

**BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL
(SOUTHERN ZONE BENCH, CHENNAI)**

**Original Application No.442 of 2013 (SZ)
With
Original Application No.20 of 2017 (SZ)
With
Original Application No.276 of 2017 (SZ)
With
Original Application No.77 of 2021 (SZ)**

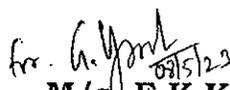
Jith Kumar ...Applicant(s)
Versus
The State of Kerala and others.Respondent(s)
With
Abdul Bhasheer ...Applicant(s)
Versus
Kochi Municipal Corporation &Ors.Respondent(s)
With
Lawyers Environmental Awareness Forum ...Applicant(s)
Versus
State Level Environment Impact Assessment Authority,
Trivandrum and others.Respondent(s)
With
Suo Motu Proceedings initiated based on a Letter received from Justice A.V. Ramakrishna
Pillai, Former Judge, High Court of Kerala, Chairman, State Level Monitoring Committee,
Kerala.
Versus
The Chief Secretary, Government of Kerala, Thiruvananthapuram and Ors.Respondent(s)

**PROPOSED ACTION PLAN FILED BY ADDITIONAL CHIEF SECRETARY,
LOCAL SELF GOVERNMENT**

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Dated at Chennai on this the 08th May 2023.

for. 
M/s. **E.K.KUMARESAN**

Standing Counsel for State Government of Kerala - NGT(SZ) Chennai Bench.

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Proposed Action Plan

The NGT while hearing the Brahmapuram fire incident case on 27.04.2023 urged the ACS,LSGD to file a detailed report about the action taken pursuant to the orders passed by the Tribunal for removing the burnt waste, plastic and ash from the dump yard and also the RDF fraction which is segregated and kept separately. It was also asked to report on the commissioning of Waste to Energy Plant and the timeline for the same.

NGT observed that about 80,000 Tons of Refuse Derived Fuel (RDF) Fraction from the fire affected area are already separated which could be transported to the WtE Plant which is to be commissioned by LSGD or in the alternate, it could be removed to the cement industries where it can be used as a co-fuel.

The following report is submitted for the kind consideration of the National Green Tribunal:

The responsibility of clearing the RDF lies with the contractor undertaking bio remediation of the Brahmapuram site. It is the same agency which won the contract for the WTE plant in Brahmapuram. The WTE plant however has not moved forward on account of the reluctance of the Kochi Municipal Corporation to sign the concessionaire agreement. Of the other WTE plants proposed in the State, only two of them are at the stage of achieving financial closure, and work is yet to commence at these sites. Therefore the option of transporting the RDF to the WTE plant to be commissioned within the State is not an available option at present. The other option is to take it to cement factories or WTEs outside the State.

As per the technical specifications (section 5) clause 1 xvii of the agreement for bio remediation between the Kochi corporation and the contractor, the contractor was bound to undertake "baling, packing, stacking, storing and sale of non recyclable fraction of high calorific value to RDF /pellets using appropriate technology and sale to waste to energy or co processing in cement plants or to thermal power plants."

As per clause 1 xviii, the contractor was bound to produce "the copy of agreement entered into with the cement kiln in disposing the RDF prepared". Accordingly copy of agreements entered into with cement kilns in Tamil Nadu had been produced before the city corporation by the contractor. However it was reported by the KMC that the contractor was not removing the RDF on the basis of which a meeting was held with the contractor by the

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MLSGD (on 30.12.2022) in which it was very clearly informed that in view of the uncertainty over the WTE project, the RDF could not be stored for usage in a prospective plant, but had to be transported to the WTE sites which were committed to as per the agreement (as noted above). In early March the fire broke out, and it was seen that the RDF has not been removed. Until the fire was brought under control, no other activity was possible. Although the Contractor is learnt to have resumed operations, the RDF is still not removed.

The responsibility of segregating and removing the waste at the site following environmental standards including leachate treatment is the responsibility of the Contractor. Be that as it may, in view of the fact that the contractor has not done the following:

1. Remove the RDF as bound to do in accordance with contract conditions
2. Segregate and manage the waste created on account of the fire, which also fall under his responsibility as long as the site is with him

the government has been compelled to think of undertaking arrangements to do address the same at the risk and cost of the contractor.

Various options were explored to find a solution to this issue.

The biomining at the site will have to be resumed for which new contractor/s are to be identified through due process or departmental action initiated. Action for closure of the contract and resumption of bio mining with increased machinery and resources is underway. Help has been sought from the Engineers India Ltd (technical resource agency to GOI) to expedite the biomining process.

Discussions were held with the Industries department and Malabar cements to explore the scope of modifying the furnace in the plant to enable it to receive RDF – however this was found to be an unviable option.

The report of NIIST was discussed with a panel of experts. A technical committee was constituted to study the situation on the ground and submit recommendations, taking into account the observations of the study by NIIST. Based on the recommendations of the committee and in house deliberations in the matter the following action plan has been conceived.

1. For the RDF at the site:

One of the reasons that the RDF has not been transported appears to be the

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poor quality of the RDF – on account of inadequate segregation. This may not be acceptable to cement factories. An effort will be made through the Kochi corporation to contact the factories with whom the contractor had made arrangements for receipt of the RDF and to dispose of the accumulated RDF as per their willingness. This process will take 5 months if the RDF is to be removed to cement factories or WTE plants. In case the cement factories do not accept the RDF as it is, segregation would have to be undertaken as part of bio remediation and processed accordingly – as recyclables, as high calorific value waste that can be used by cement factories, as low calorie waste that can be processed as briquettes etc and as inert waste that would need to be capped. This will be completed within 9 months from the date of award for bio remediation as explained below.

For the Burnt Ash at the site:

At site, the toxic burnt material is completely mixed with the biomined as well as the non-biomined waste as the Hitachis have taken the burning/burnt waste, turned it over and wetted the same. The same methods had to be used even after the fire was doused, to fight the minor fires which could potentially break out on account of it having been a smouldering fire. Therefore it is not possible to take action to dispose of the waste without ensuring segregation first. This would entail bio remediation.

Action for closure/termination of the existing contract for bio remediation is under way. On closure, the area will be retendered for urgent biomining. The intended timelines are

- Finalisation and approval of RFP/Tender document: 2 weeks
- Opening of tender: one month from date of RFP
- Finalisation of tender: 2 weeks from date of opening financial bid
- Total period till award: 2 -2.5 months from date

The department will opt for departmental action for biomining of the site in case any delay is experienced in the execution of the tender. In parallel, assessment of the availability and the number of trommels that can be pressed into service is being undertaken. It is estimated that at least 9 months would be needed from the date of the award to complete the biomining, keeping in mind the rainfall likely to be experienced. Departmental action would also take the same amount of time. Bio mining systems would have to be set up in 8 grid zones identified and marked (as per the recommendation of the technical committee).

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Unburnt and semi burnt waste:

The Brahmapuram dumpyard was divided into three sectors to estimate the quantum of unburnt, semi burnt and ash mixed with mud or soil as per the NIIST report. Sector IA and IB pertained to the legacy waste area. The area where fresh plastic was found burnt was also assessed. A total of 8151.1 MT of semi burned plastic and 95923.5 MT of ash mixed with mud and soil was estimated to be present on the site. For these three areas, the unburnt waste was estimated to be 104710.6 MT.

After separation through sieving, the unburnt waste is to be baled and stacked in a leachate controlled impoundment area at the site for removal to cement factories (estimated at 4-5 tonnes per day), based on calorific value testing. Coal substitute briquettes will be produced from the unburnt waste and transported. The same process will be adopted for semi burnt waste.

Ash mixed with mud/soil:

Temporary storage impoundment after expert advice from Hydrologist will have to be constructed. Impoundment area will need to be lined with impervious clay soils and flexible double membrane liners in order to protect groundwater. Leachate collection systems must be installed between the liners, and groundwater monitoring wells will have to be constructed on urgent basis. The heap thus formed will be provided with microbes for bioremediation process to be activated during the dormant period during rains. Post rains, the Ash mixed Mud/ soil will be checked for contamination and scientific bioremediation will be done to reclaim the quality of the soil for reuse. The expertise of KEIL will be sought for the purpose.

KEIL has also been requested to take as much of the fully burnt ash as possible for management in the hazardous waste landfill near Brahmapuram. It is understood that only one cell is available for such transport and that setting up of new cells will take 9 months.

Earth on the site on account of the sifting process will be checked for contamination levels and shifted out for filling low lying areas or as needed in construction work, particularly the ongoing NH expansion. The good earth so formed can be reused in filling gaps, trenches, roadways construction projects etc. Where possible the scope of mixing contaminated soil with good earth to reduce levels of contamination to acceptable levels and press into use as above will also be explored.

Post rains, the below measures will be undertaken to clear the temporary waste storage impoundment areas:

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1. The soil collected from the site will be processed through intensive bioremediation measures. The Good earth so formed will be reused in filling gaps, trenches, roadways construction projects etc.
2. The huge volumes of semi-burnt and unburnt waste need to be handled through multiple mitigation measures - RDF briquettes will be processed from a fraction of the waste at the dumpyard to be provided to energy intensive industries after evaluating the calorific value.
3. Inert waste ie waste which is neither biologically nor chemically reactive and will not decompose will be handed separately by converting them to sand or building material further to be used instead of natural sand for construction purposes.
4. The technical committee has recommended construction of Hazardous waste landfill (scientific capping) keeping in mind all scientific parameters and in full awareness of source reduction. The Hazardous waste landfill is to be used only for any contaminated waste identified in the residue post fire. Usually hazardous waste landfills are engineered for non liquid hazardous waste. This landfill will require double liners; double leachate collection and removal systems; leak detection safeguards, run-on, runoff, and wind-dispersal controls; and ongoing "quality assurance" monitoring.

Other:

A standard operating procedure for the waste management at Brahmapuram in the context of the above proposed actions will be developed urgently to be ensure that all these actions are undertaken in complimentarity and with the best possible results.

The report is submitted for favour of consideration by the NGT in its hearing on 8.5.2023.



Sarada Muraleedharan,
ACS LSGD
7.5.2023

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