JSW Energy Limited

Works :
Post Box No. 9, Toranagallu
Dist. Bellary - 583 123, Karnataka, India
CIN. : L74999MH1994PLC077041
Phone : 08395 - 252 124
Fax : 08395 - 250 757
Website : www.jsw.in

Ref. No. JSWEL / Consent / Auth/6013
Date: November 19, 2015

Member Secretary, EAC (T)
Ministry of Environment and Forests and climate change (MoEF)
3rd floor, Vayu block,
Indira Paryavaran Bhavan,
Jor Bagh road, Aliganj,
New Delhi

Sub : Six monthly report- status of implementation of stipulated environmental safe guards.

Ref : MoEF EC no.J-13012/203/2010-IA-IA.II (T) dtd. 18/9/2014 for 1X660 MW expansion Thermal Power plant at Village Toranagallu, Dist. Ballary, Karnataka state.

Sir,

You are kindly aware that MoEF has granted Environment clearance for 1X660 MW expansion project on 18-9-2014 vide letter no.J-13012/203/2010-IA. II (T). As a part of EC condition, we hereby submit the **second six monthly status report** on implementation of stipulated environmental safe guards issued by MoEF vide letter no. cited under reference above.

Thanking you.

Yours faithfully,
for **JSW Energy Limited**

C N Singh,
Senior Vice President &
Head of Plant.

Copy to

1. Additional Principal Chief Conservator of Forests, , MoEF Regional office, Bangaluru.
2. Chairman, Central Pollution Control Board, New Delhi.
3. Member Secretary, KSPCB, Bangaluru

1x660 MW Project MoEF EC conditions vide J-13012/203/2010-IA.II (T) dated September 18, 2014

S. No.	A. Specific Conditions	Status as on Nov 2015
i)	The EC is subject to the clearance from the standing committee of NBWL. Further the grant of EC does not necessarily imply that wild life clearance shall be granted to the project. The proposal of wild life clearance will be considered by 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 wild life 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	Noted. NBWL standing committee has recommended vide minutes dtd.24/8/2015, Ref. No. F No.6-79/2015 WL dtd. 24/8/2015, GOI, MoEF Annexure 1
ii)	Vision document specifying prospective plan for the site shall be formulated and submitted to the regional office of the ministry within six months.	Attached as Annexure-2
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.	Shall be included in the plant design
iv)	A stack of 275 m height shall be provided with continuous online monitoring equipments for SOX and NOx and PM2.5 & PM 10. Exit velocity of flue gases shall not be less than 22m/sec. Mercury emissions from stack shall also be monitored on periodic basis.	Shall be complied.
v)	One AAQ station shall be located in the south of the plant.	Shall be complied
vi)	Sulphur and Ash contents in imported coal to be used in the project shall not exceed 0.6% and 28% 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.	Not applicable in project stage. The same will be taken care in plant design and shall be complied in operation stage.
vii)	High efficiency electro static precipitators (ESPs) shall be installed to ensure that **particulate emissions does not exceed 50mg/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.	Shall be ensured in in plant design and shall be complied in operation stage.

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.	Shall be ensured in in plant design
ix)	COC of 7.0 shall be adopted.	Not applicable in project stage. Shall be ensured in plant operation stage
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 of heavy metals in ground water shall also be undertaken and results/findings submitted along with half yearly monitoring report.	Shall complied
xi)	**A well designed rain water harvesting system** shall be put in place within six moths, 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.	Shall be ensured in in plant design stage
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	Shall be complied
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.	Shall be taken up on commencement of the project activities. The report shall be submitted to Ministry.
xiv)	Waste water generated from the plant shall be treated before discharge to comply limits prescribed by the SPCB / CPCB.	Shall be complied
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.	Shall be complied
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 also in the	Shall be complied

	effluents emanating form 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	Shall be complied. The same shall be considered in plant design and engineering
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 form getting breached.	Shall be complied. The same shall be considered in plant design and engineering
xix)	**A long term study of radio activity and heavy metal contents on coal to be used shall be carried out through 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.	Shall be complied
xx)	Green belt consisting of three tiers of plantations of native species around plant at atleast 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 2500 per ha with survival rate not less than 80%	Shall be complied. The same shall be considered in the design of plant layout
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.	Noted and shall be complied
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 be evaluated by an independent external agency. This evaluation shall be both concurrent and final	Shall be complied

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.	The existing Environmental cell shall ensure the compliance.
	A. General Conditions	
i)	The treated effluents confirming 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.	The suitable measures shall be included in the plant design and engineering and ensure the compliance.
ii).	A sewage treatment plant shall be provided (as applicable) and the treated sewage shall be used for raising green belt / plantation.	Existing STP shall take care and ensure the compliance
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 lay out shall be submitted to the Ministry as well as to the Regional office of the Ministry.	Shall be considered in Plant design and shall be complied
iv)	Storage facility for auxiliary liquid fuel such as LDO /HFO/LSHS shall be made in the plant are in consultation with Department of Explosives, Nagpur. Sulphur content in the liquid fuel will not exceed 0.5%. Disaster management plant shall be prepared to meet any eventuality in case of an accident taking place due to storage of oil.	Shall be complied
v)	First aid and sanitation arrangements shall be made for the drivers and other contract workers during construction phase.	Shall be complied
vi)	Noise levels emanating from turbine 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	The measures shall be considered in plant design and engineering and shall be complied in operation stage.

	areas.	
vii)	Regular monitoring of ambient air ground level concentration of So2, Nox, PM2.5 & 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.	Shall be complied
viii)	Provision shall be made for the housing of construction labor (as applicable) with in the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, creche etc. the housing may be in the form of temporary structures to be removed after the completion of the project.	Shall be complied.
ix)	The project proponent shall advertise in at least two local newspapers widely circulated in the region around the project, one of which shall 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.	Advertised in local newspapers and copies of each are enclosed as Annexure- 3
x)	A copy of the clearance letter shall be sent by the proponent to concerned panchayat, Zila parishad / Muncipal 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 be put on the website of the company by the proponent.	The copy was sent to Local grampanchayat. And the acknowledgement is enclosed as Annexure- 4
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 not simultaneously be sent to the Regional office of MOEF, the respective zonal office of CPCB and the SPCB. The criteria pollutants levels namely, SPM, RSPM (PM2.5 & PM10), SO2,	Shall be complied

	Nox (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 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	Not applicable in project stage and shall be complied in operation stage.
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 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.	Shall be complied
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 NOx (form stack and ambient air) shall be displayed at the main gate of the power plant	A copy EIA, EMP and additional information has been submitted RO office Bengaluru
xv)	Separate funds shall be allocated for implementation of environmental protection measures along with item-wise break-up. The cost shall be included as a 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	Noted and shall be complied

	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 the plant.	Noted and shall be complied
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	Shall be complied.

Annexure-I

F.No.6-79/2015 WL (35th Meeting)
Government of India
Ministry of Environment, Forest & Climate Change
Wildlife Division
****

Indira Paryavaran Bhawan
Jor Bag Road, Aliganj
New Delhi-110003
Dated:24.08.2015.

To,

The Principal Secretary (Forests)
Department of Forests
Government of Karnataka
Banglore.

Sub: Minutes of the 35th Meeting of Standing Committee of NBWL.

Sir,

During the 35th Meeting of Standing Committee of NBWL held on 18th August 2015 under the Chairmanship of Hon'ble Minister of State (Independent Charge) for Environment, Forests and Climate Change, the following proposals pertaining to your State were considered. The relevant portion of the decision taken in respect of the proposals is reproduced below:

"1. ***Expansion of the integrated Steel Plant from 10.0 MTPA to 16.0 MTPA along with the captive power plant of 600 MW in JSW steel Complex at Toranagallu, Sandur Taluk, Bellary district***

2. ***Expansion of the JSW Energy from 860 MW to 1520 MW Power Plant at Toranagallu, Sandur Taluk, Bellary District, Karnataka***

3. ***Proposed DRI plant of capacity 1.2MTPA, within JSW Steel Complex at Toranagallu, Sandur Taluk, Bellary District, Karnataka***

4. ***Proposal for NBWL recommendations for existing projects within JSW Steel Complex of M/s JSW Steel Ltd., Toranagallu, Sandur Taluk, Bellary District, Karnataka.***

The member secretary informed the Committee that the ESZ proposals of Karnataka including Daroji Bear Sanctuary and others were received and scrutinized in the wildlife division. The proposals are under process for notification.

The Committee considered the proposals accordingly. Member Secretary informed that the projects are the expansions or installations within the existing integrated Steel Complex, which are located at a distance of 5.66 km from the sanctuary and outside the proposed ESZ. Considering the distance from the sanctuary and that the activities are located within the premises of the existing steel complex, the Committee agreed to recommend the proposals for Environment Clearance".

The above recommendation(s) are subject to the existing directives of Hon'ble Supreme Court and provisions of Forests (Conservation) Act, 1980.

Yours faithfully,

R. Rajasekhar

(Rajasekhar Ratti)
Scientist 'C'/Deputy Director (WL)

Contd.../2

Copy to:

1. The Chief Wildlife Warden, Government of Karnataka, Banglore.
2. The Addl.Pr.Chief Conservator of Forests, Ministry of Environment & Forests, Regional Office(SZ), Kendriya Sadan, 4th Floor E&F Wings, 17th Main Road, I Block, Koranmangala, Banglore-560034.
3. The General Manager, JSW Steel Ltd., 124, Thapar House, Janpath, New Delhi.
4. The Joint Secretary, I.A. Division, MoEF & CC.
5. The Inspector General of Forests, FC Division, MoEF & CC.

R. Rajasekhar

(Rajasekhar Ratti)
Scientist 'C'/Deputy Director (WL)

Annexure-II

Vision Statement:

JSW Energy Ltd, (JSWEL) has consolidated its place at the top of ranks by managing operations, enhancing social and economic benefits, minimizing environmental impact and employing cutting age innovation. JSWEL is one of the most efficient power generation companies in India. All plants are the industry benchmark for the high plant load factor achieved, which is a measure of efficient capacity utilisation.

JSWEL, Toranagallu plant is a champion of the belief in efficient business practices. It stands out as an extremely efficient power plant, and has been consistently receiving accolades from the Government of India for its meritorious performance. The plant has been awarded by CII ITC on commendations for significant achievement under sustainability. Our competitiveness is reflected in our high rate of returns and the profitability of our commercial operations.

JSWEL believes in the efficient utilization of all available resources. The main goal is to become a leading full-service integrated power company in the Indian power sector with a presence across the value chain

JSWEL is committed to achieve highest performance standards in the areas of Environment; social and corporate governance which includes compliance to the conditions stipulated in the Environmental clearance and other statutory guidelines and ensure the implementation by following actions

- To implement and monitor all environmental control measures specified in Environmental clearance conditions and beyond. Also to monitor the formulated policies are adhered to conformance to Environmental management. An adequate budget provision shall be made to ensure effective implementation.
- To address social concerns, saving interest of people, community and cultures by focusing on by training and development of employees, labour management, occupational health and safety, and community development.
- To establish company performance on corporate Governance by providing transparency in financial and nonfinancial dealings, business ethics etc.
- To empower Environment Management cell and CSR cell to implement, and monitor various initiatives and ensure Environmental sustainability.

Unique features:

- The plant is among the best plants in India for operational efficiency.
- The plant uses advanced technology that keeps heat generated in the plant well below the norms set by CEA norms
- Auxiliary power consumption —power used to run the plant, is below CEA-Stipulated levels.

Major Green initiatives.

- 100 % Fly ash produced is utilization by cement and brick manufacturers
- Reed bed based sewage treatment system (STP) over conventional STP that recycles water for use in the Plantation and greenbelt
- Use of waste gas from the steel plant for power generation.
- Use of low ash and low sulphur coal
- Cooling tower blow down recycling
- Optmisation of water consumption wherever possible

Corporate Social Responsibility (CSR):

JSWEL under JSW foundation, a social development division of JSW group is in constant pursuit of making better life for communities with various initiatives in the fields of health, education, livelihood and sports along with art and culture. The group believes in strengthening the social capital.

JSWEL is committed to

- Allocate 2 % of avg. net profits as per companies' act 2013 towards CSR.
- Transparent and accountable system for social development and conducting periodic assessment.
- Concentrate on community needs and perception through social processes and related infrastructure development
- Provide social thrust towards empowerment of women through social inclusion.

JSWEL's focus on complete life cycle approach where women shall be empowered in such a way that they become strong positive force for change. In line with company's strategy and approach, the following are major interventions are proposed.

- Improving living conditions by eradicating hunger, poverty, malnutrition etc.
- Promoting social development, by promoting education, skill development, livelihood enhancement etc.

- Ensuring Environmental sustainability by nurturing nature and adopting processes to enhance its sustainability, sanitation and personal hygiene, afforestation, rain water harvesting etc.
- Preserving national heritage.
- Sports training.

Annexure-III

DECCAN HERALD 24-9-2014

JSW Energy Limited

Tomagallu, Tq:Sandur, Dist: Bellary (Karnataka)

Environmental clearance accorded for Expansion to JSW Energy Limited

Environmental clearance accorded for expansion by addition of 1x660 MW imported coal based thermal plant at village Tomagallu in Sandur taluk in Bellary district in Karnataka to M/S JSW Energy Limited accorded by Government of India Ministry of Environment, Forests and Climate Change vide letter ref no. J-13012/203/2010-IA.II(T) dated 18th September 2014. The copies of clearance letter available with the State Pollution control board/ committee and may also seen at Website of Ministry of Environment & forests at http://envfor.nic.

Bandra (East), Mumbai - 400 051

Bandra (East), Mumbai - 400 051
Phone : +91 22 4286 1000

Annexure-IV

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 m^3/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.

Received
APDO 5

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

Bandra (East), Mumbai - 400 051