

ODISHA POWER GENERATION CORPORATION LTD.

(A Government Company of the State of Odisha)

CIN: U40104OR1984SG001429

1b Thermal Power Station

Banharpali, Dist.: Jharsuguda, Odisha - 768 234, India

Plant Manager : (+916645) 289266, Fax: (+916645) 222-230

Factory Manager : (+916645) 222224, Fax: (+916645) 222-230



Letter No. ITPS/ 7187/WE

November 24, 2017

The Additional Director (S)

Ministry of Environment Forests & Climate Change

Eastern Regional Office

A/3, Chandrasekharpur,

Bhubaneswar – 751023

**Sub.: Half yearly Environmental Status Report of Odisha Power Generation Corporation (2X210 MW ITPS),
Banharpali, Dist: Jharsuguda for the period from April 2017- September 2017.**

Ref.: ITPS Environmental Clearance No.14/13/83-EM-2, dated 27.09.1984

Dear Sir,

This has reference to the above subject and cited reference.

Kindly find enclosed the half yearly Environmental Status report of Odisha Power Generation Corporation (2X210 MW ITPS) for the period from April 2017- September-2017 for your kind perusal.

Thanking you

Sincerely yours,

Alok Mukherjee
Director (Operations)
OPGC Ltd

Enclosures as above

CC:

Member Secretary

State Pollution Control Board, Odisha

“Paribesh Bhawan”

A/118, Nilakantha Nagar,

Unit – VIII

Bhubaneswar – 751 012



ANNEXURE-1

ODISHA POWER GENERATION CORPORATION LTD
 IB THERMAL POWER STATION (2×210MW)
COMPLIANCE STATUS OF THE ENVIRONMENTAL CONDITIONS
 Environment Clearance No. 14/13/83-EM-2, dated 27.09.1984
 Period-April 2017 – September 2017

Sl. No.	Environmental Clearance Conditions	Compliance Status
1.	AIR POLLUTION	
I.	A common stack height not less than 200 meters should be provided for two units of 210 MW. Similarly for other two units a common chimney of 200 meters height should be provided.	<p>A bi flue common stack of height 220 meters has been provided for U#1&2 of 210 MW each.</p> <p>Other two units, i.e. U#3&4 of capacity 660 MW each are under construction with twin flue common stack of height 275 meters.</p>
II.	ESP of having operational efficiency of not less than 99.7% should be provided and extra fields made part of the design. The efficiency of ESPs should be monitored and recorded. Adequate training should be given to the persons engaged in the operations and maintenance of ESPs.	<p>ESP of operational efficiency 99.82%(designed value)has been provided for both of the units</p> <p>ESP internals both for unit #1 & unit #2 has been repaired during annual overhauling every year. Routine maintenance practice has been followed for ensuring healthiness of ESP to ensure the efficiency >99.7%. Stack monitoring is being carried out on weekly basis to ensure ESP output efficiency.</p> <p>ESP retrofitting job for both the units had been taken up to achieve revised particulate emission norm of 100 mg/m³. The retrofitting job for both the units has been completed by adding ESP parallel paths. For Unit#2 the particulate matter emission norm is achieved consistently, however for unit#1 OEM, M/S BHEL has been working now for ESPs optimization and resolving technical problems. After resolving these issues, BHEL is going to conduct PG test of both the unit's ESPs by March 2018.</p>

6/14

III.	Emission and ambient air quality monitoring should be done after the commissioning of the units and data recorded and should not exceed the standards set by the Central and State Pollution Control Boards.	<p>Stack monitoring has been taken up through two Nos. of online continuous emission monitoring system (CEMS) for parameters PM, SO₂, NO_x & CO for trend monitoring and taking corrective action so as to keep parameters within prescribed limit. The CEMS are connected to SPCB & CPCB server on real time basis. Offline test is being conducted through grab sampling by calibrated portable stack monitoring kit & Flue gas analyzer on weekly basis. These results are being recorded and reported.</p> <p>Five permanent ambient air-monitoring stations are installed by OPGC in & around ITPS out of which 03 no stations are placed in industrial zone & 02 no in Residential zone. Ambient air monitoring has been done regularly for parameters PM₁₀, PM_{2.5}, SO₂, NO_x & noise.</p> <p>In total four online ambient air quality monitoring station has been installed out of which two are inside plant & two are in residential area to monitor PM_{2.5}, PM₁₀, SO₂, & NO_x. Real time data transmission to the OSPCB & CPCB servers from the ambient air quality monitoring station has been established.</p> <p>Besides emission, ambient air, noise & waste water quality are being monitored by a MoEF & CC approved third party i.e. M/s SS Environics. All the results are furnished in form of maximum, minimum & average values.</p> <p>Monitoring reports are being sent to SPCB & CPCB every month. Half yearly reports are being sent regularly to MoEF & CC, Govt. of India, Eastern Regional Office. Maximum, Minimum and Average Emission data for the period April 2017 to September 2017 is enclosed as Annexure-IV.</p>
IV.	Adequate space for FGD plant should be part of the design so that they could be installed if required at a later stage.	Adequate space provision has been kept for installation of FGD in later stage as per requirement.
V.	Dust suppression / control equipment should be installed in wagon tipping area, transfer points, crushers etc.	<p>In coal handling plant there are 14 nos. cyclone type dust extractors and 04 nos. dust suppression systems, 11 nos. ventilation systems to control air pollution during handling of coal. These systems have been working satisfactorily.</p> <p>Arresting of dust leakage points, restricting spillage of coal and floor washing are some of the measures being taken up in plant area to suppress work zone dust concentration.</p> <p>Pre-sprinkling & sprinkling system has been installed in track hopper area.</p> <p>As a work zone emission improvement step, OPGC has</p>

Con/A

		installed dry fog system in place of existing sprinkling systems in order to bring higher level of fugitive dust control.
2.	WATER POLLUTION	
i.	Closed cooling system for condensers should be provided instead of once-through cooling system as proposed.	The process has been designed and operated with the closed cooling system.
ii.	Liquid effluents emanating from the different plants such as DM plant, Boiler blow down, Ash pond/dyke sewage etc. should be properly treated as per the standards stipulated by the State Pollution Control Board.	<p>The plant has been reusing its liquid effluents in its different process after necessary treatment since 28.06.2008. This is in compliance to SPCB's consent condition to reuse all liquid effluents. The details of reuse processes are-</p> <ul style="list-style-type: none"> ▪ Domestic sewage of plant has been discharged to soak pits after treatment in septic tanks. Domestic sewage of colony and hospital has been treated in STP and treated effluent is being reused for watering the Green belt and Park at ITPS. ▪ No effluent from ash pond is discharged except seepage water from ash pond. Treated ash water is recycled 100% for reuse as make up water in wet ash handling system after necessary treatment. ▪ CW blow down effluent is being reused as make up water in wet ash handling system. ▪ Boiler and turbine effluents are being reuse as ash handling make up after necessary treatment. ▪ DM plant regeneration effluent is being reuse as cooling system make up. ▪ CT drift overflow water is recycled back in cooling tower basin. <p>Close to 99% of the liquid effluent being generated has been recycled and reused inside plant. Only the gravity sand filter back wash effluent has been discharged after meeting effluent quality norm. The back wash water quality matches the drinking water grade in all respect except suspended</p>

607

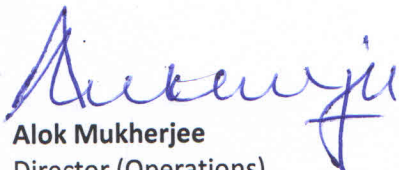
		<p>matter. The water is settled in a zigzag flow path and by the time it reaches the final discharge point (about 500m. away), the suspended matter settles down which has been confirmed from routine quality checks. It has been planned to recycle the gravity sand filter backwash water after treatment in the upcoming OPGC expansion project ETP for complete reuse, which is expected to come under operation by December 2018.</p> <p>In abnormal or emergency situation if any liquid effluent discharge situation arises, the industry will ensure the effluents are treated properly (neutralization, settling, equalization, natural cooling and oil removal) and prescribed standards is met before discharged.</p>
iii.	Hot water coming from the condenser should be properly cooled so as to ensure to keep the temperature of the receiving surface water as per the standard stipulated by the state Board.	Hot water coming from the condenser is being cooled through cooling tower & reused for condenser cooling in close loop. Cooling water blow down is being reused as make up water in ash slurry discharge system. There has been no hot water discharge coming from the condensers.
3.	SOLID WASTE MANAGEMENT	
i.	Fly ash and bottom ash should be collected in the ash dykes/ponds. The supernatants water should not contain suspended matters more than 100ppm. Dry disposal of fly ash should also be planned including the disposal in abandoned mines after mixing with the OB.	<p>Around 35% of utilization in dry form & rest ash is collected in ash pond by wet disposal method.</p> <p>The suspended particles of the supernatant water from ash pond are settled in Primary & Secondary settling tanks. The supernatant is also additionally treated with Alum & polyelectrolyte for more effective settling. The settled water after maintenance of turbidity and other required parameters is being re-cycled 100% for reuse as make up water in wet ash handling system at plant site.</p> <p>OPGC is in continuous follow up with MCL for getting abandoned mines for dry disposal of fly ash mixing with the OB from long back & seeks support from MoEF & CC in this regard.</p>
ii.	Green belt should be raised on the ash disposal areas filled by fly ash to check the dispersion by fly ash into the air. Additional land (Pvt. Land) should be acquired for compensatory afforestation.	<p>Dry disposal area (Ash Mounds) is soil capped & grass turffed completely to avoid dispersion of fly ash in to air.</p> <p>The dry ash surface in operational pond is maintained wet or water pounded to prevent air borne of ash.</p> <p>Tree plantation on the slope of the dyke has been restricted by State Pollution Control Board due to the risk involved to the dyke in form of tree root channeling effect. Thereafter, the trees planted earlier on the dykes were removed for</p>

6/11

		<p>maintaining the safety of the ash dykes.</p> <p>Compensatory afforestation has been done by OPGC over 260 Ha of non-forest land in Deogarh, Odisha, through forest department, Govt. of Odisha.</p>
iii.	Trees plantation work should be taken up all around the Thermal Power Plant. The species to be planted may be decided in consultation with the Forest Department.	Adequate number of trees of different species has been planted all around ITPS. Species are selected consulting Forest Department. More than 33% i.e. 34.6% of the plant area is now covered with green belt and high density trees. Plantation activity is also being taken up every year. Detail plantation status is enclosed- Annexure-V.
iv.	Effort should be made to utilize fly ash in bricks, blocks, building materials etc.	OPGC is having its own fly ash brick plants (capacity-15000 bricks/day) for manufacturing of fly ash bricks. Apart from that OPGC has been providing fly ash free of cost to brick plants whoever shows interest to use in manufacturing of building materials. Besides, OPGC also pays Rs 150/- per MT of ash transport to brick manufacturing units.
V.	A comprehensive re-settlement package of rehabilitation of dispersed families should be made including providing of job to at least one person per family, apart from giving cultivable land for land to those who were possessing the same.	This was already complied earlier as per our status report no ITPS/241/WE/21.01.2001 submitted in MoEF regional office.
vi.	A master plan should be prepared taking into account the requirement of power plant, township, fuel requirement, human settlements, etc. in consultation with District authorities.	It was compiled at the time of the project construction & commissioning stage during the period from the year 1989 to 1995.
vii.	Timber required for the project should be procured through the Forest Corporation and not by private contractor/dealers and the former should not abrogate this responsibility by contracting the supply out and adding its handling charges. If the corporation is not equipped to handle this themselves the project authorities should negotiate the best terms, price and environment-wise with contractors by obtaining bids.	It was compiled at the time of the project construction & commissioning stage during the period from the year 1989 to 1995.
4	ADDITIONAL CONDITION FOR MEGA PROJECTS:	
i.	Continuous monitoring of stack emissions as well as ambient air quality (as per notified standards) shall be carried out and continuous records maintained. Based on the monitored data, necessary corrective measures as may be required from time to time shall be taken to ensure that the levels are within	OPGC has installed 2 Nos of Continuous Emission Monitoring System in both the stacks for online measurement of PM, SO ₂ & NO _x . Similarly OPGC has installed 4 Nos of Ambient Air Quality Monitoring System in both industrial & residential location for online measurement of PM ₁₀ , PM _{2.5} , SO ₂ & NO _x . The data is sent to SPCB/CPCB server on real-time basis.

6/11/11

	permissible limits. The results of monitoring shall also be submitted to the respective Regional Office of MoEF regularly. Besides, the results of monitoring will also be put on the website of the company in the public domain.	Monitoring result is submitted to MoEF & CC regional office along with the half yearly EC status report in form of maximum, minimum and average values. The same is also uploaded in OPGC website on regular basis.
ii.	The six monthly monitoring reports as well as the monitored data on various parameters as stipulated in the environment clearance conditions shall be put on the website of the company and also regularly updated. The monitored data shall also be submitted to respective State Pollution Control Board/ UTPCCs and regional office of MoEF.	The six monthly as well as monthly monitoring reports on various parameters is being put on OPGC website and regularly updated. The data is also being submitted to OSPCB & MoEF & CC regional office.
iii.	The ambient air quality data as well as the stack emission data will also be displayed in public domain at some prominent place near the main gate of the company and updated in real time.	The ambient air quality data as well as the stack monitoring data are displayed at the Plant gate & are also uploaded in the website of OPGC along with the half yearly status report. *The defective display board is replaced with new one. The data are displayed at Plant gate.



Alok Mukherjee
 Director (Operations)
 OPGC Ltd.

ANNEXURE-II
ODISHA POWER GENERATION CORPORATION LTD
IB THERMAL POWER STATION (2×210MW)
COMPLIANCE STATUS OF CREP GUIDELINES

Period-October 2016 - March 2017

Sl. No.	CREP Guidelines	Compliance Status/Steps initiated
1.	Implementation of Environmental standards (emission & effluent) in non compliant power plants.	Not applicable being compliant plant.
2.	For existing thermal power plants a feasibility study shall be carried out by CEA to examine possibility to reduce the particulate matter emissions to 100mg/Nm ³ .	No such feasibility study report or guideline so far received from CEA. However, as per stipulation by State Pollution Control Board, Odisha, ESP retrofitting job was taken up to achieve revised particulate emission norm, 100 mg/Nm ³ for both the units. Both the units ESPs retrofitting job has been completed & BHEL is now working to resolve the technical problems and shall conduct PG test by March'18.
3.	New/expansion power projects to be accorded environmental clearance on or after 1.4.2003 shall meet the limit of 100 mg/Nm ³ for particulate matter.	As per point no. 2, although being an old unit the retrofitting job had been taken up. The condition with particulate matter limit 50mg/Nm ³ is incorporated in the expansion units (2×660) under construction.
4.	Development of SO ₂ and NO _x emission standards for coal based plants by Dec.2003	MoEF & CC vide their notification dt. 7 th December 2015 has issued SO ₂ and NO _x emission standards for coal based thermal power plants.
	New /expansion power projects shall meet the limit w.e.f. 1.1.2015	As per MoEF & CC notification dt. 7 th December 2015, the compliance requirement is w.e.f 07.12.2017.
	Existing power plants shall meet the limit w.e.f.01.01.2006	As per MoEF & CC notification dt. 7 th December 2015, the compliance requirement is w.e.f. 07.12.2017.
5.	Install /activate opacity meters/continuous monitoring systems in all the units by December 31,2004 with proper calibration system.	Continuous emission monitoring system has been installed since June 2015. Calibration is done by comparing offline test results tested through calibrated Stack Monitoring kit.
6.	Development of guidelines/standards for mercury and other toxic heavy metal emissions by December 2003	The standard /guideline for mercury emission as per MoEF & CC notification dt. 7 th December 2015 don't cover power generation capacity less than 500 MW.
7.	Review of stack height requirement and guidelines for power plants based on micro meteorological data by June 2003.	Compliance by other agency/authority. However, the stack height requirement i.e. 220 meter is fulfilled.
8.	Implementation of use of beneficiated coal as per GOI Notification.	The matter has been taken to coal supplier, Mahanadi Coal Field Ltd. For supply of washed coal.
9.	Power plants will indicate their requirement of abandoned coal mines for ash disposal and Coal India/MOC shall provide the list of abandoned mines by June 2003 to CEA.	The requirement was indicated before MCL but no such abandoned mine allotted to OPGC so far. On continuous pursuance from OPGC and with the support of MoEF& CC, Regional Office, Mahanadi Coal Field (MCL) had given clearance in the month of May 2007 for back

		filling of OPGC ash in Lilari OCM void from July 2009. Based on that permission, OPGC had taken immediate step for EIA and feasibility study engaging CIMFR, Dhanbad. But in the month of February 2008, the permission was withdrawn unilaterally by MCL on the ground that the anticipated life of Lilari Mine is extended for ten more years. Since then, OPGC is perusing time and again to MCL to provide any other mine void near OPGC site. In a high level meeting with MCL on 9 th February 2011, MCL has agreed to give in principle clearance to OPGC for back filling in Belpahar OCM. This has not happened so far. OPGC seeks support from MoEF & CC in this regard.
10.	Power plant will provide dry ash to the users outside the premises on uninterrupted access to the users within 06 months.	Dry fly ash is being provided to the interested users. Availability of adequate quantity of dry ash has been ensured to meet the users demand. OPGC has made 1200 MT/day dry ash collection facility which is about 49% of its total ash generation quantity.
11.	Power plant should provide dry fly ash free of cost to the users.	Complied. It is being provided free of cost. As per OSPCB direction transportation subsidy to the brick manufacturing industry @ Rs.150 per ton has been implemented.
12.	State P.W.Ds/ Construction and development agency shall also adhere to the specification/schedules of C.P.W.D. for ash/ ash based products utilization.	Compliance by other agency/authority.
13.	(i) New plant to be accorded Environmental clearance on or after 01.04.2003 shall adopt dry fly ash extraction or dry disposal system or medium(35 to 40%) ash concentration slurry disposal system or lean phase with 100% ash water recirculation system depending upon site specific environmental situation.	The requirement is incorporated in the design for its expansion project (unit 3 & 4) under construction stage. 100% dry fly ash extraction system and high concentration slurry disposal system with 100% ash water recirculation is envisaged.
	(ii) Existing plant shall adopt any of the systems mentioned in 13(i) by December 2004.	Complied. 40% dry ash collection facility has been provided. 100% ash water is being recirculated for reuse in ash handling.
14.	Fly ash mission shall prepare guide lines/manuals for fly ash utilization by March 2004.	Compliance by other agency/authority.
15.	New plant shall promote adoption of clean coal and clean power generation technologies.	Condition has been considered for expansion project in shape of supercritical technology for its expansion project under construction stage.


UK Pahi
 Head-EHS

Annexure-III
ODISHA POWER GENERATION CORPORATION LTD
IB THERMAL POWER STATION (2×210MW)


ASH GENERATION & UTILIZATION STATUS AT ITPS								
Period: April 2017-September 2017								
Ash generation in MT	ASH UTILIZATION IN MT							
	Captive(ash bricks, blocks)	Land Reclamation	Asbestos	Cenosphere	Outside Ash Brick Plants	NH/SH Road construction	Ash Dyke raising	Total Utilization
547764	878	175439	7950	36.5	1079	4437	0	189819.5
% Utilization-34.65%								

Reasons for not meeting the Ash Utilization Target

1. Due to remote location of plant (pit head power plant located in rural area) there is very limited scope of ash utilization in brick manufacturing. Moreover the ash brick acceptance level remains low. With best effort the utilization in this particular area cannot exceed more than 2 to 3%.
2. Big stone quarry or low lands are not available in this locality.
3. Export of ash is not feasible since the site is located at a distance of 500 KM from the nearest port. Transportation from site to nearest port through rail or any other means is not feasible.
- 4 Major road construction activities are taking place near Jharsuguda. The demands from these activities are met by other thermal power plants very close to that road construction area.
5. No scope available in major ash utilization area i.e. Cement plant use. Only one cement plant in the locality i.e. Ultratech Cement Ltd. Off takes entire quantity of ash for cement manufacturing from their sister concern Hindalco Power, Hirakud.
6. Even though the industry is putting its best effort to allotment of mine void for ash utilization from the coal supplier Mahanadi Coal Field Ltd., there is no allotment of mine void so far. It may kindly be note that ITPS being the only pit head power plant in this locality, mine void filling is the most feasible utilization means for achieving 100% utilization.

Actions to overcome the challenges

1. Transportation subsidy of Rs 150/- per ton has been implemented for enhancing ash Utilization in the areas of manufacturing of bricks & fly ash based products.
2. Special initiative has been taken to identify low land in nearby vicinity.
3. Action initiated to utilize 2 lakh MT ash in nearby NH 200 renovation activity.
4. Action initiated to utilize ash in OPGC expansion project MGR line construction.
5. Effort will be strengthened to get mine void allotment from MCL.
6. Action initiated to educate people for use of coal ash in agriculture.


UK Pahi
Head-EHS

ANNEXURE-IV

ODISHA POWER GENERATION CORPORATION LTD

IB THERMAL POWER STATION

ENVIRONMENTAL MONITORING REPORTS

Period-April 2017 to September 2017

A. STACK EMISSION

PARAMETER	NORM	INTERNAL MONITORING						THIRD PARTY MONITORING					
		STACK 1			STACK 2			STACK 1			STACK 2		
		MAX.	MIN.	AVE.	MAX.	MIN.	AVE.	MAX.	MIN.	AVE.	MAX.	MIN.	AVE.
SPM(mg/Nm^3)	100	127	85	97	98	74	86	117	95	102	91	86	88
SOX	NA	1509	951	1237	1517	983	1284	1063	866	960	1128	1058	1081
NOX	NA	401	223	286	384	203	277	308	238	276	367	242	294

B. AMBIENT AIR QUALITY

PARAMETER	NORM	INTERNAL MONITORING						THIRD PARTY MONITORING					
		MAX.	MIN.	AVE.	MAX.	MIN.	AVE.	MAX.	MIN.	AVE.	MAX.	MIN.	AVE.
PM ₁₀ ($\mu\text{g}/\text{m}^3$)	100	93	45	70				75	51				66
PM _{2.5} ($\mu\text{g}/\text{m}^3$)	60	57	18	34				31	20				27
SO ₂ ($\mu\text{g}/\text{m}^3$)	80	14	7	10				14	10				12
NO ₂ ($\mu\text{g}/\text{m}^3$)	80	27	12	19				16	21				18

C. AMBIENT NOISE LEVEL

	INTERNAL MONITORING						THIRD PARTY MONITORING					
	INDUSTRIAL NOISE LEVEL, dB(A)			RESIDENTIAL NOISE LEVEL, dB(A)			INDUSTRIAL NOISE LEVEL, dB(A)			RESIDENTIAL NOISE LEVEL, dB(A)		
	Day time	Night time		Day time	Night time		Day time	Night time		Day time	Night time	
NORM	75	70		55	45		75	70		55	45	
Minimum	65	69		39	43		57	53		37	34	
Maximum	72	60		48	36		69	66		47	44	
Average	68	64		44	39		65	61		43	38	

D. LIQUID INDUSTRIAL EFFLUENT QUALITY

INTERNAL MONITORING				THIRD PARTY MONITORING			
PARAMETERS	UNIT	NORM	RESULT	PARAMETERS	UNIT	NORM	RESULT
Temp(In)	°C	T(O) - T(I) = <5°C	MAX.	pH	-	6.0 - 9.0	MAX.
Temp(Out)			MIN.	TSS	PPM	100	MIN.
pH at 25°C	NA	5.5-9.0	7.18	O & G	PPM	10	7.16
Chloride as Cl	PPM	1000 max	21.1	BOD	PPM	30	40
D.Phos as P	PPM	5.0 max	0.22	COD	PPM	250	1.2
O & G	PPM	10.0 max	0.5	Fe	PPM	3	6
TSS	PPM	100 max	72	Total Chromium (as Cr)	PPM	2	38
TDS	PPM	2100 max	318	Copper (as Cu)	PPM	3	22
Res chlorine	PPM	1.0 max	NIL	Zinc(as Zn)	PPM	5	1.27
BOD	PPM	30 max	4.5				
COD	PPM	250 max	33.5				

E. STP OUTLET

THIRD PARTY MONITORING			
PARAMETERS	UNIT	NORM	RESULT
PH	-	6.5 - 9	MAX.
TSS	PPM	20	7.31
BOD	PPM	10	61
COD	PPM	50	12
Total Nitrogen	PPM	10	54
Ammonical Nitrogen	PPM	5	3.6
Feacal Coliform	MPN/100ml	<100	1.94
Total Coliform	MPN/100ml	\$	84
			140
			110



UK Pahi
Head-EHS

Annexure- V (A)
IB THERMAL POWER STATION
SUMMERY OF GREEN BELT & PLANTATION, till September 2017


- Total Plantation & colony Area-**1227.5 acres**
- Greenbelt & High Density Trees- **424 acres**
- % Greenbelt & High Density Trees- **34.6**
- Total trees planted- **311409 Nos.**
- Total trees survived-**226704 Nos.**
- % of survival-**72.8**

Plantation & sapling distribution

Year	Planted	Sapling distributed
2012-13	350	2000
2013-14	1300	6000
2014-15	3000	5000
2015-16	700	4480
2016-17	8200	15000
2017-18 (Till Sep'17)	1885	3500

*Compensatory plantation of 260 acres has been done in Deogarh area.

Besides, a nursery of 25000 capacity has been developed


UK-Pahi
Head-EHS

Annexure- V (B)

ODISHA POWER GENERATION CORPORATION LTD


IB THERMAL POWER STATION

YEAR WISE TREE PLANTATION DETAILS OF OPGC AT ITPS

Location	Name of Agency	Year	No. of trees planted	Name of the Species	No. of trees alive
Colony, Guest House, Halipad, Periphery, Pump House, Filter House, Stores etc.	Local agencies	1991-92/92-93	12,000	Akashia	9,550
Periphery of Boundary Wall (Green Belt)	O.P.G.C.	1992-93/93-94	38,500	Sirish	
Vacant place in front of SBI, Old Hanuman Temple back side of Store yard, colony road side.	Sidhartha agency, Jharsuguda.	1993-94/94-95	23,800	Chhatim	
i) Back side of Autobase, Falsamunda village area.	i) Sidhartha agency, Brukshyaropan Samiti, Jharsuguda.	1994-95/95-96	20,000	Kadamba	23,300
ii) Coal yard side, either sides of main roads, Plant boundary, Railway lines, inside area bet- ween D.M. Plant, R.W. pump house and compound wall.	ii) Departmentally. Total:-		37,000	Panash	
Both sides of Rly. inline out side the plant boundary and Ash Pond area.	i) Green channel, Brukshyaropan Samiti & 3 Nos. of Club and Yubak Sangha	1995-96/96-97	40,000	Neem	
Jhawn & Plantation coal hand- ling plant area & other species on both sides of roads inside plant.	ii) Departmentally		34,500	Bottle brush	15,000
Fuel Oil Pump house area, School, Hospital, Police station Outer periphery of children Parks, Playgrounds etc.	iii) Local agencies Total:-		5,500	Bottle Palm	
Ash Pond	i) Brukshyaropan Samiti		5,000	Chakunda	
Both side of Security road.	ii) Departmentally i) Brukshyaropan Samiti		5,000	Jhaun	15,000
	ii) Departmentally Total		5,000	Sisoo	
Ash Pond		1998-99/99-00	5,500	Golmohar	
				Eucalyptus	31,155
Ash Pond	By agencies	2000-2001	5,058	Gambhari	
CHP & Plant	-do-		5,966	Jarul	
Colony	-do-		11,500	Litchi	
Ash Filling Area (low lying area), Colony, Warehouse, SVM School (ITPS), Rengali School	-do-	2006-07	1,800	Amba	
Inside Plant campus	-do-	2007-08	3,000	Baula	
Distribution of fruit bearing tree in Periphery villages	-do-	2008-09	4,000	Radhachuda	
Block Plantation in association with District Environmental Society	Majhi		3,000	Deodaru	
Fruit bearing tree plantation at Gujapar and in Schools	do		350	Karanja	
CHP & Learning Centre on Earth Day	Self	2009-10	120	Pijuli	
World Env Day	Self		150	Saguan	
Govt. Land near Rengali Nursery	Karunakar Sahu		5000	baxa	
				Mandar	
				Rangani	
				Areca Palm	
				Juniperous	65,000
				china Palm	
				Musunda	
				Karabira	
				Golap	
				Thuja	
					15,500
					4,500
					0
					4,842
					10,000
					1200
					2300
					2100
					2500
					50
					75
					90
					2000

Vatarika & Adhapada Mandir- 150 nos fruit & flower tree, Inside Colony vacant place- 100 neem trees, World Env day- 150 neem & Devdaru tree inside Plant Premises, Gujapahar- 200 Fruit bearing trees, 800 Fruit bearing, Radha Chuda etc planted in Binika & Banaharpali through villagers	Self & through villagers	2010-11	1500	Neem, Devdaru, Radhachura, Mango, Guava, Lemon, Jamun, Coconut, Lichi & Flower Plants	900
Vacant space in between Boiler area scrap yard & clarifiers	Self	2010-11	100	Neem	70
Inside Colony Vacant Places	Self	2011-12	150	Mango, Lemon, Guava	100
Vacant space at Coal Handling Plant	Self	2012-13	350	Neem, Devdaru	200
Distribution of fruit bearing & Forest plant species in Periphery villages, 2000 nos	Self	2012-13	2000	Teak, Mango, Lemon	1000
Avenue Plantation at Banharpali & Ash Pond Road & 100 nos inside Plant premises	Self	2013-14	1300	Kadamba, Limba, Karanga, Radhachuda, Teak, Devdaru etc	900
Sapling Distribution, 6000 nos	through nearby villagers		6000	Teak, Guava, Jackfruit, Dalimb etc	3000
Sapling Distribution, 5000 nos	through nearby villagers	2014-15	5000	Teak, Guava, Teak, etc	2500
Block & Avenue Plantation (OPGC old Pump House vacant space, old Adhapada Shiv Temple premises near Banaharpali & Tarrini Temple premises at Pump House Para)	Self		3000		1050
Sapling Distribution	through nearby villagers, 4480 nos	2015-16	4480	Teak, Baula, Guava, Lemon, Karanj etc	2100
Plantation inside Plant and Colony	Self		700		650
Plantation inside Plant and Colony	Self	2016-17	200	Baula, Mango	192
Plantation inside Plant	Self		8000	Karanja, Neem, Baula	8000
Saplings Distributed, 15000 nos	Others			Grafted Mango, Guava, Teak, etc	
Plantation inside plant & township	Self	2017-18 (Till September'17)	1885	Kadamba, Neem, Bakul, Siris & Karanja	1880
Total			311,409		226,704
% Survival				72.8	

In addition to above plantation at ITPS, Compensatory Afforestation has been done by OPGC over 260 Ha. non-forest land in Deogarh, through Forest Department, Govt. Of Odisha.


UK Pahi
Head-EHS