Minutes of the 50th Goa-State Environment Impact Assessment Authority (Goa-SEIAA) meeting held on 27th December (Friday) at 11.00 am at GCZMA office , Pundalik Nagar, Porvorim, Goa.

The fiftieth meeting of the Goa-SEIAA (*hereinafter referred as 'Authority'*) was held on 27th December 2019 at 11.00 am in the chamber of Member Secretary, Porvorim, Goa. The list of members present during the meeting is at *Annexure – 1.*

At the outset, Member Secretary welcomed the Authority members; Chairman of the Authority took note of the email submitted by Member of Goa-SEIAA informing his inability to attend the said meeting due to family function. Further in his e-mail he informed that he has no objection to the proposed SWM facility at Bainguinim . Member Secretary briefed about the agenda items (*refer Annexure – 2*) to be taken up for discussion / deliberations and suitable decisions. Accordingly, the same were considered as detailed below ï

1. Application was received from GWMC dated 07/12/2017 from **Goa waste Management Corporation (GWMC)** requesting for revision in TORs for conducting Environment Impact Assessment (EIA) for the proposed setting up of Solid Waste Management Facility (SWMF) bearing survey nos. 20 Sub Division no-1-1, 3-A-1, 2-A, of village Bainginium. (Old Survey no 20/1 (P), 20/2 (P) and 20/3-A (P) Tiswadi taluka, North Goa district. During 93rd Goa-SEAC meeting held on 10th May 2018 the said application (*i.e. Form-I*) along with enclosed information was screened and appraised by the Goa-SEAC under Category 7 (i) ï Common Municipal Solid Waste Management, as per the ó Scheduleô annexed to the EIA Notification, 2006 (as amended) and terms of reference were issued for conducting Rapid Environmental Impact Assessment study for establishing a Integrated Solid Waste Management Facility (ISWMF) for 250 + 20%TPD on 17/05/2018.

The Authority perused the following documents while examining the proposal ï

1. Form I and annexure enclosed (at the time of seeking ToRsô).

2. Draft EIA report dated 13/09/2019 and final report on 15th November 2019 *(email)* prepared by CSIR-NEERI, Nagpur which was submitted by the Project Proponent ï (GWMC).

3. Response submitted by PP to the suggestions and objections raised by public during public hearing.

4. Project presentation and submission made by PP / Technical Consultant during the 108th Goa-SEAC meeting held on 1st October 2019,

5. The existing location, land use / land cover vis-a-vis present status of site conditions including the nature of activities proposed.

6. Recommendation from the Goa-SEAC during its 109th meeting held on 21st November 2019.

The Authority decided to conduct the site inspection to the proposed facility to verify present status of site conditions including the nature of activities proposed and visited the site on

27/12/2019. The Authority deliberated on the recommendations made by the Committee and noted that committee has taken into consideration the objections and suggestion raised by the public during public hearing along with the response of the PP to the suggestions and objections made .The Committee has recommended certain conditions in respect of odour control in view of the ;proximity to the residential areas, access /approach to the site and transportation of the waste in particular along with other conditions.

Accordingly after considering all above mentioned submissions the Authority decided to accord prior Environmental Clearance (EC) for setting up of Integrated Solid Waste Management Facility (ISWMF) for 250 + 20%TPD bearing survey nos. 20 Sub Division no-1-1, 3-A-1, 2-A, of village Bainginium. (Old Survey no 20/1 (P), 20/2 (P) and 20/3-A (P) Tiswadi taluka, North Goa district to ñAuthorityò (Goa-SEIAA) for grant of environmental clearance (EC) to the said project in accordance with the provisions of the Environmental Impact Assessment (EIA) Notification 2006,(*as amended till date*) subject to compliance of the following ó**General Conditions** ô

1. A Centralized Integrated Solid Waste Management Facility (ISWMF) provisions for MRF Facility, Bio-methanation system along with gas engines, In-Vessel Composting system, Sanitary Landfill, Mobile vehicles, workshop, Facility centre for operators, having canteen, shower area and medical room, Administration building, laboratory, Resource centre, Car & Vehicle parks, effluent treatment and recycle plant, road network, peripheral drains, green buffer belt, site & street lighting, ESR, fire water system, bore well, ground water monitoring wells and plant fencing. The ISWM facility shall comply with the Solid Waste Management Rules, 2016.

2. Complete facility to have automatic operation and a PLC/Scada control from a central control station.

3. Centralized Material recovery facility for recovering recyclables out of the non biodegradable component of city waste with provisions for screening, manual sorting on a conveyor belt, magnetic separator, bailing, packing and storage facilities.

4. Biodegradable fraction shall be extruded, and converted into bio-gas/electricity using anaerobic bio-methanation technology. The residue/Sludge shall be composted using completely enclosed rotating in-vessel composting drums followed by storage, screening and bagging operation.
5. PP should comply with the terms and conditions as stipulated by the Goa State Pollution Control Board (GSPCB) while issuing Consent to Establish under the Air and Water Acts as well as Authorization issued under the Solid Waste Management Rules, 2016.

6. PP should prioritize the issues related to health and hygiene in complying with the matters related to waste disposal & treatment / air & water pollution / waste-water management.

7. PP should not disturb the natural drainage and as far as possible maintain the original topography while designing for landscape development by planting local site-specific plant species and which are not alien to the local environment. In any case, no varieties of *acacia* be used either as avenue plantations or as live-fencing.

8. PP should also submit half-yearly compliance report(s) in hard as well as soft copy format to the Authority for the period upto project completion so as to enable project monitoring during the construction phase.

9. All waste shall be handled under closed sheds with proper lighting and ventilation arrangement.

10. A separate storage shed shall be provided to store RDF, Recyclable & Compost.

11. A separate Tree Mulcher and shredder shall be added to mulch green cuts and garden waste.

12. A proper drainage system shall be provided to convey the wash water & spillage from the existing as well as from the proposed units of the facility, to the proposed ETP. There shall be no spill over of such effluent into the Storm water drain. The Storm water drain shall be specifically for the rain water system and it shall be free from any effluent / wash water at any point of time.

13. The project proponent shall ensure that the number of trucks carrying waste from the proposed waste catchments area and reaching the MSW processing facility shall be minimum in numbers. Transportation of wastes to be undertaken in closed trucks to ensure minimum number of trucks engaged to transport the waste.

14. Provision may be made for solar water heaters and solar power roof-tops facing towards South as well as south-facing walls to be effectively utilized to optimally harness solar energy. Further, considering the project-specific site, PP may necessarily explore the possibility of energy conservation by hybrid energy sources towards minimizing power requirements through national grid.

15. A Report on energy conservation measures conforming to energy conservation norms finalized by Bureau of energy Efficiency should be prepared incorporating details about building materials and technology, R & U factors etc and submit to the State Expert Appraisal Committee and a copy to GSPCB in three months time.

2. <u>PP to follow General Conditions during construction Phase:</u>

1. Water demand during construction shall be reduced by use of curing agents, super plasticizers and other best construction practices.

2. Project proponent shall ensure that surrounding environment shall not be affected due to construction activity.
3. Construction materials shall be covered during transportation and regular water sprinkling shall be done in vulnerable areas for controlling fugitive emission as per CPCB guidelines.
4. All required sanitary and hygienic measures shall be provided before starting the construction activities and to be maintained throughout the construction phase.
5. First Aid Box shall be complied in letter and spirit.
6. The PP shall strictly comply with the building and other construction workers (Regulation of Employment) & conditions of service Act 1996. Local bye laws of concern Authority shall be complied in letter and spirit.
7. Ambient noise levels shall conform to residential standard both during day an d night. Incremental pollution load on the ambient air & noise quality shall closely be monitored during construction phase.
8. Use of Diesel Generator (DG) sets during construction phase shall be strictly equipped with acoustic enclosure and shall confirm to the EPA rules for air and noise emission standards.
9. Safe disposal of sewage and municipal solid wastes generated during the construction phase shall be ensured.
10. All top soil excavated during construction activity shall be used in horticultural/ landscape development within the project site.
11. Excavated earth to be generated during the construction phase shall be utilized within the premises to the maximum extent possible and balance quality of excavated earth shall be disposed off with the approval of the competent authority after taking the necessary precautions of general safety and health aspects. Disposal of the excavated earth during construction phase shall create adverse effect on neighboring communities.
12. PP shall ensure use of eco-friendly building materials including fly ash bricks , fly ash paver blocks, ready Mix concrete (RMC) and lead free paints in the project.
13. Fly ash be used in the construction wherever applicable as per provisions of fly ash Notification under the EP Act, 1986 and its subsequent amendments from time to time, regular supervision of the above and other measures for monitoring should be in place all through the construction phase , so as to avoid disturbance to all surroundings.
14. Personal Protective equipments (PPEs) shall be provided to workers and its usage shall be ensured and supervised.
15. Adequate drinking water and sanitary facilities should be provided for construction workers at the site. Provision should be made for mobile toilets. The safe disposal of waste water and solid waste generated during the construction phase should be ensured.

A. Effluent Treatment Plant (ETP)

All the wastewater generated from various sources e.g. washing of floors/mobile machinery and centrate from sludge de-watering equipmentôs etc. Shall be treated into the proposed Effluent Treatment Plant (ETP) comprising Ammonia Stripping System, Equalization, Physico-chemical Treatment, Biological Treatment and Filtration System. The treated effluent shall be reused for cleaning, floor washing and gardening etc. The plant shall have zero liquid discharge.

B. EMP during Operational phase

CMSWMF are recommended as follows:

a) Regular monitoring of scrubbing system for purification of biogas provided by the equipment vendors prior to utilize in Biogas Genset, for power generation shall be should be monitored to ascertain for absence of SO2 emissions.
b) Biogas Genset and flare (during emergency condition) shall be operated with minimum excess air (controlled combustion using lox NOx burners), so that fuel combustion is optimized and emission of NOx is minimized Ambient air quality with respect to PM10, PM2.5, SO2, NOx, Ammonia, VOCôs and CO should be monitored regularly at different sampling stations selected in consultation with Goa SPCB within the impact zone.
c) The sampling stations should be selected based on the maximum ground level concentration anticipated and keeping maximum stations in the downwind direction and at least one in the upwind direction Port holes and sampling facilities should be provided at proper location in all the stacks for monitoring of flue gas at regular intervals.
d) A weather monitoring station shall be operated continuously and regular data logging shall be done.
e) Proper moisture, oxygen and C:N ratio shall be maintained to minimize the odour and to maintain adequate temperature in compost plant .
f) Green belt shall be provided along the internal roads and plant boundary.
g) To control fugitive emissions of VOCs / Odors, over and above the inbuilt measures of Bio-Scrubbers provided by the vendor along with the plant equipment.
h) Ground water monitoring as per SWM Rules 2016 and as per compliance to consent to operate to be issued from GSPCB.

C. Biological Environment

a) Development of green belt with carefully selected (tolerant to air pollution) plant species is of prime importance due to their capacity to reduce noise and air pollution impacts by attenuation/assimilation and for providing food and habitat for local macro and micro fauna.
b) For developing the greenbelt in and around proposed project site care need to be taken to plant the evergreen species. The planting of evergreen species Survival rate of the planted trees should be closely monitored and the trees may have certain advantages that may reduce the environmental pollution.

c) The rainwater harvesting shall be practiced to the maximum possible extent which could not survive should be replaced by more tolerant species.

d) Provision of land and adequate funds for strengthening of existing as well as additional plantation to create green belt of appropriate width as per CPCB guidelines should be made in the proposed project.

e) Social awareness programme about the importance of conservation of flora and fauna need to be conducted. The tourists should be strictly warned to avoid throwing of non-degradable waste materials in the project area, so that ecosystem should not get harmed.

f) Existing flora at site and in the quarries to be preserved to an extent possible and fencing to be provided around the quarry. However utilities with minimum damage to existing flora and fauna may be permitted.

D. Socio-economic Environment

a) PP should undertake regular environmental awareness programs to bring forth the beneficial aspects of the projects and environmental management measures being undertaken for improving their Quality of Life.

b) Social welfare activities should be undertaken by the project proponent in collaboration with the local bodies and the information regarding the project activity and its plans, social welfare programme etc. should be circulated in the form of booklets and shown as audio-visually.

c) In order to improve socio-economic status in slum area, the PP should consider extending welfare measures to the local people under the community development programme.

d) In order to minimize impact due to traffic conjunction, scheduling for the movement of vehicles should be done in order to avoid peak traffic condition, to the extent possible.

e) Road side plantation on both side of the approach road to the project site may be undertaken by the project Proponent.

f) Continuous Awareness & involvement of occupants and floating population in SWM shall be organized for total success

3. Further, the Authority decided to direct the PP to comply with the following **"Specific Conditions" during post-construction phase**:-

1. In view of the close proximity of the proposed facility to the Residential project the said facility of segregation and sorting etc should be established in completely enclosed shed with double doors and exhaust system with bio filters to control the odour.

2. The PP will ensure that there is at least one more access made available to the proposed site

3. The PP will ensure that the transportation of waste will be in closed trucks with leachate collection facility and minimum in numbers to the extent possible.

4. The mitigation measures for odour control. The mitigation measures proposed to minimise odour are as follows:

5. Maintaining proper air and moisture in the compost plant area.
6. Covering the landfill area under operation daily with layer of earth, clay or a similar material.
7. Covering by using heavy duty hessian, plastics and foams
8. After visual inspection of waste and weighing at Weighbridge, the waste shall be delivered to the dedicated bunkers for each type of waste. It shall be a totally enclosed structure with Entry/Exit of Garbage Compactors, Floor Washing Connections, Drainage System, Lighting, negative Ventilation and the exhaust air within the Facility is passed through bio filters for odour control.

2) PP shall ensure completion of ETP, solid waste disposal facility, secured landfill green belt development prior to occupation of the buildings. No physical occupation of allotment will be given unless all above said environmental infra structure is installed and made functional including water requirement prior certification from appropriate authority shall be obtained.

3) Wet garbage should be treated by organic waste convertor and treated waste (manure) should be utilise in the existing premises for gardening. And no wet garbage will be disposed outside the premises. Local authority should ensure compliance to this.

4) A complete set of all the documents submitted to Goa-SEIAA should be forwarded local authority, GSPCB and Planning authority.

5) In the case of any change(s) in the scope of the project, the project would require a fresh appraisal by the Goa-SEIAA.

6) Separate funds shall be allocated for implementation of environmental protection measures /EMP along with item wise breaks-up. The funds earmarked for the environment protection measures shall not be diverted for other purposes.

7) A copy of the environmental clearance letter shall be sent by PP to the concerned Village Panchayat and planning authority as applicable, from which suggestions / representation, if any, were received while processing the proposal. The EC letter shall also be put on the companyôs website by PP within one week time period from date of issue of environmental clearance.

8) The PP shall upload the status of the compliance of the stipulated EC conditions, including results of monitoring data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of the MoEF & CC, the respective Zonal

office, CPCB and the GSPCB. The pollutant levels in respect of SPM, RSPM, SO_2 and NO_X (*ambient levels as well as D.G. stack emissions*) shall be monitored.

9) The environmental statement for each financial year ending 31st March in Form-V is to be submitted to the GSPCB as prescribed under the Environment (*Protection*) Rules 1986 (as amended) and subsequently shall also be put on the companyôs website along with the status of the compliance of the EC conditions and shall also be sent to the respective Regional Office of the MoEF & CC.

10) Consent to Operate shall be obtained from GSPCB before operation, failing which the Environmental Clearance herein shall be deemed to be withdrawn.

11) Utilization of Diesel power generating sets is subject to power failure condition only. The DG sets proposed as a source of power back up during operation phase should be of enclosed type, low sulphur diesel run and conform to rules made under the Environment (Protection) Act, 1986. The DG sets should be subjected to periodic noise and stack monitoring in consultation with GSPCB. Waste/used diesel should be stored and managed as per the Hazardous and other Wastes *(Management & Transboundary Movement)* Rules, 2016 as amended.

12) Noise should be controlled to ensure that it does not exceed the prescribed standards both during day & night time.

13) The ground water drawl from existing/proposed bore wells if any should be done only with the prior permission of Ground Water Board. The ground water level and its quality should also be monitored regularly both during construction and operation phase in consultation with Ground Water Board.

14) Traffic congestion near the entry and exit points from the roads adjoining the project site must be avoided. Parking should be fully internalized and no public space should be utilized.

15) Energy Conservation measures such as solar lighting for common area, solar water heating system; LEDs for lighting of areas, LED lights for signage, solar inverters on the etc should be adopted.

16) E-waste should be used properly collected and disposed off/ sent for recycling as per the prevailing guidelines/rules of the regulatory authority as per E-Waste Management Rules 2016.

Meeting ended with vote of thanks to the chair.

Sd/-	***Sd/-***
Shri. Johnson Fernandes	Mr. Vivekanand L. Sawkar
Member Secretary, Goa-SEIAA	**Chairman, Goa-SEIAA**

Place: Porvorim
Date: December 2019