#### BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL Principal Bench, New Delhi

#### **Original Application No. 909/2018**

Confederation of Trans Hindan RWA's Ghaziabad

...Applicant

Versus

U. P. State Pollution Control Board & Ors.

...Respondent(s)

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Place: Delhi Date: 20.07.2022

# STATUS REPORT

## SUBMITTED

(IN COMPLIANCE TO HON'BLE NGT ORDER DATED 22/10/2021 IN THE MATTER OF ORIGINAL APPLICATION NO 909/2018 TITLED CONFEDERATION OF TRANS HINDAN RWA'S GHAZIABAD VS U. P. STATE POLLUTION CONTROL BOARD & ORS)



## CENTRAL POLLUTION CONTROL BOARD (*Ministry of Environment, Forest & Climate Change*) "Parivesh Bhawan", East Arjun Nagar, Delhi-110032

20<sup>th</sup> July, 2022

## Status report in Original Application No. 909/2018 in the matter of Confederation of Trans Hindan RWA's Ghaziabad Versus U. P. State Pollution Control Board & Ors

### 1. Background

The Hon'ble National Green Tribunal (NGT), Principal bench, New Delhi passed an order on 22/10/2021 in the matter of Confederation of Trans Hindan RWA's Ghaziabad Versus U. P. State Pollution Control Board & Ors, directed Central Pollution Control Board (CPCB):

"We also direct CPCB to give an independent report on the issue of management of solid as well as liquid waste in the area in guestion 37 before the next date by e-mail at judicial-ngt@gov.in preferably in the form of searchable PDF/ OCR Support PDF and not in the form of Image PDF. The report may mention the area of both the legacy sites reclaimed, quantity of waste bio-mined, routing of recovered material for further usage. Lifting of stabilised organic fraction by the Fertilizer agencies and blending by NPK to enhance fertilizer nutritive value may be ascertained. It may be enquired whether any more legacy waste site exists. Further, whether the RDF contains plastic/chlorinated plastic used as fuel. With regard to four garbage factories, information is required about the process adopted, material balance and Authorization under MSW Rules. In case of ten sewage drains, the technologies adopted and their performance duly supported by the analytical results needs to be indicated. Storm water drains are not be used for disposal of sewage, as earlier held by this Tribunal, being prohibited under the Water Act. The performance of STPs and the gap between sewage generation and treatment may be mentioned."

A copy of Hon'ble NGT order dated 22/10/2021 is enclosed as Annexure-I.

## 2. Follow up actions taken by CPCB

#### 2.1 Actions taken for Solid Waste Management

In compliance of Para 13 of aforesaid Hon'ble NGT's Order, officials from CPCB visited the concerned waste management sites. The findings of the same on Solid Waste Management are reported in this section.

## 2.1.1 MSW Dumpsite

There are two waste dump sites one at Shakti Khand IV, Indirapuram, Ghaziabad and other at Pratap Vihar, Ghaziabad. As informed by Ghaziabad Nagar Nigam (GNN) and RO, UPPCB, Ghaziabad, there is no more dumpsite in the area of Trans Hindon Area.

## (i) MSW Dump Site, Shakti Khand IV, Indirapuram Ghaziabad

CPCB officials inspected the dumpsite on 04.01.2022 and 15.02.2022. The findings of the same are given below.

Sei	Serial No.		Item	Remarks
1			General Information	
	A		City & Location of Dumpsite	MSW Dump Site, Shakti Khand IV, Indirapuram Ghaziabad Uttar Pradesh
	В		Name, Designation & Contact Details of Nodal Officers for Biomining	Dr. Mithlesh Kumar, Nagar Swasthya Adhikari, Mobile No. 8178016808
	С		Stage of Biomining (Planned/Being Executed/Completed	Being executed during visit (Fig-1)
2			Volume of Waste	
	A		Has Contour Survey of site been Done (Y/N)	Yes
	В		Length (Initial -M)	327 M Avg.
	С		Width (Initial -M)	140 M Avg.
			Height (Initial -M)	5.00 meter +
			Total Volume (Cub. Meter)	141004 cu.m.
3			Characteristics of Waste	Mixed legacy MSW
4	А		Leachate Characteristics	No Leachate observed
5			Baseline Survey	
	A		Ground Water Analysis	Test report of ground water analysis is enclosed as <b>Table-1</b>
	В		Soil Analysis	No
	С		Quantity Of Waste Processed Per Day (TPD)	400 - 600 TPD

6		Process Flow sheet of Bio-	
		Mining	Stablization & Cleaning
			Racking of Waste for Drying
			Shifiting of Waste for Weighing
			Weighing of Waste
			Drying of Waste at Tipping Floor
			Screening of Waste
			Storage of RDF , BIO EARTH & Rejects
			Disposal of Screened Fractions
			End
7		Stabilization of waste	
	A	Type of biomining method	Windrows
		Adopted (Tractor tiller, Trench	
		method; Cone Method;	
		Windrow, Thin Layer Method)	_
	В	Machinery used for Excavating	Excavator
		dumpsite (Tractor Tiller etc)	Fuerenter
		Mindrowa (JCR ato)	Excavator
		Are large objects removed prior	Vos. Stopo Wood and large objects
		to windrow preparation	removed manually
	F	Are Windrows Turned Every 4-5	Yes As and when required based
		Davs	on site conditions
	F	Duration of Stabilization	7-14 Days for drying, it is old dump
			site and already stabilized
	G	Bio-culture Used	As and when required
	н	Is End Product Stabilized (No	Yes
		Heat / Gas /leachate /Smell)	
	1	Is leachate Being Generated	No leachate generation observed
		from the waste	
	J	If Yes, methodology for leachate	Not Applicable
		Management Adopted	
8		Processing of Legacy Waste	
<u> </u>		Machinery Used For processing	
	•		
		of legacy waste	

	i	Trommel (Number & Capacity (TPD)	2 Nos X 300 TPD = 600 Ton + 1 Ballistic X 400 TPD = 400 Ton Total = 1000 TPD ( <b>Fig-1</b> )
	ii	Size of screens used (Mostly used 150 mm. 80 to 100 mm, 24 to 50mm, 1216 mm and 4-6)	90, 24, 6 mm
	iii	Vibrating Screen	Yes. Ballistic Machine has the vibrating screen
	iv	Electromagnet (For separating ferrous metals)	Not Required
	V	Air Classifier (for separating light material from heavy organic)	Not Required
	vi	Disc/Star (No.)	Not Applicable
b		Handling	
	i	Loader (No.)	2 JCB + 1 Pockline + 1 Additional Pockline
	ii	Conveyor (No.)	11 Nos.
	iii	Fork Lift (No.)	Nil
	iv	Categories in which the waste is segregated (Compost/Recyclables/RDF/C& D/Inerts etc.)	Bio Earth, RDF and C&D Inerts
	V	Quantity of items which is being generated in each category	Tentative percentage RDF - 5 to 8 % Bio Earth - 55 to 60 % & Inert 2-3 %. Quantity of items generated is after windrows formation and sun / bio drying where the moisture is dried before segregation. The remaining portion is moisture loss.
	vi	Quantity of items being utilized of different categories	As informed by GNN Bio Earth - Used by Nagar Nigam in Horticulture, Landfilling, Plastic exchange program, offtake by farmers etc. RDF - Cement Factories, WtE Plants, Local Industrial Units. Recyclable Plastic - Recycling Units C&D Waste –Landfilling, Local use.
	vii	Documents supporting usage of different fractions (Bioearth/Recyclable/RDF/Other	Agreements with M/s East Delhi Waste Processing Company Ltd. (EDWPCL), M/s Shree Cement Ltd.,

		wastes)	M/s JK Lakshmi Cement Ltd. and
			M/s JK Cement Ltd. for disposal of
			RDF is enclosed as Annexure II.
			Purchase order of M/s JK Cement
			Ltd. is enclosed as Annexure IIa.
	viii	Analysis results of fine earth	Test report of compost analysis is
			enclosed as Table-2
	іх	Frequency of testing of bio-earth	As and when required
9		Miscellaneous	
	а	Have fires being reported at the site	No
	b	Methodology to tackle fires	Not required
	С	Is fresh waste being dumped at the site	Yes, by Ghaziabad Development Authority (GDA) @ ~95 TPD
	d	Percentage land recovered so	Approx. 95 % area has been
		far	cleared. GNN has dumped soil for
			developing forest at the site (Fig-2).
	е	Is third party audit of biomining	No
		being done	
10		Other observations:	<ol> <li>During inspection it was observed that Ghaziabad Nagar Nigam (GNN) is doing the biomining process of waste dumped by them and no processing of waste was observed for the waste dumped by Ghaziabad Development Authority (GDA).</li> <li>During inspection it has been observed that Ghaziabad Nagar Nigam (GNN) has stopped dumping of fresh solid waste. However, GDA is dumping fresh waste @ ~95 TPD. For processing of the fresh waste, GDA informed that they will provide financial support to GNN for the processing of the waste dumped by GDA.</li> <li>As informed, total 105313 MT waste has been processed so far at the site.</li> </ol>

4. Out of which,8544 MT of
RDF/Dry waste obtained which
was further disposed to cement
plants. Waste to Energy plant.
local industrial units local
recyclers and stored at site
(Table-3).
5 63000 MT & 2175 MT of
compost/bio earth and Inert
respectively also generated after
biomining and used by farmers
GNN for leveling of sites ( <b>Table</b> -
5).
6. During inspection the
Segregated fractions such as
RDF, Composit was also found
Stored at the site (Fig-3).
Quantity of RDF/Compost stored
at site and disposed is given in
I able-3.
7. As informed by GNN, the stored
RDF (307 MT) at the site shall
be shifted to the proposed
Waste to Energy plant at
Mussoorie Gulawati road
industrial area Ghaziabad.
8. As informed by GNN the land
after reclamation shall be
developed as forest area by
Miyawaki method of forestation
and the stored compost (830
MT) shall be used in the
forestation.
9. During inspection, it was
observed the process for
forestation has been initiated by
dumping soil in the reclaimed
area at the site (Fig-2).
10.NPK blending is not being done
to enhance the fertilizer nutritive
value of the generated compost
as informed by GNN.
11.The conductivity of compost

		<ul> <li>sample collected from the site (Table-2) was much higher than the prescribed limit as per SWM Rules, 2016 while Organic Matter and K as K<sub>2</sub>O were found lower than the prescribed value.</li> <li>12. The total hardness and TDS of ground water sample collected from site (Table-1) was found higher than the desirable limit as per SWM Rules, while other parameters found within the limit.</li> <li>13. As per "Consolidated Guidelines for Segregation, Collection and Disposal of Plastic Waste" published by CPCB (Annexure III), PVC is used in Pipe, Window profile, fencing, flooring, shower curtains, lawn chairs, non-food bottles and children's toys etc. During the visit no such PVC item was physically observed in the waste. However, there is no separate provision for segregation of PVC items on the site. Close view of RDF is given in Fig-3a.</li> </ul>
	Name & Designation of	C. K. Dixit, Sc 'C', CPCB & Atanu
	Inspecting Officer	Dey, RA, CPCB
	Date of Inspection	04.01.2022 and 15.02.2022



Fig-1: Trommel working at Indirapuram MSW dumpsite)



Fig-2: Dumped soil for forestation at Indirapuram MSW dumpsite



 Table 1: Analysis Report of Ground Water samples collected by CPCB on

 04.01.2022

Ground Water (Sample Location)			Desirable limit
Parameter	Indirapuram	Pratap Vihar	as per SWM
	Shakti Khand	(PVGW)	Rules 2016 (
	(SKGW)		Standards for
			Landfill
			considered for
			comparison)
рН	7.5	8.1	6.5-8.5
TDS (mg/L)	854	1044	500
Total Hardness as	404	89	300
CaCO <sub>3</sub> (mg/L)			
Chloride (mg/L)	136	282	250
NO <sub>3</sub> (mg/L)	11.4	0.9	45
Ammonical Nitrogen	BDL	0.2	-
(mg/L)			
Cyanide (mg/L)	BDL	BDL	0.05
Phenol (mg/L)	BDL	BDL	0.001
As (mg/L)	BDL	BDL	0.01
Cd (mg/L)	BDL	BDL	0.01
Cr (mg/L)	BDL	BDL	0.05
Cu (mg/L)	BDL	BDL	0.05
Fe (mg/L)	BDL	BDL	0.3
Ni (mg/L)	BDL	BDL	-
Pb (mg/L)	BDL	BDL	0.05
Zn (mg/L)	BDL	BDL	5.0
Hg (µg/L)	BDL	BDL	0.001

BDL: Below Detection Limit, Detection Limit ( $\mu$ g/L): As - 0.49, Cd - 0.42, Cr - 0.56, Cu - 0.35, Fe - 0.67, Ni - 0.54, Pb - 0.31 & Zn - 0.59, Hg-0.7

Table 2: Analysis Report of Compost samples collected by CPCB on04.01.2022

Parameter	Compost (Sampl	Prescribed limit as	
	Indirapuram Shakti	Pratap Vihar	per SWM Rules
	Khand (SKC)	(PVC)	2016
Moisture (%)	27.6	27.2	15 to 25 Maximum
pH (1:2.5)	7.6	7.6	6.5-7.5
Conductivity	7790	8230	<4000
(umoh/cm) (1:2)			
Organic Matter (%)	5.10	3.97	>12.0
Exchangeable K	143.84	125.03	-
(mg/100g)			
K as K <sub>2</sub> O (%) by	0.17	0.15	>0.4
multiplying % K by			
1.2051			
As (mg/kg)	2.85	5.79	10
Cd (mg/kg)	2.02	2.27	5.0
Cr (mg/kg)	32.00	118.62	50
Cu (mg/kg)	107.51	217.80	300
Ni (mg/kg)	15.40	43.46	50
Pb (mg/kg)	37.97	98.16	100
Zn (mg/kg)	377.47	416.90	1000
Hg (mg/kg)	BDL	BDL	0.15

Table 3: Summary of Utilization of Screened Products at Indirapuram MSWDump site;

Summary of Legacy Waste Processing (Indirapuram)			
Total Land Area	45,516	sqmt	
Area Cleaned till date	Approx. 95 %		
Legacy Waste Processed till date	105,313	MT	
Legacy Waste processed after sun drying and			
moisture reduction			
RDF / Dry Waste	8,544	MT	
Cement Plants	5,018	MT	
Waste to Energy Plants	402	MT	
Local Industrial Units	827	MT	
Local Recyclers	1990	MT	
Stored at site	307	MT	
Compost / Bio Earth	63000		
Local Use in GNN projects	7,372	MT	
Local lifting by Farmers/ Disposal for filling			
low lying areas etc.	49128	MT	
Used at site for leveling etc.	5670	MT	
Stored at site	830	MT	
Inert (Local land filling)	2,175	MT	

(as informed by Ghaziabad Nagar Nigam)

As informed by GNN, the stored RDF (307 MT) at the site shall be shifted to the proposed Waste to Energy plant at Mussoorie Gulawati road industrial area Ghaziabad. The land after reclamation shall be developed as forest area by Miyawaki method of forestation and the stored compost (830 MT) shall be used in the forestation.

## (ii) MSW Dump Site, Pratap Vihar, Ghaziabad

Inspection Report MSW Dump Site, Pratap Vihar, Ghaziabad				
Se	erial No	o. Item	Remarks	
1		General Information		
	A	City & Location of Landfill	MSW Dump Site Pratap Vihar	
			Ghaziabad Uttar Pradesh	
	В	Name, Designation & Contact	Dr. Mithlesh Kumar,	
		Details of Nodal Officers for	Nagar Swasthya Adhikari,	
		Biomining	Mobile No. 8178016808	
	С	Stage of	Being Executed.	
		Biomining(Planned/Being	As informed by GNN, more than	
		Executed/Completed	55% work completed.	
			Total Area approx. 45299 Sqm	
			Land Cleared 25066 Sqm	
2		Volume of Waste		
	А	Has Contour Survey of site	Yes	
		been Done (Y/N)		
	В	Length (Initial -M)	320 M Avg.	
	С	Width (Initial -M)	142 M Avg.	
		Height (Initial -M)	10.85 m	
		Total Volume (Cub. Meter)	4.91 lakh cu.m.	
3		Characteristics of Waste	Mixed legacy MSW	
4	А	Leachate Characteristics	No Leachate observed, Old	
			legacy Waste	
5		Baseline Survey		
	A	Ground Water Analysis	Test report of ground water	
			analysis is enclosed as Table-1	
	В	Soil Analysis	No	
	C	Quantity Of Waste Processed	Approx. 3000 TPD	
		Per Day (TPD)		

6			Process Flow sheet of Bio-	Stablization & Cleaning
			Mining	Racking of Waste for Drying
				Shifiting of Waste for Weighing
				Weighing of Waste
				Drying of Waste at Tipping Floor
				Screening of Waste
				Storage of RDF . BIO EARTH & Rejects
				Disposal of Screened Fractions
				End
7			Stabilization of waste	
	Δ		Type of biomining method	Windrows
	~		Adopted (Tractor tiller, Trench	· · · · · · · · · · · · · · · · · · ·
			method; Cone Method;	
			Windrow, Thin Layer Method)	
	В		Machinery used for Excavating	Excavator
			dumpsite (Tractor Tiller etc)	
	С		Machinery Used for preparing	Excavator
			Windrows (JCB etc)	Ver Otene Weed and Imme
	D		Are large objects removed	Yes, Stone, wood and large
	F		Are Windrows Turned Every	Yes As and when required based
	-		4-5 Davs	on site conditions
	F		Duration of Stabilization	7-14 Days for drying, it is old
				dump site and already stabilized
	G		Bio-culture Used	As and when required
	Н		Is End Product Stabilized (No	Yes
			Heat / Gas /leachate /Smell)	
	I		Is leachate Being Generated	No leachate generation observed
			From the waste	Not Appliaghla
	J		leachate Management	Not Applicable
			Adopted	
8			Processing of Legacy Waste	
			Machinery Used For	
			processing of legacy waste	
	а		Screening	
		i	Trommel (Number & Capacity	3 Nos X 400 TPD = 1200 Ton
			(TPD)	+ 1 Vibratory Screen X 2000 TPD
				= 2000 Ton

			Total = 3200 TPD ( <b>Fig-4</b> )
	ii	Size of screens used (Mostly used 150 mm, 80 to 100 mm, 24 to 50mm, 1216 mm and 4- 6)	90, 24, 6 mm
	iii	Vibrating Screen	Warrior 1200 is vibrating screen
	iv	Electromagnet (For separating ferrous metals)	Not Required
	V	Air Classifier (for separating light material from heavy organic)	Not Required
	vi	Disc/Star (No)	Not Applicable
b		Handling	
	i	Loader (No.)	3 JCB, 20 Dumpers, 4 Pokelain, 3 Tractors
	ii	Conveyor (No.)	16
	iii	Fork Lift (No.)	Nil
	iv	Categories in which the waste is segregated (Compost/Recyclables/RDF/C &D/Inerts etc.)	Bio Earth, RDF & Inerts
	V	Quantity of items which is being generated in each category	RDF -5 to 7% Bio Earth -55 to 65% & Inert 1-2 %. Quantity of items generated is after windrows formation and sun / bio drying where the moisture is dried before segregation. The remaining portion is moisture loss.
	vi	Quantity of items being utilized of different categories	As informed by GNN Bio Earth - Use by Nagar Nigam in Horticulture, Landfilling, Plastic exchange program, offtake by farmers etc. RDF-Cement Factories, WtE Plants, Local Industrial Units. Recyclable Plastic - Recycling Units Inert –Landfilling, Local Use.
	vii	Documents supporting usage of different fractions (Bioearth/Recyclable/RDF/Oth	Agreements with M/s East Delhi Waste Processing Company Ltd. (EDWPCL), M/s Shree Cement

		er wastes)	Ltd., M/s JK Lakshmi Cement Ltd.				
			and M/s JK Cement Ltd. for				
			disposal of RDF is enclosed as				
			Annexure II.				
			Purchase order of M/s JK Cement				
			Ltd. is enclosed as Annexure IIa.				
	viii	Analysis results of fine earth	Test report of compost analysis is				
			enclosed as Table-2				
	ix	Frequency of testing of bio-	As and when required				
		earth					
9		Miscellaneous					
	а	Have fires being reported at	No				
		the site					
	 b	Methodology to tackle fires	Not required				
	С	Is fresh waste being dumped	No				
		at the site					
	d	Percentage land recovered so	~55 %				
		far					
	е	Is third party audit of biomining	Yes				
		being done					
10		Other observations:	1. During inspection it has been				
			observed that no fresh waste				
			2 The processing of waste was				
			found under process during				
			the visit.				
			3. As informed, 336287 MT				
			waste has been processed				
			so far at the site.				
			4. Out of which, 16219 MT of RDF/Drv waste obtained till				
			date was further disposed to				
			Cement plants, Waste to				
			Energy plant, local industrial				
			units, local recyclers and				
			stored at site. ( <b>I able-4</b> )				
			5. 211860 MI & 1413 MT				
			respectively also generate				
			after biomining and used b				
			farmers, GNN for local lar				
			filling ( <b>Table-4)</b> .				
			6. During inspection the				
			RDF Compost and inert was				
			also found stored at the site				

		(Fig-5). Quantity of
		RDF/Compost/Inert stored at
		site and disposed is given in
		I able-4.
		7. AS Informed by Graziabau
		stored at site (0050 MT) shall
		be used in the proposed
		waste to energy plant at
		Mussoorie Gulawati road
		industrial area, Ghaziabad.
		8. As informed, 8474 MT of
		compost and 47 MT of inert,
		stored at site shall be used
		by farmers and land filling
		respectively.
		9. NPK blending is not being
		done to enhance the fertilizer
		nutritive value of the
		informed by GNN
		10 The conductivity and Cr of
		compost sample collected
		from the site (Table-2) was
		much higher than the as
		prescribed limit as per SWM
		Rules, 2016 while Organic
		Matter and K as K <sub>2</sub> O were
		found lower than the
		prescribed value.
		water sample collected from
		site ( <b>Table-1</b> ) were found to
		be on the higher than the
		desirable limit as SWM
		Rules, 2016 while Total
		Hardness was found on the
		lower side. All other
		parameters found within the limit
		12. Regarding PVC in RDF.
		similar observation was found
		at Pratap Vihar Site as in
		Indirapuram Site. No PVC
		item was observed in the
		RDF at dumpsite.
	Name & Designation of	C. K. DIXIT, SC 'C', CPCB & Atanu
 	 Inspecting Officer	
	Date of Inspection	04.01.2022 and 15.02.2022



Fig-4 : Working Trommel at Pratap Vihar MSW dumpsite



Fig-5 :RDF and Compost stored at Pratap Vihar MSW dumpsite

# Table 4: Summary of Legacy Waste Processing as informed by GNN at PratapVihar MSW Dump site

Summary of Legacy Waste Processing (Pratap Vihar)						
Total Land Area	45,299	sqmt				
Area Cleaned till 31/01/2022	25,066	sqmt				
Percentage of Area Cleaned	55.3 %					
Legacy Waste Processed	336,287	MT				
Windrows and Drying for moisture reduction						
before segregation						
RDF / Dry Waste	16,219	MT				
Cement Plants	1,817	MT				
Waste to Energy Plants	827	MT				
Local Industrial Units	697	MT				
Local Recyclers	2,919	MT				
Stored at site	9,959	MT				
Compost / Bio Earth	211,860	MT				
Local Use by Nagar Nigam	25,423	MT				
Local lifting by Farmers etc.	44,491	MT				
Local disposal for land filling	133,472	MT				
Stored at Site	8,474	MT				
Inert (Local land filling)	1,413	MT				
Local disposal for land filling	1,366	MT				
Stored at Site	47	MT				

As informed by Ghaziabad Nagar Nigam (GNN) the RDF stored at Pratap Vihar site (9959 MT) shall be used in the proposed waste to energy plant at Mussoorie Gulawati road industrial area, Ghaziabad. 8474 MT of compost and 47 MT of inert, stored at site shall be used by farmers and land filling respectively.

#### 2.1.2 Garbage Factories

There are two Garbage factories in the Trans Hindon area, one at Hindon Vihar Ghaziabad and other at Sihani, Ghaziabad. The findings of inspection by CPCB officials of these sites are reported in this section.

It was informed by GNN that apart from the above sites, GNN has initially planned to establish two more garbage factories, one at Indirapuram legacy waste site (after the land is cleared) with capacity of 500-700 TPD and another at Govindpuram with 100 TPD capacity. Out of four garbage factory projects, two were visited during inspection because work on the other two has not yet started.

## 2.1.3 Sihani Garbage Factory

The Sihani Garbage Factory was found operational during the visit on 15.02.2022.

#### (a) **Process Details**:

Waste is received at the factory and stored in covered area (**Fig-6**). The collected waste is segregated through manual and mechanical segregation. The detailed process adopted for segregation of MSW is given in **Fig-7**. Generated RDF is being stored on the site in covered area (**Fig-8**).

#### (b) Material Balance Sheet

As informed by GNN, the waste processing capacity of this factory is **150 TPD** and waste is being processed at the rate of approx. **50 TPD**. However, as per the data provided by GNN (**Table-5**), waste is processed @**513 TPM** and the waste is processed on day today basis. The material balance sheet of waste processing at Sihani Garbage Factory is given in the **Fig-9**.

- (c) The unit has not obtained Authorization under Solid Waste Management Rules, 2016.
- (d) No leachate generation is found in the tipping area. There are lined drains and RCC based leachate collection tank constructed in the plant to collect any leachate generated within the plant. No leachate treatment plant is installed. The leachate gets evaporated by sun drying in the collection tank.

- (e) During visit no odour was observed. No other source of air pollution was observed. Odour suppressant used are herbal sanitizers including citrenella, lemon grass etc.
- (f) After the windrows are formed, the wet waste decomposes by 80-90% and moisture is also lost due to bio-drying. This forms majority of the unaccounted losses.
- (g) It was informed by GNN that inert waste if combustible is mixed with RDF and if non-combustible like Coconut etc. is dried and sent for charcoal manufacturing.
- (h) The conductivity, Cr and Cu of compost sample collected from the site (**Table-6**) was found higher than the prescribed limit as per SWM Rules, 2016 while Organic Matter was found lower than the prescribed value.



Fig-6 : Source segregated waste stored at Sihani Garbage Factory

Table 5: Details of waste processing at Sihani Garbage Factory									
Month	Waste Receive d in MT	Waste Segregate d in MT	Dry Waste (including RDF & Recyclables) produced in MT	Wet Waste in MT	Reject in MT	Final Compos t in MT			
Jun-21	190	190	57	129	1	2			
Jul-21	323	323	97	220	2	19			
Aug-21	961	961	288	653	5	30			
Sep-21	513	513	154	349	3	30			
Oct-21	-	-	-	-	-	-			
Nov-21	1270	1270	381	864	25	42			
Dec-21	77	77	22	50	1	32			
Jan-22	259	259	70	159	5	49			

Table 6: Analysis Report of Compost samples collected by CPCB on								
Parameter	Value	Prescribed limit as per SWM						
i arameter	Value	Rules 2016						
Moisture (%)	26.71	15-25 Maximum						
рН	8.16	6.5-7.5						
Conductivity (umoh/cm)	11400	4000 Maximum						
Organic Matter (%)	9.75	12.0 minimum						
Exchangeable K (mg/100g)	386.91	-						
K as K <sub>2</sub> O (%) by multiplying % K by 1.2051	0.47	0.4 minimum						
As (mg/kg)	BDL	10						
Cd (mg/kg)	BDL	5.0						
Cr (mg/kg)	128.5	50						
Cu (mg/kg)	389.20	300						
Ni (mg/kg)	49.90	50						
Pb (mg/kg)	98.60	100						
Zn (mg/kg)	644.80	1000						
Hg (mg/kg)	BDL	0.15						



Fig-7: Process Flow Diagram



Fig-8: RDF stored in covered area at Sihani Garbage Factory



Fig-9: Material Balance Sheet

## 2.1.4 Hindon Vihar Garbage Factory

As informed by GNN during the visit of Hindon Vihar Garbage Factory on 15.02.2022, the waste processing capacity of this factory is 350 TPD. The construction work has been completed including electricity work (**Fig-10**). As informed, the factory is not yet operational due to lack of connecting road. It was also informed that the same process be adopted for segregation of MSW at Hindon Vihar Garbage Factory as adopted at Sihani Garbage factory.



Fig-10: Furnished Hindon Vihar Garbage Factory

#### 2.1.5 Summary & Conclusions

- ✓ Proper logbook to be maintained so as to plastic waste management
- ✓ Compost quality may be enhanced as required.
- ✓ Garbage Factory serves as Material Recovery Facility and serves as an intermediate step for Solid Waste Management preventing dumping of waste
- ✓ Very high unaccounted waste (~62%) indicating that records are not kept properly. Proper records to be maintained to ensure that the screened fractions (Compost, RDF % Inerts) are disposed off properly.
- ✓ Necessary measures to be taken for on-site control of air & water pollution.
- Necessary approvals to be obtained from UPPCB including Consents under Air & Water Act (as applicable) for operation of the garbage factory

## 2.2 Actions taken by CPCB on drains and STPs located in Ghaziabad

In compliance to directions of Hon'ble NGT, a team comprising officials from CPCB, UPPCB & Nagar Nigam, Ghaziabad visited the sites on 10.05.2022 and 18.05.2022 and conducted inspection and sampling of 08 STPs and 10 drains located in Ghaziabad, to carry out performance of bioremediation of drains. Details of drains and STPs monitored, are as under:

Drains (10) located in Ghaziabad								
S.No.	Name of the drain	Date of visit	Bioremediation	Discharge of drain into				
1	Indira Puram Drain							
2	Pratap Vihar Drain	10/05/2022						
3	Rahul Vihar Drain							
4	Kailla Bhatta Drain							
5	Dasna Drain		Yes	Hindon River				
6	Arthda Drain							
7	Karhda Drain	18/05/2022						
8	City Forest Drain							
9	Nandi Gram Drain							
10	Hindon Vihar drain	]						

STPs (10) located in Ghaziabad Date of Inspection: 10/05/2022 & 18/05/2022									
S.No.	Name of STP	Installed Capacity ( <i>in MLD</i> )	Technology adopted	Treatment Capacity ( <i>in MLD</i> )	Average flow ( <i>in MLD</i> )				
1	Indira Puram (UP Jal Nigam)	74	SBR	56	56				
2	Indira Puram (UP Jal Nigam)	56	UASB	70	70				
3	Indira Puram (GDA)	56	SBR	56	56				
4	Dundahera (UP Jal Nigam)	56	SBR	56	45				
5	Dundahera (UP Jal Nigam)	70	UASB	70	70				

6	Govindpuram, (GDA)	56	SBR	56	11
7	Bapudham, (GDA)	56	SBR	56	1
8	Noor Nagar Morty (GDA)	56	SBR	56	18

### 2.2.1 Observations

CPCB monitored 10 nos of drain and 08 nos of STPS located in Ghaziabad:

#### A. Drains:

- (i) Nagar Nigam, Ghaziabad cultured the biomedia and sprayed at different locations in drain on fortnightly basis. There is no retention wall or bridge raised in drains to ensure mixing of biomedia with wastewater of drains to get effective results.
- (ii) Bio-remediation in drains was carried out without regulation of dose to ensure homogenization of the biomedia throughout the drain. The biomedia cannot face/bear shock loads in case of accidental spills sudden flow or discharges in the drain.
- (iii) CPCB collected samples of 10 drains before the outfall into Hindon River and analyzed for 04 parameters, viz., pH, BOD, COD & TSS, to access the effectiveness of bio-remediation applied by Ghaziabad Nagar Nigam. Analytical results are depicted in **Table 7**.

## B. STPs

- (i) CPCB team monitored 10 STPs, located in Ghaziabad and samples were collected from both inlet and outlet. Subsequently, samples were analyzed for 08 parameters viz., pH, BOD, COD, TSS, NH3 -N, PO4-, fecal coliform and total coliform. Analytical results are depicted in **Table 8.**
- STP at Dundahera discharges wastewater into Dasna Canal. Discharge of treated wastewater of 02 STPs is conveyed through 03 outlets. There may

be a possibility that the by-pass channel is discharging untreated wastewater into Dasna Canal.

- (iii) There is no infrastructure in place for collection and storage of Biogas generated in UASB reactors of STP at Indirapuram (56 MLD) and Dundahera (56 MLD).
- (iv) STP at Bapudham receives only 01 MLD of wastewater against the treatment capacity of 56 MLD.

# Table 7: Analytical results of drains monitored in Ghaziabad during10/05/2022 & 18/05/2022

S. No.	Name of the drain	Parameters						
		рН	COD (mg/L)	BOD (mg/L)	TSS (mg/L)			
Genera Discha Polluta under Envirol Rules,	al Standards for rge of Environmental nts into inland surface, Schedule-VI of The nment (Protection) 1986.	5.5-9.0	250 mg/L	30 mg/L	100 mg/L			
1	Indirapuram	7.3	281	77	346			
2	Pratap Vihar	7.1	155	29	153			
3	Rahul Vihar	7	367	113	258			
4	Kailla Bhatta	7	194	63	112			
5	Dasna	7.1	297	166	193			
6	Arthda	6.5	152	62	122			
7	Karhda	7	566	218	339			
8	City Forest	7.8	93	29	82			
9	Nandi Gram	7.1	377	161	197			
10	Hindon Vihar	7.2	293	72	159			

S.	STP Name	Installed	Technology	Sampling	Parameters							
No.		Capacity (In MLD)	adopted	Location	рН	COD (mg/L)	BOD (mg/L)	TSS (mg/L)	NH₃-N (mg/L)	PO₄ <sup>-</sup> (mg/L)	Fecal Coliform (MPN/100 mL)	Total Coliform (MPN/100 mL)
Norms 1069 o	as per NGT dir f 2018	ection dated 3	0/04/2019 in the	matter of OA	6.5- 9.0	50	10	20	5	1.0	230	N/A
1	Indirapuram	74	SBR	Inlet	7	826	149	834	-	-	-	-
	•			Outlet	7.2	63	13	27	6	0.45	49 X 10 <sup>3</sup>	70 X 10 <sup>3</sup>
2	Indirapuram	56	UASB	Inlet	6.9	416	118	206	27	1.23	26 X 10 <sup>10</sup>	17 X 10 <sup>11</sup>
	-			Outlet	7	196	49	80	21	1.69	24 X 10 <sup>7</sup>	24 X 10 <sup>7</sup>
3	Indirapuram	56	SBR	Inlet	7.1	270	104	105	19	2	14 X 10 <sup>10</sup>	17 X 10 <sup>10</sup>
				Outlet	7.2	34	8	18	2	1.16	45	13 X 10 <sup>2</sup>
4	Dundahera	56	SBR	Inlet	6.6	1907	707	1954	22	1.69	39 X 10 <sup>11</sup>	28 X 10 <sup>12</sup>
				Outlet	7.6	65	10	14	BDL	0.52	17 X 10 <sup>3</sup>	22 X 10 <sup>3</sup>
5	Dundahera	70	UASB	Inlet	7	468	193	309	25	0.30	11 X 10 <sup>8</sup>	21 X 10 <sup>8</sup>
				Outlet	7.2	135	35	65	20	2.01	23 X 10⁴	49 X 10 <sup>4</sup>
6	Govindpuram	56	UASB	Inlet	7	228	115	122	23	2.7	46 X 10 <sup>8</sup>	70 X 10 <sup>8</sup>
				Outlet	7.5	35	6	BDL	3	1.30	54 X 10⁴	92 X 10 <sup>4</sup>
7	Bapudham	56	UASB	Inlet	8.1	99	16	237	8	2.02	70 X 10 <sup>8</sup>	14 X 10 <sup>9</sup>
				Outlet	-	-	-	-	-	-	-	-
8	Nur Nagar	56	SBR	Inlet	7.4	273	116	160	10	1.55	17 X 10 <sup>7</sup>	32 X 10 <sup>7</sup>
-	Morty			Outlet	7.5	43	9	20	BDL	0.68	35 X 10 <sup>9</sup>	16 10 <sup>10</sup>

## Table 8: Analytical results of Sewage Treatment Plants (STPs) located in Ghaziabad

### 2.2.2 Findings:

Based on the analytical results following findings are made:

#### A. Drains

 Bio-remediation techniques adopted by Nagar Nigam, Ghaziabad in 10 monitored drain is not effective as high organic load was observed at outfall of each drain. Nagar Nigam, Ghaziabad needs to address the issue by ensuring complete (100%) tapping of drains in compliance of Hon'ble Tribunal's orders.

## B. STPs

- Out of 08 STP<sub>S</sub> monitored, only 01 STP located at Indirapuram with SBR treatment technology and capacity of 56 MLD was complying and 06 were not complying with the norms prescribed by NGT, for parameters viz., COD 34 mg/L, BOD 8mg/L, TSS 18mg/L, NH<sub>3</sub>-N 2 mg/L & FC 45 MPN/100 MI.
- 3. STPs at Govindpuram and Nur Nagar Morty were non-complying with respect to Fecal Coliform only.
- 4. STPs at Indirapuram with UASB treatment technology and capacity of 56 MLD maintained by UP Jal Nigam and at Dudahaida with UASB treatment technology and capacity of 70 MLD were non-complying with respect to 06 parameters viz., COD, BOD, TSS, NH<sub>3</sub>-N, Phosphorus and fecal coliform.
- 5. STP at Indirapuram (74MLD) receives COD 826 mg/L and TSS 834 mg/L at inlet. This STP receives wastewater from Sahibabad drain. The high COD level at inlet indicates that drain carries untreated industrial discharge which may be attributed to untreated discharge from industrial units operating in non-conforming areas in upstream region of the drain. Storage facility for biogas generated in UASB reactors of STP at Indirapuram (56 MLD), is not available.

\*\*\*\*\*\*\*\*\*\*\*

Item No. 01

(Court No. 1)

#### **BEFORE THE NATIONAL GREEN TRIBUNAL**

(By Video Conferencing)

Original Application No. 909/2018

(With reports dated 30.07.2021, 13.08.2021 and 12.08.2021)

Confederation of Trans Hindan RWA's Ghaziabad

Applicant

Versus

U. P. State Pollution Control Board & Ors.

Respondent(s)

Date of hearing: 22.10.2021

#### CORAM: HON'BLE MR. JUSTICE ADARSH KUMAR GOEL, CHAIRPERSON HON'BLE MR. JUSTICE SUDHIR AGARWAL, JUDICIAL MEMBER HON'BLE MR. JUSTICE BRIJESH SETHI, JUDICIAL MEMBER HON'BLE DR. NAGIN NANDA, EXPERT MEMBER

Respondent:

Mr. Vishwajit Singh, Advocate for Ghaziabad Nagar Nigam Mr. Pradeep Misra, Advocate & Mr. Daleep Dhyani, Advocate for UPPCB Mr. Saurabh Balwani, Advocate for CPCB

#### ORDER

1. This is yet another instance of disappointing performance of statutory authorities in scientifically managing the waste at Indirapuram, Vasundhara and Vaishali, Ghaziabad, to the prejudice of Rule of Law and the environment and public health. This is so inspite of continuous monitoring by this Tribunal for the last about three years.

2. The application has been filed by the Resident Welfare Associations. After noticing the allegation of failure of the statutory authorities, vide order dated 19.11.2018, the Tribunal constituted a Joint Committee of District Magistrate, Ghaziabad, Ghaziabad Development Authority, Municipal Corporation Ghaziabad and State Pollution Control Board to prepare an action plan and execute the same. The matter has been thereafter reviewed and monitored on 28.05.2019, 21.08.2019, 03.03.2020, 02.09.2020, and 15.04.2021 and each time the Tribunal has noticed continuing failure and issued directions for remedial action.

3. When we have taken up the matter for review of the compliance status today, the situation remains far from satisfactory. There appears to be failure of the higher authorities in taking action against the erring officers so as to enforce the right of the citizens to clean environment. As already mentioned, steps so far taken are not adequate. There is huge gap in the mandate of law and the compliance level on the ground. This calls for stringent coercive measures by the higher authorities in the State as well as by this Tribunal, for protection of environment and public health.

4. We may notice the factual situation found in the earlier orders:

### Order dated 19.11.2018

According to the applicant, no site is specified as dumping "2. ground in the Master Plan of Ghaziabad 2021. The garbage is being dumped and burnt. There was a huge fire in the garbage on 20.10.2017. The area is now regulated by the Municipal Corporation, Ghaziabad. Garbage collected from Indirapuram, Vasundhara and Vaishali is dumped at Shakti Khand, adversely affecting the air quality. The sanitary landfill is stinking, unhygienic and unscientific. There is non-compliance of the Solid Waste Management Rules, 2016. The waste generators are not segregating the waste as required nor are they storing the construction and demolition waste or the horticulture waste or garden waste. No State Policy or Waste Management strategy has been prepared by the State for reduction, reuse and recycling. The applicants have also annexed news articles published in Dainik Jagaran, Amar Ujala, Hindustan Times, Nav Bharat Times and coloured photographs of the collected garbage.

4. Accordingly, we constitute a joint committee of representatives of the District Magistrate, Ghaziabad, the Ghaziabad Development Authority and the Municipal Corporation Ghaziabad and the State Pollution Control Board to prepare an appropriate action plan in the matter and execute the same. The District Magistrate, Ghaziabad will act as a Nodal Agency for the purpose."

#### 28.05.2019

"4. As per report dated 22.04.2019 received by this Tribunal on 06.05.2019 from the State PCB, it is acknowledged that garbage was being dumped in Shakti Khand. There is no segregation of garbage. GDA has constructed approach road for setting up the plant. Land has been arranged and handed over to GDA. Approach road work is to be completed till 27.05.2019 (which date is already over).

5. Having regard to the seriousness of the situation and adverse effect on the public health, Municipal Corporation Ghaziabad is to be held accountable. By way of an interim arrangement, we direct the Municipal Corporation Ghaziabad to deposit a sum of Rs. 25 lakhs towards compensation for damage to the environment within one month with the CPCB.

6. In spite of orders of this Tribunal, no adequate steps are shown to have been taken in the last six months. It will be necessary to require the Municipal Corporation Ghaziabad to furnish a Performance Guarantee in the sum of Rs. 25 lakhs within one month to the satisfaction of the CPCB to ensure further satisfactory action within next two months. In case satisfactory steps are not taken, the amount will be forfeited.

7. The CPCB may assess the extent of damage and give its report to this Tribunal about the status after two months.

8. In the meanwhile, fencing may be done around the dumps and green belt may also be set up to ensure that cows do not enter and consume bio non-degradable garbage as appears to be happening from the photographs annexed to the application. It will be desirable that the garbage dumps be shifted to any other appropriate site in a scientific manner. In case it is so shifted, all precautions be taken for protection of environment in accordance with the statutory rules.

### 21.08.2019

*"4. A report was filed by the PCB observing and recommending as follows:* 

#### "Observations: -

The following were the observation during inspection of dumpsite at Shakti Khand-4, Indirapuram:

- 1. Mixed Municipal Solid Waste(MSW) is being dumped at 30,000 Sq. m. plot area which is part of land allocated for STP. The height of the dumpsite varies from 5 to 15 feet at different places.(Photo-1 of Annexure-1)
- 2. As per UPPCB report, **MSW** is being dumped at this site from last 2-3 years.
- 3. The aesthetics of the site has become displeasing and the presence of bad odor, rodents, pests etc. hinders the life of people living in adjoining areas.

#### **Recommendations:**

Dumpsite at Shakti Khand-4, Indirapuram, Ghaziabad is not a scientific landfill. If dumping of MSW is continued, then generated leachate shall percolate to ground water and will lead to further contamination of ground water. As the dumpsite is located in a thickly populated area, further dumping of waste by Ghaziabad Development Authority (GOA) has to be stopped immediately so as to curtail any further damage to the environment and to avoid situation similar to dumpsites in Delhi and elsewhere in the country."

5. During the course of hearing we have been informed that since the area has not been handed to the Municipal Corporation Ghaziabad, further steps are to be taken by the GDA.

6. Since the garbage dumped is a hazard for the environment and the public health, the same must be scientifically remedied. In this regard, we may refer to the order of this Tribunal dated 17.07.2019, O.A. No. 519/2019, News item published in "The Times of India" Authored by Jasjeev Gandhiok & Paras Singh Titled "Below mountains of trash lie poison lakes", wherein directions have been given for scientific handling of all waste dumps in the country. In the light of the said order, following Committee is constituted to deal with the matter in Ghaziabad:

i. District Magistrate, Ghaziabad

Chairman

ii.	Vice-Chairman, GDA	Member
iii.	Municipal Commissioner, Ghaziabad	Member
iv.	Representative from State PCB	Member
v.	Representative from CPCB	Member

7. The Committee may meet within a month and prepare an action plan in terms of order of this Tribunal dated 17.07.2019 and ensure clearance of the dumps within a reasonable time and furnish a progress report before the next date by e-mail at judicial-ngt@gov.in."

#### 03.03.2020

"10. We may observe that non-compliance of rules relating to waste disposal results in damage to the environment and public health. Any failure needs to be visited with assessment and recovery of compensation for such damage from the persons responsible for such failure. A study was recently got conducted by CPCB, under orders of this Tribunal requiring such a study by a joint Committee comprising CPCB, NEERI and IIT, Delhi about the monetary cost of damage caused to the environment on account of existence of legacy waste dump site at Gurgaon (Bandhewadi) vide order dated 05.03.2019 in O.A. No. 514/2018. The report of the CPCB filed on 13.02.2020 is that damage on account of the said legacy waste dump site was Rs. 148.46 crore, on account of damage to the air quality, soil and water quality, climate change and disamenity (aesthetic). The damage has been assessed in terms of impact on health due to release of pollutants in air atmosphere, release of leachate into ground /surface water and soil, due to pollution from the landfill site, damage cost associated with climate change due to carbon di-oxide and methane, damage caused due to aesthetics loss, price depreciation due to disamenity cost etc.

11. Thus, monetary cost of every legacy dump site is expected to be huge depending upon the location, quantity of waste and area covered. Needless to say that there is huge cost for non-compliance of other provisions relating to waste management – Solid as well as Liquid. Loss to the environment and public health is taking place not only on account of delay in clearing legacy waste but also for not complying with other provisions of the Rules resulting in huge gap in generation and processing of waste. It may be necessary to determine such cost for delay in clearing legacy waste at every dump site as well as for delay in complying with other rules and failure to treat sewage and recover the same from the persons responsible for action in the matter.

12. The damage, thus, is about Rs. 500 per metric tonne in five years (as in Gurgaon dump site quantum of waste was about 25 lac tonnes) which is far less than the cost involved in clearing the legacy waste site or processing the waste. There is clear deficit in governance in performing constitutional obligations, resulting in huge
damage to the environment. Citizens are suffering in terms of health on account of such failure. Even if State is not to spend, least the State must do is to have the waste properly managed even at the cost of the citizens so that their health is protected. CSR funds are also available under Section 135 of the Companies Act, 2013. It is only a matter of governance and management. The procedures need to be curtailed and the work executed swiftly in the interest of public health and environment and liability of officers fixed for delay, causing huge loss.

13. This Tribunal has already interacted with the Chief Secretary, UP recently on 10.01.2020 in O.A. No. 606/2018 and issued following directions in the light of earlier directions of the Hon'ble Supreme Court and this Tribunal and the constitutional and statutory provisions:

*"36. We accordingly direct:* 

- a. In view of the fact that most of the statutory timelines have expired and directions of the Hon'ble Supreme Court and this Tribunal to comply with Solid Waste Management Rules. 2016 remain unexecuted. compensation scale is hereby laid down for continued failure after 31.03.2020. The compliance of the Rules requires taking of several steps mentioned in Rule 22 from Serial No. 1 to 10 (mentioned in para 12 above). Any such continued failure will result in liability of every Local Body to pay compensation at the rate of Rs. 10 lakh per month per Local Body for population of above 10 lakhs, Rs. 5 lakh per month per Local Body for population between 5 lakhs and 10 lakhs and Rs. 1 lakh per month per other Local Body from 01.04.2020 till compliance. If the Local Bodies are unable to bear financial burden, the liability will be of the State Governments with liberty to take remedial action against the erring Local Bodies. Apart from compensation, adverse entries must be made in the ACRs of the CEO of the said Local senior functionaries Bodies and other in Department of Urban Development etc. who are responsible for compliance of order of this Tribunal.
- **b.** Legacy waste remediation was to 'commence' from 01.11.2019 in terms of order of this Tribunal dated 17.07.2019 in O.A. No. 519/2019 para 28<sup>1</sup> even though

<sup>&</sup>lt;sup>1</sup> The Chief Secretaries may ensure allocation of funds for processing of legacy waste and its disposal and in their respective next reports, give the progress relating to management of all the legacy waste dumpsites. Remediation work on all other dumpsites may commence from 01.11.2019 and completed preferably within six months and in no case beyond one year. Substantial progress be made within six months. We are conscious that the SWM Rules provide for a maximum period of upto five years for the purpose, however there is no

statutory timeline for 'completing' the said step is till 07.04.2021 (as per serial no. 11 in Rule 22), which direction remains unexecuted at most of the places. Continued failure of every Local Body on the subject of commencing the work of legacy waste sites remediation from 01.04.2020 till compliance will result in liability to pay compensation at the rate of Rs. 10 lakh per month per Local Body for population of above 10 lakhs, Rs. 5 lakh per month per Local Body for population between 5 lakhs and 10 lakhs and Rs. 1 lakh per month per other Local Body. If the Local Bodies are unable to bear financial burden, the liability will be of the State Governments with liberty to take remedial action against the erring Local Bodies. Apart from compensation, adverse entries must be made in the ACRs of the CEO of the said Local Bodies and other senior functionaries in Department of Urban who Development etc. are responsible for compliance of order of this Tribunal.

- c. Further, with regard to thematic areas listed above in para 20, steps be ensured by the Chief Secretaries in terms of directions of this Tribunal especially w.r.t. plastic waste, bio-medical waste, construction and demolition waste which are linked with solid waste treatment and disposal. Action may also be ensured by the Chief Secretaries of the States/UTs with respect to remaining thematic areas viz. hazardous waste, e-waste, polluted industrial clusters, reuse of treated water, performance of CETPs/ETPs, groundwater extraction, groundwater recharge, restoration of water bodies, noise pollution and illegal sand mining.
- d. The compensation regime already laid down for failure of the Local Bodies and/or Department of Irrigation and Public Health/In-charge Department to take action for treatment of sewage in terms of observations in para 31 above will result in liability to pay compensation as already noted above.
- e. Compensation in above terms may be deposited with the CPCB for being spent on restoration of environment which may be ensured by the Chief Secretaries' of the States/UTs.
- f. An 'Environment Monitoring Cell' may be set up in the office of Chief Secretaries of all the States/UTs within one month from today, if not already done for coordination and compliance of above directions

reason why the same should not happen earlier, in view of serious implications on the environment and public health.

# which will be the responsibility of the Chief Secretaries of the States/UTs.

g. Compliance reports in respect of significant environmental issues may be furnished in terms of order dated 07.01.2020 quarterly with a copy to CPCB."

14. Compensation for damage to public health and environment needs to be recovered from the officers who have failed in performing their duties and current responsibility must be discharged by the officers in position failing which they must be made accountable. Compensation in terms of order dated 10.01.2020 is liable to be paid by each local body and other State authorities. Standard Operating Procedure (SoP) for legacy waste clearance has already been laid down by the CPCB which is available on its website. Even in the State of UP several service providers have been hired and there is no justification for wasting time in separate DPRs where problems are identical. Available DPRs can be utilized. Rates can be standardised. All the legacy wastes have to be cleared and sewage treatment ensured to give effect to environmental laws including Water (Prevention and Control of Pollution) Act, 1974, Air (Prevention and Control of Pollution) Act, 1981 and Environment (Protection) Act, 1986 and Constitutional provisions under Article 243(W) and 12th Schedule. The cost can be recovered as per applicable norms or laying down further norms on 'Polluter pays' principle. Right to breathe fresh air and access to water being right to life, non-availability of funds cannot be a defence for inaction. Enough power is available with the State to raise necessary funds for the purpose. Damage to the environment caused, calculated at the rate of the expert Committee report referred to above, in the last five years for one legacy site itself may be more than Rs. 8 crores. It may be necessary to fix liability in this regard.

15. In view of above, we direct the Municipal Corporation, Ghaziabad and GDA to ensure clearance of legacy waste and compliance of Solid Waste Management Rules, 2016, apart from ensuring treatment of sewage. Pending long term action, interim steps by way of phyto/bio remediation for treatment of sewage must be taken and the drains must be remedied and cleaned. In short, our directions are:

- i. Clearance of legacy waste dump site at Indirapuram must commence within one month from today which will be responsibility of the Commissioner, Municipal Corporation, Ghaziabad. GDA is at liberty to either take responsibility or transfer the cost to an ESCROW account. Tentative cost is assessed at Rs. 4 crore.
- ii. All legacy waste dump sites may be identified within one month by the Committee already constituted

namely District Magistrate, Ghaziabad, Vice-Chairman, GDA, Municipal Commissioner, Ghaziabad, Representative from State PCB and a representative from CPCB. On such identification, the legacy waste clearance may commence within one month thereafter.

- iii. Sewage management and remediation of drains may start within one month atleast by way of phyto/bio remediation which will be the responsibility of the Municipal Commissioner, Ghaziabad. Any deficiency of funds may be made up in consultation with the Secretary, Urban Development, UP as well as Secretary, Housing and Urban Planning, UP.
- *iv.* CPCB may recover the damage to the environment after making appropriate assessment."

# 02.09.2020

"5. Accordingly, a report has been filed on 28.08.2020 by the District Magistrate, Ghaziabad which does not show any meaningful progress. Report has also been filed by Ghaziabad Nagar Nigam on 27.08.2020 which merely refers to some paper work. The Tribunal records its disapproval at such attitude of the statutory authorities in dealing with such important and sensitive issue of garbage management, affecting the environment and public health which are basic needs of the citizens.

6. Status of compliance is reported as follows:

"	S.No.	Hon'ble Tribunal's Directions	Compliance Status
	1	Clearance of legacy waste dump Site at Indirapuram must commence within one month from today which will be responsibility of the Commissioner, Municipal Corporation, Ghaziabad. GOA is at liberty to either take responsibility or transfer the cost to an ESCROW account. Tentative cost is assessed at Rs. 4 Crore.	Process for clearing legacy waste from concerned site shall commence once the tender is awarded, Tender for technical bids has been opened on 10.07.2020. Technical assessment of two bids received has been held. Since the expenses are being borne by GDA, the technical bids received are being examined at their level as well. Vice Chairman, Ghaziabad Development Authority vide her letter dated 16.03.2020 has committed to transfer the amount of Rs. 4 crores in account of Ghaziabad Nagar Nigam, copy of said letter is annexed as Annexure II. Same has been reiterated in GDA's letter dated 10.07.2020 annexed as

		Annexure III.		
2	All legacy waste dump sites may be identified within one month by the Committee already constituted namely District Magistrate, Ghaziabad, Vice- Chairman, GDA, Municipal Commissioner, Ghaziabad, Representative from State PCB and a representative from CPCB. On such identification, the legacy waste clearance may commence within one month thereafter	Besides, Shakti Khand IV site, another legacy waste site has been identified at Pratap Vihar, Ghaziabad. Estimated Municipal Solid Waste on said side is around 4 lakh MT. Presently no dumping is being done on the said site. As per Municipal Corporation, Ghaziabad, the DPR for remediation on said site has been prepared and handed over to UP Housing & Development Board, the land- owning agency for said site. Site surveys are still being done to identify other legacy waste dump sites.		
3	Sewage management and remediation of drains may start within one month at least by way of phyto/bio remediation which will be the responsibility of the Municipal Commissioner, Ghaziabad. Any deficiency of funds may be made up in consultation with the Secretary, Urban Development, UP as well as Secretary, Housing and Urban Planning, UP	Survey of drains has been done, <b>10</b> drains have been identified for treatment that outfall into River Hindon, namely: 1. Karhera Drain 2. Hindon Vihar drain 3. Kaila Bhatta Drain 4. Arthala Drain 5. Sarvodaya Nagar Drain 6. Rahul Vihar Drain 7. Indrapuran Drain 8. Dasna Drain 9. Nandgram Petrol Pump Drain 10. City Forest Main Gate Drain. 11. Phase - I, it is proposed to remediate 05 drains listed at S. No. DPR for same has been prepared and has been assessed by NEERI, Nagpur. NEERI has been appointed to assess the viability and suggest changes, if needed. Their team is proposed to carry out field survey on 22.7.2020 and 23.07.2020. Work with regards to phyto/bio remediation shall be carried out accordingly. Letter from Municipal Corporation, Ghaziabad is annexed as Anneyure W		

4	CPCB may recover the damage to	CPCB's report with regard to said
	to the environment after making	assessment not received
	appropriate assessment.	

7. Let meaningful steps be now taken by the statutory authorities expeditiously and compliance report filed by email, failing which there will be no other option except to take action personally against the Senior Officers on further failure. We also request the oversight Committee headed by Justice SVS Rathore, former Judge of Allahabad High Court to look into the matter and give its independent report in the matter by e-mail."

# 15.04.2021

"7. Accordingly, GNN has filed its compliance affidavit dated 16.01.2021. The Oversight Committee has filed its independent reports dated 15.01.2021 and 09.04.2021. It will suffice to refer to the last report of the Oversight Committee dated 09.04.2021 wherein, after review of progress in the matter, following recommendations are made:

### "Recommendations:

*In view of the above we recommend as follows:* 

- I. Already the work of legacy waste clearance at Shakti Khand has been delayed. The Municipal Corporation should ensure that it positively completes it by June 2021. Similarly, the work of legacy waste clearance at Pratap Vihar should be completed on priority by year end. No further extensions be given in these works
- II. Already Ghaziabad Municipal Corporation is working on completing a number of decentralized waste processing plants. They should be fully made operational in the next three months to obviate the necessity to fill the solid waste in land fill sites.
- III. The issue of bioremediation/phytoremediation has been pending for quite some time. Municipal Corporation should ensure that the work is complete in all the 11 drains in the next 3 months.
- IV. The performance of one city one operator scheme be regularly monitored and it should be ensured that payments are linked with performance."

8. In view of above, GNN may take further action expeditiously for remediation of legacy waste, operationalizing decentralized waste processing plant and remediation of 11 drains as recommended by the Oversight Committee. The GNN may give its progress report within next three months to the Oversight Committee.

9. Legacy waste site at Shakti Khand is spread in 30,000 sq.m. area having 1.5 tonnes of waste piled to the height of 5 to 15 feet. The works awarded are with stipulation of time schedule and correspond to waste bio- minned and area reclaimed. The report of GNN is not specific on this aspect. Further, out of ten drains to be remediated, work of bioremediation has commenced only for one Arthar drain. Results mentioned need to be checked by the State PCB. Ultimately, drains are to be intercepted and diverted to STPs. While noticing the delay in bio-mining at Shakti Khand site and no progress at Pratap Vihar and slow or no progress on other issues, a Joint Committee of CPCB and SPCB is constituted to give factual compliance report on bio-mining of legacy waste at different sites with adoption of SoP and Guidelines of CPCB and routing of recovered material to authorized agencies, adequacy of existing and proposed facilities mentioned for solid waste processing and diversion of drains to identified STPs. Report may also indicate performance of bio-remediation of one drain and progress with respect to remaining drains. The report may be filed by 31.07.2021 at judicial-ngt@gov.in preferably in the form of searchable PDF/ OCR Support PDF and not in the form of Image PDF.

10. Meanwhile, Oversight Committee is requested to review progress made by State government in resolving interdepartmental issues of UP Aawas Nigam and operation of STPs under one city one operator system. Performance of STPs at Indirapuram has been dealt in O.A. No. 648/2019, M/s Hindon River Resorts Pvt. Ltd. & Anr. v. Ghaziabad Development Authority & Ors. as follows:-

*"1to6…xxx……………xxx* 

7. In view of the above, without commenting about the technology to be used, we direct that further remedial action be taken by the GNN, UP Jal Nigam and UP SIDC in coordination with each other and if necessary, the District Magistrate, Ghaziabad may facilitate inter-se coordination by holding joint meetings as and when necessary.

8. Learned counsel for the State PCB states that the GNN has taken up only one drain as a pilot project for phyto-remediation which will result in neglecting other drains. Learned counsel for the GNN states that work

will be taken up simultaneously for all the drains. Let this aspect be also addressed by the above joint Committee, in case of any difficulty."

5. In pursuance of above, reports filed are : report dated 30.07.2021 by the Ghaziabad Nagar Nigam (GNN), report dated 13.08.2021 by the State PCB and report dated 12.08.2021 of the Oversight Committee constituted by this Tribunal. Since all the three reports are covered by the report of the Oversight Committee, it will suffice to refer to the said report which is as follows:-

*"The current status of the garbage management on-going actively at the following sites is as follows:-*

S	Location	MSW Type	Waste Qty/	Current Status
No.	т 1'	T	Capacity	A 500/ 1 1
1	Indirapuram	Legacy	I lac ton waste	Approx. 50% land
		waste	qty and plant	clearea. larget
			capacity 500-	clearance of balance
			000 IPD	November 2021
2	Sihani Garbage	Fresh MSW	150 TPD	Operational
	Factory			
3	Hindon Vihar	Fresh MSW	300-250 TPD	Under Construction.
	Garbage Factory			Civil works completion
				expected by August
				2021
4	Pratap Vihar	Legacy	4-5 lac ton	Legacy waste
		Waste		processing ongoing.
				Machineries to be
				increased during the
				rainy season. One
				Ballastic Separator
				and Inree Irommel to
				be daded to increase
				adding processing
				2000 TPD Taracting
				2000 IPD. Targelling
				2022
				2022.

Apart from the above sites, GNN has planned to establish two more garbage factories, one at Indirapuram legacy waste site (after the land is cleared) with capacity of 500-700 TPD and another at Govindpuram with 100 TPD capacities. With all four garbage factories operational, the garbage of the entire city will be managed in a decentralized manner having daily handling capacity of 1000-1200 TPD. The Municipal Commissioner assured this committee that with in next 6 months 100% processing of the waste being generated will be done without any dump yard with in these Garbage factories.

Under the Jal Sansthan Department Bio-remediation section work of bio-remediation is in process for 10 drains. A detailed report of the progress being made by Ghaziabad Nagar Nigam in cleaning the drains through their innovative solutions is annexed as Annexure 1."

# "Site 1 - Inspection of Legacy Waste Processing Project at Shakti Khand Indirapuram, Ghaziabad

First I inspected Shakti Khand legacy waste site. Work of clearing the legacy waste was going on in full swing. Some fresh waste was also lying there. Windrows were made; Trommels and blast segregators were also functional. I was informed that about 50% of the legacy waste has been cleared and the remaining waste shall be cleared positively within three to four months after the rainy season. It was informed that due to Covid-19 no workers were available due to which the work has been delayed by few months and again the rainy season shall also further delay the process. On one side of this legacy waste there is a complex in which three STPs are situated and there is a water body in between the STPs and this legacy waste site. There was a dump of compost and I was informed by the representative of *M*/*S* Geron India that there is huge demand of this compost by the fertilizer companies like Kribhco and NFL. RDF in small quantity was also lying there. There were some plastic contents in it also. Representative of M/S Geron India informed that they ensure that the plastic content in RDF remains within permissible limits. If they get the permission to dispose it off with plastic content within permissible limits then it can be used as a fuel in the furnaces of the factories and it shall be quite easy for them to dispose it off quickly. I was also informed by the Municipal *Commissioner that they propose to establish a garbage factory once* this site once it is cleared and all around the border they shall develop a green belt so that the Garbage factory is not visible to anyone from outside. The pace at which the clearing work was going on at the time of inspection I am of the view that the time line as told shall be achieved. However, the timeline fixed by Hon'ble Tribunal shall stand expired.

The total land on which legacy waste had been dumped at Shakti Khand, Indirapuram is approx. 11 acres. The waste from Indirapuram and nearby areas was being dumped at the site for the last several years. The estimated waste quantity was approx. 1 lac metric tonnes at the time when the work started. The below pictures show the situation of the site before bioremediation of waste started.

The project for Bioremediation of Legacy Waste was awarded to M/s Geron Engineering Pvt Ltd in October 2020. The firm cleared the area from existing waste and established the plant for bioremediation and bio-mining. It took them 3 months to setup the plant at the site. The plant has installed capacity of 500-600 TPD with one ballistic separator and two trommels. During this period the firm also

undertook the activity of forming required number of windrows at the site. Subsequently, the legacy waste treatment commenced in mid Jan 2021.

The bio-remediation process is carried out as per the CPCB guidelines. The plant is established to segregate the waste into the different fractions like compost / bio earth, RDF, plastic waste, inert material etc. The plant is operational since mid-Jan 2021 and approx. 50% of the land area has been cleared as shown in the pictures below.

All the different segments once segregated are disposed off separately in a scientific manner. The compost / bio earth has been tested at government approved lab and is found to comply with FCO 1985 norms. The firm has tied up with fertilizer companies like Kribhco, NFL etc. to market the compost on a larger scale across UP. As of now the compost is being taken by local farmers and also used by Ghaziabad Nagar Nigam for plantation etc.

The firm has tie ups with several cement companies, waste to energy companies, recyclers and local industrial units for disposal of RDF. Approx. 4,400 ton of RDF (including plastic waste) has been disposed off.

The inert material has been used for local land filling. More than 95% material has been reused and almost no material is left for disposal.

Due to corona and intermittent rains, the project got delayed by 2-3 months. The rainy season is expected to cause further delay. Post the rainy season, it is expected to take around 3-4 months to clear the balance land.

It was also informed that they have ensured that there is no garbage below the ground level at this site.

I was informed that GNN has planned to establish four garbage factories, one at Indirapuram legacy waste site (after the land is cleared) with capacity of 500-700 TPD and another at Govindpuram with 300 TPD capacity where the work has not yet started. At present work in one garbage factory is complete and it is fully functional. While the work at the other is 75% complete and it shall start functioning at full capacity very soon. When all the four garbage factories becomes operational, the garbage of the entire city will be managed in a decentralized manner having daily handling capacity of 1000-1200 TPD which shall meet the entire requirement of the city.

Out of four garbage factory projects, two were inspected by me during inspection because **work on the other two has not yet started**.

# Site 2 – Sihani Garbage Factory

The Garbage Factory at Sihani was conceived by GNN in October 2020. In less than 6 months (including 2 months lost due to covid, as told), the project was completed, and factory was operational with garbage handling capacity of 150 TPD. The capacity of this garbage factory can go upto 200TPD if needed in future. The land used by GNN for establishing this garbage factory was an existing dumpsite. It has been converted into a beautiful structure which is covered from all sides to avoid any foul odour and ugly sight of garbage from outside.

The garbage factory is being operated by Geron Engineering Pvt Ltd in a PPP model where the concessionaire shall bear the operation cost of the factory and shall use the sale proceeds from the output products like RDF and Compost to recover its cost.

At the time of inspection I was impressed by the cleanliness there. Without going inside no one can say that work of garbage treatment is being done there. It was fully covered by tin shades. Wherever there was vacant land available, work of plantation has been done. One canteen, conference room and administrative room has also been established. I was informed that it has been done only by doing some cosmetic changes in the existing structures. Since the roof of tin is very high so the foul smell was also not there.

At the Garbage Factory, the segregated waste is received from GNN vehicles, weighed and further segregated into different fractions using mechanical segregators and manually using integration of rag pickers. The final products include plastic, paper, glass, RDF and compost etc. I was informed by the Municipal Commissioner that the running cost of this plant is managed only through the income generated by the sale of by-products. They have to bear the cost only to establish it.

Usually at the time of such inspections public living in the nearby areas come to make complaint of foul smell or other related problems, but during the inspection not even a single person appeared before me to make any complaint.

# Site 3 – Ret Mandi Garbage Factory

At Ret Mandi, Hindon Vihar, a bigger garbage factory is being constructed with capacity of 300-350 TPD. The major portion of the project has been constructed and it is informed that the project will be complete by August 2021. The capacity of this garbage factory may go upto 500TPD in furture if needed.

# Site 4 – Pratap Vihar Legacy Waste Processing

The Pratap Vihar legacy waste site has been an old dumping site of Ghaziabad where garbage was being dumped for more than 10 years. The estimated waste quantity at the site is approx. 4-5 lac ton. The height of accumulated garbage varies from 8 meter to 20 meter across the land. The land is approx. 50,000 sq mt and belongs to Awas Vikas while GNN is working on remediating the legacy waste present at the land site. **The legacy waste processing work has commenced at the site, however at a very slow pace.** The additional machinery shall also be installed at the site to increase the daily processing capacity to 1500-2000 TPD so that the remediation work can be completed by March 2022. I was also informed that there are all the chances that the garbage may be present below the ground level because they have gathered information from the public that it was a low lying area. I was also informed that in case garbage is present under surface level then it may take further time depending on the additional quantity of garbage present below the ground level. I was informed that it can be ensured only after some part of the legacy waste is cleared.

# Status of Treatment of Drains

Ghaziabad Nagar Nigam has identified 10 drains for the purpose of treatment/ remediation by means of Integrated Solar Smart Floating Aeration/Barrier/ Treatment Island System. During inspection of the Brij Vihar drain area where same practice was being carried out was inspected. Major components for treatment of drains by this method are:

### **<u>1-Power House:</u>** Bamboo Hut with Solar Panel

**<u>2-Air Pumps:</u>** Energy Efficient Diaphragm/Magnetic Pump (80 Watt for 150 KLD Aeration capacity)

**3-Floating Air Dozer:** (Using flexible closed cell foam (EPE) as Floating Material and Bamboo as Skelton and Oxitube/air stone as Air dozer)

**4-24x7 Monitoring System:** 4 HD CCTV Camera with 15 Days Recording System with HD Live Streaming using Solar Energy/ Internet Connectivity (Fiber and Wifi)

**5-Floating Treatment Island:** For root zone treatment & beautification of site using flexible closed cell foam + Plastic net+Cana/typha/phragmitis wetland plants

**6- Floating Barrier:-** Using flexible closed cell foam +Net+ Bamboo Sticks floating Barriers to Stop and Collect floating material (bottles/poly bags/thermocol etc)

**7- Smart IOT based Control System-** 24x7 remotely controlling the whole system we are using latest cutting age cheap Alexa/google ready IOT technology based switches.

The system has been customized and designed for Brij Vihar drain only. GNN is testing the above mechanism on pilot scale presently and success of present project shall determine its utility and thereafter it shall be replicated in other drains as well. Although the project is low cost and engineering alterations have been made in order to make it suitable to present scenario, success of same is not yet quantifiable. GNN should assess its performance closely and submit a detailed report in terms of its utility, cost, performance and efficacy. I was informed that system has shown some improvement in the water quality.

RO Ghaziabad was directed to get the collect water samples collected from a point before and after this project and after its analysis send a comparative report to assess the success of this plant. I was informed that it is a very low cost plant and they are working to further reduce its cost by using the waste plastic to convert into floating beds and barriers. The idea itself is appreciable because if it is successful then it can be replicated in other drains too.

While going to this location, I had to travel along the drain. I found that at several places, the entire drain was covered with floating solid waste. Its quantity was so much that the drain water was not even visible. No work of cleaning it was going on.

Besides this, during inspection drain's silt was found deposited by side of the drains. It is necessary that compaction of this silt is done and it is removed from site before onset of monsoons every year so that efforts made are not undone due to rains. Municipal Commissioner informed me that that this is the biggest drain of Ghaziabad Its discharge is about 150 MLD .They have identified ten more points on this drain where they shall repeat this project. I was also informed that they are at present working on the conveyor belt like system to clear the waste collected at the surface barrier. It's a very good idea to maintain the surface barriers clean because it will save much time and shall also keep the drain clean without cleaning it manually which is a tough process because the workers have to work in very unhygienic and unhealthy conditions.

After the inspection I am of the view that work is being done but its speed needs to be increased. Timeline provided in the Solid Waste Management Rules has already expired. Remediation of all the drains needs to be done immediately because these are ultimately causing pollution of river Yamuna. At present only one drain as pilot project has been taken and the remaining remains unattended. It is a matter of great concern for all the concerned.

RO Ghaziabad was directed to remain in touch with the concerned authorities and to ensure that the work picks up desired pace shortly.

Municipal Commissioner, Ghaziabad is also directed to ensure that bio/phytoremediation work in all the drains, as an interim measure, starts at the earliest. Apart from it, once the site of Shakti Khand is cleared, immediately the work of establishing the third Garbage Factory must also be started.

# 6. Short Compliance status

S.No.	Directions	Action Taken
<b>S.No.</b> 1	<b>Directions</b> Already the work of legacy waste clearance at Shakti Khand has been delayed. The Municipal Corporation should ensure that it positively completes it by June 2021. Similarly, the work of legacy waste clearance at Pratap Vihar should be completed on priority by year end. No further extensions be given in these works	<ul> <li>Action Taken</li> <li>Work of clearing of the legacy waste at this site is going on along with dumping of some fresh waste at the Shakti Khand site.</li> <li>50% of the legacy waste had been cleared and the remaining waste shall be cleared positively within three to four months after the rainy season.</li> </ul>
		<ul> <li>It has been proposed to establish a garbage factory once this site will be clear.</li> </ul>
		• The timeline fixed by the Hon'ble NGT had already expired.
		• The treatment of legacy waste had started in January 2021.
		• The bio- remediation process is carried out as per the CPCB guidelines.
		• The compost/bio earth has been tested at government

	approved lab and is found to comply with FCO 1985 norms.
•	up with fertilizer companies like Kribhco, NFL etc. to market the compost on a larger scale across UP.
•	As of now the compost is being taken by local farmers and also used by Ghaziabad Nagar Nigam for plantation etc.
•	The inert material has been used for local land filling. More than 95% material has been reused and almost no material is left for disposal.
	Due to corona and intermittent rains, the project got delayed by 2- 3 months. The rainy season is expected to cause further delay. Post the rainy season, it is expected to take around 3-4 months to clear the balance land.
•	The legacy waste processing work has commenced at the Pratap

			Vihar sita
			however at a
			nowever at a
			very slow pace.
		•	To complete the remediation work by March 2022 the installation of additional machinery to increase the daily processing capacity to 1500- 2000 TPD is proposed to be installed.
		•	Pratap Vihar was a low lying area as per the persons who are acquainted with the site for long period thus there are possibilities that garbage may be present under surface level. In that situation it may take more than expected time, depending on the quantity of waste material present below around level
2	Already Ghaziabad Municipal Corporation is working on completing a number of decentralized waste processing plants. They should be fully made operational in the next three months to obviate the necessity to fill the solid waste in land fill sites.	•	Four garbage factories have been proposed one at Indirapuram legacy waste site (after the land is cleared) with capacity of 500- 700 TPD and another at Govindpuram with 300 TPD capacity where the work has not yet started.

		•	At present work in one garbage factory is complete and it is fully functional. While the work at the other is 75% complete and it shall start functioning at full capacity very soon.
		•	Out of four garbage factory projects, two were inspected however the work on the other two has not started yet. As per the directions of the Hon'ble NGT the GNN had already missed the Deadlines for the setting up of the land fill sites.
3	The issue of bioremediation/ phytoremediation has been pending for quite some time. Municipal Corporation should ensure that the work is complete in all the 11 drains in the next 3 months	•	The phyto- remediation system has been customized and designed for Brij Vihar drain.
		•	During the inspection it was observed that the some part of the drain was totally covered with floating solid waste. The quantity was so much that the drain water was not even visible. No work of cleaning it was going on.

		<ul> <li>This committee is of the view that some work is being done but the speed is not as per the requirement.</li> <li>Timeline provided in the Solid Waste Management Rules has already expired.</li> </ul>
4	The performance of one city one operator scheme be regularly monitored and it should be ensured that payments are linked with performance	A contract had been signed between M/S Geron Engineering Pvt Ltd and Ghaziabad Nagar Nigam on 20.10.2020.
5	GNN may take further action expeditiously for remediation of legacy waste, operationalizing decentralized waste processing plant and remediation of 11 drains as recommended by the Oversight Committee. The GNN may give its progress report within next three months to the Oversight Committee	TheOversitecommitteehadreceivedtheprogressreport andinspectedthe site.Work of cleaning thelegacysitesbeendonehoweverthepaceofworkisslowparticularlyatPratap Viahar.
6	Oversight Committee is requested to review progress made by State government in resolving interdepartmental issues of UP Aawas Nigam and operation of STPs under one city one operator system. Performance of STPs at Indirapuram has been dealt in O.A. No. 648/2019, M/s Hindon River Resorts Pvt. Ltd. & Anr. v. Ghaziabad Development Authority & Ors.	The disputes had been resolved between the U.P. Aawas Vikas Parishad and Nagar Nigam Ghaziabad. Aawas Vikas has released Rs. 2 Crore to Nagar Nigam Ghaziabad to clean the Pratap Vihar legacy waste site. After clearance the Prataap Vihar site shall be handed over to the Awas Vikas Parishad.
7	Learned counsel for the State PCB states that the GNN has taken up	The team had installed a prototupe
	only one drain as a pilot project for	on Preet Vihar drain

	in 41
priyto-remeatation which will	in the month of
result in neglecting other drains.	February of 172
Learned counsel for the GNN	KLD capacity. The
states that work will be taken up	prototype was
simultaneously for all the drains.	tested for a month
	which has yield
	good results, an
	increase in
	dissolved oxygen
	was recorded. Post
	this trial, the work
	of installation of 2
	plants (2 MLD
	capacity) in Brij
	Vihar drains has
	been completed, this
	technique has been
	found to be very
	successful and
	tenders have been
	given to replicate it
	on all the drains.
	The work on the
	drain is expected to
	be completed by 30
	September 2021.

# 7. Recommendations:

*In view of the above we recommend as follows:* 

- I. The timelines set by the Hon'ble NGT for completion of various works have already expired but they are yet to be completed. Having regards to the ground conditions, the Ghaziabad Nagar Nigam has intimated a new timeline to complete these works. They should be directed to ensure that the works are completed within the promised timelines, else they will be liable to pay EC.
- II. The UPPCB may be directed to ensure that the agencies responsible for preserving the environment of **the Nagar Nigam area must discharge their statutory responsibilities in true spirit of the law by imposing adequate EC in time**. It should also coordinate with the District Administration for timely recovery of the EC from these agencies.
- III. In the micro shed level planning, it should be a mandate to do the real time monitoring of drains major polluting source points. It will not only be beneficial in accessing the actual quality and quantity of the sewage flowing into the river from a particular drain but also help in

# the infrastructure planning and development on the drains in future.

IV. The Ghaziabad Nagar Nigam has done some innovations in Phyto-remediation and solid waste management works. The pilot projects have been found feasible both cost and performance wise. They are working on replicating these pilot projects at other sites. Once the scalability is tested, it may be shared with other ULBs for adapting or adopting the technology as per their local requirements."

6. From the above, it is seen that the remedial action is highly inadequate and statutory timelines as well as timelines fixed by the Tribunal have been crossed. Earlier committed timelines have also been breached. New timelines are given which may or may not be observed. For acknowledged failure and damage to the environment, no accountability is fixed. There is also non-payment of compensation for delay in violation of orders of this Tribunal already quoted above. Thus, for extension recommendation of timeline without fixing any accountability for past failure is uncalled for. Crossing of timeline is a criminal offence under the Solid Waste Management Rules, 2016 read with the Environment (Protection) Act, 1986. Section 268 to 270 of the Indian Penal Code, 1860 also makes any act or omission causing injury to public or any act likely to spread infection criminal offence. Thus, the Tribunal cannot be party to permitting continuation of such criminal offence. The criminal and civil liability for the failure is of the concerned authorities as laid down. Stringent conditions have to be laid down to ensure further remedial action. As noted above, the status shown by the report is of substantial non-compliance. Pratap Vihar Legacy Site where waste is being dumped for more than ten years remains un-remediated. The drain has been found to be covered with the floating solid waste with such heavy quantity that the water was not even visible and no work of clearing was going on. The compliance status shows that only 50 % of the waste is claimed to have been cleared. Though it is stated that the remaining will be cleared in 3-4 months, after more than two months of filing of the report, further progress has been claimed. It is reported that processing of legacy waste at Pratap Vihar is at very slow pace. It has potential for hazard of contamination of ground water by the leachate. There is no report about management of the current waste. Information in public domain, by way of media reports, shows the situation to be alarming.<sup>2</sup> Failure to manage drains adds to pollution of river Ganga as the said drain first meet Hindan which meets Yamuna, which is tributary of Ganga.

7. It may be noted that the issue of scientific management of solid waste remains serious challenge to the protection of environment and public health. The matter was dealt with and monitored by the Hon'ble Supreme Court for 18 years in WP No. 888/1996, *Almitra H. Patel v. Union of India & Ors.* Vide order dated 02.09.2014, the same was transferred to this Tribunal<sup>3</sup>.

<sup>&</sup>lt;sup>2</sup> <u>https://www.jagran.com/uttar-pradesh/ghaziabad-dirt-in-the-city-due-to-noncollection-of-garbage-increasing-pollution-due-to-burning-22101556.html</u>

https://timesofindia.indiatimes.com/city/ghaziabad/why-indirapuram-needs-an-overhaul-of-itsdrains/articleshow/85544580.cms

https://www.hindustantimes.com/cities/noida-news/ghaziabad-stretches-of-national-highway-9-turninginto-dumping-sites-says-nhai-101634754144122amp.html?utm\_source=whatsapp&utm\_medium=social&utm\_campaign=ht\_AMP

https://navbharattimes.indiatimes.com/state/uttar-pradesh/ghaziabad/garbage-dumping-from-khoda-andnoida-into-ghaziabad/articleshow/87130229.cms

https://timesofindia.indiatimes.com/city/gurgaon/notice-for-waste-near-hindonriver/articleshow/87145744.cms

<sup>&</sup>lt;sup>3</sup> Operative part of the order of the Hon'ble Supreme Court reads:

<sup>&</sup>quot;Enforcement of the Rules and efforts to upgrade the technology relevant to the handling of solid municipal waste is a perennial challenge and would require constant efforts and monitoring with a view to making the municipal authorities concerned accountable, taking note of dereliction, if any, issuing suitable directions consistent with the said Rules and

# 8. The issue has been discussed at length in order dated 28.02.2020

in OA 606/2018 as follows:-

- «.....
- З. The matter was earlier considered by the Hon'ble Supreme Court inter-alia vide judgments reported in (2000) 2 SCC 679 and (2004) 13 SCC 538 directing scientific disposal of waste by setting up of compost plants/processing plants, preventing water percolation through heaps of garbage, creating focused 'solid waste management cells' in all States and complying with the Municipal Solid Waste Management Rules, 2016 (SWM Rules, 2016) on urgent basis. It was observed that the local authorities constituted for providing services to the insu<u>ff</u>icient citizens are lethargic and in their functioning which is impermissible. Non-accountability has led to lack of effort on the part of the employees. Domestic garbage and sewage along with poor drainage system in an unplanned manner contribute heavily to the problem of solid waste. The number of slums have multiplied significantly occupying large areas of public land. Promise of free land attracts more land grabbers. Instead of "slum clearance" there is "slum creation" in cities which is further aggravating the problem of domestic waste being strewn in the open. Accordingly, the Court directed that provisions pertaining to sanitation and public health be complied with, streets and public premises be cleaned daily, statutory authorities levy and recover charges from any person violating laws and ensure scientific disposal of waste, landfill sites be identified keeping in mind requirement of the city for next 20 years and environmental considerations, sites be identified for setting up of compost plants, steps be taken to prevent fresh encroachments and compliance report be submitted within eight weeks.
- 4. Further observations in the judgment of the Hon'ble Supreme Court<sup>4</sup> are:

"3. The petitioner has handed over a note in the Court showing the progress that has been made in some of the States and also setting out some of the suggestions, including the suggestion for creation of solid waste management cell, so as to put a focus on the issue and also to provide incentives to those who perform well as

direction incidental to the purpose underlying the Rules such as upgradation of technology wherever possible. **All these matters can, in our opinion, be best left to be handled by the National Green Tribunal established under the National Green Tribunal Act, 2010.** The Tribunal, it is common ground, is not only equipped with the necessary expertise to examine and deal with the environment related issues but is also competent to issue in appropriate cases directions considered necessary for enforcing the statutory provisions." <sup>4</sup> (2004) 13 SCC 538

was tried in some of the States. The said note states as under:

- "1. As a result of the Hon'ble Supreme Court's orders on 26-7-2004, in Maharashtra the number of authorisations granted for solid waste management (SWM) has increased from 32% to 98%, in Gujarat from 58% to 92% and in M.P. from NIL to 34%. No affidavits at all have been received from the 24 other States/UTs for which CPCB reported NILor less than 3% authorisations in February 2004. All these States and their SPCBs can study and learn from Maharashtra and *Gujarat's* Karnataka, successes.
- 2. All States/UTs and their SPCBs/PCCs have totally ignored the improvement of existing open dumps, due by 31-12-2001, let alone identifying and monitoring the existing sites. Simple steps can be taken immediately at almost no cost by every single ULB to prevent monsoon water percolation through the heaps, which produces highly polluting black run-off (leachate). Waste heaps can be made convex to eliminate standing water, upslope diversion drains can prevent water inflow, downslope diversion drains can capture leachate for recirculation onto the heaps, and disused heaps can be given soil cover for vegetative healing.
- 3. Lack of funds is no excuse for inaction. Smaller towns in every State should go and learn from Suryapet in A.P. (population 103,000) and Namakkal in T.N. (population 53,000) which have both seen dustbin-free 'zero garbage towns' complying with the MSW Rules since 2003 with no financial input from the State or the Centre, just good management and a sense of commitment.
- 4. States seem to use the Rules as an excuse to milk funds from the Centre, by making that a precondition for action and inflating waste processing costs 2-3 fold. The Supreme Court Committee recommended 1/3 contribution each from the city, State and Centre. Before seeking 70-80% Centre's contribution, every State should first ensure that each city first spends its own share to immediately make its wastes non-polluting by simple sanitising/stabilising, which is always the first step in composting viz.

inoculate the waste with cow dung solution or bio culture and placing it in windrows (long heaps) which are turned at least once or twice over a period of 45 to 60 days.

- 5. Unless each State creates a focussed 'solid waste management cell' and rewards its cities for good performance, both of which Maharashtra has done, compliance with the MSW Rules seems to be an illusion.
- 6. The admitted position is that the MSW Rules have not been complied with even after four years. None of the functionaries have bothered or discharged their duties to ensure compliance. Even existing dumps have not been improved. Thus deeper thought and urgent and immediate action is necessary to ensure compliance in future."
- 5. In this regard, reference may also be made to orders of Hon'ble Supreme Court in Municipal Council, Ratlam vs. Vardhichand<sup>5</sup> and B.L. Wadhera v. Union of India and Ors.<sup>6</sup> laying down that **clean environment is fundamental right of citizens under Article 21** and it is for the local bodies as well as the State to ensure that public health is preserved by taking all possible steps. **For doing so, financial inability cannot be pleaded.**
- 6. The Hon'ble Supreme Court also dealt with the issue of liquid waste management and after issuing requisite directions, required this Tribunal to monitor the compliance. Directions of the Hon'ble Supreme Court include steps for liquid waste management by setting up requisite treatment plants for which funds are to be generated by the local bodies and the States as per constitutional provisions.<sup>7</sup>

<sup>&</sup>lt;sup>5</sup> (1980) 4 SCC 162

<sup>6 (1996) 2</sup> SCC 594

<sup>&</sup>lt;sup>7</sup> "10. Given the responsibility vested in municipalities under Article 243-W of the Constitution, as also, in Item 6 of Schedule XII, wherein the aforesaid obligation, pointedly extends to "public health, sanitation conservancy and solid waste management", we are of the view that the onus to operate the existing common effluent treatment plants, rests on municipalities (and/or local bodies). Given the aforesaid responsibility, the municipalities (and/or local bodies) concerned, cannot be permitted to shy away from discharging this onerous duty. In case there are further financial constraints, the remedy lies in Articles 243-X and 243-Y of the Constitution. It will be open to the municipalities (and/or local bodies) concerned, to evolve norms to recover funds, for the purpose of generating finances to install and run all the "common effluent treatment plants", within the purview of the provisions referred to hereinabove. Needless to mention that such norms as may be evolved for generating financial resources, may include all or any of the commercial, industrial and domestic beneficiaries, of the facility. The process of evolving the above norms, shall be supervised by the State Government (Union Territory) concerned, through the Secretaries, Urban Development and Local Bodies, respectively (depending on the location of the respective common effluent treatment plant). The norms for generating funds for setting up and/or operating the "common effluent treatment plant" shall be finalised, on or before 31-3-2017, so as to be implemented with effect from the next

7. This Tribunal considered the matter of solid waste management after notifying all the concerned States/Regulatory Bodies and finally disposed of the same on 22.12.2016<sup>8</sup> requiring all the States/UTs to follow the SWM Rules, 2016 after preparing requisite action plans in a time bound manner with further direction that any State/UT which failed to comply with the Rules shall be liable to be proceeded against under Section 15 of the Environment (Protection) Act, 1986 (EP Act), apart from being required to pay environmental compensation and senior most officers of the States/Local Bodies being personally liable. The directions also include requirement for segregation of waste, providing buffer zone around plants and landfill sites and due monitoring. The States/Local Bodies were also to create market for consumption of Refuse-Derived Fuel (RDF). Tipping fee was to include the efficient and regular monitoring of waste processing plant, segregation of inert and Construction and Demolition (C&D) material and its transportation. Landfill sites were required to be bio-stabilized preventing leachate and generation of Methane, enforcement of Extended Producer Responsibility, rights and liabilities under contracts being made consistent with the Rules, creating public awareness about the facilities available at regular intervals. Copy of the judgment was circulated to all the Chief Secretaries/Advisors of States/UTs."

9. The matter was earlier considered vide order dated 20.08.2018. All the States/UTs were required to finalize their action plan latest by 31.10.2018 and execute latest by 31.12.2019, to be overseen by the Principal Secretaries of the States. Vide order dated 16.01.2019, the Tribunal directed that the statutory timelines under the 2016 Rules to be

financial year. In case, such norms are not in place, before the commencement of the next financial year, the State Governments (or the Union Territories) concerned, shall cater to the financial requirements, of running the "common effluent treatment plants", which are presently dysfunctional, from their own financial resources.

<sup>11.</sup> Just in the manner suggested hereinabove, for the purpose of setting up of "common effluent treatment plants", the State Governments concerned (including, the Union Territories concerned) will prioritise such cities, towns and villages, which discharge industrial pollutants and sewer, directly into rivers and water bodies.

<sup>13.</sup> We are of the view that mere directions are inconsequential, unless a rigid implementation mechanism is laid down. .... The said data shall be furnished to the Central Ground Water Authority, which shall evaluate the data and shall furnish the same to the Bench of the jurisdictional National Green Tribunal.

<sup>14.</sup> To supervise complaints of non-implementation of the instant directions, the Benches concerned of the National Green Tribunal, will maintain running and numbered case files, by dividing the jurisdictional area into units. The abovementioned case files will be listed periodically. The Pollution Control Board concerned is also hereby directed to initiate such civil or criminal action, as may be permissible in law, against all or any of the defaulters."

<sup>&</sup>lt;sup>8</sup> O.A. No. 199/2014 (2016) SCC Online NGT 2981

strictly followed and required the presence of the Chief Secretaries of all the States/UTs before this Tribunal with the progress reports. After interaction with the Chief Secretaries concerned, further directions were issued and finally vide order dated 20.08.2020 passed in the presence of Chief Secretary of some of the States but made applicable to all the States, the Tribunal observed that:

"

- 25. Accordingly, we have considered the matter further after interaction with the Chief Secretaries, Arunachal Pradesh, Nagaland, Manipur, Mizoram, Tripura and Meghalaya and Member Secretary, CPCB. Even though all the thematic areas of the environment are significant, interaction has been limited to few selected themes, other themes being left to be considered separately on different scheduled hearings.
- 26. As per available statistics, there is huge gap in generation and treatment of solid and liquid waste in the country. As per CPCB report 2016 (06.12.2016), as against 61948 MLD sewage generated in urban areas in India, the treatment capacity is 23277 MLD. The deficit in capacity is 62%. There is no data of sewage generation in rural areas. As per CPCB estimate of solid waste<sup>9</sup>, about 65 million tonnes of waste is generated annually in the country out of which about 62 million tonnes is Municipal Solid Waste (MSW). Only about 75-80% of the municipal waste gets collected and out of this only 22-28% is processed and treated and remaining is deposited indiscriminately at dump yards. It is projected that by the year 2031, the MSW generation shall increase to 165 million tonnes and to 436 million tonnes by 2050. There are more than 4000 dump sites as per CPCB data<sup>10</sup> which need to be remediated to avoid harmful impact on environment and public health.
- 27. All the States/UTs were directed by this Tribunal to commence remediation of legacy waste sites by 01.11.2019<sup>11</sup>. The Tribunal observed:

"28. .....We are conscious that the SWM Rules provide for a maximum period of upto five years for the purpose, however there is no reason why the same should not

<sup>9</sup> 

http://164.100.47.193/lsscommittee/Urban%20Development/16\_Urban\_Development\_25.pdf

<sup>&</sup>lt;sup>10</sup> Order dated 18.10.2019 in O.A. No. 606/2018 para 6

<sup>&</sup>lt;sup>11</sup> Order dated 17.07.2019 O.A. No. 519/2019 Para 28

happen earlier, in view of serious implications on the environment and public health<sup>12</sup>."

"30. Needless to say that potential hazard of dumpsites on public health and environment is more or less on the same pattern and earliest such dumpsites are cleared, sooner it better for public health. Such dumpsites are is undoubted source of air pollution resulting in respiratory and other diseases. Most vulnerable are the infants and the senior citizens. The right to breathe fresh air being part of right to life, delay in remedying the situation is not desirable. The plea of capping is being put forward on the ground of need for urgent remedial action, ignoring that doing so will perpetuate the adverse consequences of retaining nonbiodegradable and other polluting components in the garbage eventually causing continuous damage to the soil and the ground water. Biological solutions have to be preferred over engineering solutions on the subject. However action has to be taken fast. Delay which has taken place so far is on account of inaction of the concerned authorities for which there is no justification.

31. It will also be appropriate to note that the scheme of the SWM Rules is to prevent collection of waste and instead, to ensure its segregation, treatment and disposal at the earliest and as far as possible at the source itself. If it is not done, the waste continues to be accumulated which becomes a challenge for the environment and public health. In this regard particular reference may be made to Rule 15 (zi). The authorities need to evolve a holistic strategy for integrated waste management in the municipal planning which may

(b)<u>https://www.epw.in/engage/article/institutional-framework-implementing-solid-</u>

<sup>&</sup>lt;sup>12</sup> (a) What a Waste 2.0, Global Snapshot of Solid Waste Management to 2050, World Bank Group, ISBN (paper): 978-1-4648-1329-0, 2018 International Bank for Reconstruction and Development / The World Bank, http://datatopics.worldbank.org/what-a-waste/. The report states- When waste is burned, the resulting toxins and particulate matter in the air can cause respiratory and neurological diseases, among others (Thompson 2014). Piles of waste produce toxic liquid runoff called leachate, which can drain into rivers, groundwater, and soil. Organic waste entering waterways reduces the amount of oxygen available and promotes the growth of harmful organisms (Bhada-Tata and Hoornweg 2016). Marine pollution is also increasing as a result of mismanaged solid waste on land, poor disposal practices by sea vessels, and runoff from sewage and polluted streams.

wastemanagement- india-macro-analysis Several studies have been published that link asthma, heart attack, and emphysema to burning garbage. Human faecal matter is also frequently found in municipal waste—this, along with unmanaged decomposed garbage, attracts other rodents that further lead to a spread of diseases such as dengue and malaria. Leachate from rotten garbage contains heavy metals and toxic liquid; with such emissions ending up either absorbed into the soil or flowing into water bodies today (Awasthi 2013), the entire food chain can be affected when this contaminated water is utilised for agriculture, human consumption and animal consumption.

# result in 'zero waste' going to the landfill in terms of the said rules $^{13}$ .

35. A copy of this order be sent to CPCB, all the Chief Secretaries, the MoEF&CC and MoHUA."

- 28. The issue of solid and liquid waste needs to be taken seriously. We have already mentioned the available statistics on the subject. It is a matter of serious concern that legacy waste remediation has not even commenced at most of the sites even though statutory rules contemplate outer limit for completion of such remediation by 07.04.2021. Current processing of the waste generated and collected is also not taking place on regular basis. For any person travelling by train, hot spots of scattered garbage and overflowing sewage are common sights. Satisfactory sewage management also remains far cry. This unsatisfactory state of affairs must be remedied at the earliest and in a time bound manner by initiative at the highest level. Accountability needs to be fixed and consequences for failure clearly provided and enforced.
- 41. In view of above, consistent with the directions referred to in Para 29 issued on 10.01.2020 in the case of UP, Punjab and Chandigarh which have also been repeated for other States in matters already dealt with, we direct:
  - a. In view of the fact that most of the statutory timelines have expired and directions of the Hon'ble Supreme Court and this Tribunal to comply with Solid Waste Management Rules, 2016 remain unexecuted, interim compensation scale is hereby laid down for continued failure after 31.03.2020. The compliance of the Rules requires taking of several steps mentioned in Rule 22 from Serial No. 1 to 10 (mentioned in para 12 above). Any such continued failure will result in liability of every Local Body to pay compensation at the rate of Rs. 10 lakh per month per Local Body for population of above 10 lakhs, Rs. 5 lakh per month per Local Body for population between 5 lakhs and 10 lakhs and Rs. 1 lakh per month per other Local Body from 01.04.2020 till compliance. If the Local Bodies are unable to bear financial burden, the liability will be of the State Governments with liberty to take remedial action against the erring Local Bodies. Apart from compensation, adverse entries must be made in the ACRs of the CEO of the said Local Bodies and other senior functionaries in Department of Urban Development etc. who are responsible for compliance of order of this Tribunal. Final compensation may be assessed and recovered by the State PCBs/PCCs in the light of Para 33 above within six months from today. CPCB may prepare a template and

<sup>&</sup>lt;sup>13</sup> Reference may also be made to- Suggestive /Indicative "The National Action Plan for Municipal Solid Waste Management", Central Pollution Control Board, https://cpcb.nic.in/uploads/MSW/Action\_plan.pdf.

issue an appropriate direction to the State PCBs/PCCs for undertaking such an assessment in the light thereof within one month.

- b. Legacy waste remediation was to 'commence' from 01.11.2019 in terms of order of this Tribunal dated 17.07.2019 in O.A. No. 519/2019 para 2814 even though statutory timeline for 'completing' the said step is till 07.04.2021 (as per serial no. 11 in Rule 22), which direction remains unexecuted at most of the places and delay in clearing legacy waste is causing huge damage to environment in monetary terms as noted in para 33 above, pending assessment and recovery of such damage by the concerned State PCB within four months from today, continued failure of every Local Body on the subject of commencing the work of legacy waste sites remediation from 01.04.2020 till compliance will result in liability to pay compensation at the rate of Rs. 10 lakh per month per Local Body for population of above 10 lakhs, Rs. 5 lakh per month per Local Body for population between 5 lakhs and 10 lakhs and Rs. 1 lakh per month per other Local Body. If the Local Bodies are unable to bear financial burden, the liability will be of the State Governments with liberty to take remedial action against the erring Local Bodies. Apart from compensation, adverse entries must be made in the ACRs of the CEO of the said Local Bodies and other senior functionaries in Department of Urban Development etc. who are responsible for compliance of order of this Tribunal. Final compensation may be assessed and recovered by the State PCBs/PCCs in the light of Para 33 above within six months from today.
- c. Further, with regard to thematic areas listed above in para 20, steps be ensured by the Chief Secretaries in terms of directions of this Tribunal especially w.r.t. plastic waste, bio-medical waste, construction and demolition waste which are linked with solid waste treatment and disposal. Action may also be ensured by the Chief Secretaries of the States/UTs with respect to remaining thematic areas viz. hazardous waste, e-waste, polluted industrial clusters, reuse of treated water, performance of CETPs/ETPs, groundwater extraction, groundwater recharge, restoration of water bodies, noise pollution and illegal sand mining.

<sup>&</sup>lt;sup>14</sup> The Chief Secretaries may ensure allocation of funds for processing of legacy waste and its disposal and in their respective next reports, give the progress relating to management of all the legacy waste dumpsites. Remediation work on all other dumpsites may commence from 01.11.2019 and completed preferably within six months and in no case beyond one year. Substantial progress be made within six months. We are conscious that the SWM Rules provide for a maximum period of upto five years for the purpose, however there is no reason why the same should not happen earlier, in view of serious implications on the environment and public health.

- d. The compensation regime already laid down for failure of the Local Bodies and/or Department of Irrigation and Public Health/In-charge Department to take action for treatment of sewage in terms of observations in Para 36 above will result in liability to pay compensation as already noted above which are reproduced for ready reference:
- e. Interim measures for phytoremediation/ bioremediation etc. in respect of 100% sewage to reduce the pollution load on recipient water bodies – 31.03.2020. Compensation is payable for failure to do so at the rate of Rs. 5 lakh per month per drain by concerned Local Bodies/States (in terms of orders dated 28.08.2019 in O.A. No. 593/2017 and 06.12.2019 in O.A. No. 673/2018) w.e.f. 01.04.2020.
- f. Commencement of setting up of STPs 31.03.2020. Compensation is payable for failure to do so at the rate of Rs. 5 lakh per month per STP by concerned Local Bodies/States (in terms of orders dated 28.08.2019 in O.A. No. 593/2017 and 06.12.2019 in O.A. No. 673/2018) w.e.f. 01.04.2020.
- g. Commissioning of STPs 31.03.2021. Compensation is payable for failure to do so at the rate of Rs. 10 lakh per month per STP by concerned Local Bodies/States (in terms of orders dated 28.08.2019 in O.A. No. 593/2017 and 06.12.2019 in O.A. No. 673/2018) w.e.f. 01.04.2021.
- h. Compensation in above terms may be deposited with the CPCB for being spent on restoration of environment which may be ensured by the Chief Secretaries' of the States/UTs.
- i. An 'Environment Monitoring Cell' may be set up in the office of Chief Secretaries of all the States/UTs within one month from today, if not already done for coordination and compliance of above directions which will be the responsibility of the Chief Secretaries of the States/UTs.
- j. Compliance reports in respect of significant environmental issues may be furnished in terms of order dated 07.01.2020 quarterly with a copy to CPCB."
- 10. Vide order dated 14.12.2020 in OA No. 606/2018, the Tribunal *inter alia* directed:-

"9. The compensation in terms of earlier order be recovered and credited to a separate amount with the Environment Department of the States/UTs to be used for restoration of environment in the

concerned States/UTs. The deposit, instead of being made with the CPCB, may now be made to the said account."

Thus, the authorities have to be held accountable by way of 11. compensation on polluter pays principle and departmental action for their failure in breach of constitutional obligation under the "Public Trust Doctrine", apart from liability for prosecution under the Criminal Law. Remedial action by higher authorities may include review of posting of key officers dealing with the waste management, including Commissioner, Nagar Nigam and fixing liability under the Civil and Criminal Law.

12. Accordingly, the Chief Secretary, Uttar Pradesh with the assistance of Additional Chief Secretary, Nagar Vikas, UP and/or any other authorities may review the situation within one month. Compensation payable in terms of orders of this Tribunal may be deposited with CPCB within one month which may be utilized for restoration of damage to the environment by preparing an appropriate action plan. The situation may be constantly reviewed preferably on daily basis for the next one month and at suitable intervals thereafter. The Additional Chief Secretary, Nagar Vikas, UP may file compliance status after coordinating with authorities after three months. concerned Pending assessment quantification of compensation, the Ghaziabad Nagar Nigam may deposit interim compensation of Rs. 1 crore with the CPCB within 15 days, to be utilised for restoration of the environment. The Nigam is free to recover the amount out of the salary of erring officers.

13. We also direct CPCB to give an independent report on the issue of management of solid as well as liquid waste in the area in question

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before the next date by e-mail at judicial-ngt@gov.in preferably in the form of searchable PDF/ OCR Support PDF and not in the form of Image The report may mention the area of both the legacy sites PDF. reclaimed, quantity of waste bio-mined, routing of recovered material for further usage. Lifting of stabilised organic fraction by the Fertilizer agencies and blending by NPK to enhance fertilizer nutritive value may be ascertained. It may be enquired whether any more legacy waste site exists. Further, whether the RDF contains plastic/chlorinated plastic used as fuel. With regard to four garbage factories, information is required about the process adopted, material balance and Authorization under MSW Rules. In case of ten sewage drains, the technologies adopted and their performance duly supported by the analytical results needs to be indicated. Storm water drains are not be used for disposal of sewage, as earlier held by this Tribunal, being prohibited under the Water Act. The performance of STPs and the gap between sewage generation and treatment may be mentioned.

14. The Additional Chief Secretary, Nagar Vikas, UP may remain present in person by Video Conferencing on the next date.

List for further consideration on 24.02.2022.

A copy of this order be forwarded to the Chief Secretary, UP, CPCB, Additional Chief Secretary, Nagar Vikas, Ghaziabad Nagar Nigam and State PCB by e-mail for compliance.

Adarsh Kumar Goel, CP

Sudhir Agarwal, JM

Brijesh Sethi, JM

Dr. Nagin Nanda, EM

October 22, 2021 Original Application No. 909/2018 SN

# Annexure-II



सत्यमेव जयते

### Certificate No.

Certificate Issued Date Account Reference Unique Doc. Reference Purchased by Description of Document Property Description Consideration Price (Rs.) First Party Second Party Stamp Duty Paid By Stamp Duty Amount(Rs.)

# INDIA NON JUDICIAL

ACC. Name- RAJ KUMAR ACC. Code - UP14082404 Licence No.-253/2001 (GZB.) Mob. No. - (2) 9873463177

# **Government of Uttar Pradesh**

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THIS AGREEMENT is made on 1.06.2021 between (hereinafter "this Agreement");

East Delhi Waste Processing Company Limited (EDWPCL) a subsidiary of IL&FS Environmental Infrastructure & Services Limited, incorporated under the Companies Act, 1956, having its registered office at 217-A, Ground Floor, Okhla Phase III, Delhi –110020 (hereinafter called EDWPC and IEISL respectively) which expression shall, unless repugnant to the meaning or context thereof, include its successors and assigns of the One Part; and





#### Statutory Alert:

 The authenticity of this Stamp certificate should be verified at 'www.patiestamp.com' or using e-Stamp Mobile App of Stock Holding Any discrepancy in the details on this Certificate and as available of the website / Mobile App renders it invalid.
 The onus of checking the legitimacy is on the users of the certificate.
 In case of any discrepancy please inform the Competent Authority. **M/s. Geron Engineering Private Limited**, registered under the Companies Act, 1956, having its registered office at Unit No.219, IInd Floor, Vipul Trade Centre, Sec-48, Sohna Road, Gurgaon, Haryana and Head Office at P-4, BS Road Industrial Area, Ghaziabad-201009, U.P. (hereinafter called "Geron") which expression shall, unless repugnant to the meaning or context thereof, include its successors and assigns of the Other Part.

EDWPCL and Geron shall be individually referred to as Party and collectively as Parties.

### WHEREAS

- a) EDWPCL has established and is operating an integrated waste processing and disposal facility at Ghazipur, Delhi, including a refuse-derived fuel processing facility and a waste to energy facility (hereinafter referred to as "Ghazipur Plant").
- b) Geron is undertaking the work of disposal of Integral Post Consume Use Laminate Waste Management in the various states in India, and is desirous of delivering Post Consumer Laminate Waste and Multi layer packaging waste to the Ghazipur Plant for its disposal.

### NOW IT IS HEREBY AGREED AS FOLLOWS:

### 1. Supply and Disposal

- 1.1. Subject to and in accordance with the terms and conditions set forth in this Agreement, Geron shall deliver the postconsumer laminate and Multi layer packaging waste (hereinafter referred to as "**Waste**") to EDWPCL at the Ghazipur Plant for the processing and disposal thereof.
- 1.2. Geron hereby represents and assures EDWPCL that it will obtain and maintain all approvals, clearances, registrations or any permissions needed to supply the Waste to Ghazipur Plant for disposal
- 1.3. Geron hereby assures EDWPCL that it will supply minimum 100 MT Waste on monthly basis.
- 1.4. EDWPCL shall process and dispose the Waste delivered by Geron and accepted for processing and disposal by EDWPCL at the Ghazipur Plant.
- 1.5. Geron shall pay to EDWPCL a processing fee at the rate of Rs.700 (Rupees Seven Hundred Only) plus GST (as applicable) per metric tonne of Waste delivered and accepted for disposal at the Ghazipur Plant.

EDWPCL may suspend accepting the Waste delivered by Geron in the event of nonpayment of the required processing fee by Geron for more than 30 days.

2. Invoicing & Payment





EDWPCL shall issue the invoice for the total quantity of Waste delivered by Geron on monthly basis & accepted for disposal by EDWPCL. The parties agree that Geron will make the payments to EDWPCL within 15 days from the date of raising invoice.

Geron shall make payments through RTGS/ NEFT banking transaction. EDWPCL shall, with each invoice, provide the wire transfer details of its relevant bank account.

### 3. Disposal Certification

Subject to and in accordance with the terms and conditions set forth in this Agreement, EDWPCL shall issue a certificate certifying the scientific disposal of the monthly quantity of Waste delivered by Geron and accepted for disposal by EDWPCL at the Ghazipur Plant.

#### 4. Confidentiality

In the course of the Services undertaken under this Agreement, the parties may have access to or may obtain certain confidential information connection with the Services. Both parties are responsible for compliance of this Agreement by its employees, agents and sub-contractors. Such confidential information (hereinafter referred to as "Company Information") means all information that the party, its employees, agents and subcontractors, receive. The parties shall not, either by itself or through its employees, agents or sub-contractors, disclose to any third party or use for any purpose other than mentioned in this Agreement, without the written permission (except as may be required by law or as necessary to provide the Services). This Clause will not apply to information that is publicly known other than through disclosure by or through the Service Provider or its employees, agents or subcontractors.

#### 5. Termination:

This Agreement shall automatically terminate on the expiry of the period of:-

One year (1) year months from 1<sup>st</sup> June 2021 or completion of the project including final payment & documentation whichever is earlier provided above unless extended by the Parties by mutual consent. Or This Agreement can be terminated on following grounds:-

Geron defaults in making payment of the processing & disposal fee. Or

Any permission is found to have not been obtained or maintained by Geron in relation to allowing the delivery and disposal of the relevant Waste at Ghazipur Plant. Or

It is ascertained by EDWPCL that the processing of the Waste at the Ghazipur Plant is adversely impacting the operations of the Ghazipur Plant. Or

Parties may terminate the Agreement after giving a notice in writing of fifteen (15) days to the other Party of its intention to terminate the Agreement.





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#### 6. Force Majeure

The Parties hereby agree that in the event performance, in whole or in part, of any obligation under this Agreement (other than the obligation to pay the processing fee under Clause 1.3 above), by any Party hereto, is prevented by circumstances or events that are beyond the reasonable control of such Party, or by causes against which the Party could not reasonably make provision (including but not limited to acts of God, strike or lockout, fire, explosion, shutdown of Ghazipur Plant for any reason, failure of essential means of transportation or communication, riots, insurrections, tidal waves, flood, earthquakes, industrial disturbance, inevitable accidents, war (undeclared or declared), embargoes, blockages, legal restrictions or governmental restrictions and the like), the Party who is prevented from performing shall be excused from performing for a reasonable period of time, taking into account the cause and its duration (or potential duration).

#### 7. Governing Law & Dispute Settlement

7.1 This Agreement shall be construed and interpreted in accordance with and governed by the laws of India and the courts at Deihi, India shall have jurisdiction over all matters arising out of or relating to this Agreement.

7.2 The Parties agree that any dispute, difference, disagreements arising out of or relating to this Agreement ("Dispute") shall be first sought to be settled through amicable discussions between high level officials of each Party and if no amicable settlement to any such Dispute is achieved within thirty (30) days of the notice of such Dispute existing by either Party to the other, then the Parties shall resolve such Dispute through arbitration. The arbitration shall be governed by the Arbitration and Conciliation Act, 1996. The Parties will at first seek to mutually agree to a sole arbitrator and in the event the Parties are unable to agree to a sole arbitrator within a period of thirty days from the date of issuance of a notice for arbitration, then each party will appoint one arbitrator and the two arbitrators so appointed shall nominate the third arbitrator and the panel of such three arbitrators shall undertake the arbitration. The seat of arbitration shall be New Delhi.

#### 8. Miscellaneous

#### 8.1. No Waivers

No failure on the part of any Party to exercise, and no delay in exercising, any right, power or privilege hereunder shall operate as a waiver thereof or a consent thereto; nor shall any single or partial exercise of any such right, power or privilege preclude any other of further exercise thereof or the exercise of any other right, power or privilege. The remedies provided are cumulative and not exclusive of any remedies provided by applicable law.







This Agreement shall be valid and binding from the date of its execution till one year of its execution i.e. from 1<sup>st</sup> June, 2021 to 31<sup>st</sup> May, 2022. The Parties may mutually agree to extend the period of this Agreement by such additional period as they may deem fit.

The Parties agree that EDWPCL may terminate this Agreement at any time by providing a 30 days, notice. *Provided that* EDWPCL may suspend the implementation of this Agreement in the event: (i) Geron defaults in making payment of the processing fee, (ii) any permission is found to have not been obtained or maintained by Geron in relation to allowing the delivery and disposal of the relevant Waste at Ghazipur Plant or (iii) it is ascertained by EDWPCL that the processing of the Waste at the Ghazipur Plant is adversely impacting the operations of the Ghazipur Plant.

## 8.3. Entire Agreement

This Agreement constitutes the entire agreement between the parties and includes all promises and representations, express or implied, and supersedes all other prior agreements and representations, written or oral, between the Parties relating to the subject matter hereof. Anything which is not constituted in this instrument is not part of this Agreement.

### 8.4. Amendments

Any amendment of any provision of this Agreement shall be effective if it is evidenced in writing and signed by both Geron and EDWPCL.

### 8.5. Further Assurance

Each Party shall promptly take such actions and execute such documents as are necessary to give full effect to the rights of the other Party contained in and/or contemplated by this Agreement.

## 8.6. Rights Cumulative

The rights, powers, privileges and remedies provided in this Agreement are cumulative and are not exclusive of any rights, powers, privileges or remedies provided by law or otherwise.

## 8.7. Assignment

Both Parties may assign or transfer their rights or obligations under this Agreement with the written consent of the other Party, which shall not be unreasonably withheld; provided, however, that no such consent of the other Party shall be required, when an assignment is the result of, and part of, a corporate acquisition, merger or reorganisation to an affiliate. Notwithstanding anything contained herein, no consent of Geron or EDWPCL shall be required for an assignment by EDWPCL or Geron, as the case may be, to an affiliate, or where such





assignment is as a result of and part of a corporate acquisition or investment, merger or reorganisation or corporate restructuring with an affiliate.

No partnership

- (a) Neither this Agreement nor the performance by the Parties of their respective obligations under it shall constitute a partnership, joint venture or any association of persons between EDWPCL and Geron or between EDWPCL, Geron and any other person.
- (b) Each Party shall perform its obligations under this Agreement as an independent counterparty and not as an agent, employee or representative of the other Party.

### 8.8. Partial Invalidity

If any term or provision of this Agreement shall be held to be illegal, void or unenforceable in whole or in part, the term or provision shall to that extent be deemed not to form part of this Agreement and the enforceability of the remainder of this Agreement shall not be affected. In that event, the Parties agree to negotiate in good faith to reach an equitable agreement, which shall give effect as nearly as possible to the intention of the Parties as set out in this Agreement.

## IN WITNESS WHEREOF THE PARTIES HAVE EXECUTED THIS AGREEMENT

## SIGNED SEALED AND DELIVERED

For and on behalf of East Delhi Waste Processing company Limited by	For and on behalf of Geron Engineering Pvt. Ltd
(Signature)	(Signature)
(Name)	(Name)
(Designation)	(Designation) CEO

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Geron Engineering Pvt. Ltd. CIN No. : U45100HR2016PTC066430 GSTIN No. : 09AAGCG6521P1Z3 Works : P-4, BS Road Indl. Area, Ghaziabad - 201009 Ph. : 0120-4565999, E-mail : info@geronengineering.com Web : www.geronengineering.co.in



## AGREEMENT FOR O&M, MANAGEMENT & MARKETING AND DISPOSAL OF ORGANIC COMPOST, RDF, MLP & RECYCLABLE PLASTIC/E-WASTE MATERIAL BETWEEN M/S GEORN ENGINEERING PVT. LTD AND M/S ROLLZ INDIA WASTE MANAGEMENT PVT. LTD.

This AGREEMENT ("Agreement") is made and entered into on 1<sup>st</sup> day of February, 2021 by and between:

**Geron Engineering Pvt Ltd (GEPL)**, a company incorporated under the provisions of the Companies Act, 1956, has its registered office at Unit No. 219 II<sup>nd</sup> Floor, Vipul Trade Centre, Sector – 48, Sohna Road, Gurgaon, Haryana and its work at P-4Bulandshahar Road Industrial Area, Ghaziabad – 201009, Uttar Pradesh and entered into Concessionaire Agreement with Ghaziabad Nagar Nigam for setting up Garbage Factory (GF) / Material Recovery Facility (MRF) at Sihani & Hindon Vihar hereinafter called "**GEPL"**.

#### AND

**Rollz India Waste Management Pvt Ltd**, a company incorporated under the Indian Companies Act, 1956 and having its registered office at Bhilwara Compost Plant, Kheer Khera, Sanganer, Bhilwara, Rajasthan 311011, and head office at R-107/Raj Nagar, Ghaziabad, Uttar Pradesh 201001hereinafter referred to as the "Service Provider"

The GEPL and the Service Provider are hereinafter collectively referred to as "Parties" and individually as a "Party".

### WHEREAS:-

GEPL is setting up a Garbage Factory /MRF facility for processing of garbage collected from the entire Ghaziabad city at four locations whereas GEPL intends to avail services for marketing and disposal of products viz. Refused Derived Fuel (RDF) and organic compost, MLP, Recyclable plastic waste/e-waste from the parties who have the requisite expertise, resources, trained staff, and existing clients.

The service provider has approached the concessionaire and made representations that it has all the requisite facilities, permits, and licenses and trained staff to offer the services of operation and maintenance of the plant and for marketing and disposal of organic compost and RDF.

GEPL has, on the strength of such representation, agreed to appoint the said service provider "Rollz India Waste Management Pvt Ltd" as the service provider to undertake the marketing and Disposal of organic compost and RDFproduced at GF/MRF at Ghaziabad.





#### **TERMS AND CONDITIONS:-**

GEPL hereby appoints the service provider exclusively for the purpose of marketing and disposal of organic compost and RDF.

This agreement shall be in force w.e.f 1st February 2021to 31st January 2046 (25 years) remain until and unless terminated earlier by either party.

The service provider shall make necessary arrangements at its own cost for disposing off the MLP/RDF/recyclables/compost.

The Service provider shall maintain proper records of the sale of organic compost and RDF.

The service provider shall comply with the SWM Rules 2016 and PWM 2018 (amended) and any other compliances pertaining to the disposal of the Materials.

The service provider shall submit the Invoice on monthly basis along with the supporting documents.

The above terms and conditions have been agreed upon by both the parties and have been signed on 1<sup>st</sup> February, 2021

For M/s Geron Engineering Pvt Ltd.

Pvt Ltd. Sign

Name:- Sowing

Date:- <u>1'st February 20</u>21 Place:- <u>Cahazialocut</u>

For M/s Rollz India Waste Management

Sign

BHARAT BHUSHAN Name:-Bohnsty

## ANNEXURE - 1

## SERVICE FEES

Rollz India shall pay \_\_\_\_\_/Ton to Geron Engineering Pvt Ltd for the Operation,

Maintenance & Management of the plant along with the Disposal activity for Compost,

RDF & Recyclables.







Certificate No. Certificate Issued Date Account Reference Unique Doc. Reference Purchased by Description of Document Property Description Consideration Price (Rs.) First Party Second Party Stamp Duty Paid By Stamp Duty Amount(Rs.) सेजम कुमार स्टान्य चिक्रेता जिक्रेन्स संठ-62 सिविल कोर्ट, माजियावात

## INDIA NON JUDICIAL

# **Government of Uttar Pradesh**

## e-Stamp

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  15-Feb-2021 02:16 PM
  NEWIMPACC (SV)/ up14079704/ GHAZIABAD SADAR/ UP-GZB
  SUBIN-UPUP1407970460272330971789T
  ROLLZ INDIA WASTE MANAGMENT PVT LTD
  Article 19 Certificate or other Document
  BS ROAD GHAZIABAD
  ROLLZ INDIA WASTE MANAGMENT PVT LTD
  Not Applicable
  ROLLZ INDIA WASTE MANAGMENT PVT LTD
  100
  - (One Hundred only)



Agreement for Co-processing of Refuse Derived Fuel (RDF/ Plastic Waste) from Municipal Solid Waste (MSW) In Shree Cement Plants in Rajasthan

Please write or type below this line ......

This Agreement is made and entered into this 24<sup>th</sup> day of APRIL 2021 by and between:

First Party, which is the Rollz India Waste Management Pvt Ltd (formerly known as Rollz Material Handling Systems Pvt Limited), having its registered office at Bhilwara Compost Plant, Kheer Khera Sanganer, Bhilwara Rajasthan 311011 (hereinafter called as Rollz and referred to as first Part) having its MSW processing facilities in Rajasthan & UP at dist. Pali, Bhilwara, Alwar, Ghaziabad and Muzzaffarnagar and head office at R-10/107 Raj Nagar Ghaziabad Uttar Pradesh 201001

Statutory Alert:

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 In case of any discrepancy please inform the Competent Authority, 77

Shree cement Limited a Company incorporated under the provisions of Companies Act, 1956, having its registered office at Bangur Nagar, Beawar, Distt Ajmer (Raj) (herein called as SCL) and this agreement is for supply of RDF/ Plastic Waste to SCL's following Cement Plants (With Tentative quantity of supply) from MSW processing facilities of Rollz situated in Rajasthan and UP

SN	Name of SCL plant	Tentative quantity of supply
<b>1</b> , e' da. 1, e' da. 1, e' da.	Ras plant- Address- Village Ras, Tehsil Jaitaran, Distt Pali (Raj)	80-100 MT/day
2	Beawar plant-Address- Village Andheri Deori, Beawar, Distt	50-60 MT/day
	Ajmer, kaj	

AND WHEREAS the Rollz is responsible for supply of refuse derived fuel (RDF/ Plastic Waste) with quality parameters set out in Annexure-1A

AND WHEREAS, SCL is in the business of manufacture and sale of different types and grades of cement and has the capability to dispose the waste materials in an environment friendly manner in the cement kiln process having high temperature and long residence time

NOW, THEREFORE, to ensure the safe disposal of RDF/ Plastic Waste the two parties have entered into this Agreement.

1. Term and Validity of the Agreement

The Agreement shall be valid for a period of Three years from the date of signing and execution of this Agreement.

The Agreement may be amended by written consent of all the Parties to the Agreement. All amendments shall be documented and allotted a distinctive number and date.

2. Responsibility of the Parties

To deliver key objectives of this Agreement the responsibilities are summarized as follows -

2.1 Responsibility of Rollz

a) To supply RDF/ Plastic Waste as per parameters set out in Annexure-1A agreed mutually in line with agreement meeting all regulatory requirements and environmental clearances.

b) To load and label the RDF/ Plastic Waste clearing defining the quality and quantity in line with guidance provided at annexure 1C.

c) To work jointly with Cement Plants to finalize the schedule of delivery as per annexure 1D.

d) To undertake the testing of RDF/ Plastic Waste as per requirements agreed in this Agreement.



and

e) Rollz India being authorised by ULB's for RDF collection and disposal and accordingly Rollz India will intimate ULB's for all material dispatched to SCL on regular basis

## 2.2 Responsibility of SCL

a) To accept and utilize the RDF/ Plastic Waste as per agreed schedule of delivery (annexure 1D) and meet emission norms.

b) To work jointly with Rollz as the case may be to finalize the schedule of delivery as per annexure 1D.

c) To issue the co-processing certificate to Rollz as per annexure 1G.

d) To undertake the testing of RDF/ Plastic Waste as per requirements agreed in this Agreement.

3. Issuance plastic credit, use of plastic credit under Plastic Waste Management Rules-2016 and its amendment

First party shall not claim any plastic credit certificate under PWMR-2016. SCL shall use their own rights to use the plastic credit to fulfill own EPR compliance and free to Issue plastic credits to any other parties as per convenience.

4. Provisions for Collection, handling, storage, Segregation & Transportation of refuse Derived Fuel (RDF/ Plastic Waste) from Municipal Solid Waste (MSW) processing and delivery to cement plant located at Ras and Beawar

(A) Collection, handling, storage and transportation, unloading, storing, pre-processing, and Disposal of RDF/ Plastic Waste:

Rollz in line with ongoing MSW system shall be responsible to collect, handle and store at a designated location the RDF/ Plastic Waste generated and transporting the same to the Cement Company cement plant located at Ras and Beawar. Rollz shall at its own cost, arrange to get every consignment of RDF/ Plastic Waste weighed at an authorized weighbridge and issue the weighbridge challan to the approved transporter while dispatching the consignment of RDF/ Plastic Waste to SCL. The quantity of RDF/ Plastic Waste in any consignment delivered by Rollz to SCL shall be determined by the electronic weighbridge installed at SCL All RDF/ Plastic Waste related reports including inventory list shall be prepared as per electronic weighbridge records maintained at SCL, which shall be the conclusive documentary proof evidencing the actual quantity of RDF/ Plastic Waste received by them. In the event of any dispute relating to the actual quantities of RDF/ Plastic Waste dispatched by Rollz and received by SCL, the Parties hereto shall resolve the same in good faith through discussion on the appropriate actions required to be taken for verification and correction of any discrepancy.

Rollz at its own cost will make necessary arrangement to transport the material to Cement Plant as per guidelines in annexure 1C.

SCL shall be responsible for unloading, storing, pre-processing, and Disposal of RDF/ Plastic Waste through co-processing in its kiln in the cement plants. The protocols for receiving the RDF/ Plastic Waste is given in Annexure 1E.

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(B) Quality of RDF/ Plastic Waste:





The quality of RDF/ Plastic Waste shall be as per Annexure-1A.

The RDF/ Plastic Waste should not contain-

- Any of the banned items listed in the Annexure 1B attached herein.
- Wet fraction of the Municipal Solid Waste comprising kitchen waste and organics,
- Construction and demolition waste and inert material like stones, glass metals etc.

#### (C) Quantity and schedule of delivery:

The delivery schedule of RDF/ Plastic Waste shall be prepared in agreement with both parties on daily/weekly/fortnightly/monthly basis as per guidance given in Annexure 1D attached herein.

In case of any change in the mutually agreed delivery schedule by parties, then the affected party will intimate to the other Parties and all parties will discuss and arrive at a mutually agreed solution to deal the situation.

#### (D) Refusal:

In case SCL is in the receipt of consignment which is not matching with specifications given in Annexure 1A or contains banned items as mentioned under Annexure 1B and/or kitchen wastes or organics other than the RDF/ Plastic Waste, SCL will be entitled to refuse the acceptance of the same to RDF/ Plastic Waste manufacturer and communicate such fact of rejection within [1] days to RDF/ Plastic Waste manufacturer. It is agreed that such consignment will not be accepted and if already delivered/ unloaded the same shall be taken back by RDF/ Plastic Waste manufacturer within [3] days of such intimation at their own cost and risk to an appropriate place for disposal. Decision of SCL shall be binding on Rollz and in case of repeated occurrences, SCL will be entitled to discontinue further consignments till remedial measures are actually taken at Rollz site to prevent such recurrence. The delivery of the RDF/ Plastic Waste is complete only after the communication of the acceptance of consignment by cement company to Rollz subject to the terms herein mentioned.

## (E) Storage, Handling & Processing of RDF/ Plastic Waste:

On completion of the Delivery of RDF/ Plastic Waste SCL shall be responsible for safe storage, handling and processing of the RDF/ Plastic Waste at its cement plants. The protocols for receiving the RDF/ Plastic Waste are given in Annexure 1E.

### (F) Testing of quality Parameters

Each consignment of RDF/ Plastic Waste shall be tested by both parties for the parameters as as per Annexure-1A and the reports from both parties shall be shared every fortnight. In case of deviations in reports, both Parties have to resolve the same in good faith in view of the reasonable proofs.

Pre-shipment inspection- SCL shall be also entitled to inspect the consignment prior to dispatch (including third party inspection) at site of Rollz if required.

#### (G) Certificate of Co-Processing the RDF/ Plastic Waste-

SCL shall at the beginning of each month during the term of this agreement, issue to the Rollz Certificate of Co-processing of RDF/ Plastic Waste during the previous month in the format set out in Annexure 1F attached to the Agreement.

Similarly Rollz shall at the beginning of each month during the term of this agreement, issue to the SCL Certificate of dispatch of RDF/ Plastic Waste for coprocessing during the previous month in the format set out in Annexure 1F attached to the Agreement.

#### (H) Validation of consignment

First party shall provide the certificate duly signed by authorised person of concerned ULBs mentioning quantity and type of waste for every consignment as per Annexure-1F.

#### 4. Commercial terms for the Disposal of RDF/ Plastic Waste:

Commercial terms & conditions will be as per mutually agreed T&C on the basis of PO/ Work Order to be issued separately.

### 5. Point of Contact

Rollz and SCL shall nominate persons who should act as points of contacts during the term of the Agreement.

#### 6. Force Majeure.

Neither party shall be considered in default in the performance of its obligation under the Agreement, if such performance is prevented or delayed on account of war, civil commotion, strike, epidemics, accidents, fires, unprecedented floods, earth quake or because of promulgation of any law or regulations by the Government, unforeseen breakdowns, operational and maintenance stoppages at the Second Party's Cement Plant or on account of Acts of God.

At the time of occurrence of a force majeure condition, the affected party shall give a notice in writing with documentary proof within Ten (10) days from the date of occurrence of the force majeure condition indicating the cause of force majeure condition and the period for which the force majeure condition was likely to subsist. This agreement shall remain suspended during the period of force majeure. However, if the reason continues more than ninety (90) days, the parties hereto may mutually agree to modify the terms of the Agreement or terminate the same. On such termination, SCL/Rollz shall be obliged to settle all dues to other party as the case may be.

#### 7. Settlements of Disputes

The Parties shall endeavor to settle by mutual consultation any claim, dispute, including any Dispute with respect to the existence or validity hereof, the interpretation hereof, the activities performed under the Agreement, or the breach of the Agreement.

Any Dispute which cannot be settled within Thirty (30) days of consultation as provided written notice to

that effect to the other Party and such arbitration shall be conducted at place of ULB (or to be mutually decided by all parties) in accordance with the provisions of the Arbitration & Conciliation Act, 1996.

The Parties agree that the award passed by the arbitration panel shall be binding upon the Parties, and that the Parties shall not be entitled to commence or maintain any action in any Court of Law in respect of any matter in Dispute arising from or in relation to the Agreement, except for the enforcement of an arbitral award or for seeking injunctive relief or in case of appeal against arbitral awards passed by an arbitration panel pursuant to this Clause.

#### 8. Indemnity

The Parties shall defend, indemnify and save harmless each other and their directors, employees and agents from and against any and all claims, demands, fines, loses, damages, costs, penalties, expenses, actions, suits or proceedings, injuries, monetary liability on account of death of any person, cost of response to any governmental inquiry, liability for loss of or damage to property and reasonable attorney and consulting fees and costs relating to any of the forgoing resulting from the act or omission, breach or nonconformance

by either party with the provisions contained in the Agreement or any statutory non-compliance. The foregoing indemnification shall not apply to the extent

#### 9. Non-Waiver

Any delay or omission on the part of each Party in exercising any rights provided under applicable laws or under this Agreement shall not impair such rights or operate as a waiver thereof. The partial exercise of any right provided under applicable laws or under the Agreement shall not preclude any other or further exercise thereof or the exercise of any other rights under the Agreement.

#### 10. Relationship

It is understood that this Agreement between the parties shall be on a principle-to-principle basis. None of the provisions of this Agreement shall be deemed to constitute a joint venture or a partnership or even agency between the parties hereto and party shall have any authority to bind the other or will be deemed to be agent of the other party in any way.

#### 11. Notice

Unless otherwise provided in the Agreement, any notice, report or other communications given or made under or in connection with the matters contemplated by or arising herein, shall be deemed to have been duly given or made if sent by personal delivery or by facsimile transmission confirmed by email or upon receipted delivery at the address of the relevant Party.

#### 12. Applicability

Any Purchase Orders issued for the transaction mentioned herein in this document shall be subject to the terms herein.

#### **13. Non-Exclusive Transaction**

This Agreement is nonexclusive in nature. The parties are free to enter into mutual understanding with any of the third parties for transaction of similar nature.





## 14. Termination of agreement:

In case of non-acceptance of RDF as Plastic Waste in compliance with EPR under PWMR-2016 by CPCB/ SPCBs/ any other government agencies then this agreement is liable to terminate.

SIGNED AND DELIVERED for and on behalf of-

This agreement is executed at Ghaziabad Uttar Pradesh

Rollz India Waste Management Pvt Ltd.	Shree Cement IImited	Goswamu.) M. AFR
Signature of Witness 1,	Signature of Witness 1,	
Signature of Witness 2	Signature of Witness 2 But	

## Annexure 1A

Parameter CCT/ PDT/ Plants M		7 a 101 1 1
Parameters SCF/ RDF/ Plastic Waste	Unit	Value
Size	Mm	90% < 200
Moisture	%	< 20
Net Calorific Value (As received basis)	Kcal/ kg	>2500
Chlorine (CI)	%	<1.0
Sulphur (S)	%	<1.5
Ash	%	15-25
Odour	Should be free f	rom any bad odor





## Annexure 1B

## **List of Banned Items**

The Segregated Combustible Fraction (SCF) /RDF/ Plastic Waste dispatched by ULB shall not contain following items that are listed as banned items for Co-processing.

- Anatomical Hospital Wastes (Bio-medical waste)

- Asbestos-containing Wastes

- Bio-hazardous Wastes
- Electronic Scrap
- Entire Batteries
- Explosives
- High-concentration Cyanide Wastes
- Mineral Acids
- Radioactive Wastes
- Unsorted Municipal Garbage





## Annexure 1C

## Guidelines for Packaging, Labelling and Transportation of RDF/ Plastic Waste

Rollz shall ensure the following:

1. Arrange to load the RDF/ Plastic Waste in trucks which are properly covered with tarpaulin and tied up with ropes to avoid any fall off of the material during transportation.

2. Label every vehicle of RDF/ Plastic Waste as per format below specifying name of waste, quantity of waste, particle size of waste, size of packaging, and Local Language and with other relevant identification as stipulated under applicable laws.

3. Transport Vehicle used for transporting the RDF/ Plastic Waste should have valid authorization for transportation.

4. Transporter /driver shall be licensed for collection and transportation of the RDF/ Plastic Waste

5. Transport vehicle should be clean, fit for use and all safety equipment should be operational and easily accessible.

6. Transport vehicle used for transportation of RDF/ Plastic Waste shall be marked with an emergency information panel and should be easily identifiable (number plate)

8. Transporter / driver shall carry 4 (Four) copies of manifest and shall be guided on the proper movement of the manifest documents.

9. Transporter/driver should be provided with relevant information in Form-9 (Transport Emergency (TREM) Card of Hazardous and other Wastes (Handling and Transboundary Movement) Rules 2016, regarding the Hazardous nature of the waste and measures to be taken in case of any emergency

10. Logistics should be clearly defined for minimizing Occupational Health & safety risks

11. All relevant legal requirements for transportation should be fulfilled

12. Suitable specific emergency response procedures / crisis management plan and equipment should be in place and truck driver and cleaner should be trained accordingly.



## **ANNEXURE 1D**

## **Quantity & Delivery Schedule**

Rollz, during the term of the agreement, shall deliver the RDF/ Plastic Waste to SCL on daily/weekly/monthly basis as per the mutually agreed delivery schedule.

The delivery schedule of the month will be prepared by the parties through mutual consent and will be finalized before 20th of the preceding month.

In case of any change or modification required in the agreed monthly delivery schedule of a particular month by either party, the same shall be brought to the notice of other party.



### Annexure 1E

## **Protocols for Receiving of RDF/ Plastic Waste**

The following procedures shall be followed when receiving RDF/ Plastic Waste at SCL Cement Plant:

I. Transporter will report to the Cement Plant material gate for delivery of the RDF/ Plastic Waste at storage area(s) of SCL.

II. Material gate officer shall inform the concerned officer of SCL

III. Material gate officer will undertake following activities: -

(a) Receive all relevant documents from Rollz Transporter including;

(i) Delivery document

(ii) Certificate from Rollz specifying conformance to waste specifications.

(iii) Any other document mutually agreed between the parties.

(b) SCL shall arrange and record the weight of the Transport vehicle on the weigh bridge installed at the plant before and after unloading of the RDF/ Plastic Waste at the designated storage area.

(c) SCL shall make necessary arrangements for unloading and storage of the RDF/ Plastic Waste at the designated storage area, as per the date on which the consignment is delivered to SCL and shall also record date of delivery, consignment no., truck no. Etc.

(d) Cement Plant shall arrange to conduct inspection and sampling of the RDF/ Plastic Waste as required and report to the Rollz whether the RDF/ Plastic Waste is conforming to specifications list in Annexure 1A and Annexure-1B in 2 days of receipt of RDF/ Plastic Waste.

(e) Cement Plant shall keep the storage area locked with appropriate surveillance by the security.

(g) To attend any emergency situation, the Cement plant shall maintain a copy of the risk assessment and crisis management plan with its security officer and also with its concerned officer.





## CERTIFICATE OF Dispatch of RDF/ Plastic Waste (To be given by Rollz)

This is to certify that we have dispatched ------ MT of Refuse Derived Fuel (RDF/ Plastic Waste) derived from Municipal Solid Waste to M/s Shree Cement limited for Co-processing in SCL's Cement Kiln during the period from------to-------.

Authorized Signatory	Authorized Signatory of ULB
	Name -
Issued To: M/s	Designation-
Reference Invoice No	

CERTIFICATE OF CO-PROCESSING of RDF/ Plastic Waste (To be given by SCL)

This is to certify that we have taken receipt of the ------ MT of Refuse Derived Fuel (RDF/ Plastic Waste) derived from Municipal Solid Waste sent by M/s Rollz India Waste Management Pvt Ltd (formerly known as Rollz Material Handling Systems Private Limited) for Co-processing in our Cement Kiln during the period from------to ------. The same would be safely and completely disposed off of receipt and thereafter will not exist.

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Authorized Signatory

Certificate of Co-P	rocessin	g	
		and t	
Issued To: M/s		•••••	•••••
Poforence Invoice	No		





## Agreement for supply of Refuse Derived Fuel (RDF) recovered from Municipal Solid Waste (MSW)

## Between

Rollz India Waste Management Pvt Ltd

And

JK Lakshmi Cement Ltd

#### Preamble

1). The Ministry of Housing and Urban Affairs (MoHUA), Government of India has launched Swachh Bharat Mission on 2nd October 2014, with the objectives of modern and scientific Municipal Solid Waste Management among others.

II). To enhance the progress towards the objective of modern and scientific Municipal Solid Waste Management, an Expert Committee was constituted by MoHUA in November 2017 to prepare "Standards/Norms for Refuse Derived Fuel (RDF) from Municipal Solid Waste for its utilization in Cement Kilns, Waste to Energy Plants and similar other installations".

III). This agreement is between Authorized Concessionaire for managing municipal waste and Cement Plant for usage of MSW based RDF for co-processing.

#### This Agreement is made and entered into this 20th day of January 2020 by and between:

First Party, Rollz India Waste Management Pvt Ltd (formerly knowns as Rollz Material Handling Systems Pvt Ltd), a company incorporated under the Companies Act, 1956 having its registered office at Nagar Parishad, Bhilwara Compost Plant, Sanganer, Bhilwara, Rajasthan and head office at R-10/107, Raj Nagar, Ghaziabad, UP 201001 engaged in the business of providing MSW Management Services of Collection, Transportation, Processing and Disposal of MSW to Municipalities/ULBs, in compliance with Solid Waste Management Rules, 2016 (SWM Rules, 2016), hereinafter referred to as "Seller", and

Second Party, JK Lakshmi Cement Ltd, a Company incorporated under the Companies Act, 1956 having its registered office at Jayakaypuram, Basantgarh, Distt Sirohi, engaged in the business of manufacturing and supplying Cement and having one of its Cement Plant at Sirohi, Rajasthan, hereinafter referred to as "Buyer", of the other part

AND WHEREAS, the Urban Local Bodies (ULBs) are primarily responsible for management of MSW generated within its jurisdiction as per SWM Rules 2016. And the MSW contains reasonable quantity of RDF containing plastics and other combustible materials which are not biodegradable and may release toxic gases when they get unscientifically burnt or dumped in the dump yards/landfills.

AND WHEREAS, Seller is the selected concessionaire for executing solid waste management for Municipalities/ULBs and is the sole owner of MSW processed at its processing facilities and has full right to dispose the waste as stipulated under SWM Rules 2016 has expressed interest in selling the RDF to Buyer.

AND WHEREAS, Buyer is in the business of manufacture and sale of different types and grades of cement and has the capability to dispose the waste materials in an environment friendly manner in the cement kiln process having high temperature and long residence time (hereinafter referred to as "Co-Processing") while simultaneously producing cement of desired quality and meeting the analysis on norms, Buyer has expressed interest in procuring the RDF from Seller.

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NOW, THEREFORE, to ensure the proper and un-interrupted supply of RDF segregated from the municipal solid waste all parties have entered into this Agreement as per the terms detailed hereunder.

#### 1. Term and Validity of the Agreement

The Agreement shall be valid for a period of 2 years from the date of signing and execution of this Agreement. The Agreement can be extended for further 1 year upon mutual consent of both parties.

The Agreement may be amended by written consent of all the Parties to the Agreement. All amendments shall be documented and allotted a distinctive number and date.

#### 2. Responsibilities of the Parties

To deliver the key objectives of this agreement, the parties' responsibilities are summarized as follows-

#### 2.1 Responsibilities of Seller

a) To produce and supply RDF as per agreed quality with the Buyer from its MSW processing plants to the cement plant of Buyer on FOR basis.

d) To undertake the testing of RDF to indicate its Gross Calorific Value (GCV), Moisture Level, Sulphur, etc and other required parameters.

e) To intimate Buyer of any major breakdown of its processing facility which hinders the production and subsequent supply of RDF to Buyer.

f) To provide RDF certificate to Buyer authenticated by concerned ULB.

g) To provide MoU with ULBs before start of contract.

#### 2.2 Responsibilities of Buyer

a) To allow a minimum processing time of 10-15 days after signing of this agreement to initiate the dispatch of RDF.

b) To inspect and ensure the quality of RDF before consuming it. In case of any major deviation from agreed standards, buyer shall share with seller a proper authorized third-party testing report.

c) To designate a fixed point at its plant for unloading of RDF up to where the seller shall supply the RDF.

d) To accept and utilize the RDF as per agreed quantity and the schedule of delivery and meet emission norms.

e) To pay the price of RDF as per the agreed commercial terms defined in this agreement.

f) To immediately intimate seller of any urgent requirement of material allowing reasonable time to supply. However, fulfilment of any urgent requirement shall be at sole discretionary of the Seller.

#### 3. Quality of RDF

The RDF shall contain all combustible material which are part of incoming MSW viz-a-viz paper evolution wrapper, board, wood, leather, etc and shall be free of any organic/biodegradable waste.

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RDF shall be shredded to size of 50mm and shall meet the following parameters-

Moisture: Less than 25%

The content mixture shall wholly depend upon the quality of waste received at MSW Processing Plant and there is no control of Seller over the same howsoever.

#### 4. Quantity of RDF and Schedule of Delivery

The Agreement is hereby entered into for supply of 15,000 tons RDF to buyer over the period of 1 year. Material shall be supplied on a regular basis.

#### 5. Storage, Handling, & Processing of RDF

On completion of the delivery of RDF, Buyer shall be responsible for safe storage, handling and processing of the RDF at its cement plant located at Sirohi.

#### 6. Commercial Terms

#### 6.1 Price

The price payable by Buyer to Seller against the supply of RDF under this agreement shall be at the rate of Rs.1,700/- (Rupees One Thousand Seven Hundred only) per ton (inclusive of Loading, bailing (if required) and the transportation cost till Buyer's plant situated at Sirohi) as measured at Buyer's facility. Weight recorded at Buyer's plant shall be final for billing purpose.

For the purpose of calculation of penalty on Moisture above 25%, the base price of RDF shall be taken at Rs.1000/- per ton and transportation cost at Rs.700/- per ton will be paid without any deductions. Penalty shall be levied on pro-rata basis if moisture is above 25%. For sake of clarification, if the moisture content is 30%, the deduction will be 5% on base price of Rs 1,000 per tonne = Rs 50 per tonne and Net payable will be Rs 950 (for RDF) and Rs 700 (for transportation) = Rs 1,650 per tonne.

Fortnightly receipts shall be taken into account for calculation of Penalty.

#### 6.2 Payment Terms

The buyer agrees to pay to the seller 100% price against each consignment within 15 days from the day of delivery of RDF at buyer's premises via online mode.

#### 7. Point of Contact

Both the buyer and seller shall nominate, share and agree between them their specific respective point of contact for the purpose of all communications as stipulated under this agreement to avoid any miscommunication. In case of the person leaving the organization or change in office/designation, the contact shall be updated accordingly.





#### 6. Force Majeure

Neither party shall be considered in default in the performance of its obligation under the Agreement, if such performance is prevented or delayed on account of war, civil commotion, strike, epidemics, accidents, fires, unprecedented floods, earth quake or because of promulgation of any law or regulations by the Government, unforeseen breakdowns, operational and maintenance stoppages at the Buyer's Cement Plant or Seller's Processing facility or on account of Acts of God.

At the time of occurrence of a force majeure condition, the affected party shall give a notice in writing with documentary proof within thirty (30) days from the date of occurrence of the force majeure condition indicating the cause of force majeure condition and the period for which the force majeure condition was likely to subsist. This agreement shall remain suspended during the period of force majeure. However, if the reason continues more than ninety (90) days, the parties hereto may mutually agree to modify the terms of the Agreement or terminate the same.

#### 7. Settlements of Disputes

The Parties shall endeavour to settle by mutual consultation any claim, dispute, differences or controversy ("Dispute") arising out of, or in relation to the Agreement, including any Dispute with respect to the existence or validity hereof, the interpretation hereof, the activities performed under the Agreement, or the breach of the Agreement.

Any Dispute which cannot be settled within thirty (30) days of consultation as provided above shall be submitted to arbitration at the request of a Party ("affected Party") upon written notice to that effect to the other Party. Further, in case dispute is not resolved, arbitration shall be conducted at place of ULB (or to be mutually decided by all parties) in accordance with the provisions of the Arbitration & Conciliation Act, 1996.

The Parties agree that the award passed by the arbitration panel shall be binding upon the Parties, and that the Parties shall not be entitled to commence or maintain any action in any Court of Law in respect of any matter in Dispute arising from or in relation to the Agreement, except for the enforcement of an arbitral award or for seeking injunctive relief or in case of appeal against arbitral awards passed by an arbitration panel pursuant to this Clause.

#### 8. Indemnity

The Parties shall defend, indemnify and save harmless each other and their directors, employees and agents from and against any and all claims, demands, fines, loses, damages, costs, penalties, expenses, actions, suits or proceedings, injuries, monetary liability on account of death of any person, cost of response to any governmental inquiry, liability for loss of or damage to property and reasonable attorney and consulting fees and costs relating to any of the forgoing resulting from the act or omission, breach or non-conformance by either party with the provisions contained in the Agreement or any statutory non- compliance. the foregoing indemnification shall not apply to the extent such claims are the result of the other Party's gross negligence or wilful default.





#### 9. Non-Waiver

Any delay or omission on the part of each Party in exercising any rights provided under applicable laws or under this Agreement shall not impair such rights or operate as a waiver thereof. the partial exercise of any right provided under applicable laws or under the Agreement shall not preclude any other or further exercise thereof or the exercise of any other rights under the Agreement.

#### 10. Relationship

It is understood that this Agreement between the parties shall be on a principle to principle basis. None of the provisions of this Agreement shall be deemed to constitute a joint venture or a partnership or even agency between the parties hereto and party shall have any authority to bind the other or will be deemed to be agent of the other party in any way.

#### 11. Notice

Unless otherwise provided in the Agreement, any notice, report or other communications given or made under or in connection with the matters contemplated by or arising herein, shall be deemed to have been duly given or made if sent by personal delivery or by facsimile transmission confirmed by email or upon receipted delivery at the address of the relevant Party.

#### 12. Applicability

Any Purchase Orders issued for the transaction mentioned herein in this document shall be subject to the terms herein.

#### 13. Non-Exclusive Transaction

This Agreement is non-exclusive in nature. The parties are free to enter into mutual understanding with any of the third parties for transaction of similar nature.

IN WITNESS WHEREOF the Parties through their duly authorized representatives have executed this agreement as follows:

#### SIGNED STAMPED AND DELIVERED

For and on behalf of JK Lakshmi Cement Ltd



Name: S. Ramesh

Designation: Sr. Vice President Date: 20.01.2020



For and on behalf of Rollz India Waste

Management Pv Ghaziaba Name: Ankit Aggar

Designation: Chief Executive Officer Date: 20.01.2020



## सत्यमेव जयते

Certificate No. Certificate Issued Date Account Reference Unique Doc. Reference Purchased by Description of Document Property Description Consideration Price (Rs.) First Party Second Party Stamp Duty Paid By Stamp Duty Amount(Rs.)

## INDIA NON JUDICIAL

## **Government of Uttar Pradesh**

## e-Stamp

## IN-UP97445595146355T

01-Jul-2021 11:50 AM NEWIMPACC (SV)/ up14071204/ GHAZIABAD SADAR/ UP-GZB SUBIN-UPUP1407120482903311330085T ROLLZ INDIA WASTE MANAGEMENT PVT LTD Article 5 Agreement or Memorandum of an agreement Not Applicable

Parmodkur

गाजियाबाद मो0 : 9211681000

प्रमोद कुमार (स्टाम्प ला०नं० २८१, ३३ नवयुरा

ROLLZ INDIA WASTE MANAGEMENT PVT LTD Not Applicable ROLLZ INDIA WASTE MANAGEMENT PVT LTD 500 (Five Hundred only)



## -----Please write or type below this line-----

## MEMORANDUM OF UNDERSTANDING

This Memorandum of Understanding (hereinafter referred to as the 'Agreement"), is made and entered into at Nimbahera effect from 1<sup>st</sup> day of April, 2021

By and between First Party M/s J.K. Cement Limited & Second party Rollz India Waste Management Pvt Ltd. (Formerly known as Rollz Material Handling Systems Pvt Ltd.)

M/s JK Cement Limited, a company incorporated under the Companies Act, 1956 and having its registered office at Kamla Tower, Kanpur- 208001 (hereinafter referred to as the "First Party"



The authenticity of this Stamp certificate should be verified at 'www.shcilestamp.com' or using e-Stamp Mobile App of Stock Any discrepancy in the details on this Certificate and as available on the usebsite / Mobile App renders it invalid. The onus of checking the legitimacy is on the users of the certificate. In case of any discrepancy please inform the Competent Authority. which expression shall, unless repugnant context, mean and include its successors and assigns) of the One Part & considered as **Brand Owner (PIBOs)** for implementation of EPR plan for Plastic Waste Management (PWM) at its plants located at Nimbahera, Distt. Chittorgarh-312620 Rajasthan State.

#### And

**Rollz India Waste Management Pvt Ltd., having its registered office at Bhilwara Compost Plant Kheer Khera, Sanganer, Bhilwara, Rajasthan 311001** and head office at R-10/107, Raj Nagar, Ghaziabad, Uttar Pradesh 201001 (hereinafter referred to as the *"Second Party"*, which expression shall, unless repugnant to the context, mean and include its successors and assigns) of the Other Part.

Both First Party and Second Party shall be collectively addressed / referred to as "the Parties" and individually as "Party" herein after in this Agreement.

WHEREAS, *First Party* is an entity engaged in the business of manufacturing and sale of different types and grades of cement. *First Party* has represented that it has the capability, expertise and experience in using its cement manufacturing process for the purpose of disposal of waste material in an environmentally-friendly manner, while simultaneously producing cement of desired quality in a single combined operation through the cement kilns at its cement plants all over India ("Coprocessing").

First Party is a cement manufacturing company, selling their products on PAN INDIA basis. To fulfil the EPR obligations under the Plastic Waste Management Rule, 2016, First Party is entering into agreement with Second party for segregation, collection, pre-processing and transportation of RDF/SCF by the Second party as per the Plastic Waste Management Rule, 2016. The supplied RDF/SCF by the Second party to the First Party will be co-processed in their cement kilns located at

- 1. JK Cement works Mangrol Village: Mangrol, Tehsil: Nimbahera, Distt. Chittorgarh-312620 Rajasthan State.
- 2. JK Cement works Nimbahera, Tehsil: Nimbahera, Distt. Chittorgarh-312617 Rajasthan State.

and First Party will claim the plastic credit to fulfil their EPR obligations.

This agreement is between First Party and Second Party to meet the EPR obligations of First Party under the Plastic Waste Management Rule, 2016.

RDF/SCF is a fuel produced from various types of waste such as municipal solid waste (SCF), industrial waste or commercial waste. RDF consists largely of combustible components of such waste, as non-recyclable plastics (not including PVC), paper cardboard, labels, and other corrugated materials. These fractions are separated by different processing steps, such as screening, air classification, ballistic separation, separation of ferrous and non-ferrous materials.



and other foreign materials and shredding into a uniform grain size, or also pelletized in order to produce a homogeneous material which can be used as substitute for fossil fuels in Cement Kiln.

AND WHEREAS, Second Party has approached First Party for evaluating the feasibility of Safe disposal of RDF acceptable as per PWM Rules 2016 collected from their plant site – **Bhilwara Compost Plant, Kheer Khera, Bhilwara, Rajasthan, 311001** in an environment-friendly and based on the evaluation report, the First party has offered to send the said material at its plants in Nimbahera, Chittorgarh Cement unit for Co-processing in Cement Kiln.

Qty. of RDF/SCF to be Co-processed 5000 MT Per Annum.

AND WHEREAS, *First Party* and *Second Party* have agreed that *Second Party* shall provide services for sending RDF for Co-processing in Cement Kiln as per PWM Rules 2016, in their plants (hereinafter referred to as "Services"), subject to *First Party* obtaining all statutory clearances, consents, no objection certificate, writings and confirmations as may be applicable from various authorities and Government Agencies for the said purpose.

NOW, THEREFORE, for and in consideration of the forgoing premises and of the mutual covenant herein after stipulated, the Parties hereto, one with the other, do hereby agrees as follows:

### **1.0 EXECUTION OF SERVICES**

### 1.1 SCOPE

Second Party shall be responsible for collection, storage, segregation of RDF/SCF at its authorized site suitable to cement industry for disposal into Cement Kiln.

## **1.2 SERVICE CHARGES**

In consideration of Second Party providing the RDF/SCF, First Party shall pay to Second Party, Rs.1,050 /MT in total, as per details mentioned below:-

1. Price (for JK Cement Works Mangrol) for supply from bhilwara-

(a) RDF cost	- 600 ₹/MT
(b) Transportation cost	- 450 ₹/MT
(c) Total cost	- 1050 ₹/MT

The transportation costs may be directly paid to the transporter as well by JK Cement.

### **1.3 LOADING & TRANSPORTATION**

Loading and Transportation of RDF/SCF on trucks at its authorized site of said waste will be under scope of *Second party*.



## **1.4 QUALITY FOR WASTE MATERIAL**

- a. Second Party agreed to comply & supply RDF/SCF with quality parameters as set out in Annexure-A, generated at its authorized site to JK Cement Limited Cement Plants located in Nimbahera, Rajasthan.
- **b.** Second Party shall supply RDF/SCF from Bhilwara site to the First Party's Plants by road transportation at its own risk.
- c. Second Party shall guide the transporter on the measures to be taken in case of emergency during transportation and ensure the compliance of 'Guidelines on Transportation for Municipal Waste Material & RDF as set out in Annexure-B attached.
- d. Second Party shall, arrange to get every consignment of RDF/SCF weighed on its own and provide necessary document (having weight reference) to the approved transporter while dispatching the consignment to the Cement Plant. The quantity of RDF/SCF determined at electronic weighbridge installed at the Cement Plant will be considered as Final receipts.

## 2.0 CERTIFICATE OF CO-PROCESSING

Second Party shall at the beginning of each month, during the term of this agreement, issue to the *First Party* Certificate of Co-processing for the Waste Material sent for Co-processing during the previous month in the format set out in Annexure-C attached to the Agreement. Second Party has to grant EPR credit to First Party for fulfilling the EPR obligations.

Second Party shall inform to respective state pollution control board and CPCB for the agreement executed between both parties in the format set out in Annexure -D

## **3.0 SERVICE CHARGES AND PAYMENT TERMS**

In consideration of *First Party* providing the Incineration/co-processing services, *Second Party* shall pay to *First Party*, Service Charges at the rate of Rs. 0/- (Rupees Zero) per Ton of Waste Material on receipt basis. *First Party*, shall receive RDF/SCF at its incineration unit as per the service charges mentioned above in Clause 1.2.

#### **4.0 CONFIDENTIALITY OF INFORMATION**

All information given by one Party to the other, pursuant to this Agreement in tangible form, which is specifically marked as confidential as well as all intangible information which is specifically conveyed as confidential in writing within 7 days of disclosure of such information, shall be deemed to be "Confidential Information" for the purpose of this Agreement.

### **5.0 TERM**

The Agreement shall be valid for a term of five (05) years from the date of execution of the Agreement unless terminated earlier as per the terms of this Agreement.

#### 6.0 TERMINATION OF AGREEMENT



# 6.1 Each Party may terminate this Agreement in the following events:-

- a) In case of breach of the terms and conditions of the Agreement by either of the Parties, the other Party, may give a written notice of Thirty (30) days to such defaulting Party, demanding it to remedy such breach. If the defaulting Party fails to remedy the breach within the noticeperiod, then the other Party shall have the right to terminate this Agreement with immediate effect.
- b) If either Party goes into liquidation or is ordered to be wound up by any court of law, the other Party shall have the right to terminate this agreement with immediate effect.
- c) Any Party hereto may terminate this Agreement in case of Business exigencies, which shall be confirmed in a written document, executed by parties.
- 6.2 Even otherwise either Party shall be entitled to terminate this Agreement by giving Sixty (60) days prior written notice to the other party without specifying any reasons for the same.

#### 7.0 AMENDMENT

Any amendment and / or variation to the Agreement shall be mutually agreed by the Parties in writing and executed by or on behalf of each of the Parties hereto.

## 8.0 SEVERABILITY

If at any time during the term of the Agreement, all or any of the clauses of the Agreement is or becomes illegal, invalid or unenforceable in any respect or declared null and void or illegal under the applicable laws, the same shall not affect or impair the legality, validity or enforceability of any other provisions of the Agreement.

## 9.0 JURISDICTION

This Agreement shall be governed by Indian Laws and wherever judicial intervention is possible, Courts at Rajasthan shall have exclusive jurisdiction in respect of matters relating to this Agreement.

## **10.0 DISPUTE SETTLEMENT**

In the event of any dispute or difference arising out of or in connection with this Agreement, the same shall be settled amicably by negotiations between the Parties failing which, such dispute or difference shall be resolved by arbitration in accordance with the provisions of Arbitration and Conciliation Act, 1996, as amended and in force as on the date of execution of this Agreement. The language of Arbitration shall be English and the place of Arbitration shall be at Nimbahera, Rajasthan. The award shall be final and binding upon the Parties.

## **11.0 RELATIONSHIP OF PARTIES**

Nothing contained in the Agreement shall be construed as the engagement of Second Party as an agent or partner of First Party. The relationship between the Parties shall be principal to principal, it being clearly understood that it is a "contract for services" and not a "contract of services" and does not create and shall not be deemed to create any partnership, joint venture or a principal agent relationship between the Parties.

## **12.0 ENTIRE AGREEMENT**



The Agreement along with its annexure embodies the entire understanding between the Parties hereto and supersedes all previous correspondence, agreements and understanding, if any. This agreement shall be executed simultaneously in Two (2) counterpart originals, but shall, nevertheless together co one and the same instrument.

#### **13.0 TRANSFER OF RIGHTS**

The First Part may at any time transfer or assign its rights and obligation under the Agreement to any other company/associate company or business entity.

The First party must intimate in advance in writing, to the second party about transfer and assignment of its rights and obligations under this Agreement to any other corporation or company.

### **14.0 FORCE MAJEURE**

In case of any force majeure, either shall not be saddled with any liability contingent otherwise.

The term Force Majeure in this Agreement means act of God, war, revolt, riot, fire, tempest, flood, earthquake, lightening, pandemic, epidemic, direct or indirect consequences of war (declared/ undeclared), sabotage, hostilities, national emergencies, civil disturbances, commotion, embargo or any law of promulgation, regulation or ordinance whether Central or State or Municipal, breakage, bursting or freezing of Trucks/tankers, break down in plant, State or National level transporters strike etc. Upon occurrence of such cause and on its termination, the parties rendered unable as aforesaid shall notify other party within Twenty-Four (24) Hours of the beginning and the ending, giving full particulars and satisfactory evidence thereof. Any action of labour employed by the First Part shall not be considered as Force Majeure.

**IN WITNESS WHEREOF** this Agreement is executed in two counterparts on the day and year first above written. Each Party hereto shall preserve one counterpart of the Agreement.

SIGNED AND DELIVERED for and on behalf of

M/S JK Cement Limited, by the hand of its authorized signatory,

In the presence of.

Signature

2.

Signature of Witness,

BASANT GUPTA

(Name of Authorized Signatory)

(Name of Witness)

Date of Signing of Agreement: 13-July-2021

SIGNED AND DELIVERED for and on behalf of Rollz India Waste Management Pvt Ltd by the hand of its authorized signatory,



<u>Mr. Ankit Aggarwal</u> (Name of Authorized Signatory)

BR 2.

Signature of Witness,

BHARAT BRUSHAN

(Name of Witness)

Date of Signing of Agreement: \_

## ANNEXURE –A

Components	RDF/SCF
Plastic content	45% min
% Moisture (As recd.)	25 max
GCV (Kcal/Kg) on ARB	2500 Min.
% Sulphur	<0.01
% CL	1.5 max
Ash %	30 Max.
Bad Odour	Absent
Inert	Absent

1. Waste Material Specifications to be complied with-

#### Note:

- RDF/SCF to be incinerated shall not be chemically treated with any Chlorinated disinfectants.
- RDF/SCF shall not contain CPVC and chlorinated plastics.
- RDF/SCF should be properly loaded & covered with tarpaulin.
- RDF/SCF should be consistent in terms of quality and similar to the samples send for testing to our lab.
- The above specified values other than moisture content can vary with in the ± 5 % range
- Waste Material dispatched by Second Party shall not contain following items that are in the banned items-
- a) Radioactive waste
- b) Asbestos-containing waste
- c) Explosives and ammunition / weapons
- d) Anatomical medical waste
- e) Electronic fraction of electrical and electronic waste (e-waste)
- f) Whole batteries as a targeted material stream
- g) Waste of unknown or unpredictable composition, including unsorted municipal waste etc





## ANNEXURE – B

## Guidelines for Second party for Transportation of Waste Material

Second Party shall check following points with the vehicle received at their site for transportation purpose.

- 1. Transport Vehicle used for transporting the Waste Material should have valid authorization for transportation.
- 2. Transporter /driver shall be licensed for collection and transportation of the Waste Material.
- 3. Properly sealed and the Waste Material should only be loaded into the Transport vehicle and there should not be labeled containers/bags of any indications of potential hazards (e.g elevated temperature, barrel expansion, smoke, spillage, leaks);
- 4. Transport vehicle should be clean, fit for use and all safety equipment should be operational and easily accessible.
- 5. Transport vehicle used for transportation of waste material shall be marked with an emergency information panel and should be easily identifiable (number plate)
- 6. Only the compatible waste materials should be transported together
- 7. Transporter / driver shall carry all relevant documents and shall be guided on the proper movement of the same.
- 8. Logistics should be clearly defined for minimizing OH & safety risks.
- 9. All relevant legal requirements for transportation should be fulfilled
- 10. Suitable specific emergency response procedures / crisis management plan and equipment should be in place and driver and cleaner should be trained accordingly.
- 11. RDF/SCF should be properly loaded & covered with tarpaulin.





### ANNEXURE – C

Date:

#### CERTIFICATE OF CO-PROCESSING

This is to certify that we have send of the following quantities RFD/SCF material to M/s\_\_\_\_\_\_\_for Co-processing/Incineration in your Cement Plant during the period \_\_\_\_\_\_to\_\_\_\_.

The same would be safely and completely disposed off within 90 days of receipt and thereafter will not exist.

The credit for EPR, PAT & CO<sub>2</sub> shall be exclusively claimed by JK Cement woks Mangrol.

Quantity (Tons): .....

Authorized Signatory & Seal/Stamp of WMA




#### ANNEXURE - D

# Agreement between PIBO and ULB/WMA to include the following:

1	Name of PIBO		JK Cement Works Mangrol				
2	2 Name of ULB/WMA ende				read by Municipal a		
3	State/UT		-	end	ised by Municipal co	prporation	
4	Date of signing of ag	reement	1.04.2021	1 04 2021			
5	Date of validity of ag	reement	31.03.2026			2 B -	
6	EPR Target of PIBO(	Type & Quantity (TPA))	40000 TPA				
7	Total type & gty (TPA	) of waste to be managed	5000 TDA				
1.0.0	through ULB/WMA	, et managed	SUOU TPA				
8	Details of waste to be	e managed though ULB/WM/	A RDF/SCF	2			
8a	Plastic Waste Collect Channelization	ion &					
	WMA	Name of ULB/ Designated State Authority	Scope of Wor	k	Type of PW to be managed (LDPE/HDPE/PP/PE T etc.)	Qty of PW to be managed (TPA)	
1	Rollz India Waste Management Pvt Ltd	Municipal Council Bhilwara	M/s Municipal collects the was village Panchay, to dumping site Compost Plant, Bhilwara, Rajast this waste is seg remediated by P Management Py processing and s	Council Bhilwara ste from various ats, transport it up (Bhilwara Kheer Khera, shan) and further gregated and Rollz India Waste rt Ltd for further sent to co- Cement	RDF/MSW	5000 TPA	
8b	Plastic Waste Processi	ng	1	coment.			
	WMA .		Name of PWPF	Type of PWPF ( Recycling, co- processing etc)	Type of PW to be processed (LDPE/HDPE/PP/PE T etc.)	Qty of PW to be processed (TPA)	
i F	Rollz India Waste Mana	gement Pvt Ltd.	JK Cement Works Mangrol, the-Nimbahera, dist-chittorgarh- 312620	Co-processing	RDF/MSW	5000 TPA	
	the second			÷			
0	Anna athr						
8	Any other conditions						
9	Date of signing of Agree	ement	01.04.2021				
10	Date of validity of Agre	ement	30.03.2026	2			
11	Agreement to be on leg	al stamp paper	Yes				
12	Signed by designated a	uthorities of both parties	Yes	aste Man	860		

Dout







#### PURCHASE ORDER

Vendor Details **Code : 1121551** ROLLZ MATERIAL HANDLING SYSTEM PRIVATE LIMITED NAGAR PARISHAD BHILWARA COMPOST PLANT KHEER KHER SANGANER BHILWARA-311011 DIST-BHILWARA Rajasthan Mob.: 9079898069 Email id : ankit@rollzindia.com **GST No: 08AAECR6721J1Z6** 

Bill To address J.K. CEMENT WORKS MANGROL C/o J.K. Cement Works , Kailashnagar, Nimbahera - 312617, Distt. : Chittorgrah (Raj.) Tel. No. : 01477-220205 (Direct), 220087(PBX) GST No 08AABCJ0355R1Z7 PAN No.: AABCJ0355R

PO NO: 4100196065 PO Date: 09.03.2022 Quotation Reference: EMAIL Ver. No.: 0 Our Reference: JK-MANGROL

With reference to your quotation and subsequent negotiations, we are pleased to place this Purchase Order on you for the supply of following items subject to terms and conditions stated below and printed overleaf/attached with this document

s No.	Item Code &	Item Description	Unit	Quantity	Rate Per Unit	Amount
	PR NO.				(INR)	(INR)
0001	351028 1000219683	RDF FOR AFR USE 1.Price (for JK Cement Works Mangrol) for supply- a. RDF cost - 600 /MT b. Transportation cost - 600 /MT c. Total cost -1200/MT RDF specifications shall be as below- a.GCV - Min. 2500 kcal/kg b.Moisture - Max. 15% c. Ash %- Max. 20% d.Bad odour - absent e.Inert- absent	TO	1,000	600.00	600000.00
		<ul> <li>3.Quality control- Test results of JKCL shall be considered as final.</li> <li>4.Quantity - as per JKCL requirement from each location Invoice statement- invoice shall be raised as per 10 day supply statement of weighment shared by JKCL over email. 5.Penalty -on pro-rata basis upon deviation in quality of RDF shall be applicable within limit of 10% beyond that JKCL reserves the right to reject RDF and the rejected RDF shall have be taken back by Rollz India within 07 working days. 6 Respective EPR PAT_CO2 and any</li></ul>				
		6.Respective EPR,PAT, CO2 and any other benefit shall be exclusively				

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Corporate & Registered Office : Kamla Tower, Kanpur-208001, (U. P.) INDIA Phone : +91-512-2371478 to 81 Fax : +91-512-2399854 E-mail: admin@jkcement.com

J.K. Cement Works, Nimbahera J.K. Cement Works, Mangrol J.K. Cement Works, Gotan J.K. Cement Works, Jharli J.K. Power, Bamania J.K. Cement Works, Muddapur 108J.K. White Cement Works, Gotan J.K. White, Katni Page: 1 of2





	Vendor Code: 1121551 - ROLLZ MATERIAL HANDLING SYSTEM PRIVATE LIMITED PO NO: 4100196							O NO: 4100196065		
5	S No.	Item	Code	&	Item Description	Unit	Quantity	Rate Per	Unit	Amount
		PR	NO.					(INR)	)	(INR)
					<pre>with JKCL. 7.ULB endorsed disposal certificate shall arranged by Rollz India to JKCL on monthly basis. Tax Code : GG GST:IN: CGST(2.5%) SGST(2.5%) Delivery Date :31.05.2022 Freight Vendor :PREM SHARDA MINERALS PRIVATE Freight Pate : 600.00</pre>					
								Gross Valu Discount : Total Amou CGST SGST Freight Ch Total PO v	unt: unt: urg: value:	600000.00 0.00 600000.00 15000 15000 600,000.00 1230000.00
	Total	(in )	Words	)•	Twelve Lakh Thirty Thousand Ruppes Onl	v				

Terms of Payment: 07 days credit from Dt of recipt material/services Penalty Clause: terms and condition as mentioned above Inco Terms: FOR BHILWARA

#### For J.K. CEMENT WORKS

JAY KUMAR **Commercial Head-Shared Services** 

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#### **IMPORTANT TERMS & CONDITIONS**

#### Vendor Code: 1121551 - ROLLZ MATERIAL HANDLING SYSTEM

PO NO .- 4100196065

- 1. Please send us your order acceptance by return E-mail/post.
- 2. Invoice should be send on postal address at Purchase department, Nimbahera (Raj.)
- 3. Please provide details like Invoice No., Date, Bill Amount, Name of commodity, GST No. MSME certificate.
- 4. Our bankers are Allahabad bank, Kailash Nagar, Nimbahera.
- 5. Please provide RTGS bank details for payment.
- 6. All outstation goods to be despatched as per instructions given in the order. In case goods are wrongly booked supplier shall be liable for payment of extra expenses.
- 7. All order are subject to execution within the period specified in the order falling which the suppliers shall be held liable for damages and losses on account of delays in deliveries or non-deliveries of the goods and goods will be purchased on their account from alternative sources.
- 8. No variation in quantity or quality of the goods indented or in the mode of despatch or in the period of execution or in rates of the goods will be accepted unless confirmed by us before supply in made.
- 9. All Material supplied in execution of this order shall be subject to our inspection and our approval of the same. In case of rejection of any material, the same shall be removed by the supplier at his own expenses both ways. In case of his failure to do so within reasonable time we shall be at liberty to return the same to him at his own expenses. All rejected, short and broken material shall be replaced by the supplier at his own expenses.
- 10. Any dispute relating to this order shall be jurisdiction of Kanpur Court only.
- 11. We shall not bear any bank charges for document routed through Bank/PBG/SBG/LV.
- 12. It is always our moto to give preference to the products manufactured by Environmentally Pollution free unit and meeting quality assurance parameters.
- 13. Test certificate, material certificate, warranty certificate M.S.D.S., where applicable, must be provide along with material.
- 14. Warranty/Guarantee shall be as per order terms, else against manufacturing defect for 12 months from date of commissioning & 18 month from date of despatch will be applicable for all item.
- 15. LD CLAUSE: Liquidity damages will be applicable in case of late delivery @ 0.5% per week, maximum 5% of undelivered PO value.
- 16. GST CLAUSE: Goods and Service tax (GST), extra as applicable at the time of billing / invoicing. Supplier shall be responsible for providing proper GST invoicing in a manner as prescribed by the government for purchaser to avail 100% credit against GST payment. In case purchaser was not able to avail the credit due to the reason attributable to the supplier then the 100% GST paid by purchaser will be recovered from the supplier dues.
- 17. Force majeure: Neither party shall be liable for non-performance either in full or part of this contract due to the reasons unforeseen and beyond its reasonable control such as strikes, lockouts, lockdown, acts of God etc. in your / our Works' premises. The foregoing shall not however be considered a waiver of either party's obligations under this contract and as soon as the occurrence shall cease, the affected thereby shall promptly fulfil its previously unfulfilled obligations under this contract. However, both the parties shall share information of any such developments in writing.
- 18. Safety Clause -As per our company standard, safety policies and safety annexure.

#### 19. Bribery and Corruption Clause:

Suppliers, Contractors and Business Associates shall comply with all applicable anti-corruption laws and regulations. JK Cement Ltd, to this effect, have a zero tolerance policy towards any form of bribery, corruption, extortion and embezzlement. In particular, Suppliers, Contractors and Business Associates shall not pay bribes or make any other inducement (including kickbacks, facilitation payments, excessive gifts and hospitality, grants or donations) in relation to their business dealings. Suppliers, Contractors and Business Associates are expected to perform all business dealings transparently and these dealings shall be accurately reflected on their business books and records. Suppliers, Contractors and Business Associates shall not hire third parties or do something they are not allowed to do themselves, like paying bribes. Suppliers, Contractors and Business Associates

IAY KUMAR **Commercial Head-Shared Services** 

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# Consolidated Guidelines for Segregation, Collection and Disposal of Plastic Waste



# **CENTRAL POLLUTION CONTROL BOARD**

(Ministry of Environment, Forest and Climate Change, Government of India)

'Parivesh Bhawan' C.B.D. Cum-Office Complex,

East Arjun Nagar, Shahdara, Delhi-110032

(September, 2017)

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#### 1. Introduction:

The rapid rate of urbanization and development has led to increase in consumption of plastic products vis-à-vis plastic waste generation. It is a fact that plastics waste constitutes a significant portion of the total municipal solid waste (MSW) generated in India. Plastics are non-biodegradable and remains on earth for thousands of years. The burning of plastics waste under uncontrolled conditions lead to generation of different hazardous air pollutants (HAPs), depending upon the type of polymers and additives used. However, the end-of-life plastics can be recycled into a second life application but after every thermal treatment/recycling deterioration in quality of recycled plastic products. Thus plastic waste can be recycled only 3-4 times. The visibility of huge quantity of plastic waste has been perceived as a serious problem and made plastics a target in the management of solid waste. As per the IS 14534: 1998 "Guidelines for Recycling of Plastics", to identify the raw material of plastic products, the symbols defined by Society of the Plastics Industry (SPI, USA) shall be marked on each product. Different types of plastics and their uses are given in **Table 1**.

S. No.	Symbol	Short Name	Scientific	Uses
			Name	
1	Ċ	PET	Polyethylene terephthalate	Soft drink bottles, furniture, carpet, paneling etc.
2	<u></u>	HDPE	High-density polyethylene	Bottles, carry bags, milk pouches, recycling bins, agricultural pipe, base cups, playground equipment etc.
3	ß	PVC	Polyvinyl chloride	Pipe, Window profile, fencing, flooring, shower curtains, lawn chairs, non-food bottles and children's toys etc.
4	Â	LDPE	Low-density polyethylene	Plastic bags, various containers, dispensing bottles, wash bottles, tubing etc.
5	ß	РР	Polypropylen e	Auto parts, industrial fibers, food containers, dishware etc.
6	ئ	PS	Polystyrene	Cafeteria trays, plastic utensils, toys, video cassettes and cases, clamshell containers, insulation board etc.
7	ß	0	Other	Thermoset Plastics, Multilayer and Laminates, Bakelite, Polycarbonate, Nylon SMC, FRP etc.

Table 1. Different Types of Plastics &its Uses

Plastics are generally categorized into two types:

- Thermoplastics: Thermoplastics or Thermosoftening plastics are the plastics which soften on heating and can be molded into desired shape such as PET, HDPE, LDPE, PP, PVC, PS, etc.
- Thermosets: Thermoset or thermosetting plastics on heating, but cannot be remolded or recycled such as Sheet Molding Compounds (SMC), Fiber Reinforced Plastic (FRP), Bakelite etc. are the examples of the same.

For efficient management of plastic waste, the Government of India has superseded with the earlier Plastic Waste (Management & Handling) Rules, 2011 and notified **Plastic Waste Management (PWM) Rules, 2016** on **18<sup>th</sup> March, 2016**. These rules shall apply to every Waste Generator, Local Body, Gram Panchayat, Manufacturer, Importer, Producer and Brand Owner throughout India.

## 2. Environmental issues of plastic waste:

Followings are the major environmental issues related to plastic waste

- Littering of plastic waste is major environmental issues, it makes land infertile, choke the
- drains, on ingestion by cattle cause death and give ugly look of a city or town.
- Lack of proper system for plastic waste collection and segregation in cities/towns.
- Accumulation of non-recyclable plastic waste such as multilayered laminated packaging, thermoset plastic like SMC, FRP etc.
- Open burning of plastic waste, especially thermoset plastic waste is major health and environmental issue, as it emits toxic gases.
- Leaching impact on soil, underground water etc. due to improper dumping of plastic waste (contain metals & phthalates).
- Running of unregistered plastic manufacturing and recycling industries in residential areas.

## 3. Key Definitions of as per PWM Rules, 2016:

Some of the important keywords as per PWM Rules, 2016 are explained below:

- i) **Brand Owner:** Brand Owner means a person or company who sells any commodity under a registered brand label.
- ii) **Carrybags:** Carrybags mean bags made from plastic material or compostable plastic material, used for the purpose of carrying or dispensing commodities which have a self-

carrying feature but do not include bags that constitute or form an integral part of the packaging in which goods are sealed prior to use.

- iii) **Commodity:** means tangible item that may be bought or sold and includes all marketable goods or wares.
- iv) Compostable Plastics: Compostable Plastics mean plastic that undergoes degradation by biological processes during composting to yield CO<sub>2</sub>, water, inorganic compounds and biomass at a rate consistent with other known compostable materials, excluding conventional petro-based plastics, and does not leave visible, distinguishable or toxic residue.
- v) **Extended Producer's Responsibility (EPR):** EPR means the responsibility of a producer for the environmentally sound management of the product until the end of its life.
- vi) **Importer:** Importer means a person who imports or intends to import and holds an Importer-Exporter Code number, unless otherwise specifically exempted.
- vii) **Manufacturer:** Manufacturer means and include a person or unit or agency engaged in production of **plastic raw material** to be used as raw material by the producer.
- viii) **Multilayered Packaging:** Multilayer Packaging means any material used or to be used for packaging and having at least one layer of plastic as the main ingredients in combination with one or more layers of materials such as paper, paper board, polymeric materials, metalized layers or aluminum foil, either in the form of a laminate or co-extruded structure.
  - ix) Plastic: Plastic means material which contains as an essential ingredient a high polymer such as polyethylene terephthalate, high density polyethylene, Vinyl, low density polyethylene, polypropylene, polystyrene resins, multi-materials like acrylonitrile butadiene styrene, polyphenylene oxide, polycarbonate, Polybutylene terephthalate.
  - x) **Plastic Sheet:** Plastic Sheet means Plastic sheet is the sheet made of plastic.
  - xi) **Plastic Waste**: Plastic Waste means any plastic discarded after use or after their intended use is over.
- xii) **Producer:** Producer means persons engaged in manufacture or import of carry bags or multilayered packaging or plastic sheets or like, and includes industries or individuals using

plastic sheets or like or covers made of plastic sheets or multilayered packaging for packaging or wrapping the commodity.

- Waste Generator: Waste Generator means and includes every person or group of persons or institution, residential and commercial establishments including Indian Railways, Airport, Port and Harbor and Defense establishments which generate plastic waste.
- xiv) Waste Management: Waste Management means the collection, storage, transportation reduction, re-use, recovery, recycling, composting or disposal of plastic waste in an environmentally safe manner.

#### 4. Salient Features of PWM Rules, 2016:

#### 4.1 The salient features of the PWM Rules, 2016 are given below:

- PWM Rules, 2016 shall apply to every Waste Generator, Local Body, Gram Panchayat, Manufacturer, Importer, Producer and Brand Owner.
- Carry bag made of virgin or recycled plastic shall not be less than fifty microns in thickness. The provision of thickness shall not be applicable to carry bags made up of compostable plastic, complying IS/ISO:17088.
- Waste Generators including institutional generators, event organizers shall not litter the plastic waste. They shall segregate waste and handover it to authorized agency and shall pay user fee as prescribed by ULB for waste management or spot fine in case of violation.
- Within a period of six months from publication of PWM Rules, 2016 in official Gazette, Producer, Brand Owner shall work out modalities for waste collection system for collecting back the plastic waste generated due to their products, in consultation with local authority/State Urban Development Department and implement it within two years thereafter.
- Promote use of plastic waste for road construction or energy recovery or waste to oil or coprocessing in cement kilns etc.
- Only the registered shopkeepers or street vendors shall be eligible to provide plastic carrybags to the customers for dispensing the commodities after paying plastic waste management fees (minimum ₹48,000 per annum) to concerned Local Body.
- SPCB/PCC shall be the authority for enforcement of the provisions of PWM Rules, 2016, relating to registration, manufacture of plastic products and multi-layered packaging, processing and disposal of plastic wastes.

- Concerned Secretary-in-charge of Urban Development of the State or a Union Territory and concerned Gram Panchayat in the rural area of the State or a Union Territory shall be the authority for enforcement of the provisions of PWM Rules, relating to waste management by waste generator, use of plastic carry bags, plastic sheets or like, covers made of plastic sheets and multi-layered packaging.
- Stakeholders & Responsible Authorities shall use Forms I to VI of the PWM Rules, 2016 for providing information to respective authorities on implementation of PWM Rules, 2016 (Annexure I to VI).

#### 4.2 Responsibilities of CPCB as defined in PWM Rules, 2016 are given below in Table 2: -

<b>S.</b>	Rule No. (as	Description
No	per PWM	
•	Rules, 2016)	
1	<b>4(h)</b>	The manufacturers or seller of compostable plastic carrybags shall
		obtain a certificate from the Central Pollution Control Board before
	- / >	marketing or selling their products.
2	5(c)	Thermoset plastic waste shall be processed and disposed of as per the
		guidelines issued from time to time by the Central Pollution Control
		Board.
3	6(2)(d)	The Local Bodies shall ensure processing and disposal of non-
		recyclable fraction of plastic waste in accordance with the guidelines
		issued by the Central Pollution Control Board.
4	17(d)	The CPCB shall prepare a consolidated Annual Report on the use and
		management of plastic waste and forward it to the Central Government
		along with its recommendations before the <b>31</b> <sup>st</sup> August of every year.

# 4.3 Prescribed Authorities for Plastic Waste Management and their responsibilities as per provision '12' of PWM Rules, 2016 are given below in Table 3: -

S.	Prescribed	Responsibilities
No	Authority	
1	State Pollution	Enforcement of the provisions of PWM Rules, 2016, relating to
	Control Board	registration, manufacture of plastic products and multilayered

	(SPCB)/ Pollution	packaging, processing and disposal of plastic wastes.
	Control Committee	
2	Secretary-in-	Enforcement of the provisions of PWM Rules, 2016, relating to
	Charge, Urban	waste management by waste generator, use of plastic carry bags,
	Development	plastic sheets or like, covers made of plastic sheets and
	Department	multilayered packaging.
3	Gram Panchayat	Enforcement of the provisions of PWM Rules, 2016, rules
		relating to waste management by the waste generator, use of
		plastic carry bags, plastic sheets or like, covers made of plastic
		sheets and multilayered packaging in the rural area of the State or
		a Union Territory.
4	District Magistrate	Shall provide the assistance to SPCBs/PCCs, Secretary-in-
	or Deputy	Charge, Urban Development Department and Gram Panchayat
	Commissioner	under his jurisdiction, whenever required for enforcement of
		provisions of PWM Rules, 2016.

#### 5. Plastic Waste Generation in India:

As per the study conducted by Central Pollution Control Board (CPCB) in 60 major cities of India, it has been observed that around 4059 T/day of plastic waste is generated from these cities. The fraction of plastic waste in total Municipal Solid Waste (MSW) varies from 3.10% (Chandigarh) to 12.47% (Surat). Average plastic waste generation is around 6.92% of MSW. The plastic waste generation data for 60 major cities in India is annexed as **Annexure-VII**. With extrapolation of the plastic waste generated in India. As per the results of the study, out of total plastic waste, around 94% waste comprises of thermoplastic content, which is recyclable such as PET, LDPE, HDPE, PVC etc. and remaining 6% belongs to the family of thermoset and other categories of plastics such as sheet molding compound (SMC), fiber reinforced plastic (FRP), multi-layered, thermocol etc., which is non-recyclable.

## 6. Present Status of Plastic Waste Management in India:

As per the Annual Reports on Implementation of Plastic Waste Management Rules, 2016, the following key issues have been emerged;

- The manufacturing, stock, sale & use of less than fifty microns (<50µm) plastic carrybags is continued in majority of States/UTs. Besides, carrybags/films are manufactured, stocked sold and used without proper label or marking.
- Shopkeepers/Street vendors willing to provide plastic carrybags shall registered with Local Body by paying ₹48000/ annum @4000/month.
- Widespread littering of plastic waste is continued on road-side, railways tracks, open areas, open drains, river banks, sea-shores, beaches, public places like Bus-station/Bus-stops, open market etc.
- The estimated plastic waste (PW) generation in 25940 tons/day (based on per capita PW generation)
- A number of unlicensed/unregistered plastic manufacturing & recycling unit are running in residential or non-conforming areas.
- Accumulation of PW may lead to chocking of drains, cause land infertile, on ingestion by cattle's may lead to death etc.
- No proper system evolved by majority of Municipal Authorities for collection, segregation and disposal of PW.
- Many States/UTs have not constituted State Level Monitoring Committee (SLMC) Body for implementation of PW (M&H) Rules, 2011.
- Open burning of PW is continued &may contaminate ambient air quality resulting into diseases to human beings

# 7. Roles and Responsibilities of Different Stakeholders in Efficient Plastic Waste Management:

The concerned Local Bodies and Gram Panchayats are responsible for collection, storage, segregation, transportation and disposal of waste in their jurisdiction. For management of plastic waste, different activities and respective responsible stakeholders are summarized in **Table 4**.

S. NO	ACTIVITY	<b>RESPONSIBLE AGENCIES</b>
1.	Door to door collection and segregation of all category	Safai Karamchari (Municipal Staff)
	of <b>plastic waste</b> .	or
		Authorized Waste Collector/Picker
2.	Collection of littered/dumped plastic waste in public	Safai Karamchari (Municipal Staff)
	places like market areas, bus stands, railway stations,	or
	cinema halls, parks, community centers, road side etc.	Authorized Waste Collector/Picker
3.	Storage of collected plastic waste from households	Municipal Staff

Table	4.
-------	----

	and other places in a covered yard authorized by	or Authorized Agency
	Municipal Authority.	or NGO
4.	Segregation of stored plastic waste and shredding into	Municipal Staff
	2-4 mm size using plastic shredder.	or Authorized Agency
		or NGO
5.	Storage of shredded plastic waste in bags and	Municipal Staff
	utilization in following different technologies as per	or
	requirement and infrastructure.	Authorized Agency
	I) Use of shredded plastic waste in construction of	or
	bituminous road through hot mix plant (IRC Code SP	NGO
	98:2013).	
	II) Conversion of plastic waste in liquid fuel (As per	
	CPCB's website).	
	III) Transporting stored plastic waste in nearest cement	
	kilns for co-processing (As per CPCB's website on	
	PWM).	
	IV) Disposal of plastic waste through plasma Pyrolysis	
	technology (As per CPCB's website on PWM).	

# <u>The process for collection, segregation and utilization of plastic waste is explained</u> <u>at Figure-1.</u>



# (By Municipal Authority & Gram Panchayat)

**Figure 1. Flow Diagram for Plastic Waste Management** 

#### 8. Technologies for Disposal of Plastic Waste:

The provision '5(b)' of PWM Rules, 2016, encourages the use of technologies for disposal of plastic waste. The major technologies for the disposal of plastic waste are discussed below:

#### 8.1. Utilization of Plastic Waste in Road Construction: -

Plastic waste is collected and segregated (except chlorinated/brominated plastic waste) from mixed MSW. The segregated plastic waste is stored and should be transported to the location working site for drying. The dried plastic waste is shredded to 2-4 mm size and added to heated stone aggregate followed by mixing. Further, the coated aggregate is mixed with hot bitumen, which is used for laying and compaction. The use of plastic waste in road construction shall follow the IRC: SP:982013, titled as "Guidelines for the use of waste plastic in hot bituminous mix (dry mixing) in wearing courses". Presently, several roads have been constructed by using plastic waste with bitumen in many of the States/UTs, such as: Tamil Nadu, Himachal Pradesh, Nagaland, West Bengal, Pondicherry etc. A process flow diagram for construction of polymer-bitumen road is shown at **Figure-2**.



#### Figure 2. Process Flow Diagram for Construction of Polymer-bitumen Road

#### Salient Features of Polymer-Bitumen Road: -

- Stronger road with increased Marshal Stability Value.
- Better resistance towards rain water and water stagnation.
- No stripping and no potholes.
- Increased binding and better bonding of the mix.
- Reduction in pores in aggregate and hence less rutting and raveling.
- For 1km x 3.75m road, 1 ton of plastic is used, which leads to saving of 1 ton of bitumen.
- Cost of road construction is decreased due to saving of bitumen.
- Value addition to the waste plastics.

#### 8.2. Co-processing of Plastic Waste in Cement Kilns: -

Co-processing refers to the use of waste materials in industrial processes as alternative fuels and raw material (AFR) to recover energy and material from them. Due to the high temperature and long residence time in cement kiln, all types of wastes can be effectively disposed without any harmful emissions. As per the Basal Convention, variety of wastes including hazardous wastes, get disposed in an environmentally safe and sound manner through the technology of co-processing in cement kiln. In cement plants, plastic waste is used as Alternate Fuel and Raw-material (AFR), subjected to higher temperature around 1400°C-1500°C. During the process, energy is recovered while burning of plastic waste and its inorganic content get fixed with clinker. It requires an automatic feeding mechanism for feeding plastic waste to cement kilns. This technology is used successfully in some of the States where, cement plants (have facility for co-processing of waste) are present, such as: Gujarat, Tamil Nadu, Karnataka, Chhattisgarh, Himachal Pradesh, Madhya Pradesh, Odisha etc. Flow diagram for co-processing of plastic waste in cement kilns is shown at **Figure-3**.



Figure 3. Flow Diagram for Co-processing of Plastic Waste in Cement Kilns

#### 8.3. Conversion of Plastic Waste into Fuel-oil: Refused-derived Fuel (RDF): -

For converting plastic waste into fuel-oil (RDF), plastic waste is collected and segregated. The segregated plastic waste is then fed into multi fractionalization, where the unwanted material is rejected for better handling & processing. The segregated plastic waste (only HD, LD, PP and multilayer packaging except PVC) is then fed into in-vessel for depolymerisation system. The Catalytic Gasolysis in-vessel is designed to handle polymers. The selection of catalyst depends on the type of raw material used. The reactor operates at high temperature and in absence on Air. At high temperature, the polymers are Gasolysied to small chain hydro carbon linkage. The vapors produced are condensed in the Condensers and collected as crude oil. There are three types of condensing takes place where first cut gives fuel oil (FO), second cut gives light diesel oil (LDO) and third constitutes of highest grade diesel oil. The total percentage of this is generally at 40% to 50% of input depending on the input quality of plastics and contaminations. The non-condensable remains are then passed through scrubber for removal of gases like Chlorine, Gas-Fuel etc. This Gas-Fuel is used in process for heating.

![](_page_125_Figure_2.jpeg)

Figure 4. Process block diagram for Conversion of plastic waste into fuel-oil

This technology is used by few municipalities like Vadodara (Gujarat), NDMC (New Delhi), etc. Process block diagram for Conversion of plastic waste into liquid fuel-oil is shown at **Figure 4**.

#### Cost of plastic waste to liquid RDF plant: -

From 100 kg of mixed plastic waste approximately 35L of LDO, 40kg of LPG, 20kg of carbon and 5L of water is generated. Plant establishment cost for conversion of plastic waste into fuel-oil of input capacity of 100 kg/day (raw material-mixed plastic waste) is approximately 18 lacs and monthly operational cost is around 87,000. Return back period for such plant is from 3 to 4 years.

#### 8.4. Disposal of plastic waste through Plasma Pyrolysis Technology (PPT): -

Plasma pyrolysis technology is the disintegration of organic/inorganic compounds into gases and non- leachable solid residues in an oxygen-starved environment. Plasma pyrolysis utilizes large fraction of electrons, ions and excited molecules together with the high energy radiation for decomposing chemicals. In this process the fourth state of matter i.e. plasmas (core temperature is around 20,000°K) is used for dissociating molecular bonds. Different types of plastic waste such as polyethylene bags, soiled plastic, metalized plastic, multi-layer plastic and PVC plastic can be disposed through PPT.

In Plasma Pyrolysis, firstly the plastics waste is fed into the primary chamber at 850°C through a feeder. The waste material dissociates into carbon monoxide, hydrogen, methane, higher hydrocarbons etc. Induced draft fan drains the pyrolysis gases as well as plastics waste into the secondary chamber where these gases are combusted in the presence of excess air. The inflammable gases are ignited with high voltage spark. The secondary chamber temperature is maintained at 1050°C. The hydrocarbon, CO and hydrogen are combusted into safe carbon dioxide and water. The process conditions are maintained such that it eliminates the possibility of formation of toxic dioxins and furans molecules (in case of chlorinated waste). This process is used by few Municipalities and hospitals, however, this can be useful for tourist place, hill stations, pilgrimage, coasts and other remote places. The process flow diagram of plasma pyrolysis for disposal of plastic waste is shown at **Figure 5**.

![](_page_127_Figure_0.jpeg)

Figure 5. Process Flow Diagram of Plasma Pyrolysis for Disposal of Plastic Waste

#### Cost of plasma pyrolysis plant for the disposal of plastic waste: -

Approximately plant cost of capacity 1 Ton/day is 1.7 Crore and 6.5 Crore for capacity of 10 Tons/day plant, excluding operational cost. Payback period of plasma pyrolysis plant of higher capacity (>1Ton/day) is around 4 to 5 years. With energy recovery system, plasma pyrolysis plant will be profitable.

#### Merits of Plasma Pyrolysis Technology: -

- The plasma pyrolysis system can resolve the problems associated with particularly non-recvclable and low grade plastic waste.
- Generation of extremely high temperature in oxygen starved environment makes this technology useful for the safe destruction of plastic wastes.
- This technology (PPT) can safely destroy chlorinated as well as multi-layer plastic wastes.
- The plasma pyrolysis system can be installed in tourist/hilly locations
- PPT for the disposal of plastic waste along in conjunction with energy recovery makes it economically viable in higher capacity systems.

## 9. Constraints in Use of Plastic Waste Disposal Technologies:

Non-availability of required infrastructure including segregated plastic waste is a major issue due to which plastic waste disposal technologies are not used by most of the Municipalities. It is well known that majority of the Municipal Authorities don't have proper system for collection, segregation and disposal of plastic waste. Therefore, segregated plastic waste is not available to be

used in these technologies. Besides, the modalities for disposal of plastic waste have also not been finalized by Municipal Authorities. Some of the technologies like co-processing of plastic waste is limited to the States only where cement kilns having clinker facilities are located. In other States, the transportation of plastic waste to the cement kilns having clinker facilities becomes costly affair.

#### 10. Alternate to Conventional Petro-based Plastic Carrybags/films:

An alternate to petro-based plastic carrybags/films has been introduced i.e. compostable (100% biobased)carrybags/films conforming IS/ISO: 17088.The PWM Rules 2016 also encourages the use of compostable carrybags and products by exempting minimum thickness criteria of 50µm.Further, as per provision 4 (h) of PWM Rules, 2016, the manufacturers or sellers of compostable plastic carry bags shall obtain a certificate from the Central Pollution Control Board (CPCB) before marketing or selling their products. The manufacturers/sellers of compostable carrybags/products are required to apply to CPCB as per Standard Operating Procedure (SOP) available on CPCB's Website (http://cpcb.nic.in/Plastic\_waste.php). Thereafter, certificate will be issued to manufacturer/seller, those fulfilling criteria as per SOP. Presently, the manufacturers of compostable films/carrybags are being done by few industries due to cost constraints, however if the import duty on raw-material like PLA etc. is reduced, then manufacturing and use of compostable films/carrybags can be encouraged. CPCB has issued 'Certificate' under Rule 4(h) of PWM Rules, 2016 to firms for marketing and selling of compostable carrybags/films in Indian market. The list of firms is given on CPCB's website.

S.no	Do's	Don't
1	Use >50um plastic carrybags/sheet/ or	Don't use <50um plastic carrybags/sheet or like
	like.	
2	Use Virgin plastic carrybags for	Don't use colored & recycled for
	storing/packaging/food stuffs.	storing/packaging/food stuffs.
3	Plastic can be recycled to 2-3 time & then	Dumping of PW leads to infertility of soil,
	disposed or dumped on landfill and cause	contaminate underground water quality due to
	environmental problems.	leachate, chocking of drains, death of cattle's due
		to ingestion, burning of PW in open areas etc.
4	Collect PW is separate bins	Don't mix with bio-degradable waste.
5	Plastic can be co-processed in cement	Burning of plastic waste may contaminate air
	kilns.	quality & cause a pulmonary cancer mesothelioma

#### 11. Do's and Don'ts.

		asthma liver and other types of cancer	
6	Carry a compostable, jute, cloth bag,	Don't ask for plastic carry bag from shopkeeper or	
	compostable material bag, while going	vender.	
	for purchasing.		
7	Avoid buying items in packaged plastic	Buy food in glass jars or any other material rather	
		than plastic	
8	Don't litter plastic waste on oceans and	Sea turtles and marine mammals ingest plastic	
	sea beaches.	bags thinking they are food.	
9	Use and encourage bio based made	Do not use petro-based of plastic products to save	
	carrybags/films/packaging etc.	fossil fuel and mother earth.	

#### **12. Recommendations:**

- SPCBs/PCCs are required to interact with Concerned Municipalities and to provide technical support to municipalities in setting-up of proper plastic waste management system for segregation, collection, transportation, disposal of PW as per PWM Rules, 2016.
- SPCBs/PCCS can ask State Urban Development Department to constitute State Level Advisory Body for implementation of PWM Rules, 2016.
- SPCBs/PCCS should constitute vigilance squad in collaboration with Concerned Municipalities to check surprisingly thickness of carrybags (both manufacturing & stocking), for not allowing <50 µm thickness carry bags.</li>
- SPCBS/PCCs can organize Mass-Awareness programmer in various districts involving Municipalities & Stake-holders for not using less than fifty micron carry bags.
- Municipal Authorities shall set-up plastic waste management system and disposed PW using

various technology such as Road Construction, Co-processing, PW into Liquid Fuel etc.

- Promote eco-friendly compostable carrybags (conforming IS/ISO:17088) and certified by CPCB.
- Imposing penalties against the defaulters and non-complying units.
- Open burning of PW shall be strictly prohibited.

#### FORM-I

#### [See rules 13 (2)]

#### APPLICATION FOR REGISTRATION FOR PRODUCERS or Brand Owners

From	
	(Name and full address of the occupier)
To	
	The Member Secretary,
	Pollution Control Board or Pollution Control Committee
	Sir,

I /We hereby apply for registration under rule 9 of the Plastic Waste Management Rules, 2015

1. Producers

PART – A GENERAL			
1.(a)	Name and location of the unit		
(b)	Address of the unit		
(c)	Registration required for manufacturing of: (i) Carry bags; (a) petro- based, (b) Compostable (ii) Multilayered plastics		
(d)	Manufacturing capacity		
(e)	In case of renewal, previous registration number and date of registration		
2.	Is the unit registered with the District Industries Centre of the State Government or Union territory? If yes, attach a copy.		
3.(a)	Total capital invested on the project		
(b)	Year of commencement of production		
4. (a)	List and quantum of products and by-products		
(b)	List and quantum of raw materials used		
5.	Furnish a flow diagram of manufacturing process showing input and output in terms of products and waste generated including for captive power		

	generation and water.	
6.	Status of compliance with these rules- Thickness – fifty micron (Yes/No)	
	PART-B	
PI	ERTAINING TO LIQUID EFFLUENT AND GASEOU	S EMISSIONS
7.	(a) Does the unit have a valid consent under the Water (Prevention and control of Pollution) Act, 1974 (6 of 1974)?	
	(b) Does the west house a which as we at a day the	
	Air (Prevention and Control of Pollution) Act, 1981 (14 of 1981)?	
-	If yes, attach a copy	
	PART – C PERTAINING TO WASTE	
8.	Solid Wastes or rejects: (a) Total quantum of waste generated (b) Mode of storage within the plant (c) Provision made for disposal of wastes	
9.	Attach or Provide list of person supplying plastic to be used as raw material to manufacture carry bags or plastic sheet of like or multilayered packaging	
10.	Attach or provide list of personnel or brand Owners to whom the products will be supplied	
11.	Action plan on collecting back the plastic wastes	
		Name and Signature
Date : Place :		Designation
Date : Place :		

#### II Brand Owners:

77	PART – A GENERAL	
1.	Name, address and Contact number	
2	In case of renewal, previous registration number and date of registration	
3	Is the unit registered with the District Industries Centre of the State Government or Union	

	territory? If yes, attach a copy.	
4.(a)	Total capital invested on the project	
(b)	Year of commencement of production	
5. (a)	List and quantum of products and by-products	1
(b)	List and quantum of raw materials used	
PE	PART - B RTAINING TO LIQUID EFFLUENT AND GASEOU	S EMISSIONS
5	Does the unit have a valid consent under the Water (Prevention and control of Pollution) Act, 1974 (6 of 1974)? If yes, attach a copy	
6	Does the unit have a valid consent under the Air (Prevention and Control of Pollution) Act, 1981 (14 of 1981)? If yes, attach a copy	
2 	PART – C PERTAINING TO WASTE	n.
7.	Solid Wastes or rejects: (c) Total quantum of waste generated (d) Mode of storage within the plant (d) Provision made for disposal of wastes	
8.	Attach or Provide list of person supplying plastic material	
9	Action plan on collecting back the plastic wastes	
		Name and Signature
		Designation
Date :		
Place :		

#### FORM - II

#### [see rule 13 (3)]

#### APPLICATION FORM FOR REGISTRATION OF UNITS ENGAGED IN PROCESSING OR RECYCLING OF PLASTIC WASTE

1.	Name and Address of the unit					
2.	Contact person with designation, Tel./Fax /email					
3.	Date of commencement					1
4,	No. of workers (including contract labour)					
5.	Consents Validity a. W V b. A V c. A	ater (Pre alid up t ir (Preve alid up t uthorizat	evention o ention & o tion : va	1 & Control	of Pollution) Ad	ct, 1974; 1981;
6.	Manufacturing Process Plea flow	Please attach a flow diagram of the manufacturing proces flow diagram for each product.			ring process	
7.	Products and installed capacity of production (MTA)	Products		Installed capacity		
8.	Waste Management:		S No	Туре	Category	Qty.
	a. Waste generation in processing plastic-waste		(i)			
			(11)			-
			(m)			÷
	b. Waste Collection and transpo (attach details)	ortation			1. 1 S 7	-
	c. Waste Disposal details		S No	Туре	Category	Qty
			0			

		(ii)
	d. Provide details of the disposal facility, whether the facility is authorized by SPCB or PCC	
	e. Please attach analysis report of characterization of waste generated (including leachate test if applicable)	
9.	Details of plastic waste proposed to be acquired through sale, auction, contract or import, as the case may be, for use as raw material	(i) Name (ii) Quantity required /year
10.	Occupational safety and health aspects	Please provide details of facilities
11.	Pollution Control Measures	
	Whether the unit has adequate pollution control systems or equipment to meet the standards of emission or effluent.	If Yes, please furnish details
	Whether unit is in compliance with conditions laid down in the said rules.	Yes/No
	Whether conditions exist or are likely to exist of the material being handled or processed posing adverse immediate or delayed impacts on the environment.	Yes/No
	Whether conditions exist (or are likely to exist) of the material being handled or processed by any means capable of yielding another material (e.g. leachate) which may possess eco-toxicity.	Yes/No
12.	Any other relevant information including fire or accident mitigative measures	
13.	List of enclosures as per rule	

Name and Signature

Designation

Date : Place :

	FORM - III
	[See rules 13(4)]
Al	PPLICATION FOR REGISTRATION FOR MANUFACTURERS of plastic ra- materials
From	É
	AT 1611-11 61
То	(Name and full address of the occupier)
	The Member Secretary,
	Pollution Control Board or Pollution Control Committee
	Sir,

I/We hereby apply for registration under the Plastic Waste Management Rules, 2011

	PART – A	
	GENERAL	
1.(a)	Name and location of the unit	
(b)	Address of the unit	
(c)	In case of renewal, previous registration number and date of registration	
2.	Is the unit registered with the DIC or DCSSI of the State Government or Union territory? If yes, attach a copy.	
3.(a)	Total capital invested on the project	
(b)	Year of commencement of production	
(c)	List of producers and quantum of raw materials. supplied to producers	
		Name and Signature
		Designation
Date :		
Place :		

Form - IV [See rules 17 (1)]

#### Format of Annual Report by Operator of plastic waste processing or recycling Facility to the Local Body

#### Period of Reporting:

(1)	Name and Address of operator of the facility	
(2)	Name of officer in-charge of the facility (Telephone/Fax/Mobile/ E-mail)	
(3)	Capacity:	
(4)	Technologies used for management of plastic waste:	
(5)	Quantity of plastic waste received during the year being reported upon along with the source	
(6)	Quantity of plastic waste processed (in tons): - Plastic waste recycled(in tons) - Plastic waste processed (in tons) - Used (in tons)	
(7)	Quantity of inert or rejects sent for final disposal to landfill sites:	
(8)	Details of land fill facility to which inert or rejects were sent for final disposal: - Address - Telephone	
(9)	Attach status of compliance to environmental conditions, if any specified during grant of Consent or registration	

Signature of Operator

Dated : Place:

#### Form - V

#### [See rules 17(2)]

#### FORMAT FOR ANNUAL REPORT ON PLASTIC WASTE MANAGEMENT TO BE SUBMITTED BY THE LOCAL BODY

#### Period of Reporting: Name of the City or Town and State: (1)Population (2)(3)Area in sq. kilometers Name & Address of Local body (4)Telephone No. Fax No. E-mail: Total Numbers of the wards in the area under (5) nurisdiction Total Numbers of Households in the area under (6)iurisdiction Number of households covered by door to door (7) collection Total number of commercial establishments and (8) Institutions in the area under jurisdiction -Commercial establishments - Institutions (9) Number of commercial establishments and Institutions covered by door to door collection -Commercial establishments - Institutions (10) Summary of the mechanisms put in place for management of plastic waste in the area under jurisdiction along with the details of agencies involved in door to door collection (11) Attach details of infrastructure put in place for management of plastic waste generated in the area under jurisdiction (12) Attach details of infrastructure required, if any along with justification Quantity of Plastic Waste generated during the year (13)from area under jurisdiction (in tons) Quantity of Plastic Waste collected during the year (14)from area under jurisdiction (in tons) (15) Quantity of plastic waste channelized for recycling during the year (in tons)

(16)	Quantity of plastic waste channelized for use during the year (in tons)	
(17)	Quantity of inert or rejects sent to landfill sites during the year (in tons)	
(18)	Details of each of facilities used for processing and disposal of plastic waste Facility-I i) Name of operator ii) Address with Telephone Number or Mobile iii) Capacity iv) Technology Used v) Registration Number vi) Validity of Registration (up to) Facility-II i) Name of operator ii) Address with Telephone Number or Mobile iii) Capacity iv) Technology Used v) Registration Number Validity of Registration (up to)	
(19)	Give details of: Local body's own manpower deployed for collection including street sweeping, secondary storage, transportation, processing and disposal of waste.	
(20)	Give details of: Contractor or concessionaire's manpower deployed for collection including street sweeping, secondary storage, transportation, processing and disposal of waste.	
(21)	Mention briefly, the difficulties being experienced by the local body in complying with provisions of these rules including the financial constrains, if any	
(22)	Whether an Action Plan has been prepared for improving solid waste management practices in the city? If yes (attach copy) Date of revision:	

Signature of CEO or Municipal Commissioner or Executive Officer or Chief Officer

Date: Place:

# [F.No. 17-2/2001-HSMD]

9	Name of the SPCB PCC	
3	Estimated Photic Watte generation Tous Per Annum (TPA)	
	No. Of Mauti Recycli multila units. ( Plasti c c units	
(3)	registered acturing o acturing o ing (includ ing (includ yet, compo Rule 9) Rule 9) Rule 9) Rule 9) Rule 10 Rule 10 Ru	
	r r bing ostable) ostable) Multilay er Plastic units	
3	No. of Unregistere d plastic manufactur ing Recycling units. (in residential or unapproved areat)	
(5)	Details of Plastic Waste Management (PWM) e.g. Collection, Segregation, Disposal (Co-processing road construction etc.) (Rules 6) (Attach separate sheet)	
(0)	Partial or complete ban on unages of Plastic Carry Bags (through Executive Order) ( Attach copy of notification or executive order)	Contraction of the second s
(7)	Status of Marking Labelling on carry bags (Rule 5) [Specify the number of units or not complied)co mplied	
(8)	Explici t Pricin g of carry bags (Rule 10)	
(9)	Details of the meeting of State Level Advisory Body (SLA) along with its recommend ations on Implementa tion (Rule 11)	
(10)	No. of violation s and action taken on non- complia nce of provisio ns of these Rules	
(11)	Number of Municipal Authority or Gram Panchayatun der jurisdiction and Submission of Annual Report to CPCB (Rule 12)	2

STATE-WISE STATUS OF IMPLEMENTATION OF PLASTIC WASTE MANAGEMENT RULES, 2016 FOR THE YEAR ..... ANNUAL REPORT Format 27

# Annexure-VII

S. No.	Name of City	Total Municipal Solid	Plastic Waste	Plastic Waste
		Waste	(Percentage of	(Tonnes per day)
		(Tonnes per day)	Municipal Solid	
			Waste)	
1.	Kavaratti	2	12.09	0.24
2.	Dwarka	18	8.08	1.45
3.	Daman	25	4.64	1.16
4.	Panjim	25	4.47	1.12
5.	Gangtok	26	8.95	2.33
6.	Jamshedpur	28	3.36	0.94
7.	Silvassa	35	6.11	2.14
8.	Port Blair	45	10.07	4.53
9.	Kohima	45	5.01	2.26
10.	Shimla	50	4.45	2.23
11.	Meerut	52	6.42	3.34
12.	Gandhinagar	97	4.81	4.66
13.	Shillong	97	5.44	5.27
14.	Itanagar	102	5.35	5.46
15.	Agartala	102	5.71	5.83
16.	Aizwal	107	7.95	8.50
17.	Imphal	120	5.13	6.16
18.	Ranchi	140	5.92	8.29
19.	Kochi	150	6.29	9.43
20.	Dhanbad	150	5.02	7.52
21.	Guwahati	204	5.04	10.27
22.	Asansol	210	6.01	12.62
23.	Dehradun	220	6.67	14.66
24.	Patna	220	5.73	12.60
25.	Raipur	224	10.61	23.76
26.	Rajkot	230	6.93	15.93
27.	Thiruvananthapura	250	6.02	15.06
	m			
28.	Pondicherry	250	10.46	26.15
29.	Chandigarh	264	3.10	8.18
30.	Jammu	300	7.23	21.68
31.	Jaipur	310	5.03	15.58
32.	Vishakhapatnam	334	9.03	30.17
33.	Nashik	350	5.82	20.38
34.	Bhopal	350	6.59	23.08

# Table: Plastic Waste Generation in Sixty Major Cities of India (2010-2012)

35.	Allahabad	350	5.39	18.86
36.	Jabalpur	400	5.18	20.70
37.	Bhubaneswar	400	7.98	31.92
38.	Madurai	450	5.06	22.77
39.	Varanasi	450	5.76	25.92
40.	Agra	520	7.86	40.89
41.	Srinagar	550	5.12	28.14
42.	Amritsar	550	4.44	24.42
43.	Vadodara	600	4.57	27.41
44.	Vijayawada	600	7.29	43.72
45.	Nagpur	650	7.07	45.96
46.	Coimbatore	700	9.47	66.31
47.	Faridabad	700	11.29	79.03
48.	Indore	720	8.81	63.40
49.	Ludhiana	850	5.96	50.68
50.	Surat	1200	12.47	149.62
51.	Lucknow	1200	5.90	70.84
52.	Pune	1300	7.80	101.35
53.	Kanpur	1600	6.67	106.66
54.	Ahmedabad	2300	10.50	241.50
55.	Kolkata	3670	11.60	425.72
56.	Bangalore	3700	8.48	313.87
57.	Hyderabad	4200	4.75	199.33
58.	Chennai	4500	9.54	429.39
59.	Mumbai	6500	6.28	408.27
60.	Delhi	6800	10.14	689.52
	Total MSW	50592		
	Average PW		6.92	4059.18
	generation			

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