.9
14	BF-2	Blower house area	dB	90	86.0	82.3	82.7	78.9	79.7	80.6	81.7
15		GCP area	dB	90	86.7	82.7	87.4	83.0	85.8	84.4	85.0
16		Near Furnace area	dB	90	87.1	85.5	84.0	81.6	83.5	85.1	84.5
17		Stock house area	dB	90	86.6	87.3	84.8	82.3	86.4	86.8	85.7
18		Snort valve area	dB	90	87.2	83.8	84.6	83.5	84.1	82.9	84.4
19		PCI Inner area	dB	90	87.6	87.9	86.3	82.7	85.0	85.7	85.9
20	CPP-I	Near Boiler area	dB	90	85.7	86.1	87.0	80.6	84.9	87.0	85.2
21		Near Turbine area	dB	90	87.1	85.9	85.3	81.3	83.3	84.6	84.6
22		Near Condenser area	dB	90	86.6	85.8	84.1	79.4	81.8	83.4	83.5
23		Near ID fan area	dB	90	87.8	87.5	87.1	83.2	85.4	86.7	86.3
24	EOF-I	Near Furnace area	dB	90	86.9	86.3	87.5	82.9	85.3	85.9	85.8
25		Near ID fan area	dB	90	85.9	86.0	86.9	80.5	84.8	86.1	85.0

S.No	Plant	Location	Unit	Std	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Average
26	EOF-II	Near Furnace area	dB	90	86.4	85.2	85.8	--	83.2	85.8	85.3
27		Near ID fan area	dB	90	86.2	85.7	84.6	--	84.0	84.6	85.0
28	CCM	Near Tundish area	dB	90	87.1	86.9	87.5	82.4	84.9	85.5	85.7
29	LRF	Furnace area	dB	90	86.8	87.2	87.9	80.9	85.3	87.1	85.9
30	BRM	Near Furnace area	dB	90	86.3	83.8	83.0	--	80.6	82.4	83.2
31		Three High Rod mill area	dB	90	87.9	85.5	86.2	--	84.4	85.2	85.8
32		Near Blower area	dB	90	86.7	85.9	84.7	--	82.7	82.0	84.4
33	ASP-2	LOX Pump area	dB	90	87.5	87.8	87.2	82.3	85.2	84.0	85.7
34		Main Compressor House area	dB	90	84.8	86.4	86.0	83.8	84.5	83.8	84.9
35		Air Compressor area - Inner	dB	90	85.2	86.2	87.8	84.1	86.0	86.4	86.0
36	COP	Coke Cutter area - during operation	dB	90	87.6	87.6	87.2	83.8	86.3	86.1	86.4
37		Double duct screen house area	dB	90	86.9	86.8	85.5	80.5	84.2	85.7	84.9
38		Warf area	dB	90	86.0	87.7	87.3	84.2	85.9	85.2	86.1
39		Hammer Mill area	dB	90	85.5	85.0	86.8	83.4	84.6	86.3	85.3
40		Stamping Station Area - I	dB	90	85.1	85.4	87.7	85.1	87.0	87.5	86.3
41		Stamping Station Area - II	dB	90	83.0	86.9	86.0	81.2	84.5	86.0	84.6
42		Single Duct Screen	dB	90	84.7	85.4	84.1	78.6	82.1	85.6	83.4
43	BLM	UV Bag Inspection area	dB	90	88.1	84.6	88.3	--	86.5	87.3	87.0
44		Near CP-6 Hacksaw	dB	90	88.5	87.6	88.0	--	84.2	86.9	87.0
45		Near CP-5 Mill area	dB	90	88.3	88.2	88.5	--	86.6	87.2	87.8
46	CPP-2	Near Admin Building area	dB	90	76.4	78.6	77.9	75.1	78.6	79.4	77.7
47		Near STG building Inner area	dB	90	74.5	77.0	77.5	74.7	77.3	78.3	76.6
48		Near Turbine area - 1	dB	90	85.7	85.3	84.2	80.3	83.1	84.7	83.9
49		Near Cooling Tower area	dB	90	86.1	86.7	84.9	78.8	80.9	82.5	83.3
50		Near ID fan area	dB	90	83.4	84.1	84.6	80.4	82.5	84.2	83.2
51		Near Turbine area - 2	dB	90	84.0	85.5	86.8	81.6	84.0	84.6	84.4
52		Near ESP Area	dB	90	82.5	84.9	83.1	77.5	79.8	81.2	81.5

Annexure –G

Compliance status report for the CREP conditions

Annexure -G

Compliance status report for the conditions prescribed in the Corporate Responsibility for Environmental Protection (CREP) to our plant

S.No	Condition	Compliance status/Action taken
1	**Coke Oven Plant:** To meet the parameters PLD (% leaking doors), PLL (% leaking lids), PLO (% leaking off take) of the notified standards under EPA. To rebuild at least 40% of the coke oven batteries* in next 10 years by December 2012.	It is Non-recovery type coke oven and this requirement is not applicable.
2	**Steel Melting Shop** **Fugitive Emission Status** To reduce 30% by March 2004 and 100% by March 2008 (including installation of secondary de-dusting facilities).	SMS comprises of an Energy Optimizing Furnace wherein a "wet scrubbing system" comprising of a Down comer, quench chamber, venturi scrubber and cyclone separator and the cleaned gas sent through a chimney. The secondary steel making unit viz. Ladle Furnace is already equipped with a dry scrubbing system comprising of bag filters, belt conveyors and dust silo. The dust is being collected and reused in the Sinter Plant. Dedicated secondary dedusting systems are installed in EOF & LRF and fugitive emissions are significantly reduced.
3	**Blast Furnace** - Direct inject of reducing agents in blast furnace.	Pulverized Coal injection system installed and commissioned along with bag filter as an air pollution control measures (bag filter with stack) to reduce emission during direct injection. The rate of pulverised coal injection is increased and resulting in reduction of coke consumption in BF which leads to energy saving.
4	**Solid Waste/Hazardous Waste Management** Utilization of Steel Melting Shop (SMS) / Blast Furnace (BF) slag as per the following. • By 2004 – 70% • By 2006 – 80% and • By 2007 – 100% **Hazardous Waste:** - Charge of tar sludge/ETP sludge to coke oven by June 2003. - Inventorization of Hazardous waste as per Hazardous waste (M & H) Rules, 1989 as amended in 2000 and implementation of the rules by December 2003. (Tar sludge, acid sludge, waste lubricating oil and type fuel fall in the category of HZ).	All the Blast Furnace Slag is converted to Granulated slag and sold to cement industries. Flue dust from sinter plant, BF, SMS, sludge from BF & EOF and coke breeze from coke oven plant is re-used in sinter plant. Pellet plant is not installed in our operation. SMS slag is sent for metal recovery system and after crushing reused internal applications & sent cement industries. Refractories are selected to withstand high temperature whose shelf life is longer and generation of used refractories are lesser. The same will be recycled in downstream applications and also sold to customers involved with recycling and the disposal is in environment friendly manner. Our coke oven plant is non-recovery type and hence Tar sludge & ETP sludge is not applicable. The waste oil and other hazardous wastes generated is being disposed to authorized vendors as per the Hazardous and Other Waste (Management and Transboundary Movement) Rules, 2016.
5	**Water Conservation / Water Pollution** - To reduce specific water consumption to 5 m3/ t for long products and 8 m^3/ t for flat products by December 2005.	We are presently manufacturing only long products and our specific water consumption is well within the prescribed limit
6	Installation of continuous stack monitoring	There are 29 nos. of Process stacks. Dust & Gaseous emission monitoring systems are installed as per CTO condition and the real time data of SPM, SO2 & NOx are transmitted to the Care Air Centre of TNPCB and CPCB servers. There are 26 nos. of Non-process stacks. Dust emission monitoring systems are installed as per CTO condition and the real time data of SPM are transmitted to the Care Air Centre of TNPCB and CPCB servers. Apart from the above, TNPCB is conducting bi-annual survey and Manual monitoring is being conducted by a NABL accredited external laboratory on a monthly basis. The monitoring results are well within the permissible limits.

S.No	Condition	Compliance status/Action taken
7	The unit shall operate the existing pollution control equipment efficiently and to keep proper record of run hours, failure time and efficiency with immediate effect. Compliance report in this regard be submitted to TNPCB every three months.	The existing pollution control equipments are being operated efficiently and proper records are maintained for running hours, failure time and efficiency. Any failure leads to APC is resulted exceedance alarm from TNPCB server and justification alongwith corrective action reports are being submitted to TNPCB on monthly basis.
8	To implement the recommendations of Life Cycle Assessment (LCA) Study sponsored by MoEF by December 2003.	Complied.
9	The industry will initiate the steps to adopt the following clean technologies/measures to improve the performance of industry towards production, energy and environment.	
	✔ Energy recovery of top blast furnace (BF) gas.	Our BF gas pressure (plant capacity is 0.683 MTPA only) is not adequate to install TRT.
	✔ Use of tar-free runner linings.	Our coke oven plant is non-recovery type and hence not applicable.
	✔ De-dusting of cast house at tap holes, runners, skimmers ladle and charging points.	The de-dusting system commissioned at BF-I & II cast house covering tap holes, runners, skimmers ladles and charging points.
	✔ Suppression of fugitive emissions using nitrogen gas or other inert gas.	Water sprinkling system, Dry & Wet fog systems and the compressed air are used for suppression of fugitive emissions.
	✔ To study the possibility of slag and fly ash transportation back to the abandoned mines, to fill up the cavities through empty railway wagons while they return back to the mines and its implementation.	Since we are purchasing raw materials from outside sources, it is not applicable.
	✔ Processing of the waste containing flux & ferrous wastes through waste recycling plant.	The waste containing flux & ferrous waste is utilized to the maximum extent possible in the sinter plant. 100 % of waste containing flux and ferrous is utilized in the plant.
	✔ To implement rainwater harvesting.	Three rain water harvesting ponds are provided. Two are in the plant premises and third one in township.
	✔ Reduction of green house gases by,	Various initiatives and measures are being taken to reduce the GHG emissions and present level of GHG emission is 2.69 MT of CO2/TCS. Major focus are being given to maximise the waste heat utilisation and resource conservation.
	• Reduction in power consumption.	To reduce the power consumption VFDs are being installed whereever possible. LED lights are installed to replace the sodium vapor lamps and many Kaizens are implemented to conserve power.
	• Use of by-products gases for power generation.	By product BF gas is being used as fuel in Power Plant for power generation.
	• Promotion of energy optimization technology including energy audit.	All the upcoming projects are wetted to the best energy consumption through selection of equipments. Energy audit is being carried out and implementations are done in phased manner to minimize the energy consumption of GCal.
	• To set targets for resource conservation such as raw material, energy and water consumption to match International Standards.	Raw material, Energy and water consumption targets are being fixed as a key performance indicator and actions are being implemented to match the international standards through Best Available Technology.
	• Up-gradation in the monitoring and analysis facilities for air and water pollutants. Also to impact elaborate training to the manpower so that realistic data is obtained in the environmental monitoring laboratories.	A separate Environment cell is already available and full-fledged lab set up and need based training is being imparted to the monitoring personnels as and when required. Presently the monitoring and analysis being done through M/s Green Chem Solution Pvt. Ltd. Chennai, certified by NABL.
	• To improve over all house keeping.	5S system is being followed to maintain and improve housekeeping throughout the plant. Due to the implementation, saving in area, inventory control, retrieval time period and standardization practices are well improved.

Annexure –H

Copy of advertisement in local newspaper for EC dated. 10.02.2020

Annexure -H

Copy of advertisement in local newspaper for EC dated. 10.02.2020

THE NEW INDIAN EXPRESS TAMIL NADU

05 DHARMAPURI FRIDAY 14.02.2020

NOTICE

We would like to inform you that the Ministry of Environment, Forest and Climate change accorded Environmental Clearance vide letter no. F.No. J-11011/281/2006-IA. II (I) Dated 10.02.2020 for the installation of 0.8 MTPA slag grinding unit and new facilities related to value addition and technological upgradation within the existing 1.3 MTPA capacity Integrated Steel Plant at JSW Steel Limited, Salem. The copy of Environmental Clearance is available at State Pollution Control Board and at MoEF&CC website: http://environmentclearance.nic.in.

This is issued as per the directives of MoEF&CC.

JSW Steel Limited, Salem

வெள்ளிக்கிழமை, 14 பிப்ரவரி 2020 ★★ தினமணி தருமபுரி 3

அறிவிப்பு

தி/வா. ஜே.எஸ். டபுள்யூ ஸ்டீல் லிமிடெட் நிறுவனத்திற்கு 0.8 MTPA ஸ்லாக் அரைக்கும் அலகு நிறுவுதல் மற்றும் மதிப்பு கூட்டல் தொடர்பான புதிய வசதிகள் மற்றும் தொழில்நுட்ப மேம்பாடு வசதிகளை தற்போதுள்ள 1.3 MTPA திறன் ஒருங்கிணைந்த எஃகு ஆலைக்குள் நிறுவ சுற்றுச்சூழல், வனம் மற்றும் பருவநிலை மாற்ற அமைச்சகம் கடித எண். (F.No. J–11011/281/2006–IA. II (I) 10.02.2020 தேதியிட்டது) அனுமதி வழங்கி உள்ளது. மேற்காணும் விபரத்தை தமிழ்நாடு மாசுக்கட்டுப்பாடு வாரியம் மற்றும் இணையத்தளம் http://environmentclearance.nic.in மூலம் தெரிந்து கொள்ளலாம்.

MoEF&CC அறிவுறுத்தலின் பேரில் இந்த அறிவிப்பு வெளியிடப்படுகிறது.

ஜே.எஸ். டபுள்யூ. ஸ்டீல் லிமிடெட், சேலம்

Annexure –I

Copy of acknowledgement of EC copy submission to Heads of local bodies & Panchayats

Annexure -I

Copy of acknowledgement of EC copy submission to Heads of local bodies & Panchayats

JSW Steel Limited

JSW Steel

20th Feb 2020

The District Collector

Salem District

Dear sir,

We enclose herewith the environmental clearance letter dated 10-02-2020 issued by the Environment, Forest and Climate change (Impact Assessment Division), Government of India for the installation of 0.8 MTPA Slag grinding unit and new facilities related to value addition and Technological upgradation within the existing 1.3 MTPA Integrated Steel Plant premises by M/s JSW Steel Limited for your information please .

Thanking you,

Yours Truly,

For JSW Steel Ltd, Salem Works,

Brigadier S .Thakur (Rtd)

AVP (PR, Admin and Security)

Encl : EC for Slag Grinding Unit

மாவட்ட ஆட்சித்தலைவர் அலுவலகம் சேலம் 30 MAY 2020

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JINDAL
O P Jindal Group

JSW Steel Limited
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Mecheri, Mettur - Tk,
Salem - Dt. Pin : 636 453
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Fax : +91 4298 272272
Website : www.jsw.in

20th Feb 2020

The President

Pottaneri Panchayath

Pottaneri 636453

Dear Madam,

We enclose herewith the environmental clearance letter dated 10-02-2020 issued by the Environment, Forest and Climate change (Impact Assessment Division), Government of India for the installation of 0.8 MTPA Slag grinding unit and new facilities related to value addition and Technological upgradation within the existing 1.3 MTPA Integrated Steel Plant premises by M/s JSW Steel Limited for your information please .

Thanking you,

Yours Truly,

For JSW Steel Ltd, Salem Works,

JSW STEEL LTD. POTTANERI SALEM(DT)

V. R.

Authorized Signatory,

Copy Received !

தலைவர்
பொட்டனேரி ஊராட்சி,
மேச்சேரி ஒன்றியம்.

Registered Office : JSW Centre
Bandra Kurla Complex,
Bandra (East), Mumbai - 400 051.
Phone : +91 22-4286 1000
Fax : +91 22-4286 3000

JSW Steel Limited
Salem Works : P.O.Pottaneri,
Mecheri, Mettur - Tk,
Salem - Dt. Pin : 636 453
Tamilnadu, India.
CIN No : L27102MH1994PLC152925
GSTIN : 33AAACJ4323N1ZN

Phone : +91 4298 272000
Fax : +91 4298 272272
Website : www.jsw.in

20th Feb 2020

The President

M Kalipatty Panchayath

M Kalipatty 636453

Dear Sir ,

We enclose herewith the environmental clearance letter dated 10-02-2020 issued by the Environment, Forest and Climate change (Impact Assessment Division), Government of India for the installation of 0.8 MTPA Slag grinding unit and new facilities related to value addition and Technological upgradation within the existing 1.3 MTPA Integrated Steel Plant premises by M/s JSW Steel Limited for your information please.

Thanking you,

Yours Truly,

For JSW Steel Ltd, Salem Works,

JSW STEEL LTD POTTANERI SALEM(DT)

Authorized Signatory,

Received Copy

PANCHAYAT SECRETARY
M.Kalipatty Panchayat
Mecheri Union .

Registered Office : JSW Centre
Bandra Kurla Complex,
Bandra (East), Mumbai - 400 051.

Phone : +91 22-4286 1000
Fax : +91 22-4286 3000

Annexure –J

Report of ESC fund allocation & spent for the period Jan’20 to Jun’20 with cumulative

Annexure -J

Report of ESC fund allocation & spent for the period Jan'20 to Jun'20 with cumulative

CORPORATE ENVIRONMENT RESPONSIBILITY

HALF YEAR REPORT (JANUARY 2020 to JUNE 2020)

Mettur ITI Support

Being an enduring sponsor for Govt. ITI, Mettur Dam, we have been providing needed support every year. In order to make the Mettur ITI students to excel in Sports activities and to participate in Zonal level sports meet, we have contributed sportswear to hundreds of students to Mettur ITI worth of Rs. 54, 000 on 27-02-2020

Education Support – Smart Board to School

To ensure interactive learning experience of students, Technology support is necessary. We have offered a smart board with advanced technology worth of Rs. 1, 75, 000 to the Railway School, Salem which can provide them with an enriched learning experience by projecting visual elements during Jan 2020

Health Support – COVID 19

JSW envisioned the prominent need of this Pandemic Situation. To alleviate COVID 19 fatalities, life supporting ventilators are needed. Based on the request from District Administration, we have donated 5 well equipped ventilators total worth of 25 lakhs to the Government Hospital, Salem.

Covid-19 Relief Support – Ration to 400 families

JSW donated relief materials worth of Rs.1100000 to Pottaneri and M Kalipatty panchayat on 18th of May 2020 through which 4000 families benefitted. Each bag consists of 5 Kg rice, Half KG Dhal and Half liter oil.

Water supply through Tankers during summer & Water supply through Tap

Due to insufficient water supply by Panchayat during Summer, JSW started supplying water through tankers only during summer time.Rs . 6,60,000 spent during Mar to June 20 for this .

Based on the request from Local People, JSW has additionally put two taps along the south side of the compound wall, through which water will be supplied for four hours. The cost for laying of pipe and tap was 4,00,000.

Push Cart and Dust Bins

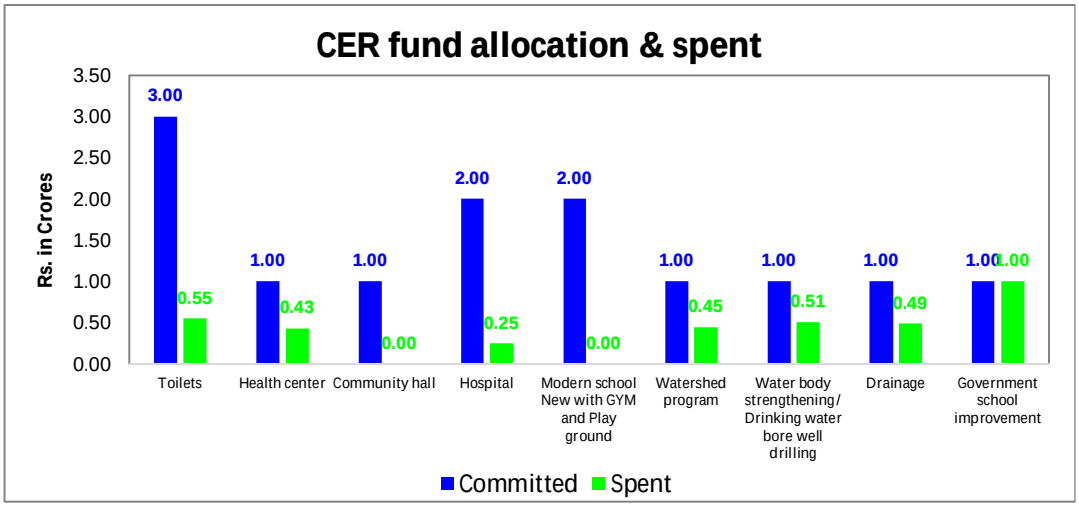
To effectively manage the waste disposal, based on the request from Block Development Officer, Mecheri, JSW had donated push carts and dustbins worth of 7,88,000 to all the 17 panchayats.

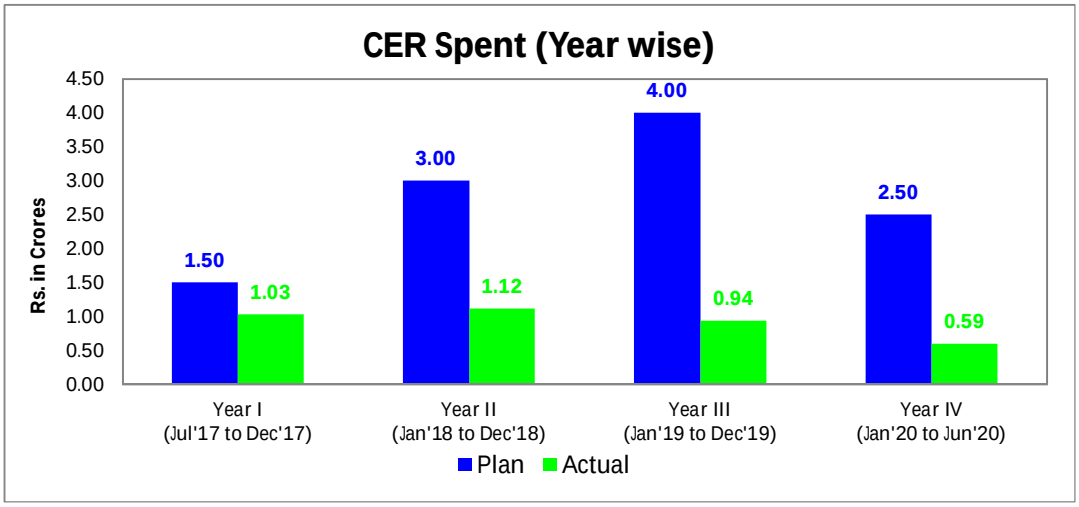
Awareness Creation through Banners:

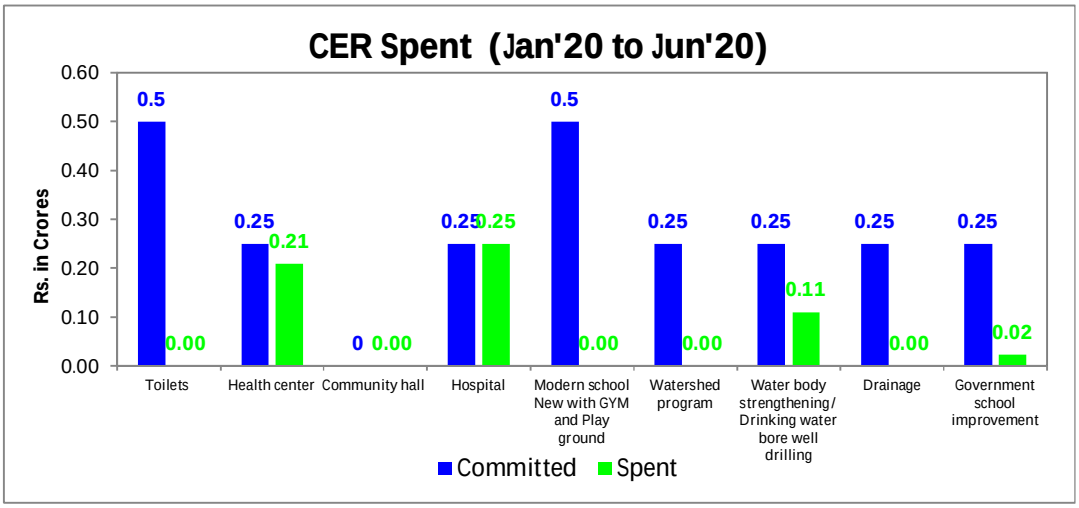
To create awareness among people in Salem District, JSW printed various awareness creation banners on COVID 19 and displayed in various prominent places of city and villages. Rs.55 ,000 spent for this activity .

CER fund allocation & Spent (Rs. in Crs)

S.No	Description of activities	No's	Year I (Jul'17 to Dec'17)		Year II (Jan'18 to Dec'18)		Year III (Jan'19 to Dec'19)		Year IV (Jan'20 to Jun'20)		Year V	Total Rs . (in Crs)	
			Committed	Spent	Committed	Spent	Committed	Spent	Committed	Spent	Committed	Committed	Spent
1	Toilets	2000	0.5	0.32	0.75	0.19	0.75	0.04	0.5	0.00	0.5	**3**	**0.55**
2	Health center	1	0.25	0	0.25	0	0.25	0.22	0.25	0.21	0	**1**	**0.43**
3	Community hall	2	0	0	0.5	0	0.5	0	0	0.00	0	**1**	**0.00**
4	Hospital	1	0.5	0	0.5	0	0.5	0	0.25	0.25	0.25	**2**	**0.25**
5	Modern school New with GYM and Play ground	1	0	0	0	0	1	0	0.5	0.00	0.5	**2**	**0.00**
6	Watershed program	1	0	0.24	0.25	0	0.25	0.21	0.25	0.00	0.25	**1**	**0.45**
7	Water body strengthening/ Drinking water bore well drilling		0	0	0.25	0.2	0.25	0.2	0.25	0.11	0.25	**1**	**0.51**
8	Drainage		0.25	0	0.25	0.39	0.25	0.1	0.25	0.00	0	**1**	**0.49**
9	Government school improvement	1	0	0.47	0.25	0.34	0.25	0.17	0.25	0.02	0.25	**1**	**1.00**
Total			**1.5**	**1.03**	**3**	**1.12**	**4**	**0.94**	**2.5**	**0.593**	**2**	**13**	**3.68**




CER Spent (Year wise)
Rs. in Crores
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
1.50
1.03
3.00
1.12
4.00
0.94
2.50
0.59
Year I (Jul'17 to Dec'17)
Year II (Jan'18 to Dec'18)
Year III (Jan'19 to Dec'19)
Year IV (Jan'20 to Jun'20)
Plan
Actual


CER Spent (Jan'20 to Jun'20)
Rs. in Crores
0.60
0.50
0.40
0.30
0.20
0.10
0.00
0.5
0.00
0.25
0.21
0
0.00
0.25
0.25
0.5
0.00
0.25
0.00
0.25
0.11
0.25
0.00
0.25
0.02
Toilets
Health center
Community hall
Hospital
Modern school New with GYM and Play ground
Watershed program
Water body strengthening / Drinking water bore well drilling
Drainage
Government school improvement
Committed
Spent

Annexure –K

Details of APC measures provided in Steel & CPPII

Annexure -K

Details of Air Pollution Control measures provided in Steel & CPPII

S. No.	PLANT	Stack Attached to	STACK TYPE	TYPE OF APC (ESP/ BAG FILTER/ OTHERS)
1	**Sinter Plant I**	Sinter Machine	Process	ESP with stack
2		Cooling System	Process	Multi clone with stack
3		Dedusting System	Non- Process	Bag filters with stack
4		Dust Extraction System for RMHS	Non- Process	Bag filters with stack
5	**Blast Furnace I**	Hot Stove	Process	Stack
6		GCP Flare	Non- Process, Standby - Emergency Stack	Venturi Scrubber with stack
7		Stock House Dedusting System	Non- Process	Bag filters with stack
8		Dust Extraction System for RMHS	Non- Process	Bag filters with stack
9		Cast House Dedusting System	Non- Process	Bag filters with stack
10	**Captive Power Plant I**	Power Plant Boiler 2 Nos of 25 TPH each (Common Stack)	Process	Stack
11	**Steel Melting Shop I**	Energy Optimizing Furnace	Process	Venturi Scrubber with stack
12		Ladle Furnaces	Process	Bag filters with stack
13		Continuous Casting Machine (Billet Cast)	Process	Stack
14	**Steel Melting Shop II**	Energy Optimizing Furnace	Process	Venturi Scrubber with stack
15		Secondary Dedusting system of Energy Optimizing Furnace I & II (Common)	Non- Process	Bag filters with stack
16		Secondary Dedusting System of LRF I to IV (Common)	Non- Process	Bag filters with stack
17		Ladle Furnaces (Common Stack)	Process	Bag filters with stack
18		Vacuum Degassing Unit (Boiler)	Process	Stack
19	**Bloom Caster**	Steam Exhaust System (2Nos) (Bloom Caster)	Process	Stack
20	**Bloom Caster**	Cut Fumes Exhaust System	Non Process	Stack
21	**CCM III**	Steam Exhaust System	Process	Stack
22	**Blooming Mill**	Reheating Furnaces (Furnace - 1 Chimney No. 1 & No. 2)	Process	Stack
23			Non Process (Air)	Stack
24	**Coke Oven**	Coke Quenching Tower	Process	Grit Arrester
25		Coke Oven Chimney - I	Process - Standby - Emergency Stack	Stack
26		Coke Oven Chimney - II	Process - Standby - Emergency Stack	Stack
27		Coke Oven Chimney - III	Process - Standby - Emergency Stack	Stack
28		Waste Heat Recovery Boiler -I	Process	Stack
29		Waste Heat Recovery Boiler -II	Process	Stack
30		Waste Heat Recovery Boiler -III	Process	Stack
31		Waste Heat Recovery Boiler -IV	Process	Stack
32		Waste Heat Recovery Boiler -V	Process	Stack
33		BF Gas Fired Boiler	Process	Stack

S. No.	PLANT	Stack Attached to	STACK TYPE	TYPE OF APC (ESP/ BAG FILTER/ OTHERS)
34	**Lime Calcining Plant**	Lime Kiln	Process (Not in operation)	Bag filters with stack
35	**Bar & Rod Mill**	Re-heating Furnace	Process	Stack
36		Intermediate Furnace	Process (Not in operation)	Stack
37	**Sinter Plant II**	Sinter Machine	Process	ESP with stack
38		Plant De-dusting and Cooling	Non- Process	ESP with stack
39		Crushing of fuel and Raw materials	Non- Process	Bag filters with stack
40	**Blast Furnace II**	Hot Stove	Process	Stack
41		GCP Flare	Non- Process, Standby - Emergency Stack	Stack
42		Stack House Dedusting and RMHS	Non- Process	Bag filters with stack
43		Cast house Dedusting system	Non- Process	Bag filters with stack
44		Pulverized Coal Injection	Non- Process	Bag filters with stack
45	**DG Set**	DG set 625 KVA	Non- Process - Emergency stack	Stack
46		DG set 625 KVA	Non- Process - Emergency stack	Stack
47		DG set 625 KVA	Non- Process - Emergency stack	Stack
48		DG set 1250 KVA	Non- Process - Emergency stack	Stack
49	**Captive Power Plant II**	Coal fired Boiler (127 TPH)	Process	ESP with stack
50		Coal crusher house	Non- Process	Bag filters with stack
51		Coal screening section	Non- Process	Bag filters with stack
52		Raw material transfer & discharge point	Non- Process	Bag filters with stack
53		Flyash storage silo	Non- Process	Bag filters with stack
54		Bottom ash storage silo	Non- Process	Bag filters with stack
55		DG set 500 KVA	Non- Process - Emergency stack	Stack

Annexure –L

Details of greenbelt development

Annexure -L

Details of Greenbelt Development

Sl.No.	Period	Quantity
1	1997 - 99	30600
2	1999 - 00	15000
3	2000 - 01	20000
4	2001 - 02	4940
5	2002 - 03	10400
6	2003 - 04	13400
7	2004 - 05	100
8	2005 - 06	1100
9	2006 - 07	200
10	2007 - 08	4395
11	2008 - 09	5120
12	01.04.2009 to 30.06.2009	820
13	01.07.2009 to 31.12.2009	2240
14	01.01.2010 to 30.06.2010	5590
15	01.07.2010 to 31.12.2010	9250
16	01.01.2011 to 30.06.2011	4000
17	01.07.2011 to 31.12.2011	4930
18	01.01.2012 to 30.06.2012	3700
19	01.07.2012 to 31.12.2012	5500
20	01.01.2013 to 30.06.2013	2410
21	01.07.2013 to 31.12.2013	3300
22	01.01.2014 to 30.06.2014	6300
23	01.07.2014 to 31.12.2014	7300
23	01.01.2015 to 31.06.2015	9600
24	01.07.2015 to 31.12.2015	10000
25	01.01.2016 to 30.06.2016	1400
26	01.07.2016 to 31.12.2016	4600
27	01.01.2017 to 30.06.2017	700
28	01.07.2017 to 31.12.2017	3250
29	01.01.2018 to 30.06.2018	3650
30	01.07.2018 to 31.12.2018	11385
31	01.01.2019 to 30.06.2019	4490
32	01.07.2019 to 31.12.2019	5864
33	01.01.2020 to 30.06.2020	5660
Total		**221194**

Annexure –M

Report of CSR activities for the period Jan’20 to Jun’20 with cumulative

Annexure –M

Report of CSR activities for the period Jan'20 to Jun'20 with cumulative

CORPORATE SOCIAL RESPONSIBILITY

HALF YEAR REPOT (JANUARY 2020 to JUNE 2020)

Background

JSW Steel Ltd., Salem Works is committed to improve the quality of life of surrounding community through Corporate Social Responsibility (CSR) programmes. We have a well laid down community development program under CSR. Our focus is on

- Health
- Education
- Environment
- Women Empowerment
- Sports and
- Rural Development.

People in Pottaneri, M.Kalipatti, Kuttapatti, Viruthasampatti and Gonur Panchayats and Mecheri Town are covered under CSR projects. Our CSR spending for the financial year 2020 is Rs. 4.10 crores and financial year 2021 is Rs. 5.00 Crores. January to June actual spend in the financial year 2020-21

HEALTH

JSW Salem conducts various health camps and hand-washing awareness in villages. Under malnutrition eradication drive, JSW Salem conducts pediatric health camps in 20 government anagawadi centres on a regular basis covering more than 1000 children from the surrounding villages.

The Covid-19 pandemic has brought huge changes for people health. To reduce the risk of outbreaking emergence cases the JSW Steel, Salem CSR donated Rs. 8 Lakhs, eight-seater battery operated car with stretcher to the Government Kumaramangalam Medical College and Hospital, Salem on 30th May 2020. The battery car used for patients' mobility, an emergency from one ward to other ward or any other place.

Covid-19:

1. Awareness Campaigns in surrounding villages-
   7479 households/32941 Individuals
2. Basic screening in surrounding villages –3500 Households /15000+ individuals
3. Provided N95 Masks (500) and PPE kits (200) to the GHs.
4. Sanitized with disinfectant spray in surrounding villages.

ENVIRONMENT

Greening Initiative: JSW supported ISHA nursery for raising 3,00,000 saplings. 5000 trees were planted in the lands of surrounding villagers on 5th June to mark the **"World Environment Day"**.

Agri-business Promotion through Farmer Producer Companies: Building on the relationship JSW Salem had with the farmers in the surrounding villages, a new project is being implemented in the villages. The farmers in the M.Kalipatti and Kuttapatti panchayats are organized into farmer interest groups and a Farmer Producer Company has been registered.

The company will help the farmers to market their produce and get a fair share of profits. So far, 2000 farmers are organized. Soil testing, mushroom & honey bee cultivation, bee keeping, organic farming practices etc., are demonstrated in the villages. One more Farmer Producer Company is being promoted in Gonur panchayat with the watershed farmers.

WOMEN EMPOWERMENT

Talioring: We have trained women groups in tailoring and leather gloves making, taken them to garment industries to give them exposure about the market. We have placed orders on self-help women's groups for stitching safety reflective jackets for use in the plant.

Gonur Watershed Programme

Beneficiaries	FY 20
Farming families	125

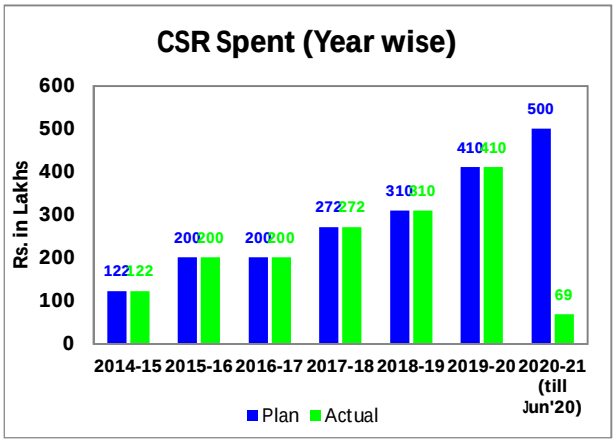
Various Soil and water conservation measures like field bunds, farm ponds, loose rock check dams etc., were implemented in seven villages of Gonur Watershed. We have covered 218 acres of land with 125 new farmers in these villages. Officials from NABARD visited the watershed to give technical recommendations as well as to monitor the ongoing programmes.

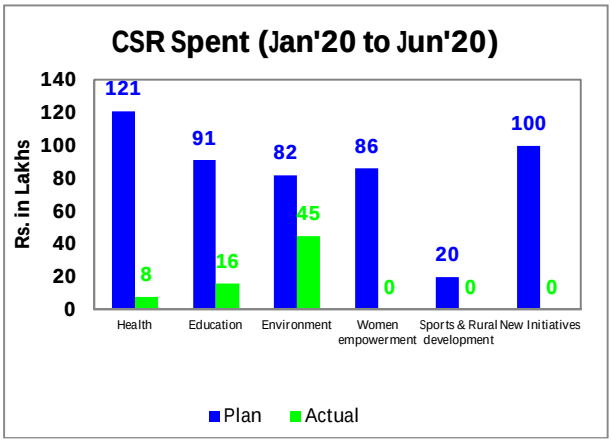
Community development

Haqdarshak: Haqdarshak project being implemented in 16 villages.We have facilitate around 300 citizens to avail Govt. Schemes through Haqdarshak under various 35 Government Schemes. And conducted 3 campus in different panchayat locations.

Beneficiaries	FY 20
citizens	300

CSR Spent - graphical representation





Annexure –N

Cost details of capital & recurring cost for pollution control measures for phase –I expansion activities

Annexure -N

Cost details of capital & recurring cost for pollution control measures for phase –I expansion activities

I. Capital cost of pollution control & monitoring measures (From FY18 to 30.06.2020)

ENVIRONMENTAL POLLUTION CONTROL							ENVIRONMENTAL & POLLUTION MONITORING		
Sl.No	**Expansion activity**	**Air pollution Control**	**Water pollution control**	**Solid waste Management**	**Noise Control**	**Occupational Health**	**Envt.Survey and sampling**	**CSR**	**Green belt**
1	BF#2 augmentation	12.00	0.50	2.00	0.59	0.0	0.0	0.0	0.0
2	EOF #1 capacity 45 to 65 T	3.82	2.09	0.00	0.00	0.0	0.0	0.0	0.0
3	LRF#1 capacity 45 to 65	0.0	0.00	0.00	0.00	0.0	0.0	0.0	0.0
4	CCM#3	0.79	4.45	0.00	0.00	0.0	0.0	0.0	0.0
5	BRM augmentation (0.40 to 0.48 MTPA)	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0
6	Blooming Mill augmentation(0.36 to 0.48)	0.00	0.00	0.00	0.08	0.0	0.0	0.0	0.0
7	Pickling & Annealing plant (0.06 MTPA)	1.61	10.73	0.30	0.00	0.0	0.0	0.0	0.0
8	Peeled and ground (0.04 MTPA)	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0
9	CPP II - Unit # 3	0.00	18.41	0.00	0.02	0.0	0.0	0.0	0.0
10	COP - Coal storage yard Dust suppression	0.77	0.00	0.00	0.00	0.0	0.0	0.0	0.0
11	CPP-II - Coal storage yard Dust suppression	0.52	0.00	0.00	0.00	0.0	0.0	0.0	0.0
12	Blast furnace dust suppression systems	2.91	0.00	0.00	0.00	0.0	0.0	0.0	0.0
13	Sinter plant dust suppression systems	0.39	0.00	0.00	0.00	0.0	0.0	0.0	0.0
14	Wagon tippler dust suppression systems	0.11	0.00	0.00	0.00	0.0	0.0	0.0	0.0
15	Civil (concrete road)	3.35	0.00	0.00	0.00	0.0	0.0	0.0	0.0
16	Utility (Sweeping machine)	1.76	0.00	0.00	0.00	0.0	0.0	0.0	0.0
17	Tyre washing unit	0.40	0.00	0.00	0.00	0.0	0.0	0.0	0.0
18	Shredder machine	0.00	0.00	0.03	0.00	0.0	0.0	0.0	0.0
19	Biogas plant	0.00	0.00	0.04	0.00	0.0	0.0	0.0	0.0
20	OHC	0.00	0.00	0.00	0.00	0.18	0.00	0.00	0.00
20	Envt.Survey and sampling	0.00	0.00	0.00	0.00	0.00	2.2	0.00	0.00
21	CSR	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	Greenbelt	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.60
Total Rs. In Crs		**28.42**	**36.18**	**2.37**	**0.69**	**0.18**	**2.21**	**0.00**	**0.60**
Commitment Rs. In Crs (as per EC)		**30.0**	**0.0**	**10.0**	**2.0**	**3.0**	**5.0**	**0.0**	**0.50**

II. Recurring cost/annum

ENVIRONMENTAL POLLUTION CONTROL							ENVIRONMENTAL & POLLUTION MONITORING		
Sl.No	**PLANT**	**Air pollution Control**	**Water pollution control**	**Solid waste Mangement**	**Noise Control**	**OHC**	**Environmental survey & Sampling**	**Social Corporate Responsibility**	**Green belt development**
1	BF#2	0.37	0.02	0.11	0.005	0.00	0.00	0.00	0.00
2	EOF #1	0.18	0.33	0.10	0.00	0.00	0.00	0.00	0.00
3	LRF#1	0.22	0.15	0.10	0.00	0.00	0.00	0.00	0.00
4	CCM#3	0.15	0.73	0.10	0.00	0.00	0.00	0.00	0.00
5	BRM augmentation	0.03	0.38	0.03	0.005	0.00	0.00	0.00	0.00
6	Blooming Mill augmentation	0.03	0.30	0.03	0.005	0.00	0.00	0.00	0.00
7	Pickling & Annealing plant	0.30	1.88	0.29	0.00	0.00	0.00	0.00	0.00
8	Peeled and ground	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
9	CPP II - Unit # 3	0.00	0.03	0.00	0.005	0.00	0.00	0.00	0.00
10	OHC	0.00	0.00	0.00	0.00	0.65	0.00	0.00	0.00
11	Environmental survey & Sampling	0.00	0.00	0.00	0.00	0.00	0.52	0.00	0.00
12	Social Corporate Responsibility	0.00	0.00	0.00	0.00	0.00	0.00	2	0.00
13	Greenbelt development	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50
Total Rs. In Crs		**1.28**	**3.83**	**0.78**	**0.02**	**0.65**	**0.52**	**2.00**	**0.50**
Commitment Rs. In Crs (as per EC)		**4.00**	**0.00**	**1.00**	**0.20**	**0.30**	**0.50**	**2.00**	**0.05**

Copy of the Environmental Clearance dated.10.02.2020

F. No. J-11011/281/2006-IA. II(I)
Government of India
Ministry of Environment, Forest and Climate Change
(Impact Assessment Division)

Indira Paryavaran Bhawan
Jor Bagh Road, Aliganj,
New Delhi – 110003

E-mail: dirind-moefcc@gov.in
Tel: 011-24695368

Dated: 10th February, 2020

To

Shri. BNS. Prakash Rao,
Senior Vice President,
M/s. JSW Steel Limited,
Pottaneri, Mecheri Salem Works,
Mettur, Salem,
Tamil Nadu - 636453
Tel: 04298-272272; E-mail: d.ravichandar@jsw.in

Subject: Installation of 0.8 MTPA slag grinding unit and new facilities related to value addition and technological upgradation within the existing 1.3 MTPA Integrated Steel Plant premises by **M/s JSW Steel Limited** located at village Pottaneri & M.Kalipatti, Mecheri, Taluk Mettur, District Salem, **Tamil Nadu – Environmental Clearance under para 7(ii) of the EIA Notification, 2006** - regarding.

Sir,

1. This refers to the online application of **M/s JSW Steel Limited** made vide proposal no. IA/TN/IND/104947/2019 dated 11/11/2019 along with copy of EIA/EMP report and Form – 2 seeking Environmental Clearance (EC) under the provisions of para 7(ii) of EIA Notification, 2006 for the project mentioned above. The proposed project activity is listed at Sl. No. 3(a) Metallurgical Industries (Ferrous and Non-ferrous) under Category "A" EIA Notification, 2006 and the project is appraised at the Central level.
2. The aforesaid proposal was considered in the 13th meeting of the Reconstituted Expert Appraisal Committee meeting held during 27-29th November, 2019. The EAC proceedings of the proposal is given as below:

Details submitted by the project proponent

3. The project of M/s. JSW Steel Works located in M. Kallipatti and Pottaneri Village, Mettur Tehsil, Salem District, Tamil Nadu was granted environment clearance for the expansion of crude steel capacity from 1.0 to 1.3 MTPA. and additional captive power plant of 1 x 30 MW vide letter No. J-11011/281/2006-IA. II (I) dated 07.07.2017. The Expansion project activities are scheduled in phased manner. At present Phase-I activities of the project are completed and CTO obtained on 25.06.19 for 1.15 MTPA steel production and 97 MW Captive power generation. Balance expansion activities are scheduled in phase II.

4. The implementation status of 1.3 MTPA existing EC are given in the table below:

S. No	Manufacturing Units	Capacity at 1.0 MTPA	Proposed Expansion 1.0 to 1.3 MTPA	Total Capacity after Expansion	Implementation Status
1	Coke Oven Plant -1(Non–Recovery Type)	0.50	-	0.5	In operation
2	Sinter Plant – 1 (20 Square Meter)	0.175	-	0	In operation
3	Sinter Plant – 2 (90 Square Meter)	1.06	-	1.06	In operation
4	Sinter Plant – 3 (90 Square Meter)	-	1.06	1.06	Yet to be installed
5	Blast Furnace – 1 (402 to 650 Cubic Meter)	0.367	0.316	0.683	Yet to be installed
6	Blast Furnace – 2 (550 to 650 Cubic Meter)	0.578	0.105	0.683	In operation
7	Energy Optimizing Furnace – 1	0.41	0.23	0.64	In operation
8	Energy Optimizing Furnace – 2	0.62	-	0.62	In operation
9	Ladle Furnace-1 with Common VD	45 T/heat	20 T/heat	65 T/heat	In operation
10	Ladle Furnace -2	65	-	65 T/heat	In operation
11	Ladle Furnace- 3 common VD	65 T/heat	-	65 T/heat	In operation
12	Ladle Furnace- 4	65	-	65 T/heat	In operation
13	Continuous Casting Machine-1	0.35	-	0.35	In operation
14	Continuous Casting Machine - 2	0.50	-	0.50	In operation
15	Continuous Casting Machine - 3	-	0.45	0.45	In operation
16	Bar & Rod Mill Augmentation	0.4	0.08	0.48	In operation
17	Blooming Mill	0.36	0.12	0.48	In operation
18	Pickling and Annealing Steel unit	-	0.06	0.06	Annealing unit is in operation. Pickling plant
19	Peeled and ground	-	0.04	0.04	0.01 MTPA in operation. 0.03 MTPA installation under
20	Air Separation Plant 1	150 T/day	-	150 T/day	In operation
21	Air Separation Plant 2	390 T/day	-	390 T/day	In operation

S. No	Manufacturing Units	Capacity at 1.0 MTPA	Proposed Expansion 1.0 to 1.3 MTPA	Total Capacity after Expansion	Implementation Status
22	Air Separation Plant 3	-	250 T/day	250 T/day	Yet to be installed
23	Captive Power Plant 1	7 MW	-	7 MW	In operation
24	Captive Power Plant - 2	2 x 30 MW	-	2 x 30 MW	In operation
25	Captive Power Plant - 3	0	1 x 30 MW	1 x 30 MW	In operation

5. An amendment in the existing environmental clearance (EC) of 1.3 MTPA was requested for installation of 0.8 MTPA slag grinding unit and other few technological upgradation of existing facilities. The proposal was appraised in the 36thmeeting of the reconstituted EAC (Industry-I) held on 9/10/2018 and ToR was prescribed on 09.11.2018. Thereafter, amendment to the ToR was requested to include few balancing and modification facilities in the existing ToR. The proposal was considered in the 6th meeting of the reconstituted EAC (Industry-I) held during on 30/04/2019 and MoEF&CC issued amendment to the existing ToR to include the proposed facilities vide letter dated 27/06/2019. Further, the Committee also recommended that the decision to consider the instant proposal under para 7(ii) (a) will be based on findings of the EIA report to be submitted to the Ministry by the project proponent. Thereafter, EAC will consider the proposal in its meeting exercising due diligence, inter-alia, and also ascertain the need for conduct of a fresh public consultation by the project proponent.

6. Based on the ToRs prescribed for the project, JSWSL has submitted an application for grant of environmental clearance under clause 7 (ii) of the EIA notification 2006 to the Ministry vide online application no. IA/TN/IND/104947/2019 dated 11.11.2019.

7. The proposed project is for value addition, modification in the existing facilities for emission reduction and balancing facilities without increasing the production capacity of 1.3 MTPA steel.

8. The modification envisaged in the existing EC dated 7/7/2017 and the details of the value added facilities envisaged are given as below:

Modifications envisaged in the existing EC dated 7/7/2017

Manufacturing Facilities	Existing Capacity	Proposed Expansion for which EC has been issued	Total Capacity after Expansion	Modification
Coke Oven Plant -1 (Non – Recovery Type)	0.50	-	0.5	The existing weakened 80m RCC chimney of Battery 1, is being replaced with

Manufacturing Facilities	Existing Capacity	Proposed Expansion for which EC has been issued	Total Capacity after Expansion	Modification
				two nos. of MS refractory lined chimney of 75m height.
Sinter Plant – 2 (90 Square Meter)	1.06	-	1.06	**Waste heat utilization:** About 6,00,000 m^3/hr of hot air (275°C) planned to be diverted from sinter cooler of SP 2 & 3 to GGBS grinding unit to recover the sensible heat which is presently vented into atmosphere. **Emission reduction:** At present, Sinter machine-2 waste gas stack is operating at an average of 110 mg/Nm^3 of SPM as against the norm of 150 mg/Nm^3, which is planned to be revamped to meet 50 mg/Nm^3 as an voluntary APC measures.
Sinter Plant – 3 (90 SquareMeter)	-	1.06	1.06	
Blast Furnace – 1 (402 to 650 Cubic Meter) – Hot Metal	0.367	0.316	0.683	It is proposed to install 0.8 MTPA slag grinding unit to produce Ground Granulated Blast furnace Slag (GGBS) as a value added facility.
Blast Furnace – 2 (550 to 650 Cubic Meter) – Hot Metal	0.578	0.105	0.683	
Ladle Furnace - 1 with Common VD (45 T to 65 T)	45 T/heat	20 T/heat	65 T/heat	The existing primary de-dusting system of LRF 1 (38000 m^3/hr) has been taken to common secondary

Manufacturing Facilities	Existing Capacity	Proposed Expansion for which EC has been issued	Total Capacity after Expansion	Modification
				de-dusting system of LRF's which is having designed capacity of 5,50,000 m^3/hr but working at 4,00,000 m^3/hr. The existing LRF-1 primary de-dusting stack of 30m height became redundant and planned to be used for CCM-3 billet grinding (surface preparation) fume extraction.
Ladle Furnace – 5 (65 T with VD)	-	-	65 T/heat (New)	Additional facility planned now. Since JSW Salem is producing special steels, the per heat process time increased from 30 min to 105 min due to vacuum degassing. Hence, additional LRF-5 is envisaged.
Continuous Casting Machine – 1	0.35	-	0.35	**Additional stacks** Since, CCM-2 is provided with auto cutter fume extraction system with stack, it is planned to provide the same facility to CCM-1 & 3 APC measures. The height of the chimney will be 20m. In addition, grinding fume extraction facility will be provided with bag filters for CCM 1 to 3 with stack height of 30m.
Continuous Casting Machine – 2	0.5	-	0.5	
Continuous Casting Machine – 3	-	0.45	0.45	
Pickling and Annealing Steel	-	0.06	0.06	A wet scrubber is envisaged to scrub the

Manufacturing Facilities	Existing Capacity	Proposed Expansion for which EC has been issued	Total Capacity after Expansion	Modification
unit				acid fumes generated from the acid bath as APC measures. Three hot water generators are envisaged to meet the following process requirement to minimize fresh acid consumption and to ensure ZLD in the proposed ETP. To maintain the acid temperature of 55^0 in the pickling bath. To maintain the treated spent acid temp. of 55^0 for reuse. To supply hot water to thermal fluidic system of evaporator for ETP to ensure ZLD
Captive Power Plant 2 (2 x 30 MW)	2X30 MW	-	2X30 MW	One coal-based boiler installed in the year 2006 with a capacity of 127 TPH is operating at emission concentration of SPM, SO_2 & NOx with 70, 1000 and 600 mg/Nm^3 respectively. This unit has been planned to be upgraded, to meet the revised emission standard as per CPCB letter dated 16.04.2018 of 50, 600 and 300 mg/Nm^3 respectively.
Captive Power Plant 3 (1 x 30)	-	30 MW	30 MW	The total capacity of 30MW remains unaltered. Since, COP capacity remains same there is no additional waste gas is expected.

Manufacturing Facilities	Existing Capacity	Proposed Expansion for which EC has been issued	Total Capacity after Expansion	Modification
				The additional BF gas as expected due to expansion is planned to be diverted to SMS (VD Boilers) and various shops.
DG sets	3x625 KVA	1x1250 KVA	3x625 KVA and 1x1250 KVA	2x1250 KVA 1x1750 KVA 3x275 KVA 1x650 KVA 1x400 KVA The above DG sets are envisaged to meet the emergency conditions of plant black out requirements.

Installation of value added facilities

S.No.	Name of the unit	Production capacity envisaged	Purpose
i.	Paver block making facility	25000 Nos. of paver block/day	The utilization of the steel slag has been a major challenge in all integrated steel plants. Our R&D has successfully developed a technology for using steel slag in the manufacture of paver blocks. The study has established successful production paver blocks at 30% lower costs than with natural aggregates with lower use of cement and use of steel slag. It is proposed to install a paver block making facility for 25000 Nos. of paver block/day for demonstration purposes. It is intended with its installation, entrepreneurs will utilize this to supply good quality pavers for use in

S.No.	Name of the unit	Production capacity envisaged	Purpose
			construction purposes.
ii.	Etching Lab	Nil	PP is receiving requests from their customers of special steels for the results of macro structure of steel products to assess its internal soundness. In order to carry out this test, the test samples of 25 mm thick will be collected from 160 to 310 mm round, 130 to 340/400 square and rectangle of bar products. The samples are to be immersed in hydrochloric acid in a tank of 100-liter volume for preparing the sample for further testing. It is proposed to install an acid fume extraction system to improve the work area for the laboratory personnel.
iii.	SMS slag crushing plant	Crushing unit of 50 TPH capacity	It is proposed to install a crushing unit of 50 TPH Capacity with suitable air pollution control facilities for crushing and separation of iron bearing material from slag.
iv.	Batching plant	Batching plant of 30 m^3/hr capacity	The construction activity for the expansion units in the 1.3 MTPA steel plant expansion is under progress. For this purpose, it is proposed to install a batching plant within the steel works with suitable air pollution control facilities for catering to the ready mix

S.No.	Name of the unit	Production capacity envisaged	Purpose
			concrete for construction
v.	Coke oven plant	Installation of bag filter with associated equipment to capture the coke dust emission	Existing Coke oven, fugitive emissions are observed while transporting coke in the conveyors (width: 1200mm) whenever it is in operation. In order to control this visible emission, it is proposed to install a bag filter with associated equipment to capture the coke dust emission
vi.	Coke Oven Plant	Coke Oven Stack 2A (COP)	Coke Oven battery # 2 existing 80m RCC chimney is found weakened, will be replaced with two nos. of MS refractory lined chimney of 75m height.
vii.	Coke Oven Plant	Coke Oven Stack 2B (COP)	
viii.	Coke Oven Plant	Coke oven # III chimney	To maintain and control draft at ovens the existing stack height of 38m will be increased to 65m.
ix.	Coke Oven Plant	Waste Heat Recovery Boiler# III	It is envisaged that additional sensible heat source from COP battery # 3 and to meet the requirement the existing stack dia and height will be modified to 1.8m and 35m respectively.
x.	SMS – CCM# 3	Steam Exhaust System stack #2	To maintain draft in the casting area an additional steam exhaust stack will be provided with the height of 26m
xi.	Pickling plant ETP	Hot water generator to ATFD	It is anticipated that Agitated Thin Film Drier (ATFD) will be installed after evaporator of ETP. To supply heat source to ATFD a Hot water generator (HSD based) will be installed

S.No.	Name of the unit	Production capacity envisaged	Purpose
xii.	Pickling plant ETP	ETP plant ATFD vent	It is anticipated that there is a vent stack to release water vapor from ATFD.
xiii.	CPP II	ETP plant ATFD vent	It is proposed to install a ETP (ZLD) plant in CPP II and steam will be used for heating application. It is anticipated that there is a vent stack to release water vapor from ATFD.

9. The certified compliance report for the existing environmental clearance was obtained from Regional office, Chennai vide letter No. EP/12.1/2016-17/20/TN/1687 dated 18.10.2019 wherein the conditions related to installation of solar panel, implementation of ESC related activities are yet to be complied. In this regard, project proponent has submitted action taken report for the conditions which are partially completed vide letter JSWSL/ENVT/MoEF&CC/ROC/2019-20/112 dated 01.11.2019.

10. The total land available including township is 268.08 ha. The plant site is 237.28 ha and township area is 30.80 ha. The land has been classified as Industrial Land use. The land required for the proposed changes/facilities is about 5.36 ha and the same exists within the plant premises. Hence, no additional land is required for the proposed changes. The greenery is about 33.5% of the total land area. Geographically, the proposed plant is located at 11°49'30.00" N & 77°54'22.34" E to 11°48'44.80" N to 77°55'37.51" E. The entire area falls in Survey of India topo sheet nos. C43F13, C43F14 & C44A1, C44A2.

11. There are No National parks, Wildlife sanctuaries, Biosphere reserves, Tigers/Elephant reserves, Wildlife corridors etc. within 10 km from the project site. There is no water body passing through project site.

12. The raw materials used in the plant are Iron ore lumps and fines, Coking/Non-coking and thermal coals, Dolomite Quartzite, Dunite, Anthracite and lime stone. The requirement of raw materials remains the same as noted in the existing EC of 1.3 MTPA except the addition of 0.04 MTPA of lime stone for SO_2 control in coal based boiler.

13. An agreement already exists between PWD and JSW to utilize 5 MGD (22730 KLD) of raw water from downstream of Mettur dam. The total estimated water requirement after the modification and installation of value added facilities will be about 17727 KLD (3.9 MGD) against the existing consumption of 17007 KLD (3.74 MGD). The additional water requirement 0.16 MGD is mainly for the proposed LRF# 5. As per existing EC dated 7/7/2017, the estimated fresh water consumption is 4.45 MGD (20245 KLD). Due to the RO plant installation and Air Cooled Condenser installation in CPP II (Unit # 3), about 2500 KLD of fresh water consumption was reduced per day.

14. The power requirement of the proposed project is estimated as 11.5 MW, The existing Captive power plant of the industry have power generation capacity of 97 MW and power purchase agreement with TNEB is about 34 MW. After the proposed changes the total power requirement would be 101.5 MW which will be cater through CPP and TNEB grid.

15. Baseline Environmental Studies were conducted during winter season from December 1st 2018 to 28th February 2019. Ambient Air Quality Monitoring (AAQM) was carried out at eight (8) locations during December 2018 to February 2019 and the baseline data indicates the ranges of concentrations as PM_{10} – 54.71 to 70.98 $\mu g/m^3$; SO_2 – 9.55 to 14.68 $\mu g/m^3$; NO_2 – 19.63 to 27.53 $\mu g/m^3$. AAQ modelling study emissions indicates that the maximum incremental GLCs after the proposed amendment is 4.17 $\mu g/m^3$ with respect to PM_{10}, 0.62 $\mu g/m^3$ with respect to SO_2, 0.38 $\mu g/m^3$ with respect to NO_2.The proposed technological upgradation and other facilities will lead to reduction in pollution load – SPM by 11.8%, SO_2 by 4.33% & NO_x by 8.14 %.

16. Ground water quality has been monitored at eight locations in the study area and analyzed. pH: 7.14 - 7.69, Total Hardness: 116.7 – 357.2 mg/l, Chlorides: 38.7 to 560.8 mg/l. Heavy metals are within the limits. Surface water samples were analyzed from 8 locations. Surface water samples were analyzed from 5 locations: pH: 6.52 – 7.56, Total Hardness: 126.0 – 216.2 mg/l, Chlorides: 32.4 to 85.3 mg/l. Heavy metals are within the limits.

17. Noise levels are in the range of 49.6 to 55.2 dB(A) for day time and 38.7 to 51.4 dB(A) for night time.

18. With the installation of the proposed facilities, there will be an additional waste generation from pollution control facilities viz dust about 3 TPD and will be reused in sinter plant. From pickling plant Phosphate Sludge about 0.27 TPD will be generated and the same will be used as fertilizer and also disposed to TSDF. Chemical Sludge/salt from the waste water treatment will be generated about 2.06 TPD and the same will be disposed to TSDF.

19. The Public hearing for the existing EC was held on 12.08.2016 as per the provisions laid down in the EIA Notification, 2006.

20. Total cost of the proposed modification and value addition facility is INR 234.2 crores. An allocation of Rs.13 Crores has been earmarked towards the implementation of CER related activities. The additional employment generation from the proposed project is about 50 nos.

21. Green belt is established in an area of 79.52 ha (33.50%)and further the green belt around the project will be developed (10000 saplings for the FY 2019-2020). Local and native tree species such as Mango, Neem, Eucalyptus, Ficus, Mahogany, Vagai, Teak, Puvarasu, Banyan, etc. are planted.

22. The resource requirement, pollution load comparison for the proposed modification vis-à-vis with existing EC dated 7/7/2017 is given as below.

S.No.	Description	UoM	At 1.3 MTPA as per Earlier EC	Installation of facilities proposed / modification	After EC modification and value added facilities	Remarks
1	Land Requirement					
a.	Total land	Ha	268.08	0	268.08	No change
2	Raw materials Requirement					
a.	Iron ore fines	MTPA	1.47	0	1.47	No change
b.	Iron Ore Pellets	MTPA	0.5	0	0.5	
c.	Lump ore	MTPA	0.705	0	0.705	
d.	Coking/Non-coking coal	MTPA	0.947	0	0.947	
e.	Power plant coal	MTPA	0.172	0	0.172	
f.	Coke breeze for SP	MTPA	0.023	0	0.023	
g.	Dolomite	MTPA	0.147	0	0.147	
h.	Quartzite	MTPA	0.039	0	0.039	
i.	Dunite	MTPA	0.039	0	0.039	
j.	Lime powder	MTPA	0.0945	0	0.0945	
k.	Mill scale	MTPA	0.158	0	0.158	
l.	Purchase coke	MTPA	0.156	0	0.156	
m.	Anthracite	MTPA	0.095	0	0.095	
n.	Limestone	MTPA	0.135	0.04	0.175	To control SO_2 in CPP II coal based boiler
	Total	MTPA	4.6805	0.04	4.7205	
3	Power Requirement					
a.	Power Requirement	MW	90	11.5	101.5	LRF #5, Slag grinding unit
b.	Captive Power generation	MW	97	0	97	
c.	From grid	MW	34	0	34	
	Total power availability	MW	131	0	131	
4	Fuel Requirement					

S.No.	Description	UoM	At 1.3 MTPA as per Earlier EC	Installation of facilities proposed / modification	After EC modification and value added facilities	Remarks
a.	High Speed Diesel	KLD	1.7	1.6	3.3	Pickling plant and DG sets - emergency operations
b.	Liquid Petroleum Gas	TPD	1.0	0.015	1.015	
5	Water Requirement					
a.	Approved water allocation	MGD (m^3/day)	5.0 (22730)	0	5.0 (22730)	No Change
b.	Make up water consumption	MGD (m^3/day)	4.45 (20245)	0.16 (720)	3.90 (17727)	LRF #5 with VD, Slag grinding unit. Water reduction due to installation of RO plant and Air Cooled Condenser in CPPII - unit III
6	Man power Requirement					
a.	Man power Requirement	Numbers	5341	50	5391	For slag grinding unit
5	Waste water generation	m^3/day	3040	235	3275	Additional effluent from RO 200 KLD,LRF#5 - 15 KLD and CPP II –unit III - 20 KLD. Zero waste water discharge by reuse in steel plant
6	Pollution load					
	PM_{10}	kg/hr	341.31	-40.34	300.97	Reduction in pollution due to Technological Modification.
	SO_2	kg/hr	280.53	-12.16	268.37	
	NO_x	kg/hr	207.01	-16.86	190.15	

S.No.	Description	UoM	At 1.3 MTPA as per Earlier EC	Installation of facilities proposed / modification	After EC modification and value added facilities	Remarks
7	Waste generation					
	Non Hazardous					
	BF Slag	TPD	1350	0	1350	No change
	SMS slag	TPD	720	0	720	No change
	Dust, Sludge	TPD	197	2.66	199.66	Additional dust generation from dedusting systems which is proposed for modification. The same will be reused in sinter plant
	Hazardous	TPD	0.41	2.33	2.74	Additional generation from pickling unit-Phosphate sludge 0.27 TPD will be used as fertilizer and salt from ZLD ETP 2.06 TPD will be disposed to TSDF.

23. The proponent has mentioned that there is no court case or violation under EIA Notification to the project or related activity.

24. Name of the consultant: Vimta Labs Limited [Sr. No. 160, List of Accredited Consultant Organizations (Alphabetically) Rev. 81, Nov., 2019].

Observations of the Committee

25. The Committee noted that as per the findings of the EIA report, there is no change in land requirement and there is reduction in water requirement and pollution load due to the technological modification. Besides, the Committee also noted that the installation of value added facilities such as slag grinding unit and its allied facilities are environment friendly. Further, there will be no increase in the production capacity of 1.3 MTPA steel. Therefore, the Committee consider the instant proposal under para 7(ii) (a) of the EIA Notification, 2006 and dispense with the requirement of conducting fresh public consultation.

Recommendations of the Committee

26. In view of the foregoing and after detailed deliberations, the committee recommended the project for grant of Environmental Clearance under para 7(ii) of EIA Notification, 2006 subject to the following specific conditions in addition to the applicable general conditions as per the Ministry's Office Memorandum No. 22-34/2018-III dated 9/8/2018 for integrated steel plants.

    i. Particulate emission from the rod mill of slag grinding unit shall be less than 10 mg/Nm^3.
    ii. Green belt shall be developed in an area of 85 ha (210 acres) in and around the plant in a time frame of two years.

Decision of MoEF&CC

27. The Ministry of Environment, Forest and Climate Change (MoEF&CC) has considered the application based on the recommendations of the Expert Appraisal Committee (Industry-I) and hereby decided to accord environmental clearance for project cited above under para 7(ii) of the EIA Notification, 2006 subject to the following specific and applicable general conditions prescribed in the Ministry's Office Memorandum No. 22-34/2018-III dated 9/8/2018 for Integrated Steel Plants.

A. Specific Conditions

    i. Particulate emission from the rod mill of slag grinding unit shall be less than 10 mg/Nm^3.
    ii. Green belt shall be developed in an area of 85 ha (210 acres) in and around the plant in a time frame of two years.

B. General conditions

I. Statutory compliance:

    i. The project proponent shall obtain Consent to Establish / Operate under the provisions of Air (Prevention & Control of Pollution) Act, 1981 and the Water (Prevention & Control of Pollution) Act, 1974 from the concerned State Pollution Control Board/ Committee.
    ii. The project proponent shall obtain the necessary permission from the Central Ground Water Authority, in case of drawl of ground water / from the competent authority concerned in case of drawl of surface water required for the project.
    iii. The project proponent shall obtain authorization under the Hazardous and other Waste Management Rules, 2016 as amended from time to time.

II. Air quality monitoring and preservation

i. The project proponent shall install 24x7 continuous emission monitoring system at process stacks to monitor stack emission with respect to standards prescribed in Environment (Protection) Rules 1986 vide G.S.R 277 (E) dated 31st March 2012(Integrated iron & Steel); G.S.R 414 (E) dated 30th May 2008 (Sponge Iron) as amended from time to time; S.O. 3305 (E) dated 7th December 2015 (Thermal Power Plants)as amended from time to time and connected to SPCB and CPCB online servers and calibrate these system from time to time according to equipment supplier specification through labs recognised under Environment (Protection) Act, 1986 or NABL accredited laboratories.

ii. The project proponent shall monitor fugitive emissions in the plant premises at least once in every quarter through labs recognised under Environment (Protection) Act, 1986.

iii. The project proponent shall install system to carryout Continuous Ambient Air Quality monitoring for common/criterion parameters relevant to the main pollutants released (e.g. PM10 and PM2.5 in reference to PM emission, and SO2 and NOx in reference to SO2 and NOx emissions) within and outside the plant area at least at four locations (one within and three outside the plant area at an angle of 120°each), covering upwind and downwind directions.

iv. The cameras shall be installed at suitable locations for 24X7 recording of battery emissions on the both sides of coke oven batteries and videos shall be preserved for at least one-month recordings.

v. Sampling facility at process stacks and at quenching towers shall be provided as per CPCB guidelines for manual monitoring of emissions.

vi. The project proponent shall submit monthly summary report of continuous stack emission and air quality monitoring and results of manual stack monitoring and manual monitoring of air quality /fugitive emissions to Regional Office of MoEF&CC, Zonal office of CPCB and Regional Office of SPCB along with six-monthly monitoring report.

vii. Appropriate Air Pollution Control (APC) system shall be provided for all the dust generating points including fugitive dust from all vulnerable sources, so as to comply prescribed stack emission and fugitive emission standards.

viii. The project proponent shall provide leakage detection and mechanised bag cleaning facilities for better maintenance of bags.

ix. Secondary emission control system shall be provided at SMS Converters.

x. Pollution control system in the steel plant shall be provided as per the CREP Guidelines of CPCB.

xi. Sufficient number of mobile or stationery vacuum cleaners shall be provided to clean plant roads, shop floors, roofs, regularly.

xii. Recycle and reuse iron ore fines, coal and coke fines, lime fines and such other fines collected in the pollution control devices and vacuum cleaning devices in the process after briquetting/ agglomeration.

xiii. The project proponent use leak proof trucks/dumpers carrying coal and other raw materials and cover them with tarpaulin.

xiv. Facilities for spillage collection shall be provided for coal and coke on wharf of coke oven batteries (Chain conveyors, land based industrial vacuum cleaning facility).

xv. Land-based APC system shall be installed to control coke pushing emissions.

xvi. Monitor CO, HC and O_2 in flue gases of the coke oven battery to detect combustion efficiency and cross leakages in the combustion chamber.

xvii. Vapour absorption system shall be provided in place of vapour compression system for cooling of coke oven gas in case of recovery type coke ovens.

xviii. In case concentrated ammonia liquor is incinerated, adopt high temperature incineration to destroy Dioxins and Furans. Suitable NOx control facility shall be provided to meet the prescribed standards.

xix. The coke oven gas shall be subjected to desulphurization if the sulphur content in the coal exceeds 1%.

xx. Wind shelter fence and chemical spraying shall be provided on the raw material stock piles.

xxi. Design the ventilation system for adequate air changes as per ACGIH document for all tunnels, motor houses, Oil Cellars.

xxii. The project proponent shall install Dry Gas Cleaning Plant with bag filter for Blast Furnace and SMS converter.

xxiii. Dry quenching (CDQ) system shall be installed along with power generation facility from waste heat recovery from hot coke

III. Water quality monitoring and preservation

i. The project proponent shall install 24x7 continuous effluent monitoring system with respect to standards prescribed in Environment (Protection) Rules 1986 vide G.S.R 277 (E) dated 31st March 2012 (Integrated iron & Steel); G.S.R 414 (E) dated 30th May 2008 (Sponge Iron) as amended from time to time; S.O. 3305 (E) dated 7th December 2015 (Thermal Power Plants) as amended from time to time and connected to SPCB and CPCB online servers and calibrate these system from time to time according to equipment supplier specification through labs recognised under Environment (Protection) Act, 1986 or NABL accredited laboratories. The project proponent shall monitor

regularly ground water quality at least twice a year (pre and post monsoon) at sufficient numbers of piezometers/sampling wells in the plant and adjacent areas through labs recognised under Environment (Protection) Act, 1986 and NABL accredited laboratories.

ii. The project proponent shall submit monthly summary report of continuous effluent monitoring and results of manual effluent testing and manual monitoring of ground water quality to Regional Office of MoEF&CC, Zonal office of CPCB and Regional Office of SPCB along with six-monthly monitoring report.

iii. The project proponent shall provide the ETP for coke oven and by-product to meet the standards prescribed in G.S.R 277 (E) dated 31st March 2012 (Integrated iron & Steel); G.S.R 414 (E) dated 30th May 2008 (Sponge Iron) as amended from time to time; S.O. 3305 (E) dated 7th December 2015 (Thermal Power Plants) as amended from time to time as amended from time to time.

iv. Adhere to 'Zero Liquid Discharge'.

v. Sewage Treatment Plant shall be provided for treatment of domestic wastewater to meet the prescribed standards.

vi. Garland drains and collection pits shall be provided for each stock pile to arrest the run-off in the event of heavy rains and to check the water pollution due to surface run off.

vii. Tyre washing facilities shall be provided at the entrance of the plant gates.

viii. CO_2 injection shall be provided in GCP of SMS to reduce pH in circulating water to ensure optimal recycling of treated water for converter gas cleaning.

ix. The project proponent shall practice rainwater harvesting to maximum possible extent.

x. Treated water from ETP of COBP shall not be used for coke quenching.

xi. Water meters shall be provided at the inlet to all unit processes in the steel plants.

xii. The project proponent shall make efforts to minimize water consumption in the steel plant complex by segregation of used water, practicing cascade use and by recycling treated water.

IV. Noise monitoring and prevention

i. Noise level survey shall be carried as per the prescribed guidelines and report in this regard shall be submitted to Regional Officer of the Ministry as a part of six-monthly compliance report.

ii. The ambient noise levels should conform to the standards prescribed under E(P)A Rules, 1986 viz. 75 dB(A) during day time and 70 dB(A) during night time.

V. Energy Conservation measures

i. The project proponent shall provide TRTs to recover energy from top gases of Blast Furnaces.

ii. Coke Dry Quenching (CDQ) shall be provided for coke quenching for both recovery and non-recovery type coke ovens.

iii. Waste heat shall be recovered from Sinter Plants coolers and Sinter Machines.

iv. Use torpedo ladle for hot metal transfer as far as possible. If ladles not used, provide covers for open top ladles.

v. Use hot charging of slabs and billets/blooms as far as possible.

vi. Waste heat recovery systems shall be provided in all units where the flue gas or process gas exceeds 300°C.

vii. Explore feasibility to install WHRS at Waste Gases from BF stoves; Sinter Machine; Sinter Cooler, and all reheating furnaces and if feasible shall be installed.

viii. Restrict Gas flaring to < 1%.

ix. Provide solar power generation on roof tops of buildings, for solar light system for all common areas, street lights, parking around project area and maintain the same regularly;

x. Provide LED lights in their offices and residential areas.

xi. Ensure installation of regenerative type burners on all reheating furnaces.

VI. Waste management

i. An attrition grinding unit to improve the bulk density of BF granulated slag from 1.0 to 1.5 Kg/l shall be installed to use slag as river sand in construction industry.

ii. In case of Non-Recovery coke ovens, the gas main carrying hot flue gases to the boiler, shall be insulated to conserve heat and to maximise heat recovery.

iii. Tar Sludge and waste oil shall be blended with coal charged in coke ovens (applicable only to recovery type coke ovens).

iv. Carbon recovery plant to recover the elemental carbon present in GCP slurries for use in Sinter plant shall be installed.

v. Waste recycling Plant shall be installed to recover scrap, metallic and flux for recycling to sinter plant and SMS.

vi. Used refractories shall be recycled as far as possible.

vii. SMS slag after metal recovery in waste recycling facility shall be conditioned and used for road making, railway track ballast and other applications. The project proponent shall install a waste recycling facility to recover metallic and flux for recycle to sinter plant. The project proponent shall establish linkage for 100% reuse of rejects from Waste Recycling Plant.

viii. 100% utilization of fly ash shall be ensured. All the fly ash shall be provided to cement and brick manufacturers for further utilization and Memorandum of Understanding in this regard shall be submitted to the Ministry's Regional Office.

ix. Oil Collection pits shall be provided in oil cellars to collect and reuse/recycle spilled oil. Oil collection trays shall be provided under coils on saddles in cold rolled coil storage area.

x. The waste oil, grease and other hazardous waste like acidic sludge from pickling, galvanising, chrome plating mills etc. shall be disposed of as per the Hazardous & Other waste (Management & Transboundary Movement) Rules, 2016. Coal tar sludge / decanter shall be recycled to coke ovens.

xi. Kitchen waste shall be composted or converted to biogas for further use.

VII. Green Belt

i. Green belt shall be developed in an area equal to 33% of the plant area with a native tree species in accordance with CPCB guidelines. The greenbelt shall inter alia cover the entire periphery of the plant

ii. The project proponent shall prepare GHG emissions inventory for the plant and shall submit the programme for reduction of the same including carbon sequestration including plantation.

VIII. Public hearing and Human health issues

i. Emergency preparedness plan based on the Hazard identification and Risk Assessment (HIRA) and Disaster Management Plan shall be implemented.

ii. The project proponent shall carry out heat stress analysis for the workmen who work in high temperature work zone and provide Personal Protection Equipment (PPE) as per the norms of Factory Act.

iii. Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.

iv. Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.

IX. Corporate Environment Responsibility

i. The project proponent shall comply with the provisions contained in this Ministry's OM vide F.No. 22-65/2017-IA.III dated 1st May 2018, as applicable, regarding Corporate Environment Responsibility.

ii. The company shall have a well laid down environmental policy duly approve by the Board of Directors. The environmental policy should prescribe for standard operating procedures to have proper checks and balances and to bring into focus any infringements/deviation/violation of the environmental / forest / wildlife norms / conditions. The company shall have defined system of reporting infringements / deviation / violation of the environmental / forest / wildlife norms / conditions and / or shareholders' / stake holders. The copy of the board resolution in this regard shall be submitted to the MoEF&CC as a part of six-monthly report.

iii. A separate Environmental Cell both at the project and company head quarter level, with qualified personnel shall be set up under the control of senior Executive, who will directly to the head of the organization.

iv. Action plan for implementing EMP and environmental conditions along with responsibility matrix of the company shall be prepared and shall be duly approved by competent authority. The year wise funds earmarked for environmental protection measures shall be kept in separate account and not to be diverted for any other purpose. Year wise progress of implementation of action plan shall be reported to the Ministry/Regional Office along with the Six Monthly Compliance Report.

v. Self-environmental audit shall be conducted annually. Every three years third party environmental audit shall be carried out.

vi. All the recommendations made in the Charter on Corporate Responsibility for Environment Protection (CREP) for the Iron and Steel plants shall be implemented.

X. Miscellaneous

i. The project proponent shall make public the environmental clearance granted for their project along with the environmental conditions and safeguards at their cost by prominently advertising it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days and in addition this shall also be displayed in the project proponent's website permanently.

ii. The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.

iii. The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same on half-yearly basis.

iv. The project proponent shall monitor the criteria pollutants level namely; PM_{10}, SO_2, NOx (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the projects and display the same at a convenient location for disclosure to the public and put on the website of the company.

v. The project proponent shall submit six-monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal.

vi. The project proponent shall submit the environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company.

vii. The project proponent shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities, commencing the land development work and start of production operation by the project.

viii. The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.

ix. The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP report, commitment made during Public Hearing and also that during their presentation to the Expert Appraisal Committee.

x. No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forests and Climate Change (MoEF&CC).

xi. Concealing factual data or submission of false/fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.

xii. The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.

xiii. The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.

xiv. The Regional Office of this Ministry shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information/monitoring reports.

xv. The above conditions shall be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 and the Public Liability Insurance Act, 1991 along with their amendments and Rules and any other orders passed by the Hon'ble Supreme Court of India / High Courts and any other Court of Law relating to the subject matter.

xvi. Any appeal against this EC shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.

28. The project proponent shall obtain fresh environmental clearance in case of change in scope of the project if any.

29. This issues with the approval of Competent Authority.

Yours faithfully,

(A.K. Agrawal)
Director

Copy to:-

i. The Secretary, Department of Environment, Government of Tamil Nadu Secretariat, Chennai.
ii. The Dy. Director General (C), Ministry of Environment, Forest and Climate Change, Regional Office (SEZ), Ist and IInd Floor, Handloom Export Promotion Council, 34, Cathedral Garden Road, Nungambakkam, Chennai – 34.
iii. The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-Cum-Office Complex, East Arjun Nagar, New Delhi-110 032.
iv. The Chairman, Tamil Nadu Pollution Control Board, 76, Mount Salai, Guindy, Chennai-600 032, Tamil Nadu.
v. The Member Secretary, Central Ground Water Authority, West Block –II, Wing -3, Sector I, R.K.Puram, New Delhi – 110086.
vi. The District Collector, District, Salem, Government of Tamil Nadu.
vii. Guard File/Record File/Monitoring File.
viii. MoEF&CC Website

(A.K. Agrawal)
Director

Copy of the Environmental Clearance dated.07.07.2017

F. No. J-11011/281/2006-IA.II (I)
Government of India
Ministry of Environment, Forest and Climate Change
(Impact Assessment Division)

Indira Paryavaran Bhawan
Jor Bagh Road, Aliganj,
New Delhi - 110003
E-mail: sharath.kr@gov.in
Tel: 011-24695319

Dated: 7th July, 2017

To

M/s JSW Steel Ltd.,
Mecheri, Taluk Mettur,
District Salem, Tamil Nadu - 636453
e-mail: d.ravichandar@jsw.in

Subject: Expansion of Integrated Steel Plant (1.0 MTPA to 1.3 MTPA) of M/s JSW Steel Ltd., located at Mecheri, Taluk Mettur, District Salem, Tamil Nadu – Environmental Clearance under EIA Notification, 2006 Regarding.

Sir,

This has reference to your online application vide proposal no. IA/TN/IND/26508/2015, dated 28th October 2016 along with copies of EIA/EMP report seeking environmental clearance under the provisions of the EIA Notification, 2006 for the project mentioned above. The proposed project activity is listed at Sl. No. 3 (a) metallurgical (Ferrous and Non-Ferrous) under Category "A" under the provisions of EIA Notification 2006.

2.0 The proposed expansion of 1.0 to 1.3 MTPA Special Alloy Steel of M/s JSW Salem Works was initially received in the Ministry 16.01.2015 for obtaining Terms of Reference (ToR) as per EIA Notification, 2006. The project was appraised by the Expert Appraisal Committee (Industry-I) [EAC(I)] during its meeting held on 11.02.2015 and prescribed ToRs to the project for undertaking detailed EIA study for obtaining environmental clearance. Accordingly, the Ministry had prescribed ToRs to the project on 12.06.2015 vide letter No. J-11011/281/2006-IA.II(I). Based on the ToRs prescribed to the project, the project proponent applied for environmental clearance to the Ministry online on 28.10.2016. The proposal was placed in the 15th meeting of Appraisal Committee (Industry-I) [EAC(I)] held during 2nd – 3rd February 2017. The committee sought additional information and the PP submitted reply on 28.03.2017.

3.0 M/s. JSW Salem Works operating 1.0 MTPA Integrated Steel Plant located at M. Kallipatti and Pottaneri Village, Mettur Tehsil, Salem District, Tamil Nadu for which environmental clearance was granted vide Lr. No. J-11011/281/2006-IA.II(I) dated 02.01.2007. Certified compliance status of existing plant was obtained vide Lr. No. EP/12.1/2016-17/20/TN/0162, dated 31.01.2017.

4.0 Now, it is proposed to expand the capacity from 1.0 MTPA to 1.3 MTPA. The details of existing and the proposed capacities are given below:

Sl. No.	Manufacturing Facilities	Existing Capacity	Proposed Expansion	Total Capacity after Expansion
1	Coke Oven Plant – 1 (Non-Recovery type)	0.5	-	0.5
2	Sinter plant – 1 (20 m^2)	0.175	-	0
3	Sinter plant – 2 (90 m^2)	1.06	-	1.06
4	Sinter plant – 3 (90 m^2)	-	1.06	1.06
5	Blast Furnace – 1 (402 to 650 m^3)	0.367	0.316	0.683
6	Blast Furnace – 2 (550 to 650 m^3)	0.578	0.105	0.683
7	Energy Optimizing Furnace - 1 (45 to 65 T)	0.41	0.23	0.64
8	Energy Optimising Furnace-2 (45 T)	0.62	-	0.62
9	Ladle Furnace – 1 (45 to 65 T)	45 T/heat	20 T/heat	65 T/heat
10	Ladle Furnace – 2 (65 T)	65 T/heat	-	65 T/heat
11	Ladle Furnace – 3 (65 T)	65 T/heat	-	65 T/heat
12	Ladle Furnace – 4 (65 T)	65 T/heat	-	65 T/heat
13	Continuous Casting Machine - 1	0.35	-	0.35
14	Continuous Casting Machine - 2	0.5	-	0.5
15	Continuous Casting Machine - 3	-	0.45	0.45
16	Bar & Rod Mill augmentation	0.4	0.08	0.48
17	Blooming Mill augmentation	0.36	0.12	0.48
18	Pickling and Annealing steel unit	-	0.06	0.06
19	Peeled and ground	-	0.04	0.04
20	Air separation plant – 1 (150 T/day)	150 T/day	-	150 T/day
21	Air separation plant – 2 (390 T/day)	390 T/day	-	390 T/day
22	Air separation plant – 3 (250 T/day)	-	250 T/day	250 T/day
23	Captive power plant – 1	7 MW	-	7 MW
24	Captive power plant – 2	2 X 30 MW	-	2 X 30 MW
25	Captive power plant – 3	-	30 MW	30 MW

5.0 The total available plant site is 237.28 ha and township is 30.80 ha. The land required for the proposed expansion project is 11.74 ha, out of total plant site and township area, scrub land is 37.89 ha, vegetation area is 47.83 ha, open scrub is 27.19, built-up area is 69.27 ha, water bodies like rainwater harvesting pond, guard pond etc is 5.34 ha, open land is 62.50 ha, stock yard is 3.82 ha, roads 9.57 ha and rocky terrain 4.711 ha. No forest land is involved. The entire land has been already acquired for the project. No river/stream passes through the project area. It has been reported that no water body exist around the project and no modification/diversion in the existing natural drainage pattern at any stage has not been proposed.

6.0 The topography of the area is slightly undulating and reported to lie between 11^0 48' 16" to 11^0 49' 2" N latitude and 77^0 0' 54" to 77^0 55' 43" E longitude in Survey of India topo sheet No. 58 E/13, 58 E/14, 58 I/1 and 58 I/2, at an elevation of 339 to 368 m AMSL. The ground water table is reported to range between 1.0 to 31.23 m below the land surface during March to May 2015. Based on hydro-geological studies, it has been reported that the radius of influence of pumped out water will be 60 m. Further, the stage of groundwater development is reported to be 0% and 100% in core and buffer zone respectively and thereby these are designated as critically exploited areas.

7.0 No national park/wildlife sanctuary/biosphere reserve/tiger reserve/elephant reserve etc. are reported in the core and buffer zone of the project. The area also does not report to form corridor for Schedule-I fauna.

8.0 The raw material requirement for the project are listed below:

Sl. No.	Raw material	Present Quantity (MTPA)	Post Exp. Quantity(MTPA)	Source
1	Iron ore fines	0.845	1.47	Indigenous/Imported
2	Iron ore pellets	NA	0.5	Indigenous source
3	Lump ore	0.806	0.705	Indigenous/Imported
4	Coking coal	0.585	0.585	Imported
5	Non-coking coal for COP	0.147	0.147	Imported
6	Non-coking coal for PCI	0.147	0.215	Imported
7	Power plant coal	0.172	0.172	Indigenous/Imported
8	Coke breeze for SP	0.023	0.023	In house
9	Limestone	0.08	0.135	Imported/indigenous
10	Dolomite	0.091	0.147	Indigenous
11	Quartzite	0.030	0.039	Indigenous
12	Dunite	0.030	0.039	Indigenous
13	Lime powder	0.0585	0.0945	Imported/indigenous
14	Mill scale	0.097	0.158	Indigenous
15	Purchase coke	0	0.156	Imported
16	Anthracite	0.039	0.095	Imported

9.0 The proposed expansion of 0.3 MTPA Integrated Steel Plant (ISP) has been contemplated to adopt conventional BF (Blast Furnace) - EOF (Energy Optimizing Furnace) - CC (Continuous Casting) and RM (Rolling Mill) route. In expansion, additional 1 X 30 MW using the WHR boilers of COP and BF gas is planned.

10.0 The targeted production capacity of the proposed expansion is 1.3 MTPA. The ore for the plant would be procured from imported. The ore transportation will be done through rail.

11.0 An agreement exists between PWD and JSW to utilize 5 MGD of raw water from downstream of river Cauvery. The present requirement is about 3.17 MGD of raw water, which is met from the intake well located at downstream of Mettur dam which meets the 1 MTPA capacity of steel plant and captive power plant of 67 MW. Total fresh water requirement after expansion will be to the tune of about 4.4 MGD.

12.0 The average power demand of the plant after expansion is estimated to be about 90 MW. It is expected that the power to the tune of 97 MW will be generated from the steel plant facilities after expansion. It is proposed to meet the entire energy requirement from the captive sources taking the support of state electricity grid for stability. Provision will be made to sell out the surplus power if any, through the grid.

13.0 Ambient air quality monitoring has been carried out at 8 locations during March to May 2015 and the data submitted indicated: PM_{10} (23.28 $\mu g/m^3$ to 76.0 $\mu g/m^3$), $PM_{2.5}$ (8.90 to 34.83 $\mu g/m^3$), SO_2 (1.21 to 9.50 $\mu g/m^3$) and NO_x (11.41 to 60.76 $\mu g/m^3$). The results of the modelling study indicates that the maximum increase of GLC for the proposed expansion project is 83.0 $\mu g/m^3$ with respect to the PM_{10}, 10.6 $\mu g/m^3$ with respect to the SO_2, 20.5 $\mu g/m^3$ with respect to the NO_x. There is no habitant in the core zone of the project. No R&R is involved.

14.0 Samples of ground (8) and surface (4) water samples were collected during monitoring season. The results indicate that most of parameters are within the prescribed norms of groundwater except for total hardness, calcium and TDS. The reason could be attributable to mixing of surface water. The area is encountered by hard rock overlined by sedimentary rock which may contain calcium and magnesium and leads to increase in hardness. Whereas, the surface water parameters are meeting the norms.

15.0 It has been reported that a total of 80 TPD of scrap waste will be generated due to the expansion project from CCM and rolling mill, and the entire waste will be dumped in the earmarked dump yard. It has been already developed that an area of 78.9 ha as green belt around the project site to attenuate the noise levels and trap the dust generated due to the project development activities.

16.0 The Public hearing for the project was held on 12.08.2016 for production of 1.0 to 1.3 million TPA of Special Alloy Steels, in the existing premises under the chairmanship of District Collector, Salem. The issues raised during the public hearing were employment to the local people; pollution due to the project; water scarcity; etc.

17.0 The capital cost of the project is Rs. 1025 Crores and the capital cost for environmental protection measures is proposed as Rs. 50.5 Crores. The annual recurring cost towards the environmental protection measures is proposed as Rs. 8.05 Crores. The project is scheduled to be completed in a period of 36 months.

18.0 The manpower working in existing project are 5041 including 4000 contractual employees. It has been planned to retain the existing man power for the proposed expansion programme. The company had spent Rs. 455.04 Lakhs for development of region as a part of CSR in last four financial years.

19.0 The proponent has mentioned that there is no court case to the project or related activity. There is no violation under EIA Notification, 2016.

20.0 The proposal was considered in the 15th meeting of Expert Appraisal Committee (Industry-I) [EAC(I)] held during 2nd – 3rd February 2017. Based on the presentation made and discussions held, the Committee desired additional information. The project proponent has submitted reply on 28.03.2017. The revised list of raw materials along with the source of the raw material given as follows:

Sl. No.	Raw material	Present Quantity (MTPA)	Post Exp. Quantity(MTPA)	Source
1	Iron ore fines	0.845	1.47	Jharkhand
2	Iron ore pellets	NA	0.5	Karnataka
3	Lump ore	0.806	0.705	Monitoring committee, Karnataka
4	Coking coal	0.585	0.585	Australia/Russia
5	Non-coking coal for COP	0.147	0.147	Australia/Russia
6	Non-coking coal for PCI	0.147	0.215	Australia/Russia
7	Power plant coal	0.172	0.172	Australia/Russia
8	Coke breeze for SP	0.023	0.023	In-house
9	Limestone	0.08	0.135	Oman
10	Dolomite	0.091	0.147	Tamil Nadu
11	Quartzite	0.030	0.039	Tamil Nadu, Andhra Pradesh
12	Dunite	0.030	0.039	South Africa
13	Lime powder	0.0585	0.0945	Malaysia
14	Mill scale	0.097	0.158	Tamil Nadu
15	Purchase coke	0	0.156	Tamil Nadu
16	Anthracite	0.039	0.095	Australia/Russia

21.0 It was informed that the iron ore lumps purchase through "Monitoring committee of Karnataka", Auction No: 107 for a quantity of about 20000 MT. The iron ore fines quantity of about 150000 MT is being purchased from M/s. Rungta mines, Jharkhand.

22.0 The Effluent Treatment Plant (ETP) is designed for 920 m^3/hr capacity with inlet suspended solids level of 2500 ppm and Outlet suspended solid level of 50 ppm.

23.0 The revised table on the cost component for environmental pollution control measures is given below:

Sl. No	Item	Capital Cost (Rs in Crores)	Recurring cost per annum (Rs in Crores)
1	Air Pollution Control	30	4
2	Water Pollution Control	1	0.2
3	Solid Waste Management	10	1
4	Noise Pollution Control	2	0.2
5	Occupational health	3	0.3
6	Environmental survey and sampling	5	0.5
	Total	51	6.2

24.0 The cost break up for the ESC component along with the time line to implement is given below:

Sl.No	Activity wise fund Allocation in Rs in Crores.		Commitment period (Year)					Total
	Description of activities	Numbers	I	II	III	IV	V	
1	Toilets	2000	0.5	0.75	0.75	0.5	0.5	3
2	Health centre	1	0.25	0.25	0.25	0.25		1
3	Community hall	2		0.5	0.5			1
4	Hospital	1	0.5	0.5	0.5	0.25	0.25	2
5	Modern school New with GYM and Play ground	1			1	0.5	0.5	2
6	Water shed program	1		0.25	0.25	0.25	0.25	1
7	Water body strengthening /Drinking water bore well drilling			0.25	0.25	0.25	0.25	1
8	Drainage		0.25	0.25	0.25	0.25		1
9	Government school improvement	1		0.25	0.25	0.25	0.25	1
10	Total		1.5	3	4	2.5	2	13

25.0 Based on the reply submitted the proposal was placed on 18th meeting of Expert Appraisal Committee (Industry-I) held during 3rd - 5th May 2017. After detailed deliberations, the committee recommended the project for Environmental Clearance with following stipulated Specific Conditions along with other environmental conditions while considering for accord of environmental clearance by the ministry.

26.0 The Ministry of Environment, Forest and Climate Change has considered the application based on the recommendations of the Expert Appraisal Committee (Industry-I) and hereby decided to grant environmental clearance for the proposed expansion of Integrated Steel Plant (1.0 MTPA to 1.3 MTPA) of M/s JSW Steel Ltd., located at Mecheri, Taluk Mettur, District Salem, Tamil Nadu under the provision of EIA Notification dated 14th September, 2006, as amended, subject to strict compliance of the following Specific and General conditions:

A. SPECIFIC CONDITION:

i. The occupational health survey of the active workmen involved shall be carried as per the ILO guidelines and all the employees shall cover in every 5 years @ 20% every year.

ii. The amount allocated for ESC i.e. Rs. 13 Crores shall be provided as CAPEX and the ESC shall be treated as project and monitored annually and the report of same shall be submitted to Regional office of MoEF&CC.

iii. The project proponent shall provide for solar light system for all common areas, street lights, villages, parking around project area and maintain the same regularly.

iv. The project proponent shall provide for LED lights in their offices and residential areas.

v. The project proponent should install 24x7 air monitoring devices to monitor air emission and submit report to Ministry and its Regional Office.

vi. The ETP for Blast furnace effluent should be designed to meet Cyanide standards as notified by the MoEFCC.

vii. No effluent shall be discharged outside the plant premises and 'zero' discharge shall be adopted.

viii. The ETP for coke oven by-product should be designed to meet EPA notified standards especially the cyanide and phenol.

ix. Coke oven plant should meet visible emission standards notified by the MoEFCC.

x. The Standards issued by the Ministry vide G.S.R. 277(E) dated 31st March 2012 shall be strictly adhered to and the Standards prescribed for the Coke Oven plant shall be monitored and the report should be submitted along with the six-monthly compliance report

xi. The emission standards specified in the Environmental (Protection) Amendment Rules, 2015 issued by vide S.O. 3305 (E) dated 7th December 2015 for the Thermal Power Plant shall be strictly adhered to.

xii. The National Ambient Air Quality Emission Standards issued by the Ministry vide G.S.R. No. 826(E) dated 16th November 2009 shall be followed.

xiii. On-line ambient air quality monitoring and continuous stack monitoring facilities for all the stacks shall be provided and sufficient air pollution control devices viz. Electrostatic precipitator (ESP), and bag filters etc. shall be provided.

xiv. A statement on carbon budgeting including the quantum of equivalent CO_2 being emitted by the existing plant operations, the amount of carbon sequestered annually by the existing green belt and the proposed green belt and the quantum of equivalent CO_2 that will be emitted due to the proposed expansion shall be prepared by the project proponent and submitted to the Ministry and the Regional Office of the Ministry. This shall be prepared every year by the project proponent. The first such budget shall be prepared within a period of 6 months and subsequently it should be prepared every year.

xv. For the employees working in high temperature zones falling in the plant operation areas, the total shift duration would be 4 hrs or less per day where the temperature is more than 50°C. Moreover, the jobs of these employees will be alternated in such a way that no employee is subjected to working in high temperature area for more than 1 hr continuously. Such employees would be invariably provided with proper protective equipment, garments and gears such as head gear, clothing, gloves, eye protection etc. There should also be an arrangement for sufficient drinking water at site to prevent dehydration etc.

xvi. In-plant control measures and dust suppression system shall be provided to control fugitive emissions from all the vulnerable sources. Dust extraction and suppression system shall be provided at all the transfer points, coal handling plant and coke sorting plant of coke oven plant. Bag filters shall be provided to hoods and dust collectors to coal and coke handling to control dust emissions. Water sprinkling system shall be provided to control secondary fugitive dust emissions generated during screening, loading, unloading, handling and storage of raw materials etc.

xvii. Gaseous emission levels including secondary fugitive emissions from all the sources shall be controlled within the latest permissible limits issued by the Ministry vide G.S.R. 414(E) dated 30th May, 2008 and regularly monitored. Guidelines / Code of Practice issued by the CPCB shall be followed.

xviii. Hot gases from DRI Kiln should be passed through dust settling chamber (DSC) to remove coarse solids and After Burning Chamber (ABC) to burn CO completely and used in Waste Heat Recovery Boiler (WHRB). The gas then shall be cleaned in ESP before dispersion out into the atmosphere through ID fan and stack. ESP shall be installed to control the particulate emission from WHRB.

xix. Efforts shall further be made to use maximum water from the rain water harvesting sources. If needed, capacity of the reservoir shall be enhanced to meet the maximum water requirement.

xx. Risk and Disaster Management Plan along with the mitigation measures shall be prepared and a copy submitted to the Ministry's Regional Office, SPCB and CPCB within 3 months of issue of environment clearance letter.

xxi. All the blast furnace (BF) slag shall be granulated and provided to cement manufacturers for further utilization. Flue dust from sinter plant and SMS and sludge from BF shall be re-used in sinter plant. Coke breeze from coke oven plant shall be used in sinter and pellet plant. SMS Slag shall be given for metal recovery and properly utilized. All the other solid waste including broken refractory mass shall be properly disposed off in environment-friendly manner.

xxii. Coal and coke fines shall be recycled and reused in the process. The breeze coke and dust from the air pollution control system shall be reused in sinter plant. The waste oil shall be properly disposed of as per the Hazardous and Other Waste (Management and Transboundary Movement) Rules, 2016.

xxiii. Green belt shall be developed in 33 % of plant area. Selection of plant species shall be as per the CPCB guidelines in consultation with the DFO.

xxiv. All the recommendations made in the Charter on Corporate Responsibility for Environment Protection (CREP) for the Steel Plants and Coke Oven Plants shall be implemented.

xxv. At least 2.5% of the total cost of the project shall be earmarked towards the Enterprise Social Commitment based on Public Hearing issues, locals need and item-wise details along with time bound action plan shall be prepared and submitted to the Ministry's Regional Office. Implementation of such program shall be ensured by constituting a Committee comprising of the proponent, representatives of village Panchayat and District Administration. Action taken report in this regard shall be submitted to the Ministry's Regional Office.

xxvi. The proponent shall prepare a detailed CSR Plan for every year for the next 5 years for the existing-cum-expansion project, which includes village-wise, sector-wise (Health, Education, Sanitation, Health, Skill Development and infrastructure requirements such as strengthening of village roads, avenue plantation, etc) activities in consultation with the local communities and administration. The CSR Plan will include the amount of 2% retain annual profits as provided for in Clause 135 of the Companies Act, 2013 which provides for 2% of the average net profits of previous 3 years towards CSR activities for life of the project. A separate budget head shall be created and the annual capital and

revenue expenditure on various activities of the Plan shall be submitted as part of the Compliance Report to RO. The details of the CSR Plan shall also be uploaded on the company website and shall also be provided in the Annual Report of the company. The plan so prepared shall be based on SMART (Specific, Measurable, Achievable, Relevant and Time bound) concept. The expenditure should be aimed at sustainable development and direct free distribution and temporary relief should not be included.

xxvii. All the commitments made to the public during the Public Hearing / Public Consultation meeting shall be satisfactorily implemented and a separate budget for implementing the same shall be allocated and information submitted to the Ministry's Regional Office at Bhubaneswar.

xxviii. Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, Safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.

B. GENERAL CONDITIONS:

i. The project authorities must strictly adhere to the stipulations made by the concerned State Pollution Control Board and the State Government.

ii. No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forests and Climate Change (MoEF&CC).

iii. At least four ambient air quality monitoring stations should be established in the downward direction as well as where maximum ground level concentration of PM_{10}, $PM_{2.5}$, SO_2 and NO_X are anticipated in consultation with the SPCB. Data on ambient air quality and stack emission shall be regularly submitted to this Ministry including its Regional Office at Chennai and the SPCB/CPCB once in six months.

iv. Industrial wastewater shall be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19th May, 1993 and 31st December 1993 or as amended from time to time. The treated wastewater shall be utilized for plantation purpose.

v. The overall noise levels in and around the plant area shall be kept well within the standards (85 dB(A)) by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels should conform to the standards prescribed under EPA Rules, 1989 viz. 75 dB(A) during day time and 70 dB(A) during night time.

vi. Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.

vii. The company shall develop rain water harvesting structures to harvest the rain water for utilization in the lean season besides recharging the ground water table.

viii. The project proponent shall also comply with all the environmental protection measures and safeguards recommended in the EIA/EMP report. Further, the company must undertake socio-economic development activities in the surrounding villages like community development programmes, educational programmes, drinking water supply and health care etc.

ix. Requisite funds shall be earmarked towards capital cost and recurring cost/annum for environment pollution control measures to implement the conditions stipulated by the

Ministry of Environment, Forest and Climate Change (MoEF&CC) as well as the State Government. An implementation schedule for implementing all the conditions stipulated herein shall be submitted to the Regional Office of the Ministry at Chennai. The funds so provided shall not be diverted for any other purpose.

x. A copy of clearance letter shall be sent by the proponent to concerned Panchayat, Zila Parishad / Municipal Corporation, Urban Local Body and the local NGO, if any, from whom suggestions/representations, if any, were received while processing the proposal. The clearance letter shall also be put on the web site of the company by the proponent.

xi. The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of the MoEF&CC at Chennai. The respective Zonal Office of CPCB and the SPCB. The criteria pollutant levels namely; PM_{10}, SO_2, NOx (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the projects shall be monitored and displayed at a convenient location near the main gate of the company in the public domain.

xii. The project proponent shall also submit six monthly reports on the status of the compliance of the stipulated environmental conditions including results of monitored data (both in hard copies as well as by e-mail) to the Regional Office of MoEF&CC, the respective Zonal Office of CPCB and the SPCB. The Regional Office of this Ministry at Chennai/ CPCB / SPCB shall monitor the stipulated conditions.

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

xiv. The Project Proponent shall inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the SPCB and may also be seen at Website of the Ministry of Environment, Forests and Climate Change (MoEF&CC) at http:/envfor.nic.in. This shall be advertised within seven days from the date of issue of the clearance letter, at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same should be forwarded to the Regional office at Bhubaneshwar.

xv. Project authorities shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of commencing the land development work.

27.0 The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.

28.0 The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.

29.0 The PP shall abide by all the commitments and recommendations made in the EIA/EMP report and also that during their presentation to the EAC. The commitment made by the project proponent to the issue raised during Public Hearing shall be implemented by the proponent.

30.0 The above conditions shall be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 and the Public Liability Insurance Act, 1991 along with their amendments and rules.

31.0 This EC supersedes the earlier EC granted vide letter Lr. No. J-11011/281/2006-IA.II(I) dated 02.01.2007 for the 1.0 MTPA capacity.

32.0 Any appeal against this EC shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.

This issues with the approval of Competent Authority.

7/7/17

(Sharath Kumar Pallerla)
Scientist 'F'/Director

Copy to:-

1). **The Secretary**, Department of Environment, Government of Tamil Nadu, Chennai.

2). **The Secretary**, Department of Forests, Government of Tamilnadu, Chennai

3). **The Additional Principal Chief Conservator of Forests**, Ministry of Environment, Forest and Climate Change,Regional Office (SEZ), 1st and 2nd Floor, Handloom Export Promotion Council, 34, Cathedral Garden Road, Nungambakkam, Chennai – 34

4). **The Chairman**, Central Pollution Control Board, Parivesh Bhawan, CBD-cum-Office Complex, East Arjun Nagar, Delhi-110032.

5). **The Chairman**, Tamil Nadu Pollution Control Board, 76, Mount Salai, Guindy, Chennai- 600 032, Tamil Nadu.

6). **The Member Secretary**, Central Ground Water Authority, A2, W- 3 Curzon Road Barracks, K.G. Marg, New Delhi-110001.

7). **The District Collector, Salem** District, State of Tamil Nadu.

8). **Guard File / Record file / Monitoring file.**

9). **MOEF&CC Website.**

7/7/17

(Sharath Kumar Pallerla)
Scientist 'F'/Director