

State Environment Impact Assessment Authority (SEIAA), Bihar
BELTRON Bhawan, 2nd Floor, Shastri Nagar, Bailey Road,
Patna – 800 023

Ref. No. 231

Patna, 28th Nov, 2013.

To,

The Municipal Commissioner,
Patna Municipal Corporation,
2nd Floor, C-Block,
Mauryalok Complex,
Patna.


**Sub: Environmental Clearance for the Integrated MSW Project at
Bariya, Patna, Bihar**

Sir,

This has reference to your application dated 14/11/2013 seeking environmental clearance for the Integrated MSW project at Bariya, Patna under EIA Notification, 2006. The proposal has been appraised as per prescribed procedure in light of the provisions under EIA Notification, 2006 on the basis of mandatory documents enclosed with the application viz. questionnaire, EIA, EMP and additional clarifications furnished in response to the observations made at the Joint Meeting of SEIAA and SEAC meeting held on 26th October, 2013.

Brief details of the Project:

1.	Item No in the list of Schedule/Category.	7 (i) B 1
2	Name of the type of the project.	Integrated MSWM Project, Patna, Bihar.
3.	Name of the Proponent.	Patna Municipal Corporation.
4.	Location of the project.	Latitude: 25 ⁰ 34' 58.08"E Longitude: 85011' 13.56" N


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5.	Plot Area.	77.55 acres.
6.	Product & Capacity.	Processing of 800 tpd MSW 200 tpd compost. 10 MW Power Plant from RDF Plant.
7	Total Water requirement:	450 cu m/ day
	Water requirement for RDF Plant:	100 cu m/day
	Water requirement for Power plant:	325 cu m/day
	Water requirement for drinking & other purposes:	24 cu m/day.
	Water source:	Bore Well
8.	Fuel & Energy.	The project shall produce Power from MSW and as such net producer rather than consumer.
9.	Total Project Cost	Rs. 147.65 Crores.
10	Total Environmental Budget.	42.71 lacs.
	Setting up of Environmental Laboratory	8.00 lacs
	Leachate Collection drains	19.71 lacs.
	Leachate Treatment Plant	15.00 lacs

Specific Conditions

- 1) This E.C is granted for setting up of processing 1000 MSW, 800 TDP RDF, 200 TPD Compost Plant, 10 MW Power plant from RDF Plant and Sanitary landfill.
- 2) That the grant of this EC is issued from the environmental angle only, and does not absolve the project proponent from the other statutory obligations prescribed under any other law or any other instrument in force. The sole and complete responsibility, to comply with the conditions laid down in all other laws for the time-being in force, rests with the project proponent.

(A) Management of municipal Solid waste:

The waste collection, segregation, storage, transportation and the processing and the disposal facilities to set up by the Patna Municipal Authority on their own or through and agency or and operator of a facility shall fulfill the following:

- (i) The safe collection and segregation of municipal solid waste into biodegradable and non-biodegradable components.
- (ii) The horticultural and construction or demolition or debris or dairy waste shall be separately collected and disposed of in accordance with the Bye laws and not to be mixed with municipal solid waste.
- (iii) The municipal authority shall identify storage spaces such as materials recovery facility, as appropriate, for segregation of MSW and storage facilities to be set up municipal authorities shall be so designed that the MSW stored are not exposed to open atmosphere and shall be user friendly. Vehicles used for transportation of MSW shall be covered. Wastes should not be visible to public nor exposed to open environment. The following criteria shall be met:
 - (a) Storage facilities set up by municipal authority shall be attended daily for cleaning wastes. The bins or containers whenever placed shall be cleaned before they start overflowing.
 - (b) Transportation of MSW from place to place should under hygienic conditions and shall be carried through especially designed transport

system as to prevent foul odor, littering, unsightly conditions and accessibility to vectors.

- (iv) Bins for storage of biodegradable waste shall be painted green, those for storage of recyclable wastes shall be painted white and those for storage of other waste shall be painted black
- (v) Manual handling of MSW shall be prohibited and if at all it is unavoidable the handling should be carried out under proper precaution with due care for the safety of the workers
- (vi) The landfill shall only be permitted for non-usable, non-recyclable, non-biodegradable, and non-reactive inert waste so as to reduce the burden on landfill.
- (vii) The bio-medical waste, industrial hazardous waste and e-waste shall not be mixed with MSW as they are governed by separate respective rules.
- (viii) **Open burning of MSW at the land fill site or at any other places in the low laying area is strictly prohibited.**

(B) Development of facilities at Site:

- (i) Landfill site shall be fenced and proper gate to monitor the incoming vehicles or other modes of transportation.
- (ii) The landfill site shall be well protected to prevent entry of unauthorized persons and stray animals.
- (iii) The landfill site shall have waste inspection facility to monitor waste brought in for landfill, office facility for record keeping and shelter for keeping equipment and machinery including pollution monitoring equipment.
- (iv) Provisions like weigh bridge to measure quantity of waste brought at landfill site, fire protection equipment and other facilities shall be provided.
- (v) Utilities such as drinking water (bathing facilities for workers) and lighting arrangements shall be provided.

(C) Land filling operations and Closure on completion of landfill:

1. Waste subjected to land filling shall be compacted in the layers using land fill compactors to achieve high density of the waste.
2. Waste shall be covered immediately or at the end of each working day with a minimum of 10 cm soil, inert debris or construction material till such time waste processing facilities for composting or recycling or energy recovery are set up as per Schedule II.
3. Prior to the commencement of monsoon season and intermediate cover of 40- 55 cm thickness of soil shall be placed on the landfill with proper compaction to prevent infiltration during monsoon. Proper drainage shall be constructed to divert run-off away from the active cell of the land fill.
4. After the completion of land fill a final cover shall be designed to minimize infiltration and erosion. The final cover shall meet the final specification namely
 - (a) The final cover shall have barrier soil layer comprising of 60 cm of clay or amended soil with Permeability coefficient less than 1×10^{-7} cm/sec.
 - (b) On top of the barrier soil layer there shall be drainage layer of 15 cm.
 - (c) On top of the drainage layer, there shall be a vegetative layer of 45 cm to support natural plant growth so as to minimize erosion.

(D) Methods to check pollution:

In order to prevent pollution problems from landfill operations, the following provisions shall be made.

1. Diversion of storm water drains to minimize leachate generation and prevent pollution of surface water and also for avoiding flooding and creation of marshy conditions.
2. Construction of a non-permeable lining system at the base and walls of waste disposal area. For landfill receiving residues of waste processing facilities or mixed waste or wastes having contamination of hazardous materials (such as aerosols, bleaching agents, batteries, waste oils, paint

products and pesticides) minimum liner specification shall be a composite barrier having 1.5 mm high polyethylene (HPPE) geomembrane/ geo-synthetic lines or equivalent, overlying 90 cm of soil (clay or amended soil) having permeability coefficient not greater than 1×10^{-7} cm/ sec. The highest level of water table shall be at least two meters below the base of clay or amended soil barrier layer.

3. Provisions for management of leachates collection and treatment shall be made. The treated leachates shall meet the standards specified in schedule-II.
4. Run-off from the land fill area entering any stream, river, lake or pond shall be prevented.
5. The ground water quality within 50 meters of the periphery of the landfill shall be periodically monitored to ensure that the ground water was not contaminated beyond permissible limit by the Ground water Board or Bihar State Pollution Control Board.
6. Green belt shall be developed in at least 30% of the total project area with suitable spaces as per the guidelines of CPCB.

Ambient Air Quality Monitoring:

1. Installation of landfill gas control system including gas generated at landfill site shall be made at the landfill site to minimize odor generation and prevent off-site migration of gases so as to protect vegetation planted on the rehabilitated land fill surface.
2. The concentration of methane gas generated at landfill site shall not exceed 25 percent of the lower explosive limit (LEL).
3. The landfill gas from the collection facility at the landfill site shall be utilized for either thermal application or power generation as per viability. Otherwise, landfill gas shall be burnt (flared) and shall not be allowed to escape directly to the atmosphere. Passive venting shall be allowed, if its utilization or flaring is not possible.
4. Ambient air quality shall meet the prescribed standards.

Composting:

In order to prevent pollution problems from compost plant, the following shall be complied:

- (i) The incoming waste at site shall be maintained properly prior to further processing. To the extent possible, the waste storage area shall be covered. If such storage is done in an open area, it shall be provided with impermeable base with the facility of collection of leachate and surface water run-off into lined drains leading to a leachate treatment and disposal facility.
- (ii) Necessary precautions shall be taken to minimize nuisance of odor, flies, rodents, birds menace and fire hazards.
- (iii) Waste intake shall be stopped in case of breakdown or maintenance of plant and arrangement shall be made for diversion of waste to a temporary processing site.
- (iv) Pre- process and post- process reject shall be removed from the processing facility on regular basis and shall not be allowed to pile at the site. Recyclables shall be routed through appropriate vendors. The non recyclable shall be sent to a well designed landfill site.
- (v) In case of compost plant the windrow area shall be provided with impermeable base. Such a base shall be made of concrete or compacted clay, 50 cm thick having permeability coefficient less than 10^{-7} cm/ sec. The base shall be provided with 1 to 2% slope and circled by lined drains for collection of leachate or surface run-off.
- (vi) Ambient air quality monitoring shall be regularly carried out particularly for checking odor nuisance at down wind direction on the boundary of the processing plant.
- (vii) Leachate shall be re-circulated in compost plant for moisture maintenance.

In order to ensure safe application of compost, the heavy metals shall meet the prescribed limit

RDF Plant

- 1) Shall have dust Collection and disposal facility and shall have provision for suitable ventilation system.
- 2) Hot gas introduced in the drier shall have proper pollution control equipment like settling chamber.
- 3) There shall be 4.0 TPH Capacity- pelletizing facility to; produce RDF pellets from RDF and biomass.
- 4) Recyclable matter coming out of RDF plant shall be given to the Recycling units. Proper storage space shall be provided for such items in the plant.

Power Plant

- (1) The particulate emissions from the stack connected to the boiler of the MSW TPP shall meet the prescribed standard.
- (2) On line stack monitoring/ Air quality monitoring stations shall be installed. Energy meters shall be installed for all pollution control systems.
- (3) Acoustic enclosures shall be provided around the turbine to control noise level. Ambient Air Quality including ambient noise levels should meet the prescribed standards of MoEF. Regular Ambient air quality monitoring should be carried out and the frequency of monitoring shall be decided in consultation with Bihar State Pollution Control Board. Periodic reports shall be submitted to MoEF Zonal Office, Bhubaneswar.


Part B - General Conditions:

- i. This environmental clearance will be valid for a period of five years from the date of its issue or till the completion of the project, whichever is earlier.
- ii. "Consent for Establishment" shall be obtained from Bihar State Pollution Control Board under Air and Water Act before the start of any activity/construction work at the site.

- iii. No change in the process technology and scope of working should be made without prior approval of SEIAA. No further expansion or modifications in the plant shall be carried out without prior approval of the SEIAA.
- iv. The proponent shall submit half-yearly compliance reports in respect of the stipulated terms & conditions in hard & soft copies to SEIAA and BSPCB on 1st June & 1st December of each calendar year.
- v. Four ambient air quality monitoring stations should be established in the core zone as well as in the buffer zone. Location of monitoring stations should be decided based on the meteorological data, topographical features and environmentally & ecologically sensitive targets.
- vi. Personnel working in dusty areas should wear protective respiratory devices and they should be provided with adequate training and information on safety & health aspects.
- vii. Occupational health surveillance program for the workers should be taken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.
- viii. A separate environmental management cell with suitable qualified personnel should be set up under the control of a Senior Executive, who will report directly to the Head of the Organization.
- ix. The funds earmarked for environmental protection measures and socio-economic development should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to SEIAA. The Project proponent shall undertake eco-development welfare measures in the project area for over all development of the environment.
- x. BSPCB will monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer(s) of the BSPCB by furnishing the requisite data/information/monitoring reports.
- xi. The project proponent shall submit the copies of the environmental clearance to the Heads of local bodies & Panchayats in addition to the relevant offices of the Government who in turn has to display the same for 30-days from the date of receipt of EC.
- xii. The project authorities should advertise at least in two local newspapers widely circulated, one of which shall be in the vernacular language of the locality concerned within 7-days of the issue of the clearance letter informing that the project has been accorded environmental clearance. This order shall be displayed in the website of the project proponent.

- xiii. The proponent shall explicitly follow the suggestions and commitments made in the public hearing.
- xiv. The Municipal Corporation shall ensure that the contractor/operator shall engage people of local area for operation of the facility as far as possible, so as to have opportunities of employment for them.
- xv. Any appeal against this environmental clearance shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.
- xvi. The Municipal Corporation may apply for transfer of environmental clearance under EIA notification dated 14.09.2006 to the contractor/operator finalized by it to SEIAA, Bihar. However, no activity shall be undertaken by the operator/contractor till the environmental clearance is transferred in his name and he is lawfully bound to comply with the conditions of the environmental clearance.
- xvii. The proponent shall obtain all other mandatory clearances from respective departments.
- xviii. Concealing the factual data or 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.
- xix. The SEIAA may alter/modify the above conditions or stipulate any further condition in the interest of the environmental safeguards. The SEIAA may revoke or suspend the order, if implementation of any of the above conditions is not satisfactory.
- xx. The above conditions will be enforced inter-alia, under the provisions of the Water (Prevention & Control of pollution) Act, 1974; the Air (Prevention & Control of pollution) Act, 1981, the Environment (Protection) Act, 1986 and the Public Liability Insurance Act, 1991 along with their amendments and rules.

Yours faithfully


**MEMBER SECRETARY
STATE ENVIRONMENT IMPACT
ASSESSMENT AUTHORITY
(SEIAA) BIHAR**

(S.K. Karn)


Member Secretary
SEIAA, Bihar.

Memo No. :- 231

Patna, dated: 28th Nov,2013

Copy forwarded to : The Secretary, Environment & Forests Department, Sichaibhawan, Patna/ The Chairman, Bihar State Pollution Control Board, Beltron Bhawan, IInd Floor, LBS Nagar, Jawahar Lal Nehru Marg, Shastrinagar, Patna-800023/Chairman, SEAC, Bihar/Chairman, Central Pollution Control Board, Parivesh Bhawan, East Arjun Nagar, Delhi-23/ Chief Conservator of Forest (C), Ministry of Environment & Forests, Regional Office (EZ), A/3, Chandrasekharpur, P.O. Rail Vihar, Bhubaneswar - 751023/, Advisor (EIA), Paryavaran Bhawan, Ministry of Environment & Forests, CGO Complex, Lodhi Road, New Delhi- 110003/ Guard File.

Yours faithfully,



**MEMBER SECRETARY
STATE ENVIRONMENT IMPACT
ASSESSMENT AUTHORITY
(SEIAA) BIHAR**

(S.K. Karn)
Member Secretary

SEIAA, Bihar.