

MINUTES OF THE 7TH MEETING OF THE RE-CONSTITUTED EXPERT APPRAISAL COMMITTEE (EAC) ON ENVIRONMENTAL IMPACT ASSESSMENT (EIA) OF THERMAL POWER PROJECTS

The 7th Meeting of the re-constituted EAC (Thermal Power) was held on 28th June, 2017 in the Ministry of Environment, Forest & Climate Change at Teesta Meeting Hall, Vayu Wing, First Floor, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi under the Chairmanship of Dr. Navin Chandra. The following members were present:

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| 1. | Dr. Navin Chandra | - | Chairman |
| 2. | Dr. Narmada Prasad Shukla | - | Member |
| 3. | Shri N. Mohan Karnat | - | Member |
| 4. | Dr. Jai Krishna Pandey | - | Member |
| 5. | Dr. Manjari Srivastava | - | Member |
| 6. | Shri Gururaj P. Kundargi | - | Member |
| 7. | Shri Suramya Dolarray | - | Member |
| 8. | Shri N. S. Mondal | - | Member (Representative of CEA) |
| 9. | Dr. R. K. Giri | - | Member (Representative of IMD) |
| 10. | Dr. S. K. Paliwal | - | Member (Representative of CPCB) |
| 11. | Prof. Om Prakash | - | Member (Representative of IIT (ISM), Dhanbad) |
| 12. | Dr. S. Kerketta | - | Member Secretary |

Dr. Sharachchandra Lele could not be present. Member Secretary informed that Ministry constituted four additional members and relieved the existing member Dr. Rajesh P. Gunaga as per his request as he is overloaded with many assignments in the Navsari Agricultural University. The Chairman welcomed the four new members.

Item No. 7.0: CONFIRMATION OF THE MINUTES OF THE 6th EAC MEETING.

The Minutes of the 6th EAC (Thermal Power) Meeting held on 29th May, 2017 were confirmed.

Item No. 7: CONSIDERATION OF PROJECTS

7.1 25 MW Waste-to-Energy (WtE) Project at Deonar, Mumbai, Maharashtra by M/s Municipal Corporation of Greater Mumbai-reg. ToR. (File No: J-13012/02/2017-IA.I(T) & Online No: IA/MH/THE/62178/2017)

(7.1.1) Project Proponent did not attend the meeting. **Accordingly, the committee has deferred the project.**

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7.2 18 MW Captive thermal power Plant at Mattampalli Village, Matampalli Mandal, Distt. Suryapet, Telangana by M/s Sagar Cement Limited- reg. ToR. (File No: J-13012/09/2017-IA.I(T) & Online No: IA/TG/THE/65044/2017)

(7.2.1) Project Proponent (PP) did not attend the meeting. Member Secretary briefed the committee that the proposal is for setting up of 18 MW Thermal Power Plant for catering to the power requirements of existing Cement Plant with clinker production of 2.35 MTPA. Further, the Member Secretary mentioned that PP has requested to withdraw the proposal as they are planning for Integrated proposal for setting up new line of cement plant along with captive power plant.

(7.2.2) As PP themselves requested for withdrawal of the proposal, **Committee after deliberations, rejected the proposal.**

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7.3 Expansion of ‘Integrated Municipal Solid Waste Management Project’- Waste to Energy (WtE) Power Plant from 19.8 MW to 48 MW at Sy. No. 173, Jawaharnagar Village, kapra mandal, Distt. Medchal, Telangana by M/s Greater Hyderabad Municipal Corporation- reg. ToR(File No: J-13012/08/2017-IA.I(T) &Online No: IA/TG/THE/64959/2017)

(7.3.1) The Project Proponent (PP) submitted online application for grant of ToR on 26.5.2017. PPP along with their environmental consultant, *M/s Ramky Enviro Services Private Ltd.* made a presentation and *inter-alia* provided the following information:

- i. The proposal is for setting up of Waste to Energy Power Plant with capacity of 48 MW based on Municipal Solid Waste at Sy. No 173, Jawaharnagar Village, Kapra Mandal, Distt. Medchal, Telangana.
- ii. SEIAA, Andhra Pradesh vide its letter dated 20.6.2012 issued EC for Integrated Municipal Solid Waste Management Project along with MSW based Power Plant with capacity of 48 MW. However, SEIAA vide their letter dated 3.10.2013 withdrawn the 48MW MSW based Power Plant from the EC. Subsequently, SEIAA on 25.10.2013 issued amendment of EC for inclusion of 19.8 MW instead of 48 MW MSW based Power Plant. However, 19.8 MW MSW based power plant could not be established.
- iii. Public Hearing for Integrated Municipal Solid Waste Management Project along with 48 MW Power Project was conducted on 29.3.2012 as part of EC dated 20.6.2012.
- iv. Nearest Railway station is Cherlapally Railway station at ~7 km S and Secundarabad Railway Station is ~13 km SW and Nearest Airport is Rajiv Gandhi International Airport at 35 km SSW from the project site. SH-1 is at 6.6 km W, NH-7 is at 10.8 km W from the proposed project.
- v. The present land use of the site is a treatment facility of municipal solid waste with all modernized facilities. The land has been handed over to the Hyderabad MSW Ltd for a period of 25 years on BOT basis by GHMC. There are no national Parks, Wildlife Sanctuaries within the study area of the proposed project. Kaparu Cheruvu, Rampalli Cheruvu and Shamirpet Cheruvu are located at 4.5 km SW, 7 km SE and 9 km N, respectively from the project site. Nagaram, Shamirpet, Dharmavaram, Ponnal, Yadagiripalli and Kesaragutta Reserve Forests are at 0.5 km SE, 3 km NW, 3.7 km NNE, 8 Km NNE, 5.5 km NE and 9.7 km NE from the project site, respectively.
- vi. The existing municipal solid waste facility is for processing of 5500 TPD MSW. The proposed project is sized for a capacity of 2400 TPD MSW with 4 combustors/boilers of 600 TPD capacity each and 2 units of turbo generators with capacity of 24 MW each is to be implemented in phased manner.
- vii. The area allocated for proposed project is 31.5 acres out of total area old 351.12 acres. The site is located at 17° 31’ 10.49” N latitude and 78° 35’ 07.52” E longitude. Exact co-ordinates of the boundary are given in the table.

POINT	LATITUDE	LONGITUDE
A	17° 31’10.49” N	78° 35’07.52”E
B	17° 31’10.06” N	78° 35’17.42”E
C	17° 31’01.75” N	78° 35’06.72”E
D	17° 31’01.31” N	78° 35’16.41”E

- viii. Alternate sites analysis was not considered because the land required for proposed project is 31.5 acres which is within the total Integrated Municipal Solid Waste Management Project area of 351.12 Acres. No additional land to be acquired and there is no displacement involved.
- ix. Around 400 people will get direct employment by the proposed project and around 100 people will get indirect employment.
- x. MSW requirement will be 2,400 TPD out of available 5500 TPD. Characteristics of RDF would be Net Calorific Value: 2000-2200 Kcal/kg; Bulk Density: 200-350 kg/m³; Moisture: 15-20%; Ash content: upto 25%.
- xi. The process water requirement for the project is 1425 KLD, of which cooling tower makeup is 750 KLD and DM plant/ Boiler makeup is 675 KLD. The waste water of 438 KLD will be generated which includes 262 KLD from cooling tower blow down 106 KLD from boiler blow down and 70 KLD from DM generation.
- xii. The total power required for operations is 7200 kW and the construction power/commissioning power/backup power source will be met from TSTRANSCO. After the power plant is operational the power requirement will be met from its own production and the surplus will be interconnected to TSTRANSCO.
- xiii. Fly ash and bottom slag generation will be 670 TPD and Flue gas treatment residues production will be 10 TPD which will be disposed in sanitary landfill. Total ash generated from both blocks of 24 MW WtE put together will be maximum of about 2,44,550 TPA. Dry fly ash collected from the bag filter hoppers and economizer hoppers and ash collected from the furnace bottom, Evaporator/ super heater bottom hoppers can be used for landfilling, cement or brick manufacturing. Estimated Project Cost is Rs. 720 Crores.

(7.3.2) Committee mentioned that the earlier EC granted by SEIAA was for Integrated Municipal Solid Waste Management Project along with 19.8 MW MSW based Power Project. As 19.8 MW power project has not been established, the proposed project cannot be considered as expansion project from 19.8 MW to 48 MW. However, since it is an integrated MSW management project, certified RO compliance report for existing EC issued by SEIAA may be submitted at the time of appraisal for EC. Committee noted that project proponent did not provide the characteristics Municipal Solid Waste such as CHONS composition (Ultimate Analysis) and waste segregation process. Committee also took note that the public hearing earlier conducted was on 29.3.2012 which is more than 3 years old. Hence, PP's request for exemption of Public Hearing cannot be considered. Committee also noted that there is a reserved forest adjacent to the proposed site and several villages are located nearby proposed site. Committee advised that PP shall draw appropriate environmental management plan considering the sensitive locations such as villages and reserved forests.

(7.3.3) Committee after detailed deliberations, **recommended for grant of following ToRs in addition to standard ToR** appended as Annexure-A1.

- i. Details of characterisation of Municipal solid waste, its segregation process and disposal of waste management plan shall be submitted along with EIA.
- ii. Toxicity Characteristic Leachate Procedure (TCLP) test shall be conducted for any potential of leaching heavy metals into the surrounding areas as well as into the groundwater.
- iii. Ground water samples shall be collected and analysed in and around the MSW site and at all the villages within 10 km radius.

- iv. Prior permission from the State Forest Department should be taken regarding likely impact of the proposed project on adjacent reserved forest. Measures should be taken to prevent impact of leaching of heavy metals, particulate emissions / fugitive emissions, if any from the proposed plant on the surrounding reserve forest or other Forests located within 10 km radius of the project. Further, Conservation Plan for the conservation of wild fauna in consultation with the State Forest Department should be prepared and implemented
- v. Public Consultation shall be conducted for the proposed power project in accordance with procedure prescribed in the EIA Notification, 2006
- vi. Certified compliance report from RO, MoEF&CC for the EC dated 20.6.2012 and amendments dated 3.10.2013 and 25.10.2013 shall be submitted.
- vii. A plan for greenbelt development with local species, area and budget shall be submitted.

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7.4 Modernization and Expansion of existing Power Plant from 741.7 MW to 999.7 MW Imported Coal based at Renusagar, Distt. Sonbhadra, Uttar Pradesh by M/s Renusagar Power Plant, Hindalco Ind. Ltd.-reg. Amendment in EC. (File No: J-13012/148/2008-IA.II(T) & Online no:IA/UP/THE/10403/2008)

(7.4.1) The Project Proponent (PP) submitted online application on 22.5.2017 for amendment in the EC dated 21.1.2013 for change in coal source from imported coal to domestic coal. PP along with their environmental consultant, *M/s Bhagavathi Ana Labs Pvt. Ltd.* made a presentation and *inter-alia* provided the following information:

- i. Environmental Clearance for modernization and expansion of existing power plant from 741.7 MW to 999.7 MW Imported Coal based at Renusagar, Dist. Sonbhadra, Uttar Pradesh has been issued by the Ministry on 21.1.2013.
- ii. The incremental power generation of 258 MW (expansion from 741.7 MW to 999.7 MW) is through 98.3 MW modernization of existing units and through new units of 79.7 MW and 80 MW (98.3 MW+79.7 MW+80 MW=258 MW). Modernisation of 98.3 MW has been implemented. However, 79.7 MW and 80 MW Captive power plants could not be implemented. Total power plant in operation is 840 MW.
- iii. As per the existing EC, the requisite coal was to be sourced as per details given below:

Sr.No	Type of coal	Quantity	Characteristics
1	Linkage coal from Krishnashila mines of NCL and coal from open market	5.29 MTPA (78.61%)	S-0.5% Ash-40% GCV-3000 kCal/kg
2	Imported Coal from Indonesia	1.439 MTPA (21.39%)	S-0.4% Ash-10% GCV-4200kCal/kg

- iv. Proposed fuel quantity is as below:

Sr.No	Type of coal	Quantity	Characteristics
1	Linkage coal from Krishnashila mines and coal from NCL/CCL, Washery tailings/middlings/rejects	90-98%	S-0.3-0.46% Ash-30-34% GCV-3400-4200 kCal/kg
2	Imported Coal	1-5%	S-0.54-0.58% Ash-10-14%

			GCV-5200-5800 kCal/kg
3	Agri residues	1-5%	S-0.04-0.05% Ash-14.5-16.5% GCV-2900-3400 kCal/kg
Total fuel quantity of 17,790 TPD (6.5 MTPA)			S-0.4% Max Ash-34%Max GCV-3652 kCal/kg

- v. Coal requirement for 999.7 MW is 6.5 MTPA. The break-up of change in coal quantity, source and transportation mode are as below:

Sr. No.	Source of coal	Existing (MTPA)	Proposed (MTPA)
1	Krishnashilla NCL coal mines through BPC combined with ARW Linkage coal (3.07 MTPA existing old linkage+0.433 MTPA recent linkage e-auction)	3.5 (Rail up to Krishnashilla siding+ 4.6 km beltpipe conveyor+ 2.85 km aerial ropeway)	4.0 (Rail up to Krishnashilla siding+ 4.6 km beltpipe conveyor+ 2.85 km aerial ropeway)
2	Tailings/middlings/washery rejects	1 MTPA (Rail up to Krishnashilla siding+ 3km road from rail siding to plant)	1 MTPA (Rail up to Krishnashilla siding+ 3km road from rail siding to plant)
3.	Coal from NCL mines/ Rice husk	0.9 (by road as NCL mines are located at a distance of 10-20 km from the plant. Or if NCL permits to transport by rail, it will be brought up to krishnashilla siding and thereafter by road for 3 km)	0.4 (by road as NCL mines are located at a distance of 10-20 km from the plant. Or if NCL permits to transport by rail, it will be brought up to krishnashilla siding and thereafter by road for 3 km)
4	Domestic coal from NCL mines/linkage coal (Krishnashilla/Bina mines/NCL Mines)	1.1 MTPA (transportation by rail and road combination)	1.1 MTPA (transportation by rail and road combination)
Total		6.5 MTPA	6.5 MTPA

- vi. Initially 1-2% petcoke has been proposed. However, petcoke will not be used in light of NGT directions to State Govt. to declare whether the petcoke is an approved fuel or not their order dated 16.5.2017 in OA No.471/2016.

- vii. Renusagar does not have any rail connectivity as it is land locked from all the four directions. Nearest railway Public siding is Krishnashilla siding which is at 3 km from the plant. Accordingly coal movement from siding is by road to plant.
- viii. NCL/CCL mines are making coal under e-auction available by road mode since they have limited infrastructure like CHPs, Silos, wharfwalls, rail connectivity etc.
- ix. Due to change in fuel source, SO₂ emission load will reduce significantly from 2272.6 g/sec to 1647 g/sec. NO_x emission load remains the same at 844 g/sec based on 260 g/Giga Joules. PM emission load remains the same at 63.6 g/sec based on 100 mg/Nm³.
- x. Impact due to road transportation is anticipated. Existing traffic in terms of Passenger Car Unit (PCU)/day of SH-75E is 10,746. The traffic after proposed change in fuel source is 10,198 PCU/day. Capacity of the road as per IRC is 15,000 PCU/day.
- xi. Certified EC compliance report by RO, Lucknow dated 1.5.2017 has been submitted.

(7.4.2) Committee noted that the EC dated 21.1.2013 is for expansion of power project from 741.7 MW to 999.7 MW which is essentially incremental power generation of 258 MW permitted based on imported coal from Indonesia/South Africa. Out of 258 MW, only 98.3 MW has been implemented and remaining 159.7 MW (79.7 MW+80 MW) could not be established. The total power plant in operation is 840 MW (741.7 MW+ 98.3 MW). PP claims that initial 741.7 MW power project is based on domestic coal. However, details of EC for 741.7 MW could not be made available. Based on the information furnished by PP, domestic coal is being used for 98.3 MW instead of imported coal as stipulated in the EC dated 21.1.2013. As per EC dated 21.1.2013, it is stipulated that Sulphur and ash contents should not exceed 0.4% and 10% respectively. However, it is not being maintained as the domestic coal is used. Committee also noted that road transportation through 3 km road shall be avoided. It is suggested that rail line may be extended from Krishnashilla rail siding to nearest point of belt pipe conveyor/aerial ropeway. A wagon tippler may set up for unloading of coal to belt pipe conveyor/aerial ropeway. It is also noted that distance from rail siding to nearest point of belt pipe conveyor/aerial ropeway is only 300 m. Some of the EC conditions are yet to be complied like harnessing solar power within the plant premises, maintain Sulphur and ash content up to 0.4% and 10%, monitoring of heavy metals around ash dyke by IIT Roorkee, annual social audit by social institute, greenbelt development, location of monitoring stations in consultation with SPCB, details of CSR expenditure (capital: 3.10 crores and recurring: 0.6 crores) etc. The RO certified compliance report is inconclusive as it is mentioned against some of the conditions stipulated in the EC are agreed to comply, being complied, compliance in progress. It is also mentioned in the RO report that a cases is pending before NGT Principal Bench in OA/Appeal no. 276/2013. However, PP has not furnished any details regarding court case.

(7.4.3) Committee after detailed deliberations, **recommended for amendment in EC dated 21.1.2013 for change in coal source from imported coal to domestic coal for a temporary period of one year for the quantity of 1.4 MTPA** subject to following additional conditions:

- i. As proposed, trucks shall be covered with tarpaulin and properly stamped to ensure that tarpaulin is properly tied with the help of rope and truck is fully covered so that there is no spillage of coal and/or emission of dust during transportation.
- ii. 1.0 MTPA shall be transported through 3 km road from Krishnashilla rail siding to the plant. 0.4 MTPA shall be transported through NCL mines located at a

distance of 10-20 km from the plant. Water sprinkling, sweeping and dust control measures shall be carried out for minimising the air borne dust.

- iii. Feasibility of connecting rail line from krishnashila siding to belt pipe conveyor/aerial ropeway shall be examined and the implementation shall be achieved within one year. Coal transportation by road shall be minimized.
- iv. New emission standards as per the MoEF&CC vide Notification dated 7.11.2015 shall be achieved, as applicable.

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7.5 3x800 MW Patratu Super Thermal Power Project (PSTPP), Phase-1 at village Patratu, Distt. Ramgar, Jharkhand by M/s Patratu Vidyut Utpadan Nigam Limited-red. EC.(File No: J-13012/21/2015-IA.I(T) &Online no: IA/JH/THE/32025/2015)

(7.5.1) Project Proponent (PP) submitted online application for grant of Environmental Clearance (EC) on 9.6.2017. Terms of Reference (ToR) for the proposed project has been issued by the Ministry on 7.6.2016. PP along with the environmental consultant M/s Visiontec Consultancy Services Pvt. Ltd. made the presentation inter-alia submitted the following information:

- i. The proposed project is for establishing 3x800 MW Patratu Super Thermal Power Project (Phase-I) at Patratu, Dist. Ramgarh, Jharkhand within the existing premises of Patratu Thermal Power Station by M/s Patratu Vidyut Utpadan Nigam Ltd. which is a joint venture of M/s NTPC and M/s Jharkhand Bidyut Vitaran Nigam Ltd.
- ii. Existing Patratu Thermal Power Station (PTPS) consists of 10 units having configurations as given below:

Units	Configuration
Unit-1-6	4x50MW & 2x100 MW
Unit-7-10	4x110 MW

These units are 30-50 years old with estimated heat rate ranging from 3500 - 4700 kCal/KWh leading to higher generation cost. Some of these units were shut down for last 13 years. The power station has been completely shut down since 24.1.2017. Units-1, 3, 5 & 8 have been deleted from installed capacity. CEA has been approached for phasing out of Units-4, 6, 7, 9 & 10.

- iii. Patratu STPP, Phase-I is located within Patratu Thermal Power Station (PTPS) near villages Hesla, Jaynagar, Koto, Katia and Balkudra in Ramgarh district of Jharkhand. The nearest Patratu railway station is (on Gomoh-Barkakana-Garwa Road Section of ECR) towards NE direction at about 2.8 Km. The site is located on the left bank of Nalkari River (150 m plant boundary), which is a tributary of the Damodar River. HFL of Nalkari River is 367.5 m near Patratu TPS in the year 1958 prior to construction of the Nalkari dam.
- iv. The proposed site is located at Latitude of 23°37'53" N to 23°39'07" N and Longitude of 85°16'57" E, to 85°17'59" E near Patratu town at about 4km distance in Ramgarh district of Jharkhand. The site is approximately 35 km from district headquarter Ramgarh and about 45 km from Ranchi. National Highway Nos. 33 & 23 are located at approx. 21 km and NH-75 at about 27 km from Plant boundary. The nearest Railway Station is Patratu which is towards NE direction at a distance of about 2.8 km on Barkakhana - Barwadih Railway line. Nearest commercial airport is Ranchi at a distance of about 45 km by road.
- v. Koto Protect Forest (PF), Tokisud PF, Sankul PF, Aswa PF, Ghaghra PF, Jarad PF, Haiharpur PF, Lem PF, Bicha PF, Rarha PF are within 10 km radius of the proposed projects. There are no wildlife sanctuaries, national parks and other protected areas within 10 km radius of the proposed project.

- vi. Coal-fired supercritical power plants operate at very high temperature and pressure (580°C with a pressure of 23 MPa) resulting much higher heat efficiencies (46%), as compare to sub-critical coal-fired plants which operates at 455°C and efficiency of about 40%.
- vii. The land requirement for the proposed power project is approx. 1,234 acres. However, there is no acquisition of land involved as the existing land of Patratu Power Station will be utilised for the proposed power project. The plant facilities for proposed project (Phase-I:3x800 MW) such as main plant, ash disposal area, township and railway track would be accommodated within the 1,234 acres out of 1,859 acres of land agreed to be transferred to PVUNL for PSTPP, Phase-I & II. Out of 1,234 acres, that is required for Phase-I, 1175.437 acre land is allotted for transfer to PVUNL vide SANKALP letter No. 782 dated 16.03.2016 of Department of Energy, Government of Jharkhand and 58.563 acre shall be transferred later. The land requirement has been duly optimized to meet the CEA guidelines.
- viii. Break-up of land is main plant + greenbelt + township: 453.667 acres, ash dyke -1+ corridor: 339.190 acres, ash dyke-2+ corridor: 347.8 acres, Rail track corridor: 34.78 acres, area to be transferred later: 58.563 acres.
- ix. As per SANKALP dated 16.03.2016 of Govt. of Jharkhand, the land for Patratu STPP, Phase-I, involves 431.522 acres of forest land, which has already been transferred to the erstwhile power company.
- x. Annual coal requirement for the proposed project is 13 MTPA. Ministry of Coal, GOI re-allocated Banhardih captive coal block to JUUNL for end use of Patratu expansion, Phase-I vide order dated 30.06.2015 and later accorded “in-principle” approval to assign Banhardih coal block to PVUNL vide letter dated 11.09.2015. A Deed of Adherence for allocation of Banhardih coal block from JUUNL to PVUNL has been entered on 02.06.2017. EC and FC for the Banhardih coal block is yet to be obtained. It is anticipated that, obtaining the statutory clearances and commencement of production from the Banhardih coal block shall be achieved before the commercial operation date (COD)of the first unit (1x800 MW) of Patratu STPP, Phase-I. However, to meet the coal requirement of the project in the intervening period, if any, PVUNL has applied to MoC vide letter No. PVUNL/CEO/002 dated 07.06.2017 for grant of “Bridge Linkage” for the end use in Patratu STPP, Phase-I (3x800 MW).
- xi. The envisaged mode of coal transportation from the coal mine to the power plant is by captive Merry-go-round (MGR) system if it is available as envisaged from nearby mines at Banhardih, alternatively Indian Railways System shall be utilized for delivery of coal through BOBR/ BOX- N wagons. For coal transportation, merry-go-round (MGR) system has been proposed.
- xii. Coal characteristics of Banhardih coal block are as follows: Ash content: 10-51%, Sulphur: 0.6-0.9%, Moisture: 6-11%, GCV-3113-4324 kcal/kg.
- xiii. Existing PTPS has a 33 kV Switchyard adjacent to the 132 kV switchyard and connected to it through 2x50 MVA Auto transformer. The requirements of the construction power supply for the project can be met by 2 no. 6.6 kV feeders from existing 6.6 kV system. Necessary construction power with 6.6 kV ring main/ LT sub-stations shall be provided in the required power plant area.
- xiv. Water requirement for construction purposes shall be met from the water network of existing Patratu Thermal Power Station. The water requirement for the operation period is estimated to about 16 Cusecs (38,640 m³/day) for 3x800 MW Patratu STPP, Phase-I, based on Air Cooled Condenser (ACC) Technology. Water will be sourced from Patratu (Nalkari) Reservoir at 2.4 km. The water requirement for the proposed project shall be sourced from the Patratu (Nalkari) Reservoir on Nalkari

river. Permission from JUUNL for withdrawal of 27 Cusecs of water for Phase-I from Patratu Reservoir has been obtained on 15.01.2016.

- xv. Construction of utilities such as power lines, pipelines, rail lines, MGR system.
- xvi. Baseline Data collected has been collected for the Post-Monsoon Season i.e. from October 2016 to December 2016. However, the monitoring is in progress till September, 2017. Pre-dominant wind direction in the study area is towards NW. Ambient Air Quality monitoring has been carried out from 8 locations. Results indicated that the values of different air quality parameters such as PM₁₀: 51.7-72.4 µg/m³, PM_{2.5}: 26.8-47.2 µg/m³, SO₂: 20.2-31.8 µg/m³, NO_x: 18.7-28.2 µg/m³, CO: < 2 mg/m³, Hg and O₃: BDL.
- xvii. Noise levels have been monitored at ten locations during post-monsoon. Noise levels are in the range of 42.16-64.26 dB(A) during daytime and 38.74-45.20 dB(A) during night time. Noise levels during day time and night time are well within the standards prescribed vide MoEF&CC notification.
- xviii. Soil samples have been collected from ten locations in and around the proposed plant. pH of the soil ranged from 7.96 to 8.42 indicating that the soils are slightly alkaline to moderately alkaline in nature. The soil in the study area is sandy ranging from 74.6 to 91.2%. The electrical conductivity was observed to be in the range of 0.11 to 0.58µS/cm. The nitrogen concentrations are in the range of 145.1 to 282.46 kg/ha indicating that soils have better quantities of nitrogen. The phosphorous concentrations are in the range of 28.11 to 51.24 kg/ha indicating that soils have from less to average sufficient quantities of phosphorus. The potassium concentrations range between 76.4 to 104.26 kg/ha, which indicate that the soils have very less to less quantity of potassium.
- xix. During pre-monsoon season, ground water levels range from 2.25 mbgl at Barwatola to 11.19 mbgl at Bhurkunda. During post-monsoon, groundwater varied from 1.6 to 5.9 mbgl in Ramgarh district.
- xx. Eight surface and ground water samples each were analyzed for physicochemical, heavy metals and bacteriological parameters as per the procedures mentioned in Standards as per IS-2296 Class -'C' and IS: 10500 respectively.
- xxi. Surface water quality: The pH values of Surface water was in the range of 6.4-7.52 with total dissolved solids in the range of 96-196.2 mg/l. BOD was in the range of 0.6-2.4 mg/l; Total Hardness: 24.6-68.7 mg/l; Chlorides: 4.6-36.4 mg/l; Calcium: 8.6-18.2 mg/l; Sulphate: 0.52-14.2 mg/l; Nitrate: 1.38- 2.6 mg/l. Overall, the surface water samples were found within the prescribed limits.
- xxii. Ground water quality: The pH values observed were in the range of 6.18-7.42, with total dissolved solid ranging from 94-458 mg/l. Total Hardness was in the range of 72.4-788.4 mg/l, exceeding at two location during one month. The fluoride ranged from 0.08-1.52 mg/l, (1.52 mg/l being exceeding at one location in a month). The concentration of alkalinity, sulphates and nitrates in all the samples were less than prescribed limits. The total coliforms were found to be less than <1.8 mg/l.
- xxiii. Heavy metal concentrations were found to be within the limit for the all three months except Iron (Fe) ranging from 1.18 to 2.1 mg/l in ground water and 0.18 to 2.2 mg/l in surface water samples. The high values of iron may be due to geogenic reasons.
- xxiv. The dominant tree species in the study area is Simuli (*Bombax cieba*), Mahua (*Madhuca longifolia*), Kendu (*Diospyros melanoxylon*) and Palas (*Butea monosperma*) etc. No taxa were found threatened in the study area. No National Park, Wildlife Sanctuary, Biosphere Reserve is present within 10 km area of the proposed Patratu STPP, Phase-I. Patches of Protected Forests are present in northeast, south and south east direction of the plant site. The fauna is restricted to commonly found

mammals, reptiles and amphibians. No endangered animal species are found in the study area.

- xxv. Study area (Buffer Zone) covers about 71 villages of Ramgarh and Hazaribagh districts. At the time of survey, it was found about 15 villages of Ramgarh district come under 5 Km radius (core zone) of the proposed project site. Total population of the study area is 4,43,418, of which Scheduled Caste (SC) and Scheduled Tribe (ST) population is 61,899 and 1,09,232, respectively. It is also revealed that ST population constitutes about 25 per cent of the total population while for SC it is about 14 per cent. The Survey on 10 km radius of study area revealed a literacy rate at 75.41%.
- xxvi. There are several industries available within 10 km radius of the proposed project viz. Jindal Steel Power Limited (2.3 km), Burnpur Cements Ltd. (2.8 km), Sarbashree Vekatesh Iron and Alloys India ltd. (8.2 km), Urimuri Coal Mines (5.2 km), Giddi Coal Mines (7 km), Raligara Coal Mines (8.9 km), Indo-Asahi Glass Co. Ltd (8.15 km), Pali Hills Brewries Pvt. Ltd. (2.8 km), HR Food Processing Pvt. Ltd (2.8 km).
- xxvii. The predicted 24 hourly maximum incremental ground level concentrations in the study area are PM₁₀: 1.8 µg/m³, PM_{2.5}: 1.16 µg/m³, SO₂: 10 µg/m³, NO_x: 10 µg/m³ at a distance of 5.2 km. Total resultant ground level concentrations are within the NAAQ standards.
- xxviii. Total ash generation is 4.8 MTPA considering the average ash content of 37%. Fly ash is 3.84 MTPA and Bottom ash is 0.96 MTPA. Extraction of dry fly ash along with suitable storage facilities shall be installed. Provision shall also be kept for segregation of coarse and fine ash, loading this ash to closed/ covered trucks and also for loading fly ash into rail wagons. This will ensure availability of dry fly ash required for manufacture of Fly Ash based Portland Pozzolana Cement (FAPPC) for cement plants and Ready Mix Concrete plants located in the vicinity of proposed project. The un-used fly ash will be stored in dedicated Ash Mound in dry form and will be supplied to the users as per the demand. PVUNL shall also set up fly ash brick manufacturing plant at proposed power plant, fly ash brick thus produced shall be utilized for in-house construction works.
- xxix. The excavation of old ash dykes are in progress and about 3 lakh cum of ash is being used in development/ improvement of balance work of Ranchi Ring Road, Section-VII.
- xxx. Risk Assessment has been carried out for credible scenarios for LDO (2x500 KL) and HFO (2x3100 KL) storage tanks. Coal dust explosion hazard has been identified at Crusher house and conveyor systems are most susceptible to this hazard. Risk mitigation and control measures have been proposed. Disaster management plan has been prepared for implementation in case of emergency.
- xxxi. Public Hearing for the proposed project has been conducted on 31.5.2017 at Rajya Samposhit, +2 Vidyalaya, Patraru, Ramgarh, Jharkhand by Jharkhand State Pollution Control Board. PH has been presided by ADM cum Director, DRDA, Ramgarh. Public Hearing proceedings have been submitted in Hindi. River and nalla pollution, CSR activities and infrastructure development, livelihood and employment opportunities, land acquisition and displaced villages, compensation and livelihood to displaced and affected villages are the major concerns of the public.
- xxxii. The project will benefit the local population by creating employment opportunities through ancillary and associated industries and improved infrastructure - better roads, education facilities, medical facilities and communication facilities.
- xxxiii. Dry fog dust suppression system at coal transfer points, ESP with 99.99% efficiency, 275 m height stack, low NO_x burners with SCR system, FGD system for Sulphur reductions, Air cooled condenser system, periodic environmental monitoring, greenbelt development are major environmental protection measures.

- xxxiv. Greenbelt development will be carried out in 50 acres.
- xxxv. The total manpower of power plant during construction phase will be about 1500. During operation period it is estimated that about 486 regular manpower which shall be fulfilled from within NTPC projects and about 600 contract labours shall be required.
- xxxvi. Estimated Project cost is Rs.14,896.28 Crores. Cost of Environment Protection measures is Rs. 3045.32 crores.

(7.5.2) Committee noted that the area demarcated for ash dyke/mound-1& 2 (339 acres and 348 acres) is more than the plant area (453 acres including greenbelt and township). PP proposed to dispose the flyash from the proposed project on the existing ash dyke and planned to make ash mound. However, Committee felt that the existing ash from the dyke should be first evacuated and there is no need to construct ash mound as the fly ash (100%) generated from the proposed power project shall be utilised. PP could not provide the volume of the existing two ash dykes and the quantum of flyash lying in there. If the exact quantity is not known, PP may have to carry out the drilling in the ash dyke area and estimate quantity of the ash. First priority is given to liquidate the ash lying in the two dukes. Committee also noted that there are typographical errors in the EIA such as baseline one season period was mentioned as October, 2016-December, 2017. Emissions have been predicted due to proposed project. However, emission and stack details of industries located within 10 km radius have not been accounted in the air quality prediction. PP claims that the emissions of all nearby industries would be attributed to baseline ambient air quality and there is no need for taking separate emission details of other industries for cumulative impact assessment. Further, committee noted that 50 acres proposed for greenbelt is very minimal and is not equivalent to 33% of the total area. Allocated budget of Rs. 5 crores for greenbelt, afforestation and landscaping is not adequate. Also, there is no financial budget commitment and year-wise expenditure plan for CSR/welfare activities in the surrounding villages and for fulfilling the public hearing commitments. Committee also noted that there is a forest land of 431.522 ha involved in the proposed project. Though it has been transferred to the erstwhile company, the legalities and applicability of FC Act may be examined by the Ministry. Public Hearing proceedings have been submitted only Hindi. Committee noted that Flora and Fauna details in the study area and forest lands area not authenticate and have been gathered from the website instead of collecting from the working plans available in the Divisional Forest Offices. As the tribal population consists of 25% in the study area, specific CSR plan has to be prepared for community development.

(7.5.3) Committee after detailed deliberations, **recommended for grant of Environmental Clearance** subject to submission of following additional information along with conditions stipulated at **Annexure- A2**:

- i. Details of volume of ash dykes and quantity of flyash. Plan along with timelines for evacuating and using flyash before starting the operations of proposed project. Undertaking by PP that there ash mound shall not be constructed.
- ii. Authenticated as well as primary baseline data shall be submitted for flora, fauna and bio-diversity.
- iii. Time bound action plan along with financial break-up for implementing CSR activities and public hearing commitments.
- iv. Action plan (area, species, density, financial allocation) for achieving 33% greenbelt development of the total project area.
- v. Construction and inert waste generated during phasing out of existing plants shall be disposed as per Construction and Demolition Waste Management Rules, 2016.

- vi. Undertaking be submitted that that there should not be any groundwater extraction during construction period.
- vii. As per the Revised Tariff Policy notified by Ministry of Power vide dated 28.01.2016, project proponent shall explore the use of treated sewage water from the Sewage Treatment Plant of Municipality/ local bodies/ similar organization located within 50 km radius of the proposed power project to minimize the water drawl from surface water bodies.
- viii. Thermal Power Plant shall achieve specific water consumption, zero liquid discharge and emission standards as per MoEF&CC Notification S.O. 3305(E) dated 7.12.2015 or subsequent notifications issued time to time.
- ix. MoEF&CC Notification G.S.R 02(E) dated 2.1.2014 regarding use of raw or blended or beneficiated or washed coal with ash content not exceeding 34% shall be complied with, as applicable.
- x. MoEF&CC Notifications on flyash utilization S.O. 763(E) dated 14.09.1999, S.O. 979(E) dated 27.08.2003, S.O. 2804(E) dated 3.11.2009, S.O. 254(E) dated 25.01.2016 and subsequent amendments issue time to time shall be complied with.
- xi. Separate Environmental Clearance shall be obtained for the township, as applicable.
- xii. Rooftop Solar lighting shall be provided for the residential houses in the surrounding villages as part of CSR activities. Agriculture, organic farming, modern irrigation techniques, training youth and women, community biogas plants, tribal welfare activities shall be part of CSR activities.
- xiii. Skill mapping of the Project Affected People (PAF) be carried out on a long-term basis for their livelihood generation. A report is to be submitted within 3 months to the Ministry from the date of issuance of environmental clearance.
- xiv. Modern methods of agriculture organic forming, compost/vermiculture making and utilization, drip/direct to root irrigation) to be promoted in and around the Project area.
- xv. Forest Clearance shall be obtained, if applicable.
- xvi. While implementing CSR,
 - Women empowerment is important. Therefore, proper skill based training/long term livelihood revenue generation be created for all them.
 - Computer facilities may be provided in the school along with a trained computer teacher to inculcate computer skill among the youths.
 - Water supply provisions shall be made for all the bio-toilets under Swachh Bharat Abhiyan.
 - Preventive health programme may be preferred than the curative health programme such as nutrition development of small children in and around the project.

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7.6 2x660 MW Super-Critical Technology Coal based Meja Thermal Power Plant near Kohadar, Bhagdeva & Mai Kalam Villages, Taluk Meja, Distt. Allahabad, Uttar Pradesh by M/s Meja Urja Nigam Pvt. Ltd.- reg.- Amendment in EC. (File No: J-13012/03/2008-IA.II(T) & Online no: IA/UP/THE/52631/2011)

(7.6.1) Project Proponent (PP) submitted the online application for amendment in EC for temporary transportation of coal by road. PP along with Environmental Consultant M/s Min Mec Conultancy Ltd. made presentation and inter-alia submitted the following information.

- i. Environmental Clearance for the establishing 2x660 MW Super-Critical Technology Coal based Meja Thermal Power Plant near Kohadar, Bhagdeva & Mai Kalam Villages, Taluk Meja, Distt. Allahabad, Uttar Pradesh has been issued

vide Ministry's letter dated 10.1.2011. Coal requirement for the proposed project is 7.34 MTPA which will be obtained from SECL.

- ii. Although, the project is in advanced stage of construction, commissioning of the railway siding of 26 km has been delayed due to land acquisition issues. The railway siding is a 26 km long track taking off from Meja road and Unchdih railway stations of North Central Railways upto plant premises. The work of railway siding is in full swing and is expected to be commissioned by March, 2018.
- iii. Unit-1 (1x660 MW) is in advance stage of completion. Trial run and commissioning activities are scheduled from July, 2017. To start the trial operations, synchronisation and commissioning of the unit, it is proposed to bring 2 Lakh tonnes of coal from SECL to Naini Railway Yard on Allahabad-Mughalsarai section through Railways and from Naini railway yard to the project by road through trucks/dumpers/tippers.
- iv. Two rakes per week will be required to be evacuated on an average through road transportation. A rake capacity is approximately 3480 Tonnes which will be transported through road in a single day. This will require total of 348 trucks per day (to and fro, with capacity of 20 Ton truck). However, transportation of coal through road will take place only for two days in a week.
- v. Three routes have been proposed i.e. Route-1:52 km, Route-2: 50km and Route-3: 60 km. It was stated that the roads are black topped and mostly in good condition. The road width at Ghurpur is undergoing widening upto 19 m, after which the road will have sufficient capacity. Plantation along the road side consists of closely planted mature trees.
- vi. All the three routes are feasible for coal transportation, but with varying degree of Design Service Volume (DSV) and Maximum Capacity. As the routes are to be used for a period of 1 year till the railway siding is completed, there will be additional traffic due to coal transportation as well as natural growth of the existing traffic.
- vii. Six monthly EC compliance report has been submitted by PP.

(7.6.2) Committee after detailed deliberations, **recommended for grant of temporary permission for road transportation of 2 Lakh Tons of coal for one year** subject to following additional conditions:

- i. GPS to be installed on all the trucks carrying coal.
- ii. MoEF&CC Notification S.O. 3305(E) dated 7.12.2015 and subsequent notifications issued time to time shall be implemented with respect to specific water consumption, zero liquid discharge and emission standards.
- iii. Trucks shall be covered with tarpaulin and properly stamped to ensure that tarpaulin is properly tied with the help of rope and truck is fully covered so that there is no spillage of coal and/or emission of dust during transportation.
- iv. Water sprinkling to be carried through out the road for control of fugitive dust emissions.
- v. Railway siding shall be constructed before the expiry of validity of EC i.e. before 9.1.2018.
- vi. Treated sewage water shall be used if there are any STPs located within 50 km distance from this project.

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7.7 Expansion of 2x600 MW TPP to 2800 MW by addition of 2x800 MW units at Village Yelluru, Taluk Udupi, Distt. Udupi in Karnataka by M/s Udupi Power Corporation Limited (UPCL)- reg. Reconsideration of EC.(File No: J-13011/12/2015-IA.I(T) & Online no:IA/KA/THE/27676/2015)

(7.7.1) The proposal for grant of EC has been earlier considered by the EAC in its 5th meeting held on 26.4.2017 wherein Committee sought the following additional information:

- i. Additional land for Proposed Phase-II power project is stated to be non-forest land which has been acquired by KIADB. However, DCF, Kandapura Division vide letter dated 17.2.2017 informed that the Survey nos.16/2F, 16/2F2, 16/2F3, 16/2F5, 17/2F1A, 17/24, 160/2A2A, 160/2A2D and 160/1 in Village Santhuru, Udupi taluk having deemed forest land of about 1.32 ha and attract provisions of Forest (Conservation) Act, 1980. If the said land is part of 730 acres, necessary forest clearance is to be obtained. In case, this land is not acquired, a certificate from DCF shall be obtained stating that the said forest land is not being diverted for the proposed project.
- ii. Details of court cases pending in different Courts/Tribunal should be submitted by the PP as in the format of undertaking in the stamp paper including status of all the court cases.
- iii. As per Ministry's OM dated 1.11.2010, a firm coal linkage between the imported coal supplier and the PP in the form of MoU shall be submitted.
- iv. As mentioned at above para, a logical and scientific explanation is required from the NEERI in support of this project that as to why this project is viable now as earlier NEERI had recommended in their carrying capacity report that due to various ecological sensitive features of the Region, coal based TPP in the Region would be unsustainable even with installation of FGD.
- v. As per the Fly Ash Utilization Notification, fly ash utilization Plan, MoUs with other companies for utilizing fly ash shall be submitted.

(7.7.2) PP vide their letter dated 2.6.2017 submitted the information as sought by EAC. PP along with environmental consultant M/s NEERI made presentation and submitted the following information:

- i. DCF, Kundapura, Karnataka Forest Department vide their letter dated 27.5.2017 mentioned that there is no forest land including deemed forest is being diverted in favour of M/s UPCL.
- ii. There are four ongoing environmental cases pending related to the existing 2x600 MW Thermal Power Plant pending before Hon'ble NGT, Chennai. Application nos.26/2013m 27/2013, 28/2013, 51/2012. All the four cases are clubbed together and sub-judice before the NGT. Written statements are duly filed by all parties including MoEF&CC and final hearing of all parties on admissibility and merits are under progress.
- iii. In addition, there are 28 cases pending on different subjects at various courts. i.e. Arbitration suits no.40-43/2011, 45-48/2011, Criminal case no.1712/2011, Criminal petition no.5671/2011, MWA CR.06/2016, Appeal nos.1/2012, 5/2012, 50/2012 & 51/2012, Civil appeal no.2230/2013, EN 12 PPC 2013, Misc. Case Np.18/2013, HRC No.5306/2011 & 3422/2012, Appeal no.C/21705/2014-DB, C/20589/2014-DB & C/25032/2013-SM, WP No.2282/2014 & 18321/2014, Review petition no. RP/19/2015 & RP/22/2015, Civil appeal no.13846 to 13848/2015, 13833-13834/2015 & 8571/2015, Petition no.242/MP/2016 & 60/RP/2016, Appeal no. C/21839/2016, OS no.119/2016, MWA CR no.15/2016 and WP no.48010/2014.

- iv. MoU between M/s Adani Global PTE Ltd. and Udupi Power Corporation Ltd. has been made on 16.1.2017 for supply of 9 MTPA imported coal with GCV: 4000-5000 kCal/Kg, Ash content: 18-25%, Sulphur content: Not specified.
- v. NEERI has provided the scientific explanation on 2.6.2017 on environmental viability of the proposed project vis-a-vis previous recommendations of NEERI during Supreme Court directions.
- vi. A report named “Examination of Environmental Viability and sustainability of Select Projects” submitted by NEERI in 1996 based on the review of the MPC EIA report, highlighted the issues related to mainly following areas:
 - a. MPC project siting which was found violative of applicable CRZ regulations in 1996.
 - b. Insufficient information in EIA for certain environmental impacts and activities by M/s MPC.
 - c. Type of Pollution Control Measures including FGD with 70% efficiency resulting into higher predicted SO₂ concentration in the area in light of different standards for ambient air quality in sensitive area in 1996.
 - d. Geo-hydrological conditions of the area and interrelation with activities proposed by MPC like use of freshwater from Mulki estuary.
 - e. Impact assessment for marine environment and fisheries was not found satisfactory in EIA report for M/s MPC and it was highlighted that pollution problems in the aquatic eco-systems could occur if project heavy industrialisation in the region is not properly planned and managed.
 - f. It was observed that in the project appraisal process, the affected population and the environmentally aware citizens were not taken into confidence.
- vii. NEERI mentioned that there is no inconsistency in the scientific conclusion by NEERI in 1996 for M/s MPC and in 2016 for M/s UPCL. Main aspects, as mentioned in the report of M/s MPC, have been considered in the EIA study conducted for the present UPCL project.
- viii. Salient points among the observations of NEERI are as below.
 - a. UPCL project is more than 4.5 km from the Arabian Sea and 5 km from the Mulki river. Power plant is outside the CRZ area and only seawater pipeline for the project is crossing the CRZ land which is a permissible activity as per CRZ notification.
 - b. In 1996, it was reported that geographically the District is wedged between the Western Ghats to the east and the Arabian sea to the West. The nearest boundary of proposed ESZ for Western Ghats from the point source emission (stack) is 23 km away.
 - c. Storm water management will be done by installing intercepting drains in the plant area and led to rainwater collection tanks, which will help in conserving the freshwater. It is estimated that during peak monsoon season about 5% of water requirement can be met by pumping the rainwater to cooling towers.
 - d. PP provided additional study on wildlife and conservation plan conducted by Dr. Bharat Jethva, a senior wildlife ecologist. Authenticated list of flora and fauna in 10 km radius was obtained. A site specific wildlife conservation plan including activity wise funds proposal has been prepared in consultation with DCF. Recommendations of the study include plantation of mangroves especially on the banks of Mulki estuary, support to forest department for rescue and rehabilitation of scheduled species, if encountered in the area. Total fund of Rs.195 lakhs has been proposed for wildlife conservation in the reports submitted by M/s UPCL.

- e. PP obtained a letter from DCF which clarifies that there is no eco-sensitive zone within 10 km radius of the project.
- f. Hydro-geology study of the area is found that major water bearing formation in the study area is laterite followed by weather granite. However, apart from localized construction impacts at the plant site during construction, no proposed activity or aspect of the UPCL expansion is found to be interacting and significantly impacting the soil environment or geological formation. Hence, the project activities of UPCL are not envisaged to alter the soil characteristics of the region.
- g. Present seawater parameters are found within normal range of values that are reported from unpolluted coastal areas. Proposed expansion project is not envisaged to affect any estuary in the area as there is no water withdrawal or discharge for the project proposed in any estuary/river.
- h. In 1996, NEERI recommendations were based on the NAAQS standards available in 1996 for SO₂ standard was 15 µg/m³ (annual) and 30 µg/m³ (24 hourly). Present ambient SO₂ standard has been modified to 20 µg/m³ (annual) and 80 µg/m³ (24 hourly). The 98th percentile values of 24 hourly concentrations of SO₂ ranged from 5-23 µg/m³, whereas the annual average concentrations of SO₂ ranged from 4-8 µg/m³. It is found that concentrations of SO₂ in Ambient Air at present is far less than limits prescribed in NAAQS.
- i. UPCL have proposed to install FGD in both the units to limit SO₂ emissions to 100 mg/Nm³. As a result, total SO₂ emissions from the plant will come down from the present 147.61 TPD (from 1200 MW) to 40.16 TPD (from 2,800 MW in future). Thus, there will be net reduction in SO₂ emissions by 107.45 TPD which is substantial (72%).
- j. The proposed project after expansion is not anticipated to exert any significant impact on any receptor beyond 10 km radius of the stack and eco-sensitive area of the Western Ghats ESZ.
- k. Expansion project is proposed with cooling towers and incremental temperature of less than 5 degree C. NIO Goa has found that marine impacts will be marginal and will be limited to 500 square meters from the outfall point. Mangroves on the banks of Mulki river are at 7.5 km SE from the land fall point of sea water pipeline on the coast.
- l. UPCL has proposed additional 730 acres land requirement for expansion by 2x800 MW. Area proposed for ash dyke for expansion proposal is 278 acres around the existing ash dyke. Out of this area, 91 acres is provided for greenbelt development around the ash dyke.
- m. As per present conditions and proposed expansion for coal and flyash storage area, to be bottom lined with impervious layer of adequate material as per applicable standards. Present water quality analysis in the region does not indicate any contamination of groundwater due to plant activities.
- n. To ensure day to day off-take of flyash from the UPCL and to avoid storage of flyash in ash ponds in case of emergency and no off-take by users on certain days, it is recommended to study the feasibility of a cement grinding unit of 1-2 MTPA within or in proximity of the UPCL.
- o. Application of technological advancements taken place in last two decades with stricter compliance to emission norms makes the present proposal environmental viable.
- p. UPCL has signed MoU with M/s Ashtech for off-take of 2500 Tonnes per day (TPD) of flyash, Magma Ash Tech Mangalore (2000 MT/day), Sun

Power Cement Palakkat (400 MT/day), Invicrete Cement Ltd (1000 MT/day), Vintech India Corporation (300 MT/day) for flyash disposal.

(7.7.3) Committee after detailed deliberations, **recommended for grant of Environmental Clearance** subject to the following additional conditions along with the conditions stipulated at **Annexure-A2**.

- i. All the recommendations of NEERI and NIO shall be implemented.
- ii. CRZ recommendations by KSCZMA shall be implemented.
- iii. As recommended by NIO, a cement grinding unit of 1-2 MTPA shall be set up for better utilisation of flyash.
- iv. Mangrove plantation shall be carried out in consultation with Forest Department on the banks of River Mulki and Arabina sea.
- v. As per the Revised Tariff Policy notified by Ministry of Power vide dated 28.01.2016, project proponent shall explore the use of treated sewage water from the Sewage Treatment Plant of Municipality/ local bodies/ similar organization located within 50 km radius of the proposed power project to minimize the water drawl from surface water bodies, if any.
- vi. Compliance of EC conditions, E(P) Act, 1986, Rules and MoEF&CC Notifications issued time to time shall be achieved by a qualified environment officer to be nominated by the Project Head of the Company who shall be responsible for implementation and necessary compliance.
- vii. MoEF&CC Notification S.O. 3305(E) dated 7.12.2015 shall be implemented with respect to specific water consumption, zero liquid discharge and revised emission standards. The PM, SO₂, NO_x and Hg emissions shall not exceed 30 mg/Nm³, 100 mg/Nm³, 100 mg/Nm³ and 0.03mg/Nm³ respectively. The specific water consumption shall not exceed 2.5 m³/MWh and zero wastewater discharge shall be achieved.
- viii. MoEF&CC Notifications on flyash utilization S.O. 763(E) dated 14.09.1999, S.O. 979(E) dated 27.08.2003, S.O. 2804(E) dated 3.11.2009, S.O. 254(E) dated 25.01.2016 and subsequent amendments shall be complied with.
- ix. Separate Environmental Clearance may be obtained for the proposed Township as applicable under EIA Notification 2006.
- x. Skill mapping of the Project Affected People (PAF) be carried out on a long-term basis for their livelihood generation. A report is to be submitted within 3 months to the Ministry from the date of issuance of environmental clearance.
- xi. Modern methods of agriculture organic farming, compost/vermiculture making and utilization, drip/direct to root irrigation) to be promoted in and around the Project area.
- xii. While implementing CSR,
 - Women empowerment is important. Therefore, proper skill based training/long term livelihood revenue generation be created for all them.
 - Computer facilities may be provided in the school along with a trained computer teacher to inculcate computer skill among the youths.
 - Water supply provisions shall be made for all the bio-toilets under Swachh Bharat Abhiyan.
 - Preventive health programme may be preferred than the curative health programme such as nutrition development of small children in and around the project.

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7.8 2x800 MW Godda Thermal Power Project at Village Motia, Patwa, Gangta and Nayabad of Godda Block and Sondiha , Petbi, Gayghat, Ranganiya and Mali villages of Poraiyahaat Block, Distt. Godda, Jharkhand by M/s Adani Power (Jharkhand) Limited- reg. Reconsideration of EC. (File No: J-13012/01/2016-IA.I(T) & Online no: IA/JH/THE/54853/2016)

(7.8.1) The proposal for grant of environmental clearance has been earlier considered by the EAC in its 6th meeting held on 29.5.2017. EAC in its meeting held on 29.5.2017 sought following additional information;

- i. Status and documents related to land acquisition.
- ii. Water sufficiency and in-streams users during monsoon due to withdrawal of water for MCM.
- iii. Reply to the public representations and action plan to address the concerns of the public.
- iv. Water bodies are present in the proposed site. Map showing the details of water bodies. Details of diversion, if any.

(7.8.2) PP has submitted the information on 13.6.2017 as sought by EAC. PP along with M/s Greenc india Consulting Pvt. Ltd. has made the presentation and inter-alia submitted the following information:

- i. Land is being acquired by GoJ as per LARR 2013 & Jharkhand Right to Fair Compensation and Transparency in Land Acquisition, R&R rules, 2015. Under Section 11, publication of preliminary notification has been made on 24.3.2017-25.3.2017. Under Section 16, draft R&R scheme has been prepared and submitted to the District Collector on 11.4.2017.
- ii. Land for the power plant has been identified in Motia, Sondhiha, Gaighat, Gangta, Nayabad, Baliakita, Renganiya, Petbi and Patwa of Godda and Porraiyaat block of Godda District. Part of the land is Government land and the balance is Raiyati land.
- iii. Shri H.K. Mehta, Additional Advocate General, Jharkhand, Ranchi has given his opinion on 10.11.2016 regarding suitability of land coming in Santhal Pargana area. He opined that the Santhal Pargana Tenancy (Supplementary Provisions) Act 1949 (SPT Act), does not restrict acquisition of land for any public purpose either for the Government or for the company except section 69 of the SPT Act, however, subject to the restriction as provided under the proviso of sub section 2 of Section 2 of Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013.
- iv. Water sufficiency and in-stream users during monsoon due to withdrawal of water for 36 MCM have been submitted by the PP which was studied by WAPCOS. The report reveals that based on the drawl pattern of the PP for industrial use, there is sufficient water available for any in-streams users and is found to be more than 94% from June to October of any calendar year, which is based on the rainfall pattern of the area. Therefore, there is no impact to the downstream users during monsoon season. Total water withdrawal is only 3.8% of the total water available in the Chir river.
- v. Action plan for Public hearing concerns has been prepared and submitted. An amount of Rs. 10.60 crores has been kept aside for greenbelt development and Rs.50 Lakhs for Afforestation in surrounding villages. A budget of Rs. 143 lakhs has been provided for pond deepening purpose as part of Capital cost under CSR budget. Company has considered promotion of Professional Education by supporting students of educational institutions offering courses in Diploma

Engg., Nursing, Management, Medicine and in other technical subjects for which an amount of Rs.138 lakhs has been kept aside.

- vi. There are two streams passing and one unlined Kachcha canal passing through the proposed site. The streams are first order and second order streams, one on the western side and another on the eastern side. The stream on the western side will be retained and routed between the proposed water reservoir and the proposed ash dyke. The stream will thus be retained and the natural drainage profile will also be maintained. The second stream on the Eastern side of the plot will come under the footprint of the Power Plant. It is proposed to develop the drainage pattern of the Power Plant along the natural drainage profile and to include the inflow and outflow of the stream. Thus, the second stream will merge in the storm water drainage of the Power Plant and the natural drainage profile will be maintained. The unlined kachcha canal passing through the proposed site will be realigned along the western boundary of the Project site, retaining the points of entry and exits. Thus, the flow in the canal will also be maintained.

(7.8.3) Committee after detailed deliberations, **recommended for grant of Environmental Clearance** subject to the following additional conditions along with the conditions stipulated at Annexure-A2 :

- i. Land acquisition shall be carried out by the State Govt. in accordance with Santhal Pargana Tenancy Act, 1949, Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 and other prevailing laws. Documents in support of land acquisition after completion acquisition process shall be submitted to this Ministry as well as concerned Regional Office.
- ii. As per the Revised Tariff Policy notified by Ministry of Power vide dated 28.01.2016, project proponent shall explore the use of treated sewage water from the Sewage Treatment Plant of Municipality/ local bodies/ similar organization located within 50 km radius of the proposed power project to minimize the water drawl from surface water bodies.
- iii. Compliance of EC conditions, E(P) Act, 1986, Rules and MoEF&CC Notifications issued time to time shall be achieved by a qualified environment officer to be nominated by the Project Head of the Company who shall be responsible for implementation and necessary compliance.
- iv. MoEF&CC Notification S.O. 3305(E) dated 7.12.2015 shall be implemented with respect to specific water consumption, zero liquid discharge and revised emission standards. The PM, SO₂, NO_x and Hg emissions shall not exceed 30 mg/Nm³, 100 mg/Nm³, 100 mg/Nm³ and 0.03mg/Nm³ respectively. The specific water consumption shall not exceed 2.5 m³/MWh and zero wastewater discharge shall be achieved.
- v. MoEF&CC Notifications on flyash utilization S.O. 763(E) dated 14.09.1999, S.O. 979(E) dated 27.08.2003, S.O. 2804(E) dated 3.11.2009, S.O. 254(E) dated 25.01.2016 and subsequent amendments shall be complied with.
- vi. Separate Environmental Clearance may be obtained for the proposed Township as applicable under EIA Notification 2006.
- vii. Solar rooftops shall be installed in the surrounding villages as part of CSR activities.
- viii. Skill mapping of the Project Affected People (PAF) be carried out on a long-term basis for their livelihood generation. A report is to be submitted within 3 months to the Ministry from the date of issuance of environmental clearance.
- ix. Modern methods of agriculture organic farming, compost/vermiculture making and utilization, drip/direct to root irrigation) to be promoted in and around the Project area.

- x. While implementing CSR,
 - Women empowerment is important. Therefore, proper skill based training/long term livelihood revenue generation be created for all them.
 - Computer facilities may be provided in the school along with a trained computer teacher to inculcate computer skill among the youths.
 - Water supply provisions shall be made for all the bio-toilets under Swachh Bharat Abhiyan.
 - Preventive health programme may be preferred than the curative health programme such as nutrition development of small children in and around the project.

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7.9 2x600 MW and 3x800 MW Coal based TPP at Villages Kottai, Ariyagosthi, Villianallur & Silambimangalam, Taluk, Chidambaram, Distt. Cuddalore, Tamil Nadu by M/s IL&FS Tamil Nadu Power Company Ltd.- reg. Extension of validity of EC.(File No: J-13012/34/2008-IA.II(T) & Online no: IA/TN/THE/11883/20008)

(7.9.1) Project Proponent (PP) had submitted online application vide dated 30.5.2017. PP made a presentation and, *inter-alia* provided the following information:

- i. Environmental Clearance has been granted to M/s IL&FS Tamil Nadu Power Company Ltd vide Ministry's letter dated 31.5.2010 for setting up of 2x660 MW and 3x800 Thermal Power Project which was valid for five years i.e till 30.5.2015. However as per new notification 14.9.2016, the validity of EC can be presumed for 7 years i.e. till 30.5.2017.
- ii. Ministry vide its letter dated 14.8.2012 issued a corrigendum to EC for setting up Flue Gas De-Sulphurisation and monitoring of Sea water quality.
- iii. Further amendment to EC for change in configuration of TPP from 3600 MW (2x600 MW+3x800 MW) to 3180 MW (2x600 MW+3x660 MW) and transportation of coal by rail was issued vide Ministry's letter dated 4.2.2014 and 27.3.2015 respectively.
- iv. CRZ clearance for Captive port and desalination plant has also been obtained vide Ministry' letter dated 29.10.2010.
- v. A total of 1128 ha land has already in ITPCL possession. Fuel requirement is 13.40 MTPA of Imported Coal.
- vi. PP mentions that 2x600 MW TPP has already been established and is in operations. It is further mentioned that Rainwater disposal system, Coal handling system and Coal Stock yard, Ash Pond and Intake system for drawl of Sea water is also established for entire 3180 MW capacity.
- vii. For balance capacity of 1980 MW, the following facilities are yet to be developed:
 - a. Boiler Turbine Generator for 3 Units of 660 MW each.
 - b. 1x275 m stack.
 - c. Intake Pump House & Outfall pipes.
 - d. Captive Port and External Coal handling system.
 - e. Cooling towers and water systems (Desalination and DM Plant)
 - f. Power Evacuation.
- viii. Project facilities for 3x660 MW are in the planning phase and are expected to commence shortly.

(7.9.2) Committee noted that Project Proponent has submitted the application on the date of expiry of EC i.e. 30.5.2017. Committee felt that PP should have submitted application for extension of validity of EC at least 60 days prior to its expiry so that proper assessment can be done. Committee noted that there is a need to obtain the certified RO compliance report as the first two units (2x600 MW) are in operation. Committee also noted that validity of EC can be extended for 3 years to achieve the completion of

already commenced activities or for projects in which construction activities have progressed significantly/at the verge of completion. In the present case, Committee noted that PP has not commenced any construction activities for 3x660 MW. Further, completing construction activities for 3x660 MW and commissioning these units in three years time is not possible even if some auxiliary facilities have been set up as part of previous units. PP is advised to apply for fresh environmental clearance as they cannot achieve commissioning within 3 years. Also, the EC was accorded in May, 2010. The baseline environment has significantly changed. New industries must have come in that region.

(7.9.3) Committee after detailed deliberations, it has been decided that a three member sub-committee shall visit the project site and assess whether the project can be completed within next three years including the compliance to the EC conditions as applicable in its present form. The Sub-committee will submit the site visit report within 15 days and **accordingly the proposal has been deferred.**

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7.10 2x30 MW Captive Thyermal Power Plant in Budni Industrial Area, Distt. Sehore, Madhya Pradesh by M/s Trident Ltd.- reg. Amendment in EC (File No: J-13012/31/2013-IA.I(T) & Online no: IA/MP/THE/65321/2014)

(7.10.1) Project Proponent submitted online application on 9.6.2017 for amendment in EC for change in configuration of the steam turbine from 2x30 MW to 1x60 MW. PP vide their application and during the presentation inter-alia submitted the following information:

- i. Environment Clearance for setting up of 2x30 MW Captive Thermal Power Plant at village Budhni, District Sehore, Madhya Pradesh has been accorded vide Ministry's letter dated 23.9.2014 which is valid for five year i.e. till 22.9.2019.
- ii. Since the project is under basic engineering phase, no construction activities are undertaken so far, except for levelling and ground preparation.
- iii. Proposed amendment is for change the configuration CPP with 1x60 MW of steam turbine generator instead of 2x30 MW without change in fuel consumption, water and land requirement.
- iv. Since the capacity of the boiler will remain unchanged from the earlier consented levels (150 TPH boiler), no change in the coal consumption, land requirement, water consumption and emissions & discharges are envisaged from the earlier consented values.
- v. As a result of proposed amendment there will be reduction of PM emissions by an order of 40% from the earlier scenario. It has been proposed ESPs will be designed and installed to meet the PM emission levels less than 30 mg/Nm³. It has been mentioned that the proposed configuration will result in reduced auxiliary consumption, lesser foot print and more reliable.
- vi. The overall project cost of the revised proposal will increase from earlier estimated budget of Rs.377.85 Crores to about Rs. 495 Crores as per the current revised estimates as on June, 2017.

(7.10.2) Committee noted that though the proposal is of Category 'B' project, it was considered as Category 'A' because Ratapani Wildlife Sanctuary is located at 7.75 km from the project site. Committee noted that the recommendations of SC-NBWL were obtained on 21.1.2015 and Wildlife Clearance from Chief Wildlife Warden has been obtained on 18.3.2015.

(7.10.3) Committee after detailed deliberations, **recommended for amendment in EC for change in turbine generator from 2x30 MW to 1x60 MW along with correction in validity of EC for 7 years instead of 5 years** subject to following additional conditions:

- i. As proposed, FGD and ESPs shall be installed to achieve emissions levels PM < 30 mg/Nm³, SO₂<100 mg/Nm³ and NOX < 100 mg/Nm³.
- ii. As per the Revised Tariff Policy notified by Ministry of Power vide dated 28.01.2016, project proponent shall explore the use of treated sewage water from the Sewage Treatment Plant of Municipality/ local bodies/ similar organization located within 50 km radius of the proposed power project to minimize the water drawl from surface water bodies.
- iii. Compliance of EC conditions, E(P) Act, 1986, Rules and MoEF&CC Notifications issued time to time shall be achieved by a qualified environment officer to be nominated by the Project Head of the Company who shall be responsible for implementation and necessary compliance.
- iv. MoEF&CC Notification S.O. 3305(E) dated 7.12.2015 shall be implemented with respect to specific water consumption, zero liquid discharge and revised emission standards, as applicable.
- v. MoEF&CC Notifications on flyash utilization S.O. 763(E) dated 14.09.1999, S.O. 979(E) dated 27.08.2003, S.O. 2804(E) dated 3.11.2009, S.O. 254(E) dated 25.01.2016 and subsequent amendments shall be complied with.

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7.11 Expansion by addition of 1x350 MW Imported Coal based Thermal Power Plant (Phase II) at Village Kamalanga, in Odapala Taluk, in Dhenkanal Distt. in Odisha by M/s GMR Kamalanga Energy Ltd.- reg. Amendment Environment Clearance. (File No: J-13012/73/2011-IA.II (T)& Online no: IA/OR/THE/75/2008)

(7.11.1) Project Proponent (PP) submitted online application on 2.6.2017 for amendment of EC for change in land requirement aswell as extending the validity of EC. EC has been issued on 5.12.2011. However, PP did not attend the meeting. Member Secretary briefed the committee that PP requested for deferment of the project. **Accordingly, Committee deferred the proposal.**

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7.12 ANY OTHER ITEM WITH THE PERMISSION OF THE CHAIR.

As there being no agenda item left, the meeting ended with a vote of thanks to the Chair.

Terms of Reference (TOR):

- i) The proposed project shall be given a unique name in consonance with the name submitted to other Government Departments etc. for its better identification and reference.
- ii) Vision document specifying prospective long term plan of the project shall be formulated and submitted.
- iii) Latest compliance report duly certified by the Regional Office of MoEF& CC for the conditions stipulated in the environmental and CRZ clearances of the previous phase(s) for the expansion projects shall be submitted.
- iv) The project proponent needs to identify minimum three potential sites based on environmental, ecological and economic considerations, and choose one appropriate site having minimum impacts on ecology and environment. A detailed comparison of the sites in this regard shall be submitted.
- v) Executive summary of the project indicating relevant details along with recent photographs of the proposed site (s) shall be provided. Response to the issues raised during Public Hearing and the written representations (if any), along with a time bound Action Plan and budgetary allocations to address the same, shall be provided in a tabular form, against each action proposed.
- vi) Harnessing solar power within the premises of the plant particularly at available roof tops and other available areas shall be formulated and for expansion projects, status of implementation shall also be submitted.
- vii) The geographical coordinates (WGS 84) of the proposed site (plant boundary), including location of ash pond along with topo sheet (1:50,000 scale) and IRS satellite map of the area, shall be submitted. Elevation of plant site and ash pond with respect to HFL of water body/nallah/River and high tide level from the sea shall be specified, if the site is located in proximity to them.
- viii) Layout plan indicating break-up of plant area, ash pond, green belt, infrastructure, roads etc. shall be provided.
- ix) Land requirement for the project shall be optimized and in any case not more than what has been specified by CEA from time to time. Item wise break up of land requirement shall be provided.
- x) Present land use (including land class/kism) as per the revenue records and State Govt. records of the proposed site shall be furnished. Information on land to be acquired including coal transportation system, laying of pipeline, ROW, transmission lines etc. shall be specifically submitted. Status of land acquisition and litigation, if any, should be provided.
- xi) If the project involves forest land, details of application, including date of application, area applied for, and application registration number, for diversion under FCA and its status should be provided along with copies of relevant documents.
- xii) The land acquisition and R&R scheme with a time bound Action Plan should be formulated and addressed in the EIA report.
- xiii) Satellite imagery and authenticated topo sheet indicating drainage, cropping pattern, water bodies (wetland, river system, stream, nallahs, ponds etc.), location of nearest habitations (villages), creeks, mangroves, rivers, reservoirs etc. in the study area shall be provided.
- xiv) Location of any National Park, Sanctuary, Elephant/Tiger Reserve (existing as well as proposed), migratory routes / wildlife corridor, if any, within 10 km of the project site shall be specified and marked on the map duly authenticated by the Chief Wildlife Warden of the State or an officer authorized by him.

- xv) Topography of the study area supported by toposheet on 1:50,000 scale of Survey of India, along with a large scale map preferably of 1:25,000 scale and the specific information whether the site requires any filling shall be provided. In that case, details of filling, quantity of required fill material; its source, transportation etc. shall be submitted.
- xvi) A detailed study on land use pattern in the study area shall be carried out including identification of common property resources (such as grazing and community land, water resources etc.) available and Action Plan for its protection and management shall be formulated. If acquisition of grazing land is involved, it shall be ensured that an equal area of grazing land be acquired and developed and detailed plan submitted.
- xvii) A mineralogical map of the proposed site (including soil type) and information (if available) that the site is not located on potentially mineable mineral deposit shall be submitted.
- xviii) Details of fly ash utilization plan as per the latest fly ash Utilization Notification of GOI along with firm agreements / MoU with contracting parties including other usages etc. shall be submitted. The plan shall also include disposal method / mechanism of bottom ash.
- xix) The water requirement shall be optimized (by adopting measures such as dry fly ash and dry bottom ash disposal system, air cooled condenser, concept of zero discharge) and in any case not more than that stipulated by CEA from time to time, to be submitted along with details of source of water and water balance diagram. Details of water balance calculated shall take into account reuse and re-circulation of effluents.
- xx) Water body/Nallah (if any) passing across the site should not be disturbed as far as possible. In case any Nallah / drain is proposed to be diverted, it shall be ensured that the diversion does not disturb the natural drainage pattern of the area. Details of proposed diversion shall be furnished duly approved by the concerned Department of the State.
- xxi) It shall also be ensured that a minimum of 500 m distance of plant boundary is kept from the HFL of river system / streams etc. and the boundary of site should also be located 500 m away from railway track and National Highways.
- xxii) Hydro-geological study of the area shall be carried out through an institute/ organization of repute to assess the impact on ground and surface water regimes. Specific mitigation measures shall be spelt out and time bound Action Plan for its implementation shall be submitted.
- xxiii) Detailed Studies on the impacts of the ecology including fisheries of the River/Estuary/Sea due to the proposed withdrawal of water / discharge of treated wastewater into the River/Sea etc shall be carried out and submitted along with the EIA Report. In case of requirement of marine impact assessment study, the location of intake and outfall shall be clearly specified along with depth of water drawl and discharge into open sea.
- xxiv) Source of water and its sustainability even in lean season shall be provided along with details of ecological impacts arising out of withdrawal of water and taking into account inter-state shares (if any). Information on other competing sources downstream of the proposed project and commitment regarding availability of requisite quantity of water from the Competent Authority shall be provided along with letter / document stating firm allocation of water.
- xxv) Detailed plan for rainwater harvesting and its proposed utilization in the plant shall be furnished.
- xxvi) Feasibility of near zero discharge concept shall be critically examined and its details submitted.
- xxvii) Optimization of Cycles of Concentration (COC) along with other water conservation measures in the project shall be specified.

- xxviii) Plan for recirculation of ash pond water and its implementation shall be submitted.
- xxix) Detailed plan for conducting monitoring of water quality regularly with proper maintenance of records shall be formulated. Detail of methodology and identification of monitoring points (between the plant and drainage in the direction of flow of surface / ground water) shall be submitted. It shall be ensured that parameter to be monitored also include heavy metals. A provision for long-term monitoring of ground water table using Piezometer shall be incorporated in EIA, particularly from the study area.
- xxx) Socio-economic study of the study area comprising of 10 km from the plant site shall be carried out through a reputed institute / agency which shall consist of detail assessment of the impact on livelihood of the local communities.
- xxxi) Action Plan for identification of local employable youth for training in skills, relevant to the project, for eventual employment in the project itself shall be formulated and numbers specified during construction & operation phases of the Project.
- xxxii) If the area has tribal population it shall be ensured that the rights of tribals are well protected. The project proponent shall accordingly identify tribal issues under various provisions of the law of the land.
- xxxiii) A detailed CSR plan along with activities wise break up of financial commitment shall be prepared. CSR component shall be identified considering need based assessment study and Public Hearing issues. Sustainable income generating measures which can help in upliftment of affected section of society, which is consistent with the traditional skills of the people shall be identified. Separate budget for community development activities and income generating programmes shall be specified.
- xxxiv) While formulating CSR schemes it shall be ensured that an in-built monitoring mechanism for the schemes identified are in place and mechanism for conducting annual social audit from the nearest government institute of repute in the region shall be prepared. The project proponent shall also provide Action Plan for the status of implementation of the scheme from time to time and dovetail the same with any Govt. scheme(s). CSR details done in the past should be clearly spelt out in case of expansion projects.
- xxxv) R&R plan, as applicable, shall be formulated wherein mechanism for protecting the rights and livelihood of the people in the region who are likely to be impacted, is taken into consideration. R&R plan shall be formulated after a detailed census of population based on socio economic surveys who were dependant on land falling in the project, as well as, population who were dependant on land not owned by them.
- xxxvi) Assessment of occupational health and endemic diseases of environmental origin in the study area shall be carried out and Action Plan to mitigate the same shall be prepared.
- xxxvii) Occupational health and safety measures for the workers including identification of work related health hazards shall be formulated. The company shall engage full time qualified doctors who are trained in occupational health. Health monitoring of the workers shall be conducted at periodic intervals and health records maintained. Awareness programme for workers due to likely adverse impact on their health due to working in non-conducive environment shall be carried out and precautionary measures like use of personal equipments etc. shall be provided. Review of impact of various health measures undertaken at intervals of two to three years shall be conducted with an excellent follow up plan of action wherever required.
- xxxviii) One complete season site specific meteorological and AAQ data (except monsoon season) as per latest MoEF Notification shall be collected and the dates of monitoring shall be recorded. The parameters to be covered for AAQ shall include PM₁₀, PM_{2.5}, SO₂, NO_x, CO and Hg. The location of the monitoring stations should be so decided so as to take into consideration of the upwind direction, pre-dominant downwind

direction, other dominant directions, habitation and sensitive receptors. There should be at least one monitoring station each in the upwind and in the pre-dominant downwind direction at a location where maximum ground level concentration is likely to occur.

- xxxix) In case of expansion project, air quality monitoring data of 104 observations a year for relevant parameters at air quality monitoring stations as identified/stipulated shall be submitted to assess for compliance of AAQ Standards (annual average as well as 24 hrs).
- xl) A list of industries existing and proposed in the study area shall be furnished.
- xli) Cumulative impacts of all sources of emissions including handling and transportation of existing and proposed projects on the environment of the area shall be assessed in detail. Details of the Model used and the input data used for modeling shall also be provided. The air quality contours should be plotted on a location map showing the location of project site, habitation nearby, sensitive receptors, if any. The windrose and isopleths should also be shown on the location map. The cumulative study should also include impacts on water, soil and socio-economics.
- xliv) Radio activity and heavy metal contents of coal to be sourced shall be examined and submitted along with laboratory reports.
- xlvi) Fuel analysis shall be provided. Details of auxiliary fuel, if any, including its quantity, quality, storage etc should also be furnished.
- xlviii) Quantity of fuel required, its source and characteristics and documentary evidence to substantiate confirmed fuel linkage shall be furnished. The Ministry's Notification dated 02.01.2014 regarding ash content in coal shall be complied. For the expansion projects, the compliance of the existing units to the said Notification shall also be submitted
- xl) Details of transportation of fuel from the source (including port handling) to the proposed plant and its impact on ambient AAQ shall be suitably assessed and submitted. If transportation entails a long distance it shall be ensured that rail transportation to the site shall be first assessed. Wagon loading at source shall preferably be through silo/conveyor belt.
- xlvi) For proposals based on imported coal, inland transportation and port handling and rail movement shall be examined and details furnished. The approval of the Port and Rail Authorities shall be submitted.
- xlvi) Details regarding infrastructure facilities such as sanitation, fuel, restrooms, medical facilities, safety during construction phase etc. to be provided to the labour force during construction as well as to the casual workers including truck drivers during operation phase should be adequately catered for and details furnished.
- xlvi) EMP to mitigate the adverse impacts due to the project along with item - wise cost of its implementation in a time bound manner shall be specified.
- xlvi) A Disaster Management Plan (DMP) along with risk assessment study including fire and explosion issues due to storage and use of fuel should be carried out. It should take into account the maximum inventory of storage at site at any point of time. The risk contours should be plotted on the plant layout map clearly showing which of the proposed activities would be affected in case of an accident taking place. Based on the same, proposed safeguard measures should be provided. Measures to guard against fire hazards should also be invariably provided. Mock drills shall be suitably carried out from time to time to check the efficiency of the plans drawn.
- l) The DMP so formulated shall include measures against likely Fires/Tsunami/Cyclones/Storm Surges/Earthquakes etc, as applicable. It shall be ensured that DMP consists of both On-site and Off-site plans, complete with details of containing likely disaster and shall specifically mention personnel identified for the

task. Smaller version of the plan for different possible disasters shall be prepared both in English and local languages and circulated widely.

- li) Detailed scheme for raising green belt of native species of appropriate width (50 to 100 m) and consisting of at least 3 tiers around plant boundary with tree density of 2000 to 2500 trees per ha with a good survival rate of around 80% shall be submitted. Photographic evidence must be created and submitted periodically including NRSA reports in case of expansion projects. A shrub layer beneath tree layer would serve as an effective sieve for dust and sink for CO₂ and other gaseous pollutants and hence a stratified green belt should be developed.
- lii) Over and above the green belt, as carbon sink, plan for additional plantation shall be drawn by identifying blocks of degraded forests, in close consultation with the District Forests Department. In pursuance to this the project proponent shall formulate time bound Action Plans along with financial allocation and shall submit status of implementation to the Ministry every six months.
- liii) Corporate Environment Policy
 - a. Does the company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be detailed in the EIA report.
 - b. Does the Environment Policy prescribe for standard operating process / procedures to bring into focus any infringement / deviation / violation of the environmental or forest norms / conditions? If so, it may be detailed in the EIA.
 - c. What is the hierarchical system or Administrative order of the company to deal with the environmental issues and for ensuring compliance with the environmental clearance conditions. Details of this system may be given.
 - d. Does the company has compliance management system in place wherein compliance status along with compliances / violations of environmental norms are reported to the CMD and the Board of Directors of the company and / or shareholders or stakeholders at large? This reporting mechanism should be detailed in the EIA report.

All the above details should be adequately brought out in the EIA report and in the presentation to the Committee.

- liv) Details of litigation pending or otherwise with respect to project in any Court, Tribunal etc. shall invariably be furnished.

Specific Conditions related to Thermal Power Projects:

- (ii) Vision document specifying prospective plan for the site shall be formulated and submitted to the Regional Office of the Ministry within **six months**.
- (iii) Harnessing solar power within the premises of the plant particularly at available roof tops shall be carried out and status of implementation including actual generation of solar power shall be submitted along with half yearly monitoring report.
- (iv) A long term study of radio activity and heavy metals contents on coal to be used shall be carried out through a reputed institute and results thereof analyzed every two year and reported along with monitoring reports. Thereafter mechanism for an in-built continuous monitoring for radio activity and heavy metals in coal and fly ash (including bottom ash) shall be put in place.
- (v) Online continuous monitoring system for stack emission, ambient air and effluent shall be installed.
- (vi) High Efficiency Electrostatic Precipitators (ESPs) shall be installed to ensure that particulate emission does not exceed 30 mg/Nm³ or as would be notified by the Ministry, whichever is stringent. Adequate dust extraction system such as cyclones/bag filters and water spray system in dusty areas such as in coal handling and ash handling points, transfer areas and other vulnerable dusty areas shall be provided along with an environment friendly sludge disposal system.
- (vii) Adequate dust extraction system such as cyclones/ bag filters and water spray system in dusty areas such as in coal handling and ash handling points, transfer areas and other vulnerable dusty areas shall be provided.
- (viii) Monitoring of surface water quantity and quality shall also be regularly conducted and records maintained. The monitored data shall be submitted to the Ministry regularly. Further, monitoring points shall be located between the plant and drainage in the direction of flow of ground water and records maintained. Monitoring for heavy metals in ground water shall also be undertaken and results/findings submitted along with half yearly monitoring report.
- (ix) A well designed rain water harvesting system shall be put in place within six months, which shall comprise of rain water collection from the built up and open area in the plant premises and detailed record kept of the quantity of water harvested every year and its use.
- (x) No water bodies including natural drainage system in the area shall be disturbed due to activities associated with the setting up/operation of the power plant.
- (xi) Additional soil for leveling of the proposed site shall be generated within the sites (to the extent possible) so that natural drainage system of the area is protected and improved.
- (xii) Fly ash shall be collected in dry form and storage facility (silos) shall be provided. Mercury and other heavy metals (As, Hg, Cr, Pb etc.) shall be monitored in the bottom ash. No ash shall be disposed off in low lying area.
- (xiii) No mine void filling will be undertaken as an option for ash utilization without adequate lining of mine with suitable media such that no leachate shall take place at any point of time. In case, the option of mine void filling is to be adopted, prior detailed study of soil characteristics of the mine area shall be undertaken from an institute of repute and adequate clay lining shall be ascertained by the State Pollution Control Board and implementation done in close co-ordination with the State Pollution Control Board.

- (xiv) Fugitive emission of fly ash (dry or wet) shall be controlled such that no agricultural or non-agricultural land is affected. Damage to any land shall be mitigated and suitable compensation provided in consultation with the local Panchayat.
- (xv) Green Belt consisting of three tiers of plantations of native species all around plant and at least 50 m width shall be raised. Wherever 50 m width is not feasible a 20 m width shall be raised and adequate justification shall be submitted to the Ministry. Tree density shall not be less than 2500 per ha with survival rate not less than 80 %.
- (xvi) Green belt shall also be developed around the Ash Pond over and above the Green Belt around the plant boundary.
- (xvii) The project proponent shall formulate a well laid Corporate Environment Policy and identify and designate responsible officers at all levels of its hierarchy for ensuring adherence to the policy and compliance with the conditions stipulated in this clearance letter and other applicable environmental laws and regulations.
- (xviii) CSR schemes identified based on need based assessment shall be implemented in consultation with the village Panchayat and the District Administration starting from the development of project itself. As part of CSR prior identification of local employable youth and eventual employment in the project after imparting relevant training shall be also undertaken. Company shall provide separate budget for community development activities and income generating programmes.
- (xix) For proper and periodic monitoring of CSR activities, a CSR committee or a Social Audit committee or a suitable credible external agency shall be appointed. CSR activities shall also be evaluated by an independent external agency. This evaluation shall be both concurrent and final.





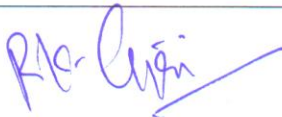
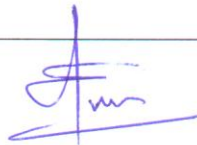
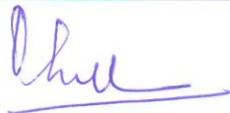

Attendance of the 7thEAC Meeting of the Re-constituted Expert Appraisal Committee (EAC) for Thermal Power Projects Meetingheld on 28th June, 2017.

LIST OF MEMBERS (Attendance Sheet)

7th EXPERT APPRAISAL COMMITTEE MEETING (Thermal & Coal Mining Sector)

DATE & TIME : 28th June, 2017

VENUE : TEESTA MEETING HALL, INDIRA PARYAVARAN BHAWAN.

Sr.No.	Name of Member	Signature
1.	Dr. Navin Chandra Chairman	
2.	Dr. Narmada Prasad Shukla Member	
3.	Sh. N. Mohan Karnat, IFS Member	
4.	Dr. Sharachchandra Lele Member	
5.	Sh. P.D. Siwal / Sh. N.S. Mondal, Member	
6.	Dr. R.K. Giri, Member	
7.	Dr. S.K. Paliwal, Member	
8.	Prof. D.C. Panigrahi/ Prof. S.K. Sinha/ Prof. Om Prakash ✓ Member	
9.	Dr. Jai Krishna Pandey, Member	

10.	Dr. Manjari Srivastava, Member	Manjari 28-6-17
11.	Dr. Gururaj P Kundargi, Member	Gururaj 28/6/17
12.	Shri Suramya Dolarray, IFS (Retd.) Member	SDC 28/6/17
13.	Dr. S. Kerketta Member Secretary MoEFCC	S. Kerketta 28/6/17

Approval of Minutes of the 7th Meeting of the Re-constituted Expert Appraisal Committee (EAC) on Environmental Impact Assessment (EIA) of Thermal Power Projects by the Chairman.

11/07/2017

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Subject: **Final Minutes of the 7th EC meeting of Thermal Power Plants committee held on 28th June, 2017** Date: 07/11/17 03:44 PM
From: navin chandra <navinchandrarrl@yahoo.com>
To: "Dr S. Kerketta" <s.kerketta66@gov.in>,
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7th MoM EAC Thermal 28.6.2017.docx (218kB)

11.07/2017

Dear Dr. Kerketta Ji,

I have gone through the minutes of the 7th EC meeting of Thermal Power Plants committee held on 28/06/2017. The Minutes are OK. There were few typing/grammatical errors. These have been corrected by me. The finalized minutes document is attached with this e-mail. You may upload it

Dr. Navin Chandra,

Director General

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**AGENDA OF 7th MEETING OF THE RE-CONSTITUTED EXPERT APPRAISAL COMMITTEE
ON THERMAL POWER PROJECTS**

DATE : 28th June, 2017

TIME : 10.30 A.M. ONWARDS

VENUE : TEESTA MEETING HALL, VAYU WING, FIRST FLOOR, INDIRA PARYAVARAN BHAWAN, JORBAGH ROAD, NEW DELHI-110003.

ITEM	
Item No. 7.0	CONFIRMATION OF MINUTES OF 6th EAC (Thermal) MEETING
Item No.	CONSIDERATION OF PROJECTS
7.1	25 MW Waste-to-Energy (WtE) Project at Deonar, Mumbai, Maharashtra by M/s Municipal Corporation of Greater Mumbai-reg. ToR. File No: J-13012/02/2017-IA.I(T)& Online no: IA/MH/THE/62178/2017
7.2	18 MW Captive thermal power Plant at Mattampalli Village, Matampalli Mandal, Distt. Suryapet, Telangana by M/s Sagar Cement Limited- reg. ToR. File No: J-13012/09/2017-IA.I(T) & Online no: IA/TG/THE/65044/2017.
7.3	Expansion of 'Integrated Municipal Solid Waste Management Project'- Waste to Energy (WtE) Power Plant from 19.8 MW to 48 MW at Sy. No. 173, Jawaharngar Village, kapramandal, Distt. Medchal, Telangana by M/s Greater Hyderabad Municipal Corporation- reg. ToR File No: J-13012/08/2017-IA.I(T)& Online no: IA/TG/THE/64959/2017.
7.4	Modernization and Expansion of existing Power Plant from 741.7 MW to 999.7 MW Imported Coal based at Renusagar, Distt. Sonebhadra, Uttar Pradesh by M/s Renusagar Power Plant, Hindalco Ind. Ltd.-reg. Amendment in EC. File No: J-13012/148/2008-IA.II(T)& Online no: IA/UP/THE/10403/2008.
7.5	3x800 MW Patratu Super Thermal Power Project (PSTPP), Phase-1 at village Patratu, Distt. Ramgar, Jharkhand by M/s Patratu Vidyut Utpadan Nigam Limited- red. EC. File No: J-13012/21/2015-IA.I(T)& Online no: IA/JH/THE/32025/2015.
7.6	2x660 MW Super-Critical Technology Coal based Meja Thermal Power Plant near Kohadar, Bhagdeva& Mai Kalam Villages, Taluk Meja, Distt. Allahabad, Uttar Pradesh by M/s Meja Urja Nigam Pvt. Ltd.- reg.- Amendment in EC. File No: J-13012/03/2008-IA.II(T)& Online no: IA/UP/THE/52631/2011.
7.7	Expansion of 2x600 MW TPP to 2800 MW by addition of 2x800 MW units at Village Yelluru, Taluk Udupi, Distt. Udupi in Karnataka by M/s Udupi Power Corporation Limited (UPCL)- reg. Reconsideration of EC. File No: J-13011/12/2015-IA.I(T)& Online no: IA/KA/THE/27676/2015.
7.8	2x800 MW Godda Thermal Power Project at Village Motia, Patwa, Gangta and Nayabad of Godda Block and Sondiha , Petbi, Gayghat, Ranganiya and Mali villages of Poraiyahaat Block, Distt. Godda, Jharkhand by M/s Adani Power (Jharkhand) Limited- reg. Reconsideration of EC. File No: J-13012/01/2016-IA.I(T)& Online no: IA/JH/THE/54853/2016.
7.9	2x600 MW and 3x800 MW Coal based TPP at Villages Kottai, Ariyagosthi, Villianallur & Silambimangalam, Taluk, Chidambaram, Distt. Cuddalore, tamil Nadu by M/s IL&FS Tamil Nadu Power Company Ltd.- reg. Extension of validity of EC. File No: J-13012/34/2008-IA.II(T)& Online no: IA/TN/THE/11883/20008.

7.10	2x30 MW Captive Thyermal Power Plant in Budni Industrial Area, Distt. Sehore, Madhya Pradesh by M/s Trident Ltd.- reg. Amendment in EC File No: J-13012/31/2013-IA.I(T) & Online no: IA/MP/THE/65321/2014.
7.11	Expansion by addition of 1x350 MW Imported Coal based Thermal Power Plant (Phase II) at Village Kamalanga, in Odapala Taluk, in Dhenkanal Distt. in Odisha by M/s GMR Kamalanga Energy Ltd.- reg. Amendment Environment Clearance. File No: J-13012/73/2011-IA.II (T)& Online no: IA/OR/THE/75/2008.
7.12	ANY OTHER ITEM WITH THE PERMISSION OF THE CHAIR.

Note: If project documents are not submitted to Committee Members on time along with brief summary/basic information as per pro-forma, it will be the Committee's discretion to consider the project.