

COMMISSION, NEW DELHI

Filing No.....

Case No.....

IN THE MATTER OF:

M/s. Delhi MSW Solutions Limited (DMSL)

..PETITIONER

Versus

M/s. Tata Power Delhi Distribution Limited (TPDDL) & Ors.

...RESPONDENTS

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Place:

Date:

**BEFORE THE HON'BLE DELHI ELECTRICITY REGULATORY
COMMISSION, NEW DELHI**

Filing No.....

Case No.....

IN THE MATTER OF:

Petition in terms of the amended National Tariff Policy dated 28.01.2016 read with the letters dated 23.02.2016 issued by this Hon'ble Commission for execution of Power Purchase Agreement by the Distribution Licensees of Delhi with the Petitioner.

AND IN THE MATTER OF:

Petition in terms of the directions issued by the Hon'ble National Green Tribunal vide Order dated 04.04.2016 for determination of tariff of the power plant of the Petitioner.

AND IN THE MATTER OF:

Petition under Sections 61, 62, 64, 86(1)(a), 86(1)(b), 86(1)(e) and 86(1)(k) of the Electricity Act, 2003 for determination of Tariff for sale of power to Distribution Licensees in the State of Delhi in respect of the Municipal Solid Waste to Energy (MSWTE) Project at Village Narela near Narela - Bawana Road at Delhi.

AND IN THE MATTER OF:

Petition seeking directions for synchronisation of the power plant of the
Petitioner

AND IN THE MATTER OF:

M/s. Delhi MSW Solutions Limited (DMSL)
6-3-1089/G/10&11, Gulmohar Avenue,
Raj Bhavan road, Somajiguda
Hyderabad-500082,
Andhra Pradesh

.....PETITIONER

Versus

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1. M/s. Tata Power Delhi Distribution Limited (TPDDL)
NDPL House, Hudson Lines
Kingsway Camp
Delhi -110 009
2. M/s. BSES Rajdhani Power Limited (BRPL)
BSES Bhawan, Nehru Place,
New Delhi – 110019
3. M/s. BSES Yamuna Power Limited (BYPL)
Shakti Kiran Building,
Karkardooma,
Delhi-110092
4. New Delhi Municipal Council
Palika Kendra
Parliament Street,
New Delhi – 110001
5. Delhi Transco Limited
Shakti Sadan,
Kota Marg,
New Delhi-110002
6. State Load Despatch Centre, Delhi
Shakti Sadan, Kota Road,
New Delhi-110 002

.....RESPONDENTS

**PETITION ON BEHALF OF THE PETITIONER UNDER SECTIONS 32,
39, 61, 62, 64 READ WITH SECTIONS 86(1)(a), 86(1)(b), 86(1)
(e) AND 86(1)(k) OF THE ELECTRICITY ACT, 2003**

MOST RESPECTFULLY SHOWETH:

1. The Petitioner is registered under the Companies Act, 2013 having its registered office at 6-3-1089/G/10-11, Ramky House, Gulmohar Avenue, Rajbhavan Road, Somajiguda, and Hyderabad-500082.

2. The Petitioner is a generating company under sub section 28 of section 2 of the Electricity Act, 2003 (the "Act"), which is in the

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process of commissioning a Waste to Energy Project at Bawana Industrial area, New Delhi. The project comprises of two units of 600 tons per day of boilers with a single stream turbine generator having a capacity of 24 MW.

3. The project employs an air cooled condenser to conserve precious resources like water and has sanction to utilize 1.0 MLD of treated sewage from Delhi Jal Board (DJB).

A copy of the approval from DJB is enclosed as **ANNEXURE P –**

1.

4. The Petitioner, namely, Delhi MSW Solutions Ltd, which is a subsidiary of Ramky Enviro Engineers Ltd (REEL), based at Hyderabad. REEL is a part of Ramky group, India's foremost environmental company.

5. The Respondent Nos. 1 to 4 are the distribution licensees in the State of Delhi. The Respondent No. 5 is the State Transmission Utility of Delhi. The Respondent No. 6 is the nodal agency which is responsible for scheduling, monitor grid operations, for carrying out real time operations for grid control and despatch of electricity within the State and smooth functioning of the grid in Delhi.

6. It is stated that with increase in standard of living in urban areas in view of economic growth, the problem of waste disposal by the Urban Local Bodies (ULBs) is becoming severe day by day in India. Delhi alone is generating more than 8,000 TPD of MSW currently.

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7. The Municipal Solid Waste (Management & Handling) Rules 2016 stipulate that every Urban Local Body (ULB) is responsible for the management of solid waste under its jurisdiction encompassing primary collection, transportation, treatment and disposal. It is mandatory under the rules to segregate the waste and adopt technical processes in tandem for processing of municipal waste. After such processing, which includes composting and generation of power, etc., the remaining residues are to be disposed of into the sanitary landfill. The objective is to reduce the burden on landfill and thereby precious urban resource like land can be conserved and used for other societal needs. The sanitary landfill is a secured construction with an impervious liner into which the rejects are disposed and thereby soil and water contamination/pollution is prevented.

A copy of the MSW (Management & Handling) Rules, 2016 is annexed herewith and marked as **ANNEXURE P – 2**.

8. Under the above MSW rules, the ULBs either on their own or by engaging a private operator can take up the task of solid waste management.
9. It is stated that the Municipal Corporation of Delhi invited the competitive proposal for implementation of integrated Municipal Solid Waste Processing and Engineered Sanitary Landfill Facility at Delhi. The Petitioner had participated in the bidding process and has been selected as successful bidder.

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10. The Petitioner has signed concessional agreement with the erstwhile Municipal Corporation of Delhi (now North Delhi Municipal Corporation – one of the three successor entities) for Door to Door collection, Transfer, Transportation, developing an integrated Municipal Solid Waste Processing Facility, which includes generation of power, and Engineered Sanitary Landfill Facility as per MSW (Management & Handling) Rules 2000 on long term Build, Own and Transfer (BOT) basis on July 17, 2009.

A copy of concession agreement is annexed herewith and marked as **ANNEXURE P – 3.**

11. Salient Features of the Concession agreement are as follows:

- i. Phase-I of the project includes Collection and Transportation of waste to project site and Phase – II includes development of Integrated Municipal Solid Waste Management, Treatment and Disposal Facility.
- ii. The Land is provided to Concessionaire (the Petitioner) on lease basis.
- iii. The Concessionaire (the Petitioner) is responsible for carrying out Processing of Municipal Solid Waste, including generation of power, and landfill the Residual inert Matter in Compliance to MSW (Management & Handling) Rules 2000.
- iv. The Concessionaire (the Petitioner) would be expected to select a combination of technologies which would maximise waste recycling treatment and would ensure that minimum quantity of inert goes to landfill. The technology selected

has to be proven and capable of handling and treating the quality and quantity of waste generated in the designated area.

- v. The Concessionaire (the Petitioner) would be responsible to plan and execute all steps in Clean Development Mechanism (CDM) development process and the benefits from CDM, if any, would be shared in ratio of 60: 40 between the Concessionaire and MCD. However, no initiative is made in this regard because of the bleak CDM scenario.

- vi. As per the provisions of Concession Agreement clause 6.12 (b) the "Concessionaire (the Petitioner) shall be free to sell or otherwise dispose off the recyclables, compost or organic manure, energy (power), and / or other material recovered after processing the municipal waste at the project facilities at such price and to such persons and using such marketing and selling arrangements and strategies as it may deem appropriate subject to meeting the O&M requirements".

- vii. At the expiry of Concession Period, the Concessionaire will also be responsible for the 'Post Closure Maintenance of the Sanitary Landfill' into which process remnants/ residues are disposed to during the period of concession. This post closure obligation is for a further period of 15 years from the expiry date of concession period, during which Concessionaire (the Petitioner) is obligated to incur expenditure to meet the responsibilities of post closure obligation.

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12. It is submitted that post the execution of the Concession Agreement the Petitioner commenced the door to door collection and transportation of the municipal solid waste as per the terms of the said agreement.

13. Further, the Petitioner obtained Environmental Clearance from Ministry of Environment and Forest, Government of India for setting up of an Integrated Municipal Solid Waste Processing and Disposal facility in compliance of the Concession Agreement with MCD. The Environmental Clearance was accorded by MoEF, Government of India, and to establish such processing facility in two phases. A facility for processing the municipal waste by using compost and RDF processes and sanitary landfill in the I phase and Waste to Energy project in the II phase.

A copy of the said Environment Clearance accorded by MoEF, Government of India, is annexed herewith and marked as

ANNEXURE P – 4.

14. Further, the Petitioner obtained specific Environmental Clearance for setting up the Waste to Energy project using reciprocating grate technology under Phase – II.

A copy of the Environmental Clearance for setting up the Waste to Energy project using reciprocating grate technology is annexed herewith and marked as **ANNEXURE P – 5.**

The Petitioner also obtained consent/ permission to establish the Waste to Energy plant from Delhi Pollution Control Committee (DPCC).

A copy of the latest consent/ permission order renewed by DPCC is annexed herewith and marked as **ANNEXURE P – 6**.

15. It is stated that the thermal processing of municipal waste results into ash as the sole residue, apart from minor quantities of chemical residues emanating from flue gas treatment. The sole and biggest advantage of thermal processing of municipal waste, through generation of power, is its ability to reduce the waste to the extent of 90% by volume and 75% by weight.

16. Thus the project set up by the Petitioner deploys multiple processing technologies namely composting, RDF, thermal processing (Waste to Energy) in tandem which will result in maximising the recoverables from municipal waste such as compost and power, and to minimize the residues so as to reduce the burden on sanitary landfill.

17. It is submitted that the Petitioner is in the advanced stage of commissioning its 1200 tons per day Waste to Energy Power plant with a power generation capacity of 24 MW, the project is located in Northern part of Delhi along Haryana border on Narela Bawana road with an aerial distance of 14 km from Old Delhi Railway Station.

18. The land required for the project is provided on lease. The handing over letter for the land of 100 acres at Bawana is dated December

31, 2009, which is issued by the erstwhile Municipal Corporation of Delhi [(MCD) now North Delhi Municipal Corporation] for development of Integrated MSW Processing Plant.

A copy of the letter dated 31.12.2009 is annexed herewith and marked as **ANNEXURE P – 7.**

Thereafter, the certificate letter was issued by the executive engineer of MCD certifying the geographical co-ordinates for the purpose of establishing the Waste to Energy plant and its Chimney as well as the certified layout map by MCD.

A copy of the certificate letter issued by the executive engineer of MCD is annexed herewith and marked as **ANNEXURE P – 8.**

A copy of the certificate with respect to chimney and the layout map is annexed herewith and marked as **ANNEXURE P – 9.**

19. The Petitioner is all set to commission the proposed Waste to Energy plant in April 2016 and all efforts in this direction are in advanced stage. The Petitioner has undertaken several steps for the development of the project over the past few years.

20. The power generated from the project would be evacuated at 66 kV voltage level of Delhi TRANSCO Limited (DTL, the STU) Network at Bawana DSIDC area and the Petitioner has received permission for Grid Connectivity from Delhi STU. The evacuation line has been laid with approval from Delhi Development Authority (DDA) and termination/fixation of the line is completed. The DTL has installed metering system for measurement of

imported/exported electricity from the plant. The plant is located in the licenced area of TPDDL and has started availing start-up/ commissioning power from TPDDL for commissioning the power project on 11.03.2016 for the purpose of testing and commissioning of the project.

A copy of the bay allotment by Delhi STU is annexed herewith and marked as **ANNEXURE P – 10.**

A copy of the permission accorded by DDA for laying the 66 KV cable is annexed herewith and marked as **ANNEXURE P – 11.**

21. The Petitioner has executed a supply agreement for 2.5 MW with TPDDL for supply of electric power for the purpose of commissioning.

A copy of the supply agreement is annexed herewith and marked as **ANNEXURE P – 12.**

22. The Inspector of Boilers, Government of NCT, Delhi has certified the successful Hydro Test of the 2 units of Boilers installed by DMSWL.

A copy of the certificate issued by the inspector of boilers, Government of NCT Delhi, is annexed herewith and marked as **ANNEXURE P – 13.**

23. It is now pertinent of mention herein that the Central Government has issued an amended National Tariff Policy dated 28.01.2016. The relevant provision of the said policy is setout herein below:

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**"6.4 Renewable sources of energy generation
including Co-generation from renewable energy
sources:**

..

(ii) Distribution Licensee(s) shall compulsorily procure 100% power produced from all the Waste-to-Energy plants in the State, in the ratio of their procurement of power from all sources including their own, at the tariff determined by the Appropriate Commission under Section 62 of the Act."

A copy of the amended National Tariff Policy dated 28.01.2016 is annexed herewith and marked as **ANNEXURE P – 14.**

From the above policy, it has been mandated that there should be compulsory procurement of electricity generated from waste to energy power plants by the distribution licensees. Further, it has been specified that the said procurement by the distribution licensees shall be at the tariff determined by the appropriate commission as per the provisions of Section 62 of the Electricity Act, 2003.

24. Pursuant to the above amendment in the tariff policy, the Petitioner made a representation to this Hon'ble Commission vide a letter dated 03.02.2016. In the said representation the Petitioner requested this Hon'ble Commission for determination of tariff of its power plant as well as for execution of a Power Purchase Agreement with the Respondent No. 1/ TPDDL. In the said representation, the Petitioner further referred to the 4th Amendment of the tariff regulations pertaining to renewable energy, issued by the Hon'ble CERC, which amendment specifies

the tariff parameters qua the waste to energy power plants. The Petitioner requested the Hon'ble Commission to determine its tariff keeping in mind the said Regulations.

A copy of the letter dated 03.02.2016 is annexed herewith and marked as **ANNEXURE P – 15.**

25. Pursuant to the above representation sent by the Petitioner to this Hon'ble Commission, the Petitioner received a letter dated 23.02.2016 from this Hon'ble Commission whereby it was communicated that directions have been issued to the Distribution licensees of the State of NCT, Delhi to comply with the amendment carried out in the National Tariff Policy dated 28.01.2016. Further the Petitioner was accordingly directed to file a petition before this Hon'ble Commission seeking determination of tariff along with a draft signed Power Purchase Agreement for approval.

A copy of the letter dated 23.02.2016 issued by the Hon'ble Commission to the Petitioner is annexed herewith and marked as **ANNEXURE P – 16.**

The Petitioner received a copy of a parallel letter dated 23.02.2016 issued by this Hon'ble Commission to all the distribution licensees in the State of NCT, Delhi wherein this Hon'ble Commission by referring to the amendment in the National Tariff Policy, directed the said licensees to comply with the provisions of the said policy to promote renewable energy sources. It is therefore, submitted that the said letter was issued to the distribution licensees by this Hon'ble Commission for

implementation of the directions contained in the amended tariff policy qua compulsory procurement of electricity from waste to energy plants.

A copy of the letter dated 23.02.2016 issued by the Hon'ble Commission to the distribution licensees is annexed herewith and marked as **ANNEXURE P – 17**.

26. The Petitioner, thereafter, wrote a letter dated 26.02.2016 to the Respondent No. 1/ TPDDL wherein it was requested to the said Respondent to execute a draft PPA with the Petitioner so as to comply with the directions of this Hon'ble Commission vide the aforementioned letters dated 23.02.2016.

A copy of the letter dated 26.02.2016 is annexed herewith and marked as **ANNEXURE P – 18**.

In response to the above letter dated 26.02.2016 of the Petitioner, the Respondent No. 1/ TPDDL issued a letter dated 11.03.2016 wherein the said Respondent did not commit to comply with either the amended national tariff policy nor the directions issued by this Hon'ble Commission vide letters dated 23.02.2016. The Respondent No. 1 in its letter dated 11.03.2016 sought to wrongfully link procurement of power from the waste to energy power plant of the Petitioner with its Renewable Purchase Obligation, inspite of the fact that the amended National Tariff Policy categorically states that the power procured from the waste to energy plants has to be 100% of the power so generated, which

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means that the said procurement ought not to be linked with the RPO norms of the concerned licensee.

A copy of the letter dated 11.03.2016 is annexed herewith and marked as **ANNEXURE P – 19.**

27. The Petitioner wrote a letter dated 21.03.2016 to the Director (Operations) of Delhi Transco Limited (Delhi SLDC) requesting for synchronization of its power plant with the Grid. It is stated that till date, no response has been received by the Petitioner from the Delhi Transco Limited.

It is stated that as per Sections 32 and 39 of the Electricity Act, 2003 it is the duty of the Delhi Transco Limited and the Delhi SLDC to coordinate synchronization of the Petitioner's power plant with the Grid.

A copy of the letter dated 21.03.2016 is annexed herewith and marked as **ANNEXURE P – 20.**

28. Post the receipt of the letter dated 11.03.2016 from the Respondent No. 1/ TPDDL, the Petitioner wrote a letter dated 29.03.2016 to this Hon'ble Commission wherein it was communicated that the procurement of power from waste to energy plants is not linked to fulfilment of RPO alone, as per the amended National Tariff Policy dated 28.01.2016.

A copy of the letter dated 29.03.2016 is annexed herewith and marked as **ANNEXURE P – 21.**

Proceedings before the Hon'ble National Green Tribunal

29. The Petitioner states that, in the meantime, certain proceedings relating to waste-to-energy power plants were initiated before the Hon'ble National Green Tribunal. The said proceedings were numbered as Original Application No. 22(THC) of 2013, wherein the Petitioner was also arrayed as a party. In the said proceedings, the Hon'ble National Green Tribunal examined the status of the power plant of the Petitioner, along with two other waste-to-energy plants situated at Okhla and Ghazipur, Delhi.

30. The Hon'ble National Green Tribunal, Principal Bench, New Delhi (NGT) in the above matter made appropriate direction to the concerned authorities and stakeholders to take imminent steps in order to ensure expeditious operationalisation of the plant of the Petitioner, and further directed the learned counsel, NCT of Delhi for visiting the project site of the Petitioner. Consequently, it was reported to the Hon'ble Tribunal that "*If effective steps are taken and all departments cooperate, these plants could be made operational without much delay*".

Further, the Hon'ble Tribunal passed an order dated 17.12.2015 wherein a committee was constituted to report the status of the plant of the Petitioner, and other such waste-to-energy plants.

A copy of the order dated 17.12.2015 of the Hon'ble National Green Tribunal is annexed herewith and marked as **ANNEXURE**

31. In the above proceedings, the Hon'ble National Green Tribunal passed another order dated 04.04.2016 wherein directions were issued to this Hon'ble Commission to determine tariff of the Petitioner for the purposes of sale to the Delhi Distribution licensees. The Petitioner was also directed to file an appropriate petition before this Hon'ble Commission for determination of its tariff. Accordingly, in the light of the said directions, the Petitioner is filing the present petition.

It is further submitted that in the aforementioned order, the Hon'ble National Green Tribunal also directed the North Delhi Municipal Corporation to file a separate petition before this Hon'ble Commission in order to seek an observation of this Hon'ble Commission regarding the revenue sharing percentage between the Petitioner and the North Delhi Municipal Corporation as per the Concession Agreement dated 17.07.2009.

It is stated that the present petition concerns with the determination of tariff of the Petitioner's power plant and other related issues, while the North Delhi Municipal Corporation shall institute separate proceedings qua the issue of revenue sharing.

A copy of the order dated 04.04.2016 of the Hon'ble National Green Tribunal is annexed herewith and marked as **ANNEXURE**

P – 23.

32. In view of the above factual matrix, the Petitioner has filed the present petition seeking determination of tariff of its power plant, along with directions upon the Respondent Licensees to execute a

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PPA with the Petitioner. The Petitioner, in the present petition, further seeks appropriate directions upon Delhi Transco Limited/ Delhi SLDC to synchronise the power plant.

The Petitioner now proceeds to place on record the parameters for determination of tariff.

Determination of Capital Cost

33. It is submitted that the Capital Cost incurred for the project with detailed break up for Land and Site development, Building and Civil Works, Plant and Machinery Cost, Preliminary and Pre-operative expenses, Contingency and Interest during construction (IDC) cost (but excluding Working Capital Margin) works out as Rs.39,271 Lakhs. The detailed rationale and analysis of each parameter for the Project cost is provided in **Schedule – 1** of the present petition.

It is stated that the above capital cost computation is as per the certificate issued by the auditors of the Petitioner.

A copy of the certificate issued by the auditors of the Petitioner, is annexed herewith and marked as **ANNEXURE P – 24**.

34. The Petitioner states that it has infused a total Equity of Rs. 9,500 Lakhs in the Project. The balance of the Project Cost (till March 31, 2016) amounting to Rs. 29,771 Lakhs has been funded by lenders as Debt. This gives a Debt – Equity Ratio of 75.81 : 24.19, which is well within the normative Debt-Equity Ratio of 70:30 in

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line with standard regulatory norms considered for power generation projects.

35. It is stated that A part of the debt component required for the project was raised from IndusInd Bank led consortium.

A copy of the loan sanction letters outlining Term sheet from Indus Ind Bank consortium is attached herewith and marked as **ANNEXUREP - 25 (Colly).**

36. The power plant of the Petitioner is based on Municipal Solid Waste (MSW) which comprises heterogeneous mixture of MSW, which causes wear and tear of the Boiler and other equipment in the plant. In view of this abrasive nature of feeding fuel and other cost components involved, the Operation and Maintenance Cost estimated for the power plant of this nature are high which have been elaborated in subsequent chapters.

37. It is submitted that the Hon'ble Central Electricity Regulatory Commission has notified Tariff Regulations outlining terms and conditions for determination of renewable projects based on municipal solid waste on 07.10.2015 through the CERC (Terms and Conditions for Tariff determination from Renewable Energy Sources) (Fourth Amendment) Regulation, 2015 (hereinafter referred to as "CERC MSW Regulations"). Hence, for parameters such as O&M cost, O&M cost escalation, Depreciation, Interest on Debt, working capital requirement, Interest rate on Working Capital, rate of Interest for Debt and Working Capital requirement,

Return on Equity, etc., the Petitioner has relied on the norms from the said regulations

It is pertinent to mention herein that this Hon'ble Commission does not have any regulations qua MSW power plants, and as such the tariff of the Petitioner has to be determined as per the provisions of Section 61 of the Electricity Act 2003, which includes taking guidance from the CERC MSW Regulations.

A copy of the consolidated CERC (Terms and Conditions for Tariff determination from Renewable Energy Sources) Regulation, 2015, which includes the 4th amendment pertaining to MSW plants, alongwith the Statement of Reasons, is annexed herewith and marked as **ANNEXURE P – 26 (Colly)**.

38. It is submitted that the break-up of the capital cost of the Petitioner is provided in Schedule – 1 of the petition, alongwith its justification. It is stated that as per the said Schedule, the per MW capital cost of the project of the Petitioner is around Rs.16.36 Crores. The Petitioner submits that as per the CERC MSW Regulations, the normative capital cost for MSW plants is Rs. 15 Crores, however, as per the provisions of Section 61(d) of the Electricity Act 2003, the Petitioner is entitled to the actual project specific tariff as the Petitioner is entitled to recover the cost of generation which includes the actual capital cost.

39. Thus, in accordance with Section 64(1) of the Electricity Act, 2003, the Petitioner is filing the present petition seeking determination

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of tariff to the Hon'ble Commission to sell power generated from its project to the Respondent Licensees.

40. In view of above, the Petitioner humbly prays that this Hon'ble Commission to determine project specific tariff of the Petitioner in the light of Sections 61, 62 of the Electricity Act, 2003 read with the amended National Tariff Policy. The Petitioner undertakes to place on record any further documents identified/ required by this Hon'ble Commission for the purposes of tariff determination through the data gaps.

Execution of PPA by the Respondent Licensees

41. It is stated that the project of the Petitioner is a renewable energy power plant which would reduce the emissions of the methane, a powerful contributor to climate change. The said project is a substantial contribution to sustainable development.
42. The Petitioner states that the Government of India has launched "Swacch Bharat Abhiyan" and accorded the sanitation including disposal of municipal solid waste with energy recovery a top priority issue. The Ministry of Urban Development, Government of India is exhorting all the State Governments to take up with the respective Regulatory Commissions to adopt the generic tariff for the Waste to Energy projects.

43. The Petitioner is located in the licenced area of the Respondent No. 1/ TPDDL and has been availing supply from the said Respondent for construction, testing and commissioning of its

45. The Petitioner wrote a letter dated 21.03.2016 to the Director (Operations) of Delhi Transco Limited (Delhi SLDC) requesting for synchronization of its power plant with the Grid. It is stated that the Petitioner is still awaiting a response from the Delhi Transco Limited.

It is stated that as per Sections 32 and 39 of the Electricity Act, 2003 it is the duty of the Delhi Transco Limited and the Delhi SLDC to coordinate synchronization of the Petitioner's power plant with the Grid, so that the Petitioner is able to schedule power. In this context it is also necessary to refer to the observations made by the Hon'ble National Green Tribunal in the order dated 17.12.2015 (Annexure P-16 and P-17) wherein it was stated that all the concerned departments ought to work in a manner so as to enable the Petitioner to start operating its power plant.

Interim relief

46. It is stated that in the present petition the Petitioner is seeking interim reliefs in terms of directions upon the Respondent Licensees for execution of a PPA with the Petitioner for the entire capacity of 24 MW. Further, the Petitioner prays for grant of a provisional tariff so that the supply of power may take place to the Respondent Licensees, while this Hon'ble Commission determines the final tariff of the Petitioner. With respect to the said provisional tariff, the same may be determined at the value of 95% of the levelised tariff claimed by the Petitioner in the

present petition. The said tariff would be subject to the final tariff that may be determined by this Hon'ble Commission.

47. The Petitioner also prays for an interim relief seeking directions upon the Respondent Nos. 5 and 6 to synchronise the power plant of the Petitioner with the grid.

48. It is stated that the balance of convenience, for the purposes of grant of the above mentioned interim reliefs, is completely in favour of the Petitioner in view of the amended tariff policy and the letters dated 23.02.2016 issued by this Hon'ble Commission. It is further stated that execution of PPA, determination of provisional tariff and synchronisation with the grid are a natural outcome of the amended tariff policy since a provisional tariff will enable the Petitioner to immediately start supply of power upon synchronisation of the said plant with the grid. The same will also start processing of the MSW, which is the aim of the waste-to-energy power plants. No prejudice will be caused to any of the Respondents if the interim relief prayed for, is granted.

Jurisdiction of the Hon'ble Commission

49. It is respectfully submitted that as per the provisions of Sections 61, 62 and 64 of the Electricity Act, 2003 read with provisions of the Tariff Policy, the determination of tariff for the Petitioner's generation plant for sale of electricity to the concerned distribution licensee is well within the jurisdiction of the Hon'ble Commission.

50. The Petitioner craves leave to place on record any additional information/ documents which may be required by this Hon'ble Commission at a later stage.

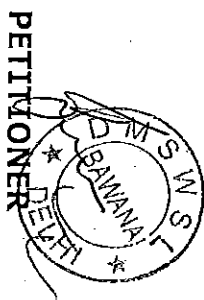
51. The present petition is bonafide and made in the interest of justice.

PRAAYER

In view of the aforementioned facts and circumstances of the present case it is, therefore, most respectfully prayed that this Hon'ble Commission may, graciously, be pleased to:

- (i) direct the Respondent Licensees to execute Power Purchase Agreement(s) with the Petitioner, in terms of the National Tariff Policy dated 28.01.2016 read with the letters dated 23.02.2016 (Annexures P – 16 and 17), for the capacity of the power plant;
- (ii) determine the tariff payable by the distribution licensees for sale of electricity from the Petitioner's power plant;
- (iii) In the interim, direct as follows:
 - (a) direct the Respondent Nos. 5 and 6 to synchronize the power plant of the Petitioner with the Delhi STU grid;
 - (b) pass orders for provisional tariff to be payable by the Respondent licensees, effective from the date of synchronisation till final tariff is determined; and

(IV) pass such further and other order as this Hon'ble Commission may deem fit and proper under the facts and circumstance of the present case and in the interest of justice.



Hemant Singh / Matru Gupta Mishra
HEMANT SINGH / MATRUGUPTA MISHRA / SHIKHA OHRI /
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PLACE: NEW DELHI

DATED: 20.04.2016.

**BEFORE THE HON'BLE DELHI ELECTRICITY REGULATORY
COMMISSION, NEW DELHI**

Filing No.....
Case No.....

IN THE MATTER OF:

M/s. Delhi MSW Solutions Limited (DMSL) **PETITIONER**

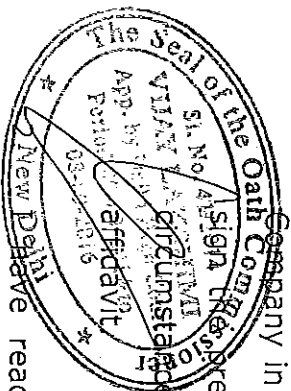
Versus

M/s. Tata Power Delhi Distribution
Limited (TPDDL) & Ors. **RESPONDENTS**

AFFIDAVIT

I, Iype George , son of Late George Philip aged 57 years (Fifty Seven years) residing at Sector - 5, Pocket N-1, Behind Pragati Power Plant, Bawana Industrial Area, New Delhi do solemnly affirm and say as follows:

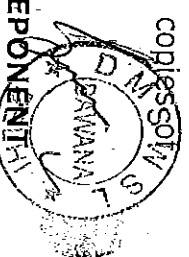
1. That I am the authorized representative of the petitioner Company in the abovementioned matter and duly authorized to sign the present affidavit. I am conversant with the facts and circumstances of the case and thus competent to swear this affidavit.
2. I have read the accompanying Petition and I say that its contents are true to my knowledge and belief and based on records which are believed to be true and correct.



3. The annexures filed along with this Petition are true copies of their respective originals.

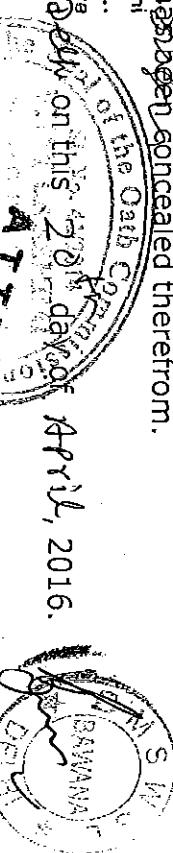
I identified the deponent who has signed in my presence.

... **DEPONENT**



VERIFICATION:

CERTIFIED that the Deponent above named do hereby verify that the contents of the Affidavit are true to my knowledge, no part of it is false and identified by me. Nothing material has been concealed therefrom. I have been read & explained a true and correct to his knowledge.



Oath Commissioner, Delhi

... **DEPONENT**

[Signature]

SCHEDULE - 1

Introduction

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Municipal Solid Waste includes commercial and residential wastes generated in municipal or notified areas (MoEF, 2000).

With increase in industrialisation and urbanisation, the volumes of municipal solid and liquid wastes have increased with high rate over the last two decades. The problem of limited availability of land and the limited capacity of the environment to absorb these wastes have increased the awareness to adopt efficient and scientific and safe methods for treatment, processing and disposal of waste. Globally, the realisation of importance of Waste Management is increasing day by day.

In India, it is the responsibility of municipalities to manage the overall Municipal Solid Waste their cities. However, most of them are currently incapable to fulfil their duty to ensure environmentally sound and sustainable ways of dealing with MSW. Many Municipalities currently are disposing off the collected waste in either uncontrolled dumpsites or burn it openly, causing severe environmental impacts like pollution of ground water resources and air. According to an estimate, around 30 million tonnes of solid waste and 4,400 million cubic meters of liquid waste are generating in the urban areas of India. The municipal solid waste (MSW) generation ranges from 0.25 to 0.66 kg/person/day with an average of 0.45 kg/person/day. Hence in India, the problems and issues of Municipal Solid Waste Management (MSWM) have gained an immediate importance. In India, Government Authorities at all levels (central, state and municipal) are taking proactive steps to improve the management of Solid Waste. The Municipal Solid Waste (Management and Handling) Rules lay down the steps to be taken by the Municipalities to ensure the management of solid waste according to best practises. The mandatory requirements of the rule are,

1. Source segregation and storage at source
2. Door to door collection

3. Abolition of open storage
4. Daily sweeping of the street
5. Transportation of waste in covered vehicles
6. Waste processing by composting or energy recovery
7. Disposal of inert by sanitary land filling

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Processing and treatment of MSW not only reduces the amount of waste to be disposed off but also to change its composition in a way that prevents adverse effects on the environment. The energy content in the MSW is attributed to the presence of organic materials found in the range of 50-60% in the urban MSW. These organic materials are further segregated as non- combustible and combustible material. Non combustible material is converted in compost while combustible matter is used for industrial purpose or power generation.

In developing countries like India, where gap between demand and supply of energy is always wide, the power generation from MSW would play a vital role. MSW based Power Generation projects not only generate green power but also encourage the efficient collection and disposal of MSW. There are several economic benefits that will accrue to the society at large including the urban local bodies by establishing the waste to energy plants using MSW:

1. Reduces environmental pollution
2. Organize and educate the urban population to segregate the wastes and to use the biodegradable material
3. Support the nation to meet the deficit power situation
4. Generation of employment both direct and indirect
5. Generation of power reduces transmission losses and pilferage

It will obviate the necessity for non-productive utilization of precious urban land, which can be used for-productive purpose and to ease the pressure on urban housing demands.

1.1 About Delhi MSW Solution Limited and RAMKY Group

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Delhi MSW Solutions Limited (DMSL) is a Group Company of the "Ramky Group". DMSL is a special purpose vehicle company, which has signed a concession agreement for twenty (20) years with Municipal Corporation of Delhi for Door to Door Collection, Transfer, Transportation, development of an integrated Municipal Solid Waste Processing Facility and Engineered sanitary landfill facility on long term build operate and transfer basis. In order to utilise the 'Waste' efficiently, DMSWL has built a 'Waste to Energy' power generation project of 24 MW capacity. The power generation project is installed at Narela, Bawana.

RAMKY Group, founded in the year 1994, today spans into a specialist multi-disciplinary organization focused in areas of Civil, Environmental & Waste Management infrastructure with specific emphasis on 'Public Private Partnership' Projects. The Ramky group has presence in more than 55 locations within the country and also having presence at SAIF Zone, Sharjah, UAE, Singapore, Gabon, Oman, and Saudi Arabia.

It is recognised as India's leading environmental house with core focus on efficient management of 'Waste' and has the distinction of having established the first-of-its-kind integrated Industrial (Hazardous) & Bio-medical waste management facility at Hyderabad. RAMKY, today, is pioneer in all fields of solid waste (Industrial, Medical & Municipal Solid Waste) management with over 90 projects in the country. RAMKY provide complete range of municipal waste management services on a 'cradle-to-grave' approach with all services from street sweeping, collection and transportation, treatment and disposal by adopting sorting, recycling, composting, vermin-composting, waste-to-energy and land filling the residue. It has established an integrated Municipal Solid Waste project at Hyderabad, Bangalore, Haldia, Belgaum and Shimoga.

Ramky Enviro operates 13 Hazardous Waste Management facilities handling about a million tonnes of waste annually, 16 Bio-medical Waste Disposal facilities catering to over 15,000 health care establishments and 2,00,000 hospital beds and several Municipal Solid Waste Management facilities.

Table: Existing Projects

Name	Location	State
Mumbai Waste Management Ltd.	Taloja	Maharashtra
West Bengal Waste Management Limited	Haldia	West Bengal
Hyderabad Waste Management Project	Hyderabad	Andhra Pradesh
Tamil Nadu Waste Management Limited	Gummidipundi	Tamil Nadu
Coastal Waste Management Project,	Visakhapatnam	Andhra Pradesh
Karnataka Waste Management Project	Bangalore	Karnataka
Madhya Pradesh Waste Management Project	Indore	Madhya Pradesh
Rajasthan Waste Management Project	Udaipur	Rajasthan.
Uttar Pradesh Waste Management Project	Kanpur Dehat	UP
Orissa Waste Management Project	Bhubaneswar	Orissa
Punjab Waste Management Project	Nimbua	Punjab

2.2 Benefits of MSW Project

Municipal Solid Waste Projects helps in reducing Green house gases by reducing fossil carbon emission and long term storage of carbon in biomass waste. Modern Technology options available in waste-to-energy

provide significant, cost-effective and perpetual opportunities for greenhouse gas emission reductions. Apart from this, these technologies can lead to a substantial reduction in the overall waste quantities requiring final disposal, which can be better managed for safe disposal in a controlled manner.

Municipal waste-to-energy plants offer many benefits to people and the environment. Some of them are highlighted here.

- **Low Dependence on fossil fuel:** MSW based Power technologies do not require any fossil fuel to generate energy therefore reducing the dependency on fossil fuels. Dependence on domestic fuel have the implication on the output of the plant as the price of the fuel can easily fluctuate. This gives one more reason to focus on technologies like WTE which do not require dependence on fossil fuels.
- **Domestic Energy:** Energy is produced domestically and municipal waste to energy takes this step. There is plenty of household waste in the landfills and homes in India, enough so that materials for the process would never have to be transported very far or run out. This garbage is created every day, and landfills are overflowing with this alternative energy source.
- **Pricing and Availability:** Solid waste technologies use municipal waste which brings stability in both the price of electricity and the availability of municipal waste. With this process there are no wide fluctuations or availability shortages. These facilities can operate twenty four hours a day every single day of the year, providing more than enough electricity to meet the local community-needs.
- **Economy Benefit:** Municipal waste-to-energy facilities are locally situated and this offers many advantages to the community. Jobs are created, taxes are paid, supplies are purchased at local businesses and stores, and energy is provided for a reasonable cost that does not pollute or harm the environment. These

facilities will be located to provide for the local area instead of being situated far away.

- **Availability of Space:** By using municipal waste to energy facilities space is preserved in the landfills. Municipal Waste which is incinerated and if not incinerated, then it would otherwise take up space in the landfill and it would contribute to the environmental pollution as well as consuming precious land space in developing metro cities of India. A number of landfills around the world have closed because they have reached full capacity, and the world is running out of places to dump the waste being created.
- **Unlimited Supply:** Municipal waste to energy methods will be very popular because of the unlimited fuel sources. With all the garbage generated around the world every single day, plus all the refuse in the many landfills, there is enough waste to generate all the electricity needed by diverting such waste from landfills. The oceans are also littered with this waste, and this adds another source of energy.
- **Reduction in GHG Emissions:** Greenhouse gas emissions play a big role in global warming, and this alternative energy generation method does not release a fraction of these emissions that fossil fuel power plants do. This means fewer gas emissions to damage the ozone layer, and speed up the effects of global warming.
- **Environmentally Friendly:** Using waste to generate energy is a process that does not harm the environment or the earth. There are no dangerous chemicals or toxins used to poison wildlife and contaminate the land and water in the area, and pollution and greenhouse gas emissions are far less than using coal or other resources.
- **Promotes Recycling:** This form of alternative energy generation promotes recycling, and that means less waste because of items being sorted and recycled. It has been proven that for each item recycled there is around twenty percent more energy conserved than what is needed to manufacture the item. Recycling minimizes

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the need for natural resources and the environmental damage done.

3 Status of MSW in India

India has an ever increasing population which is approximately 1210 Million in 2011 in accordance with Census of India 2011. There are 35 States with 640 Districts and 5924 sub Districts; there are 4,377 cities and towns in India out of which 428 are considered as Class 1 (population more than 1,00,000). These Class I cities alone contribute to more than 72% of the total MSW generated in Urban Areas. Main Sources of Municipal Solid Waste are

- House Hold Waste
- Commercial
- Street sweeping
- Hotels and Restaurants
- Clinic and dispensaries
- Construction and demolition
- Horticulture
- Sludge

4 Potential and Status of MSW Projects in Delhi

In Delhi, around twenty landfill sites have been developed since 1975 of which 15 have already been closed and two have been suspended. At present there are landfill sites in operation:

Table 1: Land Fill in Operation in Delhi

Sl. No.	Name of SLF site	Location	Area	Start Year	Waste Received	Zones
1	Bhalaswa	North Delhi	21.06 Ha	1993	2200 TPD	Civil Line, Karol Bagh, Rohini, West and Najafgarh

Sl. No.	Name of SLF site	Location	Area	Start Year	Waste Received	Zones
2	Ghazipur	East Delhi	29.16 Ha	1984	2000 TPD	Shahdara (North), Shah. (South), City, Sadar Paharganj & NDMC area
3	Okhla	South Delhi	16.20 Ha	1994	1200 TPD	Central, South, Najafgarh and Cantonment area

Source: - Municipal Corporation of Delhi

MSW Rules 2000

The Municipal Solid Waste (Management and Handling) Rules lay down the steps to be taken by all municipal authorities to ensure management of solid waste according to best practice. Municipal authorities are responsible for implementing provisions of the 2000 rules. Municipal authorities must meet the deadlines laid down in Schedule I of the rules and must follow the compliance criteria and procedure laid down in Schedule II. Salient Features of MSW Rules 2000 are as follow:

Provisions under the Rules

1. The Municipal Solid Waste (Management and Handling) Rules lay down the steps to be taken by all municipal authorities to ensure management of solid waste according to best practices.
2. Municipal authorities are responsible for implementing provisions outlined in the said rules. They must provide the infrastructure and services with regard to collection, storage, segregation, transport, treatment and disposal of MSW.

3. Municipal authorities must meet the deadlines laid down in Schedule I of the rules and must follow the Compliance criterion and procedure laid down in schedule II.
4. Under the schedule II of the rules, municipal authorities are further directed to set up and implement improved waste processing and disposal facilities. Incineration with or without energy recovery can be followed for processing of MSW.
5. Standard for waste disposal facilities are defined in the rules and municipal authorities are required to meet the specification and standard specified in schedule III and IV.

Status of Implementation of the Rules

The following are the observations of the study carried out by NEEER in 2005 regarding Solid waste disposal practices in **fifty nine** major cities covered under the study:

1. Initiatives for collection of waste from house-to-house and waste segregation were being undertaken in only seven cities;
2. Privatization of transportation of waste had been done in eleven cities;
3. Waste processing facilities had been set up in fifteen cities;
4. Ten waste processing facilities were based on composting, out of which only one of the composting facilities had provision for energy recovery;
5. Four facilities were based on vermi-composting, and one facility employed pelletisation and energy recovery technology;
6. None of the cities had proper sanitary landfill site and uncontrolled dumping of MSW had been observed in all but one city ;
7. Leachate collection is practiced in only two cities and gas collection in only one city;
8. In many cities, bio-medical waste (BMW) was getting mixed with MSW;

9. Slaughterhouse waste was not being managed properly and was dumped at landfill site along with MSW in all except 12 cities, which had separate arrangements for collection of such wastes;
10. Initiatives for collection of waste from house-to-house and waste segregation were being undertaken in only seven cities;

As per CPCB Annual report 2007, there has been a very slow progress in compliance of MSW Rules (2000). Salient features of the report are as follows:

1. It has been observed that many local bodies do not have any definite plans for setting up waste processing facilities;
2. The deadlines mentioned in Annexure I have not been complied with;

Few Urban Local Bodies (ULB) comply with MSW Rules at the town level and for most ULBs, efforts are restricted to a few wards or certain portion of the town;

1. Disposal of Waste is still continued through open dumping;
2. Landfills are only constructed in few major towns;
3. Except in state of Andhra Pradesh (Hyderabad, Vijayawada and Guntur) none of the ULBs have planned waste to energy projects; Some projects are initiated in MP, Gujarat etc

Following reasons can be cited for non compliance of MSW Rules 2000 as observed in above two reports:

1. Lack of financial resources;
2. Lack of technical knowhow;
3. Lack of skilled personnel;
4. Lack of basic facilities to set up treatment plants;
5. Lack of institutional capacity;

4.6 National Master Plan

The National Bio-energy Board (NBB), Ministry of New and Renewable Energy (MNRE), has developed a National Master Plan (NMP) for development of waste-to-energy programme as a part of the UNDP/GEF project. The NMP provides a framework for waste-to-energy programme for the country besides a means of processing / treatment for safe disposal of waste.

The primary objective of NMP is to provide additional power generation capacity in a decentralized manner through projects for energy recovery from urban and industrial wastes in a cost effective and proven manner using technologies that are applicable to the Indian community, conditions, and support ongoing adaptation to meet implementation needs and also provide vital solutions to the environmental problems including reduction in GHG emissions. The NMP is expected to also serve as a road map to cost effectively implements, in a phased manner, projects for the next 15 years in the urban and industrial sectors. The potential of the MSW for conversion to energy is:

Table: Power Generation Potential from MSW

Years	MSW generated (TPD)	Power Generation (MW)
2002	97174	1638
2007	148066	2550
2012	214865	3688
2017	303627	5192

Source: National Master Plan

The issues requiring consideration for the NMP are as follows:

- Under the Municipal Solid Wastes (Management & Handling) Rules of December 2000, all Class I cities have to provide proper treatment and disposal facility for MSW by December 2003. This translates to a very significant potential for Waste-to-Energy projects.

- b) Emphasis so far has been on supporting large projects in Metros where most of the projects are on BOO, BOOT etc, where the support is in the form of Capital or Interest subsidy.
- c) There is a pressing need for technical and financial support for MSW management in smaller towns facing the deadline of the MSW Rules.

NMP specified that at present the rates of power purchase for WTE projects are not attractive in India. Thus, it emphasized on development of a policy framework for determination of power purchase rates in order to provide reasonable and assured returns on investment and to attract the project proponents. It also emphasised on the need to develop a uniform policy framework across the country to offset the negative externalities of fossil fuels and to promote avenues for wheeling, banking and third party sale(s) of power from Waste-to-Energy projects.

2. Salient Features of the Project

2.1 Power Project

The Municipal Corporation of Delhi has awarded an integrated solid waste management project to Delhi MSW Solution Limited (DMSWL) on BOOT basis. DMSWL has executed a concession Agreement with Municipal Corporation of Delhi on July 17th 2009. The land required for the project is provided on the lease basis.

According to the mandate as a part of the Scope of work in Concession Agreement, Phase- I which is collection and transportation of MSW to the site, is operational since August 2009 and Compost Landfill and pre sorting activities in Phase - II are operational since September 2011. Under Phase- II, which is processing of MSW the Petitioner entails compost, RDF, thermal processing for power generation as the processing technologies in phased manner.

The MSW power plant is designed to combust 1200 TPD of RDF which has less heterogeneous heat value than MSW itself. The processed waste is already being segregated from MSW at Bawana. The Municipal

Solid Waste (MSW) collected from the city will be used in the boiler for generating steam. The project is proposed to use reciprocating grate boiler, which is considered as the most suitable technology for firing RDF. Modified Rankine Cycle has been adopted for the proposed project with addition of a Regenerative feed water heating.

The Petitioner is in the advance stage of commissioning a Waste to Energy Power plant with an installed capacity of 24 MW ("Project") as a part of integrated Municipal Solid Waste Management at Bawana Delhi. The petitioner intends to commission the proposed MSW power plant by end of April 2016 and efforts in this direction are in advance stage of development.

Power Project Location

The proposed MSW project of 24 MW capacity is located in Northern part of Delhi along Haryana border on Narela – Bawana road at a distance of about 5-6 km from Bawana village towards Narela Village. The site is bounded by Western Yamuna canal and high tension wire and electric substation on south, village Sanoth on north-east and Narela – Bawana road on north. The site is accessible through Narela Bawana road. This site is located at an aerial distance of 14 km from Old Delhi railway station and 23 km from nearest airport.

Area detail for project

Direction	Definition of Boundaries	Length parameter of boundaries
North side	Proposed 60 mtr. Wide road as per master plan 2021 along with boundaries	1050.50 mtr.
West Side	MCD land & distance from old canal approx. 550 mtr.	501.38 mtr.

South Side	Pragati boundary	Gas plant	652.2 mtr.
East Side	Sector - 5 DSIDC Area, Bawana	Industrial	550 mtr.

2.2 MSW - Collection, Transportation, Processing & Disposal

The Petitioner has signed an concession agreement for twenty (20) years with Municipal Corporation of Delhi for Door to Door Collection, Transfer, Transportation, developing an integrated Municipal Solid Waste Processing Facility and Engineered sanitary landfill facility on long term build operate and transfer basis. In order to utilise the 'Waste' efficiently, DMSWL intends to build a 'Waste to Energy' power generation project of 24 MW.

Salient Features of the Concessional Agreement

- Phase - I of the project includes Collection and Transportation of waste to project site and phase - II includes development of Integrated Municipal Solid Waste Management, Treatment and Disposal Facility.
- The Land is provided to Concessionaire (the Petitioner) on lease basis for the concession period of 20 years.
- Concessionaire (Petitioner) is responsible for carrying out Processing of Municipal Solid Waste and landfill the Residual inert Matter in Compliance to MSW (Management & Handling) Rules 2000.
- Concessionaire would be expected to select a combination of technologies which would maximise waste recycling treatment and would ensure that minimum quantity of inert goes to landfill. The technology selected should be proven and capable of handling and treating the quality and quantity of waste generated in the designated area.

- Concessionaire would be responsible to plan and execute all steps in CDM development process and the benefits from CDM, if any, would be shared in ratio of 60:40 between the Concessionaire and MCD.
 - As per the provisions of concession agreement clause 6.1.2 (b) "the concessionaire shall be free to sell or otherwise dispose off the recyclables, compost or organic manure, energy (power), and / or other material recovered after processing the municipal waste at the project facilities at such price and to such persons and using such marketing and selling arrangements and strategies as it may deem appropriate subject to meeting the O&M requirements".
- At the expiry of Concession Period, the Concessionaire will also be responsible for the 'Post Closure Maintenance of the Sanitary Landfill' into which process remnants/ residues are disposed to during the period of concession. This post closure obligation is for a period of 15 years from the expiry date of concession period, during which Concessionaire is obligated to incur expenditure to meet the responsibilities of post closure obligation.

2.4 Technology

Currently various Technology options are being followed for WTE Projects in India. The following are some of the technologies discussed briefly with their merits and demerits.

Landfill Gas Recovery:

Landfill has been the most common and widely prevalent practice of MSW disposal in many countries. In many urban cities, open, uncontrolled and poorly managed dumping is commonly practiced, giving rise to serious environmental degradation. More than 90% of MSW in cities and towns is directly disposed of on land in an unsatisfactory manner. Such dumping activity in many coastal towns has led to heavy metals rapidly leaching into the coastal waters. Some of the issues that now tend to limit the practice of sanitary landfilling

include land availability, production of leachates and deleterious odorous gases, and public acceptability of landfill as a disposal method.

Landfill recovery system is being implemented in large landfill sites to recover the methane gas that evolve during the land fill process. Adverse public opinion has been a critical factor limiting the overall success of refuse disposal by landfilling, even though well-engineered landfills have overcome some of the operational problems. A further issue has been the absence of a satisfactory waste collection infrastructure.

Anaerobic Digestion

In this process, also referred to as bio-methanation, the organic fraction of wastes is segregated and fed to a closed container (biogas digester) where, under anaerobic conditions, the organic wastes undergo bio-degradation producing methane-rich biogas and effluent/sludge. If the organic waste is buried in pits under partially anaerobic conditions, it will be acted upon by anaerobic microorganisms with the release of methane and carbon dioxide and the organic residue that is left is useful manure. This process is slower than aerobic composting and occurs in fact naturally in landfills. However, thermophilic digestion for bio-methanation is much faster and has been commercialized.

Anaerobic digestion leads to energy recovery through biogas generation. The biogas, which has 55-60% methane, can be used directly as a fuel or for power generation. It is estimated that through controlled anaerobic digestion, 1 tonne of MSW can produce 2-4 times methane in 3 weeks in comparison to the quantity produced by 1 tonne of waste in landfill in 6-7 years. The sludge from anaerobic digestion, after stabilization, can be used as a soil conditioner, or even sold as manure depending upon its composition, which is determined mainly by the composition of the input waste.

Gasification Technology

Gasification is the partial oxidation of combustible substance. It involves thermal decomposition of organic matter at high temperatures in presence of limited amount of air. Gasification mainly produces mixture of combustible and non combustible gas. The objective of gasification has generally been to produce fuel gas, which can be stored and used when required. In India, there are a few gasifiers in operation, but they are mostly for burning of biomass such as agro-residues, sawmill dust, and forest wastes. Gasification can also be used for MSW treatment after drying, removing the inert and shredding for size reduction. In these processes, besides net energy recovery, proper destruction of the waste is also ensured. The products are easy to store and handle.

Incineration/Combustion

Incineration is the process of burning of waste in presence of an excess air liberating heat energy inert gas and ashes. Technology is the controlled combustion of waste with the recovery of heat to produce steam that in turn produces power through steam turbine. Bulky objects present in the MSW are removed during the pre-sorting process. Incineration of MSW allows huge savings at the landfill as the volume of MSW is reduced almost to 10% in the form of ashes and slag as compared to the original waste volume. In WTE plant based on incineration, the entire energy contents of waste is recovered, except the unavoidable fraction that is lost through flue gas, cooling devices, boiler walls and ashes.

Typical technologies include (i) grate incinerators, (ii) rotary kilns, and (iii) fluidised bed incinerators. Among these technologies, grate incinerators are used most extensively and reciprocating grate as an inclined installation is the most successful. It constitutes to be the major tool for accomplishing combustion. After considering the merits and demerits of different Technology for MSW processing and the characteristics of quality and quantity of MSW generated in the city of Delhi, a reciprocating grate Boiler Technology with Activated carbon and

lime injection for flue gas treatment has been chosen for the proposed plant as stipulated by MOEF, Govt of India.

FLUE GAS TREATMENT

As a best environmental measure, the flue gas of waste combustion shall be treated with lime and activate carbon to mitigate the pollutants associated with such combustion namely chlorides, sulphates, dioxins and heavy metals. The suspended particulate matter is controlled by bag filters unlike combustion of other renewable fuels like biomass, bagasse etc, municipal waste combustion systems have a significant additional capital and operating expenditure on account of such flue gas treatment system as described above.

The propose MSW power plant shall be based on Combustion Technology and designed to burn the processed & segregation waste in the custom built boiler. Incineration is an old word used to denote the yesteryears practice of waste combustion without energy recovery. Modern facilities of thermal processing are called Municipal Waste Combustors (MWCS) where energy recovery is integrated. Hence Incineration is a misnomer in a technical sense but widely used and should be referred as Controlled combustion instead.

Advantages of Combustion Technology:-

- Waste Combustion may be advantageous when a landfill cannot be sited because of a lack of suitable sites and/or long haulage distances, which result in high costs. Combustion is an efficient way to reduce the waste volume and demand for landfill space.
- Combustion plants can be located close to the centre of gravity of waste generation, thus reducing the cost of waste transportation.
- Furthermore, energy from waste projects provides a substitute for fossil fuel combustion.
- It can be used to reduce the original volume of combustibles by 80 to 95 percent.

2.5 Environment protection and waste management

Environmental protection and the control of solid, liquid and gaseous effluents or emissions are key elements in the design of all steam and power generating systems. The pollution control board has fixed the regulations on the emissions according to suit various industrial sector. Hence in the proposed plant in order to reduce emission, MSW is burnt effectively in the boiler otherwise which would be burned in heaps. The MSW combustors burn the waste in a controlled, engineered environment and disperse the flue gas into the atmosphere through the chimney. The proposed project will reduce the undesirable emissions from the open burning from MSW and as Power is generated the considerable amount of emissions which would have generated from burning the fossil fuels for generating the same power is avoided. Thus the emission factor about the waste to power plant is that, the dust or the Green house gas released into the atmosphere are no more than what would have been produced by alternative method of disposal. The Proposed Power Plant thus is environmentally friendly and deserves encouragement.

The proposed power plant operates throughout the year to generate power using a reciprocating grate boiler to generate steam. The air pollution control system with bag filter will be installed for the boiler, to contain the dust emission from plant to a level less than 30 mg/Nm³. The chimney is selected considering Sulphur di-oxide emission meet central pollution control norms. The height of chimney has been selected as 60m for the power plant. The proposed power plant shall meet the ambient air quality standard as specified by DPCC.

The total ash generated in the proposed power plant will be carted and disposed into the sanitary landfill using appropriate equipment for compaction and soil cover. The sanitary landfill is constructed in modular design using impermeous liners at the bottom to prevent percolation of pollutants into the ground waste and to isolate.

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The total civil works consist of cost of site development and building and civil works. The estimates given as civil works costs are based on soil bearing capacity of 24 tonne per metre square at a depth of 2.0 metre with pile foundation.

The total civil works consist of cost of construction of Waste Storage pit, Tipping hall, Machinery foundations, Ramp for waste vehicles and Pre Engineered Building Enclosure for whole plant including Turbine Hall with DCS room and roads & drains. The Petitioner has incurred the cost for Buildings and Civil Works as above.

Plant & Machinery:

The plant and machinery head covers the cost for all mechanical works, Electrical works, instrumentation and control system. The cost estimate includes cost towards boiler, turbine, ACC and all the other auxiliary systems of the proposed power plant. Further it also contains the cost for steam piping, cooling water piping and all other piping. For the evacuation cost, it is considered that the power was evacuated to the nearest DTL Grid which is at a distance of about 1.6 km from the plant. The cost of 66kV transmission lines for evacuating the power from the power plant switchyard to the DSIIDC substation is incurred and included. No separate contingency is shown as the plant is ready for commissioning by end April 2016.

Preliminary and Pre-operative expenses

Preliminary and Pre-operative expenses are mostly consisting of expenditure related to Project Feasibility Studies, Technical and Commercial Studies, design and engineering of the project, Pre - Operative expenses, Preliminary expenses, loan Processing fees and technical knowhow fees. These expenses cover the project management expenses, travel, start-up and training etc.

All costs incurred are actually and tried up. The certificate from Chartered Accountant is attached.

Interest during Construction (IDC)

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The Interest during construction period is capitalised to calculate the total Project cost. The project was implemented in about 4 years being nascent. Over a period of time, the implementation experience will be gained in India.

Total project cost with IDC works out to be INR 39,271 Lakh. Considering designed capacity of 24 MW for the Project, the Capital Cost per MW works out to be INR 1636.29 Lakh / MW. This high cost of Project is on account of the high rate of corrosion in WTE boiler than conventional coal fired boiler due to heterogeneous mixture of MSW fuel. This necessitates the high quality boiler and other equipment which can withstand such conditions. The heterogeneous mixture of fuel makes it difficult to keep uniform combustion conditions. In addition to these some key reasons for the high cost of the projects are as follows;

Design Feature	Benefits of the feature
Municipal waste combustors' furnace will be designed for retaining the flue gas at a temp of Min 850 Deg C for a residence time of 2 seconds	For destruction of the PCDD/PCDFs (collectively called as Dioxins) and a global engineering practice
Pre heating of the combustion air to 220 Deg C	The combustion air will be preheated to 220 Deg C. This will ensure quick drying of waste in the specific drying zone of the grate and for ensuring complete combustion
Large Surface Area of Grate	For carrying all functions of combustion namely Drying, Ignition, and combustion and ash formation. Higher area of grate will have high Heat Release Rate from the grate

Design Feature	Benefits of the feature
	Complete combustion of the waste with large residence time ranging from 60 mts to 120 mts depending on the quality so that operation is flexible.
Waste storage under negative suction	The waste storage bunker/pit in RCC will be under negative pressure in order to such the same to suppress the odour emission. The air from pit will be drawn by Primary Fan which will be heated and used for combustion.

- Higher residence time required for complete combustion requiring taller furnace with a heavy refractory to ensure that the prescribed furnace temperature is maintained
 - Lower gas velocities to avoid erosion due to the dust associated with the type of fuel.
 - Special reciprocating grate for high-grade cast material for efficient combustion of about 120 Sq mtr area.
 - Flue gas treatment (FGT) equipment comprising of reaction tower for lime & carbon treatment followed by bag filter. The FGT is unique for solid waste to Power systems when compared with other RE combustion systems like biomass or cogen etc.
 - The dust content of waste renders the total dust load content of the flue gas to be of higher order and hence the size (by virtue of the area of filtration to be provided) of bag filters are usually large for the size of the plant.
1. The furnace is designed for retaining the Flue gas after combustion at a temp of min 850 Deg C for a min period of 2

seconds. It is practically found that the temp is more than 950 Deg C to 1050 Deg C in practice

2. The Spray reactor for treating the flue gas with lime and carbon for treating any residual dioxins, furans and for capturing the heavy metals
3. Waste is stored in a concrete pit with a negative suction and the air is drawn from the pit to be used as combustion air. This mechanism will control odour.
4. Air is preheated to 220 Deg C for primary and secondary combustion to enhance the efficiency of combustion.

Flue Gas treatment

The flue gas treatment system is an integral and crucial component of a modern municipal waste combustion plant. The state-of-the-art technology being installed for flue-gas treatment covers the absorption of acidic components such as HCl, HF and SOx and the removal of dioxins, furans and heavy metals by adsorption. The filtration of dust particles is also part of this process through a bag filter. The proposed Flue Gas Treatment system comprise the following:

De-acid System

It comprises of spray reactor lime slurry preparation tank with agitator assembly, feed pump. The milk of lime is atomized at the top of the reactor into hot flue gases at a temp of 220 Deg C. The water in the milk of lime is evaporated cooling the gases (SO₂, SO₃, HCl/HF) which react with lime forming calcium chloride and calcium sulphate etc.

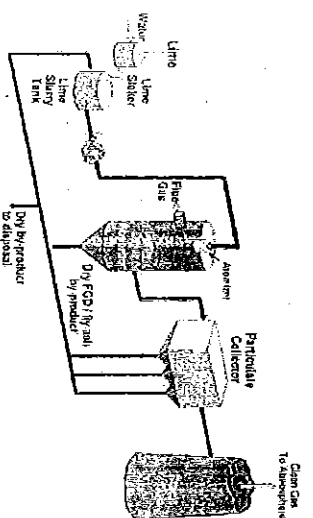
- $2 \text{ HCl} + \text{Ca(OH)}_2 \rightarrow \text{CaCl}_2 + 2 \text{ H}_2\text{O}$
- $2 \text{ HF} + \text{Ca(OH)}_2 \rightarrow \text{CaF}_2 + 2 \text{ H}_2\text{O}$
- $\text{SO}_2 + \text{Ca(OH)}_2 \rightarrow \text{CaSO}_3 + 1\frac{1}{2} \text{ H}_2\text{O}$

Bag Filter System

It comprises of casing, bag cage, filter fabric, fabric cleaning device, bag filter hopper vibrator, preheating system of bag filter, electric heating system for the bag filter hopper, and electric hoist for the filter, supporting platform/stairway and set of Control Instrumentation.

Activated Carbon System

This system will consist of carbon silo, vibrator for silo, feed hopper, metering screw feeder, injector, injection fan, nitrogen protection system and set of Control Instrumentation. The schematic representation is given below



Processing of dioxins, furans and heavy metals

Removal of acidic components in the flue gas is accomplished by injection of hydrated lime in the flue gas in reactor. Reactor is a sophisticated one with an atomizer of European make. Milk of lime is atomized at the top of the reactor into hot flue gases at a temp of 220 Deg C. Water in the milk of lime is evaporated cooling the gases (SO_2 , SO_3 , HCl/HF) which react with lime forming calcium chloride and calcium sulphate etc. Solid products along with excess lime carried by gases from the reactor into the bag house at reduced temperature. Certain amount of the chemical reactions that take place happen in the dust layer that builds up on the filter fabric called the filter cake, so the filter

media is, of course, a key component. Performance of the filter media influences the function of the entire plant, as it is the only barrier for solid particles in the gas stream. During this acceleration the absorption rate is high. This increases the speed of neutralization reactions. Because of the turbulence the rate of reaction can go back until the particle ends up in the filter cake of the filter media. There it forms a kind of fixed bed reactor, and again the rate of reaction is increased as the entire gas flow is forced to pass this fixed bed of reactive particles. As these are usually fine dust particles they have to be collected by using a bag filter unit again. Although this system is known to be the most efficient one with respect to achievable emissions, it is also complicated and requires a high input of energy. By using a mixture of hydrated lime and activated carbon, not just absorption but also removal of dioxins, furans and heavy metals by adsorption takes place on the filter media. Through this process, the expected level of emissions when compared to the MSW (M&H) Rules are provided as under:

Parameter	MSW Rules 2000	MSW Rules 2016	Designed Emissions
Particulate matter mg/N Cum	<150	50	<30
Sox mg/N Cum	Not Prescribed	200	<100
NO x mg/N Cum	< 450	400	< 350
Hcl mg/N Cum	<50	50	<50
Dioxins & Furans ngTEQ/N Cum	Not specified	0.1	0.1
Stack Height Mtrs	30	Not specified	60

The above requirements, which are critical to achieve high quality performance and to ensure safety of environment, have bearing on cost of project.

4 Tariff Structure and Tariff Design

4.1 Tariff Structure

The tariff structure for conventional projects essentially comprises two parts – viz. fixed part and variable part. Single part tariff structure for RE technologies is the most simple method to operationalise considering number of projects and unit size of each project and the same has been in practice for RE technologies for long time. Even for RE technologies such as biomass and bagasse cogeneration power projects SERCs have considered Single Part Tariff with Two components. In case of MSW projects, the CERC has specified a single part tariff for MSW and two part tariff for RDF based Projects. However, though the Petitioner's Plant is using RDF as fuel, however, it is a MSW Project for all practical purpose, as the Petitioner is not buying Refuse Derived Fuel (RDF), but processing at its site from the Municipal Solid Waste (MSW) collected and transported by it. Therefore, the Petitioner has not considered any fuel cost on account of the RDF being utilised as Fuel for the WTE Plant and computed the tariff of the Project on 'Single Part' basis – as of a MSW Plant.

4.2 Tariff Design

Tariff design is one of the most important aspects in ensuring the cash-flow stream to the developers and at the same time, protecting the interest of utility and consumers by avoiding cost burden during initial stages. Tariff should be designed in such a way that the project developer is able to meet its all cash obligations.

The Petitioner has computed levelised tariff for the Project, in accordance with the provisions of Chapter 5A of the CERC (Terms and Conditions for Tariff determination from Renewable Energy Sources) Regulations, 2012, amended from time to time.

5 Financial Analysis

The Financial Analysis of the project includes detail of Operation and profitability, cash flow for a period of 20 years from the date of commissioning of the project.

3.4 Financing of the project

The finance plan for a particular project will depend on a host of parameters like cost and size of project, ability of the developer (or agency) to mobilize resources, lending guidelines from financing institutes and other public and private sector banks. The lenders, after considering the risk factor in investment in evolving technology and uncertain characteristics of fuel and its unorganized market, Total Project Cost has been estimated as INR 39,271 Lakh by the Petitioner. The Petitioner has infused a total Equity of Rs. 9,500 Lakhs in the Project. The balance of the Project Cost (till March 31, 2016) amounting to Rs. 29,771 Lakhs has been funded by Bankers and Group Companies as Debt. This gives a Debt - Equity Ratio of 75.81 : 24.19, which is well within the normative Debt-Equity Ratio of 70:30 in line with standard regulatory norms considered for power generation projects.

3.5 Fixed cost parameters

The following components of fixed cost have been considered for determining the tariff of the proposed power plant:

- Operation and Maintenance Cost
- Revenue Sharing
- Interest on Loan
- Depreciation
- Interest on Working Capital
- Return on Equity
- Plant Load Factor

These components have been discussed in the remaining part of this Chapter.

3.5.1 Operation and Maintenance Cost

Unlike the normal power plants, moving grate boilers are designed to burn high corrosive fuel. The extent of fouling, scaling and corrosion on

the heat transfer surfaces are dependent on the nature of fuel. The MSW fuel composition is unpredictable, which have high corrosive elements in the fuel like Chlorine, Sodium, Potassium, Magnesium etc.

Hence the boiler is expected to have huge corrosion, which would cause need for more frequent tube replacement and considerable maintenance cost to repair the tube failures are expected.

This boiler design involves many moving parts in the grate, unlike other boilers and also these moving parts are located at high temperature zone of furnace. Hence the wear and tear of the grate material is expected to be higher.

Moreover, this moving grate is operated with the hydraulic drives, which requires stringent maintenance in valve seals, etc.

The flue gas cleaning system considered for this power plant is of semi-dry type scrubbing system. The flue gas cleaning system has number of moving parts like rotary spray tower etc., and hence the same requires higher repair/maintenance cost. The R&M values observed during visit to such plants located in China were cross checked with the R&M costs available in the literature for these kind of power plants. The Petitioner has considered O&M cost at 6% of Project Cost with annual escalation of 5.72% in lines with the CERC Tariff norms.

5.2.2 Interest on Loan

The Petitioner has considered an Interest Rate of 12.76% per annum (Refer CERC RE Tariff Order dated 30.03.2016 for FY 2016-17). Considering depreciation as the normative repayment, the loan tenure works out to 15 years. The Petitioner has computed the Interest on Debt, considering the above said norms.

5.2.3 Depreciation

Depreciation is the non-cash expenditure for the developer and the same supports the developer to service the principal repayment obligation under the loan agreement. The cash flow from the MSW project to the developer should be adequate to support the debt service

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obligations; otherwise there may be hesitation on the part of the lenders to extend loan facilities such power projects.

The rate of Depreciation is considered as per CERC generic tariff guidelines namely 5.83% for the first 12 years and 2.51% for the next 8 years with a salvage value of 10%.

5.2.4 Working Capital Requirement and Interest on Working Capital

The Petitioner has considered the following while working out its normative working capital requirement, in lines with the CERC Tariff norms.

- Operation and Maintenance Expense for one month;
- Revenue Sharing Cost for one month;
- Receivables equivalent to 2 (two) months of fixed charges for sale of electricity calculated on the target PLF; and
- Maintenance Spares @ 15% of Operation and Maintenance Expenses.

The Petitioner has considered Interest on Working Capital as 13.26%, in lines with the CERC Tariff norms (CERC RE Tariff Order for FY 2016-17).

5.2.5 Return on Equity

The Petitioner has started availing the Minimum Alternate Tax (MAT) benefit since beginning of the Concessionaire Period, and a period of 5 years out of a maximum MAT period of 10 years has already elapsed. Therefore, the WTE Plant would be able to avail the MAT benefit only for first 5 years and Corporate Tax would become applicable for the remaining 15 years of useful life of the WTE Plant. Considering the above, the Petitioner while computation of Return on Equity, has taken a rate of 20% for the first 5 years (instead of first 10 years) and 24% from 6th year onwards (as against 11th year onwards). The Petitioner has considered a normative return on equity as mentioned below:

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- a) 20% per annum for the first 5 years (as against 10 years as per CERC RE Tariff Norms).
- b) 24% per annum 6th years onwards (as against 11th year onwards as per CERC RE Tariff Norms).

The Petitioner wish to submit that, in the modified case, as requested by the Petitioner, the Weighted Average of post Tax RoE would be 15.70% instead of 15.71% in the normal case.

Discount Rate which is equivalent to Post Tax Weighted Average Cost of capital has been considered as 10.12%.

In the light of fact that MAT rate would be available to the WTE Plant only for a period of 5 years, the Petitioner prays to the Hon'ble Commission to allow Return on Equity as per above mentioned computation.

5.2.6 Plant Load Factor

The Plant Load Factor is the key performance parameter for any power plant installation. The plant load factor is dependent on several critical factors such as continuous availability of reliable quality fuel supply, plant availability and un-constrained off-take (high load factor). Location of Plant is at Narela, Bawana at Delhi which is a suburb of Delhi. For tariff determination purpose the normative PLF as stipulated in the CERC Tariff norms has been considered. PLF during the period of stabilisation has been considered as 65%, also the PLF of 65% has been considered for the remaining first year of the project. From second year onwards the PLF of 75% has been considered for the determination of tariff.

5.2.7 Auxiliary Consumptions

The auxiliary consumption factor is one of the key performance parameter for the power plants and the same is dependent on the size of plant and plant configuration. The auxiliary consumption factor in respect of various project approved by other State Commissions varies around 15%, much more than the conventional power projects.

The Power plant based on the MSW processes heterogeneous mixture of MSW which cause wear and tear of the Boiler and other equipments in the plant. In view of this abrasive nature of feeding fuel and other cost component involved the auxiliary consumption of the MSW plant is also higher than any conventional power plant. In the power plant there shall be two numbers 4 MVA, 11/0.433/0.422 kV converter transformer to meet with the auxiliary power requirement. The petitioner requests the Hon'ble Commission to consider an auxiliary consumption of 15% for the determination of tariff based on CERC guidelines as specified in the tariff determination regulations..

5.2.8 Plant Life

Considering the heterogeneous character of MSW and its abrasive nature the plant life considered for the proposed project is 20 years.

5.3 Proposed tariff

Summary of above discussed parameters are provided in the following table for the ready reference. Under the 'preferential tariff' tariff regime based on cost plus approach, it needs to be ensured that tariff structure and recovery thereof represents underlying costs and performance of the WTE projects. In case of WTE projects, it is suggested to specify tariff on 'Single Part' basis. Further, tariff for the Project needs to be designed in such a way that the project developer is able to meet its all cash obligations. The Petitioner prays to the Hon'ble Commission to determine the levelled tariff for the Project, taking into consideration the cost plus tariff framework, as being determined by CERC for all RE technologies.

Table 10: Summary of parameters for MSW project

Sub-Head (1)	Sub-Head (2)	Unit	Delhi MSW Solutions Ltd.
Capacity			

Sub-Head (1)	Sub-Head (2)	Unit	Delhi MSW Solutions Ltd.
	Capacity of the Plant	MW	24 MW
	Capacity Utilization Factor-during stabilization	%	65%
	Capacity Utilization Factor during the remaining period of the 1 st yr (after stabilization)	%	65%
	Capacity Utilization Factor 2 nd Yr onwards	%	75%
	Auxiliary Consumption	%	15%
	Plant Life	Years	20
Capital Cost	Power Plant Cost	Rs Lacs	39,271
		Rs lakh / MW	1636.29
Debt: Equity	Debt	%	75.81%
	Equity	%	24.19%
	Total Debt Amount	Rs Lacs	29,771
	Total Equity Amount	Rs Lacs	9,500
Debt Component			
	Interest Rate	%	12.76%
Equity Component			
	Equity amount	Rs Lacs	9,500
	Return on Equity for first 5 years	% p.a	20%
	RoE Period	Year	5
	Return on Equity 6th year onwards	% p.a	24%
	Weighted Average of Post Tax RoE	% p.a.	15.70%
	Discount Rate (Equiv. to Post Tax WACC)	% p.a.	10.12%
Depreciation			
	Depreciation considered for 1st 12 Yrs	%	5.83%
	Depreciation Rate 13th year onwards	%	2.51%
Fiscal Assumptions			

Sub-Head (1)	Sub-Head (2)	Unit	Delhi MSW Solutions Ltd.
	Income Tax	%	34.61%
	MAT Rate (for first 5 years)	%	21.34%
For Fixed Charges			
	O&M Charges	Months	1
	Maintenance Spare	%	15%
	Receivable from Debtors	Months	2
	Interest On Working Capital	%	13.26%
	Revenue Sharing (year 7 to year 13)	%	3%
O&M Expense	% of base capital cost	%	6%
Total O & M Expenses Escalation		%	5.72%

Annexure: Detailed working of the Cost of Generation

Form Template for [Delhi MSW Solution Ltd, MSW project] : Determination of Tariff Component

Units Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Installed Capacity	MW		24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24
Net Generation	MU		116.16	134.03	134.03	134.03	134.03	134.03	134.03	134.03	134.03	134.03	134.03	134.03	134.03	134.03	134.03	134.03	134.03	134.03	134.03	134.03

Fixed Cost	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
O&M Expenses	Rs Lakh		2,356	2,491	2,634	2,784	2,943	3,112	3,290	3,478	3,677	3,887	4,110	4,345	4,593	4,856	5,134	5,427	5,738	6,066	6,413	6,780
Revenue Sharing	Rs Lakh								312	309	306	304	302	300	261							
Depreciation	Rs Lakh		2,289	2,289	2,289	2,289	2,289	2,289	2,289	2,289	2,289	2,289	2,289	2,289	984	984	984	984	984	984	984	984
Interest on Term Loan	Rs Lakh		3,653	3,361	3,068	2,776	2,484	2,192	1,900	1,608	1,316	1,023	731	439	230	105	21	-	-	-	-	-
Interest on Working Capital	Rs Lakh		305	306	307	308	310	312	315	319	323	328	333	339	344	350	356	362	368	375	382	389
Return on Equity	Rs Lakh		1,900	1,900	1,900	1,900	1,900	2,280	2,280	2,280	2,280	2,280	2,280	2,280	2,280	2,280	2,280	2,280	2,280	2,280	2,280	2,280
Total Fixed Cost	Rs Lakh		10,503	10,347	10,198	10,058	9,928	10,195	10,407	10,303	10,211	10,132	10,065	10,013	8,685	8,564	8,771	9,059	9,386	9,732	10,098	10,485

Levelised tariff corresponding to Useful life of 20 years

Per Unit Cost of Generation	Unit	Levelised (Rs/Unit)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
O&M Expenses	Rs/kWh	2.67	2.03	1.85	1.95	2.08	2.20	2.32	2.45	2.59	2.74	2.90	3.07	3.24	3.43	3.62	3.83	4.05	4.28	4.53	4.78	5.06
Revenue Sharing	Rs/kWh	0.07							0.23	0.23	0.23	0.23	0.23	0.22	0.19							
Depreciation	Rs/kWh	1.54	1.97	1.71	1.71	1.71	1.71	1.71	1.71	1.71	1.71	1.71	1.71	1.71	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
Interest on Term Loan	Rs/kWh	1.47	3.14	2.51	2.29	2.07	1.85	1.64	1.42	1.20	0.98	0.76	0.55	0.33	0.00	0.08	0.02	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	Rs/kWh	0.25	0.26	0.23	0.23	0.23	0.23	0.24	0.25	0.25	0.26	0.26	0.26	0.27	0.25	0.25	0.26	0.27	0.29	0.30	0.31	0.33
Return on Equity	Rs/kWh	1.60	1.64	1.42	1.42	1.42	1.42	1.70	1.70	1.70	1.70	1.70	1.70	1.70	1.70	1.70	1.70	1.70	1.70	1.70	1.70	1.70
Fixed COG Component	Rs/kWh	7.60	9.04	7.72	7.61	7.50	7.41	7.61	7.76	7.69	7.62	7.56	7.51	7.47	6.31	6.39	6.54	6.76	7.00	7.26	7.53	7.82

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ANNEXURE-P-2

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OFFICE OF THE EXECUTIVE ENGINEER (SDW)VII
DELHI JAL BOARD: GOVT. OF N.C.T. OF DELHI
N.S.T.P CORONATION PILLAR: DELHI -110009

NO.F-5/DJB/EE (SDW) VII/2011/1611

DATED: 03/11/11

To,

Delhi MSW Solutions Ltd.,
MCD Workshop, Near Police Station,
Model Town Phase-I, Delhi-110009

Subject: Approval of availability of 1000 cu m Treated effluent at Rithala STP


Dear Sir,

This is in reference to the said subject and your request received vide letter dated 17-09-11 for daily requirement of 1000 cu m of treated effluent for their upcoming 24 MW Renewable Power Plant from waste to energy project to be setup alongside of PPCL Power Plant at Bawana. It is my pleasure to inform you that competent authority has accepted your request of supply of 1000 cu m per day of treated effluent to Delhi MSW Solutions Ltd in principle from Rithala STP with parameters of treated effluent as BOD<20mg/l and SS< 30 Mg/l. The above approval is subject to the condition that Delhi MSW Solution Ltd will make their own arrangement of carrying treated effluent from Rithala to their Plant and complete the formalities and deposit required amount for land lease charges if any and effluent consumption charges as per DJB Policy.

Thanking you,

Yours Sincerely

(S.C.Vashisht)


EXECUTIVE ENGINEER (SDW)-VI
DELHI JAL BOARD,
N. S. T. P. CORONATION PILLAR,
DELHI-110009

ANNEXURE-P-2

[भाग II-खण्ड 3(i)]

भारत का राजपत्र : असाधारण

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नगरपालिकाओं की कुल संख्या:

प्रस्तुत की गई कार्य योजना की संख्या:

प्रत्य-VI

[नियम 25 देखें]

दुर्घटना का प्रतिवेदन

1.	दुर्घटना की तारीख और समय	:	
2.	दुर्घटना के लिए कारकों का अनुक्रम	:	
3.	दुर्घटना में शामिल अपशिष्ट	:	
4.	मानव स्वास्थ्य और पर्यावरण पर दुर्घटनाओं के प्रभावों का मूल्यांकन	:	
5.	किए गए आपातकालीन उपाय	:	
6.	दुर्घटनाओं के प्रभावों को कम करने के लिए उठाए गए कदम	:	
7.	ऐसी किसी दुर्घटना की पुनरावृत्ति को रोकने के लिए उठाए गए कदम	:	
तारीख		हस्ताक्षर	
स्थान		पदनाम	

[फा. सं. 18-3/2004-एचएसएमडी]

विश्वनाथ सिन्हा, संयुक्त सचिव

MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE
NOTIFICATION

New Delhi, the 8th April, 2016

S.O. 1357(E).—Whereas the draft of the Solid Waste Management Rules, 2015 were published under the notification of the Government of India in the Ministry of Environment, Forest and Climate Change number G.S.R. 451 (E), dated the 3rd June, 2015 in the Gazette of India, part II, Section 3, sub-section (i) of the same date inviting objections or suggestions from the persons likely to be affected thereby, before the expiry of the period of sixty days from the publication of the said notification on the Solid Waste Management Rules, 2015 in supersession of the Municipal Solid Waste (Management and Handling) Rules, 2000;

And whereas, copies of the said Gazette were made available to the public on the 3rd June, 2015;

And whereas, the objections or comments received within the stipulated period were duly considered by the Central Government;

Now, therefore, in exercise of the powers conferred by sections 3, 6 and 25 of the Environment (Protection) Act, 1986 (29 of 1986) and in supersession of the Municipal Solid Waste (Management and Handling) Rules, 2000, except as respect things done or omitted to be done before such supersession, the Central Government hereby makes the following rules for management of Solid Waste, namely:-

1. Short title and commencement.-

- (1) These rules may be called the Solid Waste Management Rules, 2016.
- (2) They shall come into force on the date of their publication in the Official Gazette.

2. **Application.**—These rules shall apply to every urban local body, outgrowths in urban agglomerations, census towns as declared by the Registrar General and Census Commissioner of India, notified areas, notified industrial townships, areas under the control of Indian Railways, airports, airbases, Ports and harbours, defence establishments, special economic zones, State and Central government organisations, places of pilgrims, religious and historical importance as may be notified by respective State government from time to time and to every domestic, institutional, commercial and any other non residential solid waste generator situated in the areas except industrial waste, hazardous waste, hazardous chemicals, bio medical wastes, e-waste, lead acid batteries and radio-active waste, that are covered under separate rules framed under the Environment (Protection) Act, 1986.

3. **Definitions.**—(1) In these rules, unless the context otherwise requires,— (1) **"aerobic composting"** means a controlled process involving microbial decomposition of organic matter in the presence of oxygen;

2. **"anaerobic digestion"** means a controlled process involving microbial decomposition of organic matter in absence of oxygen;

3. **"authorisation"** means the permission given by the State Pollution Control Board or Pollution Control Committee, as the case may be, to the operator of a facility or urban local authority, or any other agency responsible for processing and disposal of solid waste;

4. **"biodegradable waste"** means any organic material that can be degraded by micro-organisms into simpler stable compounds;

5. **"bio-methanation"** means a process which entails enzymatic decomposition of the organic matter by microbial action to produce methane rich biogas;

6. **"brand owner"** means a person or company who sells any commodity under a registered brand label.

7. **"buffer zone"** means zone of no development to be maintained around solid waste processing and disposal facility, exceeding 5 TPD of installed capacity. This will be maintained within total and area allotted for the solid waste processing and disposal facility.

8. **"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 having an average waste generation rate exceeding 100kg per day;

9. **"bye-laws"** means regulatory framework notified by local body, census town and notified area townships for facilitating the implementation of these rules effectively in their jurisdiction.

10. **"census town"** means an urban area as defined by the Registrar General and Census Commissioner of India;

11. **"combustible waste"** means non-biodegradable, non-recyclable, non-hazardous solid waste having minimum calorific value exceeding 1500 Kcal/kg and excluding chlorinated materials like plastic, wood pulp, etc;

12. **"composting"** means a controlled process involving microbial decomposition of organic matter;

13. **"contractor"** means a person or firm that undertakes a contract to provide materials or labour to perform a service or do a job for service providing authority;

14. **"co-processing"** means use of non-biodegradable and non-recyclable solid waste having calorific value exceeding 1500Kcal as raw material or as a source of energy or both to replace or supplement the natural mineral resources and fossil fuels in industrial processes;

15. **"decentralised processing"** means establishment of dispersed facilities for maximizing the processing of bio-degradable waste and recovery of recyclables closest to the source of generation so as to minimize transportation of waste for processing or disposal;

16. **"disposal"** means the final and safe disposal of post processed residual solid waste and inert street sweepings and silt from surface drains on land as specified in Schedule I to prevent contamination of ground water, surface water, ambient air and attraction of animals or birds;

17. **"domestic hazardous waste"** means discarded paint drums, pesticide cans, CFL bulbs, tube lights, expired medicines, broken mercury thermometers, used batteries, used needles and syringes and contaminated gauge, etc., generated at the household level;

18. "door to door collection" means collection of solid waste from the door step of households, shops, commercial establishments, offices, institutional or any other non residential premises and includes collection of such waste from entry gate or a designated location on the ground floor in a housing society, multi storied building or apartments, large residential, commercial or institutional complex or premises;.
19. "dry waste" means waste other than bio-degradable waste and inert street sweepings and includes recyclable and non recyclable waste, combustible waste and sanitary napkin and diapers, etc;
20. "dump sites" means a land utilised by local body for disposal of solid waste without following the principles of sanitary land filling;
21. "extended producer responsibility" (EPR) means responsibility of any producer of packaging products such as plastic, tin, glass and corrugated boxes, etc., for environmentally sound management, till end-of-life of the packaging products;
22. "facility" means any establishment wherein the solid waste management processes namely segregation, recovery, storage, collection, recycling, processing, treatment or safe disposal are carried out;
23. "fine" means penalty imposed on waste generators or operators of waste processing and disposal facilities under the bye-laws for non-compliance of the directions contained in these rules and/or bye-laws
24. "Form" means a Form appended to these rules;
25. "handling" includes all activities relating to sorting, segregation, material recovery, collection, secondary storage, shredding, baling, crushing, loading, unloading, transportation, processing and disposal of solid wastes;
26. "inerts" means wastes which are not bio-degradable, recyclable or combustible street sweeping or dust and silt removed from the surface drains;
27. "incineration" means an engineered process involving burning or combustion of solid waste to thermally degrade waste materials at high temperatures;
28. "informal waste collector" includes individuals, associations or waste traders who are involved in sorting, sale and purchase of recyclable materials;
29. "leachate" means the liquid that seeps through solid waste or other medium and has extracts of dissolved or suspended material from it;
30. "local body" for the purpose of these rules means and includes the municipal corporation, nagar nigam, municipal council, nagarpalika, nagar Palikaparishad, municipal board, nagar panchayat and town panchayat, census towns, notified areas and notified industrial townships with whatever name they are called in different States and union territories in India;
31. "materials recovery facility" (MRF) means a facility where non-compostable solid waste can be temporarily stored by the local body or any other entity mentioned in rule 2 or any person or agency authorised by any of them to facilitate segregation, sorting and recovery of recyclables from various components of waste by authorised informal sector of waste pickers, informal recyclers or any other work force engaged by the local body or entity mentioned in rule 2 for the purpose before the waste is delivered or taken up for its processing or disposal;
32. "non-biodegradable waste" means any waste that cannot be degraded by micro organisms into simpler stable compounds;
33. "operator of a facility" means a person or entity, who owns or operates a facility for handling solid waste which includes the local body and any other entity or agency appointed by the local body;
34. "primary collection" means collecting, lifting and removal of segregated solid waste from source of its generation including households, shops, offices and any other non-residential premises or from any collection points or any other location specified by the local body;
35. "processing" means any scientific process by which segregated solid waste is handled for the purpose of reuse, recycling or transformation into new products;
36. "recycling" means the process of transforming segregated non-biodegradable solid waste into new material or product or as raw material for producing new products which may or may not be similar to the original products;
37. "redevelopment" means rebuilding of old residential or commercial buildings at the same site, where the existing buildings and other infrastructures have become dilapidated;

38. "refused derived fuel (RDF)" means fuel derived from combustible waste fraction of solid waste like plastic, wood, pulp or organic waste, other than chlorinated materials, in the form of pellets or fluff produced by drying, shredding, dehydrating and compacting of solid waste ;
39. "residual solid waste" means and includes the waste and rejects from the solid waste processing facilities which are not suitable for recycling or further processing;
40. "sanitary land filling " means the final and safe disposal of residual solid waste and inert wastes on land in a facility designed with protective measures against pollution of ground water, surface water and fugitive air dust, wind-blown litter, bad odour, fire hazard, animal menace, bird menace, pests or rodents, greenhouse gas emissions, persistent organic pollutants slope instability and erosion;
41. "sanitary waste" means wastes comprising of used diapers, sanitary towels or napkins, tampons, condoms, incontinence sheets and any other similar waste;
42. "Schedule" means the Schedule appended to these rules;
43. "secondary storage" means the temporary containment of solid waste after collection at secondary waste storage depots or MRFs or bins for onward transportation of the waste to the processing or disposal facility;
44. "segregation" means sorting and separate storage of various components of solid waste namely biodegradable wastes including agriculture and dairy waste, non biodegradable wastes including recyclable waste, non-recyclable combustible waste, sanitary waste and non recyclable inert waste, domestic hazardous wastes, and construction and demolition wastes;
45. "service provider" means an authority providing public utility services like water, sewerage, electricity, telephone, roads, drainage, etc;
46. "solid waste" means and includes solid or semi-solid domestic waste, sanitary waste, commercial waste, institutional waste, catering and market waste and other non residential wastes, street sweepings, silt removed or collected from the surface drains, horticulture waste, agriculture and dairy waste, treated bio-medical waste excluding industrial waste, bio-medical waste and e-waste, battery waste, radio-active waste generated in the area under the local authorities and other entities mentioned in rule 2;
47. "sorting" means separating various components and categories of recyclables such as paper, plastic, card-boards, metal, glass, etc., from mixed waste as may be appropriate to facilitate recycling;
48. "stabilising" means the biological decomposition of biodegradable wastes to a stable state where it generates no leachate or offensive odours and is fit for application to farm land, soil erosion control and soil remediation;
49. "street vendor" means any person engaged in vending of articles, goods, wares, food items or merchandise of everyday use or offering services to the general public, in a street, lane, side walk, footpath, pavement, public park or any other public place or private area, from a temporary built up structure or by moving from place to place and includes hawkker, peddler, squatter and all other synonymous terms which may be local or region specific; and the words "street vending" with their grammatical variations and cognate expressions, shall be construed accordingly;
50. "tipping fee" means a fee or support price determined by the local authorities or any state agency authorised by the State government to be paid to the concessionaire or operator of waste processing facility or for disposal of residual solid waste at the landfill;
51. "transfer station" means a facility created to receive solid waste from collection areas and transport in bulk in covered vehicles or containers to waste processing and, or, disposal facilities;
52. "transportation" means conveyance of solid waste, either treated, partly treated or untreated from a location to another location in an environmentally sound manner through specially designed and covered transport system so as to prevent the foul odour, littering and unsightly conditions;
53. "treatment" means the method, technique or process designed to modify physical, chemical or biological characteristics or composition of any waste so as to reduce its volume and potential to cause harm;
54. "user fee" means a fee imposed by the local body and any entity mentioned in rule 2 on the waste generator to cover full or part cost of providing solid waste collection, transportation, processing and disposal services.
55. "vermi composting" means the process of conversion of bio-degradable waste into compost using earth worms;
56. "waste generator" means and includes every person or group of persons, every residential premises and non residential establishments including Indian Railways, defense establishments, which generate solid waste;
57. "waste hierarchy" means the priority order in which the solid waste is to should be managed by giving

emphasis to prevention, reduction, reuse, recycling, recovery and disposal, with prevention being the most preferred option and the disposal at the landfill being the least;

58. "waste picker" means a person or groups of persons informally engaged in collection and recovery of reusable and recyclable solid waste from the source of waste generation the streets, bins, material recovery facilities, processing and waste disposal facilities for sale to recyclers directly or through intermediaries to earn their livelihood.

(2) Words and expressions used herein but not defined, but defined in the Environment (Protection) Act, 1986, the Water (Prevention and Control of Pollution) Act, 1974, Water (Prevention and Control of Pollution) Cess Act, 1977 and the Air (Prevention and Control of Pollution) Act, 1981 shall have the same meaning as assigned to them in the respective Acts.

4 Duties of waste generators.- (1) Every waste generator shall:-

- (a) segregate and store the waste generated by them in three separate streams namely bio-degradable, non bio-degradable and domestic hazardous wastes in suitable bins and handover segregated wastes to authorised waste pickers or waste collectors as per the direction or notification by the local authorities from time to time;
- (b) wrap securely the 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 and shall place the same in the bin meant for dry waste or non-bio-degradable waste;
- (c) store separately construction and demolition waste, as and when generated, in his own premises and shall dispose off as per the Construction and Demolition Waste Management Rules, 2016; and
- (d) store horticulture waste and garden waste generated from his premises separately in his own premises and dispose of as per the directions of the local body from time to time.
- (2) No waste generator shall throw, burn or bury the solid waste generated by him, on streets, open public spaces outside his premises or in the drain or water bodies.
- (3) All waste generators shall pay such user fee for solid waste management, as specified in the bye-laws of the local bodies.
- (4) No person shall organise an event or gathering of more than one hundred persons at any unlicensed place without intimating the local body, at least three working days in advance and such person or the organiser of such event shall ensure segregation of waste at source and handing over of segregated waste to waste collector or agency as specified by the local body.
- (5) Every street vendor shall keep suitable containers for storage of waste generated during the course of his activity such as food waste, disposable plates, cups, cans, wrappers, coconut shells, leftover food, vegetables, fruits, etc., and shall deposit such waste at waste storage depot or container or vehicle as notified by the local body.
- (6) All resident welfare and market associations shall, within one year from the date of notification of these rules and in partnership with the local body ensure segregation of waste at source by the generators as prescribed in these rules, facilitate collection of segregated waste in separate streams, handover recyclable material to either the authorised waste pickers or the authorised recyclers. The bio-degradable waste shall be processed, treated and disposed off through composting or bio-methanation within the premises as far as possible. The residual waste shall be given to the waste collectors or agency as directed by the local body.
- (7) All gated communities and institutions with more than 5,000 sqm area shall, within one year from the date of notification of these rules and in partnership with the local body, ensure segregation of waste at source by the generators as prescribed in these rules, facilitate collection of segregated waste in separate streams, handover recyclable material to either the authorised waste pickers or the authorised recyclers. The bio-degradable waste shall be processed, treated and disposed off through composting or bio-methanation within the premises as far as possible. The residual waste shall be given to the waste collectors or agency as directed by the local body.
- (8) All hotels and restaurants shall, within one year from the date of notification of these rules and in partnership with the local body ensure segregation of waste at source as prescribed in these rules, facilitate collection of segregated waste in separate streams, handover recyclable material to either the authorised waste pickers or the authorised recyclers. The bio-degradable waste shall be processed, treated and disposed off through composting or bio-methanation within the premises as far as possible. The residual waste shall be given to the waste collectors or agency as directed by the local body.

5. Duties of Ministry of Environment, Forest and Climate Change.- (1) The Ministry of Environment, Forest and Climate Change shall be responsible for over all monitoring the implementation of these rules in the country. It shall constitute a Central Monitoring Committee under the Chairmanship of Secretary, Ministry of Environment, Forest and Climate Change comprising officer not below the rank of Joint Secretary or Advisor from the following namely:-

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- 1) Ministry of Urban Development
- 2) Ministry of Rural Development
- 3) Ministry of Chemicals and Fertilizers
- 4) Ministry of Agriculture
- 5) Central Pollution Control Board
- 6) Three State Pollution Control Boards or Pollution Control Committees by rotation
- 7) Urban Development Departments of three State Governments by rotation
- 8) Rural Development Departments from two State Governments by rotation
- 9) Three Urban Local bodies by rotation
- 10) Two census towns by rotation
- 11) PCCCI, CII
- 12) Two subject experts

2. This Central Monitoring Committee shall meet at least once in a year to monitor and review the implementation of these rules. The Ministry of Environment, Forest and Climate Change may co-opt other experts, if needed. The Committee shall be renewed every three years.

6. **Duties of Ministry of Urban Development.**—(1) The Ministry of Urban Development shall coordinate with State Governments and Union Territory Administrations to,—

- (a) take periodic review of the measures taken by the states and local bodies for improving solid waste management practices and execution of solid waste management projects funded by the Ministry and external agencies at least once in a year and give advice on taking corrective measures;
- (b) formulate national policy and strategy on solid waste management including policy on waste to energy in consultation with stakeholders within six months from the date of notification of these rules;
- (c) facilitate States and Union Territories in formulation of state policy and strategy on solid management based on national solid waste management policy and national urban sanitation policy;
- (d) promote research and development in solid waste management sector and disseminate information to States and local bodies;
- (e) undertake training and capacity building of local bodies and other stakeholders; and
- (f) provide technical guidelines and project finance to states, Union territories and local bodies on solid waste management to facilitate meeting timelines and standards.

7. **Duties of Department of Fertilisers, Ministry of Chemicals and Fertilisers.**—(1) The Department of Fertilisers through appropriate mechanisms shall,—

- (a) provide market development assistance on city compost; and
- (b) ensure promotion of co-marketing of compost with chemical fertilisers in the ratio of 3 to 4 bags: 6 to 7 bags by the fertiliser companies to the extent compost is made available for marketing to the companies.

8. **Duties of Ministry of Agriculture, Government of India.**—The Ministry of Agriculture through appropriate mechanisms shall,—

- (a) provide flexibility in Fertiliser Control Order for manufacturing and sale of compost;
- (b) propagate utilisation of compost on farm land;
- (c) set up laboratories to test quality of compost produced by local authorities or their authorised agencies; and
- (d) issue suitable guidelines for maintaining the quality of compost and ratio of use of compost vis-a-vis chemical fertilizers while applying compost to farmland.

9. **Duties of the Ministry of Power.**—The Ministry of Power through appropriate mechanisms shall,—

- (a) decide tariff or charges for the power generated from the waste to energy plants based on solid waste.
- (b) compulsory purchase power generated from such waste to energy plants by distribution company.

10. **Duties of Ministry of New and Renewable Energy Sources.**—The Ministry of New and Renewable Energy Sources through appropriate mechanisms shall,—

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- (a) facilitate infrastructure creation for waste to energy plants; and
 - (b) provide appropriate subsidy or incentives for such waste to energy plants.
11. Duties of the Secretary-in-charge, Urban Development in the States and Union territories.- (1) The Secretary, Urban Development Department in the State or Union territory through the Commissioner or Director of Municipal Administration or Director of local bodies shall,-
- (a) prepare a state policy and solid waste management strategy for the state or the union territory in consultation with stakeholders including representative of waste pickers, self help group and similar groups working in the field of waste management consistent with these rules, national policy on solid waste management and national urban sanitation policy of the ministry of urban development, in a period not later than one year from the date of notification of these rules;
 - (b) while preparing State policy and strategy on solid waste management, lay emphasis on waste reduction, reuse, recycling, recovery and optimum utilisation of various components of solid waste to ensure minimisation of waste going to the landfill and minimise impact of solid waste on human health and environment;
 - (c) state policies and strategies should acknowledge the primary role played by the informal sector of waste pickers, waste collectors and recycling industry in reducing waste and provide broad guidelines regarding integration of waste picker or informal waste collectors in the waste management system.
 - (d) ensure implementation of provisions of these rules by all local authorities.
 - (e) direct the town planning department of the State to ensure that master plan of every city in the State or Union territory provisions for setting up of solid waste processing and disposal facilities except for the cities who are members of common waste processing facility or regional sanitary landfill for a group of cities; and
 - (f) ensure identification and allocation of suitable land to the local bodies within one year for setting up of processing and disposal facilities for solid wastes and incorporate them in the master plans (land use plan) of the State or as the case may be, cities through metropolitan and district planning committees or town and country planning department;
 - (h) direct the town planning department of the State and local bodies to ensure that a separate space for segregation, storage, decentralised processing of solid waste is demarcated in the development plan for group housing or commercial, institutional or any other non-residential complex exceeding 200 dwelling or having a plot area exceeding 5,000 square meters;
 - (i) direct the developers of Special Economic Zone, Industrial Estate, Industrial Park to earmark at least five percent of the total area of the plot or minimum five plots or sheds for recovery and recycling facility.
 - (j) facilitate establishment of common regional sanitary land fill for a group of cities and towns falling within a distance of 50 km (or more) from the regional facility on a cost sharing basis and ensure professional management of such sanitary landfills;
 - (k) arrange for capacity building of local bodies in managing solid waste, segregation and transportation or processing of such waste at source;
 - (l) notify buffer zone for the solid waste processing and disposal facilities of more than five tons per day in consultation with the State Pollution Control Board; and
 - (m) start a scheme on registration of waste pickers and waste dealers.
12. Duties of District Magistrate or District Collector or Deputy Commissioner.- The District Magistrate or District Collector or as the case may be, the Deputy Commissioner shall,-
- (a) facilitate identification and allocation of suitable land as per clause (f) of rules 11 for setting up solid waste processing and disposal facilities to local authorities in his district in close coordination with the Secretary-in-charge of State Urban Development Department within one year from the date of notification of these rules;
 - (b) review the performance of local bodies, at least once in a quarter on waste segregation, processing, treatment and disposal and take corrective measures in consultation with the Commissioner or Director of Municipal Administration or Director of local bodies and secretary-in-charge of the State Urban Development.
13. Duties of the Secretary-in-charge of Village Panchayats or Rural Development Department in the State and Union territory.- (1) The Secretary-in-charge of Village Panchayats or Rural Development Department in the State and Union territory shall have the same duties as the Secretary-in-charge, Urban Development in the States and Union territories, for the areas which are covered under these rules and are under their jurisdictions.
14. Duties of Central Pollution Control Board.-The Central Pollution Control Board shall,-

- (a) co-ordinate with the State Pollution Control Boards and the Pollution Control Committees for implementation of these rules and adherence to the prescribed standards by local authorities;
 - (b) formulate the standards for ground water, ambient air, noise pollution, leachate in respect of all solid waste processing and disposal facilities;
 - (c) review environmental standards and norms prescribed for solid waste processing facilities or treatment technologies and update them as and when required;
 - (d) review through State Pollution Control Boards or Pollution Control Committees, at least once in a year, the implementation of prescribed environmental standards for solid waste processing facilities or treatment technologies and compile the data monitored by them;
 - (e) review the proposals of State Pollution Control Boards or Pollution Control Committees on use of any new technologies for processing, recycling and treatment of solid waste and prescribe performance standards, emission norms for the same within 6 months;
 - (f) monitor through State Pollution Control Boards or Pollution Control Committees the implementation of these rules by local bodies;
 - (g) prepare an annual report on implementation of these rules on the basis of reports received from State Pollution Control Boards and Committees and submit to the Ministry of Environment, Forest and Climate Change and the report shall also be put in public domain;
 - (h) publish guidelines for maintaining buffer zone restricting any residential, commercial or any other construction activity from the outer boundary of the waste processing and disposal facilities for different sizes of facilities handling more than five tons per day of solid waste;
 - (i) publish guidelines, from time to time, on environmental aspects of processing and disposal of solid waste to enable local bodies to comply with the provisions of these rules; and
 - (j) provide guidance to States or Union territories on inter-state movement of waste.
15. Duties and responsibilities of local authorities and village Panchayats of census towns and urban agglomerations.- The local authorities and Panchayats shall-
- (a) prepare a solid waste management plan as per state policy and strategy on solid waste management within six months from the date of notification of state policy and strategy and submit a copy to respective departments of State Government or Union territory Administration or agency authorised by the State Government or Union territory Administration;
 - (b) arrange for door to door collection of segregated solid waste from all households including slums and informal settlements, commercial, institutional and other non residential premises. From multi-storage buildings, large commercial complexes, malls, housing complexes, etc., this may be collected from the entry gate or any other designated location;
 - (c) establish a system to recognise organisations of waste pickers or informal waste collectors and promote and establish a system for integration of these authorised waste-pickers and waste collectors to facilitate their participation in solid waste management including door to door collection of waste;
 - (d) facilitate formation of Self Help Groups, provide identity cards and thereafter encourage integration in solid waste management including door to door collection of waste;
 - (e) frame bye-laws incorporating the provisions of these rules within one year from the date of notification of these rules and ensure timely implementation;
 - (f) prescribe from time to time user fee as deemed appropriate and collect the fee from the waste generators on its own or through authorised agency;
 - (g) direct waste generators not to litter or throw or dispose of any waste such as paper, water bottles, liquor bottles, soft drink cans, tetra packs, fruit peel, wrappers, etc., or burn or bury waste on streets, open public spaces, drains, waste bodies and to segregate the waste at source as prescribed under these rules and hand over the segregated waste to authorised the waste pickers or waste collectors authorised by the local body;
 - (h) setup material recovery facilities or secondary storage facilities with sufficient space for sorting of recyclable materials to enable informal or authorised waste pickers and waste collectors to separate recyclables from the waste and provide easy access to waste pickers and recyclers for collection of segregated recyclable waste such as paper, plastic, metal, glass, textile from the source of generation or from material recovery facilities; Bins for storage of bio-degradable wastes shall be painted green, those for storage of recyclable wastes shall be painted white and those for storage of other wastes shall be painted black;

- (i) establish waste deposition centres for domestic hazardous waste and give direction for waste generators to deposit domestic hazardous wastes at this centre for its safe disposal. Such facility shall be established in a city or town in a manner that one centre is set up for the area of twenty square kilometers or part thereof and notify the timings of receiving domestic hazardous waste at such centres;
- (j) ensure safe storage and transportation of the domestic hazardous waste to the hazardous waste disposal facility or as may be directed by the State Pollution Control Board or the Pollution Control Committee;
- (k) direct street sweepers not to burn tree leaves collected from street sweeping and store them separately and handover to the waste collectors or agency authorised by local body;
- (l) provide training on solid waste management to waste-pickers and waste collectors;
- (m) collect waste from vegetable, fruit, flower, meat, poultry and fish market on day to day basis and promote setting up of decentralised compost plant or bio-methanation plant at suitable locations in the markets or in the vicinity of markets ensuring hygienic conditions;
- (n) collect separately waste from sweeping of streets, lanes and by-lanes daily, or on alternate days or twice a week depending on the density of population, commercial activity and local situation;
- (o) set up covered secondary storage facility for temporary storage of street sweepings and silt removed from surface drains in cases where direct collection of such waste into transport vehicles is not convenient. Waste so collected shall be collected and disposed of at regular intervals as decided by the local body;
- (p) collect horticulture, parks and garden waste separately and process in the parks and gardens, as far as possible;
- (q) transport segregated bio-degradable waste to the processing facilities like compost plant, bio-methanation plant or any such facility. Preference shall be given for on site processing of such waste;
- (r) transport non-bio-degradable waste to the respective processing facility or material recovery facilities or secondary storage facility;
- (s) transport construction and demolition waste as per the provisions of the Construction and Demolition Waste management Rules, 2016;
- (t) involve communities in waste management and promotion of home composting, bio-gas generation, decentralised processing of waste at community level subject to control of odour and maintenance of hygienic conditions around the facility;
- (u) phase out the use of chemical fertilizer in two years and use compost in all parks, gardens maintained by the local body and wherever possible in other places under its jurisdiction. Incentives may be provided to recycling initiatives by informal waste recycling sector;
- (v) facilitate construction, operation and maintenance of solid waste processing facilities and associated infrastructure on their own or with private sector participation or through any agency for optimum utilisation of various components of solid waste adopting suitable technology including the following technologies and adhering to the guidelines issued by the Ministry of Urban Development from time to time and standards prescribed by the Central Pollution Control Board. Preference shall be given to decentralised processing to minimize transportation cost and environmental impacts such as-
- a) bio-methanation, microbial composting, vermi-composting, anaerobic digestion or any other appropriate processing for bio-stabilisation of biodegradable wastes;
- b) waste to energy processes including refused derived fuel for combustible fraction of waste or supply as feedstock to solid waste based power plants or cement kilns;
- (w) undertake on their own or through any other agency construction, operation and maintenance of sanitary landfill and associated infrastructure as per Schedule I for disposal of residual wastes in a manner prescribed under these rules;
- (x) make adequate provision of funds for capital investments as well as operation and maintenance of solid waste management services in the annual budget ensuring that funds for discretionary functions of the local body have been allocated only after meeting the requirement of necessary funds for solid waste management and other obligatory functions of the local body as per these rules;
- (y) make an application in Form-I for grant of authorisation for setting up waste processing, treatment or disposal facility, if the volume of waste is exceeding five metric tonnes per day including sanitary landfills from the State Pollution Control Board or the Pollution Control Committee, as the case may be;
- (z) submit application for renewal of authorisation at least sixty days before the expiry of the validity of authorisation;

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- (za) prepare and submit annual report in Form IV on or before the 30th April of the succeeding year to the Commissioner or Director, Municipal Administration or designated Officer;
 - (zb) the annual report shall then be sent to the Secretary -in-Charge of the State Urban Development Department or village panchayat or rural development department and to the respective State Pollution Control Board or Pollution Control Committee by the 31st May of every year;
 - (zc) educate workers including contract workers and supervisors for door to door collection of segregated waste and transporting the unmixed waste during primary and secondary transportation to processing or disposal facility;
 - (zd) ensure that the operator of a facility provides personal protection equipment including uniform, fluorescent jacket, hand gloves, raincoat, appropriate foot wear and masks to all workers handling solid waste and the same are used by the workforce;
 - (ze) ensure that provisions for setting up of centers for collection, segregation and storage of segregated wastes, are incorporated in building plan while granting approval of building plan of a group housing society or market complex; and
 - (zf) frame bye-laws and prescribe criteria for levying of spot fine for persons who litters or fails to comply with the provisions of these rules and delegate powers to officers or local bodies to levy spot fines as per the bye laws framed; and
 - (zg) create public awareness through information, education and communication campaign and educate the waste generators on the following, namely:-
 - (i) not to litter;
 - (ii) minimise generation of waste;
 - (iii) reuse the waste to the extent possible;
 - (iv) practice segregation of waste into bio-degradable, non-biodegradable (recyclable and combustible), sanitary waste and domestic hazardous wastes at source;
 - (v) practice home composting, vermi-composting, bio-gas generation or community level composting;
 - (vi) wrap securely used sanitary waste as and when generated in the pouches provided by the brand owners or a suitable wrapping as prescribed by the local body and place the same in the bin meant for non-biodegradable waste;
 - (vii) storage of segregated waste at source in different bins;
 - (viii) handover segregated waste to waste pickers, waste collectors, recyclers or waste collection agencies; and
 - (ix) pay monthly user fee or charges to waste collectors or local bodies or any other person authorised by the local body for sustainability of solid waste management.
 - (zh) stop land filling or dumping of mixed waste soon after the timeline as specified in rule 23 for setting up and operationalisation of sanitary landfill is over;
 - (zi) allow only the non-usable, non-recyclable, non-biodegradable, non-combustible and non-reactive inert waste and pre-processing rejects and residues from waste processing facilities to go to sanitary landfill and the sanitary landfill sites shall meet the specifications as given in Schedule-I, however, every effort shall be made to recycle or reuse the rejects to achieve the desired objective of zero waste going to landfill;
 - (zj) investigate and analyse all old open dumpsites and existing operational dumpsites for their potential of bio-mining and bio-remediation and wheresoever feasible, take necessary actions to bio-mine or bio-remediate the sites;
 - (zk) in absence of the potential of bio-mining and bio-remediation of dumpsite, it shall be scientifically capped as per landfill capping norms to prevent further damage to the environment.
16. Duties of State Pollution Control Board or Pollution Control Committee:- (1) The State Pollution Control Board or Pollution Control Committee shall:-
- (a) enforce these rules in their State through local bodies in their respective jurisdiction and review implementation of these rules at least twice a year in close coordination with concerned Directorate of Municipal Administration or Secretary-in-charge of State Urban Development Department;
 - (b) monitor environmental standards and adherence to conditions as specified under the Schedule I and Schedule II for waste processing and disposal sites;
 - (c) examine the proposal for authorisation and make such inquiries as deemed fit, after the receipt of the application for the same in Form I from the local body or any other agency authorised by the local body;

- (d) while examining the proposal for authorisation, the requirement of consents under respective enactments and views of other agencies like the State Urban Development Department, the Town and Country Planning Department, District Planning Committee or Metropolitan Area Planning Committee, as may be applicable, Airport or Airbase Authority, the Ground Water Board, Railways, power distribution companies, highway department and other relevant agencies shall be taken into consideration and they shall be given four weeks time to give their views, if any;
- (e) issue authorisation within a period of sixty days in Form II to the local body or an operator of a facility or any other agency authorised by local body stipulating compliance criteria and environmental standards as specified in Schedules I and II including other conditions, as may be necessary;
- (f) synchronise the validity of said authorisation with the validity of the consents;
- (g) suspend or cancel the authorization issued under clause (a) any time, if the local body or operator of the facility fails to operate the facility as per the conditions stipulated;
 - provided that no such authorization shall be suspended or cancelled without giving notice to the local body or operator, as the case may be; and
- (h) on receipt of application for renewal, renew the authorisation for next five years, after examining every application on merit and subject to the condition that the operator of the facility has fulfilled all the provisions of the rules, standards or conditions specified in the authorisation, consents or environment clearance.
- (2) The State Pollution Control Board or Pollution Control Committee shall, after giving reasonable opportunity of being heard to the applicant and for reasons thereof to be recorded in writing, refuse to grant or renew an authorisation.
- (3) In case of new technologies, where no standards have been prescribed by the Central Pollution Control Board, State Pollution Control Board or Pollution Control Committee, as the case may be, shall approach Central Pollution Control Board for getting standards specified.
- (4) The State Pollution Control Board or the Pollution Control Committee, as the case may be, shall monitor the compliance of the standards as prescribed or laid down and treatment technology as approved and the conditions stipulated in the authorisation and the standards specified in Schedules I and II under these rules as and when deemed appropriate but not less than once in a year.
- (5) The State Pollution Control Board or the Pollution Control Committee may give directions to local bodies for safe handling and disposal of domestic hazardous waste deposited by the waste generators at hazardous waste deposition facilities.
- (6) The State Pollution Control Board or the Pollution Control Committee shall regulate Inter-State movement of waste.
17. Duty of manufacturers or brand owners of disposable products and sanitary napkins and diapers.- (1) All manufacturers of disposable products such as tin, glass, plastics packaging, etc., or brand owners who introduce such products in the market shall provide necessary financial assistance to local authorities for establishment of waste management system.
- (2) All such brand owners who sell or market their products in such packaging material which are non-biodegradable shall put in place a system to collect back the packaging waste generated due to their production.
- (3) Manufacturers or brand owners or marketing companies of sanitary napkins and diapers shall explore the possibility of using all recyclable materials in their products or they shall provide a pouch or wrapper for disposal of each napkin or diapers along with the packet of their sanitary products.
- (4) All such manufacturers, brand owners or marketing companies shall educate the masses for wrapping and disposal of their products.
18. Duties of the industrial units located within one hundred km from the refused derived fuel and waste to energy plants based on solid waste.- All industrial units using fuel and located within one hundred km from a solid waste based refused derived fuel plant shall make arrangements within six months from the date of notification of these rules to replace at least five percent of their fuel requirement by refused derived fuel so produced.
19. Criteria for Duties regarding setting-up solid waste processing and treatment facility.- (1) The department in-charge of the allocation of land assignment shall be responsible for providing suitable land for setting up of the solid waste processing and treatment facilities and notify such sites by the State Government or Union territory Administration.
- (2) The operator of the facility shall design and set up the facility as per the technical guidelines issued by the Central Pollution Control Board in this regard from time to time and the manual on solid waste management prepared by the Ministry of Urban Development.

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- (3) The operator of the facility shall obtain necessary approvals from the State Pollution Control Board or Pollution Control Committee.
- (4) The State Pollution Control Board or Pollution Control Committee shall monitor the environment standards of the operation of the solid waste processing and treatment facilities.
- (5) The operator of the facility shall be responsible for the safe and environmentally sound operations of the solid waste processing and or treatment facilities as per the guidelines issued by the Central Pollution Control Board from time to time and the Manual on Municipal Solid Waste Management published by the Ministry of Urban Development and updated from time to time.
- (6) The operator of the solid waste processing and treatment facility shall submit annual report in Form III each year by 30th April to the State Pollution Control Board or Pollution Committee and concerned local body.
20. Criteria and actions to be taken for solid waste management in hilly areas.- In the hilly areas, the duties and responsibilities of the local authorities shall be the same as mentioned in rule 15 with additional clauses as under:
 - (a) Construction of landfill on the hill shall be avoided. A transfer station at a suitable enclosed location shall be setup to collect residual waste from the processing facility and inert waste. A suitable land shall be identified in the plain areas down the hill within 25 kilometers for setting up sanitary landfill. The residual waste from the transfer station shall be disposed of at this sanitary landfill.
 - (b) In case of non-availability of such land, efforts shall be made to set up regional sanitary landfill for the inert and residual waste.
 - (c) Local body shall frame Bye-laws and prohibit citizen from littering wastes on the streets and give strict direction to the tourists not to dispose any waste such as paper, water bottles, liquor bottles, soft drink cans, tetra packs, any other plastic or paper waste on the streets or down the hills and instead direct to deposit such waste in the litter bins that shall be placed by the local body at all tourist destinations.
 - (d) Local body shall arrange to convey the provisions of solid waste management under the bye-laws to all tourists visiting the hilly areas at the entry point in the town as well as through the hotels, guest houses or like where they stay and by putting suitable hoardings at tourist destinations.
 - (e) Local body may levy solid waste management charge from the tourist at the entry point to make the solid waste management services sustainable.
 - (f) The department in-charge of the allocation of land assignment shall identify and allot suitable space on the hills for setting up decentralised waste processing facilities. Local body shall set up such facilities. Step garden system may be adopted for optimum utilisation of hill space.
21. Criteria for waste to energy process.- (1) Non recyclable waste having calorific value of 1500 Kcal/kg or more shall not be disposed of on landfills and shall only be utilised for generating energy either or through refuse derived fuel or by giving away as feed stock for preparing refuse derived fuel.
- (2) High calorific wastes shall be used for co-processing in cement or thermal power plants.
- (3) The local body or an operator of facility or an agency designated by them proposing to set up waste to energy plant of more than five tones per day processing capacity shall submit an application in Form-1 to the State Pollution Control Board or Pollution Control Committee, as the case may be, for authorisation.
- (4) The State Pollution Control Board or Pollution Control Committee, on receiving such application for setting up waste to energy facility, shall examine the same and grant permission within sixty days.
22. Time frame for implementation.- Necessary infrastructure for implementation of these rules shall be created by the local bodies and other concerned authorities, as the case may be, on their own, by directly or engaging agencies within the time frame specified below:

Sl. No.	Activity	Time limit from the date of notification of rules
(1)	(2)	(3)
1	Identification of suitable sites for setting up solid waste processing facilities	1 year

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2.	identification of suitable sites for setting up common regional sanitary landfill facilities for suitable clusters of local authorities under 0.5 million population and for setting up common regional sanitary landfill facilities or stand alone sanitary landfill facilities by all local authorities having a population of 0.5 million or more .	1 year
3.	procurement of suitable sites for setting up solid waste processing facility and sanitary landfill facilities	2 years
4.	enforcing waste generators to practice segregation of bio degradable, recyclable, combustible, sanitary waste domestic hazardous and inert solid wastes at source ,	2 years
5.	insure door to door collection of segregated waste and its transportation in covered vehicles to processing or disposal facilities.	2 years
6.	ensure separate storage, collection and transportation of construction and demolition wastes	2 years
7.	setting up solid waste processing facilities by all local bodies having 100000 or more population	2 years
8.	Setting up solid waste processing facilities by local bodies and census towns below 100000 population.	3 years
9	setting up common or stand alone sanitary landfills by or for all local bodies having 0.5 million or more population for the disposal of only such residual wastes from the processing facilities as well as untreatable inert wastes as permitted under the Rules	3 years
10.	setting up common or regional sanitary landfills by all local bodies and census towns under 0.5 million population for the disposal of permitted waste under the rules	3 years
11.	bio-remediation or capping of old and abandoned dump sites	5 years

23. State Level Advisory Body. - (1) Every Department in-charge of local bodies of the concerned State Government or Union territory administration shall constitute a State Level Advisory Body within six months from the date of notification of these rules comprising the following members, namely:-

Sl. No	Designation	Member
(1)	(2)	(3)
1.	Secretary, Department of Urban Development or local self government department of the State	Chairperson, ex-officio
2.	One representative of Panchayats or Rural development Department not below the rank of Joint Secretary to State Government	Member, ex-officio
3.	one representative of Revenue Department of State Government	Member, ex-officio
4.	One representative from Ministry of Environment, Forest and Climate Change Government of India	Member, ex-officio

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5.	One representative from Ministry of Urban Development, Government of India	Member, ex-officio
6.	One representative from Ministry of Rural Development, Government of India	Member, ex-officio
7.	One representative from the Central Pollution Control Board	Member, ex-officio
8.	One representative from the State Pollution Control Board or Pollution Control Committee	Member, ex-officio
9.	One representative from Indian Institute of Technology or National Institute of Technology	Member, Ex-officio
10.	Chief town planner of the state	Member
11.	Three representatives from the local bodies by rotation	Member
12.	Two representatives from census towns or urban agglomerations by rotation.	Member
13.	One representative from reputed Non-Governmental Organisation or Civil Society working for the waste pickers or informal recycler or solid waste management	Member
14.	One representative from a body representing Industries at the State or Central level	Member
15.	one representative from waste recycling industry	member
16.	Two subject experts	Member
17.	Co-opt one representative each from agriculture department, and labour department of State Government.	Member

(2) The State Level Advisory Body shall meet at least one in every six months to review the matters related to implementation of these rules, state policy and strategy on solid waste management and give advice to state government for taking measures that are necessary for expeditious and appropriate implementation of these rules.

(3) The copies of the review report shall be forwarded to the State Pollution Control Board or Pollution Control Committee for necessary action.

24. Annual report:- (1) The operator of facility shall submit the annual report to the local body in Form-II on or before the 30th day of April every year.

(2) The local body shall submit its annual report in Form-IV to State P Control Board or P Committee and the Secretary-in-Charge of the Department of Urban Development of the concerned State or Union Territory in case of metropolitan city and to the Director of Municipal Administration or Commissioner of Municipal Administration or Officer in-Charge of Urban local bodies in the state in case of all other local bodies of state on or before the 30th day of June every year.

(3) Each State Pollution Control Board or Pollution-Control Committee as the case may be, shall prepare and submit the consolidated annual report to the Central Pollution Control Board and Ministry of Urban Development on the implementation of these rules and action taken against non complying local body by the 31st day of July of each year in Form-V.

(4) The Central Pollution Control Board shall prepare a consolidated annual review report on the status of implementation of these rules by local bodies in the country and forward the same to the Ministry of Urban Development

and Ministry of Environment, Forest and Climate Change, along with its recommendations before the 31st day of August each year.

(5) The annual report shall be reviewed by the Ministry of Environment, Forest and Climate Change during the meeting of Central Monitoring Committee.

25. Accident reporting- In case of an accident at any solid waste processing or treatment or disposal facility or landfill site, the Officer-in-charge of the facility shall report to the local body in Form-VI and the local body shall review and issue instructions if any, to the in-charge of the facility.

SCHEDULE I

[see rule 15 (w), (zi), 16 (1) (b) (e), 16 (4)]

Specifications for Sanitary Landfills

- (A) Criteria for site selection-
- (i) The department in the business allocation of land assignment shall provide suitable site for setting up of the solid waste processing and treatment facilities and notify such sites.
 - (ii) The sanitary landfill site shall be planned, designed and developed with proper documentation of construction plan as well as a closure plan in a phased manner. In case a new landfill facility is being established adjoining an existing landfill site, the closure plan of existing landfill should form a part of the proposal of such new landfill.
 - (iii) The landfill sites shall be selected to make use of nearby wastes processing facilities. Otherwise, wastes processing facility shall be planned as an integral part of the landfill site.
 - (iv) Landfill sites shall be set up as per the guidelines of the Ministry of Urban Development, Government of India and Central Pollution Control Board.
 - (v) The existing landfill sites which are in use for more than five years shall be improved in accordance with the specifications given in this Schedule.
 - (vi) The landfill site shall be large enough to last for at least 20-25 years and shall develop 'landfill cells' in a phased manner to avoid water logging and misuse.
 - (vii) The landfill site shall be 100 meter away from river, 200 meter from a pond, 200 meter from Highways, Habitations, Public Parks and water supply wells and 20 km away from Airports or Airbase. However in a special case, landfill site may be set up within a distance of 10 and 20 km away from the Airport/Airbase after obtaining no objection certificate from the civil aviation authority/ Air force as the case may be. The Landfill site shall not be permitted within the flood plains as recorded for the last 100 years, zone of coastal regulation, wetland, Critical habitat areas, sensitive eco-fragile areas.
 - (viii) The sites for landfill and processing and disposal of solid waste shall be incorporated in the Town Planning Department's land-use plans.
 - (ix) A buffer zone of no development shall be maintained around solid waste processing and disposal facility, exceeding five Tonnes per day of installed capacity. This will be maintained within the total area of the solid waste processing and disposal facility. The buffer zone shall be prescribed on case to case basis by the local body in consultation with concerned State Pollution Control Board.
 - (x) The biomedical waste shall be disposed of in accordance with the Bio-medical Waste Management Rules, 2016, as amended from time to time. The hazardous waste shall be managed in accordance with the Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016, as amended from time to time. The E-waste shall be managed in accordance with the e-Waste (Management) Rules, 2016 as amended from time to time.
 - (xi) Temporary storage facility for solid waste shall be established in each landfill site to accommodate the waste in case of non-operation of waste processing and during emergency or natural calamities.
 - (B) Criteria for development of facilities at the sanitary landfills:-
 - (i) Landfill site shall be fenced or hedged and provided with proper gate to monitor incoming vehicles, to prevent entry of unauthorised persons and stray animals
 - (ii) The approach and / internal roads shall be concreted or paved so as to avoid generation of dust particles due to vehicular movement and shall be so designed to ensure free movement of vehicles and other machinery.
 - (iii) The landfill site shall have waste inspection facility to monitor waste brought in for landfilling. An office facility for record keeping and shelter for keeping equipment and machinery including pollution monitoring equipment. The operator of the facility shall maintain record of waste received, processed and disposed.

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S.No.	Parameters	IS 10500:2012, Edition 2.2(2003-09) Desirable limit (mg/l except for pH)
(1)	(2)	(3)
Arsenic		0.01
Cadmium		0.01
Chromium(as Cr^{6+})		0.05
Copper		0.05
Cyanide		0.05
Lead		0.05
Mercury		0.001
Nickel		-
Nitrate as NO_3		45.0
pH		6.5-8.5
Iron		0.3
Total hardness (as $CaCO_3$)		300.0
Chlorides		250
Dissolved solids		500
Phenolic compounds (as C_6H_5OH)		0.001
Zinc		5.0
Sulphate (as SO_4)		200

(F) Criteria for ambient air quality monitoring-

- (i) Landfill gas control system including gas collection system shall be installed at landfill site to minimize odour, prevent off-site migration of gases, to protect vegetation planted on the rehabilitated landfill surface. For enhancing landfill gas recovery, use of geomembranes in cover systems along with gas collection wells should be considered.
- (ii) The concentration of methane gas generated at landfill site shall not exceed 25 per cent of the lower explosive limit (LEL).
- (iii) The landfill gas from the collection facility at a landfill site shall be utilized for either direct thermal applications or power generation, as per viability. Otherwise, landfill gas shall be burnt (flared) and shall not be allowed to escape directly to the atmosphere or for illegal tapping. Passive venting shall be allowed in case if its utilisation or flaring is not possible.
- (iv) Ambient air quality at the landfill site and at the vicinity shall be regularly monitored. Ambient air quality shall

- (c) In case of breakdown or maintenance of plant, waste intake shall be stopped and arrangements be worked out for diversion of waste to the temporary processing site or temporary landfill sites which will be again reprocessed when plant is in order.
- (d) Pre-process and post-process rejects shall be removed from the processing facility on regular basis and shall not be allowed to pile at the site. Recyclables shall be routed through appropriate vendors. The non-recyclable high calorific fractions to be segregated and sent to waste to energy or for RDF production, co-processing in cement plants or to thermal power plants. Only rejects from all processes shall be sent for sanitary landfill site(s).
- (e) The windrow area shall be provided with impermeable base. Such a base shall be made of concrete or compacted clay of 50 cm thick having permeability coefficient less than 10^{-7} cm/sec. The base shall be provided with 1 to 2 per cent slope and circled by lined drains for collection of leachate or surface run-off.
- (f) Ambient air quality monitoring shall be regularly carried out. Odour nuisance at down-wind direction on the boundary of processing plant shall also be checked regularly.
- (g) Leachate shall be re-circulated in compost plant for moisture maintenance.
- (h) The end product compost shall meet the standards prescribed under Fertilizer Control Order notified from time to time.
- (i) In order to ensure safe application of compost, the following specifications for compost quality shall be met, namely:-

Parameters	Organic Compost (FCO 2009)	Phosphate Rich Organic Manure (FCO 2013)
(1)	(2)	(3)
Arsenic (mg/Kg)	10.00	10.00
Cadmium (mg/Kg)	5.00	5.00
Chromium (mg/Kg)	50.00	50.00
Copper (mg/Kg)	300.00	300.00
Lead (mg/Kg)	100.00	100.00
Mercury (mg/Kg)	0.15	0.15
Nickel (mg/Kg)	50.00	50.00
Zinc (mg/Kg)	1000.00	1000.00
C/N ratio	<20	Less than 20:1
pH	6.5-7.5	(1:5 solution) maximum 6.7
Moisture, percent by weight, maximum	15.0-25.0	25.0
Bulk density (g/cm ³)	<1.0	Less than 1.6
Total Organic Carbon, per cent by weight, minimum	12.0	7.9

Total Nitrogen (as N), per cent by weight, minimum	0.8	0.4
Total Phosphate (as P_2O_5) percent by weight, minimum	0.4	10.4
Total Potassium (as K_2O), percent by weight, minimum	0.4	-
Colour	Dark brown to black	-
Odour	Absence of foul Odor	-
Particle size	Minimum 90% material should pass through 4.0 mm IS sieve	Minimum 90% material should pass through 4.0 mm IS sieve
Conductivity (as $dsm-L$), not more than	4.0	8.2

* Compost (final product) exceeding the above stated concentration limits shall not be used for food crops. However, it may be utilized for purposes other than growing food crops.

B. Standards for treated leachates.—The disposal of treated leachates shall meet the following standards, namely:-

S. No	Parameter	Standards (Mode of Disposal)		
		Inland surface water	Public sewers	Land disposal
(1)	(2)	(3)	(4)	(5)
1.	Suspended solids, mg/l, max	100	600	200
2.	Dissolved solids (inorganic) mg/l, max.	2100	2100	2100
3	pH value	5.5 to 9.0	5.5 to 9.0	5.5 to 9.0
4	Ammonical nitrogen (as N), mg/l, max.	50	50	-
5	Total Kjeldahl nitrogen (as N), mg/l, max.	100	-	-
6	Biochemical oxygen demand (3 days at 27° C) max.(mg/l)	30	350	100
7	Chemical oxygen demand, mg/l, max.	250	-	-
8	Arsenic (as As), mg/l, max	0.2	0.2	0.2
9	Mercury (as Hg), mg/l, max	0.01	0.01	-
10	Lead (as Pb), mg/l, max	0.1	1.0	-
11	Cadmium (as Cd), mg/l, max	2.0	1.0	-

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[भाग II - अनुसूच 3(ii)]

भारत का राजपत्र : अतिशय

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12	Total Chromium (as Cr), mg/l, max.	2.0	2.0	-
13	Copper (as Cu), mg/l, max.	3.0	3.0	-
14	Zinc (as Zn), mg/l, max.	5.0	15	-
15	Nickel (as Ni), mg/l, max.	3.0	3.0	-
16	Cyanide (as CN), mg/l, max.	0.2	2.0	0.2
17	Chloride (as Cl), mg/l, max.	1000	1000	600
18	Fluoride (as F), mg/l, max.	2.0	1.5	-
19	Phenolic compounds (as C_6H_5OH) mg/l, max.	1.0	5.0	-

Note : While discharging treated leachates into inland surface waters, quantity of leachates being discharged and the quantity of dilution water available in the receiving water body shall be given due consideration.

C. Standards for incineration: The Emission from incinerators /thermal technologies in Solid Waste treatment/disposal facility shall meet the following standards, namely:-

Parameter	Emission standard		
(1)	(2)	(3)	
Particulates	50 mg/Nm ³	Standard refers to half hourly average value	
HCl	50 mg/Nm ³	Standard refers to half hourly average value	
SO ₂	200 mg/Nm ³	Standard refers to half hourly average value	
CO	100 mg/Nm ³	Standard refers to half hourly average value	
	50 mg/Nm ³	Standard refers to daily average value	
Total Organic Carbon	20 mg/Nm ³	Standard refers to half hourly average value	
HF	4 mg/Nm ³	Standard refers to half hourly average value	
NO _x (NO and NO ₂ expressed as NO ₂)	400 mg/Nm ³	Standard refers to half hourly average value	
Total dioxins and furans	0.1 ng TEQ/Nm ³	Standard refers to 6-8 hours sampling. Please refer guidelines for 17 concerned congeners for toxic equivalence values to arrive at total toxic equivalence.	
Cd + Pb + their compounds	0.05 mg/Nm ³	Standard refers to sampling time anywhere between 30 minutes and 8 hours.	
Hg and its compounds	0.05 mg/Nm ³	Standard refers to sampling time anywhere between 30 minutes and 8 hours.	

$\text{Sb} + \text{As} + \text{Pb} + \text{Cr} + \text{Co} + \text{Cu}$ $+ \text{Mn} + \text{Ni} + \text{V} + \text{their}$ compounds	0.5 mg/Nm ³	Standard refers to sampling time anywhere between 30 minutes and 8 hours.
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Note: All values corrected to 11% oxygen on a dry basis.

Note:

- (a) Suitably designed pollution control devices shall be installed or retrofitted with the incinerator to achieve the above emission limits.
- (b) Waste to be incinerated shall not be chemically treated with any chlorinated disinfectants.
- (c) Incineration of chlorinated plastics shall be phased out within two years.
- (d) if the concentration of toxic metals in incineration ash exceeds the limits specified in the Hazardous Waste (Management, Handling and Trans boundary Movement) Rules, 2008, as amended from time to time, the ash shall be sent to the hazardous waste treatment, storage and disposal facility.
- (e) Only low sulphur fuel like LDO, LSHS, Diesel, bio-mass, coal, LNG, CNG, RDF and bio-gas shall be used as fuel in the incinerator.
- (f) The CO₂ concentration in tail gas shall not be more than 7%.
- (g) All the facilities in twin chamber incinerators shall be designed to achieve a minimum temperature of 950°C in secondary combustion chamber and with a gas residence time in secondary combustion chamber not less than 2 (two) seconds.
- (h) Incineration plants shall be operated (combustion chambers) with such temperature, retention time and turbulence, as to achieve total Organic Carbon (TOC) content in the slag and bottom ash less than 3%, or the loss on ignition is less than 5% of the dry weight.
- (i) Odour from sites shall be managed as per guidelines of CPCB issued from time to time

FORM-I

[see rule 15 (v) 16 (1) (c), 21(3)]

Application for obtaining authorisation under solid waste management rules
for processing/recycling/treatment and disposal of solid waste

To,
The Member Secretary,
State Pollution Control Board or Pollution Control Committee,
of.....
Sir,

I/We hereby apply for authorisation under the Solid Waste Management Rules, 2016 for processing, recycling, treatment and disposal of solid waste.

1.	Name of the local body/agency appointed by them/ operator of facility	
2.	Correspondence address	
	Telephone No.	
	Fax No.	
	e-mail:	

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THE GAZETTE OF INDIA : EXTRAORDINARY

[PART II—SEC. 3(ii)]

Form- II

[see rule 16 (1) (c)]

Formal for issue of authorisation

File No.: _____

Dated: _____

Authorisation No _____

To _____

Ref: Your application number _____ dt. _____

The _____ State Pollution Control Board/Pollution Control Committee after examining the proposal hereby authorises _____ having administrative office at _____ to set up and operate waste processing/recycling/ treatment/disposal facility at _____

The authorisation is hereby granted to operate the facility for processing, recycling, treatment and disposal of solid waste. The authorisation is subject to the terms and conditions stated below and such conditions as may be otherwise specified in these rules and the standards laid down in Schedules I and II under these rules.

The _____ State Pollution Control Board/Pollution Control Committees of the UT _____ may, at any time, revoke any of the conditions applicable under the authorisation and shall communicate the same in writing.

Any violation of the provision of the Solid Waste Management Rules, 2016 will attract the penal provision of the Environment (Protection) Act, 1986 (29 of 1986).

(Member Secretary)

State Pollution Control Board/Pollution Control Committee of the UT
(Signature and designation)

Date: _____

Place: _____

Form - III

[see rule 19 (6), 24 (1)]

Formal of annual report to be submitted by the operator of facility to the local body

1	Name of the City/Town and State	
2	Population	
3	Area in sq. kilometers	
4	Name & Address of the local body Telephone No. Fax No. E-mail:	
5	Name and address of operator of the facility	
6	Name of officer in-charge of the facility Phone No: Fax No: E-mail:	

[illegible]

Waste Transportation per day Type and Number of vehicles used (p) tick or add)	No. Trips made waste transported
Animal cart Tractors Non tipping Truck Tipping Truck Dumper Placers Refuse collectors Compactors Others JCB/loader	
Frequency of transportation of waste	Frequency (%) of waste transported Daily Alternate day Twice a week Once a week Occasionally
Quantity of waste transported each day	/tpd
Percentage of total waste transported daily	%
Waste Treatment Technologies used	
Whether solid waste is processed	Yes/No
If yes, Quantity of waste processed daily	/tpd
Land(s) available with the local body for waste processing (in hectares)	
Land currently utilized for waste processing	
Solid waste processing facilities in operation	
Solid waste processing facilities under construction	
Distance of processing facilities from city/town boundary	
Details of technologies adopted	

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Composting,	Qty. raw material processed Qty. final product produced Qty. sold Qty. of residual waste landfilled
vermi composting	Qty. raw material processed Qty. final product produced Qty. sold Quantity of residual waste landfilled
Bio-methanation	Qty. raw material processed Qty. final product produced Qty. sold Quantity of residual waste landfilled
Refuse Derived Fuel	Qty. raw material processed Qty. final product produced Qty. sold Quantity of residual waste landfilled
Waste to Energy technology such as incineration, gasification, pyrolysis or any other technology (give detail)	Qty. raw material processed Qty. final product produced Qty. sold Quantity of residual waste landfilled
Co-processing	Qty. raw material processed
Combustible waste supplied to cement plant	
Combustible waste supplied to solid waste based power plants	
Others	Qty.
Solid waste disposal facilities	
No. of dumpsites sites available with the local body	
No. of sanitary landfill sites available with the local body	
Area of each such sites available for waste disposal	
Area of land currently used for waste disposal	
Distance of dumpsite/landfill facility from city/town	kms
Distance from the nearest habitation	kms
Distance from water body	kms

	Distance from state/national highway	kms
	Distance from Airport	kms
	Distance from important religious places or historical monument	kms
	Whether it falls in flood prone area	Yes/No
	Whether it falls in earthquake fault line area	Yes/No
	Quantity of waste landfilled each day	tpd
	Whether landfill site is fenced	Yes / No
	Whether Lighting facility is available on site	Yes / No
	Whether Weigh bridge facility available	Yes / No
	Vehicles and equipments used at landfill (specify)	Bulldozer, Compacters etc. available
	Manpower deployed at landfill site	Yes/No (if yes, attach details)
	Whether covering is done on daily basis	Yes/No
	If not, frequency of covering the waste deposited at the landfill	
	Cover material used	
	Whether adequate covering material is available	Yes/No
	Provisions for gas venting provided	Yes/No, (if yes, attach technical data sheet)
	Provision for leachate collection	Yes/No, (if yes, attach technical data sheet)
10	Whether an Action Plan has been prepared for improving solid waste management practices in the city	Yes/No (if Yes attach Action Plan details)
11	What separate provisions are made for : Dairy related activities : Slaughter houses waste : C&D waste (construction debris) :	Attach details on Proposals, Steps taken, Yes/No Yes/No Yes/No Yes/No
12	Details of Post Closure Plan	Attach Plan
13	How many slums are identified and whether these are provided with Solid Waste Management facilities :	Yes/ No (if Yes, attach details)
14	Give details of manpower deployed for collection including street sweeping, secondary storage, transportation, processing and disposal of waste	

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THE GAZETTE OF INDIA : EXTRAORDINARY

[PART II—SEC. 3(ii)]

	Per capita waste collected per day	/gm/day
	Quantity of solid waste processed	/tpd
	Quantity of solid waste disposed at dumpsite/landfill	/tpd
8	Status of Solid Waste Management service	
	Segregation and storage of waste at source Whether SOLID WASTE is stored at source in domestic/commercial/ institutional bins. If yes, Percentage of households practice storage of waste at source in domestic bins Percentage of non-residential premises practice storage of waste at source in commercial /institutional bins Percentage of households dispose or throw solid waste on the streets Percentage of non-residential premises dispose of throw solid waste on the streets Whether solid waste is stored at source in a segregated form. If yes, Percentage of premises segregating the waste at source	Yes/No % % % % % Yes/No %
	Door to Door Collection of solid waste	
	Whether door to door collection (D2D) of solid waste is being done in the city/town if yes	Yes/No
	Number of wards covered in D2D collection of waste	
	No. of households covered	
	No. of non-residential premises including commercial establishments ,hotels, restaurants educational institutions/ offices etc covered	
	Percentage of residential and non-residential premises covered in door to door collection through : Motorized vehicle Continuized triycle/handcart Other device	% % %
	If not, method of primary collection adopted	
	Sweeping of streets	
	Length of roads, streets, lanes, bye-lanes in the city that need to be cleaned	km

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Frequency of street sweepings and percentage of population covered	frequency	Daily	Alternate days	Twice a week	Occasionally
	% of population covered				
Tools used					
Manual sweeping					
Mechanical sweeping	%				
Whether long handle broom used by sanitation workers	Yes/No				
Whether each sanitation worker is given handcart/tricycle for collection of waste	Yes/No				
Whether handcart / tricycle is containerized	Yes/No				
Whether the collection tool synchronizes with collection/ waste storage containers utilized	Yes/No				
Secondary Waste Storage facilities					
No. and type of waste storage depots in the city/town	No. Capacity in m ³				
Open waste storage sites					
Masonry bins					
Cement concrete cylinder bins					
Dhala/covered rooms/space					
Covered metal/plastic containers					
Up to 1.1 m ³ bins					
2 to 5 m ³ bins					
Above 5m ³ containers					
Bin-less city					
Bin/ population ratio					
Ward wise details of waste storage depots (attach) :					
Ward No:					
Area:					
Population:					
No. of bins placed					
Total volume of bins placed					
Total storage capacity of waste storage facilities in cubic meters					
Total waste actually stored at the waste storage depots daily					

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THE GAZETTE OF INDIA : EXTRAORDINARY

[PART II—SEC. 3(i)]

Give frequency of collection of waste from the depots	Frequency	No. of bins
Number of bins cleared		
	Daily	
	Alternate day	
	Twice a week	
	Once a week	
	Occasionally	
Whether storage depots have facility for storage of segregated waste in green, blue and black bins	Yes/ No (if yes, add details)	
	No. of green bins:	
	No. of blue bins:	
	No. of black bins:	
Whether lifting of solid waste from storage depots is manual or mechanical. Give percentage (%) of Manual lifting of solid waste (%) of Mechanical lifting	% %	
If mechanical – specify the method used	front-end loaders/ Top loaders	
Whether solid waste is lifted from door to door and transported to treatment plant directly in a segregated form	Yes/ No (if yes, specify)	
Waste transportation per day	No. Trips made	waste transported
Type and Number of vehicles used		
Animal cart Tractors Non tipping Truck Tipping Truck Dumper Placers Refuse collectors Compactors Others JCB/loader		

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[भाग II-खण्ड 3(ii)]

भारत का राजपत्र : असाधारण

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Frequency of transportation of waste	Frequency (%) of waste transported
	Daily
	Alternate day
	Twice a week
	Once a week
	Occasionally
Quantity of waste transported each day	/tpd
Percentage of total waste transported daily	%
Waste Treatment Technologies used	
Whether solid waste is processed	Yes/No
If yes, Quantity of waste processed daily	/tpd
Whether treatment is done by local body or through an agency	
Land(s) available with the local body for waste processing (in Hectares)	
Land currently utilized for waste processing	
Solid waste processing facilities in operation	
Solid waste processing facilities under construction	
Distance of processing facilities from city/town boundary	
Details of technologies adopted	
Composting,	Qty. raw material processed Qty. final product produced Qty. sold Quantity of residual waste landfilled
Vermi composting	Qty. raw material processed Qty. final product produced Qty. sold Quantity of residual waste landfilled
Bio-methanation	Qty. raw material processed Qty. final product produced Qty. sold Quantity of residual waste landfilled

Refuse Derived Fuel	Qty. raw material processed Qty. final product produced Qty. sold Quantity of residual waste landfilled
Waste to Energy technology such as incineration, gasification, pyrolysis or any other technology (give detail)	Qty. raw material processed Qty. final product produced Qty. sold Quantity of residual waste landfilled
Co-processing	Qty. raw material processed
Combustible waste supplied to cement plant	
Combustible waste supplied to solid waste based power plants	
Others	Qty.
Solid waste disposal facilities	
No. of dumpsites sites available with the local body	
No. of sanitary landfill sites available with the local body	
Area of each such sites available for waste disposal	
Area of land currently used for waste disposal	
Distance of dumpsite/landfill facility from city/town	kms
Distance from the nearest habitation	kms
Distance from water body	kms
Distance from state/national highway	kms
Distance from Airport	kms
Distance from important religious places or historical monument	kms
Whether it falls in flood prone area	Yes/No
Whether it falls in earthquake fault line area	Yes/No
Quantity of waste landfilled each day	tpd
Whether landfill site is fenced	Yes /No
Whether Lighting facility is available on site	Yes /No

[भाग II - अनुसूची 3(ii)]

भागी की तसवीर : अनामिका

87.

	Whether Weigh bridge facility available	Yes / No
	Vehicles and equipments used at landfill (specify)	Bulldozer, Compactors etc. available
	Manpower deployed at landfill site.	Yes/No (if yes, attach details)
	Whether covering is done on daily basis	Yes/No
	If not, frequency of covering the waste deposited at the landfill	
	Cover material used	
	Whether adequate covering material is available	Yes/No
	Provisions for gas venting provided	Yes/No (if yes, attach technical data sheet)
	Provision for leachate collection	Yes/No (if yes, attach technical data sheet)
9	Whether an Action Plan has been prepared for improving solid waste management practices in the city	Yes/No (if Yes attach Action Plan details)
10	What separate provisions are made for : Dairy related activities : Slaughter houses waste : C&D waste (construction debris) :	Attach details on Proposals, Steps taken, Yes/No Yes/No Yes/No Yes/No
11	Details of Post Closure Plan	Attach Plan
12	How many slums are identified and whether these are provided with Solid Waste Management facilities :	Yes/ No (if Yes, attach details)
13	Give details of: Local body's own manpower deployed for collection including street sweeping, secondary storage, transportation, processing and disposal of waste	
14	Give details of: Contractor/ concessionaire's manpower deployed for collection including street sweeping, secondary storage, transportation, processing and disposal of waste	
15	Mention briefly, the difficulties being experienced by the local body in complying with provisions of these rules	

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16	Mention briefly, if any innovative idea is implemented to tackle a problem related to solid waste, which could be replicated by other local bodies	
----	--	--

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

Date:
Place:

Form - V
[see rule 24(3)]

Format of annual report to be submitted by the state pollution control board or pollution control committee
committees to the central pollution control board

PART A

To,

The Chairman
Central Pollution Control Board
Parivesh Bhawan, East Arjun Nagar
DELHI-110 0032

1.	Name of the State/Union territory	
2.	Name & address of the State Pollution Control	
3.	Number of local bodies responsible for management of solid waste in the State/Union territory under these rules	
4.	No. of authorisation application Received	
5.	A Summary Statement on progress made by local body in respect of solid waste management	Please attach as Annexure-I
6.	A Summary Statement on progress made by local bodies in respect of waste collection, segregation, transportation and disposal	Please attach as Annexure-II
7.	A summary statement on progress made by local bodies in respect of implementation of Schedule II	Please attach as Annexure-III

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Date:	Chairman or the Member Secretary
Place:	State Pollution Control Board/ Pollution Control Committee

PART B

Towns/cities

Total number of towns/cities

Total number of ULBs

Number of class I & class II cities/towns

Authorisation status (names/number)

Number of applications received

Number of authorisations granted

Authorisations under scrutiny

SOLID WASTE Generation status

Solid waste generation in the state (TPD)

collected

treated

landfilled

Compliance to Schedule I of SW Rules (Number/names of towns/capacity)

Good practices in cities/towns

House-to-house collection

Segregation

Storage

Covered transportation

Processing of SW (Number/names of towns/capacity)

Solid Waste processing facilities setup:

Sl. No.	Composting	Vermi-composting	Biogas	RDF/Pelletization

Processing facility operational:

Sl. No.	Composting	Vermi-composting	Biogas	RDF/Pelletization

Processing facility under installation/planned:

Sl. No.	Composting	Vermi-composting	Biogas	RDF/Pelletization

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Waste-to-Energy Plants: (Number/names of towns/capacity)

Sl. No.	Plant Location	Status of operation	Power generation (MW)	Remarks

Disposal of solid waste (number/names of towns/capacity):

- Landfill sites identified
- Landfill constructed
- Landfill under construction
- Landfill in operation
- Landfill exhausted
- Landfilled capped

Solid Waste Dumpsites (number/names of towns/capacity):

- Total number of existing dumpsites
- Dumpsites reclaimed/capped
- Dumpsites converted to sanitary landfill
- Monitoring at Waste processing/Landfills sites

Sl. No.	Name of facilities	Ambient air	Groundwater	Leachate quality	Compost quality	VOCs
1.						
2.						
3.						

Status of Action Plan prepared by Municipalities

Total number of municipalities:

Number of Action Plan submitted:

Form - VI
[see rule 25]

Accident Reporting

1.	Date and time of accident	
2.	Sequence of events leading to accident	
3.	The waste involved in accident	

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[सूची II-खण्ड 3(i)]

भारत का तत्पर : असाधारण

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4.	Assessment of the effects of the accidents on human health and the environment	
5.	Emergency measures taken	
6.	Steps taken to alleviate the effects of accidents	
7.	Steps taken to prevent the recurrence of such an accident	
Date:		Signature:
Place:		Designation:

[F. No. 18-3/2004-HSMD]
BISHWANATH SINHA, Jr. Secy.

ANNEXURE-P-3

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CONCESSION AGREEMENT




between
MUNICIPAL CORPORATION OF DELHI
acting through
its authorised Officer on this behalf

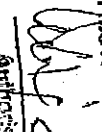
and
Delhi MSW Solutions Limited
For

Door to Door collection, Transfer, Transportation, developing an integrated Municipal Solid Waste Processing Facility and Engineered Sanitary Landfill Facility as per MSW (M&H) Rules 2000, for Select Zones in Delhi, on a long-term Build, Operate and Transfer (BOT) basis; for Municipal Solid Waste.

Civil Lines Zone, Rohini zone and Vasant Kunj, Dwaraka-Pappankalan

July 17th, 2009


For the Municipal Corporation of Delhi

for DELHI MSW SOLUTIONS, LTD.

Authorized Signatory,

Department of Environment Management Services (D.E.M.S.)
Municipal Corporation of Delhi

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CONCESSION AGREEMENT

Between MCD and Delhi MSW Solutions Limited for Door to Door collection, Transfer, Transportation, developing an Integrated Municipal Solid Waste Processing Facility and Engineered Sanitary Landfill Facility as per MSW (M&H) Rules 2000, for Select Zones in Delhi, on a long-term Build, Operate and Transfer (BOT) basis; for Municipal Solid Waste for Civil Lines Zone, Rohini zone and Vasant Kunj, Dwarka -Pappankalan

S.No	Contents	No of pages	Page Number
1.	Concession Agreement	109	1-109
2.	Substitution Agreement	8	110-117
3.	Request for Proposal (RFP) document	56	118-173
4.	Pre Bid Queries Clarification	21	174-194
5.	Major Changes in RfQ, RFP & Draft Agreement	4	195-198
6.	Request for Qualification (RFQ)	28	199-226
7.	Relevant Correspondence Letters I. Query from MCD during Technical Proposal Evaluation & its reply II. Reply that MoU not registered in Delhi Court III. Letter of Acceptance and Reply IV. Work Order and Reply of acceptance	18	227-244

Note: The above mentioned documents are made part of agreement in order to their application and use in right earnest for implementation of the project smoothly

July 17th, 2009

Delhi
II (SIGNED)
for DELHI MSW SOLUTIONS LTD.

Department of Environment Management Services (D.E.M.S.)
Municipal Corporation of Delhi.
Authorized Signatory

- E. MCD had invited competitive proposals from eligible Bidders for implementing the Project and in response thereto MCD received proposals from several persons including the Concessionaire for implementing the Project.

- F. MCD, after evaluating the aforesaid Proposals accepted the Proposal submitted by the Concessionaire and issued Letter of Acceptance No. _____ dated _____ to the Concessionaire for developing the Project.

- G. The Parties hereto are required to enter into the Concession Agreement being these presents to record the terms, conditions and covenants of the Concession.

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:-

ARTICLE 1

1. INTRODUCTION

1.1 Background and the Project/Work

The task of managing solid waste collection, transfer, transportation, developing an integrated Municipal Solid Waste Processing Facility and Engineered Sanitary Landfill Facility as per MSW (M&H) Rules 2000, on a long-term Build, Operate and Transfer (BOT) basis, for Municipal Solid Waste, in the Concession Area has been initiated in order to provide clean, hygienic and litter free environment in and around the concession Area. The proposed system will be helpful to remove the requirements of Dust bins/Dhalaos/Open sites from the concession area.

Note: The terms and condition provided in the RfP document [technical proposal and presentation submitted as part of RfP document] as well as in the concession agreement document, both shall be applicable to the concessionaire, for implementation of this project.

Concession Area Profile

Civil Lines Zone, Rohini zone and Vasant Kuni, Dwaraka - Pappankala

1.2 Generation of Municipal Solid Waste and present mode of the service

The collection and transportation of solid waste in Project Area is generally carried out from the Dhalaos (waste storage depots) and dustbins/designated sites on public streets/roads by deploying tipper trucks.

Presently MCD is not doing door-to-door collection of Municipal Solid Waste. Waste from house holds collected by private Safai Karamcharies or residents themselves dump it into Dalaos/Dustbins located in the nearby area. From these Dustbins /Dalaos the garbage is shifted to the SLF site by deploying Safai Karamcharies/workers engaged by the MCD, by using JCB/Loaders/RRTs

The present system does not provide for a sound and effective approach since public awareness and enforcement of the compliances under the MSW (M&H) Rules, 2000 are marginally done. This creates multifold problems in providing timely, quality, aesthetic and hygienic services desired under the MSW (M&H) Rules, 2000, i.e. Doorstep collection, separate/ segregated collection of MSW from source in Biodegradable, Non-biodegradable and environment friendly transportation, disposal. Thus the present services are not compliant with MSW (M&H) Rules, 2000 and the present service level as it appears is also far from users' satisfaction.

1.3 The Municipal Solid waste Management Work Components Covered

MUNICIPAL CORPORATION OF DELHI, therefore, invites detailed offer from eligible bidders for the project / work of revamping the present set up of its solid waste management services by integrating the following components under the tender on Build, Operate and Transfer of immovable infrastructure created by the concessionaire for the project, at the expiry or termination of concession [which ever is earlier] to the MCD.

1.3.1 The Scope of Work

Door to door collection, segregation, transfer and transportation of Biodegradable, Non biodegradable from every generators/producer in the concession area to processing/ landfill site as decided by MCD, by using auto lifter, refuse compactors and closed tippers etc., developing an integrated Municipal Solid Waste Processing Facility and Engineered Sanitary Landfill Facility as

Ex. Engineer (DEMS)-II
Municipal Corporation of Delhi

For DELHI MSW SOLUTIONS

- Authorised Signatory

per MSW (M&H) Rules 2000, on a long-term Build, Operate and Transfer (BOT) basis; for Municipal Solid Waste;

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The work would comprise the following items:

- ? Doorstep collection (Segregated, Municipal Solid Waste) from the designated area
- ? Lifting and transportation of sweeping silt from the concession area.
- ? Transportation of the collected waste in segregated form, to Processing Facilities
- ? Construction, operation and maintenance of Waste Transfer Stations / vehicle parking site(s).
- ? Setting up of appropriate integrated processing facility in consonance with the characteristics of the waste and compliance of MSW (M&H) Rules 2000.
- ? Setting up of an engineered sanitary landfill (SLF) site and its operation & maintenance in compliance to MSW (M&H) Rules 2000.
- ? Providing top soil cover on the closed portions of landfill and developing green cover and would follow CPCB guidelines for setting up of a Engineered SLF for the purpose

Door to Door collection:

The collection service has to start from door of the MSW producer i.e. source. The bidder shall collect segregated garbage (biodegradable and non-biodegradable) in an auto tipper containing two-bins, having colour coded system as per MSW (M&H) Rules 2000 and a sound Management Information System (MIS) for monitoring of MSW collection, aimed at 100% MSW pick up.

The colour coding of the bins (and also of the corresponding transporting vehicles) have to be as per the MSW (M&H) Rule 2000- green for bio-degradable waste, white for recyclable waste and black for other waste.

Efficiency has to be achieved by deployment of mechanized system. Manual systems will be allowed only on those roads where mechanical system may not be feasible due to lesser right of way. The project proponent is required to give an indicative flow-sheet (showing the capacity and type of vehicles to be employed) at the RFP stage.

Note: Bin(s) of required size [in any number, as per their requirement] to segregate the MSW at source shall be purchased/maintained by the producer/generator him/her self.

Transportation of MSW:

In view of the large area and long road network, one transfer stations for each zone is proposed. The waste collected from the doorsteps is brought to the transfer station if required, where it is/would be shifted to transfer trailers [no transfer of MSW at ground]. Bulk refuse carriers would be deployed to take the MSW transferred in these large bins and or transfer trailers to the site for processing and disposal. Collection vehicles operating in the areas between the disposal site and the nearest transfer station may be sent directly to the disposal site (site for processing and disposal).

Different types of waste would be transported in different vehicles which would also be colour coded as above. From the transfer stations, different types of waste would be sent to respective destinations for further processing and final disposal.

The transportation vehicle shall be fixed with Geographic Positioning System (GPS) and a sound MIS based monitoring mechanism. All the vehicles would be fitted with GPS tracking equipment. The GPS would be accessible from the Urban Local Body (ULB) control room, also. The ULB Control room shall be set up by the BOT Operator.

FOR DELHI MSW SOLUTIONS LTD.

Ex. Engineer (DEMS)-II
Municipal Corporation of Delhi

2. Reported Signature 4

Space for Workshop and Parking shall be provided by MCD. Infrastructure Development and Furnishing of Workshop and Parking Space are to be done by the bidder at his/her own cost. He may use existing water & electricity connections on payment of bills, as per actual. The bidder shall also arrange necessary infrastructure/spare parts etc. and manpower for the purpose of regular maintenance of the vehicles, machinery & equipments.

The bidders shall set up a control room to monitor the movement of every vehicle by using Real time GPS (Global Positioning System) / GSM (Global System for Mobile Communication) at the space provided by the MCD for the purpose, at his own cost. The bidder will allow the access to monitoring system [as and when required] to independent consultant as well as to the Engineers of MCD.

The bidders shall set up ERP (Enterprise Resource Planning) system in the same control room as stated above, to monitor the complete enterprise set up.

Whenever (e.g. market, public street, parks etc.) Whenever prescribed (festivals, event, seasons etc. at any point of time during concession period) collection and transportation of MSW will have to be carried out by the contractor at no additional charge.

Transfer stations:

The operator would have to build 2 nos. of transfer stations, one in each zone. Land would be provided by the MCD on lease for the duration of this concession. The transfer stations would be designed for all weather operations and would be environmentally compatible for proximity to inhabited localities. Therefore, these would have the following components:

1. Adequate space for all operations within the premises of the transfer station, which would have solid [Brick Masonry] wall fencing of minimum 2 m height.
2. Operations within the transfer station would be under cover, so that dust and noise could be effectively controlled. At the same time the operation would not be hampered during precipitation as well.
3. All internal roads, ramp and platforms at different levels would be concrete built and should withstand load of moving machines/vehicles.
4. The transfer station shall be cleaned daily and the floors washed. The wash water should go through a sediment basin and then to the city sewer.
5. The selected BOT operator would have to make appropriate site-specific designs as per the type of vehicles and containers to be handled and the method applied for transfer of the waste.
6. Prospective designs may be discussed with the MCD during the pre-bid meeting but detailed discussion followed by written approval would have to be taken from MCD for their adequacy, before construction.

Note: The transfer stations would receive and compact solid waste between 6 AM to 6 PM (or 7 PM) to avoid nuisance to nearby resident population.

The bidder shall be allocated about 100 Acre land at Narela Bawana Site. The bidder will set up processing facility (ies) and Engineered Land Fill Site to process the 700-1000 TPD MSW, initially, which may go on increasing at natural growth till 2029 (during 20 years concession period).

The selected BOT operator would be expected to select a combination of technologies / systems that includes Material Recycle Facility (MRF), Composting, and Refuse Derived Fuel (RDF); which would maximize waste recycling / treatment and would ensure that minimum quantity of inert goes to landfill. As the bidder would be aware, so far composting has been the most used processing system for municipal solid waste in India. Lately RDF is also being considered in the country for use, as fuel.

The bidder will be required to submit proposal on the above mentioned technologies. The bidder would be required to look into the quality and quantity of the Municipal Solid Waste generated in the designated area for arriving at the technology selection. The total system would be compliant with the applicable rules and guidelines, framed in India for the purpose.

For Details

Authorised Signatory

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- (ii) The treatment facility (yes) shall be compatible to all weather conditions (including concrete road pavement for reducing dust and controlled bypass lanes), so that the processing of waste is continuous and unhindered during the entire concession period.

- (iii) Selling of products after processing the MSW like Re-cyclable(s), Compost and RDF

(c) **Constructing and operating Engineered landfill to receive and store the rejects of processed MSW:** The broad scope of works to be carried out by the bidder under this category includes the following components, but is not limited to:

- ? Providing impermeable CCL (Compacted Clay Liner)/GCL (Geo synthetic Clay Liner) / GL (geo-membrane liner) at the bottom, over the slopes and on top with proper anchoring.
- ? Providing protective layer on either side of impermeable layer
- ? Provision of Drainage layer with construction debris/gravel/moorum/geo-synthetics
- ? Construction of gas collection wells, gas collection manifold and flaring system
- ? Construction of rain water collection and disposal system
- ? Construction of leachate collection ducts, sump with special emphasis on worker safety, arrangements for replacement of pump or other appurtenances and leachate treatment system [preferably simple solar assisted natural cleansing methods].
- ? Providing appropriate soil cover or exposed geo-membrane cover on the closed portions of landfill and developing green cover using suitable locally sustainable vegetation. Green cover around the periphery to be developed by the bidder.
- ? providing measurement systems for keeping a track record of remaining landfill capacity such as compaction rate (kg/cum), leachate generation rate (liters per hectare per day), variations in chemical quality of leachate each month (The record shall be maintained for a day/month wise) and landfill gas generation rates, landfill settlement rate (The record shall be maintained for a month/year wise).

The **Engineering Land Fill Facility** shall be designed with protective measures against pollution of ground water, surface water and ambient fugitive dust, wind-blown litter, bad odour, fire hazard, bird menace, pests or rodents, greenhouse gas emissions, slope instability and erosion etc., as specified in Schedule III of the MSW (M&H) Rules, 2000.

Note:

1. This is made clear that the concessionaire shall arrange/engage necessary T&P, vehicles (all type) /manpower [in required number] for successful implementation of the project. Therefore, he/she shall exclusively be responsible for all accidents [any sort] occurred during collection, transportation, transfer, processing of MSW and land filling of inert. The concessionaire shall also be responsible for implementation of all labour related laws. The concessionaire shall indemnify the MCD in respect of both i.e. accident as well as labour laws.

2. This is also made clear that the scope of work under this project, does not include the collection, transportation, transfer, processing of Construction & Demolition Waste, Un-claimed malba, Silt removed from the de-silting of drain(s) and Green Waste generated in various parks etc., within the jurisdiction of concession area, for which the necessary arrangements shall be made by the MCD.

OTHER TECHNICAL DETAILS:

[A] Change of Processing Technology:

There are all possibilities that during the passage of time the MSW characteristics may change. Therefore, the bidder may require change in the processing technology/method to treat the MSW in an efficient manner. For that the Bidder will be allowed the option of change(s) in technology on mutually acceptable terms, after a period of 10 years. However, the bidders shall submit letter

For DELHI, MSW SOLUTIONS

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proposal for change in technology/method for approval of MCD, with all possibilities of revenue /carbon credit sharing. Only proven technologies would be considered for implementation, as the Corporation cannot take any chance, which may lead to failure of the project. This is clarified here, due to change in treatment process at a later date; no enhancement to the tipping fee shall be permissible/ paid by the MCD, to the bidder.

[B] CDM (Clean Development Mechanisms) Benefits:

The bidder will be responsible to plan and execute all steps in CDM development process (project structuring, documentation, registration, validation, verification and marketing) and will integrate mechanisms including end use of methane to maximize the CER (Certified Emission Rates) revenues accruing from the project. The bidder will share the CER revenue as per the concession agreement and will provide all CER accrual and sale related information with MCD. The sale of CDM and CER shall be strictly through escrow account "Narela Bawana Site" and all revenue shall be deposited in the same, to have a transparency in all transactions). Bidder will be given 60% of the revenues from carbon credits and 40% of the revenues shall be retained by the MCD. This escrow account shall be monitored by the Independent Consultant.

[C] Awareness Programme:

The bidder shall organize and conduct public awareness programs for ensuring segregation/separate collection of waste at/from source. Two percent of tipping fees, payable to the bidder shall go to Escrow account and this fund shall be utilised by the bidder for organizing and conducting public awareness programs [interval to be decided by the MCD, in consultation with IC and the bidder]. The bidder shall engage a firm of international repute for implementing the awareness programme. Independent Consultant will supervise this activity during the entire concession period.

[D] Operation & Maintenance of Infrastructure and the equipments:

The bidder shall be responsible for Construction/Supply, operation and maintenance of required infrastructure including processing units [Compost and RDF Plant], engineered sanitary land fill facilities etc., workshop/parking facilities, segregation facilities, auto tipper, refuse compactors, on Build, Operate, and transfer basis. The bidder shall transfer immovable infrastructure, machineries, equipment, and vehicles to MCD (free of cost) in working condition, at the time of completion of concession period or termination of contract, whichever ever is earlier.

After issue of Letter of Intent to the selected bidder, MCD will provide:

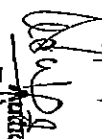
- (i) The vacant and uncontested possession of the land demarcated for waste transfer station, workshop and parking etc.,
- (ii) The vacant and uncontested possession of the processing/land fill site.

Also, the MCD will make necessary budgetary provisions to make the payment of the tipping fee to the Concessionaire, in pursuant to the Concession Agreement at a regular interval.

The integrated Municipal Solid Waste Processing Facility [Composting, RDF etc.] and Engineered Sanitary Landfill Facility as per MSW (M&H) Rules 2000 shall be set up by the bidder at Narela Bawana Site. The required land (only) for the purpose shall be provided by the MCD. Rest other facilities like infrastructure, manpower or equipments (what so ever) etc. required for successful implementation of project, shall be arranged by the bidder at his own cost, nothing shall be payable by the MCD to the bidder, to this effect.

Note: The bidder shall construct a room [of sufficient size], duly furnished with furniture, ACs and Computer, Printer etc.; having sitting arrangements for MCD Engineers, Independent Consultant and his/her personnel at the entry of processing unit & Land fill [Location "A" as well as at the entry of Engineered Land Fill [Location "B"], so that entry of MSW can be monitored at both places.

For DEEPI MSW SOLUTIONS PVT. LTD.


Authorized Signatory

Swept Material/Silt:

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It is proposed that the concession area shall be free from Dust Bin/Dhalao. The Safai Karamcharies of the MCD [of that particular ward] shall bring the swept material/silt after sweeping of road and cleaning of small drains [of size less than 4 feet depth as well as height] in wheel barrows/Tri-Cycle Rickshaw etc. The bidder shall ensure the availability of compactor/tipper trucks [in required number] at the designated place between 8.00 A.M. to 11.00 A.M. [365 days in a year] to collect the swept material/silt. From these designated places the swept material/silt shall be transported to the Narela- Bawana site; developed by the bidder.

Organizing and conducting public awareness programs for segregation/separate collection of waste at source and

Supply, operation and maintenance of required infrastructure including auto-tipper, Refuse compactors, workshop facilities, segregation facilities, processing units and Engineered sanitary land fill facilities etc. on Build, Operate and transfer of machineries, equipment, vehicles and immovable infrastructure in working condition to MCD (free of cost) at the time of completion of concession period or termination of contract.

The work is required to be carried out by the Successful Bidder in the Project Area.

The successful bidder will be required to submit a detailed operational plan with complete details of the moveable/immovable infrastructure and time schedule for its implementation of the system within 30 working days after the execution of the agreement.

The performance evaluation shall be based on criteria of measurement on daily work and the payment for work done shall be on per day basis proportion to the points obtained in daily performance evaluation for collection of Biodegradable, Non biodegradable collected from sources of generators doorstep i.e. from premises to premises, building to building, properties to properties and from street sweeping to processing/ landfill site. The evaluation of the processing and Land fill site shall also be made.

Looking to the contract period of work of 20 years duration, due care should be taken for planning of the services for their total integrated approach by the bidder.

1.4 Approach for Improvement Desired Under the Scope

- 2 Municipal Corporation of Delhi intends to revamp entirely its collection, transfer and transportation systems of handling the Solid Waste in Concession Area. The Bidders have to note the following aspects and they shall have to plan, procure items and provide the intended services accordingly.
 - 2 The prime approach in the tender aims at providing the services in an integrated manner for all types of wastes; biodegradable, non-biodegradable, recyclable, green waste shall be collected for transportation to the processing sites or SLF sites for final disposal.
 - 2 At present the MSW collected is a mix of Biodegradable, non-biodegradable Recyclable and Green Waste, which shall now be collected separately.
 - 2 All the types of wastes shall be cleared and collected by the successful bidder from the Concession Area assigned for the work.
 - 2 Transfer points on public roads and places for collection of all types of wastes shall be litter free and there shall be no spillage of waste while transferring the waste from collection vehicle i.e. auto tippers to refuse compactor.
 - 2 All the equipment, vehicles for collection, transfer or transportation shall have closed body and eco-friendly operations; no manual handling, garbage not to be exposed to atmosphere and not seen outside by citizens and commuters.
 - 2 The work shall be carried out at appropriate time and can be spread in two shifts and corrective action in the third shift.
 - 2 The transfer points shall be maintained nuisance free of solid waste round the clock in two shifts and also the services; doorstep collection, community bins collection shall be operated & maintained to the satisfaction of the Corporation as defined under the performance evaluation system by providing inspection system and rescue team of men and collection vehicles for clearing backlog and re-dressing complaints.

1.5 Overall System of Collection, Transfer and Transportation. For DELHI MSW SOLUTIONS LTD.

The service provider shall plan and establish the system of collection, transfer and transportation of waste as summarized below.

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1.5.1 Primary and Secondary Collection, Transfer and Transportation of Biodegradable and Non-biodegradable waste:

a) Primary collection:

Door-to-Door Collection from individual house hold/commercial establishment/bulk generator/institute/parks etc.: - The waste shall be collected from each unit i.e. source in an auto lifter. The auto lifter shall have capacity upto 1500 Ltr and shall have two compartments for carrying biodegradable and non-biodegradable waste separately. Working time for door-to-door collection of waste from each unit shall be between 7.00 AM to 3.00 PM. Bidder may also deploy wheel barrow/cycle rickshaws in the streets where auto lifter can not enter, with the prior approval of MCD.

House Hold: Bin(s) to segregate the MSW in individual house, shall be purchased and maintained by the House owner(s). The House owner shall ensure delivery of MSW in the vehicle(s) being deployed by the concessionaire, as per the time schedule already intimated to them [by concessionaire].

Hotel, Restaurant etc.: Bin(s) of appropriate size & in number [as per their requirements], shall be purchased and maintained by the Hotel/Restaurant(s) owner(s) and the Hotel/Restaurant(s) through Safai Karamcharies being engaged by them; shall ensure the delivery of segregated MSW in the bin(s) installed at the Gate of Hotel/Restaurant(s) or appropriate location as decided by the owners of Hotel/Restaurant(s), in consultation with MCD.

From the bin(s) installed at the Gate of Hotel/Restaurant(s) or appropriate location as decided by owners of Hotel/Restaurant(s) in consultation with MCD; the concessionaire shall ensure collection of MSW through the vehicle(s) being deployed by them. The Owner/occupier of Hotel/ Restaurant(s) shall continue to pay transportation and disposal charges [in respect of MSW being generated in the Hotel/ Restaurant(s)] to the MCD.

School(s)/Offices: Bin(s) of appropriate size & in number [as per their requirements], shall be purchased and maintained by the School Authorities/Office owner(s) and the School Authorities/Office owner(s) through Safai Karamcharies being engaged by them; shall ensure the delivery of segregated MSW in the bin(s) installed at the Gate of School/Office or appropriate location as decided by School Authorities/Office owner(s), in consultation with MCD. From the bin(s) installed at the Gate of School/Office or appropriate location as decided by School Authorities/Office owner(s) in consultation with MCD; the concessionaire shall ensure collection of MSW through the vehicle(s) being deployed by them.

Mandies/Markets etc.: Bin(s) of appropriate size & in number [as per their requirements], shall be purchased and maintained by the shop(s) owner(s) and the shop(s) owner(s) through Safai Karamcharies being engaged by them; shall ensure the delivery of segregated MSW in the bin(s) installed at the Gate of Market/Mandi or appropriate location as decided by shop(s) owner(s), in consultation with MCD. From the bin(s) installed at the Gate of Market/Mandi or appropriate location as decided by shop(s) owner(s) in consultation with MCD; the concessionaire/MCD shall ensure collection of MSW through the vehicle(s) being deployed by them.

Successful bidder may deploy hand cart/Tri-cycle cart for the waste collection from congested/narrow lane/slum. However, a survey of such area shall be conducted by successful bidder and shall be approved from MCD. Working time for door-to-door collection of waste from household shall be between 7.00 AM to 3.00 PM.

b) Secondary Collection:

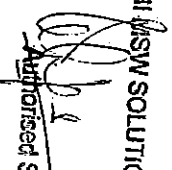
Refuse compactor with appropriate capacities will receive waste from and mini tippers and cycle rickshaws in segregated form.

It shall be responsibility of MCD to ensure that the swept waste shall reach the nearest compactor of the contractor.

1.6 Identification of the Transfer Points / Collection Centers.

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a) There shall be no dust bin/ dalao system for the storage of waste. Waste shall be collected from each household by using auto lifters/ Cycle Rickshaw's and shall be transferred to compactor vehicle and the compactor vehicle shall carry the waste to disposal /processing site as decided by the MCD.

b) The successful bidder shall identify the transfer points, where the auto lifters and compactor vehicles will be parked in order to receive the waste. Such transfer points shall not cause inconvenience to inhabitants. The bidder shall submit the details of such arrangements in writing to Municipal Corporation of Delhi

1.6.1 Mode of Operations of the Service [This should be submitted as apart of the operational plan]

(a) Street wise generators (premises, plots, buildings of house holds, commercial, institutional and others) shall be identified in each work area and Route plans shall be developed by the successful bidders.

(b) Mode of Collection of Biodegradable and Non-biodegradable Waste from the Collection Centers; from Doorstep & from Transfer Points.

(c) Doorstep collection of Biodegradable waste and Non-biodegradable waste shall be carried out street wise from generators daily (premises, plots, buildings) as per route plans. Auto lifter shall be deployed for this purpose.

(d) The auto lifter for doorstep collection shall have two compartments of appropriate capacity. The Auto lifter shall unload Biodegradable waste and Non-biodegradable waste in the hopper of the Refuse compactors separately; in separate compactor trips.

(e) Medium size Compactors of appropriate capacity will be used for the purpose which will receive waste collected by the Auto lifter.

(f) The waste so collected from bulk generators places will be transported to the processing and landfill site.

(g) The collection frequency for biodegradable & non-biodegradable waste shall be once in 24 hours and with in 72 hours of the services on demand.

(h) The Contractor shall own, deploy, operate and maintain all equipment and vehicles of all types, category and capacity mentioned in the specifications.

(i) The bins full with waste kept by generators in the front yard or from the nearest approachable gate of the building/premises to the collection vehicle shall be brought to the vehicle by the concessionaire and they shall be kept back in place after unloading in to the vehicles.

(j) The ground at the place where vehicles stop for loading shall be clean-swept if there are any dropping of the refuse from the container while loading and it should be disinfected by an approved disinfectant liquid spray.

(k) All waste collection vehicles shall be thoroughly cleaned and disinfected by the collection crew by approved disinfectant liquid spray at the time of attendance.

Preparing Micro Operations Plan

a) The collection, Transfer and Transportation system desired under work plan is on Build, Operate and Transfer of the immovable/movable infrastructure after a period of 20 years,

b) Payment for work of collection, Transfer and Transportation of Biodegradable and Recyclable waste is on per ton basis, based on criteria of day's performance specified in the tender

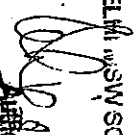
c) Based on its micro plan, the successful bidder shall prepare for streetwise plan of doorstep collection indicating generators collection points, waste expected, type of vehicle, vehicle route, timings of collection, manpower allotted to each vehicle and output expected.

? Auto Cad Map of the area : Identify vehicle allocation recommended for each area ; device and mark routes of the vehicle and equipment; decide on stop and identify transfer point and mark on map ; assign route no., timings to each vehicle route.

? Prepare Summary of Daily Route Plans for all the two types of services Doorstep and on Demand

? Daily Route wise Plan and Record of Attendance.

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- 7 The results are required to be recorded for every vehicle or equipment trip, every day to ascertain the completion of desired quantity of work with acceptable quality in stipulated time while implementing the system.

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- 7 Identifying Places of Operations and Maintenance Infrastructure

All vehicles are to be fitted with GPS for effective tracking by MCD from a centrally located control room and the same Infrastructure for tracking will be provided to the Independent Consultant for day to day monitoring of work; by the bidder.

1.6.2 Transportation of Municipal Solid Waste

- a) The solid waste collected from doorsteps, by auto lifter as explained earlier shall be unloaded into compactor vehicles and which in turn shall be transferred to waste processing/ landfill site.
- b) The biodegradable and recyclable solid waste collected shall be transported separately to the processing sites & disposal site in different vehicles.

- 1.7 **Processing:** The Municipal Solid Waste shall be transformed into new or recycled products including processes like composting, RDF, as defined in the MSW (M&H) Rules, 2000.

- 1.8 **Engineered Sanitary Landfill Site:** Landfill Facility shall be, designed with protective measures against pollution of ground water, surface water and air fugitive dust, wind blown litter, bad odour, fire hazard, bird menace, pests or rodents, greenhouse gas emissions, slope instability and erosion, and utilised for disposal of Landfill Waste.

- 1.9 **Infrastructure for Office, Mustering, Garaging, Maintenance and Monitoring Services**

- a) **One site for workshop and operations control centre shall be established for the services under the scope and operated by the service provider on the land given by the Municipal Corporation of Delhi.**

- Separate land of size as per requirement shall be earmarked for the purpose of parking of vehicles at wards and it shall be handed over on lease, to the service provider for a period of 20 years.
- The facility will house office, control room, communication and monitoring centre, operations and maintenance facility and facility for workers – sanitary, rest room and canteen

The MCD has identified suitable sites for Workshop and Transfer station as follow:

Rohini Zone:

1. A piece of land between Railway Line & CRB, Park, Mangolpuri Industrial Area Phase-I, New Delhi. [Measuring About 3.5 Acre].
2. Automobile Workshop of Rohini Zone.

Civil Line Zone:

1. A piece of land between Safai Karamchari Staff Quarters and Road No.51 [Over and side of covered nallah, subject to the condition that the bidder/ concessionaire at various time shall allow the MCD to de-sit the nallaha as well as shall ensure that there is no inconvenience to the road users] Jahangirpuri, New Delhi. [Measuring About 3.0 Acre].
2. Automobile Workshop of Civil Line Zone.

Vasant Kunj- Dwarka- Pappankalan:

The MCD is in short supply of land. However MCD will try to provide a piece of land to the concessionaire either in Vasant Kunj or Dwarka –Pappankalan area for parking of vehicle(s) purposes, if possible.

The concessionaire shall be allowed to use the existing electricity/water connection(s) in the Automobile Workshop(s) on payment of bills, as per actual.

This is to make clear that the space for setting up office, workshop and transfer station/parking site etc. shall be provided to the concessionaire on rent @ Re 1/- Acre, per annum. The land shall always be remain property of MCD and be given to the concessionaire for the use [during concession period only] for the purposes defined in this document [only].

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b) Operations Control Room and Communication System

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- A wireless Communication network shall be provided by the contractor for the supervisors as well as on the vehicles and equipment for drivers with a base station at the control room at workshop area to be provided by MCD.

All vehicles shall be equipped by GPS equipment and should be capable of being monitored from the MCD control room failing which a penalty of Rs 5000/- per vehicle, per day shall be imposed on the concessionaire.

- The type of system shall be two way communication wireless or mobile phone.

• There will be a complaint redressal cell established with a toll free number. The toll free number should be communicated to all the user of the system in Concession Area. The complaint received up to 3.00 PM shall be redressed on the very same day and the complaints received after 3.00 PM, those shall be redressed by 11.00 AM on the next day. If the complaints are not redressed as per the time schedule given above; a penalty of Rs. 5000/- per day per offence shall be imposed on the bidder/contractor.

Note:

1. The bidder shall use auto lifter only, for collecting the garbage from source. If there are some lanes/by-lanes where the auto lifter access is not possible, a rickshaw having two compartments may be used by the bidder with the prior approval from MCD.
2. The automobile vehicle having the gross vehicle weight (empty weight of vehicle + pay load) less than 7.5 MT; shall be CNG fuel based otherwise shall be diesel fuel based.

1.10 Specifications of Vehicles / workshop facilities.

1.10.1 Vehicles and Equipment for Collection and Transportation of MSW

Specifications of the vehicles to be provided with the RFP submission

A. Auto Tipper for Collecting Biodegradable and Recyclable waste at Doorstep from Small lanes.

The small closed container vehicle should have minimum payload of 600 Kg to 1500 Kg & should be mounted on suitable four wheeler light motor vehicle chassis for this pay load. It should be provided with unloading arrangement. The unloading arrangement shall be such that the vehicle can unload the garbage directly into the hopper of 6 – 25 Metric Tones Capacity Compactor. The tipping height shall be compatible with the height of the hopper of the compactor. In the driver's cabin, there shall be place for seating of one labour. These vehicles shall be reputed make and proven design. A bell or hooter should be provided on the vehicles. The blinking light indicator should be provided on the vehicle to indicate stoppages while loading of garbage. The proof of manufacturer's experience of supply of minimum 50 similar vehicles for MSW projects/ tie up with manufacturer for technical and spares support for the entire 20 years should be attached with the proposal. Catalogues in original for both chassis and rear tipper body should be submitted at the time of RFP submission.

B. Refuse Compactor vehicle for Collecting Garbage from Bulk generators / main roads and Transfer Points.

Compactor equipment (16 -25 T GVM) should have minimum payload of 10 Metric Tones & should be mounted on suitable chassis for this pay load. The compactor should be rear loading type. Tail Gate of the compactor equipment should have the collection hopper at the rear end having suitable capacity as per standard manufacturer's specifications. The compactor equipment should have ejector plate for unloading the garbage. The operations of the compactor equipments should be hydraulically controlled. The control should be provided in the operator's cabin at a convenience position for easy operation. The compactor should be provided with Leachate collection tray for collection of leachate on compaction of garbage. This leachate collection tray should be provided with the suitable drainage and cleaning system. There should be a provision in driver's cabin for carrying 2 labourers & separate place for keeping their implements. A bell or hooter should be provided on the vehicles. These vehicles shall be used for collection of wet & mix / dry garbage. The blinking light indicators should also be provided on the vehicle to indicate its stoppages while collection of garbage. The manufacturer of compactor should have an experience of sale of more than 300 Nos. during last ten years in any part of the world. The proof of their experience / tie up

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letter with manufacturer for technical and spares support for the entire 20 years should be attached with the proposal. Catalogues in original for both chassis and rear compactor body should be submitted in the tender proposal.

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1.11 Workshop Site

Workshop Site to meet requirements lay out below:

1. The design layout for the Workshop Site should be such that it allows for systematic use of designated, parking of vehicles, easy right of way for in and outbound vehicles and separate sections for repair and maintenance of vehicles.
2. The Workshop Site should be designed to upgrade the current status of the buildings and equipments handed over to the Concessionaire at the time of handover.
3. The maintenance of the Workshop Site should be at par with Good Industry Practice and should have all arrangements to meet emergency situations such as fire hazards as per Applicable Law.
4. The building and sheds in the Workshop Site should be painted annually and annual repair and maintenance operations should be carried out;
5. Bidder shall submit list of equipments/ machineries to be provided in the workshop to maintain the entire fleet of vehicles. The minimum capability of the bidder should be to repair the minor breakdown vehicles (10% of the strength provided) for hassle free operations.

1.12 Procedures during Construction

The contractor shall:

1. Ensure that the construction/rehabilitation of the Existing Project Facilities is undertaken with minimal inconvenience to the public;
2. Take precautions to avoid inconvenience, damage, destruction or disturbance to any third party's rights and properties;
3. Be in compliance with the Applicable Laws and Applicable Permits obtained for the Project including the clearances obtained by MCD;
4. Adhere to the Operations Plan of the Project;
5. Deploy adequate number of qualified and competent personnel having relevant experience and skills.
6. Removal/substitution of any material, equipment or machinery which, in its opinion, does not meet the standards specified in this schedule from the construction site, within such time as may be specified in its instructions.

1.13 Public Awareness Programme: Daily/Fortnightly/Monthly public awareness program details to be provided to MCD by the first week of every month throughout the concession period: The bidder shall engage a firm of international repute for implementing the awareness programme. Independent Consultant will supervise this activity during the entire concession period.

1.13.1 Prime approach in conducting public awareness programme

- a. Prime objective of the activities under the programme is creation of public awareness for their responsibility under the MSW (M&H) Rules, 2000 and explain them contents of the Bye laws framed and also the MCD's plan for improving the services.
- b. The end results aim at full implementation of the directives under the MSW (M&H) Rules 2000 regarding separate collection of solid waste at source, door to door collection, prevention of littering/ prevention of deposition of all kinds of waste on roads and public places done by them and maintain discipline regarding general cleanliness and nuisance free streets and public places.
- c. The performance evaluation shall be based on criteria of measurement on fortnightly work, planned against carried out and the payment for work shall also be done on fortnightly basis depending upon the level of performance.
- d. Looking to the mode of work on contract due care should be taken for planning and implementing the public awareness

1.13.2 The work coverage - Public Awareness

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a. It is necessary to organize the public awareness programme in the Concession Area targeting group wise; in consultation with MCD,

b. This should be one day duration workshop to explain the service users the proposed approach of the integrated solid waste management in the Concession Area and the role of the service users- citizens and outsiders.

c. The programme shall be organized on an average 15 days in the work area, target group wise. Target group stake holders; councillors, housing societies, NGO groups, house wives, shop keepers, school children, hawkers, construction agencies citizens etc. should be invited group by group.

d. The literature, posters and other reading material desired for the programme shall be prepared and distributed.

f. More cycles shall be repeated by organizing meetings of the local stake holders ward wise or group of wards wise in subsequent months for the next four to five months. This round shall be completed within the period by which the regular project / work starts on daily basis.

g. As explained earlier the Public awareness should encompass all the aspects of the compliances under the Rules. Major items shall be

- ? Separate collection of biodegradable and recyclable waste at source for all the generators,
- ? Generators participation and close cooperation in door to door collection,
- ? Public participation in prevention of littering & prevention of deposition of garbage, debris and other house holds in drains and on public roads and places,
- ? Encouragement in use of litter bins and keeping them clean,
- ? Encouraging citizens for using on demand services of debris and green waste collection,
- ? Encouragement of decentralized waste processing at generators end by forming citizens groups for reducing, reusing and recycling the biodegradable and recyclable components and hand over debris and processing residue to the council for final disposal.
- ? Daily/Fortnightly/Monthly programme shall be planned a week in advance to cover systematically the awareness components listed above and implemented.
- ? The Contractor should plan, organize and conduct the awareness programmes and initiate citizen's group's formation to continue such programmes periodically and help MCD in monitoring the results.
- ? The programme shall be a continuous feature with innovations in approach as the level of response of the users / beneficiaries changes.

1.14 Assigning the Agreement/Contract

a) **Period of Contract:** The period of Concession shall be 20 years.

FIRST PHASE: Operations for door to door Collection and Transportation of MSW, in the concession area i.e. at least five ward from both the zones, should start from 91st day of signing of Concession Agreement and in complete concession area, within in 180th day of signing of the Agreement.

SECOND PHASE: The concessionaire shall complete all infrastructure work required for successful implementation of the project and shall start receiving the MSW at Processing and Land Fill Site, within in Eighteen Months.

THIRD PHASE: The concessionaire shall start receiving the MSW at Processing and Land Fill Site, from first day of Nineteenth Months and onwards.

MCD is also desirous of making Delhi a 'Dhalao/dust bin-free' city. The concessionaire shall ensure that at least 25% Dust Bin/Dhalao and at least 50% Dust Bin/Dhalao [of the existing, in concession area] is removed from the concession area, within 12 months and 24 months respectively, of signing of agreement, respectively. Remaining 50% Dust Bin/Dhalao shall be removed by the concessionaire with in the time period, as decided by the MCD. The

f) If no representative of the corporation is available on a particular day for joint inspection, the self evaluation done by the Independent Consultant shall be binding on the corporation. The concerned officer of the corporation on receipt of bills shall verify and ascertain the correctness of bills and certify that the work is carried out as per the specifications and to the complete satisfaction of the corporation and submit it to the accounts department for final payment. The accounts department after due scrutiny of records shall release the payment usually within the 30 calendar days.

g) If the bills are not paid within 180 days, the contractor shall be paid interest @ SBI PLR rates by MCD for which the bidder shall communicate its claim to MCD in writing.

h) **Relationship with the Contractor's Suppliers and Service Providers.** All transactions between the contractor and third parties shall be carried out as between the two principals without any reference to committing or purporting to commit MCD in any manner for this work. The bidder should give undertaking to make such third parties fully aware that the bidder has no authority to bind MCD in any manner.

i) **Legal Jurisdiction:** The legal Jurisdiction for purpose of any matter in this tender / contract agreement shall be the courts of Delhi, only.

j) **Penalty:** As specified in performance evaluation and mode of payment.

1.19 Preparing and Implementing the Plan

The process of implementation is required to be designed and indicated by the Bidder at the tendering stage only. Major steps in the process along with role of MCD and that of the successful Bidder are outlined for explaining a close co-ordination desired between two agencies.

The Bidder shall submit overall technical bid in Appendix-6 of RFP, along with Inventory of the information and documents desired are given in Appendix-6 of RFP.

a) Requirement of vehicles equipment and accessories to carry out the solid waste collection work based on the collection points identified.

b) The plan shall be prepared for deployment of men, vehicles and equipment, infrastructure as specified in the tender.

1.20 Work Timings and frequency of work desired under the plan

a) Prime objective of the work defined is to see that solid waste- Biodegradable, Non biodegradable generated in the Concession Area is separately collected and transported to the final processing or disposal sites within 24 hours without any backlog.

b) In order to meet the success, the work defines attending collection points thoroughly in time and maintaining them solid waste & nuisance free.

c) The collection points should be attended by rescue team, If backlog occurred by chance causes, within the next 12 hours by planning routes or on complaints. This may require deployment of the system in additional shifts

d) The entire collection and transportation work defined earlier (doorstep collection, collection from transfer points and on demand service and transportation of waste to processing and disposal sites) shall be carried out generally during the work timings as below

? The shift timings shall be 7.00 A.M. to 3.00 P.M or adjusted as per local condition including transportation, make ready and put away activity accordingly.

? Doorstep collection: The timings of collection of biodegradable waste shall generally be between 7.00 A.M. and 3.00 P.M in the morning hours. The Non biodegradable waste can be planned to be collected in the afternoon shift. But they shall be fixed once for all in consultation with MCD and announced to the citizens.

? Transportation by the biodegradable and recyclable waste from the large generators shall be done in the afternoon shift.

? It is mandatory on the part of the service provider to maintain all the collection points and roads clean and tidy without any solid waste lying near or around the compactor or on roads. However MCD reserves the right to ask the service provider to take corrective action at any time round the clock.

? In order to maintain the area as specified, the Contractor shall form a rescue team of requisite men and allocate to the rescue vehicle at least in two shifts.

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Municipal Corporation of Delhi

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- ? The maintenance work shall also include rectification of the defects pointed out by the representative of MCD assigned for inspection. The object is to work towards zero defects by introducing nearly 100% inspection and rectification of defective points.
- ? After gaining experience in the field, the timings may have to be readjusted for most effective cleaning work, which shall be done in consultation with the MCD officers/personnel.

- ? The service provider shall give the specified services on all 365/366 days of the year.

1.22 Procuring Resources & Commissioning the Project

The vehicles, equipment, machines, accessories, materials, implements, workers and their facilities and protective gears required for implementing the project/work shall be provided by the successful Bidder on B.O.T Basis (Build Operate & Transfer of immovable/immovable infrastructure Basis).

- a) The bidder shall determine the requirement of vehicles, machinery and equipment etc for work, based on the operational requirement – in terms of type, capacity, numbers.
- b) The service provider shall procure and own the brand new vehicles, machinery and equipment for all work in their name capable of effective performance in environment and on roads in Concession Area for this project.
- c) The bidder shall tie-up for procurement of machinery in their name with manufacturing company/companies with proven records and whose vehicles, equipment, machines materials, accessories, implements are widely used for the same work in India and abroad.
- d) The bidder shall provide original coloured brochure of the vehicles, equipment, machines, accessories, implements offered in the tender, obtained from the manufacturer with whom the Bidder has tied up for the project (proof necessary).
- e) This should also accompany with all relevant specifications such as type, size, model, over all dimensions obtained from the manufacturer with whom the bidder has tied up for this project for supply, installation, commissioning, operations training and maintenance back up.
- f) The details of the users of these vehicles, equipment, machines, accessories, implements offered in the tender with the proof of selling number of units in the past years.
- h) Operations plan in detail shall be prepared by the Contractor.
- i) The success bidder shall submit schedule of implementation plan to the MCD; in tabular form as well as on PERT chart / Bar Chart with in 30 days of the receipt of Lot from the MCD.
- j) The service provider shall carry out detailed survey of the area street by street in the formats suggested and prepare micro plan after the survey of the entire work area within 30 days of the date of the work order / letter of intent.
- k) The micro operations plan as per the guidelines in the tender will be prepared and submitted by the successful bidder as desired under the work specifications. The plan shall be approved by MCD's authorized representative for implementation in consultation with Independent Consultant
- l) Simultaneously they shall procure all T&P, Equipment and Vehicles stipulated for work with in four months of Lot for inspection trials and approval in Project Area.
- m) Prototypes of prime vehicles, equipment, Machines, accessories, implements shall be presented in Concession Area or at the manufacturers place at the bidder's cost for inspection by MCD and approval within 60 days of the letter of intent / work order given to the service provider by MCD.
- n) The contractor shall also simultaneously recruit and train Manpower.
- o) Regular work shall be commenced in whole Concession area.
- p) With in the Second Phase the system should get implemented in the complete Concession area.
- q) Public awareness programmes should be planned in the first two months and should start in the third month as soon as the proto types are received and trials are organized
- r) During the period of the implementation period the Service provider / Contractor/ successful bidder shall organize 15 programme per month.

s) The Contractor shall have to provide adequate number of vehicles, infrastructure, materials, services and manpower as offered/prescribed under the requirements in the tender on commencement of the regular work.

t) The implementation period can be extended maximum to the extent of two more months with the mutual consent of the service provider and the Commissioner, MCD.

u) There shall be no penalty levied by MCD during the implementation period.

v) The final supply of all vehicles, equipment, machines, materials, accessories, implements, shall be made for commissioning within 60 days of the approval of the prototypes (120 days from Lol.).

w) Commissioning and the successful trial of all vehicles, equipment, machines, materials, accessories, implements, desired for the work assigned shall be given to the designated person of MCD in charge of the project within 120 days from the date of the Lol.

x) Regular work shall start then from the Second Phase in whole Concession area.

y) The vehicles, equipment, machines, materials, accessories, implements, materials, consumables found defective, insufficient or inadequate shall be replaced or brought in sufficient quantity and appropriate type and quality as advised by MCD's representative.

1.23 The Process of Start up and Implementation

a) The successful bidder will be given Lol and subsequently the work order mentioning contract period and a firm order for starting the work full-fledged latest within Second Phase period. The performance guarantee of 5.0 Crore (Rupees) as per terms & conditions shall be paid on receipt of Lol, after getting a firm order latest within 30 days.

b) The final supply of all vehicles, equipment, Machines, Materials, accessories, implements, shall be made for commissioning with in the period stipulated earlier.

c) Commissioning and the successful trial of all vehicles, equipment, Machines, Materials, accessories, implements desired for the work assigned shall be given to the designated person of MCD as mentioned earlier.

d) There after Delay in starting the regular work in the Concession Area shall attract a penalty of Rs.5000 per day, which shall be recovered either from security deposit or monthly bill, if the delay is on account of the service provider.

e) On receipt of the letter of Intent and acceptance, the Bidder should place orders for all requisites immediately to avoid delay in starting the work. A copy of the order placed with the manufacturer for all vehicles, equipment, machinery and infrastructure and their confirmation to dispatch them in stipulated time should be produce as stipulated earlier for prototypes and for remaining with in the period specified after the approval of prototypes is received.

1.24 Operational Records and Operations Control

a) The successful Bidder shall keep all the statutory documents and registers duly recorded for inspection of MCD before 10 days of commencement on regular basis.

b) The successful Bidder should also keep operational records :

- o Attendance Cards/ Register of the manpower deployed
- o Log Book of vehicles.
- o Register of issue of the disinfectant liquid.
- o Register of Stock of implements, and other materials and their issue.
- o Record of Acceptance of Personnel carriers with registration Numbers & timings.
- o Register for issue of Uniforms and protective gears defined in the specifications.
- o Performance Evaluation Record in separate form for each zone.
- o Operations & Maintenance records of all vehicles.

c) A computerized system of keeping records of operations & maintenance of the service and complaint Registration & Redressal shall be established and maintained to keep information on all the aspects of the service ready and to receive and redress complaints to the satisfaction of the users.

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d) The complaints received upto 3.00 PM shall be redressed on the same day and the complaint received after 3.00 PM shall be redressed by next morning.

e) The control room shall be equipped with the land line toll free telephones in required number having voice recording facility. The complaint shall be redressed as above, other wise a penalty of Rs. 5000/- per default shall be imposed on the bidder. The bidder shall give a wide publicity in leading Delhi news papers to this effect along with other modes of communication like radio, cable T.V., cinema halls, display on vehicles etc..

f) The Contractor may design their own operations management and operations control system for approval of MCD before commencing the work.

g) An overall supervisor, first line supervisor's capable of understanding work plan, organizing the work accordingly, and capable of directing, disciplining and controlling work force shall be appointed before commencing the work.

h) The driver/operators and supervisors shall keep all records and submit all reports desired to operate the plan and as suggested by MCD.

i) The Contractor supervisors shall keep close liaison with MCD staff that is in charge of the work of organizing joint inspection daily as desired for ascertaining work performance.

j) An officer from MCD will be named who is in charge of implementing and operating the system of collection and transportation work carried out on contract.

1.25 Facilities and Benefits for the Work Force Employed

The successful Bidder shall furnish the details of the work force employed for the work defined in this document – details of the workers including those for supervision before commencing the work

Each person (including Supervisor) deployed on this work shall be provided the following facilities.

- ? Uniform – Pant, shirt / apron, cap – approved by MCD (visible distinctly at night)
- ? The name of the person and level shall be either knitted on pocket of the apron or name embossed on plastic badge.
- ? A set of Hand Gloves, Mask and safety shoes will be given to all employees up to supervisors.
- ? A set of gum boots and rain wear shall be provided.
- ? If the employees are found without proper dress code, a penalty of Rs. 5000 per person per default shall be imposed on the bidder.

1.26 Duty/Reporting and Vehicle Service Station & Office

- a) A duty reporting place will be established on the places given by MCD.
- b) The MCD shall provide land for setting up of an office from where the collection & transportation and public awareness & enforcement activities shall be organized and monitored.
- c) The successful bidder shall take following steps for these places provided by MCD for the purpose

- ? The places will be fenced for security purposes by the bidder. The successful Bidder shall also provide private uniformed security personnel for guarding the place round the clock.
- ? A shed for Parking of vehicles will be constructed by the bidder, out of cement / PVC sheets fitted on tubular structure for carrying out washing & maintenance. Permanently wired lighting system should also be provided.

d) The employees provided for the vehicles, operations and manual work in the Concession area shall be covered under all relevant labour laws prevailing in the state of Delhi and in India, especially the minimum wages act, the contract labour act 1970 etc and those get introduced in future from time to time. The wages / salary paid to the relevant categories should not be less than that specified under the minimum wages Act revised from time to time.

MCD shall not be liable to take any corrective action, incur any extra cost on account of these laws by way of compensation or any other assistance to the workers or bear any legal liability- direct or indirect. The successful Bidder shall take care of all these areas at their end and at their cost

e) It will be the total responsibility of the successful bidder to maintain requisite documents, registers, wage cards, daily attendance muster, and service records including P.F., Gratuity etc where applicable and submit returns regularly to the statutory authority, as per rule.

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f) The successful bidder shall also be responsible for obtaining license for the service station, if required and adhering to all the rules and regulations provided under the act

1.27 Performance Measurement and Evaluation

a) A system of performance evaluation of the work done, feed back of the results, analysis of deviations as compared to plan and initiation and completion of corrective action before the next cycle; in this case a cycle time is only 24 hours, elaborated below shall be introduced.

b) MCD shall deploy a Independent Consultant for the performance evaluation of work done.

c) The work done at the end of each day shall be jointly inspected by the bidder and independent consultant along with a designated representative of MCD and the results & deviations shall be noted. Performance measurement and evaluation will be carried out by the MCD and Independent Consultant.

d) The items of Measurement have been given points depending upon their importance. The work satisfaction level will be decided daily after joint inspection and recording the performance as points obtained against each item.

e) In order to set right the defects noticed during inspection, an opportunity will be given to the bidder to rectify the same and to improve the points to reach 100 %.

f) The service provider shall simultaneously take Corrective Actions by communicating instructions to the operations team.

g) The inspection of corrected items shall again be performed to ensure 100 % results.

h) The service provider shall be paid proportionately to the level of work completed barring the deficit after the second inspection, but the service provider will have to any way again attend the defective point and redress the fault in presence of both i.e. the representatives of Independent Consultant and MCD.

i) Interaction through: wireless networks or mobile phones shall be maintained by the service provider within its workforce for transfer of messages and general interaction related to the work.

1.28 Statutory Laws, Rules and Regulations Applicable

The service provider firm / company should adhere to the following laws, rules, regulations and all Government of India (G.O.I.) Rules, Regulations and Directives present, amended, updated and added during the work period applicable to the Project / Work of the components covered;

- a. The MSW Rules 2000 of MoEF, GOI, under EPA, 1986
- b. Recommendations of the Committee constituted by the Hon. Supreme court, in 1999.
- d. Rules under Environmental, Health and Safety Aspects
- e. Other Environmental Pollution Control laws, rules and directives
- f. Environmental Emission laws
- g. Motor vehicle Act and Vehicles Emission Control
- h. Labour Laws –Minimum wages, Contract Labour Abolition and Regulation
- i. Good Industry Practice
- j. Directives on SWM services in the Act for MCD, Governing the Civic services
- k. Any other norms prescribed by the authorities who are applicable from time to time for the project work in this tender.

ARTICLE 2

2.0 DEFINITIONS AND INTERPRETATION

2.1 Definitions

In this Agreement, the following words and expressions shall, unless repugnant to the context or meaning thereof, have the meaning hereinafter respectively ascribed to them hereunder.

Act and Rules: The term "said Act" and "said Rules" shall mean and include the Municipal Corporation of Delhi Act 1957 amended upto date and Rules framed there under from time to time, the Solid Waste (Management and Handling) Rules 2000 and all those labour laws/ relevant laws and rules mentioned above/applicable to the contract.

Action against bidder: Municipal Corporation of Delhi shall take action against the bidder, if any worker of the bidder or any his/her employee mixes segregated waste at any point of collection, or fails to pick up waste as per the specified time schedule.

"Additional Cost" shall mean the additional capital expenditure and/or the additional operating costs or both as the case may be, which the Concessionaire would be required to incur as a result of Change in Law.

"Agreement" shall mean this Agreement, and include any amendments hereto made in accordance with the provisions hereof.

"Applicable Law" shall mean all laws in force and effect, including MSW Rules, as of the date hereof and which may be promulgated or brought into force and effect hereinafter in India including judgments, decrees, injunctions, writs or orders of any court of record, as may be in force and effect during the subsistence of this Agreement and applicable to the Project/the Concessionaire.

"Applicable Permits" shall mean all clearances, permits, authorisations, consents and approvals required to be obtained or maintained by the Concessionaire under Applicable Law, in connection with the construction, operation and maintenance of the Project during the subsistence of this Agreement.

"Appointed Date" shall mean the date of this Agreement.

"Arbitration Act" shall mean the Arbitration and Conciliation Act, 1996 and shall include any amendment to or any re-enactment thereof as in force from time to time.

The bidder , prospective bidder, successful bidder shall mean and include a proprietary and Partnership firms or companies Pvt. Ltd., Limited which has obtained the tender document from MUNICIPAL CORPORATION OF DELHI , which has submitted a tender for the work, which has been given a RFP/ work order for the work on successful bidding, respectively. In case of proprietary firm, him/her, his/her heir's executors and administrators and in case of partnership firm a partner or partners of the firm and in case of the companies their Directors.

Bio-degradable waste means the waste of plant and animal origin e.g. kitchen waste, food & flower waste, leaf litter, kitchen-garden waste, animal dung, fish/meat waste and any other material that gets decomposed by the action of living organism, as defined in MSW (M&H) Rules 2000.

"Bio-medical Waste" shall have the meaning ascribed to it under the Biomedical Wastes (Management & Handling) Rules, 1998.

"Book Value" shall mean the cost of the fixed assets incurred by the Concessionaire for the Project, net of accumulated depreciation computed on straight line basis in accordance with the rates specified in Companies Act, 1956 and as determined by an independent firm of chartered accountants mutually agreed upon and appointed by the Parties.

Bulk generator means the owner, occupier or any other person representing owners and occupiers of housing society / housing complexes, restaurants, hotels, markets, industrial estates, parks, garden, traffic islands etc. and shopping complexes / malls and includes any government or public office building, or other users such as clubs, gymkhana, marriage halls, recreation/ entertainment complexes hospitals, educational institutions, commercial establishments or other establishment sources / premises etc.

"COD" shall mean the commercial operations date of the Project which shall be the date on which the Independent Consultant has issued the Provisional Readiness Certificate or the Readiness Certificate in accordance with the provisions of this agreement.

Collection means lifting and removal of municipal solid waste (MSW) from designated collection points or any other location.

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Collection at Source means the collection of municipal solid waste by the bidder directly from the premises of any building, bulk generators or common premises of a group of buildings etc..

"Construction Requirements" shall mean collectively the Waste Processing Facility Construction Requirements and the Landfill Facility Construction Requirements.

"Construction Works" shall mean all works and things required to be constructed by the Concessionaire, pursuant to the Construction Requirements and O&M Requirements.

Contract: The term "Contract" shall mean and include (i) RFP (ii) Terms and conditions of Contract (iii) Tender Form (iv) Form of acceptance (v) Form of agreement (vi) Additional or modified clauses added on account of the pre-bid meeting (vii) Mutually accepted conditions in writing signed by both the parties; MUNICIPAL CORPORATION OF DELHI and Contractor. Thus the Contract means the agreement between the successful Bidder (The Bidder to whom the work order is given) and MUNICIPAL CORPORATION OF DELHI as recorded in the article of agreement signed by the successful Bidder and MUNICIPAL CORPORATION OF DELHI, including all appendices, attachment and documents mentioned there in. The successful Bidder then becomes the Contractor/ service provider of the project/work. "Contractor" shall mean any Person with whom the Concessionaire has entered into/may enter into any material contract in relation with the Construction Works and O&M Requirements.

Contract Amount: The term "Contract Amount" shall mean the sum quoted by the Contractor in his offer and accepted by the Corporation.

Commissioner: The term "Commissioner" shall mean and include the Commissioner of Municipal Corporation of Delhi, appointed under relevant provisions of the DMC Act 1957.

Door Step Collection shall mean collection of solid waste from building to building or property to property, bungalow to bungalow.

"Drawings" shall mean all of the drawings, designs, calculations and documents pertaining to the Project in accordance with the Construction Requirements and O&M Requirements.

"DSPCC" shall mean the Delhi State Pollution Control Committee.

"Emergency" shall mean a condition or situation that is likely to endanger the safety of the individuals on or about the Project Facilities or which poses an immediate threat of material damage to any of the Project Facilities.

"Encumbrance" shall mean any encumbrance such as mortgage, charge, pledge, lien, hypothecation, security interest, assignment, privilege or priority of any kind having the effect of security or other such obligations and shall include without limitation any designation of loss payees or beneficiaries or any similar arrangement under any insurance policy pertaining to the Project, physical encumbrances, claims for any amounts due on account of taxes, cesses, electricity, water and other utility charges and encroachments on the Project Facilities.

"Engineered Sanitary Landfill" shall mean the area within the Landfill Facility, designed with protective measures against pollution of ground water, surface water and air (fugitive dust, wind blown litter, bad odour, fire hazard, bird menace, pests or rodents, greenhouse gas emissions, slope instability and erosion, and utilised for disposal of Landfill Waste.

"Expiry Date" shall mean the date on which Post Closure Period ends.

"Financing Documents" shall mean collectively the documents evidencing Lenders' commitment to finance the Project.

"Financial Year" shall mean the period commencing from April 1 of any given year to March 31 of the succeeding year.

"Fit for Land filling" shall have the meaning ascribed to it in Schedule 5.

Four Categories of waste means Biodegradable, Non biodegradable, Recyclable & Green waste to be collected separately.

"Force Majeure" or **"Force Majeure Event"** shall mean an act, event, condition or occurrence as specified.

"The Goods" means all materials, articles, accessories, assemblies, equipment, machinery which the Successful bidder is required to provide at specified places for establishing, commencing,

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continuing and carrying out the Work in specified manner and with the specified performance levels.

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"Gol" shall mean the Government of India.

"GoNCTD" shall mean the Government of the National Capital Territory of Delhi.

Good Industry Practice: The term shall mean exercise of that degree of skill, diligence prudence & foresight in compliance with the undertakings and obligations as under the agreement which would reasonably and ordinarily are expected of a skilled & experienced persons engaged in the implementation, operations and maintenance or supervision or monitoring thereof of any of them of a project similar to this project

"Government Agency" shall mean Gol, GoNCTD, MCD or any state government or governmental department, commission, board, body, bureau, agency, authority, instrumentality, court or other judicial or administrative body, central, state, or local, having jurisdiction over the Concessionaire, the Site/Project Facilities or any portion thereof, or the performance of all or any of the services or obligations of the Concessionaire under or pursuant to this Agreement.

"Hazardous Waste" shall have the meaning as defined under the Hazardous Wastes (Management and Handling) Rules, 1989 and as amended thereto.

Inert Solid Waste means any solid waste or remnant of processing whose physical, chemical and biological properties make it suitable for sanitary land filling.

"Implementation Period" shall mean the period from the Agreement Date to COD.

"Land filling" shall mean disposal of the Landfill Waste in the Engineered Sanitary Landfill in accordance with the terms of this Agreement.

Landfill means a waste disposal site for the deposit of residual solid waste in a facility designed with protective measures against pollution of ground water, surface water and air fugitive dust, windblown litter, bad odour, fire hazard, bird menace, pests or rodents, greenhouse gas emissions, slope instability and erosion.

"Landfill Facility" shall mean collectively the facilities set out in Schedule 3, including the Engineered Sanitary Landfill to be duly designed, engineered, and constructed in accordance with the provisions specified thereto.

"Landfill Facility Construction Requirements" shall mean the requirements as to design and construction of the Landfill Facility set forth in Schedule 3.

"Landfill Life" or "Active Operations Period" shall mean the period commencing from COD till the completion of activities as per Clause 5.4 of Operations and Maintenance Requirements for Landfill Facility (Schedule 5) when the Engineered Sanitary Landfill is fully filled with Landfill Waste and a final cover designed in accordance with the MSW Rules is laid on the Engineered Sanitary Landfill, and in accordance with the provisions of this Agreement.

Provided that, the Landfill Life may be further extended after discussions between Parties on mutually agreed terms.

"Landfill Waste" shall mean the Residual Inert Matter, duly certified as fit for land filling by the Independent Consultant in accordance with the O&M Requirements.

"Lenders" shall mean financial institutions, banks, funds and trustees for bond holders or debenture holders, who have provided funds to the Concessionaire for financing any part of the Project.

"Material Adverse Effect" shall mean a material adverse effect on (a) the ability of the Concessionaire to exercise any of its rights to perform/discharge any of its duties/obligations under and in accordance with the provisions of this Agreement and/or (b) the legality, validity, binding nature or enforceability of this Agreement.

"Material Breach" shall mean a breach by either Party of any of its obligations under this Agreement which has or is likely to have a Material Adverse Effect on the Project and which such Party shall have failed to cure.

"MCD" shall mean Municipal Corporation of Delhi, the municipal corporation established under the provisions of the Delhi Municipal Corporation Act, 1957.

"MSW Rules" shall mean the Municipal Solid Wastes (Management and Handling) Rules, 2000 and includes any amendments thereto.

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Municipal Solid Waste: Municipal Solid Waste includes commercial, residential and other waste generated within the limits of Municipal Corporation of Delhi either in solid or semi-solid form excluding industrial hazardous waste but including treated bio-medical waste. The term Solid Waste shall further mean the Municipal Solid Waste as described under the MSW (M&H) Rules 2000 notified by MoEF, Govt. of India, notified on 25 September, 2000, generated in the Concession area by all generators which includes domestic/residential, commercial, institutional, green waste generated in the work area inclusive of private markets, recreation centers, public places and from the places of occasional accumulation of such solid waste.

"O&M Requirements" shall mean the requirements as to operation and maintenance of the Land fill sites set forth in **Schedule 4 and Schedule 5.**

Concession Area means:

Civil Lines Zone, Rohini zone and Vasant Kunj, Dwarka-Pappankala

Party or Parties mean MUNICIPAL CORPORATION OF DELHI and the Contractor/ Service provider who has been assigned the work. **"Parties"** shall mean the parties to this Agreement and **"Party"** shall mean either of them, as the context may admit or require.

"Performance Security" shall mean the guarantee for performance of its obligations to be procured by the Concessionaire in accordance with this agreement.

"Pelletisation" means a process whereby pellets are prepared which are small cubes or cylindrical pieces made out of solid wastes and includes fuel pellets which are also referred as refuse derived fuel (RDF).

"Permitted Investments" shall mean interest bearing demand or time deposits or similar arrangements with scheduled public sector banks in India, Public financial institutions in India, Govt wholly owned corporations or Govt statutory bodies (which in all cases have credit ratings of at least AA) or its equivalent thereof by an approved credit rating agency which is reasonably acceptable to the Parties provided, however, that no Permitted Investment shall have a maturity in excess of six (6) months.

"Permissible Landfill Waste" shall mean and refer to the maximum allowable waste that can be diverted to the landfill site, without attracting any penal provisions.

"Person" shall mean (unless otherwise specified or required by the context), any individual, company, corporation, partnership, joint venture, trust, unincorporated organisation, government or government body or any other legal entity.

"Post Closure Maintenance Plan" shall have the meaning ascribed thereto in this agreement.

Premises includes buildings, tenements in a building, house, outhouse, stable, shed, hut, and any other structure whether of masonry, brick, mud, wood, metal or any other material whatsoever and lands of any tenure whether open or enclosed whether built upon or not being used for the time being for purposes of residence, trade, industry, service, business, government or any other public or private purpose including weddings, banquets, meetings, exhibitions, organized events, etc. It also includes any portion of a public road that is permitted by the Commissioner to be used for the time being for parking of vehicles, street vending, and storage of materials at a work site or for any public or private purpose whatsoever other than the movement of vehicles.

Price Offer: The term shall mean commercial offer to be given by the bidder in prescribed schedule, the offer of price of the rate of work detailed in technical offer in terms of Rupees and in terms of the total price in Rupees to be paid to the successful bidder on completion of work for that particular period.

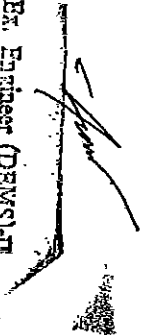
"Post Closure Activities" shall mean the activities to be undertaken by the Concessionaire during the Post Closure Period in accordance with the provisions of **Schedule 5.**

"Post Closure Period" shall mean the period commencing from the day immediately following the Active Operations Period and ending on the fifteenth anniversary of the said day.

"Preliminary Notice" shall mean the notice of intended Termination by the Party entitled to terminate this Agreement to the other Party setting out, inter alia, the underlying Event of Default.

"Processing" shall mean the process by which Municipal Solid Waste is transformed into new or recycled products including processes like composting, RDF as defined in the MSW Rules.

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"Project" shall mean design, financing, construction, operation and maintenance of the Project Facilities in accordance with the provisions of this Agreement.

The "Project Work" means "Build / Procure, Own, Plan, Operate and Maintain vehicles, equipment, systems, installations, infrastructure, manpower and provide services of Door to Door Collection, Transfer, Transportation, developing an integrated Municipal Solid Waste Processing Facility and Engineered Sanitary Landfill Facility, on a long-term Build, Operate and Transfer (BOT) basis; for Municipal Solid Waste collected from properties / premises in the Concession Area Zone of MUNICIPAL CORPORATION OF DELHI; and organize public awareness periodically for achieving compliance of the MSW (M&H) Rules 2000, as defined in the scope of work.

IC means Independent Consultant. "Independent Consultant" shall mean a reputed Person being a firm, company or a body corporate appointed in accordance with this agreement for supervision and monitoring of compliance by the Concessionaire with the Construction Requirements and O&M Requirements, more particularly to undertake, perform and carry out the duties, responsibilities, services and activities set forth in this agreement.

"Project Facilities" shall mean the Site, together with the Waste Processing Facility, Landfill Facility and all other related facilities located thereon, and any other offsite facilities created for the Project.

Public place includes any road, arch road, viaduct, lane, footway, alley or passage, highway, causeway, bridge, square alley or passage whether a thoroughfare or not over which the public have a right of passage, and such places to which the public has access such as parks, gardens, recreation grounds, playgrounds, beaches, water bodies, water courses, public plazas and promenades, government and municipal buildings, public hospitals, markets, slaughter houses, courts, etc.

"Readiness Certificate" shall mean the certificate issued by Independent Consultant certifying, inter alia, that:

- (i) the Concessionaire has constructed all the facilities within the Waste Processing Facility and the Landfill Facility so as to enable receipt of Municipal Solid Waste for Processing and Land filling.
- (ii) the Concessionaire has obtained all approvals necessary to receive the Municipal Solid Waste supplied by MCD.

"Remuneration" shall mean all fees, costs, charges and expenses payable to the Independent Consultant in accordance with the terms of his appointment.

"Residual Inert Matter" shall mean the material left as residue after Processing of Municipal Solid Waste and segregation and removal of the organic matter, compost or organic manure there from, either wholly or in part, and includes pre-processing rejects.

"Rupees" or "Rs." refers to the lawful currency of the Republic of India.

"Substitution Agreement" means the agreement substantially in the form set out at Schedule M, to be entered into between MCD, Lenders and the Concessionaire.

The Services means all activities direct or ancillary to the work like guarding, up keeping, operating and maintaining the vehicles, equipment, systems and related infrastructure required performing the Work assigned to the successful bidder / Contractor in a specified manner for a specified period for fulfilling the desired performance. The services will include collection, transfer and transportation, developing an integrated Municipal Solid Waste Processing Facility and Engineered Sanitary Landfill Facility as per MSW (M&H) Rules 2000, on a long-term Build, Operate and Transfer (BOT) basis; for Municipal Solid Waste.

"Segregation" means

SPV means Special Purpose Vehicle Company.

"Tax" shall mean and includes all taxes, fees, cesses, levies that may be payable by the Concessionaire under Applicable Law.

Technical offer: The term shall mean the details of the technical and financial eligibility of the bidder, acceptance of the terms and condition of the project / work and undertakings regarding the same; project plan and operational details including identification of activities, resources requirement and details of type, capability, quality and quantity; methodology of work; plan of

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resources deployment, implementation plan and evaluation of the results. This will be contained in a separate cover.

"Termination" shall mean early termination of this Agreement pursuant to Termination Notice or otherwise in accordance with the provisions of this Agreement but shall not, unless the context otherwise requires, include expiry of this Agreement due to efflux of time in the normal course.

"Termination Date" shall mean the date specified in the Termination Notice as the date on which Termination occurs.

"Termination Notice" shall mean the notice of Termination by either Party to the other Party, in accordance with the applicable provisions of this Agreement.

"Tests" shall mean the tests to be carried out in accordance with the Construction Requirements or the O&M Requirements.

"Tipping Fee" shall mean the amounts payable by MCD to Concessionaire in accordance with Article 8.

"Tipping Fee Statement" shall have the meaning as ascribed thereto in Article 8.

"Tipping Fee Rate" shall mean the amounts payable per tonne of Landfill Waste as set out in Schedule 6.

Transportation means conveyance of Municipal Solid Waste from place to place hygienically through specially designed transport system, so as to prevent foul odour, littering, spillage unsightly condition and accessibility to vectors.

"Waste Processing Facility (ies)" shall mean the facilities for Processing Municipal Solid Waste to be designed, engineered and constructed, within the area earmarked on the Site, by the Concessionaire in accordance with the provisions of this agreement.

"Waste Processing Facility Construction Requirements" shall mean the requirements as to design and construction of the Waste Processing Facility set forth in this agreement.

OTHER DEFINITIONS of TERMS: As defined in the MSW (M&H) Rules, 2000 of MoEF, Govt. of India.

2.2 The Standards

The Goods, vehicles, equipment, systems and services provided under the Tender/Contract shall conform to the standard as specified in the technical specifications;

In specific, Vehicles should conform to Euro III standards of emission and above - up graded from time to time as per statutory requirement

Where no standards are specified for particular goods, vehicles, equipment, services, they should conform to the latest minimum Bureau of Indian Standards specifications if prescribed for the product, machinery, equipment, services required in the tender, if not prescribed under BIS they should conform to the latest ISO standard.

Or the authoritative latest standards used in the country of origin, appropriate to the specified goods, vehicles, equipment systems, and services.

A declaration will be submitted by the bidder / contractor for the above with the certification of the authorized agency of the origin

2.3 Interpretation

In this Agreement, unless the context otherwise requires,

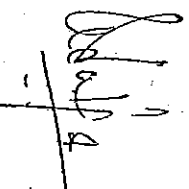
- (a) any reference to a statutory provision shall include such provision as is from time to time modified or re-enacted or consolidated so far as such modification or re-enactment or consolidation applies to, or is capable of being applied to any transactions entered into hereunder;
- (b) references to Applicable Law shall include the laws, acts, ordinances, rules, regulations, notifications, guidelines or bylaws which have the force of law;
- (c) the words importing singular plural and vice versa, and words denoting natural persons shall include partnerships, firms, companies, corporations, joint ventures,

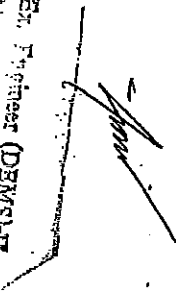
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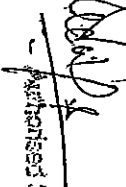
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trusts, associations, organisations or other entities (whether or not having a separate legal entity);

- (d) the headings are for convenience of reference only and shall not be used in, and shall not affect, the construction or interpretation of this Agreement;
- (e) the words "include" and "including" are to be construed without limitation;
- (f) any reference to day, month or year shall mean a reference to a calendar day, calendar month or calendar year respectively;
- (g) the Schedules to this Agreement form an integral part of this Agreement as though they were expressly set out in the body of this Agreement;
- (h) any reference at any time to any agreement, deed, instrument, license or document of any description shall be construed as reference to that agreement, deed, instrument, license or other document as amended, varied, supplemented, modified or suspended at the time of such reference;
- (i) references to recitals, Articles, sub-articles, clauses, or Schedules in this Agreement shall, except where the context otherwise requires, be deemed to be references to recitals, Articles, sub-articles, clauses and Schedules of or to this Agreement;
- (j) any agreement, consent, approval, authorisation, notice, communication, information or report required under or pursuant to this Agreement from or by any Party or by Independent Consultant shall be valid and effectual only if it is in writing under the hands of duly authorized representative of such Party or Independent Consultant in this behalf and not otherwise;
- (k) any reference to any period commencing "from" a specified day or date and "till" or "until" a specified day or date shall include both such days or dates;




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Municipal Corporation of Delhi

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ARTICLE 3

3.0 CONCESSION

3.1 Grant of Concession

Subject to and in accordance with the terms and conditions set forth in this Agreement, the Concessing Authority hereby grants and authorizes the Concessionaire to investigate, study, design, engineer, procure, finance, construct, operate and maintain the Project Facilities and to exercise and / or enjoy the rights, powers, benefits, privileges, authorizations and entitlements as set forth in this Agreement ("the Concession").

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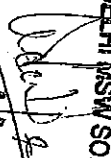
3.2 Concession Period

The Concession is hereby granted for a period of 20 years, commencing from the Appointed Date and ending on the Expiry Date ("the Concession Period") during which the Concessionaire is authorised to design, finance, construct, operate and maintain the Project Facilities in accordance with the provisions hereof. Provided that in the event of Termination, the Concession Period shall mean and be limited to the period commencing from the Appointed Date and ending with the Termination Date.

3.3 Acceptance of Concession

In consideration of the rights, privileges and benefits conferred upon the Concessionaire, and other good and valuable consideration expressed herein, the Concessionaire hereby accepts the Concession and agrees and undertakes to perform / discharge all of its obligations in accordance with the provisions hereof.

For DELHI MSW SOLUTIONS LTD.


Authorized Signatory

ARTICLE 4

4.0 PROJECT SITE

4.1 Handover of Site

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- (a) MCD shall, within 15 days from the Appointed Date, handover to the Concessionaire on as-is-where-is basis, vacant and peaceful physical possession of the Site free from Encumbrance, for the purpose of implementing the Project.
- (b) Upon the Site being handed over pursuant to the preceding sub-article (a), the Concessionaire shall, subject to the provisions of Article 5, have the right to enter upon, occupy and use the same and to make at its costs, charges and expenses such investigation, development and improvements in the Site as may be necessary or appropriate to implement the Project and provide the Project Facilities in accordance with the provisions of this Agreement.

4.2 Rights, Title and Use of the Site

- (a) The Concessionaire shall have the right to the use of the Site in accordance with the provisions of this Agreement and for this purpose, it may regulate the entry into and use of the same by third parties.
- (b) The Project Facilities shall be and continue to be the property of MCD.
- (c) The Concessionaire shall not part with or create any Encumbrance on the whole or any part of the Project Facilities, including the Site save and except as set forth and permitted under this Agreement.
- (d) The Concessionaire shall not, without the prior written approval of MCD, use the Project Facilities for any purpose other than for the purpose of the Project and purposes incidental or ancillary thereto.
- (e) The Concessionaire shall allow access to and use of the Site for laying / installing / maintaining telegraph lines, electric lines or for such other public purposes as MCD may specify.
- Provided that such access or use shall not result in a Material Adverse Effect and that MCD shall, in the event of any physical damage to the Project Facilities on account thereof, ensure that the Project Facilities are promptly restored at its cost and expenses.

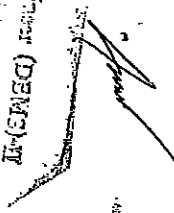
Provided further, that to the extent such access and use allowed by the Concessionaire affects the performance of any of its obligations hereunder, the Concessionaire shall not be deemed or construed to be in breach of its obligations nor shall it incur/suffer any liability on account thereof.

4.3 Peaceful Possession

MCD hereby warrants that:

- (a) The Site together with the necessary right of way/way-leaves
- (i) has been acquired through the due process of law
- (ii) belongs to, or has been leased to MCD and is vested in MCD

For DELTA MSW SOLUTIONS LTD.

By:  (DEMSAT)
Authorized Signatory of Delta

Authorized Signatory

and that MCD has full powers to hold, dispose of and deal with the same consistent, interalia, with the provisions of this Agreement and that the Concessionaire shall, in respect of the Site, have no liability regarding any compensation payment on account of land acquisition or rehabilitation/resettlement of any Persons affected thereby.

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(b) The Concessionaire shall, subject to complying with the terms and conditions of this Agreement, remain in peaceful possession and enjoyment of


- ? the whole Site during the Active Operations Period, and
- ? the area on which the Landfill Facility has been created during the Post Closure Period.

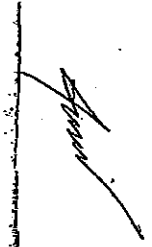
In the event the Concessionaire is obstructed by any Person claiming any right, title or interest in or over the Site or any part thereof or in the event of any enforcement action including any attachment, distraint, appointment of receiver or liquidator being initiated by any Person claiming to have any interest in charge on the Site or any part thereof, MCD shall, if called upon by the Concessionaire, defend such claims and proceedings and also keep the Concessionaire indemnified against any consequential loss or damages which the Concessionaire may suffer, on account of any such right, title, interest or charge.

4.4 Applicable Permits

The Concessionaire shall obtain and maintain the Applicable Permits in such sequence as is consistent with the requirements of the Project. The Concessionaire shall be responsible and shall be in compliance with the terms and conditions subject to which Applicable Permits have been issued.

For DELHI MSW SOLUTIONS LTD.


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Municipal Engineer (DEMS)-II
Municipal Corporation of Delhi

ARTICLE 5

5.0 INDEPENDENT CONSULTANT

5.1 Procedure for Appointment

MCD prior to the execution of this Agreement shall call for financial bids from at least five (5) Persons, requiring them to quote the annual fee payable to them and thereafter select and take necessary steps to appoint the Person quoting the lowest annual fee to act as Independent Consultant for the Project. MCD shall endeavour to complete the process of appointment of the Independent Consultant within 30 days hereof.

The initial term of the Independent Consultant shall be 3 years, which may be renewed/ extended for a period not exceeding 2 years at a time.

5.2 Payments to Independent Consultant

All fees, costs, charges and expenses payable to the Independent Consultant in accordance with the terms of its appointment (collectively "the Remuneration") shall be shared and borne by the Parties equally i.e. Concessionaire and the MCD. Both Parties shall pay 'the Independent Consultant, their respective share of the Remuneration within 15 days of receiving an invoice from Independent Consultant.

5.3 Replacement of the Independent Consultant

The Parties may replace the Independent Consultant for the time being in any of the following circumstances by giving a 30 day written notice:

If MCD or the Concessionaire has reason to believe that the Independent Consultant has not discharged its duties in a fair, appropriate and diligent manner;

If the Parties decide not to renew the term of the Independent Consultant;

If, in accordance with the terms of its appointment the Independent Consultant resigns or notifies its intention not to continue as the Independent Consultant;

Any other circumstance which in the opinion of the Parties warrants replacement of the Independent Consultant.

INDEPENDENT CONSULTANT - SCOPE OF WORK

5.4 Role of the Independent Consultant

The Independent Consultant is expected to play a positive and independent role in discharging its functions, thereby facilitating the smooth implementation and operation of the Project. Broadly, the role of the Independent Consultant shall encompass:

5.4.1 Verification and random checks of weightment and Testing of the MSW at the Processing and Landfill Site.

Independently review, monitor and where required by the Agreement, to approve the design, construction, operation and maintenance of the Project Facilities to ensure compliance by the bidder with the Operations Plan, Design Requirements, Construction Requirements and O&M Requirements,

5.4.2 Report to the Parties on the various physical, technical and financial aspects of the Project based on inspections, site visits and Tests,

5.4.3 Assist the Parties in arriving at an amicable settlement of disputes, should the need arise, and

5.4.4 Review matters related to safety and environment management measures adopted by the bidder for the Project.

5.5 Scope of Services of the Independent Consultant

The services to be provided by the Independent Consultant in accordance with the applicable provisions of this Agreement are specified in this section.

5.5.1 Obligations during Implementation Period

The Independent Consultant would monitor, in accordance with Good Industry Practice, the progress in implementation of the Waste Processing Facility and the Landfill Facility and ensure compliance with the Construction Requirements. For this purpose the Independent Consultant shall undertake, interalia, the following activities and where appropriate make suitable suggestions:

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By Engineer (DEMS)-18
Municipal Corporation of Delhi

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- (a) Provide administration of the contract in full and in complete accordance with applicable laws;
- (b) Act on the MCD's behalf as the MCD's representative regarding all contact with the Concessionaire unless expressly indicated otherwise;
- (c) Designate tests on materials and/or equipment;
- (d) Review and approve test results and materials and/or equipment used in the Construction Works;
- (e) Interpret the requirements of the contract and make decisions regarding performance of the Concessionaire. The IC shall inform and advise the MCD, in a timely manner all matters relating to the execution, progress, and completeness of the Construction Works;
- (f) Reject work which fails to comply with the specifications and requirements of the Agreement. Whenever considered necessary or advisable to ensure correction of defective work, the IC may require inspection or testing of such work, whether or not such work be then fabricated, installed, or completed;
- (g) Review, approve or disapprove drawings, samples, and other submissions of the Concessionaire to determine compliance and conformance with the requirements of the Agreement;
- (h) Provide the services of a full time resident project representative during the period commencing from 7 (seven) days from the date of appointment of the PE until the expiry of the IC's appointment;
- (i) Provide the services of experts to check the quality of materials and the workmanship during the installation/construction of the Waste Processing Facility, including the following:
 - (i) weigh bridge at the Project Facility entry gate;
 - (ii) windrow platforms;
 - (iii) drainage system;
 - (iv) leachate collection and treatment system;
 - (v) water supply system;
 - (vi) sieving mechanism for the Residual Inert Matter;
 - (vii) quality control laboratory and associated equipments;
 - (viii) Electrical systems.
- (j) Provide the services of experts to check the quality of materials and the workmanship during the installation/construction of the Landfill Facility, including the following:
 - (i) weigh bridge at the Processing Facility gate location "A" and Landfill site location "B";
 - (ii) drainage system;
 - (iii) leachate collection system;
 - (iv) leachate treatment plant;
 - (v) composite liner system of the Engineered Sanitary Landfill;
 - (vi) Stability of the Engineered Landfill up to Final Cover;
 - (vii) testing laboratory and associated equipments

- (k) Address issues relating to specific site conditions, design modifications, or Concessionaire disputes. 14/

The IC shall prepare and submit to MCD, Fortnightly Progress Reports including the following:

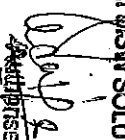
- (a) Daily progress of works;
 - (b) Slippages, if any, in the construction vis-à-vis planned construction schedule and the reasons thereof;
 - (c) Construction schedule for the succeeding week;
 - (i) Report on Tests
 - (ii) Report on notices issued
 - (d) Issues, if any, with regard to the works along with the details of the action taken for the resolution of the same;
 - (e) Photographic record of progress of works over the previous week.
- The IC shall provide all other services as normally provided by an architect-engineer.

5.6 Active Operations Period

During this period the Independent Consultant would monitor, in accordance with Good Industry Practice, the operations and maintenance activities undertaken by the Concessionaire so as to ensure compliance with the O&M Requirements. The specific activities to be undertaken would include the following:

- (a) Provide administration of the contract in full and in complete accordance with applicable laws;
- (b) Act on the MCD's behalf as the MCD's representative regarding all contact with the Concessionaire unless expressly indicated otherwise;
- (c) Designate tests on materials and/or equipment;
- (d) Review and approve test results and materials and/or equipment used;
- (e) Interpret the requirements of the contract and make decisions regarding performance of the Concessionaire. The IC shall inform and advise the MCD, in a timely manner all matters relating to the execution, progress, and completeness of works;
- (f) Reject work which fails to comply with the specifications and requirements of the Agreement. Whenever considered necessary or advisable to ensure correction of defective work, the IC may require inspection or testing of such work, whether or not such work be then fabricated, installed, or completed;
- (g) Review, approve or disapprove drawings, samples, and other submissions of the Concessionaire to determine compliance and conformance with the requirements of the Agreement;
- (h) Provide the services of a full time resident project representative during the period commencing from 7 seven days from the date of appointment of the PE until the expiry of the IC's appointment;
- (i) In addition to the daily responsibilities, conduct a general inspection of the Project Facilities at least once a month and as and when exigencies require to ascertain conformity with Construction Requirements and O&M Requirements;
- (j) Provide the services of experts to check the quality of materials and the workmanship during the construction of the Landfill Facility, including that of the following:
 - (i) leachate collection system;

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- (ii) intermediate liner system of the Engineered Sanitary Landfill;
(iii) daily cell cover;

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- (iv) gas venting and flaring system;
(v) slope stability of the Engineered Sanitary Landfill;
(vi) final cover system.

(ix) Inspect and certify the quality of Municipal Solid Waste supplied by MCD, when required

(i) Inspect and certify the quality of compost being sold or otherwise disposed outside the Site

(ix) Inspect and certify composition of the Residual Inert Matter

(ix) Address issues relating to specific site conditions, design modifications, or Concessionaire disputes.

(o) Review the O&M Plans submitted by the Concessionaire from time to time and assist the Concessionaire in finalising the same. The Independent Consultant shall also consult MCD prior to finalisation of the O&M Plans;

(p) Periodically review the O&M Manual for adequacy;

(q) Monitor Operation and Maintenance activities (including maintenance of Project Facilities and equipment, standards of service, safety and environmental issues) and the overall quality of O&M activities so as to ensure compliance by the Concessionaire with the O&M Requirements, O&M Plan and O&M Manual;

(r) Review and ascertain the cost variation arising as a result of Change in Law and determine the Additional Cost;

(s) Undertake a quarterly review of the various records and registers to be maintained by the Concessionaire and suggest suitable remedial measures/ procedures, where necessary.

5.6.1 The IC shall attend regular meetings ("Project Review Meetings" or "PRMs") with the MCD and the Concessionaire, to be held at least once in every month during the Active Operations Period to report on progress and quality of work performed by the Concessionaire and to discuss problems or other pertinent matters relating to the work. The IC shall take notes at the meetings and provide a copy of the PRM minutes to each person who attended the meeting.

5.6.2 The IC shall prepare and submit to MCD, Monthly Project Reports including the following:

(a) Report on Tests

(b) Report on notices issued

(c) Issues, if any, with regard to the works along with the details of the action taken for the resolution of the same;

(f) Photographic record of progress of works over the previous week.

5.7 Post Closure Period

5.7.1 During the Post Closure Period, the IC shall monitor and certify compliance with the Post Closure Maintenance Plan.

5.7.2 Attend meetings with the MCD and the Concessionaire, to be held at intervals as mutually decided upon by the Parties, to discuss problems or other pertinent matters relating to the Project. The IC shall take notes at the meetings and provide a copy of the minutes of such meetings to each person who attended the meeting.

For DELHI MSW SOLUTIONS PVT. LTD.

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- a) Review of the Operations Plan submitted by the Concessionaire in accordance with of the Agreement.
- b) Monitoring and reporting to MCD on whether the bidder has complied with the timelines for activities as specified in the Operations Plan in (a) above;
- c) Verify and report to MCD whether (i) the New Project Facilities comply with the Design Requirements (ii) Existing Project Facilities comply with the Construction Requirements and (iii) the Project Facilities comply with all Applicable Laws including MSW (M&H) Rules, 2000.
- d) Issue Provisional/Readiness Certificate in accordance with the of this Agreement;
- e) The Independent Consultant shall undertake, inter alia, the following activities and where appropriate:
 - (i) Require suspension of whole or any part of the Construction Works if in its reasonable opinion the same does not conform to the Construction Requirements;
 - (ii) Require clearing of any construction site of all construction equipment, surplus materials, debris and temporary installations as per applicable provisions of this Agreement.
 - (iii) Review the monthly progress report submitted by the bidder during the Implementation Period and its conformity with the Operations Plan, report on the same to the MCD and suggest corrective measures, if any.
 - (iv) If during the course or upon review / inspection undertaken by the Independent Consultant, it transpires that either of the Parties is in breach/ default of any of its obligations under the Agreement, the Independent Consultant shall, under intimation to both the Parties, require the defaulting Party to remedy such breach/ default within time frame as may be felt suitable by the Independent Consultant.

5.8 Obligations during Operations Period

5.8.1 Monitoring at processing and Landfill Site

The Independent Consultant's prime responsibility would be to monitor the operations at the weighbridge and waste inspection area at the processing and Landfill Site. For this purpose the Independent Consultant shall undertake, inter alia, the following activities:

- a) Verification of the weightment;
- b) Verification of the Testing of the MSW.
- c) Verification of the records generated at the weighbridge and Waste Inspection Area.
- d) Issue "Notice to Remedy" in event of observing non-compliance to O&M Requirements;
- e) If during the course or upon review/inspection undertaken by the Independent Consultant or otherwise, it transpires that either of the Parties is in breach/default of any of its obligations under the Agreement, the Independent Consultant shall, under intimation to both the Parties, require the defaulting Party to remedy such breach/default within such time and in such manner as the Independent Consultant may deem fit and in each case the same shall be recorded.

5.8.2 Conducting Random Inspections

The Independent Consultant shall conduct random inspections of the Project Facilities as well as the operations as follows:

- a) The random inspections may be carried out by visual assessment with careful observation of the specific object/item for identification and for quantification of the deficiencies or damages of the Project Facilities and operation and maintenance of the Project Facilities. For this purpose the Independent Consultant can use photographs with time and place record.
1. During the random inspections, the Independent Consultant would monitor, in accordance with Good Industry Practice, the operations and maintenance

activities undertaken by the Contractor so as to ensure compliance with the O&M Requirements;

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c) Issue "Notice to Remedy" in the event of non compliance to O&M Requirements and recording the same.

d) Record and report to the MCD on the incidents of Material Breach or Persistent Breach of O&M Requirements;

5.8.3 Random inspection of Project Facilities

The Independent Consultant shall undertake inspection of the Project Facilities, Facility Site and Workshop Site in such frequency and sample selection as mentioned in the table below:

S. No	Project Facilities	Frequency of Inspection	Sample selection requirement
1	Facility Site	Once a Month	-
2	Workshop Site	Once a Month	-
3	Transport and Loading Vehicles	Once a Month	A minimum sample of 10 % of each category of vehicles deployed in the Concession Area. There should not be repetition of the same set of vehicles in the next round of inspection.

5.8.4 Hand back and Transfer of Project Facilities to MCD

At the time of hand back and transfer of the Project Facilities to MCD at the end of Concession Period, the Independent Consultant shall:

- Monitor the compliance with the Hand back and Transfer Requirements as provided in Chapter VII of this Agreement and
- Issue a certificate of compliance on satisfactory completion of Hand back and Transfer Requirements by the bidder.

5.8.5 Maintenance of Records

a) The Independent Consultant would be required to participate in the Project review meetings held from time to time by the Parties, which are ordinarily expected to be held once a month during the Implementation Period and once every two months during the Operations Period as also to participate in emergency or extra-ordinary meetings of the Parties held to deal with any Emergency, Force Majeure Event or other exigencies.

5.8.6 The Independent Consultant shall maintain record of the activities undertaken by it in discharge of its functions and responsibilities. This would include records in respect of the following:

- Manpower deployed and other organizational arrangements of the Independent Consultant;
- Inspections undertaken and notices/instructions issued to the bidder;
- Review compliance by the bidder with the Agreement;
- Force Majeure Events;
- Material and Persistent Breach of O&M Requirements and Events of Default by the Parties; and
- Compliance by the bidder with Hand back and Transfer Requirements

5.8.7 The Independent Consultant would be required to verify/issue the following reports to the Parties:

For DELHI MSW SOLUTIONS LTD.

Ex. Engineer (DEMS)-II
Municipal Corporation of Delhi

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Period/Event	Verification	Applicable report to be issued by the Independent Consultant
1. Implementation Period	? Review monthly progress report submitted by the Contractor ? Issue "Notice to Remedy" in event of non compliance by the Contractor ? Issue Provisional/ Readiness Certificate	?
2. Monitoring Weighbridge at	? Verify weighment slip ? Verify monthly Tipping Fee Statement	? Monthly Inspection Report
3. Monitoring at Waste Inspection Area	? Verify recording of Test results ? Verify monthly Tipping Fee Statement and penalties (if applicable)	? Monthly Inspection Report
4. Random Inspections of Project facilities	? Advise MCD on penalties payable by the Contractor	Monthly Inspection Report
6. Force Majeure/ Material and Persistent Breach of O&M Requirements/Events of Default.	? Issue "Notice to Remedy" in event on non compliance Record Events of Default, Material/Persistent Breach of O&M Requirements, Force Majeure Events	
7. Hand back and Transfer of Project Facilities	? Specify list of works/jobs to be carried out by the Contractor. ? Specify list of items to be handed back and transferred back to MCD by the Contractor. ? Verify compliance by the Contractor with Hand back and Transfer Requirements	? Issue of compliance certificate of Hand back and Transfer Requirements

5.8.8 Material and Persistent Breach of O&M Requirements

The Independent Consultant shall monitor the performance of the Contractor and report on incidence of material and persistent breach of O&M requirements with reference to the compliance and tolerance criteria as laid out in of the O&M Requirements:

5.9 Awareness Campaign

The Independent Consultant shall review the Awareness Campaign programme conducted by the bidder.

5.10 General Obligations

The Independent Consultant shall carry out such other functions as may be specifically assigned to it under the agreement including certification of adequacy of insurance and verification of termination payments

For DELTA MSW SOLUTIONS LTD.

Authorised Signature

Signature
The Independent Consultant (DEMS)-17
The Independent Corporation of 17/17

ARTICLE 6

6.0 CONCESSIONAIRE'S OBLIGATIONS

In addition to and not in derogation or substitution of any of its other obligations under this Agreement, the Concessionaire shall have the following obligations:

6.1 Performance Security

- (a) The Concessionaire shall, for due and punctual performance of its obligations hereunder relating to the Project, deliver to MCD, simultaneously with the execution of this Agreement, a bank guarantee from a scheduled bank acceptable to MCD, in the form as set out in Schedule 7, ("Performance Security") for a sum of Rs. 5,00,00,000/- (Rupees Five Crores Only).

- (b) The Performance Security shall be kept valid for a period of 24 months from the Appointed Date.

Provided that if the Agreement is terminated due to any event other than a Concessionaire Event of Default, the Performance Security if subsisting as of the Termination Date shall, subject to MCD's right to receive amounts, if any, due from the Concessionaire under this Agreement, be duly discharged and released to the Concessionaire.

6.2 Financing Arrangement

The Concessionaire shall at its cost, expenses and risk make such financing arrangements including grant or assistance from Governmental Agencies other than MCD, as would be necessary to implement the Project and to meet all of its obligations under this Agreement, in a timely manner.

6.3 Drawings

(a) Preparation of Drawings

- (i) The Concessionaire may, subject to the Construction Requirements, adopt with or without modifications the Drawings made available by MCD [if any] or adopt its own Drawings. Provided that, the Concessionaire shall in any event be solely responsible for the adequacy of the Drawings.
- (ii) If the Concessionaire proposes any modifications to the Drawings made available by MCD [if any] or submits alternate Drawings or Drawings in respect of any item for which no Drawings are made available by MCD, the same shall be subject to review by the Independent Consultant as hereinafter provided in clause (b).

(b) Review of Drawings

- (i) The Concessionaire shall promptly and in such sequence as is consistent with the Construction Requirements, submit a copy of each of the Drawings to the Independent Consultant and MCD.
- (ii) By forwarding the Drawings to the Independent Consultant and MCD pursuant to the preceding clause (i), the Concessionaire shall be deemed to have represented that it has verified and determined that the Drawings forwarded are in conformity with the Construction Requirements.
- (iii) Within 15 days of receipt of the Drawings, Independent Consultant shall review the same taking into account, inter alia, comments of MCD, if any, thereon, and convey its comments/observations to the Concessionaire on the conformity of Drawings with Construction Requirements. If the comments/observations of the Independent Consultant indicate that the Drawings are not in conformity with the Construction Requirements, such Drawings shall be revised by the Concessionaire to the extent necessary and resubmitted to Independent Consultant for further review. The Independent Consultant shall give its observations and comments, if any, within 15

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(fifteen) days of receipt of such revised Drawings, which shall be taken into account by the Concessionaire while finalising the Drawings.

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- (iv) If, within the period stipulated in the preceding clause (iii), the Independent Consultant does not respond to the Drawings submitted to it by the Concessionaire the Concessionaire shall be entitled to proceed with the Project on the basis of such Drawings submitted by it to the Independent Consultant, and intimate the same to MCD. The same should be highlighted in the periodic reporting by the Concessionaire.

- (v) Notwithstanding any review or failure to review by or the comments / observations of the Independent Consultant or MCD, the Concessionaire shall be solely responsible for the adequacy of the Drawings and their conformity with the Construction Requirements, and shall not be relieved or absolved in any manner whatsoever of any of its obligations hereunder.

- (vi) The Concessionaire shall be responsible for delays in meeting the Construction Requirements caused by reason of any Drawings not being in conformity with the Construction Requirements, and shall not be entitled to seek any relief in that regard from MCD.

- (vii) The Concessionaire shall in consultation with the Independent Consultant finalise an implementation schedule for the Project in accordance with the Construction Requirements.

- (viii) Within 90 (ninety) days of issue of Readiness Certificate or Provisional Readiness Certificate, as the case may be, the Concessionaire shall furnish to MCD three copies of "as built" Drawings of the Construction Works which have been completed as on COD, in a manner as set out in Construction Requirements.

6.4 Project Implementation: Construction Works

- (a) Unless otherwise permitted by MCD, no Construction Works shall begin until the Independent Consultant is in place and has assumed charge.

- (b) The Concessionaire shall adhere to the Construction Requirements and achieve COD on or before the Scheduled Project Completion Date.

- (c) The Concessionaire may undertake Construction Works by itself or through a Contractor possessing requisite technical, financial and managerial expertise/capability; but in either case, the Concessionaire shall remain solely responsible to meet the Construction Requirements.

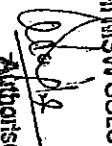
- (d) The Concessionaire shall, before commencement of Construction Works;

(i) have requisite organisation and designate and appoint suitable officers/ representatives as it may deem appropriate to supervise the Project, to deal with the Independent Consultant/MCD and to be responsible for all necessary exchange of information required pursuant to this Agreement;

(ii) construct, provide and maintain a reasonably furnished site office accommodation for the Independent Consultant, at the Project Site.

- (e) For the purposes of determining that Construction Works are being undertaken in accordance with the Construction Requirements and O&M Requirements, the Concessionaire shall with due diligence carry out all necessary and periodical Tests in accordance with the instructions and under the supervision of the Independent Consultant and the Construction Requirements and O&M Requirements. The Concessionaire shall maintain proper record of such Tests and the remedial measures taken to cure the defects or deficiencies, if any, indicated by the Test results.

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- (f) All Tests shall be conducted in accordance with Construction Requirements. If the Tests are successful and the Project Facilities can be safely and reliably opened for operation, the Independent Consultant shall issue Readiness Certificate.

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Provided, notwithstanding that certain works or things forming part of Construction Works are not complete, if following Tests, the Independent Consultant determines that the Project Facilities can be safely and reliably opened for operations, the Independent Consultant may issue Provisional Readiness Certificate to the Concessionaire. The Provisional Readiness Certificate shall have appended thereto a list of outstanding items signed jointly by the Independent Consultant and the Concessionaire ("Punch List"). All Punch List items shall be completed by the Concessionaire within such time as may be determined by the Independent Consultant, not exceeding 90 (ninety) days of the date of issue of the Provisional Readiness Certificate. Upon satisfactory completion of all Punch List items, the Independent Consultant shall promptly and in any case within 15 days thereof, issue Readiness Certificate.

- (g) If the Concessionaire fails to complete the Punch List items within the said period of 90 days, MCD may, without prejudice to any other rights or remedy available to it under this Agreement, have such items completed at the risk and costs of the Concessionaire. The cost incurred by MCD in completing the Punch List items, as certified by the Independent Consultant, shall be reimbursed by the Concessionaire to MCD within 7 days from the date of receipt of a claim in respect thereof from MCD. Thereupon, Independent Consultant may issue Readiness Certificate.

- (h) The Independent Consultant may, by written notice, require the Concessionaire to suspend forthwith the whole or any part of the Construction Works, if in its reasonable opinion the same is being carried on in a manner that is not in conformity with the Construction Requirements.

- (i) The Project shall be deemed to be complete and ready to receive Municipal Solid Waste only when the Provisional Readiness Certificate or the Readiness Certificate is issued by the Independent Consultant in accordance with the provisions hereof.


Provided if COD is delayed beyond 60 days of the Scheduled Project Completion Date, MCD shall, subject to the provisions of Article 9, be entitled to terminate this Agreement and to appropriate the Performance Security.

6.5 Project Implementation: Operation and Maintenance

- (a) The Concessionaire shall operate and maintain the Project Facilities in accordance with the O&M Requirements.
- (b) The Concessionaire may undertake operations and maintenance of the Project Facilities by itself or through a Contractor possessing requisite technical, financial and managerial expertise / capability; but in either case, the Concessionaire shall remain solely responsible to meet the O&M Requirements.
- (c) The Concessionaire shall, during the Active Operations Period;
- (i) have requisite organisation and designate and appoint suitable officers/ representatives as it may deem appropriate to supervise the Project, to deal with the Independent Consultant/MCD and to be responsible for all necessary exchange of information required pursuant to this Agreement;
- (ii) construct, provide and maintain a reasonably furnished site office accommodation for the Independent Consultant, at the Project Site;

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(iii) for the purposes of determining that the Construction Works and Project Facilities

are being maintained in accordance with the Construction Requirements and O&M Requirements, the Concessionaire shall with due diligence carry out all necessary and periodical Tests in accordance with the instructions and under the supervision of the Independent Consultant. The Concessionaire shall maintain proper record of such Tests and the remedial measures taken to cure the defects or deficiencies, if any, indicated by the Test results.

(iv) Conduct all Tests to ascertain compliance with Construction Requirements and O&M Requirements.

(v) suspend forthwith the whole or any part of the Construction Works upon receiving a written notice from the Independent Consultant, who may require the Concessionaire to suspend the activities in whole or part if in the reasonable opinion of the Independent Consultant, the operations are being carried on in a manner that is not in conformity with the O&M Requirements.

(d) In the event the Concessionaire has failed to operate and maintain the Project in accordance with the O&M Requirements, and such failure has not been remedied despite a notice to that effect issued by the Independent Consultant or MCD ("Notice to Remedy"), MCD may, without prejudice to any of its other rights/remedies under this Agreement, be entitled to operate and maintain the Project or cause to repair and maintain the Project Facilities at the risk and cost of the Concessionaire. The Concessionaire shall reimburse all costs incurred by MCD on account of such operation and maintenance or repair and maintenance within 7 days of receipt of MCD's claim therefore.

(e) The Concessionaire shall be deemed to be in material breach of O&M Requirements if the Independent Consultant acting reasonably and in accordance with the provisions of this Agreement, has determined that due to breach of its obligations by the Concessionaire :

(i) there has been failure/undue delay in carrying out scheduled/planned maintenance or the scheduled/planned maintenance has not been carried out in accordance with the O&M Requirements;

(ii) the maintenance of the Project Facilities or any part thereof has deteriorated to a level which is below the acceptance level prescribed by the O&M Requirements;

(iii) there has been a serious or persistent let up in adhering to the O&M Requirements and thereby the Project Facilities or any part thereof is not safe for operations;

(iv) There has been persistent breach of O&M Requirements. For avoidance of doubt, persistent breach shall mean :

- a. any breach of O&M Requirements by the Concessionaire which has not been remedied by the Concessionaire despite a Notice to Remedy in respect thereof issued by the Independent Consultant/MCD;
- b. recurrence of a breach by the Concessionaire, during the pendency of Notice to Remedy by the Independent Consultant/MCD requiring the Concessionaire to remedy a breach, and
- c. repeated occurrence of a breach notwithstanding that earlier breaches have been remedied pursuant to Notice to Remedy or otherwise.

Upon occurrence of a material breach of O&M Requirements, MCD shall, without prejudice to and notwithstanding any other consequences provided therefore under this Agreement, be entitled to terminate this Agreement.

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6.6 Insurance

The Concessionaire shall at its cost and expense, purchase and maintain by due re-instatement or otherwise, during the Concession Period all insurances in respect of the Project Facilities in accordance with the Good Industry Practice. The Concessionaire shall maintain a register of entry in order of premiums paid towards the Project Facilities and proof of payments made shall be submitted to MCD whenever requested for.

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6.7 Application of Insurance Proceeds

Subject to the provisions of the Financing Documents and unless otherwise provided herein, the proceeds of all insurance policies received shall be promptly applied by the Concessionaire towards repair, renovation, restoration or re-instatement of the Project Facilities or any part thereof which may have been damaged or destroyed. The Concessionaire may designate the Lenders as the loss payees under the insurance policies or assign the insurance policies in their favour as security for the financial assistance provided by them to the Project. The Concessionaire shall carry out such repair, renovation, restoration or re-instatement to the extent possible in such manner that the Project Facilities after such repair, renovation, restoration or re-instatement be as far as possible in the same condition as it were prior to such damage or destruction, normal wear and tear excepted.

6.8 Un-Insurable Risks

If during the Concession Period, any risk which has been previously insured becomes un-insurable due to the fact that the insurers have ceased to insure such a risk and therefore insurance cannot be maintained/re-instated in respect of such risk, the Concessionaire shall not be deemed to be in breach of its obligations regarding insurance under this Agreement.

6.9 Environmental Compliance

The Concessionaire shall, at all times, ensure that all aspects of the Project Facilities and processes employed in the construction, operation and maintenance thereof shall conform with the laws pertaining to environment, health and safety aspects including rules such as MSW Rules, policies and guidelines related thereto. The Concessionaire shall obtain and maintain from time to time all necessary clearances from the DSPCC or any other similarly empowered Government Agency and for this purpose shall carry out the necessary environmental impact assessment studies and implement appropriate environment management plans in respect of the Project Facilities.

6.10 Land Use

The Concessionaire shall ensure optimum utilisation of the Site and shall not use the same for any purpose unconnected or which is not incidental to the Project or related activities.

6.11 Weighment, Acceptance of Municipal Solid Waste

- (a) The Concessionaire shall weigh the Municipal Solid Waste at the entry gate to the Site and weigh the Landfill Waste prior to disposal of the same in the Landfill Facility in the manner as set out in the O&M Requirements.

- (b) The Concessionaire also undertakes not to accept Municipal Solid Waste which is not supplied by any Person appointed by it.

6.12 Sale/Distribution of Compost, RDF and Other Recyclables

- (a) The Concessionaire may adopt such processes and methods as it considers necessary or expedient for Processing of Municipal Solid Waste and Landfilling at the Project Facilities, subject to meeting the Construction Requirements and O&M Requirements.
- (b) The Concessionaire shall be free to sell or otherwise dispose of the recyclables, compost or organic manure, energy (power) and/ or other material recovered after Processing the


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Municipal Solid Waste, at the Project Facilities at such price and to such Persons and using such marketing and selling arrangements and strategies as it may deem appropriate subject to meeting the O&M Requirements.

6.13 Landfilling


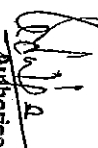
The Concessionaire shall carry out Landfilling, including carrying out of relevant Tests, maintenance of records and ensure certification by Independent Consultant, in accordance with O&M Requirements. The Concessionaire shall weigh the Landfill Waste prior to disposal of the same in the Landfill Facility.

6.14 General Obligations

The Concessionaire shall at its own cost and expense:

- (a) investigate, study, design, construct renovate, operate and maintain the Project Facilities in accordance with the provisions hereof;
- (b) obtain all Applicable Permits as required by or under the Applicable Law and be in compliance thereof at all times during the Concession Period;
- (c) comply with Applicable Law governing the operations of Municipal Solid Waste processing units and engineered sanitary landfills at all times during the Concession Period;
- (d) ensure and procure that any contract relating to the Project, entered into by the Concessionaire for implementing the Project in accordance with this Agreement contains provisions that would entitle Lenders or a nominee of MCD to step into such contract/s at MCD's discretion, in place and substitution of the Concessionaire, pursuant to the provisions of this Agreement or the Substitution Agreement
- (e) endeavour to sell or otherwise dispose off, without Landfilling, all recyclables in a manner which is not detrimental to the environment;
- (f) endeavour to improve the ancillary conditions and infrastructure related to the Project including assistance to informal recycling workers;
- (g) procure and maintain in full force and effect, as necessary, appropriate proprietary rights, licenses, agreements and permissions for materials, methods, processes and systems used in or incorporated into the Project;
- (h) make efforts to maintain harmony and good industrial relations among the personnel employed in connection with the performance of its obligations under this Agreement and shall be solely responsible for compliance with all labour laws and solely liable for all possible claims and employment related liabilities of its staff employed in relation with the Project and hereby indemnifies MCD against any claims, damages, expenses or losses in this regard and that in no case and shall for no purpose shall MCD be treated as employer in this regard;
- (i) make its own arrangements for construction materials and observe and fulfil the environmental and other requirements under the Applicable Law and Applicable Permits;
- (j) be responsible for all the health, security, environment and safety aspects of the Project at all times during the Concession Period.
- (k) ensure that the Project Facilities remain free from all encroachments and take all steps necessary to remove encroachments, if any;
- (l) upon receipt of a request thereof, afford access to the Project Facilities to the authorised representatives of MCD for the purpose of ascertaining compliance with the terms, covenants and conditions of this Agreement.
- (m) pay all Taxes, duties and outgoings, including utility charges relating to the Project Facilities.

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6.15 No Breach of Obligations

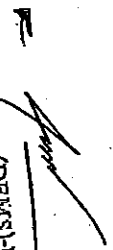
The Concessionaire shall not be considered to be in breach of its obligations under this Agreement nor shall it incur or suffer any liability if and to the extent performance of any of its obligations under this Agreement is affected by or on account of any of the following:

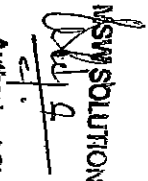
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- (a) Force Majeure Event, subject to Article 8.3;
- (b) MCD Event of Default;
- (c) Compliance with the instructions of the Independent Consultant/MCD or the directions of any Government Agency other than instructions issued as a consequence of a breach by the Concessionaire of any of its obligations hereunder;
- (d) Closure of the Project Facilities or part thereof with the approval of the Independent Consultant / MCD.

6.17 Maintenance of Records

The Concessionaire shall maintain records of the quantum (measured in tonnes) of biodegradable substance, non-biodegradable, recyclable and green waste ~~collected, stored, transported and disposed in the Waste Processing Facility and the Landfill Facility, duly countersigned by the Independent Consultant and provide monthly, quarterly and annual reports of the same to the Independent Consultant and MCD.~~


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Municipal Corporation of Delhi

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ARTICLE 7

7. MCD's OBLIGATIONS

In addition to and not in derogation or substitution of any of its other obligations under this Agreement, MCD shall have the following obligations:

7.1

Specific Obligations

MUNICIPAL CORPORATION OF DELHI shall provide:

- a) The barest minimum Land in the Concession Area for vehicles maintenance work shop to the contractor, during the contract period.
- b) MCD shall also provide premises for parking purpose. This area can be provided as small areas where in the contractors can park their vehicles in different locations.
- c) The Contractor shall erect fencing, construct roads/ office and other infrastructure & services as required for effective implementation of the contract and install other services as necessary to safe and effective completion of the work. Such movable and immovable infrastructure shall be transferred to MCD in working conditions, on completion of the contract period or at the time of termination of contract.
- d) The successful bidder will use these premises for organizing, inspecting, monitoring and controlling the work including receipt of the complaints directly from citizens to be redressed within 24 hours.
- e) MCD shall provide barest minimum land area at one or more locations for storage and T&P for parking door to door collection vehicles as mentioned above Separate workshop area shall also be provided as mentioned above by MCD. The contractor shall make own arrangements at such parking facilities including security, light, water, telephone etc. MCD shall provide required land allotment documentation for the same.
- f) MCD shall provide the barest minimum land area at one location for setting up the processing units (composting & RDF) and Land Fill site.
- g) MCD shall not provide any additional infrastructure or services to the contractor on this account, such as printing, stationary, electricity, water supply, telephone. The contractor shall make their own arrangement and the charges for all such services will have to be borne by the contractor.
- h) MCD shall declare and maintain, or cause to declare and maintain, a no-development zone around the Processing and Land Fill Site in accordance with Applicable Laws.
- i) MCD shall subscribe to the Substitution Agreement within 30 days of the intimation regarding financial close given by the Concessionaire
- j) MCD shall grant in a timely manner all such approvals, permissions and authorisations which the Concessionaire may require or is obliged to seek from MCD under this Agreement, in connection with implementation of the Project and the performance of its obligations. Provided where authorisation for avallment of utilities such as power, water, sewerage, telecommunications or any other incidental services/utilities is required, the same shall be provided by MCD in the form as set out in Schedule 9, within thirty days (30) days from receipt of request from the Concessionaire to make available such authorisation.
- k) MCD shall endeavour to assist the Concessionaire in obtaining finances from the financial institutions for the Project.

Rohini Zone:

1. A piece of land between Railway Line & CRB Park, Mangolpuri Industrial Area Phase-I, New Delhi. [Measuring About 3.5 Acre].
2. Automobile Workshop of Rohini Zone.

Civil Line Zone:

1. A piece of land between Safai Karamchari Staff Quarters and Road No.51 [Over and side of covered nallah, subject to the condition that the bidder/ concessionaire at various time shall allow

the MCD to de-silt the nallala as well as shall ensure that there is no inconvenience to the road users] Jahangirpur, New Delhi. [Measuring About 3.0 Acre].

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2. Automobile Workshop of Civil Line Zone.

Vasant Kunj, Dwaraka-Pappankalan:

The MCD is in short supply of land. However MCD will try to provide a piece of land to the concessionaire either in Vasant Kunj or Dwaraka -Pappankalan area for parking of vehicle(s) purposes, if possible.

The concessionaire shall be allowed to use the existing electricity/water connection(s) in the Automobile Workshop(s) on payment of bills, as per actual.


This is to make clear that the space for setting up office, workshop and transfer station/parking site etc. shall be provided to the concessionaire on rent @ Rs 1/- Acre, per annum. The land shall always be remaining property of MCD and be given to the concessionaire for the use [during concession period only] for the purposes defined in this document [only].

7.2 General Obligations

MCD shall :

- (a) where appropriate provide necessary assistance to the Concessionaire in securing Applicable Permits;
- (b) Observe and comply with all its obligations set forth in this Agreement.

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ARTICLE 8

8. TIPPING FEE AND POST CLOSURE PAYMENTS

8.1 Tipping Fee

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- (a) Subject to the provisions of this Agreement and in consideration of the Concessionaire accepting the Concession and undertaking to perform and discharge its obligations in accordance with the terms, conditions and covenants set forth in this Agreement, MCD agrees and undertakes to pay to Concessionaire, the Tipping Fee calculated in accordance with **Schedule 6**.
- (b) The Concessionaire shall weigh the Landfill Waste and get it duly certified by the Independent Consultant in the manner as set out in the O&M Requirements. The Concessionaire shall, on the 5th day of every Month or in case the 5th day of a Month is a holiday then on the following working day of such Month, submit to MCD a statement ("Tipping Fee Statement") providing the following details, in the manner as set out in the O&M Requirements:
- (i) Total quantity of Municipal Solid Waste collected by the bidder;
 - (ii) Amounts payable to MCD by the Concessionaire in accordance with this Agreement;
 - (iii) Quantity of Waste Collected on each day of the previous Month along with proof of certification of the same by the Independent Consultant;
 - (iv) Aggregate quantity of Landfill Waste for the previous Month,
 - (v) Quantity of Permissible Landfill Waste on each day of the previous Month,
 - (vi) Aggregate quantity of Permissible Landfill Waste for the previous Month and
 - (vii) Amount of Tipping Fee for the previous Month calculated in accordance with **Schedule 6**.

Note:

1. Inert Material to be landfilled shall not be more than 25% of the garbage entering to the Processing and Land Fill site, as set out in the Technical Proposal [in third phase].
2. Proposed Tipping Fee would be the fee, in the first eighteen months of operations, per tonne of Landfill Waste [MSW and Sweeping silt], paid to the Bidder by MCD.
3. The Tipping Fee Rate would be the same as per the Financial Proposal submitted for the first three years. The Tipping Fee Rate would be increased by 3.5 % per annum, after wards.

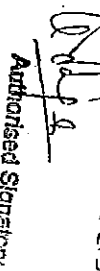
8.2 Mechanism of Payment

- (a) MCD shall, within 30 days from the date of receipt of the Tipping Fee Statement, Pay to the Concessionaire, an amount equal to 95% of the total amounts payable to Concessionaire (subject to the performance based marks scored) as stated in such Tipping Fee Statement.
- (i) Pay into a special account designated as "Post Closure Performance Account", an amount equal to 2.5 % of the total amounts payable to Concessionaire as stated in such Tipping Fee Statement.
- Provided, however, the Concessionaire shall be eligible to receive at the end of each year, during the Active Operations Period, an amount equivalent to two-thirds of the amounts accrued in the Post Closure Performance Account during that year, subject to the Concessionaire furnishing of a bank guarantee of equivalent value in favour of MCD.

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Municipal Corporation of Delhi



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Provided further that the bank guarantees shall be kept valid and co-terminus and shall be released with the Post Closure Performance Account payments due as stated in sub - article 8.2 (b) herein below.

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- (b) The amounts in the Post Closure Performance Account would be payable to the Concessionaire during the Post Closure Period in 60 quarterly installments upon Cheque on the Post Closure Performance Account duly signed by MCD and the Concessionaire.

- (c) Any delay in making any payment in accordance with the Tipping Fee Statement shall, without prejudice to any other consequences under this Agreement, entail payment of interest on the amount in default at prevailing annual prime lending rate of State Bank of India calculated for the duration of delay. The period of delay shall be counted from 180 days after the day of submission of the tipping Fee Statement.

- (d) All payments to the Concessionaire shall be made by way of Cheque. All payments to MCD shall be made by way of demand draft in favour of Commissioner, MCD payable at Delhi.


8.3

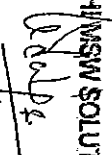
Post Closure Performance Account

- (a) Within 30 days from the Appointed Date, the Parties shall open a special account designated as Post Closure Performance Account for making the payments as set out in Article 8.2 (a).

- (b) Subject to the Concessionaire meeting his obligations in respect to the Post Closure Period in accordance with the O&M Requirements, payments from the Post Closure Performance Account shall be made to the Concessionaire in accordance with Schedule 8.

- (c) MCD and the Concessionaire would set out a mechanism, within 30 days of COD, for investing the amounts in Post Closure Performance Account in Permitted Investments. MCD agrees to pay to the Concessionaire interest accrued / received from Permitted Investments. MCD and the Concessionaire shall suitably structure the operation of Post Closure Performance Account.


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8.4 Performance evaluation of collection, transfer and transportation of municipal solid waste (MSW) in the Concession Area

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Table 8.1:- Daily Work Performance Evaluation Sheet for doorstep collection, transportation of Bio degradable, Non biodegradable, Recyclable & Green waste, Processing and Land fills etc.

Sl.No.	ITEM	Marks assigned	Level achieved in %	Marks Obtained	Justification for award of marks
1	Segregation of Waste in four parts at the source	10			
2	Cleanliness of the compactors and its surroundings i.e. at the transfer point	5			
3	Transportation of MSW from compactor to the SLF or processing site.	5			
4	Cleanliness (washing) of Auto lifter/disposal vehicles	5			
	Public awareness programme- conducted as per schedule (if there is no programme on a day, full marks shall be awarded)	5			
	Redressal of Complaints i) Received upto 3.00 PM ii) Received after 3.00 PM	10			
6	Break down of vehicle not more than 5% (non availability of the vehicle) on every 1% in excess 1 mark shall be deducted	5			
7	Disinfectant sprayed (no foul smell from the vehicles or at the transfer point)	10			
8	All trip reported at disposal sites	10			
9	Segregation at Processing site	5			
10	Functioning of composting facility	10			
11	Functioning of the RDF facility	10			
12	Functioning of the Land fill Site	10			
	Grand Total	100			

Table 8.2:- Monthly inspection report

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Sr.No.	ITEM	Marks assigned	Level achieved In %	Marks Obtained	Justification for award of marks
1	Public Awareness Programme	20			
2	Painting of Vehicles	10			
3.	Repair to Vehicles	10			
4	Functioning of composting facility	20			
5	Functioning of the RDF facility	20			
6	Functioning of the Land fill Site	20			
	Grand Total	100			

8.5 Performance based Payment

a) The net payment based on performance evaluation of doorstep collection, transportation of Bio degradable, Non biodegradable, Recyclable & Green waste, Processing and Land filling etc. will be worked out = Quoted Rate (Rs./ton) x Total waste entered to the Land Fill Site x (points obtained /points assigned). The cent percent payment will be done on obtaining 97.5 % point. If the points obtained are not 97.5%, then one chance is given for rectification in the next day preferably with in 24hrs. After a chance is given for rectification of the defect the payment proportionate to percentage point obtained after second inspection will be released.


b) Usually, a regular payment shall be made to the bidder in accordance to the marks achieved. If the bidder fails to achieve at least 90% marks; not more than two occasions in a month during the entire contract period, the MCD shall initiate the proceedings for canceling the contract with the bidder and the work during the remaining period of the contract shall be carried out, by engaging another agency (through call of tenders) at the risk and cost of the bidder.


8.5.1 Other Conditions

a) In case of inspection by Independent Consultant on particular day after the work is completed, if work is not found satisfactory on measurement through marks/points, the amount in accordance to the loss of points for that day, shall be deducted from the monthly running bills

b) In case of MCD's representative not available for the joint inspection with the Independent Consultant, the evaluation carried out by the Independent Consultant shall be taken for processing the payment.

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ARTICLE 9

9.0 FORCE MAJEURE AND CHANGE IN LAW

9.1 Force Majeure Event

Any of the following events which is beyond the control of the Party claiming to be affected thereby ("Affected Party") and which the Affected Party has been unable to overcome or prevent despite exercise of due care and diligence, and results in Material Adverse Effect shall constitute Force Majeure Event:

- (a) earthquake, flood, inundation and landslide
- (b) storm, tempest, hurricane, cyclone, lightning, thunder or other extreme atmospheric disturbances
- (c) fire caused by reasons not attributable to the Concessionaire or any of the employees, Contractors or agents appointed by the Concessionaire for purposes of the Project;
- (d) acts of terrorism;
- (e) strikes, labour disruptions or any other industrial disturbances not arising on account of the acts or omissions of the Concessionaire or the Contractor
- (f) action of a Government Agency having Material Adverse Effect including but not limited to
 - (i) acts of expropriation, compulsory acquisition or takeover by any Government Agency of the Project/Project Facilities or any part thereof or of the Concessionaire's or the Contractor's rights in relation to the Project,
 - (ii) any judgement or order of a court of competent jurisdiction or statutory authority in India made against the Concessionaire or the Contractor in any proceedings which is non-collusive and duly prosecuted by the Concessionaire, and
 - (iii) any unlawful, unauthorised or without jurisdiction refusal to issue or to renew or the revocation of any Applicable Permits, in each case, for reasons other than Concessionaire's or the Contractor's breach or failure in complying with the Project Requirements, Applicable Laws, Applicable Permits, any judgement or order of a Governmental Agency or of any contract by which the Concessionaire or the Contractor as the case may be is bound.

- (g) early determination of this Agreement by MCD for reasons of national emergency or national security.
- (h) any failure or delay of a Contractor caused by any of the sub-clauses (f) and (g) hereinabove, for which no offsetting compensation is payable to the Concessionaire by or on behalf of the Contractor.
- (i) War, hostilities (whether declared or not), invasion, act of foreign enemy, rebellion, riots, weapon conflict or military actions, civil war, ionising radiation, contamination by radioactivity from nuclear fuel, any nuclear waste, radioactive toxic explosion, volcanic eruptions, any failure or delay of a Contractor caused by the events mentioned in this subclause for which no offsetting compensation is payable to the Concessionaire by or on behalf of the Contractor

9.2 Notice of Force Majeure Event

- (a) As soon as practicable and in any case within 7 days of the date of occurrence of a Force Majeure Event or the date of knowledge thereof, the Affected Party shall notify Independent Consultant and the other Party of the same setting out, inter alia, the following in reasonable detail:

- (i) the nature and extent of the Force Majeure Event;
- (ii) the estimated Force Majeure Period;

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- (iii) the nature of and the extent to which, performance of any of its obligations under this Agreement is affected by the Force Majeure Event;
 - (iv) the measures which the Affected Party has taken or proposes to take to alleviate/mitigate the impact of the Force Majeure Event and to resume performance of such of its obligations affected thereby; and
 - (v) any other relevant information concerning the Force Majeure Event, and /or the rights and obligations of the Parties under this Agreement.
- (b) As soon as practicable and in any case within 5 days of notification by the Affected Party in accordance with the preceding clause (a), the Parties shall alongwith the Independent Consultant, meet, hold discussions in good faith and where necessary conduct physical inspection/survey of the Project Facilities in order to:
- (i) assess the impact of the underlying Force Majeure Event,
 - (ii) to determine the likely duration of Force Majeure Period and,
 - (iii) to formulate damage mitigation measures and steps to be undertaken by the Parties for resumption of obligations, the performance of which shall have been affected by the underlying Force Majeure Event.
- (c) The Affected Party shall during the Force Majeure Period provide to the other Party and the Independent Consultant regular (not less than weekly) reports concerning the matters set out in the preceding clause (b) as also any information, details or document, which the other Party may reasonably require.

9.3 Performance of Obligations


If the Affected Party is rendered wholly or partially unable to perform any of its obligations under this Agreement because of a Force Majeure Event, it shall be excused from performance of such obligations to the extent it is unable to perform the same on account of such Force Majeure Event provided that:

- (a) due notice of the Force Majeure Event has been given as required by the preceding **Clause 9.2;**
- (b) the excuse from performance shall be of no greater scope and of no longer duration than is necessitated by the Force Majeure Event;
- (c) the Affected Party has taken all reasonable efforts to avoid, prevent, mitigate and limit damage, if any, caused or is likely to be caused to the Project Facilities as a result of the Force Majeure Event and to restore the Project Facilities, in accordance with the Good Industry Practice and its relative obligations under this Agreement;
- (d) when the Affected Party is able to resume performance of its obligations under this Agreement, it shall give to the other Party and the Independent Consultant written notice to that effect and shall promptly resume performance of its obligations hereunder, the non issue of such notice being no excuse for any delay for resuming such performance;
- (e) the Affected Party shall continue to perform such of its obligations which are not affected by the Force Majeure Event and which are capable of being performed in accordance with this Agreement; and
- (f) any insurance proceeds received shall be, subject to the provisions of Financing Documents, entirely applied to repair, replace or restore the assets damaged on account of the Force Majeure Event, or in accordance with Good Industry Practice.

9.4 Termination due to Force Majeure Event

- (a) Termination

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Ex. Engineer (DEMS)-II
Municipal Corporation of Delhi

- (1) If a Force Majeure Event, excluding events described under **Clauses 9.1(f), 9.1(g) and 9.1(h)**, continues or is in the reasonable judgment of the Parties likely to

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continue beyond a period of 120 days, the Parties may mutually decide to terminate this Agreement or continue this Agreement on mutually agreed revised terms. If the Parties are unable to reach an agreement in this regard, the Affected Party shall after the expiry of the said period of 120 days, be entitled to terminate this Agreement.

Notwithstanding anything inconsistent contained in this Agreement, if a Force Majeure Event is an event described under **Clauses 9.1(f), or 9.1(h)**, and the same subsists for a period exceeding 365 days, then either Party shall be entitled to terminate this Agreement.

Provided that MCD may at its sole discretion have the option to terminate this Agreement any time after the occurrence of any event described under **Clauses 9.1(f) or 9.1(h)**.

(b) Termination Notice

If either Party, having become entitled to do so, decides to terminate this Agreement pursuant to the preceding clause (a), it shall issue Termination Notice setting out:

- (i) in sufficient detail the underlying Force Majeure Event;
- (ii) the Termination Date which shall be a date occurring not earlier than 60 days from the date of Termination Notice;
- (iii) the estimated Termination Payment including the details of computation thereof and;
- (iv) any other relevant information.

(c) Obligation of Parties

Following issue of Termination Notice by either Party, the Parties shall promptly take all such steps as may be necessary or required to ensure that:


- (i) the Termination Payment, if any, payable by MCD in accordance with the following clause (d) is paid to the Concessionaire on the Termination Date and
- (ii) the Project Facilities are handed back to MCD by the Concessionaire on the Termination Date free from all Encumbrance.


(d) Termination Payment

Upon Termination of this Agreement due to a Force Majeure Event, Termination Payment shall be made to the Concessionaire by MCD in accordance with the following:

- (i) If Termination is due to a Force Majeure Event, described under **Clauses 9.1(a) to 9.1(e)**, no Termination Payment shall be made by MCD to the Concessionaire but, the Concessionaire shall be entitled to receive and appropriate
 - (a) the proceeds of any amounts under insurance policies and
 - (b) the amounts in the Post Closure Performance Account
- (ii) If Termination is due to the occurrence of any event described under **Clauses 9.1(f), 9.1(g) or 9.1(h)**, MCD shall pay to the Concessionaire Termination Payment equal to 100 % of the Book Value as on the Date of Termination Notice. The Concessionaire would also be allowed to appropriate the amounts in the Post Closure Performance Account.

- (iii) If Termination is due to the occurrence of any event described under Clause 9.1(f), MCD shall subject to the certification of Independent Consultant, pay to the Concessionaire, Termination payment equal to 100% of the Book Value as on the


Dr. Engineer (DEMS)-II
Municipal Corporation of Delhi

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date of Termination Notice. The Concessionaire would also be allowed to appropriate the amounts in the Post Closure Performance Account.

Provided MCD shall be entitled to deduct from the Termination Payment any amount due and recoverable by MCD from the Concessionaire as on the Termination Date.

9.5 Liability for other losses, damages etc.

Save and except as expressly provided in this Article 9, neither Party hereto shall be liable in any manner whatsoever to the other Party in respect of any loss, damage, cost, expense, claims, demands and proceedings relating to or arising out of occurrence or existence of any Force Majeure Event.

9.6 Change in Law

- (a) Change in Law shall mean the occurrence or coming into force of any of the following, after the Appointed Date:
- (i) The enactment of any new Indian law including laws related to environment;
 - (ii) The repeal, modification or re-enactment of any existing Indian law
 - (iii) A change in the interpretation or application of any Indian law by a court of record.
- Provided that Change in Law shall not include:**

- (i) Coming into effect, after the Appointed Date, of any provision or statute which is already in place as of the Appointed Date,
- (ii) Any new law or any change in the existing law under the active consideration of or in the contemplation of any government as of the Appointed Date which is a matter of public knowledge,
- (iii) Any change in the rates of the Taxes.

- (b) Subject to Change in Law resulting in Material Adverse Effect and subject to the Concessionaire taking necessary measures to mitigate the impact or likely impact of Change in Law on the Project, if as a direct consequence of a Change in Law, the Concessionaire is obliged to incur Additional Costs, and MCD shall subsequently reimburse to the Concessionaire 50% of such Additional Costs, provided such additional cost is not less than Rupees Seventy Five lakhs.

- (c) Upon occurrence of a Change in Law, the Concessionaire may, notify MCD and the Independent Consultant of the following:
 - (i) The nature and the impact of Change in Law on the Project
 - (ii) In sufficient detail, the estimate of the Additional Cost likely to be incurred by the Concessionaire on account of Change in Law
 - (iii) The measures, which the Concessionaire has taken or proposes to take to mitigate the impact of Change in Law, including in particular, minimising the Additional Cost
 - (iv) The relief sought by the Concessionaire

- (d) Upon receipt of the notice of Change in Law issued by the Concessionaire pursuant to preceding sub-clause, MCD and the Concessionaire shall along with the Independent Consultant hold discussions and take all such steps as may be necessary including determination/certification by the Independent Consultant of the quantum of the Additional Cost to be borne and paid by MCD.
- (e) MCD shall within 30 days from the date of determination of quantum of Additional Cost, provide relief to the Concessionaire in the manner as mutually agreed upon by the Parties.

FOR DELINQUENTS SOLD:

Mr. [redacted] (D-DE)-
Municipal Corporation of [redacted]

~~Authorized Signatory~~

ARTICLE 10

10.0 EVENTS OF DEFAULT AND TERMINATION

10.1 Events of Default

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Event of Default shall mean either Concessionaire Event of Default or MCD Event of Default or both as the context may admit or require.

(a) Concessionaire Event of Default

a) MCD at any time may terminate the contract by giving written notice to the bidder.

If the Bidder/ Contractor becomes bankrupt or otherwise insolvent, provided that such termination will not prejudice or affect any right of action or remedy which has accrued or will accrue thereafter to MCD.

If the Bidder/ Contractor creates events of default of any of the terms and conditions governing the contract or any clause of the contract including those of operation clauses of house to house collection, deployment of right type of vehicles and compactors, transportation of waste, designated processing & disposal of waste etc.

If it is proved that the Contractor is intentionally and deliberately violating the provisions of the contract.

b) MCD requires that the Bidders under this tender observe the highest standards of ethics during the procurement and execution of such Contracts. In pursuance of this policy, MCD defines for the purposes of this provision, the terms set forth as follows:

"Corrupt practice" means the offering, giving, receiving or soliciting of any thing of value to influence the action of the public official in the procurement process or in contract execution; and

"Fraudulent practice" means a misrepresentation of facts in order to influence a procurement process or execution of the contract to the detriment of MCD, and includes collusive practice among Bidders (prior to or after Tender submission) designed to establish Contract Prices at artificial non-competitive levels and to deprive MCD of the benefits of the free and open competition.

c) If the bidder indulges in Corrupt or Fraudulent Practices, it gets disqualified for tendering or MCD may at any point of time terminate the contract by giving written notice to the Bidder, even after the work is started, provided that such termination will not prejudice or affect any right of action or remedy which has accrued or will accrue thereafter to the MCD.

d) In case of failure to clarify or improve the work to the utmost satisfaction of MCD, letter of termination will be sent to the bidder.

e) If the order /contract is cancelled / terminated after commencing the work, on account of the reasons and / or failure of the Contractor to perform up to the standard as evaluated, Contractor shall;

- Hand over the entire infrastructure, sheds, cabins built, services provided by the service provider, in the premises given by MCD to an authorized representative of MCD; without any compensation.
- Hand over vehicles, equipment, procured for use immediately again to an authorized representative of MCD; without any compensation.

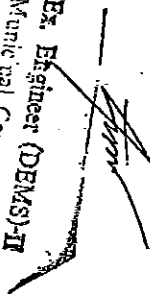
MCD may/shall assign the entire work and its set up to the next willing bidder or any other company or individual for operations of the services along with infrastructure, places and all vehicles and equipment acquired from the Contractor, at the risk and cost of the bidder.


Any of the following events shall constitute an Event of Default by the Concessionaire ("Concessionaire Event of Default") unless such event has occurred as a result of one or more reasons set out in this agreement:

(i) The Concessionaire has failed to adhere to the Construction Requirements and such failure, in the reasonable estimation of the Independent Consultant, is likely to delay achievement of COD beyond 60 days of the Scheduled Project Completion Date;

Completion Date:

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Municipal Corporation of Delhi


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- (ii) The Concessionaire has failed to achieve COD within 60 days of the Scheduled Project Completion Date for any reason whatsoever;
- (iii) At any time during the Concession Period, the Concessionaire fails to adhere to the Construction Requirements or O&M Requirements and has failed to remedy the same within 20 days;
- (iv) The Concessionaire has failed to make any payments due to MCD and more than 30 days have elapsed since such payment default;
- (v) The Concessionaire is in Material Breach of any of its obligations under this Agreement and the same has not been remedied for more than 30 days;
- (vi) Any representation made or warranty given by the Concessionaire under this Agreement is found to be false or misleading;
- (vii) A resolution for voluntary winding up has been passed by the shareholders of the Concessionaire;
- (viii) Any petition for winding up of the Concessionaire has been admitted and liquidator or provisional liquidator has been appointed or the Concessionaire has been ordered to be wound up by Court of competent jurisdiction, except for the purpose of amalgamation or reconstruction with the prior consent of MCD, provided that, as part of such amalgamation or reconstruction and the 'amalgamated' or reconstructed entity has unconditionally assumed all surviving obligations of the Concessionaire under this Agreement.
- (ix) A default has occurred under any of the Financing Documents and any of the Lenders has recalled its financial assistance and demanded payment of the amounts outstanding under the Financing Documents or any of them as applicable;
- (x) The Concessionaire has abandoned the Project Facilities;
- (xi) The Concessionaire has unlawfully repudiated this Agreement or has otherwise expressed an intention not to be bound by this Agreement;
- (xii) The Concessionaire has suffered an attachment levied on any of its assets which has caused or is likely to cause a Material Adverse Affect on the Project and such attachment has continued for a period exceeding 90 days.

(b) MCD Event of Default

- a) The Contractor may at any times request for termination of the contract if desired on default on the part of MCD, such as non payment of bills or resistance from citizens and it does not get resolved by MCD, by giving written communication to MCD, the Contractor may hand over the vehicles, equipment, bins, and fixed assets created by them to MCD.
 - b) In case of termination /cancellation of the contract after commencing the work when MCD asks to do so on account of MCD's inability to continue, all the infrastructure, vehicles, equipment, containers brought by the Contractor may be taken over by the MCD, if requested by the Contractor, at the mutually agreed rates.
- Any of the following events shall constitute an event of default by MCD ("MCD Event of Default"), when not caused by a Concessionaire Event of Default or Force Majeure Event:
- (i) MCD has failed to make any payments due to the Concessionaire and more than 180 days have elapsed since such default;
 - (ii) MCD is in Material Breach of any of its obligations under this Agreement and has failed to cure such breach within 90 (ninety) days of receipt of notice thereof issued by the Concessionaire;
 - (iii) MCD has (a) failed to execute the Substitution Agreement in accordance with Article 7.1 (n) having executed the same is in breach of any of its obligations For DELHI MSW SOL.

there under and such breach has not been cured within 30 days from the date of written notice thereof given by the Concessionaire;

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(iv) MCD has unlawfully repudiated this Agreement or otherwise expressed its intention not to be bound by this Agreement;

(v) MCD has unreasonably withheld or delayed grant of any approval or permission which the Concessionaire is obliged to seek under this Agreement, and thereby caused or likely to cause Material Adverse Effect;

(vi) Any representation made or warranties given by the MCD under this Agreement has been found to be false or misleading.

10.2 Termination due to Event of Default

(a) Termination for Concessionaire Event of Default

(i) Without prejudice to any other right or remedy which MCD may have in respect thereof under this Agreement, upon the occurrence of a Concessionaire Event of Default, MCD shall, subject to the provisions of the Substitution Agreement, be entitled to terminate this Agreement in the manner as set out under this agreement.

Provided however that upon the occurrence of a Concessionaire Event of Default as specified under this agreement, MCD may terminate this Agreement by issue of Termination Notice in the manner set out under this agreement.

(ii) If MCD decides to terminate this Agreement pursuant to preceding clause 10.1 (i), it shall in the first instance issue Preliminary Notice to the Concessionaire. Within thirty (30) days of receipt of the Preliminary Notice, the Concessionaire shall submit to MCD in sufficient detail, the manner in which it proposes to cure the underlying Event of Default (the "Concessionaire's Proposal to Rectify"). In case of non-submission of the Concessionaire's Proposal to Rectify within the said period of 30 days, MCD shall be entitled to terminate this Agreement by issuing Termination Notice, and to appropriate:

- a. the Performance Security, if subsisting and
- b. the amounts in the Post Closure Performance Account

(iii) If the Concessionaire's Proposal to Rectify is submitted within the period stipulated therefore, the Concessionaire shall have further period of 30 days to remedy/ cure the underlying Event of Default. If, however the Concessionaire fails to remedy/cure the underlying Event of Default within such further period allowed, MCD shall be entitled to terminate this Agreement, by issue of Termination Notice and to appropriate

- (a) the Performance Security, if subsisting and
- (b) the amounts in the Post Closure Performance Account

(b) Termination for MCD Event of Default

(i) Without prejudice to any other right or remedy which the Concessionaire may have in respect thereof under this Agreement, upon the occurrence of MCD Event of Default, the Concessionaire shall be entitled to terminate this Agreement by issuing Termination Notice.

(ii) If the Concessionaire decides to terminate this Agreement pursuant to preceding clause (i) it shall in the first instance issue Preliminary Notice to MCD. Within 30 days of receipt of Preliminary Notice, MCD shall forward to the Concessionaire its proposal to remedy/ cure the underlying Event of Default (the "MCD Proposal to Rectify"). In case of non submission of MCD Proposal to rectify within the period

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stipulated therefore, Concessionaire shall be entitled to terminate this Agreement by issuing Termination Notice.

- (iii) If MCD Proposal to Rectify is forwarded to the Concessionaire within the period stipulated therefore, MCD shall have further period of 30 days to remedy/ cure the underlying Event of Default. If, however MCD fails to remedy/ cure the underlying Event of Default within such further period allowed, the Concessionaire shall be entitled to terminate this Agreement by issuing Termination Notice.

(c) **Termination Notice**

If a Party is having become entitled to do so decide to terminate this Agreement pursuant to the preceding sub article (a) or (b), it shall issue Termination Notice setting out:

- (i) in sufficient detail the underlying Event of Default;
- (ii) the Termination Date which shall be a date occurring not earlier than 60 days from the date of Termination Notice;
- (iii) the estimated termination payment including the details of computation thereof, and,
- (iv) any other relevant information.

(d) **Obligation of Parties**

Following issue of Termination Notice by either Party, the Parties shall promptly take all such steps as may be necessary or required to ensure that:

- (i) until Termination the Parties shall, to the fullest extent possible, discharge their respective obligations so as to maintain the continued operation of the Project Facilities;
- (ii) the termination payment, if any, payable by MCD in accordance with the following sub - article (f) is paid to the Concessionaire on the Termination Date; and
- (iii) the Project Facilities are handed back to MCD by the Concessionaire on the Termination Date free from any Encumbrance along with any payment that may be due by the Concessionaire to MCD.

(e) **Withdrawal of Termination Notice**

Notwithstanding anything inconsistent contained in this Agreement, if the Party who has been served with the Termination Notice cures the underlying Event of Default to the satisfaction of the other Party at any time before the Termination occurs, the Termination Notice shall be withdrawn by the Party which had issued the same.

Provided that the Party in breach shall compensate the other Party for any direct costs/consequences occasioned by the Event of Default which caused the issue of Termination Notice.

(f) **Termination Payments**

Upon Termination of this Agreement on account of MCD Event of Default, the Concessionaire shall be entitled to withdraw the Performance Security, if subsisting, and receive from MCD, termination payment equal to 100% of the Book Value as on Termination Date and amounts in the Post Closure Performance Account.

Upon Termination of this Agreement on account of Concessionaire Event of Default, Concessionaire shall be entitled to receive from MCD termination payment equal to 80% of the Book Value as on the Termination Date.

10.3 **Rights of MCD on Termination**

- (a) Upon Termination of this Agreement for any reason whatsoever, MCD shall upon making the Termination Payment, if any, to the Concessionaire have the power and authority to:

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(i) enter upon and take possession and control of the Project Facilities i/c vehicles, workshop etc. forthwith;

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(ii) prohibit the Concessionaire and any person claiming through or under the Concessionaire from entering upon/ dealing with the Project Facilities;

- (b) Notwithstanding anything contained in this Agreement, MCD shall not, as a consequence of Termination or otherwise, have any obligation whatsoever including but not limited to obligations as to compensation for loss of employment, continuance or regularisation of employment, absorption or re-employment on any ground, in relation to any person in the employment of or engaged by the Concessionaire in connection with the Project, and the hand back of the Project Facilities by the Concessionaire to MCD shall be free from any such obligation.

10.4 Accrued Rights of Parties

Notwithstanding anything to the contrary contained in this Agreement, Termination pursuant to any of the provisions of this Agreement shall be without prejudice to accrued rights of either Party including its right to claim and recover money damages and other rights and remedies which it may have in law or contract. The rights and obligations of either Party under this Agreement, including without limitation those relating to the Termination Payment, shall survive the Termination but only to the extent such survival is necessary for giving effect to such rights and obligations.

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Municipal Corporation of Delhi

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ARTICLE 11

11.0 HANDBACK OF PROJECT FACILITIES

11.1 Ownership

Without prejudice and subject to the Concession, the ownership of the Project Facilities, including all improvements made therein by the Concessionaire, shall at all times remain that of MCD.

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11.2 Concessionaire's Obligations

11.2.1 Transfer of the movable and immovable assets by the bidder; after Completion of the Contract i.e. 20 Years to the MCD

- (a) The Contractor shall at the end of the Contract period hand back vacant and peaceful possession of the Project Facilities to MCD free of cost and in good operable condition.
- (b) MCD may decide to extend the contract or announce completion; a letter to this effect shall be given by MCD. On acceptance of the extension a new contract agreement shall be signed and the work shall continue un-interruptedly with use of same vehicles, equipment and infrastructure etc.
- (c) During the extended period there shall be no escalation in the rate payable to the bidder in 20th year. The bidder shall work at the twentieth year's rate for further years, for a maximum of two years.
- (a) **All Vehicles, Workshops, Offices, Communication arrangements etc. and immovable infrastructure/ facilities:** On completion of the contract period, unless it is extended, the bidder will transfer All Vehicles, Workshop, Offices, Communication arrangements etc. and immovable infrastructure/ facilities to MCD, in working conditions, free of cost.

(b) Waste Processing Facility

- (i) The Concessionaire shall on the date of expiry of Landfill Life, hand back peaceful possession of the Waste Processing Facility to MCD free of cost and in good operable condition.
- (ii) At least 12 months before the expected expiry of the Landfill Life a joint inspection of the Project Facilities shall be undertaken by MCD, Independent Consultant and the Concessionaire. MCD/ Independent Consultant shall, within 45 days of such inspection prepare and furnish to the Concessionaire a list of works/ jobs ("Handback Requirements"), if any, to be carried out so as to conform to the Construction Requirements and O&M Requirements. The Concessionaire shall promptly undertake and complete such works/jobs at least three months prior to the expected expiry of Landfill Life and ensure that the Project Facilities continue to meet such requirements until the same are handed back to MCD.

- (iii) MCD/ Independent Consultant shall, within 45 days of the joint inspection undertaken shall prepare and furnish to the Concessionaire a list of items, if any, with corresponding distinctive descriptions, which are to be compulsorily handed back to MCD along with the Waste Processing Facilities.

(d) Landfill Facility

- (i) At least 12 months before the expected expiry of the Landfill Life, the Parties jointly with the Independent Consultant shall, in accordance with Schedule 5, discuss and jointly prepare the Post Closure Operating Plan for maintenance of the Landfill Facility, under the provisions of the prevailing statutory regulations ("Post Closure Maintenance Plan").
- (ii) The Concessionaire shall after expiry of the Active Operations Period maintain the Landfill Facility in accordance with the Post Closure Maintenance Plan.

(iii) Upon the expiry of the Concession Period, the Concessionaire shall hand back peaceful possession of the Landfill Facility to MCD free of cost and in good condition.

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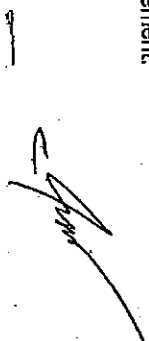
(e) The Concessionaire hereby acknowledges MCD's rights specified in this agreement enforceable against it upon Termination and its corresponding obligations arising there from. The Concessionaire undertakes to comply with and discharge promptly all such obligations.

11.3 MCD's Obligations

MCD shall, subject to MCD's right to deduct amounts from the Post Closure Performance Account towards;

- (i) carrying out works/jobs listed under Article 11.2, which have not been carried out by the Concessionaire,
- (ii) purchase of items, which have not been handed back to MCD along with the Project Facilities in terms of Article 11.2, and
- (iii) any outstanding dues, which may have accrued in respect of the Project during the Concession Period, duly discharge and release to the Concessionaire the amounts in the Post Closure Performance Account in accordance with this agreement.

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ARTICLE 12

12.0 DISPUTE RESOLUTION
12.1 Amicable Resolution

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- (a) Save where expressly stated to the contrary in this Agreement, any dispute, difference or controversy of whatever nature between the Parties, howsoever arising under, out of or in relation to this Agreement, including those arising with regard to acts, decision or opinion of the Independent Consultant (the "Dispute") shall in the first instance be attempted to be resolved amicably in accordance with the procedure set forth in clause (b) below.

- (b) Either Party may require such Dispute to be referred to the Commissioner, MCD (or the Person holding charge) and the Chief Executive Officer of the Concessionaire for the time being, for amicable settlement. Upon such reference, the two shall meet at the earliest mutual convenience and in any event within 15 days of such reference to discuss and attempt to amicably resolve the Dispute. If the Dispute is not amicably settled within 15 (fifteen) days of such meeting between the two, either Party may refer the Dispute to arbitration in accordance with the provisions of Article 12.2 below.

12.2 Arbitration

(a) Procedure

Subject to the provisions of Article 12.1, any Dispute which is not resolved amicably shall be finally settled by binding arbitration under the Arbitration Act. The arbitration shall be by a panel of three arbitrators, one to be appointed by each Party and the third to be appointed by the two arbitrators appointed by the Parties. The Party requiring arbitration shall appoint an arbitrator in writing, inform the other Party about such appointment and call upon the other Party to appoint its arbitrator. If within 15 days of receipt of such intimation, the other Party fails to appoint its arbitrator, the Party seeking appointment of arbitrator may take further steps in accordance with Arbitration Act.

(b) Place of Arbitration

The place of arbitration shall be New Delhi.

(c) English Language

The request for arbitration, the answer to the request, the terms of reference, any written submissions, any orders and awards shall be in English and, if oral hearings take place, English shall be the language to be used in the hearings.

(d) Enforcement of Award

The Parties agree that the decision or award resulting from arbitration shall be final and binding upon the Parties and shall be enforceable in accordance with the provisions of the Arbitration Act subject to the rights of the aggrieved parties to secure relief from any higher forum.

12.3 Performance during Dispute

Pending the submission of and/or decision on a Dispute and until the arbitral award is published, the Parties shall continue to perform their respective obligations under this Agreement without prejudice to a final adjustment in accordance with such award.

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Ex. Engineer (DEMS)-II
Municipal Corporation of Delhi

ARTICLE 13

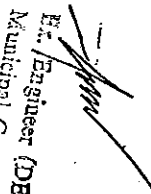
13.0 REPRESENTATIONS AND WARRANTIES

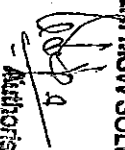
13.1 Representations and Warranties of the Concessionaire

The Concessionaire represents and warrants to MCD that:

- (a) it is duly organised, validly existing and in good standing under the laws of India;
- (b) it has full power and authority to execute, deliver and perform its obligations under this Agreement and to carry out the transactions contemplated hereby;
- (c) it has taken all necessary corporate and other action under Applicable Laws and its constitutional documents to authorise the execution, delivery and performance of this Agreement;
- (d) it has the financial standing and capacity to undertake the Project;
- (e) this Agreement constitutes its legal, valid and binding obligation enforceable against it in accordance with the terms hereof;
- (f) the execution, delivery and performance of this Agreement will not conflict with, result in the breach of, constitute a default under or accelerate performance required by any of the terms of the Concessionaire's Memorandum and Articles of Association or any Applicable Laws or any covenant, agreement, understanding, decree or order to which it is a party or by which it or any of its properties or assets are bound or affected;
- (g) there are no actions, suits, proceedings or investigations pending or to the Concessionaire's knowledge threatened against it at law or in equity before any court or before any other judicial, quasi judicial or other authority, the outcome of which may constitute Concessionaire Event of Default or which individually or in the aggregate may result in Material Adverse Effect;
- (h) it has no knowledge of any violation or default with respect to any order, writ, injunction or any decree of any court or any legally binding order of any Government Agency which may result in Material Adverse Effect;
- (i) it has complied with all Applicable Laws and has not been subject to any fines, penalties, injunctive relief or any other civil or criminal liabilities which in the aggregate have or may have Material Adverse Effect;
- (j) subject to receipt by the Concessionaire from MCD of any amount due under any of the provisions of this Agreement, in the manner and to the extent provided for under the applicable provisions of this Agreement all rights and interests of the Concessionaire in and to the Project Facilities shall pass to and vest in MCD on the Termination Date free and clear of all Encumbrances without any further act or deed on the part of the Concessionaire or MCD;
- (k) no representation or warranty by the Concessionaire contained herein or in any other document furnished by it to MCD, or to any Government Agency in relation to Applicable Permits contains or will contain any untrue statement of material fact or omits or will omit to state a material fact necessary to make such representation or warranty not misleading;
- (l) no bribe or illegal gratification has been paid or will be paid in cash or kind by or on behalf of the Concessionaire to any person to procure the Concession.
- (m) Without prejudice to any express provision contained in this Agreement, the Concessionaire acknowledges that prior to the execution of this Agreement, the Concessionaire has after a complete and careful examination made an independent evaluation of the Project Facilities, and the information provided by MCD, and has determined to its satisfaction the nature and extent of risks and hazards as are likely to

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E. Engineer (DEMS)-IV
Municipal Corporation of Delhi


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arise or may be faced by the Concessionaire in the course of performance of its obligations hereunder.

- (n) The Concessionaire also acknowledges and hereby accepts the risk of inadequacy, mistake or error in or relating to any of the matters set forth above and hereby confirms that MCD shall not be liable for the same in any manner whatsoever to the Concessionaire.

13.2 Representations and Warranties of MCD

MCD represents and warrants to the Concessionaire that:

- (a) MCD has full power and authority to grant the Concession;
- (b) MCD has taken all necessary action to authorise the execution, delivery and performance of this Agreement;
- (c) This Agreement constitutes MCD's legal, valid and binding obligation enforceable against it in accordance with the terms hereof;
- (d) There are no suits or other legal proceedings pending or threatened against MCD in respect of the Project Facilities or the Project.

13.3 Obligation to Notify Change

In the event that any of the representations or warranties made/given by a Party ceases to be true or stands changed, the Party who had made such representation or given such warranty shall promptly notify the other of the same.

For DELHI MSW SOLUTIONS LTD.

Authorised Signatory

M. Prakash (BMS)-II
Municipal Corporation of Delhi

ARTICLE 14

14.0 MISCELLANEOUS

14.1 Assignment and Charges

- (a) The Concessionaire shall not assign in favour of any person this Agreement or the rights, benefits and obligations hereunder save and except with prior consent of MCD.
- (b) The Concessionaire shall not create nor permit to subsist any Encumbrance over the Project Facilities except with prior consent in writing of MCD, which consent MCD shall be entitled to decline without assigning any reason whatsoever.
- (c) Restraint set forth in clauses (a) and (b) above shall not apply to:
 - (i) liens/encumbrances arising by operation of law (or by an agreement evidencing the same) in the ordinary course of business of the Concessionaire;
 - (ii) Pledges/hypothecation of goods/ moveable assets, revenue and receivables as security for indebtedness, in favour of the Lenders and working capital providers for the Project;
 - (iii) assignment of Concessionaire's rights and benefits under this Agreement to or in favour of the Lenders as security for financial assistance provided by them.

14.2 Interest and Right of Set Off

Any sum which becomes payable under any of the provisions of this Agreement by one Party to the other Party shall, if the same be not paid within the time allowed for payment thereof, shall be deemed to be a debt owed by the Party responsible for payment thereof to the Party entitled to receive the same. Such sum shall until payment thereof carry interest at prevailing prime lending rate of State Bank of India per annum from the due date for payment thereof until the same is paid to or otherwise realised by the Party entitled to the same. Without prejudice to any other right or remedy that may be available under this Agreement or otherwise under law, the Party entitled to receive such amount shall also have the right of set off.

Provided the stipulation regarding interest for delayed payments contained in this agreement shall neither be deemed or construed to authorise any delay in payment of any amount due by a Party nor be deemed or construed to be a waiver of the underlying breach of payment obligations.

14.3 Governing Law and Jurisdiction

This Agreement shall be governed by the laws of India. The Courts at Delhi shall have jurisdiction over all matters arising out of or relating to this Agreement.

14.4 Waiver

- (a) Waiver by either Party of any default by the other Party in the observance and performance of any provision of or obligations under this Agreement:
 - (i) shall not operate or be construed as a waiver of any other or subsequent default hereof or of other provisions or obligations under this Agreement;
 - (ii) shall not be effective unless it is in writing and executed by a duly authorised representative of such Party; and
 - (iii) shall not affect the validity or enforceability of this Agreement in any manner.
- (b) Neither the failure by either Party to insist on any occasion upon the performance of the terms, conditions and provisions of this Agreement or any obligation hereunder nor time or other indulgence granted by a Party to the other Party shall be treated or deemed as waiver/breach of any terms, conditions or provisions of this Agreement.

14.5 Survival

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Termination of this Agreement

- (a) shall not relieve the Concessionaire or MCD of any obligations already incurred hereunder which expressly or by implication survives Termination hereof, and
- (b) except as otherwise provided in any provision of this Agreement expressly limiting the liability of either Party, shall not relieve either Party of any obligations or liabilities for loss or damage to the other Party arising out of or caused by acts or omissions of such Party prior to the effectiveness of such Termination or arising out of such Termination.

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14.6 Amendments

This Agreement and the Schedules together constitute a complete and exclusive understanding of the terms of the Agreement between the Parties on the subject hereof and no amendment or modification hereto shall be valid and effective unless agreed to by all the Parties hereto and evidenced in writing.

14.7 Notices

Unless otherwise stated, notices to be given under this Agreement including but not limited to a notice of waiver of any term, breach of any term of this Agreement and termination of this Agreement, shall be in writing and shall be given by hand delivery, recognised international courier, mail, telex or facsimile transmission and delivered or transmitted to the Parties at their respective addresses set forth below:

If to MCD :

Commissioner

Municipal Corporation of Delhi

Commissioner's Office

Ambedkar Stadium, Delhi Gate

Delhi - 110002, India

Phone: (011) 23739363

If to the Concessionaire:

The Managing Director,

Fax No. _____


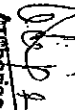
Or such address, telex number, or facsimile number as may be duly notified by the respective Parties from time to time, and shall be deemed to have been made or delivered

- (i) in the case of any communication made by letter, when delivered by hand, by recognised international courier or by mail (registered, return receipt requested) at that address, and
- (ii) in the case of any communication made by telex or facsimile, when transmitted properly addressed to such telex number or facsimile number.

14.8 Severability

If for any reason whatsoever any provision of this Agreement is or becomes invalid, illegal or unenforceable or is declared by any court of competent jurisdiction or any other

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instrumentality to be invalid, illegal or unenforceable, the validity, legality or enforceability of the remaining provisions shall not be affected in any manner, and the Parties shall negotiate in good faith with a view to agreeing upon one or more provisions which may be substituted for such invalid, unenforceable or illegal provisions, as nearly as is practicable. Provided failure to agree upon any such provisions shall not be subject to dispute resolution under this Agreement or otherwise.

14.9 No Partnership

Nothing contained in this Agreement shall be construed or interpreted as constituting a partnership between the Parties. Neither Party shall have any authority to bind the other in any manner whatsoever.

14.10 Language

All notices required to be given under this Agreement and all communications, documentation and proceedings which are in any way relevant to this Agreement shall be in writing and in English language.

14.11 Exclusion of Implied Warranties etc.

This Agreement expressly excludes any warranty, condition or other undertaking implied at law or by custom or otherwise arising out of any other agreement between the Parties and any representation by any Party not contained in a binding legal agreement executed by the Parties.

14.12 Counterparts

This Agreement may be executed in two counterparts, each of which when executed and delivered shall constitute an original of this Agreement but shall together constitute one and only the Agreement.

IN WITNESS WHEREOF THE PARTIES HAVE EXECUTED AND DELIVERED THIS AGREEMENT AS OF THE DATE FIRST ABOVE WRITTEN.

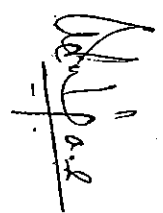
SIGNED SEALED AND DELIVERED

For and on behalf of MCD by:

(Signature) 

(Name) SAMIR DATTA

For and on behalf of CONCESSIONAIRE by:

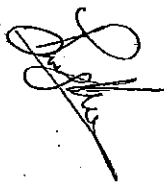
(Signature) 

(Name) B. Padmaja

(Designation) Executive Engineer
(EDS)

(Designation) DIRECTOR

In the presence of :

1) 

2) Sanyu Kumar


58/A East Goro Bypass, Mysore
Dist. 92

SCHEDULE "1"

DETAILS OF PROJECT SITE

The details of the Site shall be provided by MCD prior to execution of this agreement.

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Ex. Engineer (DEMS)-IT
Municipal Corporation of Delhi

For DELHI MSW SOLUTIONS LTD.

(Authorised Signatory)

CONSTRUCTION REQUIREMENTS FOR WASTE PROCESSING FACILITY

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1. General

- 1.1 The minimum facilities to be provided in the Waste Processing Facility which is to be implemented by the Concessionaire as part of the Project have been highlighted in this Schedule.

- 1.2 The Waste Processing Facilities shall conform to the minimum design requirements set out in this Schedule and to the MSW Rules.

2. Overall Design Parameters

2.1 Area

The area earmarked for Processing of Municipal Solid Waste, including for provision of the facilities listed under Clause 3 herein below, shall be as per the assessment of MCD (after review of all technical bids).

The location of the Waste Processing Facility shall be such as to allow access from outside the Site without transgressing the Landfill Facility.

2.2 Capacity

The Concessionaire shall design the Waste Processing Facilities so as to have a minimum capacity for Processing 700-1000 metric tonnes of Municipal Solid Waste per day throughout the Landfill Life.

3. List of Mandatory Facilities

The Concessionaire shall provide the facilities in the manner as set out under this clause ("Mandatory Waste Processing Facilities"). The Concessionaire, subject to review and approval of the same by Independent Consultant/MCD, may adopt alternate designs for the Mandatory Waste Processing Facilities.

Part "A"

3.1 Weigh Bridge

- (a) The Concessionaire shall provide one weigh bridge with two independent weighing platforms of rated capacity of 40 metric tonnes each at the entry gate of the Processing Facilities. Each weighing platform shall have minimum dimensions of 12m length and 3m width.

- (b) The weigh bridge shall meet the minimum technical specifications set out in Table 2.1 of this Schedule.

3.2 Municipal Solid Waste Inspection Area

The Concessionaire shall, for the purpose of inspection of Municipal Solid Waste by the Independent Consultant, as required under this agreement shall, provide a separate area ("Municipal Solid Waste Inspection Area"), which shall meet the minimum technical specifications set out in Table 2.2 of this Schedule.

3.3 Storm Water Drainage System

The Concessionaire shall design and implement the storm water drainage system within the Waste Processing Facility in such a manner as to ensure that

- (a) it is independent from the Leachate System (as provided in Clause 3.4 below);
- (b) the run-off rain water from the hinterland does not enter the Municipal Solid Waste storage and processing area;
- (c) there is no stagnation of rain water in the Site. **For DELHI MSW SOLUTIONS LTD.**

Ex. Engineer (DEMS)-II

Municipal Corporation of Delhi

Authorised Signatory

The drainage system shall be constructed so as to meet the minimum technical specifications set out in Table 2.3 of this Schedule.

3.4 Leachate System

(a) The Concessionaire shall,

(i) construct leachate collection tanks and provide a leachate collection network which shall meet the O&M Requirements;

(ii) ensure that the leachate from the Waste Processing Facility is carried to the Leachate Collection Tank without any stagnation (except in storage/holding tanks)

(b) The Concessionaire shall provide a leachate treatment plant ("Leachate Treatment Plant") of appropriate capacity but with a minimum initial capacity of 15cum/hour with suitable technology to ensure treatment of leachate to Inland Surface Water Standards as per IS: 2490: Part 1 1981 Tolerance Limits for Industrial Effluents. The Leachate Treatment Plant shall be designed as a modular unit and so as to allow for increase in capacity in line with the increase in leachate treatment requirement.

(c) Overall design of the leachate system should be such as to ensure that there is no percolation of the leachate into the ground and it does not come into contact with any water body.

(d) The Concessionaire however should work out the maximum leachate flow generated, depending on the maximum prevailing rainfall intensity and the landfill area, as designed by him. The designs of leachate collection and treatment system should be carried out for the peak flow, as generated during the monsoon period.

3.5 Water Supply System

The Concessionaire shall provide a water supply system adequate to meet the requirements for Processing of Municipal Solid Waste, drinking and washing purposes in accordance with Good Industry Practise.

3.6 Quality Control Laboratory

The Concessionaire shall provide a quality control laboratory with the equipment adequate to carry out the following tests:

- (a) Municipal Solid Waste analysis and characterisation
- (b) Leachate quality as per Schedule IV of MSW (M&H) Rules, 2000.
- (c) Compost quality as per Schedule IV of MSW (M&H) Rules, 2000.
- (d) Air quality as per Schedule IV of MSW (M&H) Rules, 2000.
- (e) Maturity Test for the Residual Inert Matter as set out in Article 11 of Schedule 5.

3.7 Worker Amenities

The Concessionaire shall provide workers amenities in accordance with Good Industry Practice.

3.8 Internal Roads

The Concessionaire shall provide good quality motorable roads within the Site which shall meet the minimum criteria as set out in Table 2.4.

3.9 Lighting

The Concessionaire shall provide,

- (a) adequate lighting system to achieve the lux levels, specified in the Indian Standard Codes (latest versions) of SP - 30 and IS 6665 - 1972 for the different working areas;
- (b) street lighting with permanent steel light posts for main internal roads and access roads;

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- (c) movable heavy duty focus lamps depending on the operational requirement.
- 3.10 Other Electrical Works**

The Concessionaire shall provide all electrical equipment and implement all electrical works in accordance with Good Industry Practices and as per the Drawings approved by the Independent Consultant. The Concessionaire shall provide power back-up to ensure operation of at least the following facilities:

- (a) Weigh bridge
- (b) Lighting of work area
- (c) Leachate treatment plant and circulation system
- (d) Water supply system

3.11 Boundary Wall and Fencing

- (a) The Concessionaire shall construct a boundary wall of minimum 3.5 m height, including a barbed wire fencing of 1m height, along the perimeter of the Waste Processing Facility.

- (b) There shall be only one entrance into the Waste Processing Facility from outside the Site. The Waste Processing Facility shall also be separated from the Landfill Facility by means of a boundary wall and fencing in the manner specified in sub-clause (a) hereinabove.

3.12 Green Belt

The Concessionaire shall provide a vegetative cover in a strip of width 6 m all along the boundary wall. The species of trees for providing vegetative cover shall be approved by the Independent Consultant.

3.13 Name Board

The Concessionaire shall erect two signboards, one in Hindi and the other in English, of a size not less than 2 ft. by 4 ft each, adjacent to the main entrance to the Project Facilities in a manner such that it is ordinarily visible to any person using such entrance. The signboard shall prominently display the following text in English (and its translation in Hindi) in black upper case letters on a white/yellow background:

"This property belongs to the Municipal Corporation of Delhi, and has been handed over to Ms _____ for Developing, Operating and Maintaining an Integrated Waste Processing & Engineered Sanitary Landfill Facility under a Build, Operate and Transfer Concession Agreement".

The Concessionaire shall ensure that the signboard is maintained in good condition throughout the Landfill Life.

B. Specific facilities for Waste Processing Facilities

In addition to the facilities mentioned in Part A. above, the following facilities shall be provided by the Concessionaire, based on the proposed mechanism for Processing Municipal Solid Waste.

In case of composting or related technology, the Concessionaire shall provide the following minimum facilities in addition to the facilities set out in Part A above.

3.14 Windrow Platform

The Concessionaire shall, for the purpose of Processing of Municipal Solid Waste, provide windrow platforms ("Windrows"), which shall meet the minimum technical specifications as set out in Table 2.5 of this Schedule.

OR

In case of a waste to energy or any equivalent technology, the Concessionaire shall provide the following minimum facilities in addition to the facilities set out in Part A above.

3.15 Solar Drying Yard

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For Engineer (DWV)-II
Municipal Corporation of Delhi

Authorized Signatory

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The Concessionaire shall, for the purpose of drying the segregated Municipal Solid Waste, provide a separate area, which shall meet the minimum technical specifications as set out in Table 2.6 of this Schedule.

3.16 Hot Air Generator and Hot Air Drying Area

The Concessionaire shall, for the purpose of drying the Municipal Solid Waste during rainy seasons and at times when solar drying is not sufficient, provide a Hot Air Generator and Hot Air Drying Area, which shall meet the minimum technical specifications as set out in Tables 2.7 and 2.8 of this Schedule.

The Concessionaire is free to use any technologies other than specified above, for Processing Municipal Solid Waste and shall adhere to the MSW Rules for the same.

4. Codes and Standards

4.1 The following standards in order of preference shall be adopted in consultation with the Independent Consultant, unless otherwise specified:

- (a) MSW Rules
- (b) Any other standards specified by statute and Applicable Laws
- (c) Bureau of Indian Standards (BIS)
- (d) Suitable specification/standard devised by the Independent Consultant
- (e) Any other standard proposed by the Concessionaire and approved by the Independent Consultant

4.2 All items of building works shall conform to Central Public Works Department (CPWD) specifications for Class 1 building works and standards given in the National Building Code (NBC).


5. Procedure

5.1 Before Commencement of construction

5.1.1 Prior to commencement of any construction activity, the Concessionaire shall finalise an implementation plan for the Project ("Implementation Plan") in consultation with the Independent Consultant. The Implementation Plan shall, inter alia, include:

- (a) A detailed schedule of implementation for putting up and operationalising the Project Facilities, which shall specify at least four major milestones;
- (b) The Critical Path Method (CPM)/Programme Evaluation and Review Technique (PERT) charts or similar activity planning technique/ method for monitoring. This would cover all stages/ aspects of implementation of the Project Facilities including design and engineering, procurement of materials and equipment, installation, construction and testing;
- (c) Manpower deployment plan, including the designation of key personnel for the management and supervision of all Project-related activities. (This would include the designation of suitably qualified personnel for areas such as contract administration and supervision, construction management, safety, environmental management, plant and equipment maintenance, procurement, materials management and quality control);
- (d) A broad method statement for key items (including earth works, concrete works, structural concrete work, and road works) setting out the methodology of construction, materials and construction equipment mobilisation/ utilisation plans;
- (e) Details of the quality assurance and quality control procedures; and
- (f) Format of the Monthly Project Progress Report giving details of the physical progress in implementation of the Project Facilities and operations and maintenance activities undertaken ("Monthly Project Progress Report").

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5.1.2 Prior to commencement of any construction activity, the Concessionaire shall also finalise in consultation with the Independent Consultant:

- (a) an operations and maintenance plan for the Project Facilities during the Implementation Period (O&M Plan – Implementation Period) and which shall, inter alia, include an Environmental Management Plan,
- (b) Quality Assurance Plan

5.1.3 The Concessionaire shall, in consultation with the Independent Consultant workout an appropriate schedule for submission of documents set out in **Clauses 6.1.1 and 6.1.2** above to the Independent Consultant for review.

5.1.4 Prior to commencement of construction of any of the Project Facilities, the Concessionaire shall have:

- (a) Obtained all such Applicable Permits as are necessary to commence construction of such Project Facilities;
- (b) Finalised such Drawings as are necessary and the Implementation Schedule in consultation with the Independent Consultant;
- (c) Mobilised the requisite resources, personnel and organisation necessary for the same and designated and appointed suitable officers/ representatives as it may deem appropriate with responsibility to supervise implementation of the Project and for exchange of information with the Independent Consultant and MCD;
- (d) Finalised in consultation with the Independent Consultant a method statement setting out details of the actual methods that would be adopted by the Concessionaire for the construction of such Project Facilities including details of equipment and machinery that would be used, their locations, and arrangements for conveying and handling materials;
- (e) Finalised in consultation with the Independent Consultant quality assurance and quality control procedures to cover all aspects of the work so as to ensure the desired quality. This would include establishment of a well-equipped functional laboratory.

5.1.5 The Concessionaire shall immediately upon commencement of Construction Works notify MCD of the same.

5.2 During Construction

5.2.1 The Concessionaire shall:

- (a) Ensure that the construction/ rehabilitation of the Project Facilities is undertaken with minimal inconvenience to the traffic using the existing access road to the Site.
- (b) Take precautions to avoid inconvenience to, damage to, destruction of or disturbance to any third party rights and properties;
- (c) ensure adequate safety of the personnel deployed at the Project Site which would include measures such as the provision and maintenance of barricades, and illumination during night in consultation with the Independent Consultant;
- (d) be in compliance with the Applicable Laws and Applicable Permits obtained for the Project including the clearances obtained by MCD;
- (e) Adhere to the Implementation Plan and O&M Plan-Implementation Period;
- (f) deploy adequate number of qualified and competent personnel having relevant experience and skills for implementation of the Project and interaction with the Independent Consultant/ MCD.

5.2.2 Positions and Levels

- The Concessionaire shall be responsible for:
 - (a) the accurate setting-out survey control points, lines and levels of reference;

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- (i) the correctness of the positions, levels, dimensions and alignment of all parts of the works;
- (ii) the provision of all necessary instruments, appliances and labour in connection with the foregoing responsibilities;
- (iii) If, at any time during execution of the works, any error is noticed in the position, levels, dimensions or alignment of any part of the Construction Works, the Concessionaire, on being asked to do so by the Independent Consultant, shall at his own cost, rectify such errors to the satisfaction of the Independent Consultant.

- (b) The checking of any setting-out or of any line or level by the Independent Consultant shall not in any way relieve the Concessionaire of his responsibility for the accuracy thereof and the Concessionaire shall carefully protect and preserve all benchmarks, sight rails, pegs and other materials used in setting-out the works.

5.2.3 Tests

- (a) Various tests ("Tests") would be undertaken for the Project as per the standards prescribed under MSW Rules and Bureau of Indian Standards. Where no testing methods are specified by the said standards, details of the Tests to be carried out and specifications to be achieved for the respective Project Facilities/Construction Works or part thereof shall be agreed upon with the Independent Consultant prior to construction.
- (b) Where material properties vary from or comply only marginally with the specifications contained in the Construction Requirements, the Independent Consultant shall increase the frequency of Testing as appropriate at the cost of the Concessionaire.
- (c) The Tests would be carried out at a location (place of manufacture, fabrication or preparation, at site or any specialised testing laboratory) that the Independent Consultant may reasonably require, at the cost and expense of the Concessionaire.

- (d) The Concessionaire shall provide such assistance, labour, electricity, fuels, stores, apparatus and instruments as are normally required for examining, measuring and testing any materials or plant and shall supply samples of materials, as required by the Independent Consultant to undertake Tests.

- 5.2.4 No part of the Construction Works shall be covered up or put out of view before the same has been examined by the Independent Consultant.

- 5.2.5 The Independent Consultant may from time to time require:

- (a) removal from the Project Site, within such time as may be specified in its instructions, any material, equipment, machinery or plant which, in its opinion, do not meet the standards specified in the Construction Requirements;
 - (b) Substitution/replacement of such improper material, equipment, machinery or plant;
 - (c) Re-execution, of any or part of the Construction Works which in the opinion of the Independent Consultant do not meet the standards set out in the Construction Requirements;
 - (d) the Concessionaire to make boreholes or to carry out exploratory excavation for the Project.
- 5.2.6 The Concessionaire shall mobilise adequate numbers of equipment, plants and machinery to ensure adherence to the Implementation Plan.

- 5.2.7 The Concessionaire shall arrange for all the material requirements for the Project and disposal of all material wastes. The Applicable Permits in this regard would have to be obtained by the Concessionaire. All operations shall be carried out by the Concessionaire with minimum degradation of the environment. All excessive and unsuitable excavated materials shall be stacked at appropriate dumping places or otherwise disposed of by the Concessionaire in consultation with the Independent Consultant.

5.2.8 Prior to making the request for the issue of Readiness Certificate or Provisional Readiness Certificate, the Concessionaire shall submit to the Independent Consultant/MCD the following, duly finalised in consultation with the Independent Consultant:

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(a) the Operations and Maintenance Manual for the Project ("O&M Manual") setting out in detail the standards, schedules, procedures, type, periodicity and other details of the operation and maintenance activities to be carried out for the Project during the Active Operations Period so as to meet the O&M Requirements as well as details of the management information system to be incorporated, reports to be submitted and procedure for reviews, and

(b) the Operations & Maintenance Plan ("O&M Plan") for the first year of operations.

5.3 After Completion of Construction

Upon completion of construction but prior to issue of the Readiness Certificate, the Site shall be cleared of all construction equipment, surplus materials, debris and temporary installations and shall be left in tidy and clean manner and to the satisfaction of the Independent Consultant.

5.4 Reporting Requirements and Documents to be provided

5.4.1 During the period of construction of the Project ("Implementation Period"), the Concessionaire shall submit to the Independent Consultant/ MCD, Monthly Project Progress Reports (for each calendar month or part thereof) within 5 working days of the last day of the month. The report shall review the progress made, identify slippages, if any, and project the future activities to be undertaken (including rectifications), operations and maintenance activities undertaken and would, inter alia, include the following:

- (a) Listing of working drawings/sketches submitted
- (b) Comments of Independent Consultant, if any on the working drawings/sketches submitted
- (c) Concessionaire's response to the comments on the Drawings/sketches
- (d) Listing of the "As Built" drawings submitted
- (e) Progress of pre-construction activities - mobilization of plant and equipment, personnel, site office, utility relocation etc.
- (f) Concessionaire's compliance inspection report, if any required
- (g) Constraints in construction
- (h) Progress data with "S" curves
- (i) Project data with contract detail and sectional completion details
- (j) Tests carried out, if any, and results thereof
- (k) Remedial measures taken by the Concessionaire following such tests, where required
- (l) Review of milestones and reasons for delay, if any
- (m) Suspension of construction, if any, its reasons, duration and the steps undertaken to resume construction
- (n) All actual or potential deviations from the implementation Plan
- (o) Disagreements/ Disputes, if any, and proposed measures to be taken
- (p) Maintenance activities carried out by the Concessionaire
- (q) Monthly weather report giving daily temperature maximum and minimum value, rainfall and any other significant event

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- (r) Injury to any personnel, its severity, cause and remedial measure(s) taken to avoid recurrence
 - (s) Brief report of any accident / incident within the Site, injury/fatality, property damage, cause of accident and actions taken to avoid recurrence
 - (t) Notes of meetings between the Concessionaire, the Independent Consultant and MCD highlighting critical decisions taken or agreements reached.
- 5.4.2 Within 90 days of issue of Readiness Certificate or the Provisional Readiness Certificate, as the case may be, the Concessionaire shall submit to MCD the following documents, free of cost:
- (a) three hardcopies and two copies in electronic form (two Compact Discs) of the "as-built" Drawings of the Construction Works which have been completed as on COD, duly verified by the Independent Engineer, including, but without limitation, an "as-built" survey illustrating the layout of the Project and setback lines, if any, of the buildings and structures forming part of Project Facilities reflecting the Project as actually designed, engineered and constructed. Such "as-built" Drawings shall be detailed, accurately scaled and sequentially numbered, covering all relevant engineering features, which in relation to structures shall also include cross sections in each drawing;
 - (b) copies of all geo-technical, meteorological reports, if any;
 - (c) three hardcopies and two copies in electronic form (two Compact Discs) of the Operations and Maintenance Manual.

TECHNICAL SPECIFICATIONS TABLE

(a) Table 2.1 (Weigh Bridge)

Parameter	Specifications
Type	Fitness Design, Fully Electronic Weighbridge
No. of platforms	Two
Capacity	40 MT per platform
Resolution	5 kg (Display Increment)
Size	12m x 3m
Weighing Electronics	Micro-controller type multi-processing of weighment based digital weight indicator with <ul style="list-style-type: none"> ✗ Menu driven Operations ✗ Auto Zero /Auto Zero Maintenance. ✗ Auto Gain & Full Digital Calibration ✗ Auto Calibration Check ✗ Programmable Update Rate with adjustable digital averaging and auto latching ✗ A/D Converter: 24 Bit high resolution integrated ✗ Password Security ✗ Parallel Printer Port & Serial EDP port ✗ Real Time Clock ✗ Self & Operator Diagnostics
Printer	80 Column Dot Matrix Parallel Printer
Key Board	105 keys IBM compatible key-board with interface

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[Signature]
 Municipal Corporation of Delhi

[Signature]
 Authorised Signatory

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Parameter	Specifications
Display	<ul style="list-style-type: none"> ☒ Dual Display (6 digit 7 segment LED for Weight Display and 2 x 16 Character, LCD Dot Matrix Display for message). ☒ 4 Inch Seven segment LED weight display (Jumbo Display) ☒ Polarity Indication: Negative sign in display
Data Storage	Facility to store 2000 truck information in the memory
UPS	Adequate for 1 hour operation of the weigh bridge
Weighbridge Construction	Rugged Fabricated Steel Structure, side girders, 8mm thick Top Deck Chequered Plate, Cross Girders, designed to take 100% Rated Load, 150% Safe Over Load & 200% Ultimate Load
Load Cells	<ul style="list-style-type: none"> ☒ 4 nos double ended shear beam type, IP 68 class protection capacity ☒ 12 VDC/15VDC
Software	To print Weighment slip consisting of Time, Date, Lorry Number, Product, Customer, Tare Weight, Gross Weight, Net Weight.

(b) Table 2.2 (Municipal Solid Waste Inspection Area)

Parameter	Specifications
Platform	<ul style="list-style-type: none"> ☒ Open platform constructed using non-suspended reinforced cement concrete slabs ☒ Minimum area: 50 sqm
Construction	<ul style="list-style-type: none"> ☒ Levelling of the ground shall be done with approved earth having permeability coefficient (to leachate) and measured in field not greater than 1.0×10^{-7} cm/sec and subsequently compacted at 90% modified Proctor Density ☒ 50 mm thick PCC to be provided ☒ 150 mm thick RCC flooring on top of the PCC. ☒ 2% slope shall be provided for platform ☒ Lined drains shall be provided for collection of leachate and surface run-off

(c) Table 2.3 (Storm Water Drainage System)

Parameter	Specifications
Design	<ul style="list-style-type: none"> ☒ Shall have rectangular cross section ☒ Shall be neat cement plastered ☒ Shall be as per the Drawings approved by the Independent Consultant

(d) Table 2.4 (Internal Roads)

Parameter	Specifications
Carrageway width	☒ 5 m

Parameter	Specifications
Pavement design	<ul style="list-style-type: none"> ✗ Flexible pavement with the following specifications (as per Specifications for Road and Bridge Works (latest Revision) by Ministry of Surface Transport published by Indian Roads Congress (IRC)) ✗ Sub-grade: CBR value of 5% ✗ Sub-base: 200 mm thick, sand-gravel mix of 1:1, CBR value of 20% ✗ Base course: 150 mm thick WBM in 2 layers of 75 mm each ✗ Asphalt base: 50 mm thick Bituminous Macadam laid with mechanical spreaders ✗ Seal Coat: Semi dense bituminous concrete or mixed seal surface

(c) Table 2.5 (Windrow Platform)

Parameter	Specifications
Platform	<ul style="list-style-type: none"> ✗ Open platform constructed using non-suspended reinforced cement concrete slabs ✗ The area of the Windrow shall be adequate for Processing the quantity of Municipal Solid Waste as set out in Clause 2.2 of this Schedule 2.
Construction	<ul style="list-style-type: none"> ✗ Levelling of the ground shall be done with approved earth having permeability coefficient (to leachate) and measured in field not greater than 1.0×10^{-7} cm/sec and subsequently compacted at 90% modified Proctor Density ✗ 50 mm thick PCC to be provided ✗ 150 mm thick RCC flooring on top of the PCC. ✗ Platform slabs shall be laid with adequate expansion and contraction joints to prevent leachate percolation to the ground ✗ 2% slope shall be provided for platform ✗ Lined drains shall be provided for collection of leachate and surface run-off

(d) Table 2.6 (Solar Drying Yard)

Parameter	Specifications
Platform	<ul style="list-style-type: none"> ✗ Open platform constructed using non-suspended reinforced cement concrete slab ✗ Average drying days: 3 days ✗ The area of the solar drying yard shall be adequate for processing the quantity of waste as set out in Clause 2.2 of this Schedule 2.
Construction	<ul style="list-style-type: none"> ✗ Levelling of the ground shall be done with approved earth having permeability coefficient of 1.0×10^{-7} cm/sec and subsequently compacted to 95% modified Proctor Density ✗ 50 mm thick PCC to be provided ✗ 150 mm thick RCC flooring on top of the PCC.

For DELHIAN SIN SOLUTIONS LTD.

Tn. Engineer (DBMS)-II
Date

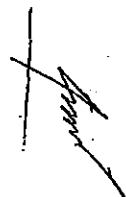
Parameter	Specifications
	<ul style="list-style-type: none"> Platform slabs shall be laid with adequate expansion and contraction joints to prevent leachate percolation to the ground 2% slope shall be provided for platform Lined drains shall be provided for collection of leachate and surface run-off

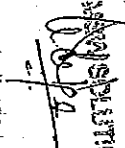
(g) Table 27 (Hot Air Generator Area)

Parameter	Specifications
Platform	<ul style="list-style-type: none"> Open platform constructed using non-suspended reinforced cement concrete slab Suitable RCC foundations to support the Hot Air Generator, FD fan, burning chamber, ash removal & handling system
Construction	<ul style="list-style-type: none"> Leveling of the ground shall be done with approved earth and subsequently compacted to 95% modified Proctor Density 50 mm thick PCC to be provided 150 mm thick RCC flooring on top of the PCC. Platform slabs shall be laid with adequate expansion and contraction joints to prevent leachate percolation to the ground 2% slope shall be provided for platform Lined drains shall be provided for collection of leachate and surface run-off

(h) Table 28 (Hot Air Drying Area)

Parameter	Specifications
Construction	<ul style="list-style-type: none"> RCC framed structure with AC sheet truss roofing with good ventilation and roof chimney to remove the hot air Machine foundation for conveyors, hot air conveyance system Fire extinguishers and fire hydrants


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CONSTRUCTION REQUIREMENT FOR LANDFILL FACILITY

1 General

- 1.1 The minimum facilities to be provided in the Landfill Facility which is to be implemented by the Concessionaire as part of the Project have been highlighted in this Schedule.
- 1.2 The Landfill Facilities shall conform to the minimum design requirements set out in this Schedule and to the MSW Rules.

2. Landfill Design and Construction

2.1 Area

The Concessionaire shall utilise the Site, excluding the Waste Processing Facility area, for the purpose of setting up the Landfill Facility in accordance with the Construction Requirements and O&M Requirements.

2.2 Survey and Excavation

- (a) The Concessionaire shall undertake detailed topographic survey within the proposed Engineered Sanitary Landfill area at 5m grids (such levels being designated as "Natural Ground Level") and submit the same to the Independent Consultant.

- (b) The Concessionaire shall excavate to a depth from the existing Natural Ground Level ("NGL") based on the results of the detailed topographic survey.

- (c) The Concessionaire shall, except with the prior written approval of the Independent Consultant, carry out excavation of area adequate for at least 4 months of Landfilling.

2.3 Composite Liner System

- 2.3.1 The Concessionaire shall provide a composite liner system at bottom of the landfill, which shall consist of the following:

- (a) Drainage layer of 50 cm thick granular soil material of permeability value of 1×10^{-2} cm/sec.

- (b) A 1.5mm thick Grade 1 smooth HDPE liner as per IS: 10889-1984 Specification for High Density Polyethylene Films

- (c) A 900 mm thick compacted soil amended with additives as per IS: 6186-1986 Specification for Bentonite to reach the required permeability coefficient, (to leachate) and measured in field, 1×10^{-7} cm/sec.

2.4 Intermediate Liner System

The Concessionaire shall, in accordance with the O&M Requirements, provide an Intermediate Liner, which shall consist of a 450 - 600 mm thick compacted soil amended with additives as per IS: 6186-1986 to reach the required permeability value 1×10^{-7} cm/sec.

2.5 Daily Cell Cover

The Concessionaire shall, in accordance with the O&M Requirements, at its own cost and expense provide the Daily Cell Cover which shall consist of a 100 mm thick compacted soil layer over a 2 m thick layer of MSW amended with additives as per IS: 6186-1986 to reach the required permeability value not greater than 1×10^{-7} cm/sec.

2.6 Final Cover System

The Concessionaire shall, in accordance with the O&M Requirements, provide the Final Cell Cover which shall consist of:

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- (a) Barrier Soil Layer of 600mm thick compacted soil amended with additives as per IS: 6186-1986 to achieve a permeability value not greater than 1×10^{-7} cm/sec.

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- (b) Deleted

- (c) Drainage Layer of 150mm thick granular soil material of permeability value not greater than 1×10^{-2} cm/sec

- (d) Vegetative Layer of 450mm thick with good clay soil as per MSW Rules and as approved by the Independent Consultant.

2.7 Leachate Collection and Removal System ("LCRS")

2.7.1 The Concessionaire shall provide the LCRS, which shall consist of:

- (a) a leachate drainage layer consisting of 500 mm thick granular soil material of permeability value of 1×10^{-2} cm/sec with a slope of 2%.
- (b) 100mm dia HDPE feeder pipes ("Feeder Pipes") with a maximum lateral spacing of 30 m.
- (c) 150mm dia HDPE header pipes ("Header Pipes") with a maximum lateral spacing of 50 m.
- (d) a HDPE main header pipe ("Main Header Pipe") of size 250mm dia, which will collect leachate from the header pipes and discharge into a day sump.
- (e) leachate collection tanks and a leachate collection network which shall meet the O&M Requirements.

2.7.2 The leachate from the Landfill Facility should be carried to the Leachate Collection Tank without any stagnation (except in storage/holding tanks)

2.7.3 Overall design of the leachate system should be such as to ensure that there is no percolation of the leachate into the ground and it does not come into contact with any water body.

2.8 Gas Recovery and Greenhouse Gas Mitigation System ("GRGS")

2.8.1 The Concessionaire shall, in accordance with the O&M Requirements, provide the GRGS, which shall consist of a gas venting layer 200mm thick granular soil material of permeability value of 1×10^{-2} cm/sec, and adheres to Applicable Law.

2.8.2 GRGS shall be as approved by the Independent Consultant.

3. List of Other Mandatory Facilities

The Concessionaire shall also mandatorily provide the facilities in the manner as set out under this clause ("Mandatory Landfill Facilities"): The Concessionaire may, subject to review and approval of the same by Independent Consultant/MCD, adopt alternate designs for the Mandatory Landfill Facilities.

3.1 Weigh Bridge

- (a) The Concessionaire shall provide one weigh bridge with two independent weighing platforms of rated capacity of 40 metric tonnes each at the entry gate to the Landfill Facility. Each weighing platform shall have minimum dimensions of 12m length and 3m width.


- (b) The weigh bridge shall meet the minimum technical specifications set out in Table 2.1 of Schedule D.

3.2 Storm Water Drainage System

- (a) The Concessionaire shall design and implement a storm water drainage system within the Landfill Facility in such a manner as to ensure that

- (i) it is independent from the Leachate System;

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(ii) the run-off rain water from the hinterland does not enter the Municipal Solid Waste storage and processing area;

(iii) there is no stagnation of rain water in the Site.

(b) The drainage system shall be constructed so as to meet the minimum technical specifications set out in Table 2.3 of Schedule D.

3.3 Water Supply System

The Concessionaire shall provide a water supply system adequate to meet the requirements for Land filling, drinking and washing purposes in accordance with Good Industry Practice.

3.4 Quality Control

The Concessionaire shall ensure provision of equipment adequate to carry out the following tests:

- (a) Air quality (SPM, RPM, CO, Methane, SO_x, NO_x)
- (b) Ground water quality
- (c) Leachate quality

3.5 Worker Amenities

The Concessionaire shall provide workers amenities in accordance with Good Industry Practice.

3.6 Internal Roads

The Concessionaire shall provide good quality motorable roads within the Landfill Facility which shall meet the minimum criteria as set out in Table 2.4 of Schedule D.

3.7 Lighting

The Concessionaire shall provide,

- (a) adequate lighting system to achieve the lux levels, specified in the Indian Standard Codes (latest versions) of SP – 30 and IS 6665 – 1972 for the different working areas;
- (b) street lighting with permanent steel light posts for main internal roads and access roads;
- (c) movable heavy duty focus lamps depending on the operational requirement.

3.8 Other Electrical Works

The Concessionaire shall provide all electrical equipment and implement all electrical works in accordance with Good Industry Practices and as per the Drawings approved by the Independent Consultant. The Concessionaire shall provide power back-up to ensure operation of at least the following facilities:

- (a) Weigh bridge
- (b) Lighting of work area
- (c) Leachate circulation system
- (d) Water supply system

3.9 Boundary Wall and Fencing

(a) The Concessionaire shall construct a wire mesh fencing of minimum 3.5 meters height along the perimeter of the Landfill Facility.

(b) There shall be only one common entry-cum-exit point into the Landfill Facility with such entry-cum-exit point being from the Waste Processing Facility.

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3.10 Green Belt

The Concessionaire shall provide a vegetative cover in a strip of width 6 meters all along the fencing specified under Clause 3.9 hereinabove. The species of trees for providing vegetative cover shall be approved by the Independent Consultant.

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4. Codes and Standards


4.1 The following standards in order of preference shall be adopted in consultation with the Independent Consultant, unless otherwise specified:

- (a) MSW Rules
- (b) Any other standards specified by statute and Applicable Laws
- (c) Bureau of Indian Standards (BIS)
- (d) Suitable specification/standard devised by the Independent Consultant
- (e) Any other standard proposed by the Concessionaire and approved by the Independent Consultant

4.2 All items of building works shall conform to Central Public Works Department (CPWD) specifications for Class 1 building works and standards given in the National Building Code (NBC),

5 Procedure

The terms and conditions shall be as set out under Clause 5 of Schedule 2.


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OPERATIONS AND MAINTENANCE REQUIREMENTS

WASTE PROCESSING FACILITY

1 General

- (a) The Concessionaire shall comply with the O&M Requirements set out in this Schedule. In doing so, the Concessionaire shall ensure that the Waste Processing Facilities are maintained to the standards and specifications, as set out in the Construction Requirements and also meet the other requirements, if any, set out in the Agreement.
- (b) In the design, planning and implementation of all works and functions associated with the operation and maintenance of the Waste Processing Facilities, the Concessionaire shall take all such actions and do all such things (including without limitation, organising itself, adopting measures and standards, executing procedures including inspection procedures, and engaging contractors, if any, agents and employees) in such manner, as will:
- (i) ensure the safety of personnel deployed on and users of the Waste Processing Facilities or part thereof;
 - (ii) keep the Waste Processing Facilities from undue deterioration and wear;
 - (iii) permit unimpaired performance of statutory duties and functions of any party in relation to the Project;
- (c) During the Active Operations Period and till the date of hand back of the Waste Processing Facilities, the Concessionaire shall, in respect of the Waste Processing Facilities, ensure that:
- (i) applicable and adequate safety measures are taken;
 - (ii) the Project Facilities are kept free from undue deterioration and undue wear;
 - (iii) adverse effects on the environment and to the owners and occupiers of property and/or land in the vicinity of the Waste Processing Facilities, due to any of its actions, is minimised;
 - (iv) any situation which has arisen or likely to arise on account of any accident or other emergency is responded to as quickly as possible and its adverse effects controlled/minimised;
 - (v) disturbance or damage or destruction to property of third party by operations of the Waste Processing Facilities is controlled/minimised;
 - (vi) data relating to the operation and maintenance of the Waste Processing Facilities is collected;
 - (vii) all materials used in the maintenance, repair and replacement of any of the Waste Processing Facilities shall meet the Construction Requirements;
 - (viii) the personnel assigned by the Concessionaire have the requisite qualifications and experience and are given the training necessary to enable the Concessionaire meet the O&M Requirements.
- 2 Operations and Maintenance Manual and O&M Plans
- (a) As provided in Schedule D, prior to making application for the Readiness Certificate for the Project the Concessionaire shall finalise in consultation with the Independent Consultant:
- (i) the O&M Manual (including the formats for the reports to be submitted during the Active Operations Period and the Post Closure Period)

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- (ii) the O&M Plan for the first year of operations.
- (b) Six weeks prior to the anniversary of COD each year, the Concessionaire shall submit to the Independent Consultant and MCD an annual O&M Plan for the next year of operations.

3 Weighment, Acceptance and Rejection of Municipal Solid Waste

3.1 Weighment of Municipal Solid Waste

3.1.1 The Concessionaire shall provide for a weigh-bridge in accordance with the Construction Requirements for weighment of the Municipal Solid Waste supplied by MCD.

3.1.2 The Concessionaire shall record at least the following data:

- (a) Date of operation
- (b) Registration number of the truck supplying Municipal Solid Waste/ Lorry number
- (c) Total laden weight of the truck
- (d) Time of entry of the truck
- (e) Circle from which Municipal Solid Waste has been collected
- (f) Total unladen weight of the truck
- (g) Net weight of Municipal Solid Waste
- (h) Time of exit of the truck

3.1.3 The format for recording shall be finalised in consultation with the Independent Consultant, and the same shall be documented as part of the O&M Manual.

3.1.4 In the event that the weigh-bridge provided in accordance with sub-clause 3.1.1 above is not in operation, the following methodology shall, unless modified with mutual consent of the Parties, be adopted for computing the weight of Municipal Solid Waste supplied by MCD:

$$W_s = W_{avg} * N_t$$

Where,

W_s is the weight of Municipal Solid Waste supplied during the period for which the weigh-bridge was inoperable

W_{avg} is the average weight of Municipal Solid Waste carried per truck based on the data available for the six Months prior to the Month in which the weigh-bridge was rendered inoperable.

N_t is the number of truck-loads of Municipal Solid Waste accepted by the Concessionaire during the period for which the weigh-bridge was inoperable.

4 Production of Compost

4.1 The Concessionaire may adopt any such process and/or methods as it considers necessary for the Processing of Municipal Solid Waste in order to ensure that the compost produced after such Processing is certified as being Fit for Sale (in the manner described under sub-clause 4.2 below).

4.2 Unless modified with mutual consent by the Parties, the compost shall be sampled and tested in the manner as set out below:

The compost proposed to be sold or otherwise disposed off shall be placed in at least ten heaps of almost equivalent size. One random sample from each of these heaps shall be taken. Such random samples shall then be thoroughly mixed and a single random sample taken and tested. In case the composition of this single random sample satisfies the criteria set out in the table 4.1, it shall be certified as being "Fit for Sale".

Table 4.1

S.No	Parameter	Standard
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	(concentration not to exceed)
1	Arsenic 10 ppm ¹
2	Cadmium 5 ppm
3	Chromium 50 ppm
4	Copper 300 ppm
5	Lead 100 ppm
6	Mercury 0.15 ppm
7	Nickel 50 ppm
8	Zinc 1000 ppm
9	pH 5.5 to 8.5
10	C:N ratio 20 to 40

4.3 The Concessionaire shall not sell or otherwise dispose off any compost produced after Processing without sieving using a wire mesh having a maximum mesh size of 14 mm square or any such similar equipment.

4.4 The Concessionaire shall inspect the sieving equipment once every three months and carry out any maintenance necessary to minimise wear and tear and ensure that the mesh size is in accordance with the specifications laid down in the Agreement.

4.5 The Concessionaire shall process the rejects of the Processing Facility and also the compost that get produced as a byproduct, if they are not Fit for Sale, before disposal of the same.

5 Production of RDF

5.1 The Concessionaire may adopt any such process and/or methods as it considers necessary for the conversion of Municipal Solid Waste into RDF in order to ensure that the RDF produced after such conversion is certified as being Fit for Sale (in the manner described in table 4.2 below).

Table 4.2

Sr. No.	Parameter	Standard
	Physical Characteristics	
1	Calorific Value	Minimum 3500 Kcal / Kg
2	Density	Minimum 1 MT / Cum
3	Ash Content	15%
4	Moisture Content	10%
	Burning Characteristics	
5	Smoke	White smoke in initial burning
6	Sulphur	NIL

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¹ Parts per million

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Mandatory Facilities

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During the Active Operations Period and until the handback of the Waste Processing Facilities, the Concessionaire shall, unless suitably modified with mutual consent and duly documented in the O&M Plan and/or O&M Manual, operate and maintain the Waste Processing Facilities as per table 4.3.

A. Common Facilities for Waste Processing

Table 4.3

S. No.	Description of Mandatory Facility	Operation and Maintenance Standard
1	Weigh Bridge	<input checked="" type="checkbox"/> Calibration certification from manufacturer/ independent certification agency (approved by the Independent Consultant) to be renewed every year <input checked="" type="checkbox"/> Maximum period of non-operation: 5 days <input checked="" type="checkbox"/> Data recording and reporting format to be decided in consultation with the Independent Consultant and to form part of the O&M Plan and/or O&M Manual.
2	Municipal Solid Waste Inspection Area	<input checked="" type="checkbox"/> Leachate drain around the Municipal Solid Waste Inspection Area is free from clogging and allows unobstructed flow of leachate. Maintain shape & scope of the leachate drains in the designed manner during the lifetime <input checked="" type="checkbox"/> No cracks/ruptures in the top RCC layer
3	Pulverisation & Additive / Binder Storage and Mixing Room	<input checked="" type="checkbox"/> Regular preventive maintenance of conveyors, pulveriser, mixer, drier etc <input checked="" type="checkbox"/> Room shall be regularly maintained for leakage, painting etc
4	RDF Conversion Room	<input checked="" type="checkbox"/> Regular preventive maintenance of conveyors, machinery like hydraulic press, moulds / dyes, drier etc <input checked="" type="checkbox"/> Room shall be regularly maintained for leakage, painting etc
5	RDF Storage Room	<input checked="" type="checkbox"/> Room shall be regularly maintained for leakage, painting etc
6	Storm Water Drainage System	<input checked="" type="checkbox"/> All storm water drains are free from clogging and allows unobstructed flow of water <input checked="" type="checkbox"/> Maintain shape & scope in the designed manner during the lifetime <input checked="" type="checkbox"/> No stagnation of rain water on the Site
7	Leachate Collection and Drainage System	<input checked="" type="checkbox"/> No overflow of leachate from the Leachate Collection Tanks <input checked="" type="checkbox"/> Cracks or leaks in the leachate collection and drainage system to be sealed immediately <input checked="" type="checkbox"/> Should be free from clogging and allows unobstructed flow of leachate
8	Leachate Treatment Plant	<input checked="" type="checkbox"/> Maximum period of shut-down: 24 hrs.

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S. No.	Description of Mandatory Facility	Operation and Maintenance Standard
		<p>☑ Treated leachate to meet standards as specified in table 4.4 below</p> <p>☑ No untreated leachate to be let out from the Site, unless it meets the standards as set out in the table 4.4 of this Schedule</p>
9	Water Supply System	<p>☑ Water for drinking purposes to meet IS :10500</p> <p>☑ Water supply for gardening and flushing to meet Inland Surface Water standards as per Central Public Health and Environmental Engineering Organisation (CPHEEO)</p>
10	Quality Control Laboratory	<p>☑ Quality and calibration certification from manufacturer/independent certification agency (approved by the Independent Consultant) to be renewed every year</p> <p>☑ Maximum period of non-operation: 5 days</p> <p>☑ Data recording and reporting format to be decided in consultation with the Independent Consultant and to form part of the O&M Plan and/or O&M Manual.</p>
11	Internal Roads	☑ The main roads shall be pot-hole free and in good motorable condition
12	Lighting and other electrical works	☑ Minimum lux level of 20 in the area of operation (in case of 2 shift operations)
13	Boundary Wall and Fencing	<p>☑ Any breach in the boundary wall and fencing to be brought to the notice of the Independent Consultant immediately and to be sealed within 1 day</p> <p>☑ Boundary wall and fencing to be inspected at least once every week and rejects (paper, plastics etc.), if any, found trapped in the fencing to be removed promptly</p>
14	Green Belt	☑ Maintained in accordance with O&M Plan and O&M Manual

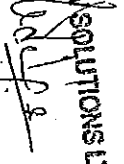
Table 4.4 (Standard for Treated Leachate)

S.No	Parameter	Standard (Maximum)	Units
1	PH	5.5 – 9.0	
2	Suspended Solids	100	Ppm
3	Dissolved Solids-Inorganic	2100	Ppm
4	Arsenic (as As)	0.2	Ppm
5	Ammonical nitrogen (as N)	50	Ppm
6	Total Kjeldahl Nitrogen (asN)	100	Ppm
7	Cadmium (as Cd)	2	Ppm
8	Copper (as Cu)	3	Ppm
9	Total Chromium (as Cr)	2	Ppm
10	Lead (as Pb)	0.1	Ppm

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S.No	Parameter	Standard (Maximum)	Units
11	Mercury (as Hg)	0.01	Ppm
12	Nickel (as Ni)	3	Ppm
13	Cyanide (as CN)	0.2	Ppm
14	Fluoride (as F)	2	Ppm
15	Zinc (as Zn)	5	Ppm
16	Chloride (as Cl)	1000	Ppm
17	Phenolic compounds (as C ₆ H ₅ OH)	1	Ppm
18	BOD (3 days at 27° C)	30	Ppm
19	COD	250	Ppm


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B. Specific Waste Processing Facilities

1	Windrow Platform	<input checked="" type="checkbox"/> Leachate drain around the Municipal Solid Waste Inspection Area is free from clogging and allows unobstructed flow of leachate. Maintain shape & scope of the leachate drains in the designed manner during the lifetime <input checked="" type="checkbox"/> No cracks in the top RCC layer
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OR

In case conversion of Municipal Solid Waste into refuse derived fuel ("RDF") is envisaged, the Concessionaire shall provide the following minimum facilities.


1	Solar Drying Yard	<input checked="" type="checkbox"/> Leachate drain around the Solar Drying Yard is free from clogging and allows unobstructed flow of leachate. Maintain shape & scope of the leachate drains in the designed manner during the lifetime. <input checked="" type="checkbox"/> No cracks in the top RCC layer <input checked="" type="checkbox"/> No Stagnation of rainwater on the Site.
2	Segregated Waste Storage Yard	<input checked="" type="checkbox"/> No cracks in the top RCC layer <input checked="" type="checkbox"/> No Stagnation of rainwater on the Site.
3	Hot Air Generator	<input checked="" type="checkbox"/> Regular preventive maintenance of forced draft fan, burner, coal & dried Municipal Solid Waste feeder, ash handling system, chimney etc <input checked="" type="checkbox"/> The platform area shall be kept clean without any cracks on the surface.
4	Hot Air Drying Room	<input checked="" type="checkbox"/> Regular preventive maintenance of conveyors, exhaust fans etc <input checked="" type="checkbox"/> Room shall be regularly maintained for leakage, painting etc
5	Dried Municipal Solid Waste Segregation Room	<input checked="" type="checkbox"/> Regular preventive maintenance of conveyors, magnetic separator, de-stoner etc <input checked="" type="checkbox"/> Room shall be regularly maintained for leakage, painting etc
6	Dried Municipal Solid Waste Storage Yard	<input checked="" type="checkbox"/> No cracks in the top RCC layer <input checked="" type="checkbox"/> No Stagnation of rainwater on the Site.

7. Routine Maintenance Standards

7.1 In order to ensure smooth and uninterrupted operations, routine maintenance of the Project Facilities shall include but not be limited to:

- (a) prompt repairs of the weigh-bridge, windrow platforms, leachate collection drainage and treatment system, electrical items, drains, internal roads, seiving machinery, lighting and fencing;
- (b) replacement of equipment/consumables, horticultural maintenance and repairs to equipment, structures and other civil works which are part of the Project Facilities;
- (c) maintaining the shape, scope, full cross-section of the stormwater drainage system and leachate collection and drainage system;

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- (d) keeping the Project Facilities in a clean, tidy and orderly condition and taking all practical measures to prevent damage to the Project Facilities or any other property on or near the Site;
- (e) undertaking maintenance works in accordance with the O&M Plan and O&M Manual;
- (f) preventing, with the assistance of law enforcement agencies, where necessary, any unauthorised entry to and exit from and any encroachments including any encroachments on the Site;
- (g) taking all reasonable measures for the safety of all the workmen, material, supplies and equipment brought to the Site. Explosives, if any, shall be stored, transported and disposed of by the Concessionaire in accordance with Applicable Laws/Applicable Permits.

In case conversion of Municipal Solid Waste into RDF is envisaged, the Concessionaire shall carry out the following minimum activities in addition to those set out above:

- 7.2 In order to ensure smooth and uninterrupted operations, routine maintenance of the RDF Facility shall include but not be limited to:

- (a) Prompt repairs of the weigh-bridge, Solar Drying Yard, Municipal Solid Waste Receiving Area, Segregated Waste Storage Yard, Hot Air Generator platform, Dried Municipal Solid Waste Segregation Room & Storage area, Pulverisation, Additives / Binder Storage cum mixing area, RDF conversion room and storage, leachate collection drainage and treatment system, hot air generator, screens, conveyors, destoner, magnetic separator, mixer, blower, pulveriser, RDF machinery & other mechanical equipments electrical items, drains, internal roads, lighting and fencing;
- (b) replacement of equipment/consumables, horticultural maintenance and repairs to equipment, structures and other civil works which are part of the RDF Facility;
- (c) maintaining the shape, scope, full cross-section of the stormwater drainage system and leachate collection and drainage system;
- (d) keeping the RDF Facility in a clean, tidy and orderly condition and taking all practical measures to prevent damage to the RDF Facility or any other property on or near the Site;
- 7.3 The following standards in order of preference shall be adopted in consultation with the Independent Consultant, unless otherwise specified:

- (a) MSW Rules
- (b) Any other standards specified by statute and Applicable Laws
- (c) Bureau of Indian Standards (BIS)
- (d) Suitable specification/standard devised by the Independent Consultant
- (e) Any other standard proposed by the Concessionaire and approved by the Independent Consultant

7.4 The Concessionaire, for the purpose of routine maintenance shall, in consultation with the Independent Consultant, set forth such criteria as to conform to good international standards and Good Industry Practice for sound maintenance of the Project Facilities.

7.5 The Concessionaire shall regularly carry out the necessary preventive maintenance activities for the Project Facilities to ensure adherence to the Construction Requirements/ specifications.

8 Emergency Maintenance

8.1 The Emergency Response Protocol ("ERP") shall be developed by the Concessionaire in consultation with the Independent Consultant. This shall be a part of the O&M Manual developed by the Concessionaire.

8.2 The ERP shall set out steps to be taken and measures to be adopted by the Concessionaire in responding to dealing with Emergency including those situations related

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to vehicle accidents involving personal injuries or fatalities, property damage and force majeure as follows:

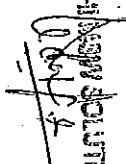
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- (a) In the event of an Emergency, the Concessionaire shall immediately carry out an inspection of the area affected by the Emergency. Where Emergency has necessitated closure of the Project Facilities or part thereof, the Concessionaire shall promptly carry out any repair works necessary to restore the Project Facilities to safe condition and in any event shall carry out such works before the affected area of the Project Facilities is re-opened to for normal operations.
 - (b) The Concessionaire shall ensure that sufficient staff, plant, equipment and materials, including without limitation medical assistance are available to respond to Emergency within reasonable period at all times during the Active Operations Period.
- 8.3 In case of Emergency, the Concessionaire shall
- (a) carry out such emergency maintenance and repairs as may be required to repair the damages, if any, in consultation with the Independent Consultant and where required under the supervision of the police in order to ensure that the Project Facilities are returned to normal operating standards as quickly as possible
 - (b) take all necessary measures to minimise pollution in accordance with the procedure specified in the O&M Plan/ Environmental Management Plan.

9 Reporting

- (a) The Concessionaire shall ensure that MCD and Independent Consultant is provided with adequate information and forewarned of any event or any other matter affecting the Project Facilities to enable them to control/minimise any adverse consequences.
- (b) The frequency and formats for the reports to be submitted shall be finalised in consultation with the Independent Consultant and form part of the O&M Plan and O&M Manual.
- (c) The following data should form part of the reports submitted by the Concessionaire:
 - (i) Circle wise quantity of Municipal Solid Waste received
 - (ii) Municipal Solid Waste characterisation
 - (iii) Leachate generation
 - (iv) Rainfall
 - (v) Compost / Pellets quality test reports
- (d) The Concessionaire shall furnish to MCD three copies of "as-built" Drawings of any construction undertaken after COD.


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FOR DELIVERY SOLUTIONS LTD.

A Division of For Delivery Solutions Ltd.

OPERATIONS AND MAINTENANCE REQUIREMENTS FOR LANDFILL FACILITY

1 General

- (a) The Concessionaire shall comply with the O&M Requirements set out in this Schedule. In doing so, the Concessionaire shall ensure that the Landfill Facilities are operated and maintained to the standards and specifications as set out in the Construction Requirements and also meet the other requirements, if any, set out in the Agreement.
- (b) In the design, planning and implementation of all works and functions associated with the operation and maintenance of the Landfill Facility, the Concessionaire shall take all such actions and do all such things (including without limitation, organising itself, adopting measures and standards, executing procedures including inspection procedures, and engaging contractors, if any, agents and employees) in such manner, as will :
 - (i) ensure the safety of personnel deployed on and users of the Landfill Facility or part thereof;
 - (ii) keep the equipment and machinery employed at the Landfill Facility from undue deterioration and wear;
 - (iii) permit unimpaired performance of statutory duties and functions of any party in relation to the Project;
- (c) During the Concession Period, the Concessionaire shall, in respect of the Landfill Facility, ensure that :
 - (i) applicable and adequate safety measures are taken;
 - (ii) adverse effects on the environment and to the owners and occupiers of property and/or land in the vicinity of the Landfill Facility, due to any of its actions, is minimised;
 - (iii) any situation which has arisen or likely to arise on account of any accident or other emergency is responded to as quickly as possible and its adverse effects controlled/minimised;
 - (iv) disturbance or damage or destruction to property of third party by operations of the Landfill Facility is controlled/minimised;
 - (v) data relating to the operation and maintenance of the Landfill Facility is collected;
 - (vi) all materials used in the operation, maintenance of any of the Landfill Facility shall meet the Construction Requirements;
 - (vii) the personnel assigned by the Concessionaire have the requisite qualifications and experience and are given the training necessary to enable the Concessionaire meet the O&M Requirements.

2 Operations and Maintenance Manual and O&M Plans

The Concessionaire shall finalise the O&M Plan and the O&M Manual for the Landfill Facility in the manner as set out under Clause 2 of Schedule F.

3 Sampling and Testing

- 3.1 Unless modified with mutual consent by the Parties, the Residual Inert Matter shall be sampled and tested in the manner as set out below:

The Residual Inert Matter proposed to be taken to the Landfill Facility shall be placed in at least ten heaps of almost equivalent size of maximum 50 MT each. The Independent Consultant shall take ten random samples from each of these heaps. These random samples shall then be thoroughly mixed and a single random sample taken and tested as per the procedure set out in Appendix 1 of this Schedule. In case the composition of this

For DELHI LANDWATER SOLUTIONS LTD,

single random sample satisfies the criteria set out in Article 11 of this Schedule, it shall be certified as being "Fit for Land filling".

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- 3.2 Any sample which fails to be certified as "Fit for Land filling" shall be rejected and cause the rejection of the all the heaps from which it was sourced and the Concessionaire shall subsequently act in accordance with the direction of the Independent Consultant with regard to such rejected heaps.

- 3.3 Notwithstanding any certification of the Independent Consultant, the Concessionaire shall be solely responsible for the composition of the material disposed in the Landfill Facility.

4 Weighment

- 4.1 The Concessionaire shall provide for a weighbridge in accordance with the Construction Requirements.

- 4.2 The Concessionaire shall not take any Residual Inert Matter into the Landfill Facility without having obtained the "Fit for Land filling" certificate from the Independent Consultant. The Concessionaire shall plan his operations in a manner such that the Landfill Waste is taken into the Landfill Facility only between 9 AM and 6 PM or as mutually agreed upon between MCD and the Concessionaire.

- 4.3 The Concessionaire shall ensure that the quantum of Landfill Waste does not exceed 25 % of the garbage entered at the gate of processing and land fill site.

- 4.4 The Concessionaire shall record the following minimum data with regard to the Landfill Waste:

- (a) Date of operation
- (b) Total laden weight of the truck
- (c) Time of entry of the truck
- (d) Total unladen weight of the truck
- (e) Time of exit of the truck

- 4.5 In the event that the weigh-bridge provided in accordance with sub-clause 4.1 hereinabove is not in operation, the Concessionaire shall use the weighbridge provided at the entry gate of the Waste Processing Facility for weighment of the Residual Inert Matter. Such weighment and transport of the Residual Inert Matter shall be done only under the direct supervision of the Independent Consultant.

- 4.6 The procedure for weighment of the Landfill Waste and certification by the Independent Consultant shall be as set out in the O&M Plan and the O&M Manual.

- 4.7 The detailed format for the Tipping Fee Statement, to be submitted in accordance with the Agreement, shall be as per the O&M Plan and the O&M Manual.

5. Landfill Operation

5.1 Intermediate liner system

- (a) The Concessionaire shall provide a liner layer ("Intermediate Liner") before the onset of monsoon leaving only a temporary unrestored sloping face.

- (b) The Intermediate Liner shall be as per the Construction Requirements.

5.2 Daily Cell Cover

On each day during the Active Operations Period, the Concessionaire shall compact the Landfill Waste and cover the same ("Daily Cell Cover") in the manner as specified in the Construction Requirements.

5.3 Special Operational Conditions

Except with specific approval from the Independent Consultant, the Concessionaire shall ensure the following:

- (a) Provide a benching (terrace) of 10m width for every 5 m height of filling within the Engineered Sanitary Landfill.
- (b) The slope of the Engineered Sanitary Landfill face shall not exceed 1:3 and shall be in accordance with the guidelines of CPHEEO manual.

5.4 Landfill Closure and Final Cover

- (a) The Concessionaire shall demonstrate the actual stability by considering the strength parameters of compacted inert material for every 5 m of benching.
- (b) Upon reaching a height of the Engineered Sanitary Landfill such that the area at the top of the Engineered Sanitary Landfill is 30% of the area of the base of the Engineered Sanitary Landfill, or before starting the final cover, whichever is earlier, the Concessionaire shall promptly intimate the Independent Consultant and MCD providing the following details:
 - (i) The estimated quantity of Landfill Waste that can be Landfilled in future
 - (ii) The probable date till which Municipal Solid Waste can be accepted by the Waste Processing Facility
 - (iii) The plan for laying the final cover ("Final Cover") for the Landfill Facility

- (c) The Concessionaire shall provide the Final Cover in accordance with the Construction Requirements.

5.5 Vegetative cover

- (a) The Concessionaire shall, in accordance with MSW Rules ensure the provision of a vegetative cover after laying of the Final Cover.
- (b) The selection of the varieties of plants and trees to be planted shall be decided in consultation with the Independent Consultant/MCD and shall form part of the Post Closure Maintenance Plan.

5.6 Leachate Collection and Removal System ("LCRS")

- (a) The Concessionaire shall ensure that there is no overflow of leachate from the LCRS.
- (b) The Concessionaire shall ensure that all leachate drains are free from clogging and allows unobstructed flow of leachate.
- (c) No untreated leachate to be let out from the Site, unless it meets the standards as set out in Table 4.4 of Schedule F.

5.7 Gas Recovery and Greenhouse Gas Mitigation System ("GRGS")

- 5.7.1 The Concessionaire shall ensure that the greenhouse gas emissions from the Landfill Facility conforms to the permissible limits as per Applicable Law;

- (b) collect information pertaining to the quantum of greenhouse gases produced from the Engineered Sanitary Landfill.

5.8 Post-Closure Maintenance Plan

- 5.8.1 The Concessionaire shall maintain the Landfill Facility during the Post Closure Period in accordance with the Post-Closure Maintenance Plan.

- 5.8.2 At least three months prior to the completion of any Financial Year during the Post Closure Period, the Concessionaire shall prepare and submit for review and approval by the Independent Consultant/MCD, the Post Closure Maintenance Plan for the subsequent Financial Year.

- 5.8.3 Post-closure maintenance shall be in accordance with Applicable Laws and shall involve periodical inspections, of at least once every three months, of the Landfill Facility to monitor land surface care, leachate collection, and methane control by way of flaring and to maintain flaring equipment.

- 5.8.4 Post-closure maintenance shall also involve investigations for detection of adverse environmental impacts, if any, and implementation of measures for mitigation of the same.

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6. Environment Monitoring System

6.1.1 Monitoring shall be carried out in the following four zones:

- On and within the Engineered Sanitary Landfill
- In the unsaturated subsurface zone (vadose zone) around the Engineered Sanitary Landfill.
- In the ground water (saturated) zone around the Engineered Sanitary Landfill.
- In the atmosphere/local air above and around the Engineered Sanitary Landfill.

6.1.2 The quality of air (at the gas control facilities within the Site, at buildings on or near the Engineered Sanitary Landfill and along any preferential migration paths) shall meet the standards ("Acceptable Levels") as set out in table 5.1.

Table 5.1

S.No.	Description	Acceptable Levels
1.	Sulphur dioxide	120 μ g/m ³ (24 hours)
2	Suspended Particulate Matter	500 μ g/m ³ (24 hours)
3	Methane	Not to exceed 25% of Lower Explosive Limit (equivalent to 650 mg/m ³).
4	Ammonia daily average	0.4 mg/m ³ (24 hours)
5	Carbon monoxide	2 mg/m ³ (1 hour average) 1 mg/m ³ (8 hour average)

6.1.3 The quality of ground water (one source in the upstream of Engineered Sanitary Landfill and three sources on the downstream of Engineered Sanitary Landfill, within 50 m from the site and to a depth tapping the entire unsaturated zone and minimum 4 m down in confined aquifer) in the saturated zone shall meet the standards ("Acceptable Levels") as set out in Table 5.2.

Table 5.2

S.No.	Parameter	Standard	Units
1	Arsenic	0.02	mg/l
2	Cadmium	0.01	mg/l
3	Chromium	0.05	mg/l
4	Copper	0.005	mg/l
5	Cyanide	0.05	mg/l
6	Lead	0.05	mg/l
7	Mercury	0.001	mg/l
8	Nickel	-	
9	Nitrate as NO ₃	10.0	mg/l
10	pH	6.5-8.5	
11	Iron	0.3	
12	Dissolved solids	500	mg/l
13	Chlorides	250	mg/l
14	Sulphate (as CO ₃)	200	mg/l
15	Zinc	5.0	

S.No	Parameter	Standard	Units
16	Phenolic Compounds (as C_6H_5OH)	0.001	mg/l
17	Total hardness (as $CaCO_3$)	250 or lower	mg/l

6.1.4 The frequency of monitoring shall be as per the table 5.3.

Table 5.3

S.No	Description	Frequency
During Active Operations Period		
1	Leachate quantity	Daily
2	Leachate quality	Weekly
3	Ground water quality – within the site	Once in 3 months
4	Ground water quality – outside the site	Once in 6 months
5	Air Quality	Once every 2 months
During Post Closure Period		
1	Movement of the Engineered Sanitary Landfill cover	Yearly
2	Leachate quantity	Quarterly
3	Leachate quality	Quarterly
4	Ground water quality – within the site	Once in 6 months
5	Ground water quality – outside the site	Once in 6 months
6	Air Quality	Once in 6 months
7	Gas quality	Once in 6 months

6.1.5 The Concessionaire shall provide the instruments/equipment required for carrying out the environmental monitoring tests set out hereinabove.

7. Mandatory Facilities

The Concessionaire shall, unless suitably modified in the O&M Plan and/or the O&M Manual, operate and maintain the mandatory facilities in accordance with the standards set out in the table 5.4.

Table 5.4

S.No	Description of Mandatory/Facility	Operation and Maintenance Standard
1	Weigh Bridge	<input checked="" type="checkbox"/> Calibration certification from manufacturer/independent certification agency (approved by the Independent Consultant) to be renewed every year <input checked="" type="checkbox"/> Maximum period of non-operation: 5 days <input checked="" type="checkbox"/> Data recording and reporting format to be decided in consultation with the Independent Consultant and to form part of the O&M Plan and/or O&M Manual.
2	Storm Water Drainage System	<input checked="" type="checkbox"/> All storm water drains are free from clogging and allows unobstructed flow of water <input checked="" type="checkbox"/> Maintain shape & scope in the designed manner during the lifetime <input checked="" type="checkbox"/> No stagnation of rain water on the Landfill Facility

For DELHI NGWSOLUTIONS LTD.

Authorised Signatory

S. No.	Description of Mandatory Facility	Operation and Maintenance Standard
3	Leachate Collection and Drainage System	<input checked="" type="checkbox"/> No overflow of leachate from the Leachate Collection Tanks <input checked="" type="checkbox"/> Cracks or leaks in the leachate collection and drainage system to be sealed immediately <input checked="" type="checkbox"/> Should be free from clogging and allows unobstructed flow of leachate <input checked="" type="checkbox"/> No untreated leachate shall be let out from the Site unless it meets the standards as set out in Table 4.4 of Schedule 4
4	Water Supply System	<input checked="" type="checkbox"/> Water for drinking purposes to meet IS 10500 <input checked="" type="checkbox"/> Water supply for gardening and flushing to meet Inland Surface Water standards as per Central Public Health and Environmental Engineering Organisation (CPHEEO)
5	Quality Control Laboratory	<input checked="" type="checkbox"/> Quality and calibration certification from manufacturer/independent certification agency (approved by the Independent Consultant) to be renewed every year <input checked="" type="checkbox"/> Maximum period of non-operation : 5 days <input checked="" type="checkbox"/> Data recording and reporting format to be decided
6	Internal Roads	<input checked="" type="checkbox"/> The main roads shall be pot-hole free and in good motorable condition
7	Lighting and other electrical works	<input checked="" type="checkbox"/> adequate lighting system to achieve the lux levels, specified in the Indian Standard Codes. (latest versions) of SP - 30 and IS 6665 - 1972 for the different working areas (in case of 2 shift operations)
8	Boundary Fencing	<input checked="" type="checkbox"/> Any breach in the boundary fencing to be brought to the notice of the Independent Consultant immediately and to be sealed within 1 day <input checked="" type="checkbox"/> Boundary fencing to be inspected at least once every week and rejects (paper, plastics etc.), if any, found trapped in the fencing to be removed promptly
9	Green Belt	<input checked="" type="checkbox"/> Maintained in accordance with O&M Plan and O&M Manual

8. Routine Maintenance Standards

The terms and conditions shall be as set out under Clause 7 of Schedule 4.

9. Emergency Maintenance

The terms and conditions shall be as set out under Clause 8 of Schedule 4.

10. Reporting

- (a) The Concessionaire shall ensure that MCD and Independent Consultant is provided with adequate information and forewarned of any event or any other matter affecting the Project Facilities to enable them to control/minimise any adverse consequences.

- (b) The frequency and formats for the reports to be submitted shall be finalised in consultation with the Independent Consultant and form part of the O&M Plan and O&M Manual.

[Signature]

For DELHI WATER SUPPLY

[Signature]

- (c) The following data should form part of the reports submitted by the Concessionaire:

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- (i) Residual Inert Matter quality test reports (including moisture content)
 - (ii) Leachate generation
 - (iii) Emission of greenhouse gases
 - (iv) Ground Water quality (both within and outside the Site)
- (d) The Concessionaire shall also maintain a system for tracking the location of Landfilling operations within the Engineered Sanitary Landfill on a daily basis.
- (e) The Concessionaire shall furnish to MCD three copies of "as-built" Drawings of any construction undertaken after COD.

11. Maturity Test

Maturity tests shall include the following two tests. The Concessionaire shall carry out Maturity Tests as per procedure set out below to ascertain whether the Residual Inert Matter is Fit for Landfilling. Only the Residual Inert Matter which has passed the following two tests shall be termed as fit for Landfilling:

11.1 Starch Iodine Test

The Concessionaire shall carry out Maturity Test as per procedure set out below to ascertain whether the Residual Inert Matter is Fit for Landfilling. Only the Residual Inert Matter which is completely degraded is termed as Fit for Landfilling.

Objective	To determine the maturity of the composting sample
Reagents & Chemicals	<ol style="list-style-type: none"> 1. 35% perchloric acid (V/V) 2. 2% Iodine solution 3. Dissolve 4 gms of Iodine (AR grade) and 8 gms of Potassium iodide in 500 ml distilled water
Method	<ol style="list-style-type: none"> 1. Weigh 1 gm of air dried sample in a 100 ml beaker 2. Add 20ml of 35% perchloric acid beaker, keep the mixture to react for 20 minutes 3. Filter the slurry through Whatman No. 542 filter paper in a 250 ml conical flask 4. Add 2 ml of iodine solution to the filtrate and observe the colour change
Results	<p>Golden Yellow Colour Indicates complete degradation</p> <p>Reddish Brown Colour Indicates incomplete degradation</p> <p>Greenish Blue to Blue Colour Indicates no degradation</p>

11.2 Carbon – Nitrogen Ration (CN Ratio) Test

The samples shall be tested for the C/N ratio (Organic water-soluble Carbon/ Organic water-soluble nitrogen). The C/N ratio shall be less than 7. If this acceptance criteria is not fulfilled all the heaps of Residual Inert Matter is "not fit for landfilling" and further stabilization is required. They will be recycled back to the treatment facility. The Test of C/N Ratio will be carried out regularly on daily basis. The results of the tests should be documented on daily basis and certified by the Independent Consultant.

The Analysis Procedure for finding the C/N Ratio for the MSW is based on the following Standards

For DEHY MSW SOLUBILIZATION

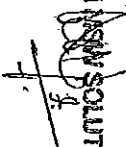
Engineer (DEMS)-I
-All Commissions are valid

Authorized Signature

Carbon / Nitrogen Ratio : IS 10158, 1982, Reaffirmed 1995, Serial No 4 and 6. The procedure as laid down in the standard to be followed.

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Ex. Engineer (BEMS)-II
Municipal Corporation of Delhi


For DELHI SEWER SOLUTIONS LTD.
APPROVED & SIGNED

TIPPING FEE

(Amount in Rupees)

Year	Tipping Fee Rate per tonne (in figures)	Tipping Fee Rate per tonne (in words)

1. Tipping Fee = $T_r \times W_{LF}$
Where,
 T_r is the Tipping Fee Rate per tonne
 W_{LF} is the actual quantity of MSW and Silt at Location "A" in tonnes


Ex. Engineer (DEMS)-II
Municipal Corporation of Delhi

FOR DELHI MSW SOLUTIONS LTD.

Authorized Signatory

PERFORMANCE SECURITY

(PROFORMA OF BANK GUARANTEE)²

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THIS DEED OF GUARANTEE executed on this the _____ day of _____ at _____ by _____ (Name of the Bank) having its Registered office at _____ hereinafter referred to as "the Guarantor" which expression shall unless it be repugnant to the subject or context thereof include successors and assigns;

In favour of

Municipal Corporation of Delhi, a body corporate constituted under the Delhi Municipal Corporation Act, 1957 (hereinafter referred to as "MCD") which expression shall, unless repugnant to the context or meaning thereof include its administrators, successors or assigns.

WHEREAS

By the Concession Agreement ("the Concession Agreement") being entered into between MCD and _____ a company incorporated under the Companies Act, 1956, having its registered office at _____ ("the Concessionaire"), the Concessionaire has been granted the Concession to implement the project envisaging design, financing, construction, operations, maintenance and transfer of an integrated Municipal Solid Waste Processing Facility, and Engineered Sanitary Landfill Facility for the City of Delhi at Narela Bawana (hereinafter referred to as "the Project").

A. In terms of Article 6.1 of the Concession Agreement, the Concessionaire is required to furnish to MCD, an unconditional and irrevocable bank guarantee for an amount of Rs. 500,00,000/- (Rupees Five Crores Only) as security for due and punctual performance / discharge of its obligations under the Concession Agreement, relating to achievement of COD by the Concessionaire.

B. At the request of the Concessionaire, the Guarantor has agreed to provide bank guarantee, being these presents guaranteeing the due and punctual performance/discharge by the Concessionaire of its obligations relating to the Project.

NOW THEREFORE THIS DEED WITNESSETH AS FOLLOWS:

Capitalised terms used herein but not defined shall have the meaning assigned to them respectively in the Concession Agreement.

1. The Guarantor hereby irrevocably guarantees the due and punctual performance by M/s _____ (hereinafter called "the Concessionaire") of all its obligations relating to the Project and in connection with achievement of COD by the Concessionaire in accordance with the Concession Agreement.
2. The Guarantor shall, without demur, pay to MCD sums not exceeding in aggregate Rs. 500,00,000/- (Rupees Five Crores Only), within five (5) calendar days of receipt of a written demand therefor from MCD stating that the Company has failed to meet its obligations under the Concession Agreement. The Guarantor shall not go into the veracity of any breach or failure on the part of the Concessionaire or validity of demand so made by MCD and shall pay the amount specified in the demand notwithstanding any direction to the contrary given or any dispute whatsoever raised by the Concessionaire or any other Person. The Guarantor's obligations hereunder shall subsist until all such demands are duly met and discharged in accordance with the provisions hereof.

2 To be issued by a Scheduled Bank in India

FOR DELHI MCD SOLUTIONS LTD.

21/01/2019

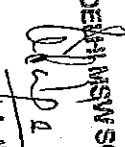
3. In order to give effect to this Guarantee, MCD shall be entitled to treat the Guarantor as the principal debtor. The obligations of the Guarantor shall not be affected by any variations in the terms and conditions of the Concession Agreement or other documents or by the extension of time for performance granted to the Concessionaire or postponement/non exercise/ delayed exercise of any of its rights by MCD or any indulgence shown by MCD to the Concessionaire and the Guarantor shall not be relieved from its obligations under this Guarantee on account of any such variation, extension, postponement, non exercise, delayed exercise of any of its rights by MCD or any indulgence shown by MCD, provided nothing contained herein shall enlarge the Guarantor's obligation hereunder.
4. This Guarantee shall be irrevocable and shall remain in full force and effect until _____³ unless discharged/released earlier by MCD in accordance with the provisions of the Concession Agreement. The Guarantor's liability in aggregate be limited to a sum of Rs. 500,00,000/- (Rupees Five Crores Only).
5. This Guarantee shall not be affected by any change in the constitution or winding up of the Concessionaire/the Guarantor or any absorption, merger or amalgamation of the Concessionaire/the Guarantor with any other Person.
6. The Guarantor has power to issue this guarantee and discharge the obligations contemplated herein, and the undersigned is duly authorised to execute this Guarantee pursuant to the power granted under _____.

IN WITNESS WHEREOF THE GUARANTOR HAS SET ITS HANDS HEREUNTO ON THE DAY, MONTH AND YEAR FIRST HEREINABOVE WRITTEN.

SIGNED AND DELIVERED

by _____ Bank
by the hand of Shri _____
its _____ and authorised official.


E. Engawa (CHIEF-M)
Municipal Corporation of Delhi

For DEW MSW SOLUTIONS LTD.

Authorised Secretary

3 24 months from the date of signing the Concession Agreement

SCHEDULE OF PAYMENTS TO THE CONCESSIONAIRE FROM THE POST CLOSURE
PERFORMANCE ACCOUNT

Time Period from Commencement of Post Closure Period	Amount Payable to Concessionaire
End of 1 st quarter	1/60 th of account balance
End of 2 nd quarter	1/59 th of account balance
End of 3 rd quarter	1/58 th of account balance
End of 4 th quarter	1/57 th of account balance
End of 5 th quarter and so on	1/56 th of account balance and so on

For DELHI MGN SOLUTIONS LTD
Authorized Signatory

For DELHI MGN SOLUTIONS LTD
Authorized Signatory

Date: _____

LETTER OF AUTHORISATION

To Whomsoever it may Concern

This is to confirm that to pursuant to the Concession Agreement dated _____ entered into between the Municipal Corporation of Delhi and _____ ("the Concessionaire"), the Concessionaire has been authorised to construct, operate and maintain an Integrated Municipal Solid Waste Processing Facility and Engineered Sanitary Landfill Facility at for the city of Delhi at Narela Bawana and for that purpose, to apply for and obtain all approvals, licenses and permits required therein and to avail the utilities such as power water, telecommunication and any other

For MSW Solutions,

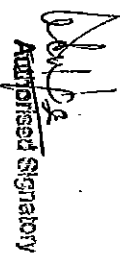


Executive Engineer (Projects), D.E.M.S.
Municipal Corporation of Delhi



Ex. Engineer (DEMS)-II
Municipal Corporation of Delhi

For DELHI MSW SOLUTIONS LTD.



Authorised Signatory

SUBSTITUTION AGREEMENT

SCHEDULE "10"

2/4

THIS SUBSTITUTION AGREEMENT is entered into on this the _____ day of _____ (Month) -
--- (Year) at _____.

AMONGST,

Municipal Corporation of Delhi, a body corporate constituted under the Delhi Municipal Corporation Act, 1957 (hereinafter referred to as "MCD") which expression shall, unless repugnant to the context or meaning thereof include its administrators, successors or assigns, OF THE ONE PART,

AND

M/s. _____, a company incorporated under the provisions of the Companies Act, 1956 and having its Registered Office at _____, hereinafter referred to as "the Concessionaire" (which expression shall unless repugnant to the context or meaning thereof include its successors and assigns),

AND

YYYY (Financial Institution/ Bank) having its Registered Office/Head Office at _____
_____ hereinafter referred to as "the Lender".

OR

ZZZZ (Financial Institution/Bank) having its Registered Office/Head Office at _____
_____ acting for and on behalf of the Lenders listed in Schedule I hereto (hereinafter referred as "the Lenders' Representative".

WHEREAS,

MCD desires to establish an Integrated Municipal Solid Waste Processing Facility and Engineered Sanitary Landfill Facility for the City of Delhi at Narela Bawana through private participation on Build, Operate and Transfer basis and the same has been approved by the MCD Council (hereinafter referred to as "the Project");

A. By the Concession Agreement dated _____ entered into between MCD and the Concessionaire (hereinafter referred to as "the Concession Agreement") the Concessionaire has been granted the Concession to implement the Project on BOT basis;

B. With a view to facilitate financing of the Project by the Concessionaire, MCD and the Concessionaire have agreed to enter into a Substitution Agreement being these presents with the Lender/s/Lenders' Representative.

For DELHI MSW SOLUTIONS LTD.

Authorized Signatory

Ex. Engineer (DEWASHY)
Municipal Corporation of Delhi

SUBSTITUTION AGREEMENT

THIS SUBSTITUTION AGREEMENT is entered into on this the _____ day of _____ (Month) -
-- (Year) at _____.

AMONGST,

Municipal Corporation of Delhi, a body corporate constituted under the Delhi Municipal Corporation Act, 1957 (hereinafter referred to as "MCD") which expression shall, unless repugnant to the context or meaning thereof include its administrators, successors or assigns, OF THE ONE PART,

AND

M/s. _____, a company incorporated under the provisions of the Companies Act, 1956 and having its Registered Office at _____, hereinafter referred to as "the Concessionaire" (which expression shall unless repugnant to the context or meaning thereof include its successors and assigns),

AND

YYYY (Financial Institution/Bank) having its Registered Office/Head Office at _____
_____ hereinafter referred to as "the Lender".

OR

ZZZZ (Financial Institution/Bank) having its Registered Office/Head Office at _____
_____ acting for and on behalf of the Lenders listed in Schedule I hereto (hereinafter referred as "the Lenders' Representative".

WHEREAS,

MCD desires to Door to Door collection, Transfer, Transportation, developing an integrated Municipal Solid Waste Processing Facility and Engineered Sanitary Landfill Facility as per MSW (M&H) Rules 2000, for Select Zones in Delhi, on a long-term Build, Operate and Transfer (BOT) basis, for Municipal Solid Waste in Civil Lines Zone, Rohini zone and Vasant Kunj, Dwarka-Pappankala and the same has been approved by the MCD (hereinafter referred to as "the Project");

- A. By the Concession Agreement dated _____ entered into between MCD and the Concessionaire (hereinafter referred to as "the Concession Agreement") the Concessionaire has been granted the Concession to implement the Project on BOT basis;
- B. With a view to facilitate financing of the Project by the Concessionaire, MCD and the Concessionaire have agreed to enter into a Substitution Agreement being these presents with the Lender/s/Lenders' Representative.

NOW, THEREFORE, THIS AGREEMENT WITNESSETH AS FOLLOWS:

ARTICLE 1

DEFINITIONS AND INTERPRETATION

1.1 Definitions

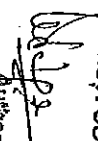
In this Agreement the following words and expressions shall, unless repugnant to the context or meaning thereof, have the meaning hereafter respectively assigned to them.

"Agreement" means this agreement and includes any amendment or modification made to this agreement in accordance with the provisions hereof.

"Financial Assistance" means the financial assistance set forth in Schedule I hereto, agreed to be provided by the Lender(s) to the Concessionaire for financing the Project.

(DEMS)-M
Municipal Corporation of Delhi

For DELHI MSW SOLUTIONS LTD.


Authorized Signatory 1

"Lender(s)" means the financial institutions/banks whose name(s) and addresses are set out in Schedule I hereto.

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"Residual Concession Period" means the period which shall be the remainder of the Concession Period computed from the date of substitution of the Concessionaire by the Selectee.

"Selectee" means a Person proposed by the Lender/Lender's Representative pursuant to this Agreement and approved by MCD for substituting the Concessionaire for the Residual Concession Period, in accordance with the provisions of this Agreement.

"Suspension Period" means the period commencing from the expiry of the Cure Period specified in the Preliminary Notice and ending on the date on which all formalities connected with substitution of the Concessionaire by the Selectee including handing over of Project Site/Project Facility, in accordance with this Agreement are completed and the substitution has become effective.

- 1.2 Capitalised terms used in this Agreement but not defined shall have the meaning assigned to them respectively in the Concession Agreement.

ARTICLE 2

SUBSTITUTION OF THE CONCESSIONAIRE BY THE SELECTEE

- 2.1 Lender's right to Substitute

MCD and the Concessionaire hereby irrevocably agree that upon occurrence of a Concessionaire Event of Default, the Lender(s) shall, without prejudice to any other rights or remedies available to them under law/Financing Documents and without being required to exercise or exhaust such rights or remedies, have the right to seek substitution of the Concessionaire by Selectee for the Residual Concession Period under the Concession Agreement in accordance with the provisions of this Agreement.

- 2.2 Preliminary Notice of Termination

MCD shall as soon as possible but in any case not later than 15 days of its knowledge of the occurrence of the Concessionaire Event of Default issue Preliminary Notice of Termination to the Concessionaire in terms of Article 10 of the Concession Agreement, with a copy thereof simultaneously to the Lenders. Provided, if the Concessionaire Event of Default is the one set out in Article 10 of the Concession Agreement, MCD shall not be obliged to issue Preliminary Termination Notice until receipt by MCD of the recall notice issued by the Lender(s) to the Concessionaire

- 2.3 Suspension of Concession and Takeover of the Project Facility

The Concessionaire irrevocably agrees that if the Cure Period specified in the Preliminary Notice of Termination lapses without the Concessionaire Event of Default having been cured, the Concession shall effective from the expiry of such Cure Period stand suspended, without any further notice or other act of MCD being required, and that MCD shall have the right to enter upon and takeover the Project Site/Project Facility and to take all such steps as are necessary for the continued operation and maintenance of the Project Facility, subject to servicing the payment obligations under the Financing Documents, and the substitution of the Concessionaire by the Selectee in accordance with this Agreement. The Concessionaire hereby irrevocably consents to the takeover of the Project Facility/ Project Site by MCD forthwith upon suspension becoming effective.

2.4 Substitution Notice

MCD and the Concessionaire hereby irrevocably agree that in the event of the Concessionaire's failure to cure the Event of Default specified in the Preliminary Notice of Termination, the Lender/Lenders' Representative may, within 30 (thirty) days of the expiry of the Cure Period specified therein, notify MCD and the Concessionaire about the intention of the Lender(s) to seek substitution of the Concessionaire by the Selectee for the Residual Concession Period (the "Substitution Notice").

2.5 Criteria for selection of the Selectee.

The Lender/ Lenders' Representative shall in addition to any other criteria that it may deem fit and necessary, apply the following criteria in the selection of the Selectee:

- (a) the Selectee shall possess the net worth, experience, technical capability and managerial ability to perform and discharge all the residual duties, obligations and liabilities of the Concessionaire in respect of the Concession, under the Concession Agreement;
- (b) the Selectee shall have the capability and shall unconditionally consent to assume the liability for the payment and discharge of dues, if any, of the Concessionaire to MCD under and in accordance with the Concession Agreement, and also payment of amounts due to the Lender(s) under the Financing Documents upon terms and conditions as agreed to between the Selectee and the Lenders.

ARTICLE 3


MODALITY FOR SUBSTITUTION

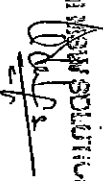
3.1 Modalities for Substitution.

The following modalities shall be followed for substitution of the Concessionaire by the Selectee pursuant to this Agreement:

- (a) The Lender(s)/Lenders' Representative shall be entitled, within a period of 120 (one hundred twenty) days from the date of delivery of the Substitution Notice pursuant to the preceding Article 2.2 to invite or procure offers either through private negotiations or public auction or process of tender or otherwise from the eligible Persons, for the substitution of the Concessionaire by the Selectee and propose to MCD for its approval, the Selectee (the "Proposal"). The Proposal of the Lender/Lender's Representative shall contain the particulars and information in respect of the Selectee, particulars of the amounts due to the Lenders under the Financing Documents, the terms of Substitution and such data and information as would be necessary and relevant for MCD to decide as to the acceptability of the Selectee. The Lender/ Lender's Representative shall provide to MCD such additional information and clarification in respect of any data, particulars or information contained in the Proposal, as MCD may reasonably require.

- (b) The Proposal shall be accompanied by an unconditional undertaking of the Selectee to the effect that it shall upon acceptance by MCD of the Proposal observe, comply with, perform and fulfill the residual terms, conditions and covenants of the Concession Agreement as if the Selectee had been the Concessionaire under the Concession Agreement, and to assume, take over, discharge and pay the Concessionaire's obligations under the Financing Documents on the terms and conditions agreed to by the Selectee with the Lenders. The Selectee shall also undertake to enter into such documents and writings with MCD and the Lender(s) as may be necessary or required to give effect to the substitution of the Concessionaire by the Selectee.

By  Rajender (DEMS)-II
Principal Corporation of Delhi

FOR DELHI MCD SOLUTIONS

Authorized Signatory

- (c) MCD shall convey to the Lender/Lenders' Representative its acceptance or otherwise of the Selectee within 30(thirty) days of (a) the date of receipt of the Proposal by MCD, or (b) the date of receipt of the additional information and clarifications in respect of any data, particulars or information comprised in the Proposal, provided by the Lender/Lender's Representative to the MCD, whichever is later.

- (d) At any time prior to the acceptance of the Selectee by MCD pursuant to this Agreement, MCD may require the Lender/Lenders' Representative to satisfy it as to the eligibility of the Selectee and the decision of MCD as to acceptance or rejection of any Selectee (which shall be reasonable), shall be final, conclusive and binding on the Lender(s), the Selectee and the Concessionaire. In the event that MCD fails to communicate its acceptance or otherwise or the objections if any it has to the acceptance of the Proposal/ the Selectee within a period of 30 days prescribed in preceding sub-article (iii), MCD shall be deemed to have accepted the Proposal/ the Selectee

- (e) The rejection of the Selectee if made by MCD shall be reasoned and be made after hearing the Lender/Lenders' Representative. Following the rejection of the Proposal, the Lender/Lenders' Representative shall have the right to submit a fresh Proposal, proposing another Selectee, within 30 days of receipt of communication regarding rejection of the Selectee previously proposed. The provisions of preceding sub-article (iii) and (iv) shall apply mutatis mutandis to such fresh Proposal.

- (f) If MCD accepts the Proposal/fresh Proposal, MCD shall take all necessary steps to substitute the Concessionaire by the Selectee by amendment of the Concession Agreement or by execution of fresh agreement or such other writing as may be required or necessary to give effect to the Substitution of the Concessionaire by the Selectee for the Residual Concession Period.

- (g) The substitution of the Concessionaire by the Selectee shall be deemed to be complete upon the Selectee executing all necessary documents and writings with or in favour of MCD and the Lender(s) so as to give full effect to the terms and conditions of substitution, subject to which the Selectee has been accepted by the Lender(s) and MCD and upon the delivery by MCD of the Project Site/ Project Facility to the Selectee. Upon the substitution becoming effective pursuant to this sub-article all the rights of the Concessionaire under the Concession Agreement shall cease to exist. Provided nothing contained in this sub-article shall prejudice any pending/subsisting claims of the Concessionaire against MCD or any claim of MCD against the Concessionaire and the Selectee shall incur no liability or consequence on account of any previous breach/default and shall subject to the terms and conditions of the substitution, have a period of 90 days to cure any breach/default subsisting on the date of substitution and required or agreed to be cured.

- (h) The decision of the Lenders and MCD in the selection of the Selectee shall be final and binding on the Concessionaire and shall be deemed to have been made with the concurrence of the Concessionaire. The Concessionaire hereby expressly waives all rights to object to or challenge such selection of the Selectee on any ground whatsoever.

3.2 Termination and Termination Payment.

- (a) Where the Lender/Lenders' Representative (on behalf of all the Lenders) communicates in writing that (i) the Lender/ Lender's Representative does not intend to seek substitution of the Concessionaire, or (ii) that the Lender/Lenders' Representative has not been able to find suitable Selectee or (iii) that MCD has declined to accept the Selectee proposed by the Lender/Lenders' Representative, MCD shall proceed to terminate the Concession and to make Termination Payment, in accordance with the provisions of the Concession Agreement

- (b) Nothing contained in these presents shall mean or be interpreted as provision of any guarantee or surety by MCD and it is expressly agreed that MCD has not provided any