

**BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL
PRINCIPAL BENCH, NEW DELHI**

ORIGINAL APPLICATION NO. 514/2019

Applicant(s) : State Level Monitoring Committee

Versus

Respondent(s) : The State of Kerala & others

VOLUME-1

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Dated this the 14th day of September 2020

JogyScaria, Advocate
ADDITIONAL STANDING COUNSEL FOR THE RESPONDENT

**BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL
PRINCIPAL BENCH, NEW DELHI**

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**ADDITIONAL REPORT FILED BY THE CHIEF ENVIRONMENTAL
ENGINEER, FOR AND ON BEHALF OF KERALA STATE POLLUTION
CONTROL BOARD**

Adv. JogyScaria, Advocate
ADDITIONAL STANDING COUNSEL FOR THE RESPONDENT

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**ADDITIONAL REPORT FILED BY CHIEF ENVIRONMENTAL ENGINEER,
FOR AND ON BEHALF OF KERALA STATE POLLUTION CONTROL
BOARD**

1. M.A Baiju, 54 years, S/o M.K. Aravindakshan, now working as Chief Environmental Engineer, Regional Office, Kerala State Pollution Control Board, Ernakulam. I am competent to and duly authorized to represent the Board. I know the facts and circumstances of the case. The factual submissions made here under are true and correct to the best of my knowledge, information and belief. In these circumstances, it is just and necessary that this Hon'ble Tribunal may be pleased to accept the accompanying report on file and it is so humbly prayed in the interests of justice in this case.

2. It is respectfully submitted that this is in continuation to the report already submitted dated 01.08.2020 as per the order dated 03.07.2020 of the Hon'ble NGT in the above-mentioned application. The Hon'ble Tribunal vide order dated 03.07.2020 observed that the progress appears to be very slow in providing waste to energy plant. In order to ascertain the situation, the Chairman, Kerala State Pollution Control Board convened a video conference on 17.08.2020 with the Secretary, Kochi Corporation and with the Municipalities of Aluva, Angamali, Kalamassery, Maradu, Thrikkakara, and Thrippunithura and panchayths namely Cheranallur and Vadavucode-Puthencruz, to ascertain the compliance of the Solid Waste Management Rules, 2016. The officials from the Directorate of Urban Affairs and Directorate of Panchayath were also present in the Video conference. During the meeting the observation of the Hon'ble NGT on 03.07.2020, that very slow progress on solid waste management, was brought to their notice



M.A. Baiju

M. A. BAIJU
Chief Environmental Engineer

and made discussion for speeding up the process of implementation of solid waste management.

3. It is respectfully submitted that the Chairman discussed issues related to the waste management and directed Kochi Corporation and the municipalities that are transferring waste to Brahmapuram to furnish the details and specific action taken report and time bound action plan and the details called for by the Board in the prescribed format by 27.08.2020.

4. I may humbly submit that accordingly reports in the above format were submitted by the Kochi Corporation and the municipalities namely Aluva, Angamali, Kalamassery, Maradu, Thrikkakara, and Thrippunithura. On hearing, Maradu municipality reported that they are not transferring waste to Brahmapuram; instead they informed that de-centralized wet waste treatment facilities are being materialized there.

5. I may humbly submit that the Kochi Corporation submitted a detailed report with time bound action plan for the compliance of the solid waste management and a copy of the same is submitted herewith as **Exhibit 1**. The main actions submitted by them are as follows:

- i. *Regarding the "Waste to Energy project", efforts were taken by Kerala State Industrial Development Corporation (KSIDC) on behalf of the Government to enter into agreement with M/s. GJ Ecopower Pvt Limited vide G.O (Rt)No.805/2020/LSGD dated 30/04/2020 but terminated the concession agreement after affirming that they would not be able to implement the project even if more time is granted vide G.O (Rt)No.1064/2020/LSGD dated 05/06/2020. Hence the Government again floated fresh tenders on 24/06/2020 with last date for submission of bids as 03/08/2020. As requested by the prospective bidders the last date of submission of bids was extended till 14/09/2020. The tender procedures will be completed by 15/10/2020. Government approval to the tender is expected to be received by 15/11/2020 and the project will be completed in 24 months time after the receipt of required approvals and clearances for the project.*
- ii. *For biomining of legacy waste, tendering was done by the Government on 24/06/2020 with last date for submission on 27/08/2020. Bids were opened on 3/09/2020. 3 bids were received. Bids are being evaluated and the tender process will be completed by 1st week of October 2020 and in another 9 months' time from October 2020 it is expected to complete the work.*




M. A. BAIJU
 Chief Environmental Engineer

- iii. There are about 1,67,935 households in Kochi Corporation. Wastes are directly collected from about 1,50,730 HHs (90%) (Door to door collection of wastes). In about 7,262(4.32%)HHs source level treatment of wastes is adopted. In another 8204 HHs(4.88%), CREDAI a real estate builders association is taking care of the waste management. In total 99.2% of the total wastes are either collected by door to door collection or processed at source. Only the remaining 0.8% (1343) of the households needs to be brought on board for 100% collection and processing of waste. This will be ensured by end of November 2020. For the establishments, 100% door to door collection of waste from establishments also will be ensured by November 2020. The wastes that are collected are transported in covered vehicles and compactor trucks to the Brahmapuram plant.
- iv. Regarding source level segregation, of the 90% of HHs where door to door collection of wastes are practiced, 85% of HHs store wastes in segregated form (biodegradable waste and non-biodegradable wastes separately). 5% of HHs where source segregation is not practiced belongs to the areas in and around Fort Kochi. To promote source segregation of wastes, under the Cochin Smart Mission (Smart City Project) 30,000 bins were distributed to the HHs in Fort Kochi area. 100% segregation of waste will be ensured through the Kudumbasree already engaged in waste collection and by restructuring and streamlining the 548 number of existing Kudumbasree/Haritha Karma sena. This will be achieved by end of November 2020. The Corporation proposed to ensure 100% segregation of waste through the Kudumbasree already engaged in waste collection and by restructuring and streamlining the Kudumbasree/Haritha Karmasena.
- v. On an average 250 tonnes per day of wastes are received at the windrow compost plant that includes waste collected from 5 municipalities and 3 gramapanchayaths. 23 windrows of 4x4x80m size are usually formed. Due to space constraints in the dilapidated shed, it is to be operated with 23 windrows, which are regularly rotated for aeration and accelerate the composting. Repair of trommels and many other maintenance works were carried out in the plant in March 2019. On an average 250 tonnes of biodegradable wastes are processed in the plant daily and about 20 tonnes of finished 6mm sieved manure is produced which are sold to planters. 9 cameras were installed at the Brahmapuram plant for surveillance and all the cameras are in good working condition.



A handwritten signature in blue ink, appearing to be "M. A. Baiju".

M. A. BAIJU
Chief Environmental Engineer

- vi. Action was initiated to gradually bring down the quantity of non-biodegradable waste taken to Brahmapuram plant. For this purpose, 5 MRFs will be operated by November 2020 and to MCF in each ward by 31.05.2021.
- vii. The leachate generated from the windrow composting plant is collected in the newly constructed 100m³ capacity collection tank. From the collection tank it is pumped to a tanker truck of 5000 litre capacity and taken to the septage treatment plant of 100KLD capacity (UASB reactor combined with MBBR, sand filter, activated carbon filter and sludge drying beds) within the premise and treated there. Leachate generated from the windrow composting plant is having low heavy metal content but high organic loading. copy of the test result is submitted herewith as Annexure. Five such loads are taken to the plant daily. Test result of sample drawn from the septage treatment plant outlet tested by Kerala State Pollution Control Board enclosed as Annexure. The commissioning of leachate treatment plant is proposed to be commissioned by 15.03.2021.
- viii. Govt identified land for sanitary landfill, Sanction was accorded by the Government to Kerala Enviro Infrastructure Limited and Clean Kerala Company Limited vide G.O.(Rt) No. 1198/2020/LSGD dated 18.06.2020 for constructing **Regional sanitary landfill** in the land purchased by KINFRA from FACT near Brahmapuram by utilizing 25 acres of land.
- ix. C&D wastes are not collected nor mixed with the other wastes collected, transported and treated by Corporation. C&D wastes are reused for filling low-lying areas and filling of basement areas and for construction of pavement tiles and kerb stones.
- x. Modernization of existing slaughter house at Kaloor with rendering plant will be completed by 02.02.2021. The construction of modern slaughter house at Marakkadavu, Fort Kochi with rendering plant will be completed by 02.02.2021.

6. It is respectfully submitted that biodegradable wastes from municipalities namely Aluva, Angamaly, Kalamassery, Thrikkakara, and Thrippunithura which falls in the categories of Class II and below, have also submitted the action taken report and time bound action plan to bring down the quantity of biodegradable waste to be treated in Brahmapuram.

7. I may humbly submit that from the above, it can be observed that Kochi Corporation submitted the efforts with timelines taken for the implementation of Solid Waste Management Rules, 2016 Kerala State



M. A. BAIJU
M. A. BAIJU
Chief Environmental Engineer

Pollution Control Board has initiated steps for verifying the commitment explained by the Corporation illustrated above **(Items i-x)** and monitoring the compliance of the above time frame. It may be pertinent to note that prosecution steps have also been initiated against the Kochi Corporation and also assessed Environmental compensation. Copy is submitted as **Exhibit 2**. Further action will be taken as per the direction of the Hon'ble NGT.

8. It is respectfully submitted that there are restrictions imposed due to lockdown in view of the outbreak of COVID-19 in the country. Though certain relaxations were allowed in lockdown recently, the COVID-19 pandemic wide spreading rapidly. Hence, the delay if any occurred to initiate actions are due to time constrains faced in allocating field staffs for conducting detailed verification of the facilities provided by the local bodies mentioned above.


CHIEF ENVIRONMENTAL ENGINEER



M. A. BAIJU
Chief Environmental Engineer

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VOLUME 2

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Dated this the 14th day of September 2020



KOCHI MUNICIPAL CORPORATION

Phone { 2369007, 2369196
2369143, 2369149
2369197, 2369069
Fax : 91-484-2369023

Corporation Office
P.B.No.1016
Ernakulam. Cochin 682 011

No.MOE2-10948/17

11/09/2020

From
Secretary

To
The Director-Urban Affairs
Swaraj Bhavan,
Nanthancode, Kowdiar(PO)
Thiruvananthapuram – 695003
E.Mail: duatvpm@gmail.com

The Member Secretary
Kerala State Pollution Control Board
Head Office, Pattom P.O
Thiruvananthapuram -695004
E.Mail: rulespcb@gmail.com

Sir,

Sub: Clarification to the SWM Rules'16 compliance report

Ref. 1. Letter No.MOE2/10948/17 dated 24/08/2020

2. E.Mail from rulespcb@gmail.com to kochicorpsecretary@gmail.com
with copy to duatvpm@gmail.com dated 08/09/2020

With regard to the clarification sought on the letter under ref.1 regarding the implementation of SWM Rules 2016, the following details are submitted:

1. Vide G.O (Ms)No.8/2020/DMD dated Thiruvananthapuram 05/03/2020 Government have cancelled the tenders floated by Kochi Corporation for "Biomining of legacy waste" and assigned KSIDC to float fresh tenders. On 20/03/2020 KSIDC invited tenders for bio-mining of legacy waste. 2 bids were received, but both the bidders did not qualify the minimum financial and technical eligibility criteria. The work was re-tendered on 24/06/2020 with last date for submission on 27/08/2020. Bids were opened on 3/09/2020. 3 bids were received. Bids are being evaluated and the tender process will be completed by 1st week of October 2020. And in another 9 months time from October 2020 it is expected to complete the work. (Ref.Letter No.KSIDC/TVM/W2E/2020/1003 dated 09/09/2020). Under the scope of work of biomining all the waste in the dumping yard including those lying around the shed will be removed.
2. Regarding the "Waste to Energy project" Government vide G.O (Rt)No.805/2020/LSGD Dated 30/04/2020 cancelled the approval granted to the concessionaire M/s GJ Ecopower Pvt Ltd and directed Kochi Corporation to terminate the concession agreement. The concession agreement was terminated by Kochi Corporation accordingly KSIDC was directed to float fresh tenders for the waste to energy project. The concessionaire was also heard by the Government as directed by Hon'ble High Court and Vide G.O (Rt)No.1064/2020/LSGD dated 05/06/2020 Government affirmed that the concessionaire would not be able to implement the project even if more time is granted and directed the MD, KSIDC to float new tenders. KSIDC floated fresh tenders on 24/06/2020 with last date for submission of bids on 03/08/2020. As requested by the prospective bidders the last date of submission of bids was extended till 14/09/2020. The tender procedures will be completed by 15/10/2020. Government approval to the tender is expected to be received by 15/11/2020 and the project will be completed in 24 months time after the receipt of required approvals and clearances for the project.(Ref.Letter No.KSIDC/TVM/W2E/2020/1003 dated 09/09/2020)
3. There are about 1,67,935 households in Kochi Corporation. Wastes are directly collected from about 1,50,730 HHs (90%) (Door to door collection of wastes). In about 7,262(4.32%)HHs source level treatment of wastes are adopted. And in another 8204 HHs(4.88%) CREDAI a real estate builders association is taking care of the waste management. In total 99.2% of the total wastes are either collected by door to door collection or processed at source. Only the remaining 0.8% (1343) of the households needs to be brought on board for

100% collection and processing of waste. This will be ensured by end of November 2020.

Of the 90% of HHs where door to door collection of wastes are practiced, 85% of HHs store wastes in segregated form (Biodegradable waste and Non-biodegradable wastes separately). 5% of HHs where source segregation was not practiced belongs to the areas in and around Fort Kochi. To promote source segregation of wastes, under the Cochin Smart Mission (Smart City Project) 30,000 bins were distributed to the HHs in Fort Kochi area. The HHs were already covered under door to door collection of waste.

4. Time bound action plan was sent with the status report of solid waste management vide letter No.MOE2/10948/17 dated 26/08/2020 as annexure. It is also enclosed with this letter after revision for reference.
5. 100% segregation of waste will be ensured through the Kudumbasree already engaged in waste collection and by restructuring and streamlining the 548 number of existing Kudumbasree/Haritha Karma sena. This will be achieved by end of November 2020. 100% door to door collection of waste from establishments also will be ensured by November 2020.
6. Time bound action plan was sent with the status report of solid waste management vide letter No.MOE2/10948/17 dated 26/08/2020 as annexure. It is also enclosed with this letter after revision for reference.
7. The leachate generated from the windrow composting plant is collected in the newly constructed 100m³ capacity collection tank. *(The composting plant is having a capacity to process 250 tonnes per day of bio-degradable waste with a manure conversion efficiency of 6-8% compared to the 12% standard mentioned in the CPHEEO manual on SWM 2016. On an average 250 tonnes of segregated biodegradable wastes are received at the plant and processed. To ensure that only segregated wastes are sent to the treatment facility a vehicle pass system duly certified by the Health Inspectors of the respective health circles was also introduced)* From the collection tank it is pumped to a tanker truck of 5000 litres capacity and taken to the septage treatment plant of 100KLD capacity (UASB reactor combined with MBBR, Sand filter, Activated Carbon Filter and Sludge drying beds) within the premise and treated there. 5 such loads are taken to the plant daily (25 KLD). Due to public resistance against the facility only 12 loads (60KLD) of septage from outside are received

1

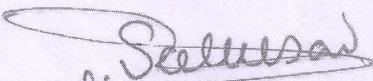
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Action initiated to gradually bring down the quantity of non-biodegradable waste taken to Brahmapuram. As a first step already constructed 5 MRFs will be operated. Will be completed by November 2020.

9. Details regarding chicken stalls, mode of treatment etc will be submitted soon.
10. About 85 tonnes of dry waste were given to Clean Kerala Company so far. There are no registered recyclers
11. Corporation is not collecting or storing the construction and demolition wastes. C&D wastes are reused and disposed by the builders itself in filling the foundation and making pavement tiles.
12. Non-recyclable wastes are at present not taken to any cement factory.

Yours faithfully,


Adhikari Secretary
#



15/29

Phone 2369007, 2369196
2369143, 2369149
2369197, 2369069
Fax : 91-484-2369023

No.MOE2-10948/17

09/09/2020

From
Secretary

To
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11. Corporation is not collecting or storing the construction and demolition wastes. C&D wastes are reused and disposed by the builders itself in filling the foundation and making pavement tiles.
12. Non-recyclable wastes are at present not taken to any cement factory.

Yours faithfully,

Secretary

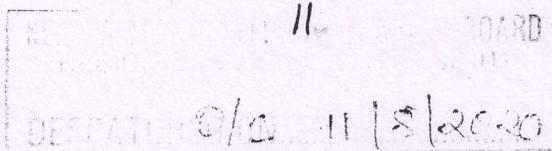


EXHIBIT - 2



PCB/RO-EKM/GEN- 258/2019

11.08.2020

From

The Chief Environmental Engineer

To

The Member Secretary

Sub: Prosecution & Assessment of EC against Kochi Corporation & Others :
Reg

Ref: 1. Mail forwarded on 31.07.2020 for vetting the draft report
2. Discussion had on 31.07.2020, 01.08.2020 & 11.08.20.
3. Updated Status report dated 01.08.2020 submitted before the
Hon'ble NGT

Madam,

As discussed, I may forward a copy of the assessment details of Environmental Compensation against Kochi Corporation and Local Bodies [As per the SWM Rules(Ann R2 C) and order dated 03.07.20 of the Hon'ble NGT(Ann R2 D)] utilizing the dumping yard at Brahmapuram exclusively for biodegradable waste disposal. It may also be noted that a reminder was received on 31.07.2020 from that office intimating the case details and a copy of the draft of report along with Annexures including both these assessment details were already forwarded on that day itself for vetting and the vetted report was submitted in time (01.08.2020) before the Hon'ble NGT (Copy of this report also sent through mail). Regarding prosecution against Corporation, the Advocate Standing counsel was contacted and was advised that a detailed report need to be sent for completing further formalities. The letter asking legal advice will be sent soon.

Yours faithfully,

M A BAIJU

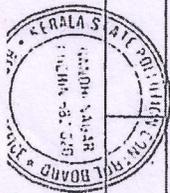
Digitally signed by M A BAIJU
Date: 2020.08.11 14:11:54 +05'30'

CHIEF ENVIRONMENTAL ENGINEER

Enclosed as above.

ASSESSMENT OF ENVIRONMENTAL COMPENSATION (KOCHI CORPORATION AND 5 MUNICIPALITIES)

City	Kochi Corporation	Kalamassery Municipality	Aluva Municipality	Angamaly Municipality	Trikkakara Municipality	Thirupunthura Municipality
Population (2011)	677,381	71,038	22,428	33,495	77,319	69,390
Class	Class I	Class II	Class III	Class III	Class II	Class II
Waste Generation (kg. per person per day)		0.3	0.3	0.3	0.3	0.3
Waste Generation (TPD)	315.96	21.31	6.73	10.04	23.20	20.82
Waste Disposal as per rules (TPD)	31.60	2.13	0.67	1.00	2.32	2.08
Waste Management Capacity Gap (TPD)	284.36	19.18	6.06	9.04	20.88	18.74
Calculated EC (capital cost component) in Lacs. Rs.	682.47	46.03	14.53	21.69	50.10	44.55
Minimum and Maximum values of EC (Capital Cost Component) recommended by the Committee (Lacs Rs.)	Min. 100 Max. 1000	Min. 100 Max. 1000	Min. 100 Max. 1000	Min. 100 Max. 1000	Min. 100 Max. 1000	Min. 100 Max. 1000
Final EC (capital cost component) in Lacs. Rs.	682.47	100.00	100.00	100.00	100.00	100.00
Calculated EC (O&M Component) in Lacs. Rs./Day	5.69	0.38	0.12	0.18	0.42	0.37
Minimum and Maximum values of EC (O&M Cost Component) recommended by the Committee (Lacs. Rs./Day)	Min. 0.1 Max. 1.0	Min. 0.1 Max. 1.0	Min. 0.1 Max. 1.0	Min. 0.1 Max. 1.0	Min. 0.1 Max. 1.0	Min. 0.1 Max. 1.0
Final EC (O&M Component) in Lacs. Rs./Day	1.00	0.32	0.10	0.15	0.35	0.31
Calculated Endonerental Externality (Lacs Rs. per Day)	0.01	0.00	0.00	0.00	0.00	0.00
Minimum and Maximum value of Environmental Externality recommended by the Committee (Rs. per day)	Min. 0.05 Max. 0.10	Min. 0.05 Max. 0.10	Min. 0.05 Max. 0.10	Min. 0.05 Max. 0.10	Min. 0.05 Max. 0.10	Min. 0.05 Max. 0.10
Final Environmental Externality (Rs. per day)	0.05	0.05	0.05	0.05	0.05	0.05
Total EC (in Lakhs)	1331.37	277.6	172	196	292	272.8



M. ABAJU
Chief Environmental Engineer

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27/29

Municipal Solid Waste Management Capacity Gap (TPD)	Environmental Externality (Rs. per ton per day)	Minimum and Maximum value of Environmental Externality recommended by the Committee (Rs. per day)	Class-I City/Town and others
Upto 500	5	Min. 5000 Max. 10000	Min. 100 Max. 1000
500-5000	10	Min. 10000 Max. 15000	
5000-10000	15	Min. 20000 Max. 30000	
Class of the City/Town	Mega-City	Million-plus City	
Minimum and Maximum values of EC (Capital Cost Component) recommended by the Committee (Lacs Rs.)	Min. 1000 Max. 10000	Min. 500 Max. 5000	Min. 100 Max. 1000
Minimum and Maximum values of EC (O&M Cost Component) recommended by the Committee (Lacs Rs./day)	Min. 1.0 Max. 10.0	Min. 0.5 Max. 5.0	Min. 0.1 Max. 1.0

- No. of days calculated from 22.11.2018 for Kochi Corporation (Order dated 22.11.2018 in OA No.353/2016) to 31.07.2020 : 618 days (Where population is more than 1 Lakh)
 - No. of days calculated for other 5 Municipalities from 09.04.2019 to 31.07.2020 (As per the Solid Waste Management Rule 2016) : 480 days (Where population is below 1 Lakh)
- *3. Eventhough waste generation as per CPCB guideline is 0.3 x population(203.21 T/day), average waste quantity collected at Brahmapuram obtained from the registers kept at the plant for the months of May, June & July 2019 is 315.96 T/day.



M. A. BAJU
Chief Environmental Engineer

Q

ASSESSMENT OF ENVIRONMENTAL COMPENSATION AS PER ORDER DATED 03.07.2020 IN
OA 514/2020

1. Kochi Corporation - Rs. 20 Lakhs (From 01.04.2020 to till date- Rs 5 Lakhs x 4 Months)
2. Aluva Municipality - Rs. 4 Lakhs (From 01.04.2020 to till date- Rs 1 Lakh x 4 Months)
3. Thrikkakkara Municipality - Rs. 4 Lakhs (From 01.04.2020 to till date- Rs 1 Lakh x 4 Months)
4. Thrippoonithura Municipality - Rs. 4 Lakhs (From 01.04.2020 to till date- Rs 1 Lakh x 4 Months)
5. Angamaly Municipality - Rs. 4 Lakhs (From 01.04.2020 to till date- Rs 1 Lakh x 4 Months)
6. Kalamassery Municipality - Rs. 4 Lakhs (From 01.04.2020 to till date- Rs 1 Lakh x 4 Months)

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M. A. BAIJU
Chief Environmental Engineer