



J-13012/203/2010-IA.II (T)
Government of India
Ministry of Environment, Forests and Climate Change

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

Dated: 18th September, 2014.

To

M/s JSW Energy Ltd.
JSW Centre,
Bandra Kurla Complex,
Bandra (East), Mumbai- 400 051

Tel. 022 -42861000; Fax: 022-42863000

Sub: Expansion by addition of 1x660 MW Imported Coal based Thermal Power Plant at Village Toranagallu, in Sandur Taluk, in Bellary Distt., in Karnataka by M/s JSW Energy Ltd. - reg. Environmental Clearance.

Sir,

This has reference to your letters dated 15.11.2010, 29.12.2012, 13.09.2013, 12.12.2013, 13.12.2013, 27.02.2014, 10.04.2014, 12.04.2014 and 01.07.2014 on the subject mentioned above. The Ministry has examined the application. The ToR for preparation of EIA/EMP report was accorded by MoEF on 13.05.2011. Public Hearing for the project was held on 07.07.2012.

2. It is noted that the land requirement is about 89.19 acres which is available within the existing project area. The plant site corner co-ordinates are Latitude 15°11'1.16" N to 15°11'32.7" N & Longitude 76°39'39.8" E to 76°39'58.0" E and the ash pond corner co-ordinates are Latitude 15°11'21.39" N to 15°11'27.57" N & Longitude 76°40'21.88" E to 76°40'32.94" E. Daroji Bear Sanctuary is located at a distance of 5.4 km from the project site. The project capital cost is Rs. 3,300 crores.

3. The coal requirement would be 2.25 MTPA and will be imported from South Africa/Australia through Goa/Mangalore/Krishnapatnam ports. An MoU was signed on 10.2.2012 with M/s Avani Coal Resources PTE Ltd., Singapore for supply of coal from South Africa and Australia. The guaranteed values of the ash content, sulphur content and GCV of the coal will be 28% max., 0.6 % max., and 4,500 Kcal/Kg minimum. The additional water requirement of 1,469 m³/h will be sourced from the captive reservoir. COC of 7 will be maintained for the cooling water system. Effluent zero discharge concept will be adopted.

4. About 0.5 MTPA of fly ash and 0.12 MTPA of bottom ash would be generated. 95% of the Fly ash generated will be collected in dry form, stored in silos and dispatched in closed bulker to the group cement plant. A MoU was signed with M/s JSW Cement Ltd. on 07.03.2012 for supply of fly ash. The balance 5% of the fly ash will be utilized for the manufacture of bricks and ready mix concrete. The bottom ash will be used for low lying area development, strengthening of bund, road & embankment and mining segment.

5. Based on the information submitted by you and presentations made by you and your consultant viz. M/s MECON Ltd., Ranchi before the Expert Appraisal Committee (Thermal Power) in its 8th & 16th Meetings held during January 9-10, 2014 and July 1-2, 2014, the Ministry hereby accords environmental clearance to

the above project under the provisions of EIA Notification dated September 14, 2006 and amendments therein subject to the compliance of the following Specific and General conditions:

A. Specific Conditions:

- i) *The EC is subject to the clearance from the Standing Committee of the NBWL. Further, the grant of EC does not necessarily imply that wildlife clearance shall be granted to the project. The proposal of wildlife clearance will be considered by the respective authorities on its merits and decision taken. The investment made in the project, if any based on EC, in anticipation of the clearance from wildlife angle shall be entirely at the cost and risk of the project proponent and MoEF shall not be responsible in this regard in any manner.*
- 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 stack of 275 m height shall be provided with continuous online monitoring equipments for SO_x, NO_x and PM_{2.5} & PM₁₀. Exit velocity of flue gases shall not be less than 22 m/sec. Mercury emissions from stack shall also be monitored on periodic basis.*
- v) *One AAQ station shall be located in the South of the Plant.*
- vi) *Sulphur and ash contents in the imported coal to be used in the project shall not exceed 0.6 % and 28.0 % respectively at any given time. In case of variation of coal quality at any point of time, fresh reference shall be made to the Ministry for suitable amendments to environmental clearance wherever necessary.*
- vii) *High Efficiency Electrostatic Precipitators (ESPs) shall be installed to ensure that particulate emission does not exceed 50 mg/Nm³. 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) *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.*
- ix) *COC of 7.0 shall be adopted.*
- x) *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.*

- xi) 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.
- xii) 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.
- xiii) Hydrogeology of the area shall be reviewed annually from an institute/ organization of repute to assess impact of surface water and ground regime (especially around ash dyke). In case any deterioration is observed specific mitigation measures shall be undertaken and reports/ data of water quality monitored regularly and maintained shall be submitted to the Regional Office of the Ministry.
- xiv) Wastewater generated from the plant shall be treated before discharge to comply limits prescribed by the SPCB/CPCB.
- xv) 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.
- xvi) Fly ash shall be collected in dry form and storage facility (silos) shall be provided. Unutilized fly ash shall be disposed off in the ash pond in the form of slurry. Mercury and other heavy metals (As, Hg, Cr, Pb etc.) will be monitored in the bottom ash as also in the effluents emanating from the existing ash pond. No ash shall be disposed off in low lying area.
- xvii) 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.
- xviii) Ash pond shall be lined with HDPE/LDPE lining or any other suitable impermeable media such that no leachate takes place at any point of time. Adequate safety measures shall also be implemented to protect the ash dyke from getting breached.
- xix) 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.
- xx) Green Belt consisting of three tiers of plantations of native species 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 %.
- xxi) 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.

- xxii) 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.
- xxiii) An Environmental Cell comprising of at least one expert in environmental science/ engineering, ecology, occupational health and social science, shall be created preferably at the project site itself and shall be headed by an officer of appropriate superiority and qualification. It shall be ensured that the Head of the Cell shall directly report to the Head of the Plant who would be accountable for implementation of environmental regulations and social impact improvement/mitigation measures.

B. General Conditions:

- (i) The treated effluents conforming to the prescribed standards only shall be re-circulated and reused within the plant. Arrangements shall be made that effluents and storm water do not get mixed.
- (ii) A sewage treatment plant shall be provided (as applicable) and the treated sewage shall be used for raising greenbelt/plantation.
- (iii) Adequate safety measures shall be provided in the plant area to check/minimize spontaneous fires in coal yard, especially during summer season. Copy of these measures with full details along with location plant layout shall be submitted to the Ministry as well as to the Regional Office of the Ministry.
- (iv) Storage facilities for auxiliary liquid fuel such as LDO/ HFO/LSHS shall be made in the plant area in consultation with Department of Explosives, Nagpur. Sulphur content in the liquid fuel will not exceed 0.5%. Disaster Management Plan shall be prepared to meet any eventuality in case of an accident taking place due to storage of oil.
- (v) First Aid and sanitation arrangements shall be made for the drivers and other contract workers during construction phase.
- (vi) Noise levels emanating from turbines shall be so controlled such that the noise in the work zone shall be limited to 85 dB(A) from source. For people working in the high noise area, requisite personal protective equipment like earplugs/ear muffs etc. shall be provided. Workers engaged in noisy areas such as turbine area, air compressors etc shall be periodically examined to maintain audiometric record and for treatment for any hearing loss including shifting to non noisy/less noisy areas.
- (vii) Regular monitoring of ambient air ground level concentration of SO₂, NO_x, PM_{2.5} & PM₁₀ and Hg shall be carried out in the impact zone and records maintained. If at any stage these levels are found to exceed the prescribed limits, necessary control measures shall be provided immediately. The location of the monitoring stations and frequency of monitoring shall be decided in consultation with SPCB. Periodic reports shall be submitted to

the Regional Office of this Ministry. The data shall also be put on the website of the company.

- (viii) Provision shall be made for the housing of construction labour (as applicable) within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.
- (ix) The project proponent shall advertise in at least two local newspapers widely circulated in the region around the project, one of which shall be in the vernacular language of the locality concerned within seven days from the date of this clearance letter, informing that the project has been accorded environmental clearance and copies of clearance letter are available with the State Pollution Control Board/Committee and may also be seen at Website of the Ministry of Environment and Forests at <http://envfor.nic.in>.
- (x) A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zila Parisad / Municipal Corporation, urban local Body and the Local NGO, if any, from whom suggestions/representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the Company by the proponent.
- (xi) The proponent shall upload the status of compliance of the stipulated environmental clearance conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of MOEF, the respective Zonal Office of CPCB and the SPCB. The criteria pollutant levels namely; SPM, RSPM (PM_{2.5} & PM₁₀), SO₂, NO_x (ambient levels as well as stack emissions) shall be displayed at a convenient location near the main gate of the company in the public domain.
- (xii) The environment statement for each financial year ending 31st March in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of environmental clearance conditions and shall also be sent to the respective Regional Offices of the Ministry by e-mail.
- (xiii) **The project proponent shall submit six monthly reports on the status of the implementation of the stipulated environmental safeguards to the Ministry of Environment and Forests, its Regional Office, Central Pollution Control Board and State Pollution Control Board. The project proponent shall upload the status of compliance of the environmental clearance conditions on their website and update the same periodically and simultaneously send the same by e-mail to the Regional Office, Ministry of Environment and Forests.**
- (xiv) Regional Office of the Ministry of Environment & Forests will monitor the implementation of the stipulated conditions. A complete set of documents including Environmental Impact Assessment Report and Environment Management Plan along with the additional information submitted from time to time shall be forwarded to the Regional Office for their use during monitoring. Project proponent will up-load the compliance status in their website and up-date the same from time to time at least six monthly basis.

Criteria pollutants levels including NO_x (from stack & ambient air) shall be displayed at the main gate of the power plant.

- (xv) Separate funds shall be allocated for implementation of environmental protection measures along with item-wise break-up. These cost shall be included as part of the project cost. The funds earmarked for the environment protection measures shall not be diverted for other purposes and year-wise expenditure should be reported to the Ministry.
- (xvi) The project authorities shall inform the Regional Office as well as the Ministry regarding the date of financial closure and final approval of the project by the concerned authorities and the dates of start of land development work and commissioning of plant.
- (xvii) Full cooperation shall be extended to the Scientists/Officers from the Ministry / Regional Office of the Ministry / CPCB/ SPCB who would be monitoring the compliance of environmental status.

6. The Ministry of Environment and Forests reserves the right to revoke the clearance if conditions stipulated are not implemented to the satisfaction of the Ministry. The Ministry may also impose additional environmental conditions or modify the existing ones, if necessary.

7. The environmental clearance accorded **shall be valid for a period of 5 years** from the date of issue of this letter to start operations by the power plant.

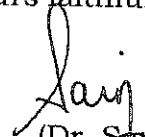
8. Concealing factual data or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act, 1986.

9. In case of any deviation or alteration in the project proposed including coal transportation system from those submitted to this Ministry for clearance, a fresh reference should be made to the Ministry to assess the adequacy of the condition(s) imposed and to add additional environmental protection measures required, if any.

10. The above stipulations would be enforced among others under the Water (Prevention and Control of Pollution) Act, 1974, the Air (Prevention and Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986 and rules there under, Hazardous Wastes (Management, Handling & Transboundary Movement) Rules, 2008 and its amendments, the Public Liability Insurance Act, 1991 and its amendments.

11. Any appeal against this environmental clearance shall lie with the National Green Tribunal, if preferred, within 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.

Yours faithfully,


(Dr. Saroj)
Scientist 'F'

Copy to:

1. The Secretary, Ministry of Power, Shram Shakti Bhawan, Rafi Marg, New Delhi - 110001.

2. The Secretary (Environment), Forests and Environment Department Government of Karnataka.
3. The Chairman, Central Electricity Authority, Sewa Bhawan, R.K. Puram, New Delhi-110066.
4. The Chairman, Karnataka State Pollution Control Board, Parisara Bhawan, 4th & 5th Floor, 49, Church Street, Bangalore - 560 001.
5. The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-cum-Office Complex, East Arjun Nagar, Delhi-110032.
6. The Chief Conservator of Forests, Regional Office (SZ), Kendriya Sadan, 4th Floor E&F Wings 17th Main Road, 1 Block , Koranmangala, Bangalore-560 034.
7. The District Collector, Bellary District, Govt. of Karnataka.
8. Guard file.
9. Monitoring file.

(Dr. Saroj)
Scientist 'F'

