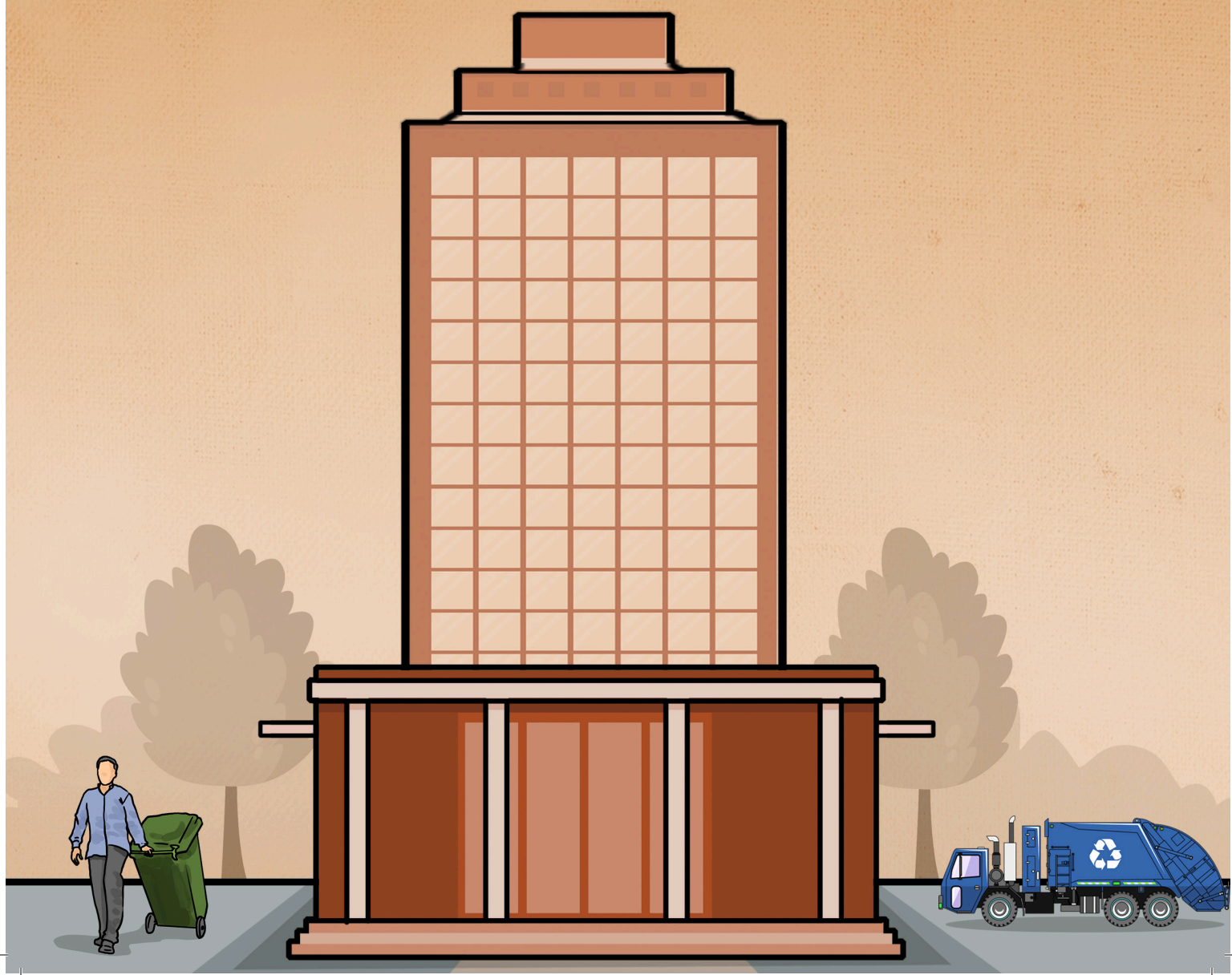
WASTE MANAGEMENT BY BULK WASTE GENERATORS IN AGRA

ASSESSMENT AND WAY FORWARD



WASTE MANAGEMENT BY BULK WASTE GENERATORS IN AGRA

ASSESSMENT AND WAY FORWARD

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Contents

1. Introduction

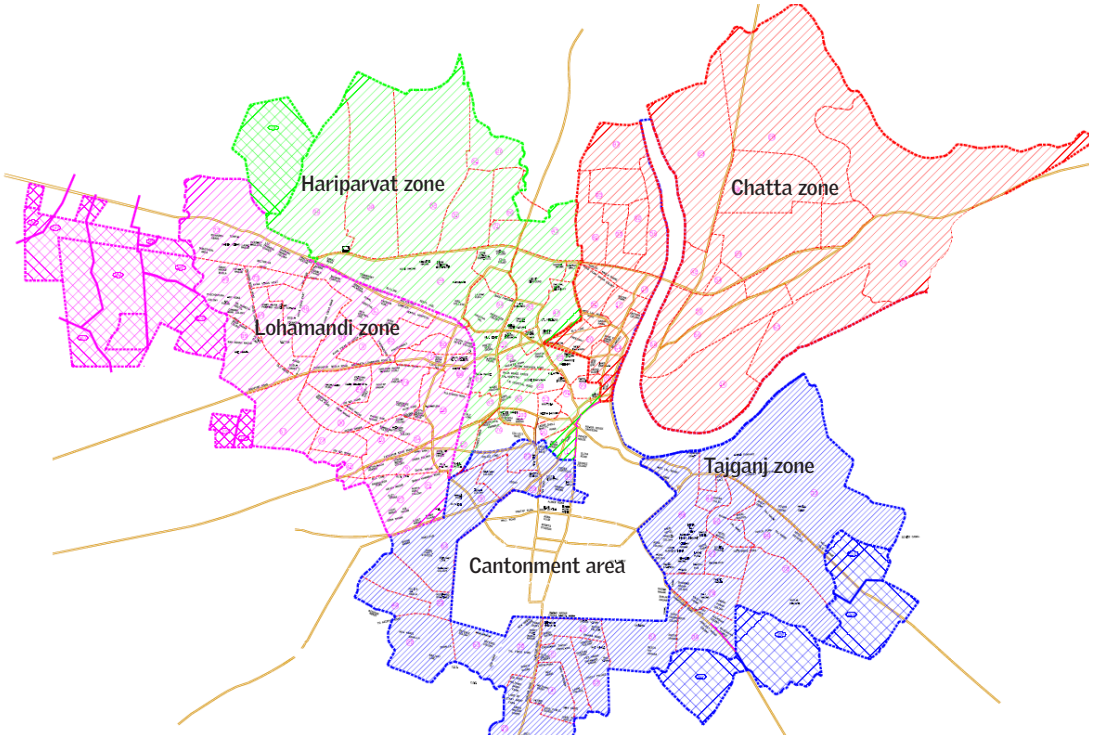
Highlights

- As per the latest ANN records, current municipal solid waste generation in Agra is 916 TPD and per capita waste generation is 0.48 kg
- As per MoHUA guidelines, BWGs are responsible for 30-40 per cent of the total waste generated in cities.
- There are more than 2,000 bulk waste generators spread across the city.

Accoring to Census 2011, Agra has a population of about 1.58 million residing within its municipal limits.[1] However, as per Agra Nagar Nigam's (ANN) official record, the current population of Agra is approximately 1.9 million, with a floating population of about 0.3 million.[2]

The city is divided into four administrative zones—Hariparvat, Chhatta, Lohamandi and Tajganj (see *Map 1: Map of Agra under Agra Nagar Nigam*). Each zone is divided into 25 wards to make a total of 100 wards in the city. In the

Map 1: Map of Agra under Agra Nagar Nigam



Source: ANN, 2023

study conducted by the Centre for Science and Environment (CSE) in 2020, it was estimated that the city generates around 796 tonnes per day (TPD) of municipal solid waste (MSW), which brings its per capita waste generation to between 0.37–0.45 kg per day.[3] But, as per the latest ANN records (city solid waste action plan submitted by ANN to the state government), current municipal solid waste generation in Agra is 916 TPD and per capita waste generation is 0.48 kg.

1.1 Status of bulk waste generators in Agra

Taking cognizance of the significant amount of waste generation from bulk waste generators (BWGs), the Ministry of Housing and Urban Affairs (MoHUA) has developed a step-by-step guideline for ULBs to implement the Solid Waste Management Rules, 2016. Municipalities are required to identify various BWGs as defined in the SWM Rules, 2016, which mandate that BWGs must effectively manage their waste and ULBs must be empowered to ensure compliance.

As per this guideline, a significant portion of the daily waste, approximately 30–40 per cent, comes from bulk generators. Therefore, given that total MSW generated in Agra is about 916 TPD, it can be estimated that waste generated from BWGs is close to 270–370 TPD. Hence, BWGs are an impotant stakeholder in Agra's waste management ecosystem.

A total of 2,136 BWGs were identified and notified by ANN between 2019–20. Considering that every BWG is generating a minimum of 100 kgs of waste per day, it is estimated that BWGs are generating a minimum of 213.6 TPD of municipal solid waste. This translates to a minimum of 23.3 per cent of the total 916 tonnes of municipal solid waste generated in Agra city daily. Since ANN does not have separate waste generation data for BWGs, it was difficult for CSE researchers to ascertain the actual contribution of BWGs in overall waste generation of Agra city.

However, the actual number of BWGs may vary from the number listed by ANN. During field visits, CSE's researchers found a number of sources listed as BWGs which were generating lesser than 100 kgs of waste per day. For example, a bank with about 10 employees was on the list.

Further, the representatives of a few hotels or resturants like PL Palace, Holiday Inn, Pinch of Spice and Grand Imperial claimed to be generating less than 100 kgs of solid waste per day and were not listed as BWGs by ANN. But CSE's research team visiting their premises found that they are generating more than 100 kg of solid waste on days with high customer footfall and room occupancy.

WHO ARE BULK WASTE GENERATORS?

According to the Solid Waste Management Rules, 2016, a bulk waste generator "means and includes buildings occupied by the Central Government Departments or Undertakings, State Government Departments or Undertakings, Local Bodies, Public Sector Undertakings or Private Companies, Hospitals, Nursing Homes, Schools, Colleges, Universities, other Educational Institutions, Hostels, Hotels, Commercial Establishments, Markets, Places of Worship, Stadia and Sports Complexes, etc. having an average waste generation rate exceeding 100 kg per day (of all waste streams put together)."

Table: Criteria for different bulk waste generators as mentioned

Residential	• Cooperative group housing society with more than 300 flats, markets* • Central government residential colonies* • RWAs
Commercial	• Restaurant(s) with more than 200 seating capacity* • All 4 and 5 star hotel(s)* • Shopping complex(es)/mall(s) having built-up area of more than 5,000 sqm*
Government, public sector or private bodies	• Central government ministries, departments and undertakings • State government ministries, departments and undertakings • Local bodies • Public sector undertakings • Private sector offices, complexes, buildings
Social infrastructure	• Hospital(s) / Nursing Home(s) which have more than 200 beds, whether private or government* • Places of worship • Stadia and sports complexes • Clubs • Marriage halls • Recreation/Entertainment complexes • Hostels/Schools, colleges, universities, educational & training institutions with more than 500 students for accommodation* • Railway stations, bus stations, airports, etc.

*Bulk Garbage Generators as defined by National Green Tribunal (NGT) in Court Order of Original application No. 199 of 2014 in the matter of Almitra H. Patel Vs UOI and application no. 281 of 2016 in the matter of Kudrat Sandhu Vs Govt. of NCT of Delhi & Govt. of India

Source: MoHUA, Nov 2017, Bulk waste generators: A step by step guidance for Urban local bodies to implement the solid waste management rules, 2016, http://cpheeo.gov.in/upload/5abcb3c488029Bulk-Waste-Generator-Book.pdf

Duties of bulk waste generators as per SWM Rules, 2016

a) Segregate and store the waste generated in three separate streams namely:
(i) biodegradable (wet waste); (ii) non-biodegradable (dry waste); and (iii) domestic hazardous wastes in suitable bins/containers

b) Process wet waste (biodegradable waste) to the extent feasible on the premises itself and develop a system of reuse of products for processing, that is, compost or biogas;

c) Handover segregated dry wastes to ULB's waste collector or agency authorized by the ULB to collect waste on its behalf as per the direction or notification by the local authorities from time to time;

d) Handover segregated domestic hazardous wastes to authorized waste pickers or waste collectors as per the direction or notification by local authorities from time to time;

e) Securely wrap used sanitary waste like diapers, sanitary pads, etc., in the pouches provided by the manufacturers or brand owners of these products or in a suitable wrapping material as instructed by the local authorities (such as newspaper, paper, etc.) and handover separately to waste collector or place the same in the bin meant for dry waste or non-biodegradable waste;

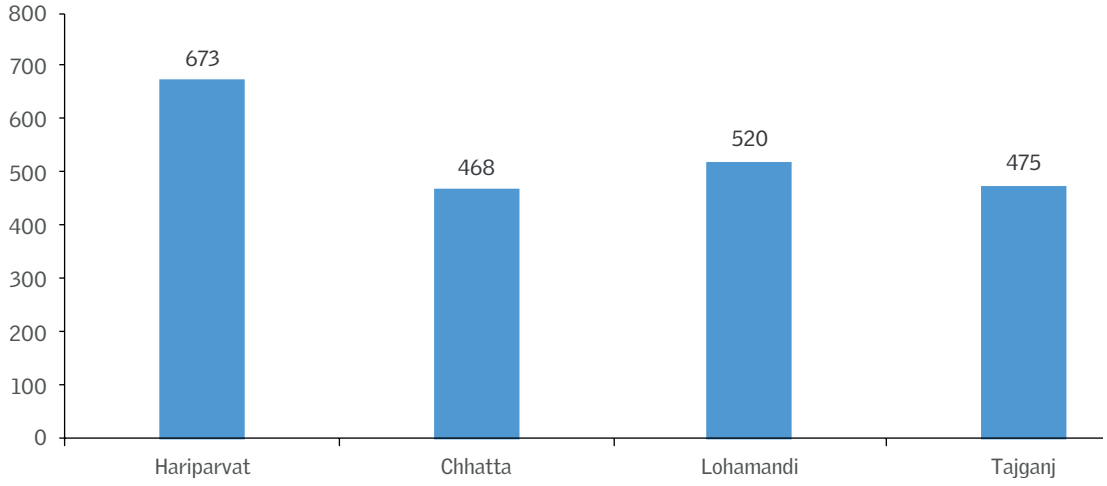
f) Store horticulture waste and garden waste generated within the premises separately and carry out composting in compost pits within the premises. In case of non-availability of land, dispose off as per the directions of the urban local body from time to time;

g) Separately store construction and demolition waste generated in own premises and dispose off as per the Construction & Demolition Waste Management Rules, 2016;

h) In addition to above, bulk waste generators are required not to mix e-waste—it should be separately stored as and when generated and should be handed over for recylcing.

There are many more examples that CSE's research team came across, which suggest that the current list of BWGs is not free from errors. The current list does not contain the quantity of waste generated by each identified BWG. The list also does not feature the area of the premises, which is significant in identifying a source as BWG according to SWM Rules, 2016.

Graph 1: Zone-wise distribution of BWGs in Agra



Source: As per data received from ANN

Table 1: Zone-wise (minimum) waste generation by BWGs in Agra

Zone	No. of BWGs	Minimum solid waste generation (in MT per day)*
Hariparvat	673	67.3
Chhatta	468	46.8
Lohamandi	520	52.0
Tajganj	475	47.5
Total	2136	213.6

*Assuming that every BWG generates a minimum of 100 kg of solid waste as specified in the SWM Rules, 2016

Source: As per data received from ANN

2. Engagement of the concessionaire to manage waste generated by bulk waste generators

Highlights

- ANN hired the concessionaire to set up, operate and maintain a 210 TPD common material recovery facility for management of non-biodegradable waste.
- The concessionaire is also responsible for development, supply, installation, operation and maintenance of the 4 TPD common compost processing facility for management of biodegradable waste generated by BWGs in Agra.

Agra Nagar Nigam (ANN) invited bids through the e-tender process for management of non-biodegradable and biodegradable waste generated by bulk waste generators (BWGs). A total of three bidders participated in the process. After technical and financial evaluation of the received bids, on 19 June 2019, ANN appointed the concessionaire as an authorized operator to manage waste generated by BWGs for a period of 25 years.

As per the Letter of Award (LoA), ANN assigned the concessionaire to set up, operate and maintain a 210 TPD common material recovery facility (MRF) for management of non-biodegradable waste. The concessionaire is also responsible for development, supply, installation, operation and maintenance of the 4 TPD common compost processing facility for management of biodegradable waste generated by BWGs in Agra (*see Annexures 1 and 2*).

The key terms of the agreement are as follows:

For non-biodegradable waste

Clause 7.1. Reporting:

a) The operator (meaning the concessionaire) shall develop an online portal, where a report containing the quantity of daily inward, outward and processed waste will be uploaded to the public domain.

b) During the term, the operator shall provide monthly reports to ANN stating the following:
   i. Quantity of incoming waste, recyclables recovered, biodegradable waste received and quantity of rejects returned to BWGs.
   ii. Outward report specifying quantity and destination.
   iii. Inert/non-biodegradable waste inward and outward report.
   iv. Monitoring and verification report.
   v. Reports of certificates issued to BWGs for complying with SWM rules with respect to non-biodegradable solid waste.

c) If the concessionaire doesn't submit the monthly report within three days of the end of the relevant month for three consecutive months or the information is falsely reported in more than three reports, it shall constitute an Operator Event of Default.

Clause 11.1.c. Tipping fees:

a) The bulk waste generator is responsible for transportation of the waste to the nearest MRF or one of the six collections points in the city specified by ANN. If the bulk waste generator requests the operator to transport the waste from the generator's premises to the site, then the operator shall charge tipping fees. The operator will charge tipping fees at the rate of Rs 1/kg per km.

b) The tipping fees shall be calculated on the basis of distance between the location of the bulk waste generator and the nearest MRF, irrespective of the actual dumping center the operator takes it to.

c) This tipping fee is valid for first year of operation, starting from commercial operational date (COD). The tipping fee shall be increased or decreased based on changes in the Wholesale Price Index (WPI). In case WPI is discontinued in the future by RBI, then the Consumer Price Index or any other appropriate mechanism shall be used for increase or decrease of collection fees. The rate revision shall be affected on April 1 of every subsequent year based on the following formula:

Processing fee adjustment formula:

$PF_A = PF_B + PF_B((WPI_A - WPI_B)/ WPl_B))$

PF_A: Applicable processing fee

PF_B: Processing fee for previous year (B)

Collection fee adjustment formula:
$CF_A = CF_B + CF_B((WPI_A - WPI_B)/ WPI_B))$
CF_A: Applicable Collection fee
CF_B: Collection Fee for previous year (B)

WPI_A: Wholesale price index of closest WPI index data made available by RBI or as on 31 March of the current year

WPI_B: Wholesale price index of closest WPI index data made available by RBI or as on 31 March of the previous year

Illustration: If the revision is to be made for the year 2017–18, WPI index data made available by RBI on or closest to 31 March 2018 shall be taken as WPI_A, WPI index data made available by RBI on or closest to 31 March 2017 shall be taken as WPI_B.

Clause 11.5. Sale of recoveries/recyclables:

(a) The operator shall have full right on the recoveries made from solid waste.
(b) The operator will try their best to sell recoveries to approved recyclers and processors.
(c) The authority will provide full support to the operator in contacting approved recyclers.

Clause 3.2 (a) (ii)

Exclusive right over non-biodegradable solid waste of BWGs, in accordance with Uttar Pradesh SWM policy pertaining to One City One Operator (Here city means a category of waste generator in Agra. To be specific in case of this agreement, bulk waste generators in Agra city).

For biodegradable waste

Clause 3.2. (b). Land right:

ANN provides use right of the site to the operator at a nominal lease rental of Rs 1/m^2 per annum for the term of this agreement which is 25 years or any term as defined in this agreement, in accordance with Uttar Pradesh Solid Waste Management Policy promulgated through Order no. 2221/9-5-18-352C/2016 dated 29 June 2018.

Clause 6.1. Reporting:
During the term, the concessionaire shall provide monthly reports to the ANN in the following format:

a) Quantity of incoming waste, compost produced, quantity of rejects returned to BWG/ANN
b) Compost sales/outward report
c) Inert/non-biodegradable waste inward and outward report
d) Test report of compost quality to be submitted on a quarterly basis

Clause 6.2
If the concessionaire doesn't submit the monthly report within three days of the end of the relevant month for any three consecutive months or false information is provided in more than three reports during the term, it shall constitute an Operator Event of Default.

Clause 10.5. Sale of compost:

a) The operator will try their best to sell compost in the market.
b) The operator shall have full right on the produced compost.
c) BWGs are required to buy compost from the operator for their in-house usage.
d) The authority will provide full support to the operator.

The current status of waste management by the BWGs and the role played by the concessionaire engaged is analysed and described in the following chapter.

3. Existing solid waste management practices of bulk waste generators

Highlights

- BWGs within the network of the concessionaire give up to 90 per cent of their generated waste to the network of informal waste collectors and the rest to the concessionaire in order to fulfill the formalities of their agreement with them.
- CSE found that BWGs are unwilling to give their waste to the concessionaire because the charges levied for collection and processing are very high and the collection mechanism set up by the concessionaire is not able to meet the requirements of BWGs.
- ANN is in the process of reviewing the support mechanism to deal with the entire quantity of waste coming from the BWGs after careful assessment of the performance of the current concessionaire.
- The linkage between BWGs and informal workers is facilitated by informal aggregators.

Currently, bulk waste generators (BWGs) are dealing with solid waste in different manners:

i. Engagement with the concessionaire: BWGs provide waste to the concessionaire as per their agreement with them.

ii. Engagement with the concessionaire and informal sector: BWGs give up to 90 per cent of their generated waste to informal private parties and rest to the concessionaire in order to fulfill the formalities of their agreement.

iii. Managing waste with own resourses: Some BWGs were found disposing of waste in nearby dustbins.

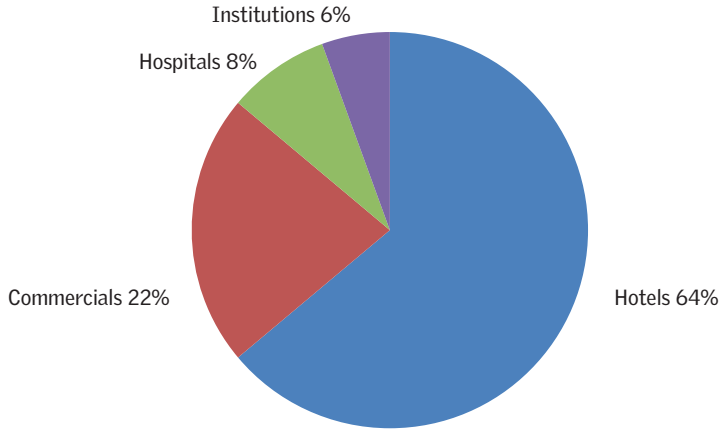
iv. Managing waste with in-situ facilities: Some BWGs have in-situ treatment facilities to treat biodegradable waste.

3.1 Waste management practices of concessionaire

The agency has deployed 10–12 workers including manager, accountant and security guard for operation and maintenance of the MRF and has engaged one auto tipper and one Matador (light-medium vehicle) for collection of solid waste from identified BWGs.

Photographs 1 and 2: Vehicles deployed by the concessionaire for non-biodegradable and biodegradable waste collection and transportation

Graph 2: Distribution and types of BWGs having agreement with the current concessionaire



Source: ANN, 2023

Only 72 (3.4 per cent) BWGs—mainly hotels followed by commercials establishments, hospitals and institutions—out of 2,136 have signed agreements with the concessionaire. The remaining 96.6 per cent did not sign any agreements primarily for two reasons: 1. The rate of waste management fixed by ANN is exorbitantly high; and 2. ANN had very limited impact in its effort to enforce waste management by BWGs.

Common material recovery facility for non-biodegradable waste

As per ANN's records, the MRF's capacity is 210 TPD. However, only 1–1.5 TPD of non-biodegradable waste is reaching the plant. Collected non-biodegradable waste is being segregated into 24 categories and these segregated materials are

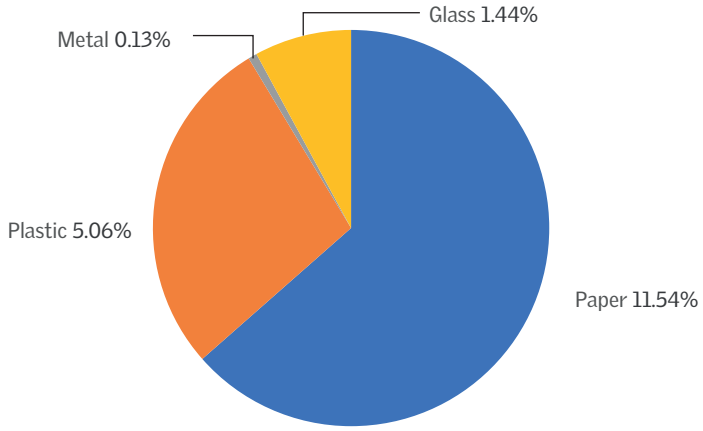
baled with the help of three baling machines. The baled non-biodegradable waste is stored until an optimum quantity is obtained. The optimum quantity of non-biodegradable waste is decided based on storage capacity of the plant, which is 16,620 sqft. It is then sent to various recyclers.

Table 2: Data received from the concessionaire for a week

Date	Weight of dry waste (Kg)	Recovered recyclable waste (Kg)	Non-recyclable waste (Kg)	Percentage of recyclable waste recovered from overall dry waste	Percentage of non-recyclable waste recovered from overall dry waste
1 July 2023	1232.7	135.1	1097.6	10.96%	89.04%
2 July 2023	1006.3	193	813.3	19.18%	80.82%
3 July 2023	721.5	256.2	465.3	35.51%	64.49%
4 July 2023	1337.5	120.5	1217	9.01%	90.99%
5 July 2023	713.5	200.5	513	28.10%	71.90%
6 July 2023	916.6	162.4	754.2	17.72%	82.28%
7 July 2023	974.6	186.8	787.8	19.17%	80.83%
Average	986.10	179.21	806.89	18.17%	81.83%

Source: CSE, 2022

Graph 3: Recyclable waste recovered from dry waste in broad categories



Percentage of recyclables recovered from dry waste is only 18.17 per cent. Out of that, 11.54 per cent is paper (mostly cardboard), 5.06 per cent is plastic, 1.44 per cent is glass and only 0.13 per cent are metals.

Photographs 3 and 4: Material recovery facility of the concessionaire at Tedi Baghiya

The quantity of dry waste collected by the concessionaire from its authorized partners appeared to be inadequate. During the field survey, CSE's researchers found that the valuable categories of waste from the sources listed in table 2 are taken away by the aggregators through informal waste pickers. This is a practice followed by the BWGs to get away from paying the concessionaire charges as per the contract.

Common compost processing facility for biodegradable waste

The agency has installed an anaerobic composting plant of 4 TPD capacity to treat biodegradable waste collected from BWGs. As per data shared by the concessionaire, only 70–80 kg of biodegradable waste is collected every day from BWGs.

The concessionaire has shared that BWGs are not interested in handing over their wet waste to them. However, on interacting with BWGs, CSE found that charges fixed by ANN for collection and processing of wet waste are very high (Rs 12.5/kg for processing and Rs 1/kg for collection) and the collection mechanism set up by the concessionaire is not able to meet the requirements of BWGs. Especially problematic is the timing of collection. While the BWGs expects their waste to be collected either early in the morning or in the evening, the concessionaire is mobilizing its vehicles between 8 AM and 2 PM.

The concessionaire has created a makeshift arrangement to process the collected biodegradable waste in the premises of the plants using the aerobic (pit composting) method.

Collection of user charges from BWGs

The operator is authorized by ANN to issue an invoice on a monthly basis depending on the amounts of biodegradable and non-biodegradable waste collected and processed from the BWGs.

Photographs 5 and 6: Wet waste to compost plant facility of the concessionaire at Dhandhupura, Agra

Photograph 7: Temporary wet waste treatment facility in Dhandhupura

Problems associated with waste management systems for BWGs in Agra

i. Processing and collection charges

Non-biodegradable waste

Processing and collection charges levied on BWGs by the concessionaire for management of non-biodegradable waste are as follows:

1. Processing fees: Rs 6 per kg of waste
2. Collection fees*: Rs 1 per kg per km

* It is the responsibility of BWGs to transport their waste to the nearest processing unit, if they seek assistance from the concessionaire, they are required to pay collection charges as specified in the Letter of Award (LoA).

Biodegradable waste

Processing and collection charges levied by the concessionaire on BWGs for management of biodegradable waste are as follows:

1. Processing fees: Rs 12.5 per kg of waste
2. Collection fees*: Rs 1 per kg per km

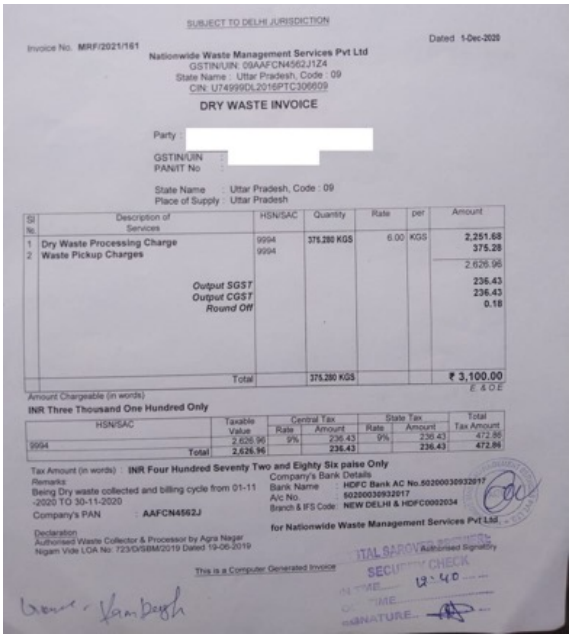
*It is the responsibility of BWGs to transport their waste to the nearest processing unit, if they seek assistance from the concessionaire, they are required to pay collection charges as specified in the Letter of Award (LoA).

The concessionaire revised their collection charges in 2020 from Rs 1 per kg per km to Rs 1 per kg (the distance factor was eliminated). However, BWGs still find the processing charges exorbitantly high.

ANN recently consented to the concessionaires's proposal to review and adjust collection and processing fees, intending to set them at a fixed rate per month. ANN has officially declared that it has no objections if the concessionaire establishes a rate of Rs 175 per room per month in consultation with BWGs.

During the field visit, the CSE team interacted with 10 BWGs and found that they are taking the service of the concessionaire to manage their waste, despite high charges of processing and collection, because they received directions from ANN

Figure 1: Sample invoice generated by the concessionaire



SUBJECT TO DELHI JURISDICTION

Invoice No. MRF/2021/161 Dated 1-Dec-2020

Nationwide Waste Management Services Pvt Ltd
GSTIN/UIN: 09AAFCN4562J1Z4
State Name : Uttar Pradesh, Code : 09
CIN: U74999DL2016PTC306609

DRY WASTE INVOICE

Party :

GSTIN/UIN :
PAN/IT No :

State Name : Uttar Pradesh, Code : 09
Place of Supply : Uttar Pradesh

Sl No.	Description of Services	HSN/SAC	Quantity	Rate	per	Amount
1	Dry Waste Processing Charge	9994	375.280 KGS	6.00	KGS	2,251.68
2	Waste Pickup Charges	9994				375.28
						2,626.96
	Output SGST					236.43
	Output CGST					236.43
	Round Off					0.18
	Total		375.280 KGS			₹ 3,100.00

E & O E

Amount Chargeable (in words)
INR Three Thousand One Hundred Only

HSN/SAC	Taxable Value	Central Tax Rate	Central Tax Amount	State Tax Rate	State Tax Amount	Total Tax Amount
9994	2,626.96	9%	236.43	9%	236.43	472.86
Total	2,626.96		236.43		236.43	472.86

Tax Amount (in words) : INR Four Hundred Seventy Two and Eighty Six paise Only
Remarks:
Being Dry waste collected and billing cycle from 01-11-2020 TO 30-11-2020
Company's PAN : AAFCN4562J

Company's Bank Details
Bank Name : HDFC Bank AC No.50200030932017
A/c No. : 50200030932017
Branch & IFS Code : NEW DELHI & HDFC0002034

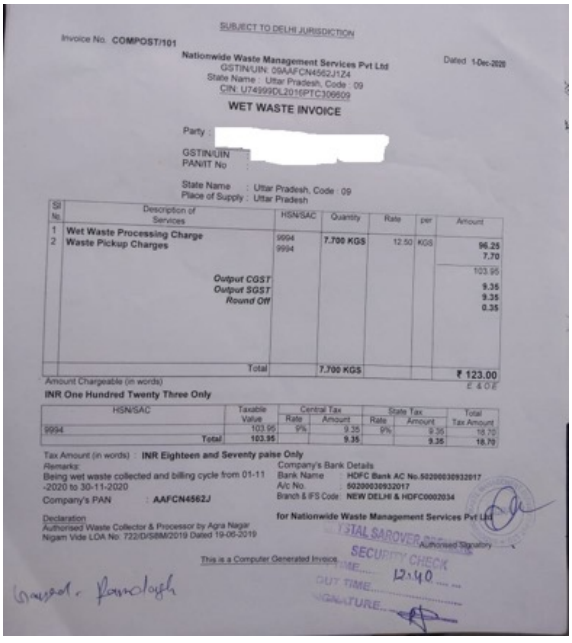
for Nationwide Waste Management Services Pvt Ltd

Declaration
Authorised Waste Collector & Processor by Agra Nagar Nigam Vide LOA No: 723/D/SBM/2019 Dated 19-06-2019

Authorised Signatory

This is a Computer Generated Invoice

SECURITY CHECK
IN TIME 12:40
OUT TIME
SIGNATURE



SUBJECT TO DELHI JURISDICTION

Invoice No. COMPOST/101 Dated 1-Dec-2020

Nationwide Waste Management Services Pvt Ltd
GSTIN/UIN: 09AAFCN4562J1Z4
State Name : Uttar Pradesh, Code : 09
CIN: U74999DL2016PTC306609

WET WASTE INVOICE

Party :

GSTIN/UIN :
PAN/IT No :

State Name : Uttar Pradesh, Code : 09
Place of Supply : Uttar Pradesh

Sl No.	Description of Services	HSN/SAC	Quantity	Rate	per	Amount
1	Wet Waste Processing Charge	9994	7.700 KGS	12.50	KGS	96.25
2	Waste Pickup Charges	9994				7.70
						103.95
	Output CGST					9.35
	Output SGST					9.35
	Round Off					0.35
	Total		7.700 KGS			₹ 123.00

E & O E

Amount Chargeable (in words)
INR One Hundred Twenty Three Only

HSN/SAC	Taxable Value	Central Tax Rate	Central Tax Amount	State Tax Rate	State Tax Amount	Total Tax Amount
9994	103.95	9%	9.35	9%	9.35	18.70
Total	103.95		9.35		9.35	18.70

Tax Amount (in words) : INR Eighteen and Seventy paise Only
Remarks:
Being wet waste collected and billing cycle from 01-11-2020 to 30-11-2020
Company's PAN : AAFCN4562J

Company's Bank Details
Bank Name : HDFC Bank AC No.50200030932017
A/c No. : 50200030932017
Branch & IFS Code : NEW DELHI & HDFC0002034

for Nationwide Waste Management Services Pvt Ltd

Declaration
Authorised Waste Collector & Processor by Agra Nagar Nigam Vide LOA No: 722/D/SBM/2019 Dated 19-06-2019

Authorised Signatory

This is a Computer Generated Invoice

SECURITY CHECK
IN TIME 12:40
OUT TIME
SIGNATURE

Source: ANN

to take service of the concessionaire. This is why only 3.3 per cent of total BWGs are unwillingly taking services from the concessionaire.

ii. **Vehicles deputed:** The concessionaire has engaged one auto tipper and one Matador (light medium vehicle) for collection of solid waste from identified BWGs. These vehicles can collect a maximum of 5–6 tonnes of solid waste per trip catering to around 65–70 BWGs.

iii. **210 TPD MRF, Tedi Baghiya**

a) **MRF Area:** The concessionaire has acquired 16,620 sqft of land with infrastructure on lease basis, near Tedi Baghiya. As per the CSE toolkit for preparing city solid waste action plans under SBM 2.0, an area of 10,000 sqft is required for a 5 TPD MRF.[4] This suggests that the current MRF in place may not align with best practices for managing the daily disposal of 210 tonnes of non-biodegradable waste.

b) **Baling machine capacity:** Baling machines installed at the MRF have a capacity of pre-processing close to 10 tonnes of non-biodegradable waste if run at full capacity. During CSE's visit to the plant, only one of the three baling machines was being operated by a single worker.

iv. **Common compost processing facility**

Upon visiting the processing facility based at Dhandhupura, the CSE team found that the plant has never been commissioned from the day of its installation.

- No waste seems to be coming to the plant and the machines are therefore lying idle.
- The land area of 3,432 sqm which was rented to the concessionaire by ANN is not being used for its assigned purpose but is instead being used as a parking space for the concessionaire's vehicles and to host a makeshift arrangement for managing biodegradable waste in pit-compost.

The aforementioned points suggest that the common compost processing facility has been largely unsuccessful for the concessionaire because it has not been able to encourage BWGs to provide them with biodegradable waste.

3.2 Informal sector and BWGs

It was found that BWGs, especially hotels, have engaged the informal sector to handle the solid waste they generate. Hotels get in touch with informal waste aggregators to manage their solid waste. Aggregators in return pay annual charges

to BWGs between Rs 5,000—3,00,000 to get access to waste. Aggregators may have contracts with several BWGs in their area.

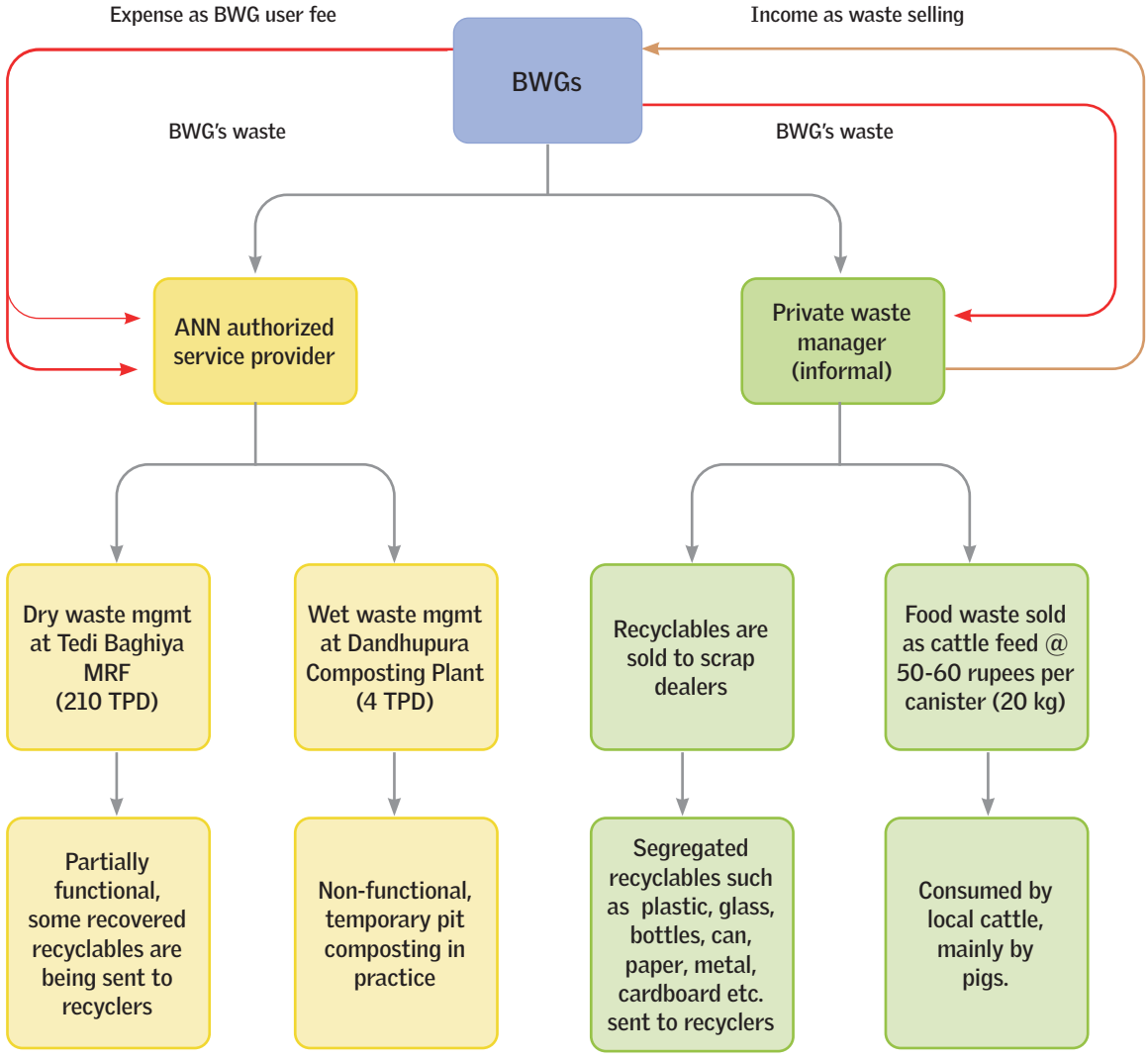
Informal waste aggregators also follow a different mode of engaging waste collectors who are in extreme need for livelihoods. These waste collectors are engaged on a monthly salary ranging from Rs 5,000–6,000 per month only for collection of waste from source and bringing the same to the aggregator.

In an interaction with six hotels, it was found that the informal workers are given dedicated spaces where they sort the waste into required categories such as food waste, recyclables and discarded materials. Recyclable materials are also being sorted by the hotel staff (for this the aggregator gives some incentives). Although, further secondary segregation is done by informal workers post collection.

Food waste and recyclables are collected and taken to different locations by informal collectors for further sorting and channelizing. One such location is Tin ka Nagla near Dhandoopura. Discarded materials are disposed of at a transfer station on their way. At the informal sorting facility, the waste is segregated into

Photograph 8: Informal worker disposing of discarded items at Tajganj MRF

Figure 2: Operational diagram of waste management by authorized service provider and informal waste aggregators.



many more categories of recyclables by the informal workers and stored, before selling it to formal and informal recycling facilities by the aggregators. The food waste is sold by the aggregators to informal workers who have cattle, especially pigs, at their homes. The informal workers buy the food waste from the aggregators at a rate of Rs 3–4 per kg to use as cattle feed.

Despite the informal sector playing a critical role in managing waste generated by BWGs in Agra city, ANN has to take responsibility for handling the waste

Informal waste aggregators are an agglomeration of informal waste pickers. They make informal agreements with BWGs for collecting their waste and in return they themselves pay the BWG. Every aggregator has their own catchment area where they mobilize their work force to buy waste from the generator. In most cases, they discard non-recyclables in the nearest bin or dhalao, sell wet waste to piggery owners and valuable dry waste to their own network of aggregators.

discarded by the network of informal aggregators, for which it gets no revenue. On the other hand, BWGs are violating the law by engaging with the informal sector. They are neither managing their own waste nor paying the municipal government or their authorized agency for the service.

WASTE MANAGEMENT THROUGH THE INFORMAL SECTOR: A CASE STUDY

The concessionaire is a private firm authorized by ANN to be a service provider to BWGs. Sunil is an informal aggregator who is not authorized by ANN but is able to get direct contracts with 5–6 BWGs to collect their solid waste

For example, let's say he has a contract with DoubleTree Hilton hotel for one year, for which Sunil has to pay the hotel Rs 1.5–2 lakh per annum. DoubleTree hotel generates 230 kg of waste per day.

Sunil appoints another informal worker named Vijay to collect waste from the hotel. Vijay comes to the hotel early in the morning around 6 am and collects all the waste in his tricycle. He collects waste in three categories: food waste (100 kg), recyclables (60 kg) and discarded materials (materials that do not have market value, which weigh around 70 kg). Food waste (leftovers, vegetables and fruit peels) is kept separate in a container. Recyclables are collected separately in several categories such as PET bottles, tetrapacks, milk pouches, etc. Discarded materials are placed in a separate bag.

After collection of segeregated waste from BWG, he returns to the informal facility run by Sunil. On the way to the informal facility, Vijay disposes of the discarded materials at ANN's transfer station, even though he does not have any authorization from ANN to dispose of this material at their transfer station. Sunil does not pay any amount to ANN for the disposal of discarded materials. Nevertheless, ANN further transports this discarded material to its Kuberpur dumpsite.

At the informal facility, Vijay segregates all collected recyclable items into more than 20 categories and sells these items to Sunil for roughly Rs 600. He takes away the collected food waste from Sunil without paying any charges to him and feeds this food waste to his pigs at home. Sunil sells these recyclables to recyclers (Ramesh) or large scrap dealers.

In this scenario, every stakeholder (hotel as BWG, Sunil as an aggregator, Vijay as an informal worker, and Ramesh as a recycler) is making a profit, except ANN which has to manage discarded materials and use its own resources to manage waste.

Photograph 9: Food and bio-degradable waste used as cattle feed in piggies

3.3 Managing waste with own resources

3.3.1. How some of BWGs are managing their own waste

During the field visits, CSE's research team made several noteworthy observations regarding the waste management practices in hotels and ANN's initiatives for managing organic waste from various sources.

One prevalent practice observed by CSE's research team was the tendency of hotels to drop their waste at the nearest bin or transfer station. This way they are paying neither the authorized service provider nor ANN for waste management. This may look like a better practice but in the whole process, even ANN is deprived of the revenue that they should have been paid for managing the waste of the BWGs.

Photograph 10: Hotel staff disposing of waste at Tajganj transfer station

3.3.2. Decentralised organic waste management initiative by ANN

CSE's team identified that ANN has taken proactive steps in managing organic waste generated from BWGs like vegetable markets and temples across Agra. In particular, ANN has established three decentralized waste management plants dedicated to organic waste treatment. These treatment plants are handling the waste generated by vegetable markets (sabzi mandis) located in Basai, Shikandra, and Barohi Ahir area of the city. Details of these processing plants are as follows:

- 1 TPD organic waste to compost plant in Transport Nagar.
- 2 TPD organic waste to compost plant in Raj Nagar.
- 2 TPD flower waste to compost plant in Raj Nagar.

The organic waste to compost plants (having 1 and 2 TPD capacity in Transport Nagar and Raj Nagar, respectively) are operated by Purna Pro Enviro Engineers Private Limited, while the 2 TPD flower waste to compost plant is operated by Indian Agro Organics.

Photograph 11: Shikandra Sabji Mandi

Photograph 12: ISBT organic waste to compost plant

Photograph 13: Raj Nagar organic waste to compost plant

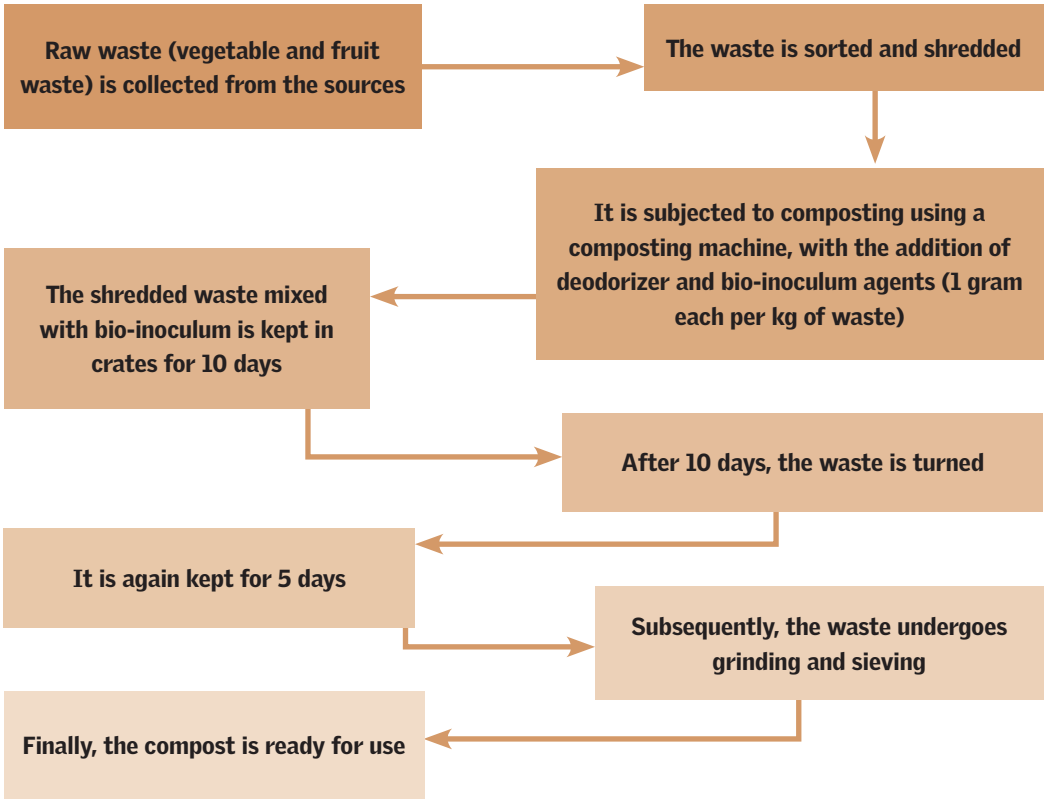
Photograph 14: Flower waste to compost plant located in Raj Nagar

Photograph 15: Final compost produced in ISBT plant

This entire process is completed within 15 days and yields a compost product constituting 12–15 per cent of the original organic waste.

In the case of the 2 TPD flower waste to compost plant, the process involves pit-composting, wherein flower waste is converted into compost. Cow-dung is used as a covering material for leaf and flower waste. Bio-inoculum is added during the composting process, and regular turning of the waste takes place. This entire process takes around 21 days.

The process employed by Purna Pro Enviro Engineers Private Limited for the 1 and 2 TPD organic waste to compost plants follows these steps:



It's worth noting that the compost produced by Purno Pro Enviro is used in the parks of ANN, contributing to sustainable landscaping practices. Additionally, Indian Agro Organics sells the produced compost through e-commerce sites Jio-mart and Amazon at the rate of Rs 15 per kg.

Furthermore, the plant operated by Indian Agro Organics was established (mainly the shed and machineries) through the CSR fund of GAIL, and the land is provided by ANN. According to the agreement between ANN and Indian Agro Organics, 50 per cent of the net profit is to be shared with ANN.

Indian Agro Organics has also established partnerships with 74 temples across Agra. They claim to collect an average of 250 kgs of waste from these temples every day and add an additional 500 kgs of cow dung for processing. The process yields approximately 10 per cent, resulting in the production of around 1–1.5 TPD of compost per month. However, Indian Agro Organics has mentioned that they have not generated a net profit yet, as the flower waste collection is highly uncertain and depends on festivals and seasons.

For Purno Enviro, these plants were also established under the GAIL CSR fund. The combined daily waste coming to both plants operated by Purno Enviro is 1.5 TPD, resulting in approximately 12 per cent yield. This means that approximately 5 TPD of compost is being produced from both plants.

These three waste management plants exemplify the best practices implemented by Agra Nagar Nigam in efficiently managing organic waste generated from fruit and vegetable markets in Agra. ANN's dedication to sustainable waste management is evident through these initiatives.

3.4 In-situ treatment of organic waste

A few BWGs have installed an organic waste convertor (OWC) machine to treat their biodegradable waste on their own premises. However, the hotel staff was not using the OWC machines to process biodegradable waste due to the following reasons:

i. Cost of machine
ii. Electricity cost
iii. Lack of will to deploy dedicated man-power
iv. Maintenance cost

Photograph 16: Non-functional OWC at Holiday Inn

4. Key findings and way forward

Highlights

- There needs to be better research on BWGs, backed by better institutions to manage the waste,
- Some of the things which need to be done are increase in outreach activities, revision of existing bye-laws and integration of the informal sector

Key findings

1. Existing list of BWGs is not very reliable

Many BWGs in Agra city are yet to be identified and included in the official list of BWGs. While some others who are not BWGs have been included in the list. Therefore, the previous list of 2,136 BWGs needs complete re-validation following the provisions of SWM Rules, 2016. With growing population and human settlements in Agra city, the total number of BWGs is expected to be much higher than indictaed by the findings of the 2019 survey. Resurveying of BWGs would be the first critical step to revamp the management protocol on the part of Agra Nagar Nigam.

2. Quantification of waste generation by BWGs

A common assumption made in the survey was that every source generates 100 kg of waste and the estimation was done accordingly. During the study, CSE researchers found out that there are BWGs in Agra city that generate way more than 100 kg of waste. In some cases, waste generated could be more than 200–300 kg per day. Unless the actual generation of waste is captured, the total contribution of waste by BWGs will never be estimated correctly. This will lead to incorrect planning in relation to BWGs and even the user charges levied on the basis of quantity of waste would be wrong. A correct estimation of the quantity of waste generated by BWGs would have further given ANN the opportunity to determine the design capacity of waste processing plants.

3. Engagement with BWGs

In Agra, very little evidence has been found on the ground to understand the level of engagement of the municipal corporation with the BWGs. Though the survey was conducted by city officials in 2019, most BWGs have not been approached for any engagement related to behaviour change or IEC and there is no specific

communication from the city corporation to gather information on the quantity of waste generation and other parameters. Under provisions of the SWM Rules, 2016 and the Agra Municipal Bye-Laws, 2016, the city corporation is supposed to engage with the BWGs for monitoring and understanding their challenges and to address them appropriately.

4. Institutional arrangement for management of BWGs in Agra

The on-ground situation of the BWGs and their existing systems for management indicated that the institutional arrangement for management of BWGs in Agra city require to be strengthened. The solid waste management department in Agra city needs to create institutional mechanisms to supervise, monitor, review, report and inspect the management of BWGs more efficiently.

5. Management of waste from BWGs by a single concessionaire

It was very strongly evident from the study that the existing concessionaire has been able to reach very few BWGs to collect and manage their waste despite having the Letter of Acceptance (LoA) for the entire Agra city. Since the time the concessionaire was brought on board, two facilities were created for management of wet waste and dry waste respectively. Both the plants have been grossly underutilized primary because of two reasons: (1) very few BWGs (about 72) have agreed to sign an agreement with the concessionaire to give their waste, and (2) the cost of waste collection and processing is abnormally high, which has been the primary factor due to which a majority of the BWGs refused to engage with the authorized concessionaire for management of their waste. It was further discovered during the course of the study that the infrastructure and capability of the existing concessionaire is nowhere near what is required to manage more than 2,000 BWGs of Agra city.

6. Commissioning of Dhandhupura wet waste processing plant

The Dhandhupura waste to compost plant with a design capacity of 4 TPD was installed in 2019 but was never commissioned thereafter. The land for this plant was given by ANN and it has just been wasted for all these years. There has been very little monitoring on the part of the ANN to ascertain the fuctionality of the plant since installation. The reason why the plant has not been commissioned is that the concessionaire never managed to secure a mandate from the BWGs to collect their wet waste in the quantity required to make the plant economically feasible.

7. Management of waste generated by BWGs by the informal sector

The team of CSE researchers found during the study that a substantial percentage of BWGs have engaged informal waste pickers for collection and transportation of their waste at a very nominal cost, which has resulted in massive loss of revenue for ANN. The option to engage with informal waste collectors has been a very easy one as the cost of management has been substantially lesser than what it would have been otherwise. Eventually, the waste picked up by the network of informal waste pickers has ended at the nearest dhalao or community bin and had to be managed by the resources of the city government. As a result, the burden of waste management, which ideally should have been borne by the BWGs themselves, is falling on ANN causing loss of revenue to the city government.

8. Weak bye-laws and their enforcement

The municipal bye-laws adoped by ANN have very little to say about identification, notification and enforcement of the provisions of Solid Waste Management Rules, 2016 with regard to managing the BWGs. As a result, the provisions have never been notified to the existing list of BWGs in Agra and the enforcement has been very limited.

9. Absence of support system to partner with the BWGs in Agra

It was apprarent that hiring one concessionaire for the entire city of Agra with more than 2 million population is a problem. The support system to engage with such a large number of BWGs for managing the wet waste in-situ, is missing. Despite having a strong and emerging network of competent organizations to engage with the BWGs and for providing them with technical, managerial and operational support to fulfill their legal mandate, ANN made no real effort towards creating an enabling environment for the BWGs.

Way forward

Inventorizing BWG's

ANN needs to inventorize the total number of BWG's in its jurisdiction. The inventorization should be based on the guidelines provided by MoHUA. In addition to using an appropriate format for a city-wide survey, GIS-based mapping of all the BWGs should also be considered. It should also categorize the BWGs on the basis of their activities, footfall received, number of beds, number of students, number of rooms, area, etc. A few types of BWGs are mentioned below:

- Residential welfare associations (RWAs)
- Malls

- Shopping complexes
- Government offices
- Hotels
- Restaurants
- Banquet halls
- Hospitals
- Educational institutes

Quantification and charaterization studies

ANN should carry out quantification and characterization studies at BWGs to understand the trends of waste generation in every type of BWG. This will help ANN to plan for better solid waste management servies for BWGs and also help them to enforce compliance of BWGs to the existing legislation. This might also help ANN officials to settle any claims made by establishments of not being BWGs.

Establish dedicated monitoring mechanisms for management of BWGs

ANN should consider creating an institutional mechanism for BWGs to monitor waste generation, compliance, waste management practices and grievance redressal. In addition, ANN should also review the current state of management and the agreement signed with the existing concessionaire, including the amount of BWGs served and quantity of waste collected, processed and disposed. A reporting mechanism should be developed so that a monthly report is submitted to the commissioner of ANN. The committee may be formed zone-wise comprised of the ZSO, CSI, SI, etc. The whole initiatve can be headed by an environment engineer, city health officer or additional municipal commisioner.

Strengthen enforcement of solid waste management rules

ANN should set up a system for issuing challans to those BWGs which are not complying with SWM Rules, 2016. This should be done in a phased manner. An effective communication campaign should be run to help BWGs understand their responsibilities. ANN should monitor concessionaires who are collecting waste from BWGs and penalize them in the event of non-compliance.

For rejuvenation of existing plants at *Tedi baghiya* and *Dhandhupura*, ANN may direct the concessionaire to take the necessary steps:

- Revision of collection and processing charges.
- Creation of route plan for collection of waste.
- Enabling GPS system in all deployed vehicles for real-time monitoring.
- Maintain records of collected, processed and treated waste.

- Maintain record register and evidence of scientific disposal of rejected waste from both plants.
- Daily record of revenue generation from the selling of compost and recyclables along with list of vendors where the recovered waste is channelized.
- Ensure quality of compost through NABL accredited lab tests (regular batch-wise testing).
- Ensure suffient number of manpower at both the plants.
- Incorporation of informal workers through employment opportunities in both plants.
- Ensure PPE kits are provided to workers deployed for collection, transportation and processing of waste.
- Provide dress and ID cards to all workers.
- Ensure regular medical checkups and health insurance are made available to workers and PF deductions are made regularly.
- Ensure timely waste collection from all identified BWGs.
- Ensure fire safety measures at both plants.
- First Aid kits should be placed in both facilities.
- Regular training of workers and staff in facility area.
- Maintaining clean toilets at both plants.
- Timely payment of water and electricity bills of both plants.
- IEC and capacity building of all identified BWGs.
- Ensure regular inspection of both plants through Zonal Officer, Chief Sanitary Inspector, Sanitary Inspector and Safayi Nayak.
- In case of failure in compliance, serve notice to plant operator.
- Impose penality calculated at Rs 2000 x total no. of BWGs per day the plant is shut down or not functioning.

Integration of informal sector

A large number of BWGs are getting their waste collected and disposed of by the informal sector. The municipal authorities therefore should explore how the informal sector can be provided the means to come on board formally as service providers to the BWGs through mapping, awareness, capacity building and recognition in the formal waste management value chain. The process must begin with a planned drive for mapping of the informal waste pickers in Agra to ascertain the number and then explore the best possible model for integration. There are many best practices in terms of integration of informal sector in India, like in Pune, Mumbai, Bengaluru, etc., which can be studied and adopted. Integration of informal sector in management of BWGs may therefore be seen as an opportunity.

Revision of the existing bye-laws

The existing municipal bye-laws in Agra have very little to say about BWGs and their management. Therefore, as a legal instrument for enforcement, the municipal corporation must consider revision of the municipal bye-laws for solid waste management as one of the first steps. The process of revising bye-laws must also explore whether the existing ceiling of waste generation, which currently stands at more than 100 kg per day, should be brought down to a practicable limit (for example 50 kg per day or more) like many cities have done. Such a strategy always helps the municipal government to reduce their burden of waste management and the relatively smaller sources are captured in the process of survey with waste quantification for each source. The bye-laws may also explore how to incentivize in-situ management of wet waste through property tax relief for compliance and heavy penalties otherwise. Upon revision of the bye-laws, the city government must also ensure their notification to all identified sources. There should be provisions for hearing in the event of wrongly identified source for de-listing.

Fresh empanelment of authorized agencies to partner with BWGs

Considering the existing support system for engaging with BWGs, municipal authorities must explore empanelment of competent private operators to partner with BWGs as service providers for management of wet waste in-situ if sufficient space is available within the premises of the BWGs. Otherwise, the wet waste may be collected by the private operator for treatment in their captive facility. Empanelment of agencies must leave room to the BWGs to choose their private partner following a process of negotiation. The empanelled agencies may also collect and process the dry waste using their own resources to channelize them to authorized recycling partners. The existing endeavour of setting up one MRF which has been given to only one concessionaire has had very limited success simply because very few BWGs have agreed to partner with the sole concessionaire. The process of empanelment must have the flexibility to create space for capable NGOs, cooperatives and member-based organizations of informal waste-pickers, provided they are organized and capacitated appropriately.

Rejuvenation of Dhandhupura waste to compost plant

The municipal authority in Agra must visit the Dhandhupura waste to compost plant, which has never been commissioned, to take a call on whether the plant can be handed over to some other private agency for operation and maintenance. If the plant has technological issues and cannot be made operational, then the municipal corporation may consider re-allocation of the land or using the same for gainful application after the plant is completely dismantled. The plant is

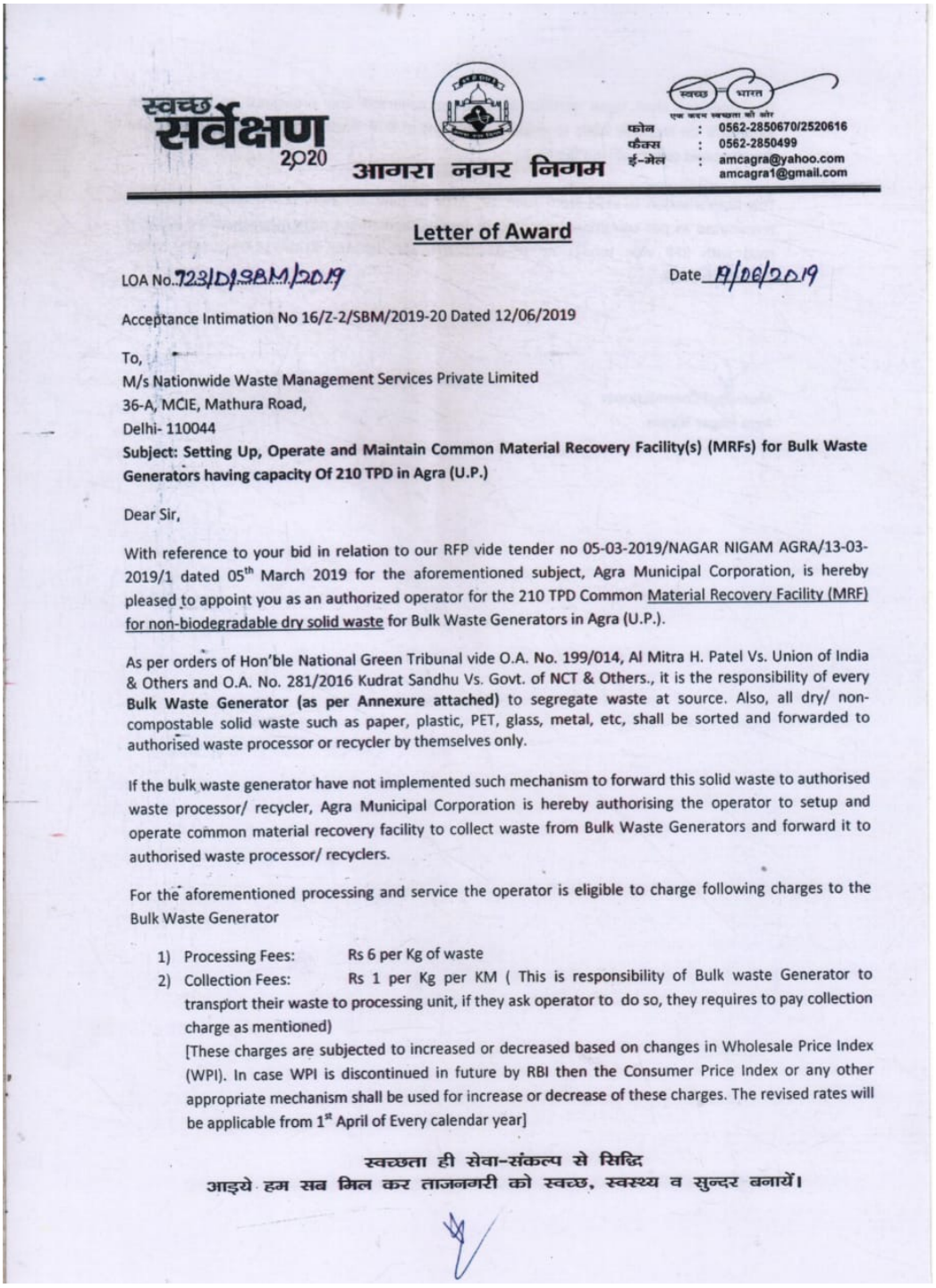
occupying about 30 per cent of the total available land (3,432 sqm or 0.84 acres). Therefore, optimum utilization of the plant has remained a question ever since its installation, which has led to total wastage of the land that could have been used for setting up a functional plant for waste management.

Outreach activities

The city government has initiated a negligible number of outreach activities to engage with BWGs regarding legal mandates, incentives, penal provisions, etc. Considering the globally established fact that waste management is a behavioural problem, the role of outreach activities is of paramount importance.

Annexures

Annexure 1



स्वच्छ सर्वेक्षण 2020

आगरा नगर निगम

स्वच्छ भारत

एक कदम स्वच्छता की ओर

फोन : 0562-2850670/2520616
फैक्स : 0562-2850499
ई-मेल : amcagra@yahoo.com
amcagra1@gmail.com

Letter of Award

LOA No. 723/DI/SBM/2019 Date 19/06/2019

Acceptance Intimation No 16/Z-2/SBM/2019-20 Dated 12/06/2019

To,
M/s Nationwide Waste Management Services Private Limited
36-A, MCIE, Mathura Road,
Delhi- 110044

Subject: Setting Up, Operate and Maintain Common Material Recovery Facility(s) (MRFs) for Bulk Waste Generators having capacity Of 210 TPD in Agra (U.P.)

Dear Sir,

With reference to your bid in relation to our RFP vide tender no 05-03-2019/NAGAR NIGAM AGRA/13-03-2019/1 dated 05th March 2019 for the aforementioned subject, Agra Municipal Corporation, is hereby pleased to appoint you as an authorized operator for the 210 TPD Common Material Recovery Facility (MRF) for non-biodegradable dry solid waste for Bulk Waste Generators in Agra (U.P.).

As per orders of Hon'ble National Green Tribunal vide O.A. No. 199/014, Al Mitra H. Patel Vs. Union of India & Others and O.A. No. 281/2016 Kudrat Sandhu Vs. Govt. of NCT & Others., it is the responsibility of every **Bulk Waste Generator (as per Annexure attached)** to segregate waste at source. Also, all dry/ non-compostable solid waste such as paper, plastic, PET, glass, metal, etc, shall be sorted and forwarded to authorised waste processor or recycler by themselves only.

If the bulk waste generator have not implemented such mechanism to forward this solid waste to authorised waste processor/ recycler, Agra Municipal Corporation is hereby authorising the operator to setup and operate common material recovery facility to collect waste from Bulk Waste Generators and forward it to authorised waste processor/ recyclers.

For the aforementioned processing and service the operator is eligible to charge following charges to the Bulk Waste Generator

1) Processing Fees: Rs 6 per Kg of waste
2) Collection Fees: Rs 1 per Kg per KM (This is responsibility of Bulk waste Generator to transport their waste to processing unit, if they ask operator to do so, they requires to pay collection charge as mentioned)

[These charges are subjected to increased or decreased based on changes in Wholesale Price Index (WPI). In case WPI is discontinued in future by RBI then the Consumer Price Index or any other appropriate mechanism shall be used for increase or decrease of these charges. The revised rates will be applicable from 1st April of Every calendar year]

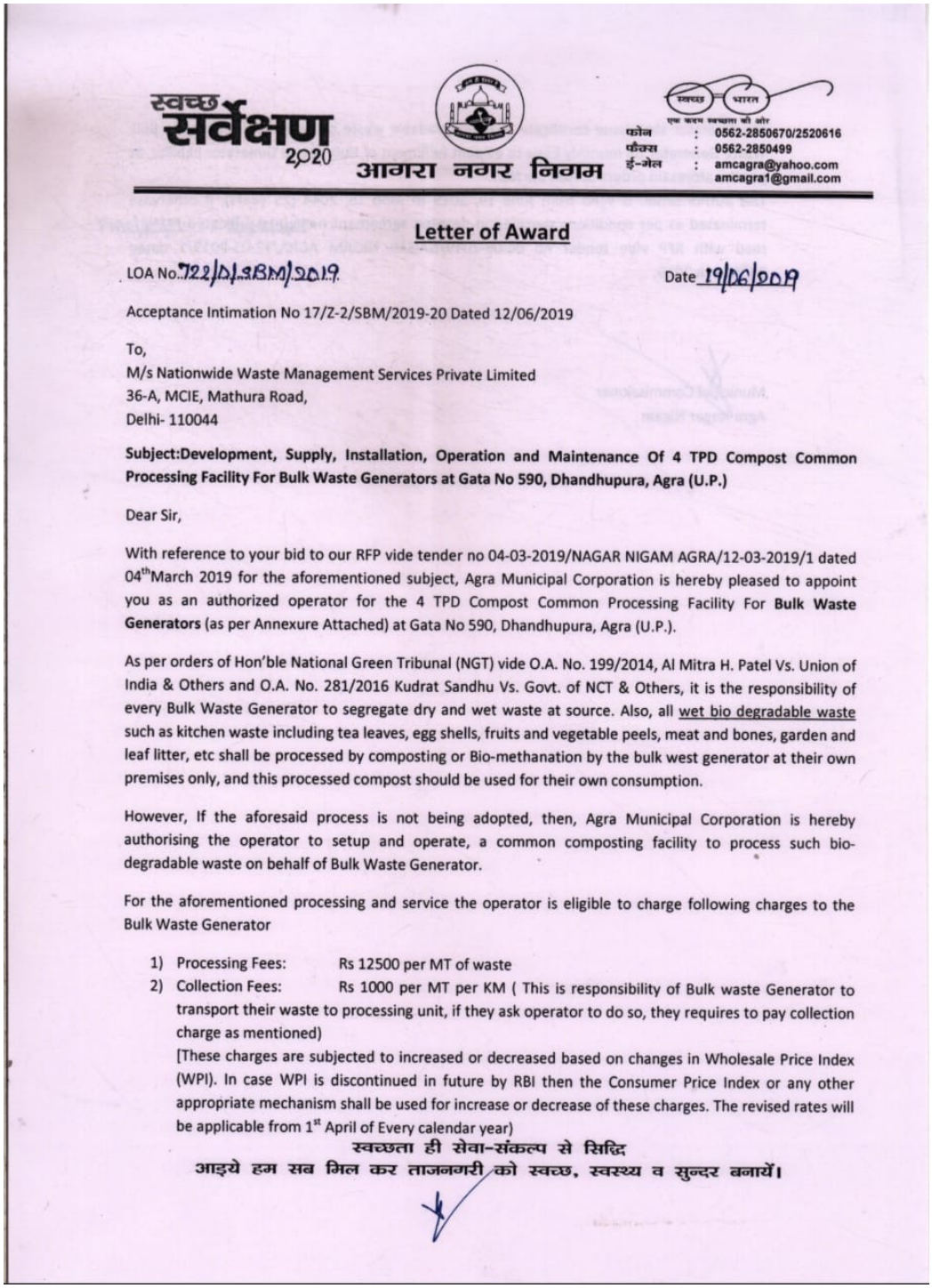
स्वच्छता ही सेवा-संकल्प से सिद्धि
आइये हम सब मिल कर ताजनगरी को स्वच्छ, स्वस्थ्य व सुन्दर बनायें।

The Operator shall issue certificate of waste collected and processed to Bulk Waste Generator on monthly basis to evident fulfilment of Bulk Waste Generator liability, as per the aforesaid orders of Hon'ble NGT.

This authorisation is valid from June 19, 2019 to June 18, 2044 (25 years), if otherwise terminated as per conditions specified in detailed agreement no. 72/D/SPM/19 dated 19/06/19 read with RFP vide tender no 05-03-2019/NAGAR NIGAM AGRA/13-03-2019/1 dated 05th March 2019.

Municipal Commissioner
Agra Nagar Nigam

Annexure 2



स्वच्छ सर्वेक्षण 2020

आगरा नगर निगम

स्वच्छ भारत
एक कदम स्वच्छता की ओर

फोन : 0562-2850670/2520616
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ई-मेल : amcagra@yahoo.com
amcagra1@gmail.com

Letter of Award

LOA No. 722/DJ.SBM/2019 Date 19/06/2019

Acceptance Intimation No 17/Z-2/SBM/2019-20 Dated 12/06/2019

To,
M/s Nationwide Waste Management Services Private Limited
36-A, MCIE, Mathura Road,
Delhi- 110044

Subject:Development, Supply, Installation, Operation and Maintenance Of 4 TPD Compost Common Processing Facility For Bulk Waste Generators at Gata No 590, Dhandhupura, Agra (U.P.)

Dear Sir,

With reference to your bid to our RFP vide tender no 04-03-2019/NAGAR NIGAM AGRA/12-03-2019/1 dated 04th March 2019 for the aforementioned subject, Agra Municipal Corporation is hereby pleased to appoint you as an authorized operator for the 4 TPD Compost Common Processing Facility For **Bulk Waste Generators** (as per Annexure Attached) at Gata No 590, Dhandhupura, Agra (U.P.).

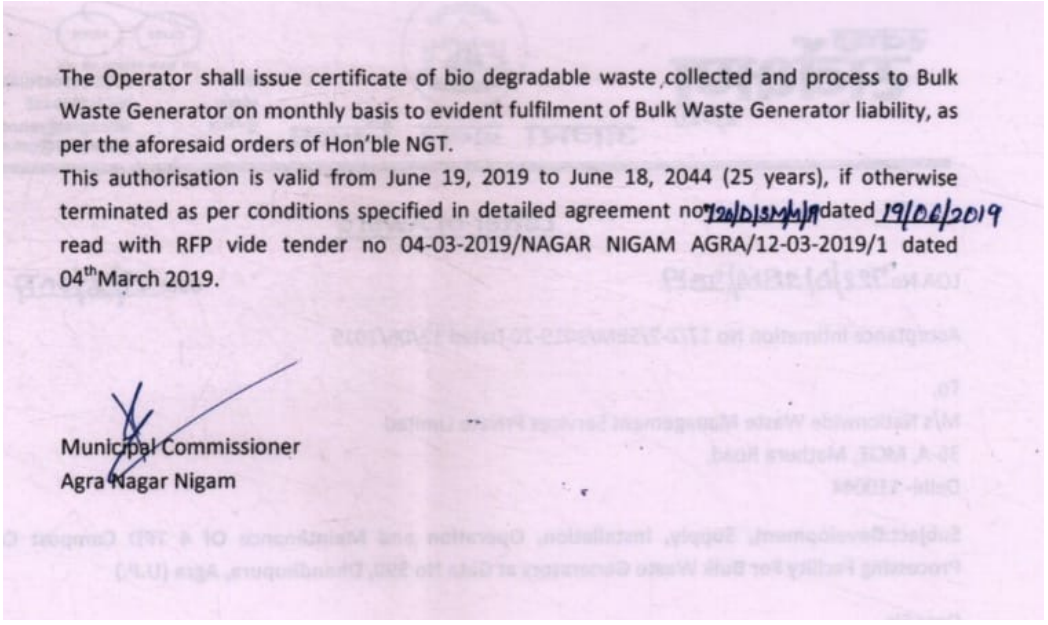
As per orders of Hon'ble National Green Tribunal (NGT) vide O.A. No. 199/2014, Al Mitra H. Patel Vs. Union of India & Others and O.A. No. 281/2016 Kudrat Sandhu Vs. Govt. of NCT & Others, it is the responsibility of every Bulk Waste Generator to segregate dry and wet waste at source. Also, all wet bio degradable waste such as kitchen waste including tea leaves, egg shells, fruits and vegetable peels, meat and bones, garden and leaf litter, etc shall be processed by composting or Bio-methanation by the bulk west generator at their own premises only, and this processed compost should be used for their own consumption.

However, If the aforesaid process is not being adopted, then, Agra Municipal Corporation is hereby authorising the operator to setup and operate, a common composting facility to process such bio-degradable waste on behalf of Bulk Waste Generator.

For the aforementioned processing and service the operator is eligible to charge following charges to the Bulk Waste Generator

1) Processing Fees: Rs 12500 per MT of waste
2) Collection Fees: Rs 1000 per MT per KM (This is responsibility of Bulk waste Generator to transport their waste to processing unit, if they ask operator to do so, they requires to pay collection charge as mentioned)
[These charges are subjected to increased or decreased based on changes in Wholesale Price Index (WPI). In case WPI is discontinued in future by RBI then the Consumer Price Index or any other appropriate mechanism shall be used for increase or decrease of these charges. The revised rates will be applicable from 1st April of Every calendar year)

स्वच्छता ही सेवा-संकल्प से सिद्धि
आइये हम सब मिल कर ताजनगरी को स्वच्छ, स्वस्थ्य व सुन्दर बनायें।



The Operator shall issue certificate of bio degradable waste collected and process to Bulk Waste Generator on monthly basis to evident fulfilment of Bulk Waste Generator liability, as per the aforesaid orders of Hon'ble NGT.

This authorisation is valid from June 19, 2019 to June 18, 2044 (25 years), if otherwise terminated as per conditions specified in detailed agreement no. [illegible] dated 19/06/2019 read with RFP vide tender no 04-03-2019/NAGAR NIGAM AGRA/12-03-2019/1 dated 04th March 2019.

Municipal Commissioner
Agra Nagar Nigam

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