



**Bhubaneswar Municipal  
Corporation**



**Government of Odisha**

## **CONCESSION AGREEMENT**

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**BETWEEN**

**BHUBANESWAR MUNICIPAL CORPORATION**

**Vivekananda Marg, Bhubaneswar - 751014**

**AND**

**ESSEL BHUBANESWAR MSW LIMITED**

**Essel House, B-10, Lawrence Road, Industrial Area, New Delhi - 110035**

**FOR**

**Development of a Regional Municipal Solid Waste Management  
(MSW) Facility for treating the MSW collected from the city of  
Bhubaneswar on Design, Build, Finance, Operate and Transfer (the  
"DBFOT") basis**

**CONCESSION AGREEMENT SIGNED ON**

**May 29, 2014**

**Housing & Urban Development Department, Government of Odisha**

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## **PART I- PRELIMINARY**





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#### CONCESSION AGREEMENT

THIS AGREEMENT is made on this 29<sup>th</sup> day of May, Two Thousand and Fourteen at Bhubaneswar, Odisha, India.

BETWEEN

Bhubaneswar Municipal Corporation, a Municipal Corporation established vide Housing & Urban Development Department Notification No. 24148/dated 28.7.1994 and operating under Orissa Municipal Corporation Act of 2003 and having its offices at Vivekanda Marg, Gautam Nagar, Bhubaneswar – 751014, acting through the Municipal Commissioner (hereinafter referred to as the “BMC” or “Authority” which expression shall, unless repugnant to the context or meaning thereof, mean and include its successors and assigns) of the FIRST PART;

AND

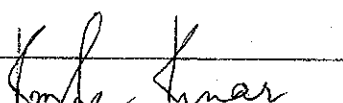
ESSEL BHUBANESWAR MSW LIMITED, a company incorporated in India under the Companies Act of 1956 and having its registered office at Essel House, B-10, Lawrence Road, Industrial Area, New Delhi - 110035, Delhi, INDIA (hereinafter referred to as the “Concessionaire”, which expression shall, unless repugnant to the context or meaning thereof, mean and include its successors and assigns) of the SECOND PART

BMC and Concessionaire are hereinafter referred to individually as the “Party” and collectively as the “Parties”

WHEREAS,

(A) By Seventy Fourth Amendment to the Constitution of India (with effect from 1<sup>st</sup> June 1993), Part IXA was inserted which inter-alia introduced the concept of local self-governance by urban local bodies

Concession Agreement

  
Municipal Commissioner

Bhubaneswar Municipal Corporation

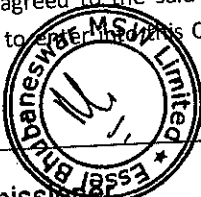


("ULBs" or "Municipalities"). Article 243W divested powers and responsibilities on the municipalities for performance of functions and implementation of schemes as may be entrusted to them including those in relation to the matters listed in the Twelfth Schedule of the Constitution of India. Public health, sanitation conservancy and solid waste management have been provided as few of the activities in Twelfth Schedule which are required to be under taken by Municipalities.

- (B) The Ministry of Environment and Forests (MoEF) under the aegis of Government of India (GoI), has formulated the Municipal Solid Waste (MSW) Rules 2000 ("MSW Rules"), which provides that every municipal authority shall within the territorial area of municipality, be responsible for implementation of MSW Rules and for any infrastructure development for collection, storage, segregation, transportation, processing and disposal of Municipal Solid Wastes ("MSW Services"). Accordingly, the ULBs are required to perform their obligatory duties within the provision of their respective Acts and also to provide MSW Services in accordance with MSW Rules and also to protect the environment and public health of their citizens and public in general.
- (C) To facilitate the implementation of the above mandate and recognizing the need for supporting ULBs in implementation of the above mandate, the Department of Housing and Urban Development (H&UDD), Government of Odisha proposed the development of a Regional MSW Processing and Disposal facility at Bhuasuni on Public Private Partnership (PPP) basis for treatment and disposal of municipal solid waste generated in the cities of Bhubaneswar and Cuttack;
- (D) Authority, authorized by H&UDD vide letter no 16761/HUD/13-HUD-65-REFM-17-SCH-007/3013 (Vol-II) dated 15th May 2013, had accordingly invited proposals by its Request for Proposals No. E.E.II BMC04/2013-14 dated 12/06/2013 (the "Request for Proposal" or "RFP") for selection of bidders for construction, operation and maintenance of the Regional Municipal Solid Waste Management Facility for treating the MSW collected from the city of Bhubaneswar and Cuttack (the "Project") on DBFOT basis wherein the bidding consortium comprising Essel Infraprojects Limited and Rochem Separation System (India) Private Limited (collectively the "Consortium") with Essel Infraprojects Limited as its lead member (the "Lead Member") was one of the bidders.
- (E) After evaluation of the Bids received, Authority had accepted the Bid of the Consortium and issued its Letter of Award No. 1921 dated 07/02/2014 (hereinafter called the "LOA") to the Bidding Consortium requiring, inter-alia the execution of this Concession Agreement within 45 (forty five) days of the date of Letter of Award.
- (F) The Bidding Consortium has since been promoted and incorporated the Concessionaire as a limited liability company under the Companies Act, 1956, and has requested the Authority to accept the Concessionaire as the entity which shall undertake and perform the obligations and exercise the rights of Bidding Consortium under the LOA, including the obligations to enter into this Concession Agreement pursuant to LOA for executing the Project.
- (G) By its letter dated 19/02/2014, the Concessionaire has also joined the said request of the Consortium to the Authority to accept it as the entity which shall undertake and perform the obligations and exercise the rights of Consortium under the LOA, including the obligations to enter into this Concession Agreement pursuant to LOA. The Concessionaire has further represented to the effect that it has been promoted by the Consortium for the purposes hereof.
- (H) The Concessionaire has paid the Project Development Fee amounting to Rs. 40 Lakhs (Rupees Forty Lakhs only) and has provided performance security to the Authority.
- (I) The Authority has agreed to the said request of the Consortium and the Concessionaire and has accordingly agreed to enter into this Concession Agreement for execution of the Project on Design

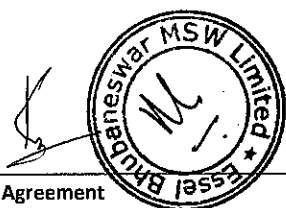
Concession Agreement

Municipal Commissioner  
Bhubaneswar Municipal Corporation



Build Finance Operate and Transfer (the "DBFOT") basis subject to and on the terms, conditions and covenants set forth hereinafter.

**NOW THEREFORE**, in consideration of the foregoing and the respective covenants and agreements set forth in this Concession Agreement, the receipt and sufficiency of which is hereby acknowledged, and intending to be legally bound hereby, the Parties agree as follows:



Concession Agreement

[3]

Municipal Commissioner  
Bhubaneswar Municipal Corporation

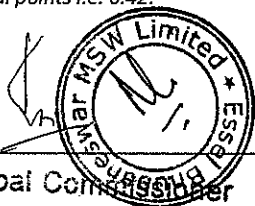
## 1. Definitions and Interpretation

### 1.1 Definitions

In this Agreement, the following words and expressions shall, unless repugnant to the context or meaning thereof, have the meaning hereinafter respectively ascribed to them hereunder; and the words and expressions defined in the Schedules and used therein shall have the meaning ascribed thereto in the Schedules:

Access Road	the motorable approach road for the access to the site as detailed out in the Schedule 1
Accounting Year	means the financial year commencing from the first day of April of any calendar year and ending on the thirty-first day of March of the next calendar year. It is clarified that first accounting year shall be the period commencing from the COD and ending on the thirty-first day of March of the next calendar year.
Additional Cost	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 in operation, management and implementation of the Project.
Adjusted Equity	<p>means the Equity funded in Indian Rupees and adjusted on the first day of the current month (the "Reference Date"), in the manner set forth below, to reflect the change in its value on account of depreciation and variations in WPI, and for any Reference Date occurring:</p> <ul style="list-style-type: none"><li>a) On or before COD, the Adjusted Equity shall be a sum equal to the Equity funded in Indian Rupees and expended on the Project, revised to the extent of one half of the variation in WPI occurring between the first day of the month of Appointed Date and the Reference Date;</li><li>b) From COD and until the 4<sup>th</sup> (fourth) anniversary thereof, an amount equal to the Adjusted Equity as on COD shall be deemed to be the base (the "Base Adjusted Equity") and the Adjusted Equity hereunder shall be a sum equal to the Base Adjusted Equity, revised at the commencement of each month following COD to the extent of variation in WPI occurring between COD and the Reference Date;</li><li>c) after the 4th (fourth) anniversary of COD, the Adjusted Equity hereunder shall be a sum equal to the Base Adjusted Equity, reduced by 0.42% (zero point four two per cent)<sup>1</sup> thereof at the commencement of each month following the 4th (fourth) anniversary of COD and the amount so arrived at shall be revised to the extent of variation in WPI occurring between COD and the Reference Date;</li><li>d) For the avoidance of doubt, the Adjusted Equity shall, in the event of Termination, be computed as on the Reference Date immediately preceding the Transfer Date; provided that no reduction in the Adjusted Equity shall be made for a period equal to the duration, if any, for which the Concession Period is extended, but the revision on account of WPI shall continue to be made</li></ul>

<sup>1</sup> This number shall be substituted in each case by the figure arrived at upon dividing 100 by the number of months comprising the Concession Period. For example, the figure for a 20 year Concession Period shall be  $100/240 = 0.416$  rounded off to two decimal points i.e. 0.42.



Affected Party	shall have the meaning set forth in Clause 26.1
Agreement or Concession Agreement	means this Agreement, its Recitals, the Schedules hereto and any amendments thereto made in accordance with the provisions contained in this Agreement signed within 45 (forty five) days of the Letter of Award
Applicable Laws	means all laws, brought into force and effect by GOI or the State Government including rules, regulations and notifications made thereunder, and judgments, decrees, injunctions, writs and orders of any court of record, applicable to this Agreement and the exercise, performance and discharge of the respective rights and obligations of the Parties hereunder, as may be in force and effect during the subsistence of this Agreement
Applicable Permits	means all clearances, licenses, permits, authorisations, no objection certificates, consents, approvals and exemptions required to be obtained or maintained under Applicable Laws in connection with the construction, operation and maintenance of the Project during the subsistence of this Agreement
Application	means the Technical Proposal and Financial Offer submitted by the Concessionaire in response to the RFP
Appointed Date	means the date on which Financial Close is achieved or an earlier date that the Parties may by mutual consent determine, and shall be deemed to be the date of commencement of the Concession Period. For the avoidance of doubt, every Condition Precedent shall have been satisfied or waived prior to the Appointed Date and in the event all Conditions Precedent are not satisfied or waived, as the case may be, the Appointed Date shall be deemed to occur only when each and every Condition Precedent is either satisfied or waived, as the case may be
Arbitration Act	means the Arbitration and Conciliation Act, 1996, as amended and shall include modifications to or any re-enactment thereof, as may come in force from time to time
Associate or Affiliate	means, in relation to either Party {and/or Consortium Members}, a person who controls, is controlled by, or is under the common control with such Party {or Consortium Member} (as used in this definition, the expression "control" means, with respect to a person which is a company or corporation, the ownership, directly or indirectly, of more than 50% (fifty per cent) of the voting shares of such person, and with respect to a person which is not a company or corporation, the power to direct the management and policies of such person, whether by operation of law or by contract or otherwise)
Authority Event of Default	shall have the meaning set forth in Clause 29.1.3
Authority Indemnified Persons	shall have the meaning set forth in Clause 34.1.1
Authority Representative	means such person or persons as may be authorized in writing by the Authority to act on its behalf under this Agreement and shall include any person or persons having authority to exercise any rights or perform and fulfill any obligations of the Authority under this Agreement
Bank	means a bank incorporated in India and having a minimum net worth of Rs. 1,000 crore (Rupees one thousand crore) or any other bank acceptable to Senior Lenders, but does not include a bank in which any Senior Lender has an interest
Bank Rate	means the rate of interest specified by the Reserve Bank of India from time to time in pursuance of section 49 of the Reserve Bank of India Act, 1934 or any replacement of such Bank Rate for the time being in effect
Bid	means the documents in their entirety comprised in the bid submitted by the {selected

	bidder/Consortium} in response to the Request for Proposals in accordance with the provisions thereof
Bid Security	means the security provided by the Concessionaire to the Authority along with the Bid in a sum of Rs. 1 crore (Rupees one crore), in accordance with the Request for Proposals, and which is to remain in force until substituted by the Performance Security
Bio-medical Waste	shall have the meaning as defined under the Biomedical Wastes (Management and Handling) Rules, 1998 and as amended thereto
CDM	Clean Development Mechanism
CERs	Certified Emission Reduction
Change in Law	means the occurrence of any of the following after the date of Bid: the enactment of any new Indian law; the repeal, modification or re-enactment of any existing Indian law; the commencement of any Indian law which has not entered into effect until the date of Bid; a change in the interpretation or application of any Indian law by a judgement of a court of record which has become final, conclusive and binding, as compared to such interpretation or application by a court of record prior to the date of Bid; or any change in the rates of any of the Taxes that have a direct effect on the Project;
Change in Ownership	means a transfer of the direct and/or indirect legal or beneficial ownership of any shares, or securities convertible into shares, that causes the aggregate holding of the Consortium members, together with their Associates, in the total Equity to decline below 51% (fifty one per cent) thereof during Concession Period, provided that any material variation (as compared to the representations made by the Concessionaire during the bidding process for the purposes of meeting the minimum conditions of eligibility or for evaluation of its application or Bid, as the case may be,) in the proportion of the equity holding of any Consortium member to the total Equity, if it occurs prior to completion of the Concession Period, shall constitute Change in Ownership;
COD or Commercial Operation Date	shall have the meaning set forth in Clause 15.1
Company	means the company acting as the Concessionaire under this Agreement
Completion Certificate	shall have the meaning set forth in Clause 14.2
Completion Date	means the completion date to be notified by the Independent Engineers, on which the Completion Certificate or the Provisional Certificate, as the case may be, is deemed to have been given to the Concessionaire.
Composting	a controlled process involving microbial aerobic decomposition of organic matter
Concession	shall have the meaning set forth in Clause 3.1.1
Concession Period	means a period of 22 years starting on and from the Appointed Date and ending on the Transfer Date.
Concessionaire	shall have the meaning attributed thereto in the array of Parties hereinabove as set forth in the Recitals
Concessionaire Event of Default	shall have the meaning set forth in Clause 29.1.2
Conditions	shall have the meaning set forth in Clause 4.1.1

Precedent	
Construction & Demolition / C & D Waste	means Solid Waste, resulting from construction, modeling, re-modeling, repair, renovation or demolition of structures or from land clearing activities or trenching or de-silting activities. "Structures" for the purposes of this definition means buildings of all types (both residential and non-residential), utilities, infrastructure facilities and any other type of man-made structure. C & D debris include, but are not limited to bricks, concrete rubble and other masonry materials, soil, rock, wood (including painted, treated and coated wood and wood products), land clearing debris, wall coverings, plaster, drywall, plumbing fixtures, roofing, waterproofing material and other roof coverings asphalt pavement, glass, plastics, paper, gypsum boards, electrical wiring and components containing non-hazardous materials, pipes, steel, aluminium and other non-hazardous metals used in construction of structures
Construction Period	shall mean the period beginning from the Appointed Date and ending on the COD
Construction Plan	As defined in Clause 9.5.3 of Schedule 9
Construction Requirements	collectively construction requirements for the Processing Facility in line with minimum specifications given in Schedule 9.
Construction Works	all works and things required to be constructed by the Concessionaire as part of the Project Facilities in accordance with this Agreement
Contractor	means the person or persons, as the case may be, with whom the Concessionaire has entered into any of the EPC Contract, the O&M Contract, or any other agreement or a material contract for construction, operation and/or maintenance of the Project or matters incidental thereto, but does not include a person who has entered into an agreement for providing financial assistance to the Concessionaire
Cure Period	the period specified in this Agreement for curing any breach or default of any provision of this Agreement by the Party responsible for such breach or default and shall: commence from the date on which a notice is delivered by one Party to the other Party asking the latter to cure the breach or default specified in such notice; not relieve any Party from liability to pay Damages or compensation under the provisions of this Agreement; and not in any way be extended by any period of Suspension under this Agreement; provided that if the cure of any breach by the Concessionaire requires any reasonable action by the Concessionaire that must be approved by the Authority or the Independent Engineer hereunder, the applicable Cure Period shall be extended by the period taken by the Authority or the Independent Engineer to accord their approval
Daily Reports	shall constitute the reports to be submitted daily as defined in the Schedule 15
Damages	shall have the meaning set forth in Sub-clause 1.2.1(w)
DBFOT	Design, Build, Finance, Operate and Transfer
Debt Due	means the aggregate of the following sums expressed in Indian Rupees outstanding on the Transfer Date: the principal amount of the debt provided by the Senior Lenders under the Financing Agreements for financing the Total Project Cost (the "principal") but excluding any part of the principal that had fallen due for repayment two years prior to the Transfer Date; all accrued interest, financing fees and charges payable under the Financing Agreements on, or in respect of, the debt referred to in Sub-clause (a) above until the Transfer Date but excluding (i) any interest, fees or charges that had fallen due one year prior to the Transfer Date, (ii) any penal interest or charges payable under the Financing Agreements to any Senior Lender, and (iii) any pre-payment charges in relation to accelerated repayment, except where such charges have arisen due

	to Authority Event of Default; and any Subordinated Debt which is included in the Financial Package and disbursed by lenders for financing the Total Project Cost; provided that if all or any part of the Debt Due is convertible into Equity at the option of Senior Lenders and/or the Concessionaire, it shall for the purposes of this Agreement be deemed to be Debt Due even after such conversion and the principal thereof shall be dealt with as if such conversion had not been undertaken
Debt Service	means the sum of all payments on account of principal, interest, financing fees and charges due and payable in an Accounting Year to the Senior Lenders under the Financing Agreements
Development Period	means the period from the date of this Agreement until the Appointed Date
Dispute	shall have the meaning set forth in Clause 36.1.1
Dispute Resolution Procedure	means the procedure for resolution of Disputes set forth in Article 36
Divestment Requirements	means the obligations of the Concessionaire for and in respect of Termination as set forth in Clause 30.1
Document or Documentation	means documentation in printed or written form, or in tapes, discs, drawings, computer programmes, writings, reports, photographs, films, cassettes, or expressed in any other written, electronic, audio or visual form
Drawings	means all of the drawings, calculations and documents pertaining to the Project
Encumbrances	means, in relation to the Project, any encumbrances 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 any designation of loss payees or beneficiaries or any similar arrangement under any insurance policy pertaining to the Project, where applicable herein but excluding utilities
EPC Contract	means the engineering, procurement and construction contract or contracts entered into by the Concessionaire with one or more Contractors for, inter alia, engineering and construction of the Project in accordance with the provisions of this Agreement
EPC Contractor	means the person with whom the Concessionaire will enter into an EPC Contract
Equity	means the sum expressed in Indian Rupees representing the paid up equity share capital of the Concessionaire for meeting the equity component of the Total Project Cost, and shall for the purposes of this Agreement include convertible instruments or other similar forms of capital, which shall compulsorily convert into equity share capital of the Company, and any interest-free funds advanced by any shareholder of the Company for meeting such equity component
Escrow Account	means an account opened with a nationalized bank or scheduled commercial bank as permitted by the Authority and having a branch in Bhubaneswar AND/OR Cuttack, prior to Appointed Date, in which all inflows and outflows of cash on account of capital and revenue receipts and expenditure shall be credited and debited, as the case may be, in accordance with the provisions of this Agreement.
Environment and Social Impact Assessment Plan	shall have the meaning set forth in Schedule 23
Event of Default	shall have the meaning ascribed thereto in Clause 29.1.
Excluded Waste	waste material of the nature that the Project Facilities are not designed or authorized





	to receive, manage, process and dispose which includes Hazardous Waste, Bio-medical Waste, Treated Bio-medical waste.
Financial Close	means the fulfillment of all conditions precedent to the initial availability of funds under the Financing Agreements
Financial Default	shall have the meaning set forth in Schedule 18
Financial Model	means the financial model adopted by Senior Lenders, setting forth the capital and operating costs of the Project and revenues therefrom on the basis of which financial viability of the Project has been determined by the Senior Lenders, and includes a description of the assumptions and parameters used for making calculations and projections therein
Financial Package	means the financing package indicating the total capital cost of the Project and the means of financing thereof, as set forth in the Financial Model and approved by the Senior Lenders, and includes Equity, all financial assistance specified in the Financing Agreements, Subordinated Debt and Equity Support, if any
Financing Agreements	means the agreements executed by the Concessionaire in respect of financial assistance to be provided by the Senior Lenders by way of loans, guarantees, subscription to non-convertible debentures and other debt instruments including loan agreements, guarantees, notes, debentures, bonds and other debt instruments, security agreements, and other documents relating to the financing (including refinancing) of the Total Project Cost, and includes amendments or modifications made in accordance with Clause 5.2.3
Force Majeure or Force Majeure Event	shall have the meaning ascribed to it in Clause 26.1
Gol or Government	means the Government of India
GoO	means the Government of Odisha
Good Industry Practice	means the practices, methods, techniques, designs, standards, skills, diligence, efficiency, reliability and prudence which are generally and reasonably expected from a reasonably skilled and experienced operator engaged in the same type of undertaking as envisaged under this Agreement and which would be expected to result in the performance of its obligations by the Concessionaire in accordance with this Agreement, Applicable Laws, relevant Indian Standards and Applicable Permits in reliable, safe, economical and efficient manner
Government Agency	Gol, GoO, the Authority 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 Concessionaire, the Site/Project Facilities or any portion thereof, for the performance of all or any of the services or obligations of Concessionaire under or pursuant to this Agreement.
Government Instrumentality	means any department, division or sub-division of the Government or the State Government and includes any commission, board, authority, agency or municipal and other local authority or statutory body including Panchayat under the control of the Government or the State Government, as the case may be, and having jurisdiction over all or any part of the Project or the performance of all or any of the services or obligations of the Concessionaire under or pursuant to this Agreement
Hand Over of Project Facilities	shall have the meaning ascribed thereto in Article 22
Hazardous	shall have the meaning as defined under the Hazardous Wastes (Management and

Waste	Handling) Rules, 1989
Indemnified Party	means the Party entitled to the benefit of an indemnity pursuant to Article 34
Indemnifying Party	means the Party obligated to indemnify the other Party pursuant to Article 34
Independent Engineer	shall have the meaning ascribed thereto in Article 21
Indirect Political Event	shall have the meaning set forth in Clause 26.3
Inspection Report	As defined in the Schedule 16
Insurance Cover	means the aggregate of the maximum sums insured under the insurances taken out by the Concessionaire pursuant to Article 24, and includes all insurances required to be taken out by the Concessionaire but not actually taken, and when used in the context of any act or event, it shall mean the aggregate of the maximum sums insured and payable or deemed to be insured and payable in relation to such act or event
Intellectual Property	means all patents, trademarks, service marks, logos, get-up, trade names, internet domain names, rights in designs, blue prints, programmes and manuals, drawings, copyright (including rights in computer software), database rights, semi-conductor, topography rights, utility models, rights in know-how and other intellectual property rights, in each case whether registered or unregistered and including applications for registration, and all rights or forms of protection having equivalent or similar effect anywhere in the world
Landfilling	The disposal of the Residual Inert Matter and process remnants at the Scientific Landfill 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, in accordance with the terms of this Agreement.
Landfill Site	shall mean the site for regional processing and scientific landfill facility at Bhuasuni, Bhubaneswar as forth in Clause 1.1 of Schedule 1
Landfilling Weighbridge	Weighbridges installed at the entrance of the Scientific Landfill facility.
Lenders' Representative	means the person duly authorized by the Senior Lenders to act for and on behalf of the Senior Lenders with regard to matters arising out of or in relation to this Agreement, and includes his successors, assigns and substitutes
License Fee	shall have meaning set forth in Clause 10.1
Licensed Premises	shall have meaning set forth in Clause 10.2
Material Adverse Effect	means a material adverse effect of any act or event on the ability of either Party to perform any of its obligations under and in accordance with the provisions of this Agreement and which act or event causes a material financial burden or loss to either Party
Material Breach	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
Monitoring Agency	Any agency authorized by the Authority to monitor progress or adherence to construction or Operations & Maintenance requirements. This includes the Independent Engineer.

Monthly Reports	shall constitute the reports to be submitted monthly as defined in the Schedule 15
MSW or Municipal Solid Waste or Solid Waste	solid or semi-solid waste generated by households, public services, agricultural activities, commercial establishments and industries and shall include Solid Waste, and Organic Waste, but shall not include the Excluded Wastes
MSW Rules	the Municipal Solid Waste (Management and Handling) Rules, 2000 framed by the Government of India under the Environment (Protection) Act, 1986 (Act 29 of 1986).
Nominated Company	means a company selected by the Lenders' Representative and proposed to the Authority for substituting the Concessionaire in accordance with the provisions of the Substitution Agreement
Non-Political Event	shall have the meaning set forth in Clause 26.2
O&M	means the operation and maintenance of the Project and includes all matters connected with or incidental to such operation and maintenance and provision of services and facilities in accordance with the provisions of this Agreement, set forth in Clause 12.3
O&M Contract	means the operation and maintenance contract that may be entered into between the Concessionaire and the O&M Contractor for performance of all or any of the O&M obligations
O&M Contractor	means the person, if any, with whom the Concessionaire has entered into an O&M Contract for discharging O&M obligations for and on behalf of the Concessionaire
O&M Expenses	means expenses incurred by or on behalf of the Concessionaire or by the Authority, as the case may be, for all O&M including (a) cost of salaries and other compensation to employees, (b) cost of materials, supplies, utilities and other services, (c) premia for insurance, (d) all taxes, duties, cess and fees due and payable for O&M, (e) all repair, replacement, reconstruction, reinstatement, improvement and maintenance costs, (f) payments required to be made under the O&M Contract or any other contract in connection with or incidental to O&M, and (g) all other expenditure required to be incurred under Applicable Laws, Applicable Permits or this Agreement
O&M Inspection Report	shall have the meaning set forth in Clause 20.2
O&M Plan	shall mean the plan referred to in Schedule 10, Clause 10.2(a)(ii)
O&M Requirements	the requirements as to operation and maintenance of the Project Facilities set forth in the Schedule 10
Obligated Quantity	As defined in the Clause 17.1.3
Operation & Maintenance Manual or O&M Manual	shall have the meaning ascribed to it in Clause 16.2
Operation Period	means the period commencing from COD and ending on the Transfer Date
Organic Waste	such type of Waste that can be degraded by microorganisms
Panel of Chartered Accountants	shall have the meaning set forth in Clause 25.2.1
Parties	means the parties to this Agreement collectively and "Party" shall mean any of the parties to this Agreement individually

Performance Security	shall have the meaning set forth in Article 9
Performance Standards	Standards of operations as defined in the Schedule 12, Clause 12.1
Performance Standards and Damages	Standards of operations as defined in the Schedule 12, Clause 12.2
Plant	the apparatus and machinery for carrying on the activities required for the Project, fixed or movable, but excluding consumables and premises
Political Event	shall have the meaning set forth in Clause 26.4
Post Closure Activities	The activities to be undertaken by the Concessionaire after closure of Scientific Landfill in accordance with standards and specifications
Post Closure Activities Escrow Account	An account opened with a nationalized bank in which Retention Fee shall be held towards post-closure obligations after the Concession Period as set in Clause 17.3.6.
Post Concession Period	Means the time period of 15 (Fifteen) years commencing from the expiry of the Concession Period; for taking up the Post Closure Activities.
Power Plant	a power generation plant that will generate electricity by using the MSW/ RDF and/ or Supplementary Fuel, as the case may be
Preliminary Notice	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	processing of MSW by which it is transformed into new or recycled products by using processes such as composting, bimethanation, RDF, pelletisation or any other Proposed Technology in accordance to the standards set forth in Schedule 12 and Applicable Law.
Processing Facility	the facilities established for processing of MSW in accordance with this Agreement.
Processing Weighbridge	Weighbridge installed at the entrance of the Processing Facility
Project	the project for enabling construction of Processing Facility, processing of MSW and for that purpose to design, develop, finance, construct, operate and maintain the Plant, under and in accordance with the terms and provisions of this Agreement.
Project Agreements	means this Agreement, the Financing Agreements, EPC Contract, O&M Contract, and any other agreements or material contracts that may be entered into by the Concessionaire with any person in connection with matters relating to, arising out of or incidental to the Project, but does not include the Substitution Agreement and Escrow Agreement.
Project Assets	means all physical and other assets relating to and forming part of the Site including (a) rights over the Site in the form of License, Right of Way or otherwise; (b) tangible assets such as civil works and equipment including foundations, roads and pavements, drainage works, electrical systems, communication systems and administrative offices; (c) Project Facilities situated on the Site; (d) all rights of the Concessionaire under the Project Agreements; (e) financial assets, such as receivables, security deposits etc.; (f) insurance proceeds; and (g) Applicable Permits and authorisations relating to or in respect of the Project
Project Completion Schedule	means the progressive Project Milestones set forth in Schedule 5 for completion of the Project on or before the Scheduled Completion Date

Project Development Fee	shall have meaning set forth in the RFP document
Project Facilities	shall mean all the amenities and facilities, including transportation vehicles and (a) Transfer Stations, (b) the Site, (c) Processing facilities and (d) Scientific Landfill.
Project Milestones	means the project milestones set forth in Schedule 5
Proposed Technology	Shall have the meaning set forth in Clause 2.3
Provisional Certificate	shall have the meaning set forth in Clause 14.3
Punch List	shall have the meaning ascribed to it in Clause 14.3.1
RBI	means the Reserve Bank of India, as constituted and existing under the Reserve Bank of India Act, 1934, and its successors
RDF	the solid fuel in the form of fluff or pellets/ briquettes that is produced by drying and separation of combustible fractions from the MSW meeting the requirements of the boiler to generate electricity through the turbine that will be part of the Power Plant
Re., Rs., or Rupees or Indian Rupees	means the lawful currency of the Republic of India
Readiness Certificate	the certificate issued by Independent Engineer/ the Authority certifying, inter-alia, that Concessionaire has constructed all the facilities so as to enable receipt of Municipal Solid Waste Processing, and the Concessionaire has obtained all approval necessary to receive the Municipal Solid Waste supplied by BMC
Reference Exchange Rate	means, in respect of any one currency that is to be converted into another currency in accordance with the provisions of this Agreement, the exchange rate as of 12.00 (twelve) noon on the relevant date quoted in Delhi by the State Bank of India, and in the absence of such rate, the average of similar rates quoted in Delhi by the Bank of India and the Bank of Baroda
Request for Proposals or RFP	Request for Proposal document issued by the Authority for this Project
Residual Inert Matter	the waste matter obtained after Processing of the MSW by each of the relevant Processing Facilities
Safety Requirements	shall have the meaning set forth in Clause 19.1.1
Scheduled COD	COD of the Project as per the Project Milestones
Scientific Landfill	The landfill site located at Bhuasuni, Odisha, more particularly indicated in the map in Schedule 1 and which is prepared for Landfilling of the Residual Inert Matter in accordance to the MSW Rules 2000.
Scientific Landfilling	Landfilling of Residual Inert Matter and process remnants in accordance to the MSW Rules 2000.
Selected Bidder/Consortium	Means the bidder/consortium that has been issued the Letter of Award.
Scope of the Project	shall have the meaning set forth in Clause 2.1

Scheduled Completion Date	shall mean that date mentioned for completion of Construction Work in schedule for completion of the Project in accordance with the Project Completion Schedule as set forth in Schedule 5;
Senior Lenders	means the financial institutions, banks, multilateral lending agencies, trusts, funds and agents or trustees of debenture holders, including their successors and assignees, who have agreed to guarantee or provide finance to the Concessionaire under any of the Financing Agreements for meeting all or any part of the Total Project Cost and who hold pari passu charge on the assets, rights, title and interests of the Concessionaire
Site or Project Site	As detailed in the Schedule 1
SPCB/OSPCB	State Pollution Control Board: specifically, Orissa State Pollution Control Board.
Specifications and Standards	means the specifications and standards relating to the quality, quantity, capacity and other requirements for the Project, and any modifications thereof, or additions thereto, as included in the design and engineering for the Project submitted by the Concessionaire to, and expressly approved by, the Authority
State	means the State of Odisha and "State Government" means the government of that State
Statutory Auditors	means a reputable firm of chartered accountants acting as the statutory auditors of the Concessionaire under the provisions of the Companies Act, 1956 including any statutory modification or re-enactment thereof, for the time being in force, and appointed in accordance with Clause 25.2.1
Subordinated Debt	means the aggregate of the following sums expressed in Indian Rupees or in the currency of debt, as the case may be, outstanding as on the Transfer Date: the principal amount of debt provided by lenders or the Concessionaire's shareholders for meeting the Total Project Cost and subordinated to the financial assistance provided by the Senior Lenders; and all accrued interest on the debt referred to in Sub-clause (a) above but restricted to the lesser of actual interest rate and a rate equal to 5% (five per cent) above the Bank Rate in case of loans expressed in Indian Rupees and lesser of the actual interest rate and six-month LIBOR (London Inter Bank Offer Rate) plus 2% (two per cent) in case of loans expressed in foreign currency, but does not include any interest that had fallen due one year prior to the Transfer Date; provided that if all or any part of the Subordinated Debt is convertible into Equity at the option of the lenders and/or the Concessionaire's shareholders, it shall for the purposes of this Agreement be deemed to be Subordinated Debt even after such conversion and the principal thereof shall be dealt with as if such conversion had not been undertaken
Substitution Agreement	shall have the meaning set forth in Clause 32.3
Supplementary Fuel	any fuel as a supplement to the MSW to support power plant operation
Suspension	shall have the meaning set forth in Clause 28.1
SWM	Solid Waste Management
Taxes	means any Indian taxes including excise duties, customs duties, value added tax, sales tax, local taxes, cess and any impost or surcharge of like nature (whether Central, State or local) on the goods, materials, equipment and services incorporated in and forming part of the Project charged, levied or imposed by any Government Instrumentality, but excluding any interest, penalties and other sums in relation thereto imposed on any account whatsoever. For the avoidance of doubt, Taxes shall not include taxes on

	corporate income
Termination	means the expiry or termination of this Agreement and the Concession hereunder, as the case may be
Termination Date	the date specified in the Termination Notice as the date on which Termination occurs / comes into effect
Termination Notice	means the communication issued in accordance with this Agreement by one Party to the other Party terminating this Agreement
Termination Payment	means the amount payable by the Authority to the Concessionaire upon Termination and may consist of payments on account of and restricted to the Debt Due and Adjusted Equity, as the case may be, which form part of the Total Project Cost in accordance with the provisions of this Agreement; provided that the amount payable in respect of any Debt Due expressed in foreign currency shall be computed at the Reference Exchange Rate for conversion into the relevant foreign currency as on the date of Termination Payment. For the avoidance of doubt, it is agreed that within a period of 60 (sixty) days from COD, the Concessionaire shall notify to the Authority, the Total Project Cost as on COD and its disaggregation between Debt Due and Equity, and only the amounts so conveyed shall form the basis of computing Termination Payment, and it is further agreed that in the event such disaggregation is not notified to the Authority, Equity shall be deemed to be the amount arrived at by subtracting Debt Due from Total Project Cost
Tests	means the tests set forth in Schedule 7 to determine the completion of the Project in accordance with the provisions of this Agreement
Tipping Fee	the amounts payable by the Authority to Concessionaire, as set out in Article 17
TPD	tonnes per day
Total Project Cost	means the lowest of: the capital cost of the Project, as set forth in the Financial Package; the actual capital cost of the Project upon completion of the Project; a sum of Rs 58.47 Crores (Rupees fifty eight crores and forty seven lakhs only) provided that in the event of Termination, the Total Project Cost shall be deemed to be modified to the extent of variation in WPI or Reference Exchange Rate occurring in respect of Adjusted Equity and Debt Due, as the case may be, in accordance with the provisions of this Agreement; provided further that in the event WPI increases, on an average, by more than 6% (six per cent) per annum for the period between the date hereof and COD, the Parties shall meet, as soon as reasonably practicable, and agree upon revision of the amount hereinbefore specified such that the effect of increase in WPI, in excess of such 6% (six per cent), is reflected in the Total Project Cost
Transfer Date	means the date on which this Agreement and the Concession hereunder expires pursuant to the provisions of this Agreement or is terminated by a Termination Notice
Transfer Station	Shall mean the station to be constructed by the Concessionaire in accordance with the Construction Requirements at the site for stations as detailed in Schedule 1 and shall be the point where MSW shall be received by the Concessionaire for further transportation to the Processing Facility, subject to and in accordance with this Agreement.
Transfer Station Weighbridge	Weighbridge installed at the Transfer Station
Vacant Possession	delivery to Concessionaire of the Site free from all Encumbrances and the grant of all easement rights and all other rights appurtenant thereto subject to the License.
Vesting	shall have the meaning set forth in Clause 30.4

Certificate	
Waste generators	all residential, commercial establishments, institutions and other sources located within the service area of BMC and generating MSW as defined in MSW Rules, 2000.
Waste Reports	shall have the meaning ascribed in the Schedule 15
WPI	means the Wholesale Price Index for all commodities as published by the Ministry of Industry, GOI and shall include any index which substitutes the WPI, and any reference to WPI shall, unless the context otherwise requires, be construed as a reference to the latest monthly WPI published no later than 30 (thirty) days prior to the date of consideration hereunder

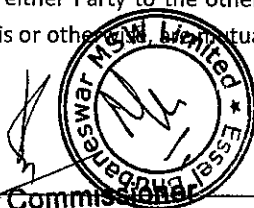
## 1.2 Interpretation

1.2.1 In this Agreement, unless the context otherwise requires,

- a. references to any legislation or any provision thereof shall include amendment or re-enactment or consolidation of such legislation or any provision thereof so far as such amendment or re-enactment or consolidation applies or is capable of applying to any transaction entered into hereunder;
- b. references to laws of India or Indian law or regulation having the force of law shall include the laws, acts, ordinances, rules, regulations, Indian standards, bye laws or notifications which have the force of law in the territory of India and as from time to time may be amended, modified, supplemented, extended or re-enacted;
- c. references to a "person" and words denoting a natural person shall be construed as a reference to any individual, firm, company, corporation, society, trust, government, state or agency of a state or any association or partnership (whether or not having separate legal personality) of two or more of the above and shall include successors and assigns;
- d. the table of contents, headings or sub-headings in this Agreement 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 and shall be deemed to be followed by "without limitation" or "but not limited to" whether or not they are followed by such phrases;
- f. references to "construction" or "building" include, unless the context otherwise requires, investigation, design, developing, engineering, procurement, delivery, transportation, installation, processing, fabrication, testing, commissioning and other activities incidental to the construction, and "construct" or "build" shall be construed accordingly;
- g. references to "development" include, unless the context otherwise requires, construction, renovation, refurbishing, augmentation, upgradation and other activities incidental thereto, and "develop" shall be construed accordingly;
- h. any reference to any period of time shall mean a reference to that according to Indian Standard Time;
- i. any reference to day shall mean a reference to a calendar day;
- j. references to a "business day" shall be construed as a reference to a day (other than a Sunday) on which banks in Bhubaneswar are generally open for business;



- k. any reference to month shall mean a reference to a calendar month as per the Gregorian calendar;
- l. references to any date, period or Project Milestone shall mean and include such date, period or Project Milestone as may be extended pursuant to this Agreement;
- m. 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; provided that if the last day of any period computed under this Agreement is not a business day, then the period shall run until the end of the next business day;
- n. the words importing singular shall include plural and vice versa;
- o. references to any gender shall include the other and the neutral gender;
- p. "lakh" means a hundred thousand (100,000) and "crore" means ten million (10,000,000);
- q. "indebtedness" shall be construed so as to include any obligation (whether incurred as principal or surety) for the payment or repayment of money, whether present or future, actual or contingent;
- r. references to the "winding-up", "dissolution", "insolvency", or "reorganisation" of a company or corporation shall be construed so as to include any equivalent or analogous proceedings under the law of the jurisdiction in which such company or corporation is incorporated or any jurisdiction in which such company or corporation carries on business including the seeking of liquidation, winding-up, reorganisation, dissolution, arrangement, protection or relief of debtors;
- s. save and except as otherwise provided in this Agreement, any reference, at any time, to any agreement, deed, instrument, licence or document of any description shall be construed as reference to that agreement, deed, instrument, licence or other document as amended, varied, supplemented, modified or suspended at the time of such reference; provided that this Sub-clause shall not operate so as to increase liabilities or obligations of the Authority hereunder or pursuant hereto in any manner whatsoever;
- t. any agreement, consent, approval, authorisation, notice, communication, information or report required under or pursuant to this Agreement from or by any Party or the Independent Engineer shall be valid and effective only if it is in writing under the hand of a duly authorized representative of such Party or the Independent Engineer, as the case may be, in this behalf and not otherwise;
- u. the Schedules and Recitals to this Agreement form an integral part of this Agreement and will be in full force and effect as though they were expressly set out in the body of this Agreement;
- v. references to Recitals, Articles, Clauses, Sub-clauses or Schedules in this Agreement shall, except where the context otherwise requires, mean references to Recitals, Articles, Clauses, Sub-clauses and Schedules of or to this Agreement, and references to a Paragraph shall, subject to any contrary indication, be construed as a reference to a Paragraph of this Agreement or of the Schedule in which such reference appears;
- w. the damages payable by either Party to the other of them, as set forth in this Agreement, whether on per diem basis or otherwise, shall be mutually agreed genuine pre-estimated loss and



damage likely to be suffered and incurred by the Party entitled to receive the same and are not by way of penalty (the "Damages"); and

- x. time shall be of the essence in the performance of the Parties' respective obligations. If any time period specified herein is extended, such extended time shall also be of the essence.

1.2.2 Unless expressly provided otherwise in this Agreement, any Documentation required to be provided or furnished by the Concessionaire to the Authority and/or the Independent Engineer shall be provided free of cost and in three copies, and if the Authority and/or the Independent Engineer is required to return any such Documentation with their comments and/or approval, they shall be entitled to retain two copies thereof.

1.2.3 The rule of construction, if any, that a contract should be interpreted against the parties responsible for the drafting and preparation thereof, shall not apply.

1.2.4 Any word or expression used in this Agreement shall, unless otherwise defined or construed in this Agreement, bear its ordinary English meaning and, for these purposes, the General Clauses Act 1897 shall not apply.

### 1.3 Measurements and arithmetic conventions

1.3.1 All measurements and calculations shall be in the metric system and calculations done to 2 (two) decimal places, with the third digit of 5 (five) or above being rounded up and below 5 (five) being rounded down.

### 1.4 Priority of agreements, clauses and schedules

1.4.1 This Agreement, and all other agreements and documents forming part of or referred to in this agreement are to be taken as mutually explanatory and, unless otherwise expressly provided elsewhere in this Agreement, the priority of this Agreement and other documents and agreements forming part hereof or referred to herein shall, in the event of any conflict between them, be in the following order:

- a. this Agreement; and
- b. all other agreements and documents forming part hereof or referred to herein; i.e. the Agreement at (a) above shall prevail over the agreements and documents at (b) above.

1.4.2 Subject to the provisions of Clause 1.4.1, in case of ambiguities or discrepancies within this Agreement, the following shall apply:

- a. between two or more Clauses of this Agreement, the provisions of a specific Clause relevant to the issue under consideration shall prevail over those in other Clauses;
- b. between the Clauses of this Agreement and the Schedules, the Clauses shall prevail and between Schedules and Annexes, the Schedules shall prevail;
- c. between any two Schedules, the Schedule relevant to the issue shall prevail;
- d. between the written description on the Drawings and the Specifications and Standards, the latter shall prevail;
- e. between the dimension scaled from the Drawing and its specific written dimension, the latter shall prevail; and

- f. between any value written in numerals and that in words, the latter shall prevail.



## **PART II – THE CONCESSION**

## 2. Scope of the Project

### 2.1 Scope of the project

The scope of the Project (the "**Scope of the Project**") shall mean and include, during the Concession Period,

- a. design, construction and operation of Transfer Station at Gadakan and Ghatikia as referred in Schedule 1.2 and 1.3;
- b. provision and operations of adequate number of suitable vehicles for transport of municipal solid waste from Transfer Station to the Regional Municipal Solid Waste Management Facility at Bhuasuni.
- c. design, construction and operation of MSW processing facility for the expected input MSW quantity during the Concession Period of 800 TPD; however the Concessionaire must have the capacity to process additional 25% of the Obligated quantity of MSW as and when required.
- d. design, construction and operation of Scientific Landfill and disposal of process remnants and Residual Inert Matters.
- e. Process the existing waste at the Bhuasuni dump site in accordance to the Schedule 24
- f. performance and fulfillment of all other obligations of the Concessionaire in accordance with the provisions of this Agreement and matters incidental thereto or necessary for the performance of any or all of the obligations of the Concessionaire under this Agreement.

The scope of the Project shall also include any and all other activities that are ancillary to the above mentioned scope of the Project.

### 2.2 Project Facilities

The Concessionaire shall construct the Project Facilities in accordance with the provisions of this Agreement.

### 2.3 Processing Technology

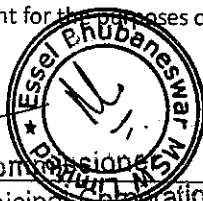
The Authority desires that its MSW management system would scientifically collect, transport, process and dispose MSW, have maximum recycling and recovery, and create public awareness. Without prejudice to the generality of the foregoing, Concessionaire shall develop the Project Facilities using technology or technologies in accordance with terms of this Agreement and Applicable Law (the "**Proposed Technology**") which ensures:

- a. the proper handling of MSW at the Transfer Station and transport of MSW with due consideration to the local citizens, environment and safety standards;
- b. the bio-degradable and recyclable content of the MSW are separated through a suitable Material Recovery Facility (the "**MRF**");
- c. a suitable Processing technology is used for Processing of the bio-degradable content of the MSW;
- d. a suitable Processing technology is used for Processing of combustible content of the MSW;
- e. a suitable technology is used for recovering and processing recyclable content of the MSW,
- f. not more than 20% of the MSW recovered at the Processing Facility is sent to the Landfill.

### 3. Grant of Concession

#### 3.1 The Concession

- 3.1.1 Subject to and in accordance with the provisions of this Agreement, the Applicable Laws and the Applicable Permits, the Authority hereby grants to the Concessionaire the concession set forth herein including the exclusive right, license and authority to construct, operate and maintain the Project (the "Concession") for a period of 20 (twenty) years commencing from the Appointed Date, and the Concessionaire hereby accepts the Concession and agrees to implement the Project subject to and in accordance with the terms and conditions set forth herein:
- 3.1.2 Subject to and in accordance with the provisions of this Agreement, Applicable Laws and Good Industry Practice, the Concession hereby granted shall oblige or entitle (as the case may be) the Concessionaire to:
- a. perform and fulfill all of the Concessionaire's obligations under and in accordance with this Agreement;
  - b. to design, engineer, finance, procure, construct, install, commission, operate and maintain each of the Project Facilities either itself or through such person as may be selected by it;
  - c. bear and pay all costs, expenses and charges in connection with or incidental to the performance of the obligations of the Concessionaire under this Agreement;
  - d. upon commissioning of a Project Facilities, to manage, operate and maintain the same either itself or through such person as may be selected by it, provided that the ultimate obligation and responsibility for the performance of this agreement shall continue to vest with the Concessionaire;
  - e. to transfer the Project Facilities to the Authority at the end of the Concession Period or on Termination, in accordance with the provisions of this Agreement;
  - f. to borrow or raise money or funding required for the due implementation of the Project and mortgage, charge or create lien or encumbrance on the whole or part of the Project Facilities except the Project Site;
  - g. to receive and to transport MSW from the Transfer Station to the Regional Landfill at Bhuasuni;
  - h. to transport and to process MSW at the Plant and dispose the process remnants and inert waste as per provisions of this Agreement and Applicable Law;
  - i. to, in accordance with the Applicable Law, store, use appropriate, market and sell or dispose all the components/ products of the MSW, including but not limited to electricity, methane, recyclables, RDF, compost and to further retain and appropriate any revenues generated from the sale of such products/ end-products;
  - j. to obtain the utilities required for enabling the construction of the Project Facilities;
  - k. exclusively hold, possess, and control the Site, in accordance with the terms of the Concession Agreement for the purposes of the due implementation of this Project;



- l. to receive all the fiscal incentives and benefits accruing in respect of or on account of the Project including Carbon Credits/ Certified Emission Reduction (CERs) under Clean Development Mechanism (CDM) and share 10 (ten) percent of such fiscal incentives / benefits with the BMC as per the provision of this Agreement;
- m. Neither assign, transfer or sublet or create any lien or Encumbrance on this Agreement, or the Concession hereby granted or on the whole or any part of the Project nor transfer, license, lease or part possession thereof; save and except as expressly permitted by this Agreement or the Substitution Agreement.

  
**Municipal Commissioner**  
**Bhubaneswar Municipal Corporation**



## 4. Conditions Precedents

### 4.1 Conditions Precedent

4.1.1 Save and except as expressly provided in Articles 4, 9, 12, 23, 26, 36 and 39, or unless the context otherwise requires, the respective rights and obligations of the Parties under this Agreement shall be subject to the satisfaction in full of the conditions precedent specified in this Clause 4.1 (the "Conditions Precedent").

4.1.2 The Conditions Precedent required to be satisfied by the Authority shall be deemed to have been fulfilled when:

- a. the Authority shall have handed over the land to the Concessionaire for the development of the Project as per the Clause 6.1.2(f);
- b. the Authority shall have appointed an Independent Engineer in accordance with Article 21.

4.1.3 The Conditions Precedent required to be satisfied by the Concessionaire prior to the Appointed Date shall be deemed to have been fulfilled when the Concessionaire shall have:

- a. provided Performance Security to the Authority;
- b. provided Project Development Fee of Rs.40 (forty) lakhs to the IDCO;
- c. obtained approval from the Independent engineer on the detailed project report covering the adopted processing technology, detailed construction drawings, and Construction Milestones as per provisions of the Agreement;
- d. obtained approval from the Authority on the detailed Construction Plan comprising of details delineating the Site for construction of Project Facilities and ensuring continued use of the Site for managing MSW by BMC till COD;
- e. prepared the Environment and Social Impact Assessment (ESIA) Report through a competent agency in accordance with Schedule 23 and obtained an approval from the Authority on the ESIA;
- f. obtained the EIA approval for the Project from competent authorities;
- g. executed and procured execution of the Substitution Agreement;
- h. procured all the Applicable Permits specified in Schedule 2 unconditionally and if subject to conditions, the all such conditions required to be fulfilled by the date specified therein shall have been satisfied in full and such Applicable Permits are in full force and effect;
- i. executed the Financing Agreements and delivered to the Authority 3 (three) true copies thereof, duly attested by a Director of the Concessionaire;
- j. executed and procured execution of the Escrow Agreement;
- k. delivered to the Authority 3 (three) true copies of the Financial Package and the Financial Model, duly attested by a Director of the Concessionaire, along with 3 (three) soft copies of the Financial Model in MS Excel version or any substitute thereof, which is acceptable to the Senior Lenders;

  
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- I. delivered to the Authority a confirmation from the Selected Bidder / each of the Consortium member, in original, of the correctness of their representations and Warranties set forth in Clause 7.1(m), Clause 7.1 (n) and Clause 7.1 (o).

Provided that upon request in writing by the Concessionaire, the Authority may, in its discretion, waive any of the Conditions Precedent set forth in this Clause 4.1.3. For the avoidance of doubt, the Authority may, in its sole discretion, grant any waiver hereunder with such conditions as it may deem fit.

- 4.1.4 Each Party shall make all reasonable endeavours to satisfy the Conditions Precedent within the time stipulated and shall provide the other Party with such reasonable cooperation as may be required to assist that Party in satisfying the Conditions Precedent for which that Party is responsible.
- 4.1.5 The Parties shall notify each other in writing at least once a month on the progress made in satisfying the Conditions Precedent. Each Party shall promptly inform the other Party when any Condition Precedent for which it is responsible has been satisfied.

#### **4.2 Damages for delay by the Authority**

In the event that (i) the Authority does not procure fulfilment of any or all of the Conditions Precedent set forth in Clause 4.1.2 within the period specified in respect thereof, and (ii) the delay has not occurred as a result of breach of this Agreement by the Concessionaire or due to Force Majeure, the Authority shall pay to the Concessionaire Damages in an amount calculated at the rate of 0.2% (zero point two per cent) of the Performance Security for each day's delay until the fulfillment of such Conditions Precedent, subject to a maximum of 20% (twenty percent) of the Performance Security.

#### **4.3 Damages for delay by the Concessionaire**

In the event that (i) the Concessionaire does not procure fulfilment of any or all of the Conditions Precedent set forth in Clause 4.1.3 within a period specified in respect thereof, and (ii) the delay has not occurred as a result of failure to fulfill the obligations under Clause 4.1.2 or other breach of this Agreement by the Authority, or due to Force Majeure, the Concessionaire shall pay to the Authority Damages in an amount calculated at the rate of 0.2% (zero point two per cent) of the Performance Security for each day's delay until the fulfillment of such Conditions Precedent, subject to a maximum of 20% (twenty percent) of the Performance Security.



*[Signature]*  
Municipal Commissioner  
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## 5. Obligations of the Concessionaire

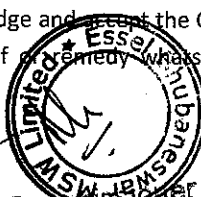
### 5.1 Obligations of the Concessionaire

- 5.1.1 Subject to and on the terms and conditions of this Agreement, the Concessionaire shall, at its own cost and expense, procure finance for and undertake the design, engineering, procurement, construction, operation and maintenance of the Project and observe, fulfill, comply with and perform all its obligations set out in this Agreement or arising hereunder.
- 5.1.2 The Concessionaire shall be responsible to operate the Project Facilities such that it can process the Obligated Quantity of MSW throughout the Concession Period.
- 5.1.3 The Concessionaire shall be responsible for design, engineering, procurement, construction, operation and maintenance of the infrastructure facilities such as water supply, power supply and approach road outside the boundaries of the Project Facilities and shall bear all costs and expenses of the same including but not limited to deposit charges, consumption charges to the relevant authorities as may be necessary.
- 5.1.4 The Concessionaire shall comply with all the Applicable Laws and procure all the Applicable Permits (including renewals as required) in the performance of its obligations under this Agreement.
- 5.1.5 Subject to the provisions of Clauses 5.1.1 and 5.1.4, the Concessionaire shall discharge its obligations in accordance with all relevant Indian standards, MSW Rules 2000 with Good Industry Practice and as a reasonable and prudent person.
- 5.1.6 The Concessionaire shall, at its own cost and expense, in addition to and not in derogation of its obligations elsewhere set out in this Agreement:
- make, or cause to be made, necessary applications to the relevant Government Instrumentalities with such particulars and details as may be required for obtaining Applicable Permits (other than those set forth in Clause 4.1.3), and obtain and keep in force and effect such Applicable Permits in conformity with the Applicable Laws;
  - procure, as required, the appropriate proprietary rights, licenses, agreements and permissions for materials, methods, processes and systems used or incorporated into the Project;
  - perform and fulfill its obligations under the Financing Agreements;
  - make reasonable efforts to maintain harmony and good industrial relations among the personnel employed by it or its Contractors in connection with the performance of its obligations under this Agreement;
  - undertake the recommendations and actions prescribed under the Environment and Social Impact Assessment (ESIA);
  - ensure and procure that its Contractors comply with all Applicable Permits and Applicable Laws in the performance by them of any of the Concessionaire's obligations under this Agreement;
  - not do or omit to do any act, deed or thing which may in any manner be in violation of any of the provisions of this Agreement;

- h. support, cooperate with and facilitate the Authority in the implementation and operation of the Project in accordance with the provisions of this Agreement; and
- i. transfer the Project to the Authority upon Termination of this Agreement, in accordance with the provisions thereof.

## 5.2 Obligations relating to Project Agreements

- 5.2.1 It is expressly agreed that the Concessionaire shall, at all times, be responsible and liable for all its obligations under this Agreement notwithstanding anything contained in the Project Agreements or any other agreement, and no default under any Project Agreement or agreement shall excuse the Concessionaire from its obligations or liability hereunder.
- 5.2.2 The Concessionaire shall submit to the Authority the drafts of all Project Agreements, or any amendments or replacements thereto, for its review and comments, and the Authority shall have the right but not the obligation to undertake such review and provide its comments, if any, to the Concessionaire within 15 (fifteen) days of the receipt of such drafts. Within 7 (seven) days of execution of any Project Agreement or amendment thereto, the Concessionaire shall submit to the Authority a true copy thereof, duly attested by a Director of the Concessionaire, for its record. For the avoidance of doubt, it is agreed that the review and comments hereunder shall be limited to ensuring compliance with the terms of this Agreement. It is further agreed that no review and/or observation of the Authority and/or its failure to review and/or convey its observations on any document shall relieve the Concessionaire of its obligations and liabilities under this Agreement in any manner nor shall the Authority be liable for the same in any manner whatsoever.
- 5.2.3 The Concessionaire shall not make any addition, replacement or amendments to any of the Financing Agreements without the prior written consent of the Authority if such addition, replacement or amendment has, or may have, the effect of imposing or increasing any financial liability or obligation on the Authority, and in the event that any replacement or amendment is made without such consent, the Concessionaire shall not enforce such replacement or amendment nor permit enforcement thereof against the Authority. For the avoidance of doubt, the Authority acknowledges and agrees that it shall not unreasonably withhold its consent for restructuring or rescheduling of the Debt Due.
- 5.2.4 The Concessionaire shall procure that each of the Project Agreements contains provisions that entitle the Authority to step into such agreement, in its sole discretion, in substitution of the Concessionaire in the event of Termination or Suspension (the "Covenant"). For the avoidance of doubt, it is expressly agreed that in the event the Authority does not exercise such rights of substitution within a period not exceeding 90 (ninety) days from the Transfer Date, the Project Agreements shall be deemed to cease to be in force and effect on the Transfer Date without any liability whatsoever on the Authority and the Covenant shall expressly provide for such eventuality. The Concessionaire expressly agrees to include the Covenant in all its Project Agreements and undertakes that it shall, in respect of each of the Project Agreements, procure and deliver to the Authority an acknowledgment and undertaking, in a form acceptable to the Authority, from the counter party(ies) of each of the Project Agreements, whereunder such counter party(ies) shall acknowledge and accept the Covenant and undertake to be bound by the same and not to seek any relief or remedy whatsoever from the Authority in the event of Termination or Suspension.

  
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5.2.5 Notwithstanding anything to the contrary contained in this Agreement, the Concessionaire agrees and acknowledges that selection or replacement of any Contractor shall be subject to the prior approval of the Authority from national security and public interest perspective, the decision of the Authority in this behalf being final, conclusive and binding on the Concessionaire, and undertakes that it shall not give effect to any such selection or contract without prior approval of the Authority. For the avoidance of doubt, it is expressly agreed that approval of the Authority hereunder shall be limited to national security and public interest perspective, and the Authority shall endeavor to convey its decision thereon expeditiously. It is also agreed that the Authority shall not be liable in any manner on account of grant or otherwise of such approval and that such approval or denial thereof shall not in any manner absolve the Concessionaire or its Contractors from any liability or obligation under this Agreement.

### 5.3 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 as detailed in the Schedule 2 and maintain the environmental standards as approved under the Environmental and Social Impact Assessment (ESIA) as per Schedule 23 .

### 5.4 Land Use

The Concessionaire shall ensure optimum utilization of the Site and land available and shall not use the same for any purpose unconnected or which is not incidental to the Project or related activities. For avoidance of doubt, any land given by the Authority to the Concessionaire for this Project shall not be used for development of residential or commercial facilities or premises for rent, lease or similar purpose. The Concessionaire shall construct a boundary wall around the entire land parcel.

### 5.5 Transportation of MSW (Routing)

Concessionaire shall be solely responsible for transportation of MSW from the Transfer Station to the Processing Facility and transportation of process remnants and Residual Inert Matter from the Processing Facility to the Scientific Landfill. Concessionaire shall adhere to the standards stipulated at Schedule 10 of this Agreement.

Concessionaire shall ensure that all vehicles used for transportation of MSW shall be fitted with automatic position identification systems using appropriate technology, which can enable the automatic tracking and recording of vehicle identification and movement data. This data shall be made available to the Independent Engineer / the Authority.

### 5.6 Processing of MSW

The technologies adopted to process the MSW shall be those proposed by the Concessionaire in the detailed project report submitted to the Independent Engineer as set forth in Clause 4.1.3 (c).



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## 5.7 Post Closure Activities

The Concessionaire shall maintain the capped and closed portion of the landfill as per Applicable Law during the Concession Period and Post Concession Period.

## 5.8 Measurement of MSW

- 5.8.1 For measurement of MSW, Weighbridges will need to be installed at the Transfer Station (the "Transfer Station Weighbridge") by the Concessionaire. Additionally, Weighbridges will need to be constructed at the of the Processing Facility (the "Processing Weighbridge") and at the entrance of the Landfilling facility (the "Landfilling Weighbridge") as per the Schedule 15
- 5.8.2 The Concessionaire shall prepare Waste Reports as defined in Schedule 15 which shall be final and binding on the Parties.
- 5.8.3 Tipping Fee payment to the Concessionaire will be made as per the measurement at the weighbridge at the Transfer Station and is detailed in the Article 17.
- 5.8.4 The Weighbridges shall be constructed, operated and maintained by Concessionaire.
- 5.8.5 Each consignment to the Site shall be screened and weighed at the Weighbridge. Concessionaire shall also keep a record of weight and volume of each empty delivery truck, in order to determine the net weight of the consignment.
- 5.8.6 The Authority shall have the option to depute a responsible person from the Authority (the "BMC Representative") to monitor the operations of the Weighbridges.
- 5.8.7 The Weighbridges shall be monitored and inspected regularly to ensure due calibration and accuracy and any errors shall be rectified immediately.

## 5.9 Maintenance of records and Operations Plan

The Concessionaire shall maintain records of the quantum of MSW as per the Schedule 15.

## 5.10 Sale / Distribution of Compost / Manure / Energy

- 5.10.1 The Concessionaire may adopt such processes and methods as it considers necessary or expedient for processing of MSW at the Project Facilities, subject to complying with the provisions of the Concession Agreement, construction requirements and operation requirements.
- 5.10.2 Subject to Clause 2.3, the Concessionaire is free to choose the processing technologies/options in line with all applicable legislations including but not limited to the MSW Rules 2000 and is entitled to receive the revenues so generated through the products produced out of such processing like Compost, energy/power, RDF, biogas, Carbon credits, metals etc. as per the provision of this Agreement and is entitled to have its own marketing tie up for the same.

## 5.11 Penalty for O&M Breach

The Concessionaire recognizes that the services under this Agreement constitute a public health issue and concerns the wellbeing and quality of life of the citizens. Accordingly, the Concessionaire shall perform the services with diligence and promptness and generally manage the MSW system of the Authority.

due performance and guard against performance breaches, Schedule 12 sets out certain Damages for non-compliance to the O&M Requirements of this Agreement.

## **5.12 Obligations relating to Change in Ownership**

5.12.1 The Concessionaire shall not undertake or permit any Change in Ownership, except with the prior approval of the Authority.

5.12.2 For the Concessionaire formed for the purpose of implementing this Concession, the following is mandated

- a. The Lead Member, whose experience has been evaluated for the purposes of the RFP, shall subscribe to 26% (twenty six percent) or more of Equity of the Concessionaire;
- b. Other Members of the Consortium (i.e. members other than the Lead Member), whose experience has been evaluated for the purposes of the RFP, shall subscribe to 26% (twenty six percent) or more of Equity of the Concessionaire;
- c. The Lead Member, whose experience had been evaluated for the purposes of the RFP, until the expiry of the Concession, shall hold Equity not less than the higher of (i) 26% (twenty six percent) of the Equity of the Concessionaire; or (ii) 5% (five percent) of the Project cost;
- d. Other Members of the Consortium (i.e. members other than the Lead Member), whose experience had been evaluated for the purposes of the RFP, shall for a period of 3 (three) years from the COD of the Project, hold Equity not less than 26% (twenty six percent) of the Equity of the Concessionaire;
- e. Consortium members collectively shall hold at least 51% (fifty one percent) of the issued and paid up Equity of the Concessionaire at all times during the Concession Period; and

5.12.3 Notwithstanding anything to the contrary contained in this Agreement, the Concessionaire agrees and acknowledges that:

- a. all acquisitions of Equity by an acquirer, either by himself or with any person acting in concert, directly or indirectly, including by transfer of the direct or indirect legal or beneficial ownership or control of any Equity, in aggregate of not less than 15% (fifteen per cent) of the total Equity of the Concessionaire; or
- b. acquisition of any control directly or indirectly of the Board of Directors of the Concessionaire by any person either by himself or together with any person or persons acting in concert with him

shall constitute a Change in Ownership requiring prior approval of the Authority from national security and public interest perspective, the decision of the Authority in this behalf being final, conclusive and binding on the Concessionaire, and undertakes that it shall not give effect to any such acquisition of Equity or control of the Board of Directors of the Concessionaire without such prior approval of the Authority. For the avoidance of doubt, it is expressly agreed that approval of the Authority hereunder shall be limited to national security and public interest perspective, and the Authority shall endeavour to convey its decision thereon expeditiously. It is also agreed that the Authority shall not be liable in any manner on account of grant or otherwise of such approval and that such approval or denial thereof shall not in any manner absolve the Concessionaire from any liability or obligation under this Agreement.

For the purposes of this Clause 5.12.3:

  
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- c. the expression "acquirer", "control" and "person acting in concert" shall have the meaning ascribed thereto in the Securities and Exchange Board of India (Substantial Acquisition of Shares and Takeover) Regulations, 2011 or any statutory re-enactment thereof as in force as on the date of acquisition of Equity, or the control of the Board of Directors, as the case may be, of the Concessionaire;
- d. the indirect transfer or control of legal or beneficial ownership of Equity shall mean transfer of the direct or indirect beneficial ownership or control of any company or companies whether in India or abroad which results in the acquirer acquiring control over the shares or voting rights of shares of the Concessionaire; and
- e. power to appoint, whether by contract or by virtue of control or acquisition of shares of any company holding directly or through one or more companies (whether situate in India or abroad) the Equity of the Concessionaire, not less than half of the directors on the Board of Directors of the Concessionaire or of any company, directly or indirectly whether situate in India or abroad, having ultimate control of not less than 15% (fifteen per cent) of the Equity of the Concessionaire shall constitute acquisition of control, directly or indirectly, of the Board of Directors of the Concessionaire.

#### **5.13 Employment of foreign nationals**

The Concessionaire acknowledges, agrees and undertakes that employment of foreign personnel by the Concessionaire and/or its contractors and their sub-contractors shall be subject to grant of requisite regulatory permits and approvals including employment/residential visas and work permits, if any required, and the obligation to apply for and obtain the same shall and will always be of the Concessionaire and, notwithstanding anything to the contrary contained in this Agreement, refusal of or inability to obtain any such permits and approvals by the Concessionaire or any of its contractors or sub-contractors shall not constitute Force Majeure Event, and shall not in any manner excuse the Concessionaire from the performance and discharge of its obligations and liabilities under this Agreement.

#### **5.14 Employment of trained personnel**

The Concessionaire shall ensure that the personnel engaged by it in the performance of its obligations under this Agreement are at all times properly trained for their respective functions.

#### **5.15 Branding of Project**

The Concessionaire agrees that the Project shall be known, promoted, displayed and advertised by the name of 'Regional Municipal Solid Waste Management Facility, Bhuasuni'. The Project or any part thereof shall not be branded in any manner to advertise, display or reflect the name or identity of the Concessionaire or its shareholders save and except as may be necessary in the normal course of business. The Concessionaire shall however, have right to utilise the name of the Project to exhibit technical and financial capability of the Concessionaire for bidding for projects.

#### **5.16 Sole purpose of the Concessionaire**

The Concessionaire having been set up for the sole purpose of exercising the rights and observing and performing its obligations and liabilities under this Agreement, the Concessionaire or any of its subsidiaries

shall not, except with the previous written consent of the Authority, be or become directly or indirectly engaged, concerned or interested in any business other than as envisaged herein.



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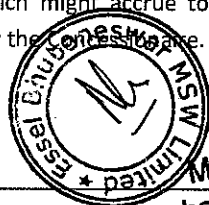
## 6. Obligations of the Authority

### 6.1 Specific obligations of the Authority

6.1.1 The Authority shall grant in a timely manner all such approvals, permissions and authorizations which Concessionaire may require or is obliged to seek from the Authority under this Agreement, in connection with implementation of the Project and the performance of its obligations. Provided where authorization for availing permits for utilities such as power, water, sewerage, telecommunications or any other incidental services/utilities is required, the same shall be provided by the Authority within 120 (One Hundred and Twenty) days from receipt of request from Concessionaire to make available such authorization, subject to the conditions of the applications / details submitted being complete and correct.

#### 6.1.2

- a. Without prejudice to the generality of Clause 6.1.1 above, the Authority shall:
  - i. Recommend and forward to the relevant authority / ministry / department, any application of Concessionaire to obtain any Applicable Permits,
  - ii. Assist Concessionaire in getting necessary clearances from the relevant authorities / ministry / departments.
  - iii. Endeavour that the building plans for the Project Facilities at Site are duly and expeditiously approved by the concerned authorities under the relevant Acts / building by-laws / other relevant by-laws or regulations.
- b. The Authority agrees, for the purposes of the Financing Documents, to intimate to the Senior Lenders by such notice as required under the Financing Documents:
  - i. Of the happening or likely happening of an Event of Default on the part of Concessionaire;
  - ii. Of the termination of this Agreement by the Authority;
  - iii. Of the occurrence, continuance and cessation of any force majeure cause; or
  - iv. Other breach or default on the part of Concessionaire under this Agreement.
- c. The Authority shall pay Tipping Fees to Concessionaire as for processing of MSW. The Tipping Fee shall be paid on a monthly basis equivalent to the amount calculated as per provisions of Article 17 and subject to necessary approval by the Independent Engineer.
- d. The Authority shall declare and maintain, or cause to declare and maintain, a no-development zone around the Landfill Site in accordance with Applicable Laws.
- e. The Authority hereby agrees that if there is any financial benefits or otherwise in respect or on account of the Project (including but not limited to carbon credits and tax benefits), 5% (five percent) of such benefits shall be shared with the Authority. The Authority agrees to facilitate the receipt of all such benefits by Concessionaire, whether on its own behalf or on behalf of the Authority and for the purpose to give all needed recommendations, no-objections, authorizations, etc. However, any Tax benefits which might accrue to the Concessionaire during the Project shall be passed on to the Authority by the Concessionaire.



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- f. The Authority shall handover land to the Concessionaire as per the requirement, on a License basis, for development of the Project Facilities at the Transfer Station and Regional Land Fill at Bhuasuni as per Schedule 9 Clause 9.7 [Schedule for Land Requirement] on "As Is Where Is Basis". Accordingly, the land at the Transfer Station and Regional Land Fill at Bhuasuni shall be handed over to the Concessionaire in two parts, the first transfer shall occur prior to the Appointed Date and the second transfer shall occur at COD.

## 6.2 General Obligations of the Authority

- 6.2.1 The Authority at its own cost and expense shall undertake, comply with and perform all its obligations set out in this Agreement or arising hereunder.
- 6.2.2 The Authority agrees to provide support to the Concessionaire and undertakes to observe, comply with and perform, subject to and in accordance with the provisions of this Agreement and the Applicable Laws, the following:
- a. Upon written request from the Concessionaire and subject to Concessionaire complying with Applicable Laws, provide reasonable support and assistance to the Concessionaire in securing Applicable Permits required from any Government Instrumentality for implementation and operation of the Project;
  - b. ensure timely payments to Concessionaire
  - c. not do or omit to do any act, deed or thing which may in any manner that is in violation of any of the provisions of this Agreement;
  - d. support, cooperate with and facilitate the Concessionaire in the implementation and operation of the Project in accordance with the provisions of this Agreement; and
  - e. upon written request from the Concessionaire and subject to the provisions of Clause 5.13, provide reasonable assistance to the Concessionaire and any expatriate personnel of the Concessionaire or its Contractors to obtain applicable visas and work permits for the purposes of discharge by the Concessionaire or its Contractors their obligations under this Agreement and the Project Agreements.



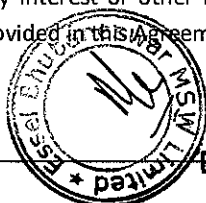
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## 7. Representations and Warranties

### 7.1 Representations and Warranties of Concessionaire

Concessionaire represents and warrants to the Authority that:

- a. It is duly organized, validity 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 actions under Applicable laws and its constitutional documents to authorize the execution, delivery and performance of this Agreement;
- d. It has the financial standing and capacity to undertake the Project in accordance with the terms of this Agreement;
- e. This Agreement constitutes its legal, valid and binding obligation enforceable against it in accordance with the terms hereof and its obligations under this Agreement will be legally binding, valid and enforceable obligations against it in accordance with the terms hereof;
- f. It is subject to the laws of India and hereby expressly and irrevocably waives any immunity in any jurisdiction in respect of this jurisdiction or matter arising thereunder, including any obligation, liability or responsibility hereunder;
- g. The information furnished in the Application and as updated on or before the date of this Agreement is true and accurate in all respects as on the date of this Agreement;
- h. 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 Concessionaire's 'Memorandum and Articles of Association' or any of the 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;
- i. There are no actions, suits, proceedings or investigations pending, or to 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;
- j. 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 resulting Material Adverse Effect;
- k. 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;
- l. All its rights and interests in the Project shall pass to and vest in the Authority on the Transfer Date free and clear of all liens, claims and Encumbrances, without any further act of deed on its part or act of the Authority and that none of the Project Assets shall be acquired by it, subject to any agreement, under which a security interest or other lien or Encumbrance is retained by any person, save and except as expressly provided in this Agreement. ;



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- m. Concessionaire agrees to indemnify and hold indemnified the Authority against all cost, expenses, and penalties arising out of:
- i. Operations of the Project Facilities under this Agreement.
  - ii. Compliance with all labour laws and all possible claims and employment related liabilities of its staff employed in relation with the Project.
- n. It shall at no time undertake or permit any Change in Ownership except as permitted under Clause 5.12.
- o. The Consortium members and their Associates have the financial standing and the resources to fund the required Equity and to raise debt necessary for undertaking and implementing the Project in accordance with this Agreement.
- p. Each Consortium member is duly organised and validly existing under the laws of the jurisdiction of its incorporation, and has requested the Authority to enter into this Agreement with the Concessionaire pursuant to LOA; and has agreed to unconditionally accept the terms and conditions set forth in this Agreement;
- q. No representation or warranty by it contained herein or in any other document furnished by it to Authority or to any Government Instrumentality in relation to Applicable Permits contains or will contain any untrue or misleading statement of material fact or omits or will omit to state a material fact necessary to make such representation or warranty not misleading;
- r. no sums, in cash or kind, have been paid or will be paid, by it or on its behalf, to any person by way of fees, commission or otherwise for securing the Concession or entering into this Agreement or for influencing or attempting to influence any officer or employee of the Authority in connection therewith; and
- s. all information provided by the {selected bidder/ Consortium Members} in response to the Request for Proposal or otherwise, is to the best of its knowledge and belief, true and accurate in all material respects.

## 7.2 Representations and warranties of the Authority

The Authority represents and warrants to Concessionaire that:

- a. That it is duly incorporated under the laws of India and has the power to conduct its business as presently conducted and to enter into this Agreement;
- b. That it has full power, capacity and authority to execute, deliver and perform this Agreement and has taken all necessary sanctions and approvals and followed all the procedure required to authorize the execution, delivery and performance of this Agreement;
- c. All approvals and permissions as are necessary for the execution of this Agreement have been obtained and all the required procedure for the due execution of this Agreement have been adhered to and further that this Agreement will be valid, legal and binding against it under the Indian law.



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### 7.3 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 are given such warranty shall promptly notify the other of the same.



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## 8. Disclaimer

### 8.1 Disclaimer

- 8.1.1 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 Request for Proposals, Scope of the Project, Specifications and Standards, Site, existing structures, local conditions, physical qualities of ground, subsoil, and geology, MSW waste characteristics and all information provided by the Authority or obtained, procured or gathered otherwise, and has determined to its satisfaction the accuracy or otherwise thereof and the nature and extent of difficulties, risks and hazards as are likely to arise or may be faced by it in the course of performance of its obligations hereunder. The Authority makes no representation whatsoever, express, implicit or otherwise, regarding the accuracy, adequacy, correctness, reliability and/or completeness of any assessment, assumptions, statement or information provided by it and the Concessionaire confirms that it shall have no claim whatsoever against the Authority in this regard.
- 8.1.2 The Concessionaire acknowledges and hereby accepts the risk of inadequacy, mistake or error in or relating to any of the matters set forth in Clause 8.1.1 above and hereby acknowledges and agrees that the Authority shall not be liable for the same in any manner whatsoever to the Concessionaire, {the Consortium Members and their} Associates or any person claiming through or under any of them.
- 8.1.3 The Parties agree that any mistake or error in or relating to any of the matters set forth in Clause 8.1.1 above shall not vitiate this Agreement, or render it voidable.
- 8.1.4 In the event that either Party becomes aware of any mistake or error relating to any of the matters set forth in Clause 8.1.1 above, that Party shall immediately notify the other Party, specifying the mistake or error; provided, however, that a failure on part of the Authority to give any notice pursuant to this Clause 8.1.4 shall not prejudice the disclaimer of the Authority contained in Clause 8.1.1 and shall not in any manner shift to the Authority any risks assumed by the Concessionaire pursuant to this Agreement.
- 8.1.5 Except as otherwise provided in this Agreement, all risks relating to the Project shall be borne by the Concessionaire and the Authority shall not be liable in any manner for such risks or the consequences thereof.



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## **PART III- DEVELOPMENT AND OPERATIONS**

## 9. Performance Security

### 9.1 Performance Security for Construction Works

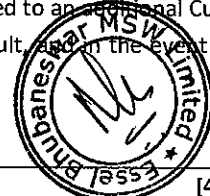
9.1.1 The Concessionaire shall, for due and punctual performance of its obligations during the Construction Period hereunder relating to the Project, deliver to the Authority, a bank guarantee from a scheduled bank in the form as set out in Schedule 3, for a sum of **Rs. 1,25,00,000/- (Rupees One Crore Twenty Five Lakhs only)**. The Performance Security in the form of performance bank guarantees has to be furnished by the Concessionaire within 45 (forty five) days of issuance of Letter of Award and before signing the Concession Agreement and the Performance Security shall remain valid for a period of 120 days over and above the date of COD. Until such time the Performance Security is provided and comes into effect, the Bid Security shall remain in force and effect, and upon such provision of the Performance Security pursuant hereto, the Authority shall release the Bid Security to the Concessionaire.

9.1.2 Notwithstanding anything to the contrary contained in this Agreement, in the event Performance Security is not provided by the Concessionaire on or before the execution of this Agreement, the Authority may encash the Bid Security and appropriate the proceeds thereof as Damages, and thereupon all rights, privileges, claims and entitlements of the Concessionaire under or arising out of this Agreement shall be deemed to have been waived by, and to have ceased with the concurrence of the Concessionaire, and this Agreement shall be deemed to have been terminated by mutual agreement of the Parties

9.1.3 The renewal of the Performance Security, as and when required, is to be done by the Concessionaire at least one month before the date of expiry of the existing Performance Security, failing which, the Authority shall be entitled to invoke the Performance Security. Provided that if the Agreement is terminated due to any event other than a Concessionaire Event of Default, the Performance Security, if subsisting as on the Termination Date shall, subject to rights of the Authority to receive amounts at prevailing time, if any, due from Concessionaire under this Agreement, be duly discharged and released to Concessionaire within 30 (thirty) days from the Termination Date.

### 9.2 Appropriation of Performance Security for Construction Works

Upon occurrence of a Concessionaire Event of Default or failure to meet any Condition Precedent, the Authority shall, without prejudice to its other rights and remedies hereunder or in law, be entitled to encash and appropriate the relevant amounts from the Performance Security as Damages for such Concessionaire Event of Default. Upon such encashment and appropriation from the Performance Security, the Concessionaire shall, within 30 (thirty) days thereof, replenish, in case of partial appropriation, to its original level the Performance Security, and in case of appropriation of the entire Performance Security provide a fresh Performance Security, as the case may be, and the Concessionaire shall, within the time so granted, replenish or furnish fresh Performance Security as aforesaid failing which the Authority shall be entitled to terminate this Agreement in accordance with Article 29. Upon replenishment or furnishing of a fresh Performance Security, as the case may be, as aforesaid, the Concessionaire shall be entitled to an additional Cure Period of 90 (ninety) days for remedying the Concessionaire Event of Default, and in the event of





the Concessionaire not curing its default within such Cure Period, the Authority shall be entitled to encash and appropriate such Performance Security as Damages, and to terminate this Agreement in accordance with Article 29.

### 9.3 Release of Performance Security for Construction Works


The Performance Security shall remain in force and effect for a period of 120 days from COD; provided, however, that the Performance Security shall not be released if the Concessionaire is or has been in breach of this Agreement. The Performance bank Guarantee will be released upon (a) completion of the Construction Works, (b) issuance of Provisional Completion Certificate and (c) submission of Performance Security in accordance with Clause 9.4.

### 9.4 Performance Security for Operation and Maintenance Period

On or before the completion of the Construction Works and issuance of the Provisional Completion Certificate, the Concessionaire, to cover its liability arising from the breach of Performance Standards leading to payment of Damages as mentioned in the Schedule 12 or any breach of this Agreement or for the liability of defects and deficiencies arising after Termination, shall provide to the Authority a Performance Security of a sum of **Rs. 75,00,000/- (Rupees Seventy Five Lakhs only)**, in the form set forth in Schedule 4, to be modified, mutatis mutandis, for this purpose. The Concessionaire shall keep the Performance Security for Operation and Maintenance Period valid until one year after the expiry of the Concession Period.

### 9.5 Appropriation of Performance Security during Operation and Maintenance Period

Upon the breach of Performance Standards that leads to payment of Damages or any breach of this Agreement or upon the liability of defects and deficiencies arising after the Termination, the Authority shall, without prejudice to its other rights and remedies hereunder or in law, be entitled to encash and appropriate the relevant amounts from the Performance Security for meeting the Damages levied or for undertaking the repairs or rectification at the Concessionaire's risk and cost in accordance with the provisions of Article 31. Upon such encashment and appropriation from the Performance Security, the Concessionaire shall, within 30 (thirty) days thereof, replenish, in case of partial appropriation, to its original level the Performance Security, and in case of appropriation of the entire Performance Security provide a fresh Performance Security, as the case may be, and the Concessionaire shall, within the time so granted, replenish or furnish fresh Performance Security as aforesaid failing which the Authority shall be entitled to terminate this Agreement in accordance with Article 29. If there is no such encashment and appropriation from the Performance security is made, the Performance Security shall be renewed annually in accordance with this Agreement, at least 30 (thirty) days before the start of the Accounting Year, failing which, the Authority shall be entitled to invoke the Performance Security.

  
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## 10. Project Site

### 10.1 The Site

Pursuant to grant of Concession and in consideration of grant of License of the Site in accordance with this agreement, the Concessionaire shall pay to the Authority by way of License fee (the "License Fee"), equivalent to Rupees one per acre of land per year during the Concession Period. Subject to other provisions of the Concession Agreement, Concessionaire shall have the full right to regulate the entry into and use of the Site. The land constituting the Site shall be vested with Concessionaire under this Concession, for the sole purposes of performance, execution and implementation of the Project. The Concessionaire is responsible for payment of all applicable taxes, including property tax on the site.

The Authority will hand over land to the Concessionaire in accordance with Clause 6.1.2(f). upon achievement of Milestones for land transfer as set out in Schedule 9, Clause 9.7.

### 10.2 Rights, Title and Use of the Site

- a. In consideration of the License Fee, this Agreement and the covenants and warranties on the part of the Concessionaire herein contained, the Authority, in accordance with the terms and conditions set forth herein, hereby grants to the Concessionaire, commencing from the Appointed Date, leave and license rights in respect of all the land (along with any buildings, constructions or immovable assets, if any, thereon) comprising the Site which is described, delineated and shown in Schedule-1 hereto (the "Licensed Premises"), on an "as is where is" basis, free of any Encumbrances, to develop, operate and maintain the said Licensed Premises, together with all and singular rights, liberties, privileges, easements and appurtenances whatsoever to the said Licensed Premises, hereditaments or premises or any part thereof belonging to or in any way appurtenant thereto or enjoyed therewith, for the duration of the Concession Period and, for the purposes permitted under this Agreement, and for no other purpose whatsoever.
- b. The Concessionaire shall not part with or create any Encumbrance on the whole or any part of the Site. Save and except as otherwise permitted under this Agreement.
- c. The Concessionaire shall not, without the prior written approval of the Authority, use the Project Facilities for any purpose other than for the purpose of the Project and purpose incidental or ancillary thereto.
- d. It is expressly agreed that the License granted hereunder shall terminate automatically and forthwith, without the need for any action to be taken by the Authority to terminate the License, upon the Termination of this Agreement for any reason whatsoever. For the avoidance of doubt, the Parties expressly agree that notwithstanding any temporary or permanent structures erected on the Site by the Concessionaire, the License rights in respect of the Site shall automatically terminate, without any further act of the Parties, upon Termination of this Agreement.
- e. The Concessionaire hereby irrevocably appoints the Authority (or its nominee) to be its true and lawful attorney to execute and sign in the name of the Concessionaire a transfer or

  
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Concession Agreement

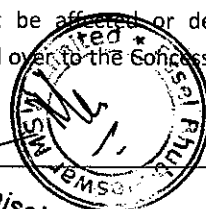
surrender of the License rights granted hereunder at any time after the Concession Period has expired or has been terminated earlier in terms hereof, a sufficient proof of which will be the declaration of any duly authorized officer of the Authority.

- f. It is expressly agreed that trees on the Site are property of the Authority except that the Concessionaire shall be entitled to exercise usufructuary rights thereon during the Concession Period. The Concessionaire shall allow access to and use of the Site for laying/ installing/ maintaining telegraph lines, electric lines, gas lines of the Gas Authority of India Limited or for such other public purposes as the Authority may specify provided that such access or use shall not result in a Material Adverse Effect to the Concessionaire. -
- g. The Concessionaire accepts on an "as is where is" basis and undertakes to bear all risk arising out of the inadequacy or physical condition of the Site.

### 10.3 Possession of the Site

- 10.3.1 In order to handover the possession of the Site pursuant to Clause 4.1.2, the authorized representatives of the Authority and the Concessionaire shall, on mutually agreed date and time, inspect the Site and prepare a memorandum containing an inventory of the Site including the vacant and unencumbered land, building, structures, road network, trees, pipelines and any other immovable property on or attached to the Site. Such memorandum shall have appended thereto an appendix (the "Appendix") specifying in reasonable detail those parts of the Site to which vacant and unencumbered possession of the Site has not been granted to the Concessionaire. Signing of the memorandum, as above, by the authorized representatives of the Parties shall, subject to the provision of Clause 10.1, be deemed to constitute a valid handover of possession of the Site to the Concessionaire for free and unrestricted use and development of the vacant and unencumbered Site during the Concession Period under and in accordance with the provisions of this Agreement and for no other purpose whatsoever. For avoidance of doubt, it is agreed that vacant and unencumbered possession of the Site in respect of those parts of the Site which have been set forth in the Appendix shall be deemed to have been granted to the Concessionaire upon vacant handover of possession being provided
- 10.3.2 On and after signing the memorandum referred to in Clause 10.3.1, and until the Transfer Date, the Concessionaire shall maintain a round-the-clock vigil over the Site and shall ensure that no encroachment thereon takes place, and in the event of any encroachment or occupation on any part thereof, the Concessionaire shall report such encroachment or occupation forthwith to the Authority and undertake its removal at its cost and expense.
- 10.3.3 The Authority shall make best efforts to handover, **no later than 90 (ninety) days** from the signing of this Agreement, the possession of the land included in the Appendix, and in the event of delay for reason other than Force Majeure or breach of this Agreement by the Concessionaire, it shall pay to the Concessionaire, Damages calculated in accordance with Clause 4.2, in respect of the land set forth in the Appendix, from the 91<sup>st</sup> (ninety first) day of the Appointed Day and until such land is handed over to the Concessionaire.
- 10.3.4 Upon receiving the possession of the land included in the Appendix, the Concessionaire shall complete the Construction Work thereon within a reasonable period to be determined by the Independent Engineer in accordance with Good Industry Practice; provided that the issue of Provisional Completion Certificate shall not be affected or delayed on account of vacant possession of any part of Site was not handed over to the Concessionaire or any construction on

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such part of the Site remaining incomplete on the date of Tests on account of delay or denial of such possession thereto. For avoidance of doubt, it is expressly agreed that Construction Work on all the land which has been handed over within 90 (ninety) days of the Appointed Date shall be completed before the Scheduled Completion Date.

10.3.5 Subject to this Sub-clauses of this Clause 10.3, the Authority hereby warrants that:

- a. The Site has been acquired through the due process of law and belongs to and is vested in the Authority and that the Authority has full powers to hold, dispose of and deal with the same; consistent and interlaid 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 person affected thereby.
- 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 Concession Period.

#### 10.4 **Applicable Permits**

The Concessionaire shall obtain and maintain the Applicable Permits in such sequence as is consistent with the requirements of the Project. The Authority shall provide all necessary co-operation/ assistance for obtaining the permission. The Concessionaire shall be responsible to be in compliance with the terms and conditions subject to which Applicable Permits have been issued.

#### 10.5 **Protection of Site from encroachments**

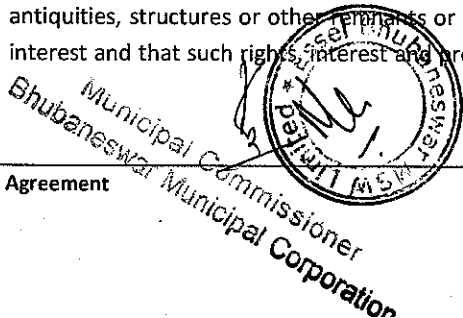
During the Concession Period, the Concessionaire shall protect the Site from any and all occupations, encroachments or Encumbrances, and shall not place or create nor permit any Contractor or other person claiming through or under the Concessionaire to place or create any Encumbrance or security interest over all or any part of the Site or the Project Assets, or on any rights of the Concessionaire therein or under this Agreement, save and except as otherwise expressly set forth in this Agreement.

#### 10.6 **Access to the Authority and Independent Engineer**


The License rights to the Site granted to the Concessionaire hereunder shall always be subject to the right of access of the Authority and the Independent Engineer and their employees and agents for inspection, viewing and exercise of their rights and performance of their obligations under this Agreement.

#### 10.7 **Geological and archaeological finds**

It is expressly agreed that mining, geological or archaeological rights do not form part of the License rights granted to the Concessionaire under this Agreement and the Concessionaire hereby acknowledges that it shall not have any mining rights or interest in the underlying minerals, fossils, antiquities, structures or other remains or things either of particular geological or archaeological interest and that such rights, interest and property on or under the Site shall vest in and belong to



the Authority or the concerned Government Instrumentality. The Concessionaire shall take all reasonable precautions to prevent its workmen or any other person from removing or damaging such interest or property and shall inform the Authority forthwith of the discovery thereof and comply with such instructions as the concerned Government Instrumentality may reasonably give for the removal of such property.

  
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## **11. Utilities, Associated Roads and Trees**

### **11.1 Existing utilities and roads**

Notwithstanding anything to the contrary contained herein, the Concessionaire shall ensure that the respective entities owning the existing roads, right of way or utilities on under or above the Site are enabled by it to keep such utilities in continuous satisfactory use, if necessary, by providing suitable temporary or permanent diversions with the Authority as the controlling body of such road, right of way or utility, and the Authority shall, upon written request from the Concessionaire, initiate and undertake at the Concessionaire's cost, legal proceedings for acquisition of any right of way necessary for such diversion.

### **11.2 Shifting of obstructing utilities**


The Concessionaire shall, subject to Applicable Laws and with assistance of the Authority, undertake shifting of any utility including electric lines, water pipes and telephone cables, to an appropriate location or alignment within or outside the Site if and only if such utility causes or shall cause a Material Adverse Effect on the construction, operation or maintenance of the Project. The cost of such shifting shall be borne by the Concessionaire, if the Authority so directs.

### **11.3 New utilities and roads**

The Concessionaire shall allow, subject to such conditions as the Authority may specify, access to, and use of the Site for laying telephone lines, water pipes, electric cables or other public utilities. Where such access or use causes any financial loss to the Concessionaire, it may require the user of the Site to pay compensation or damages as per Applicable Laws. For the avoidance of doubt, it is agreed that use of the Site under this Clause shall not in any manner relieve the Concessionaire of its obligation to maintain the Project in accordance with this Agreement and any damage caused by such use shall be restored forthwith.

### **11.4 Felling of trees**

The Authority shall assist the Concessionaire in obtaining the Applicable Permits for felling of trees to be identified by the Concessionaire for this purpose if and only if such trees cause a Material Adverse Effect on the construction, operation or maintenance of the Project. The cost of such felling shall be borne by the Authority, and in the event of any delay in felling thereof for reasons beyond the control of the Concessionaire, it shall be excused for failure to perform any of its obligations hereunder if such failure is a direct consequence of delay in the felling of trees. For the avoidance of doubt, the Parties hereto agree that the felled trees shall be deemed to be owned by the Authority and shall be disposed in such manner and subject to such conditions as the Authority may in its sole discretion deem appropriate.

  
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## 12. Development and operations of the Project

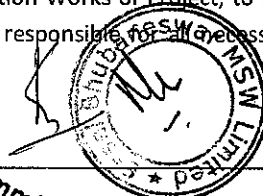
### 12.1 Obligations prior to commencement of construction

Prior to commencement of Construction Works, the Concessionaire shall:

- a. submit to the Authority and the Independent Engineer its detailed design, construction methodology, quality assurance procedures, and the procurement, engineering and construction time schedule for completion of the Project in accordance with the Project Completion Schedule as set forth in Schedule 5;
- b. submit to the Authority on the detailed construction plan comprising of details delineating the Site for construction of Project Facilities and ensuring continued use of the Site for managing MSW by BMC till COD;
- c. submit to the Authority for its approval the Environment and Social Impact Assessment report in accordance with the Terms of Reference set out in Schedule 23;
- d. appoint its representative duly authorized to deal with the Authority in respect of all matters under or arising out of or relating to this Agreement;
- e. undertake, do and perform all such acts, deeds and things as may be necessary or required before commencement of construction under and in accordance with this Agreement, the Applicable Laws and Applicable Permits; and
- f. make its own arrangements for procuring materials needed for the Construction Works and in accordance with the Applicable Laws and Applicable Permits.

### 12.2 Project Implementation: Construction of Project Facilities

- 12.2.1 Unless otherwise permitted by the Authority, no Construction Works shall begin until the Independent Engineer is in place and has assumed charge and has approved the concepts, proposals, drawings, construction drawings, environment management plan etc. submitted by the Concessionaire.
- 12.2.2 The Concessionaire shall adhere to the Construction Requirements and the Project Completion Schedule and achieve COD on or before the dates specified in this Schedule 5.
- 12.2.3 The Concessionaire shall adhere to all the Construction Requirements as per Schedule 9 and shall adhere to the standards / guidelines for construction as per BIS, MSW Rules 2000 and other applicable standards / guidelines.
- 12.2.4 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 solely responsible to meet the Construction Requirements.
- 12.2.5 The Concessionaire shall, before commencement of construction of Project Facilities;
  - a. Have requisite organization and designate and appoint suitable officers/representatives as it may deem appropriate to supervise the Construction Works of Project, to interact with the Independent Engineer / the Authority and to be responsible for all necessary exchange of information required pursuant to this Agreement;



- b. Construct, provide, incur day to day office running expenditure and maintain a reasonably furnished site office accommodation for the Independent Engineer / the Authority personnel, at the Project Site.

12.2.6 For the purposes of determining that Construction Works are being undertaken in accordance with the requirements, the Concessionaire shall with due diligence carry out all necessary and periodical Tests with advance intimation to the Independent Engineer / the Authority who either in person or through his representative may choose to be present during the conduct of such tests. 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 and keep the Independent Engineer / the Authority informed.

If the Tests are successful and the Project Facilities can be safely and reliably opened for trial runs, the Independent Engineer / the Authority shall issue Readiness Certificate.

12.2.7 The Independent Engineer / the Authority, 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, in case the same is not responded to within 7 (seven) days of such notice.

12.2.8 The Concessionaire shall construct the Project Facilities in accordance with the Project Completion Schedule set out in the Schedule 5 and achieve COD within 18 months from the Appointed Date. In the event that the Concessionaire fails to complete any of the activities / milestones (the "Project Milestones") within a period of 60 (sixty) days from the date set forth for such Project Milestone (the "Project Completion Schedule") in the Schedule 5, unless such failure has occurred due to Force Majeure or for reasons solely attributable to the Authority, it shall pay damages (the "Damages") to the Authority in a sum calculated at the rate of 0.1% (zero point one per cent) of the amount of Performance Security for delay of each day until such Project Milestone is achieved; provided further that in the event COD is achieved on or before the scheduled date for COD, the Damages paid under this Clause shall be refunded by the Authority to the Concessionaire, but without any interest thereon. For the avoidance of doubt, it is agreed that recovery of Damages under this Clause shall be without prejudice to the rights of the Authority under this Agreement, including the right of Termination thereof.


### 12.3 Project Implementation: Operation and Maintenance

12.3.1 The Concessionaire shall operate and maintain the Project Facilities in accordance with the O&M Requirements as stipulated in the Schedules 10, 11, 12, 13 and 14

12.3.2 The Concessionaire will be allowed to utilize the Project facility for treating MSW from other gram panchyats and/ or other urban local bodies, provided it has excess capacity to treat such MSW after treating the MSW provided by the Authority, provided further it has obtained a No Objection Certificate from the Housing and Urban Development Department, Government of Odisha for treating such MSW.

12.3.3 The Concessionaire may undertake operations and maintenance of the Project Facilities by itself or after prior written consent of the Authority, 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.

12.3.4 The Concessionaire shall, for Operations and Maintenance;

  
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- a. have requisite organisation and designate and appoint suitable officers/ representatives as it may deem appropriate to supervise the Project, to deal with the Independent Engineer / the Authority and to be responsible for all necessary exchange of information required pursuant to this Agreement;
- b. construct, provide, incur day to day office running expenditure and maintain a reasonably furnished site office accommodation for the Independent Engineer / the Authority, at the Project Site.

12.3.5 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 Engineer / the Authority. 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.

12.3.6 Conduct all Tests to ascertain compliance with Construction Requirements and O&M Requirements.

12.3.7 Suspend forthwith the whole or any part of the Operation and Maintenance activities upon receiving a written notice from the Independent Engineer / the Authority, who may require the Concessionaire to suspend the activities in whole or part if in the reasonable opinion of the Independent Engineer, the operations are being carried on in a manner that is not in conformity with the O&M Requirements.

12.3.8 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 Engineer or the Authority (the "Notice to Remedy"), the Authority 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, under the supervision of Independent Engineer, at the risk and cost of the Concessionaire. The Concessionaire shall reimburse all costs incurred by the Authority on account of such operation and maintenance or repair and maintenance, and as certified by Independent Engineer, within 7 (seven) days of receipt of the Authority claim therefore.

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

- a. 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;
- b. 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;
- c. 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;
- d. There has been persistent breach of O&M requirements. For avoidance of doubt, persistent breach shall mean:

  
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- i. 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 Engineer / the Authority;
- ii. Recurrence of a breach by the Concessionaire, during the pendency of Notice to Remedy by the Independent Engineer / the Authority requiring the Concessionaire to remedy a breach, and
- iii. Repeated occurrence of a breach notwithstanding that earlier breaches have been remedied pursuant to Notice to Remedy or otherwise

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

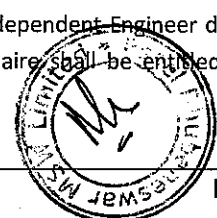
## 12.4 Drawings

### 12.4.1 Preparation of Drawings

- a. The Concessionaire may, subject to the Construction Requirements, adopt with or without modifications the drawings made available by the Authority, if any, or adopt its own drawings, provided that the Concessionaire shall in any event be solely responsible for the adequacy of the drawings.
- b. If the Concessionaire proposes any modifications to the drawings made available by the Authority, if any, or submits alternate drawings or drawings in respect of any item for which no drawings are made available by the Authority, the same shall be subject to review by the Independent Engineer as hereinafter provided in Clause 12.4.2.

### 12.4.2 Review of Drawings

- a. The Concessionaire shall promptly and in such sequence as is consistent with the Construction Requirements, submit a copy of each of the drawings as mentioned in the Schedule 6 to the Independent Engineer and the Authority.
- b. By forwarding the drawings to the Independent Engineer and the Authority pursuant to the preceding Clause (a), 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.
- c. Within 15 (fifteen) days of receipt of the drawings, Independent Engineer shall review the same taking into account, inter-alia, comments of the Authority, if any, thereon, and convey its comments / observations to the Concessionaire on the conformity of drawings with Construction Requirements mentioned in Schedule 9. If the comments / observations of the Independent Engineer 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 Engineer for further review. The Independent Engineer shall give its observations and comments, if any, within 15 (fifteen) days of receipt of such revised drawings, which shall be taken into account by the Concessionaire while finalising the drawings.
- d. If, within the period stipulated in the preceding Clause (c), the Independent Engineer does not respond to the drawings submitted to it by the Concessionaire, the Concessionaire shall be entitled to



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proceed with the Construction Works on the basis of such drawings submitted by it to the Independent Engineer, and intimate the same to the Authority. The same should be highlighted in the periodic reporting by the Concessionaire.

- e. Notwithstanding any review or failure to review by or the comments / observations of the Independent Engineer or the Authority, 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.
- f. 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 the Authority.
- g. Within 90 (ninety) days of issue of Readiness Certificate, the Concessionaire shall furnish to the Authority three set of "as built" Drawings, 2 (two) hard copies and 1(one) soft copy, reflecting the Construction Works which have been completed as on COD, in a manner as set out in Construction Requirements. The Concessionaire shall also submit an as built survey illustrating the layout of the Project Facilities and seth if any, of the building and structures forming part of Project Facilities.

  
  
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## 13. Monitoring of Construction

### 13.1 Monthly progress reports

During the Construction Period, the Concessionaire shall, no later than 7 (seven) days after the close of each month, furnish to the Authority and the Independent Engineer a monthly report on progress of the Construction Works and shall promptly give such other relevant information as may be required by the Independent Engineer.

### 13.2 Inspection

During the Construction Period, the Independent Engineer shall inspect the construction of the Project Facilities at least once a month and make a report of such inspection (the "Inspection Report") stating in reasonable detail the defects or deficiencies, if any, with particular reference to the Scope of the Project and Specifications and Standards. It shall send a copy of the Inspection Report to the Authority and the Concessionaire within 7 (seven) days of such inspection and upon receipt thereof, the Concessionaire shall rectify and remedy the defects or deficiencies, if any, stated in the Inspection Report. Such inspection or submission of Inspection Report by the Independent Engineer shall not relieve or absolve the Concessionaire of its obligations and liabilities hereunder in any manner whatsoever.

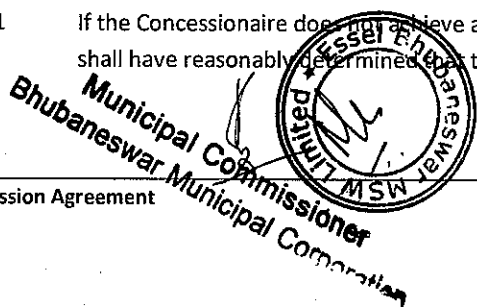
### 13.3 Tests

13.3.1 For determining that the Construction Works conform to the Specifications and Standards, the Independent Engineer shall require the Concessionaire to carry out or cause to be carried out tests, at such time and frequency and in such manner as may be specified by the Independent Engineer from time to time, in accordance with Good Industry Practice for quality assurance. The costs incurred on the Tests shall be borne solely by the Concessionaire.

13.3.2 In the event that results of any tests conducted under this Clause 13.3 establish any defects or deficiencies in the Construction Works, the Concessionaire shall carry out remedial measures and furnish a report to the Independent Engineer in this behalf. The Independent Engineer shall require the Concessionaire to carry out or cause to be carried out tests to determine that such remedial measures have brought the Construction Works into compliance with the Specifications and Standards, and the procedure set forth in this Clause 13.3 shall be repeated until such Construction Works conform to the Specifications and Standards. For the avoidance of doubt, it is agreed that tests pursuant to this Clause shall be undertaken in addition to and independent of the tests that shall be carried out by the Concessionaire for its own quality assurance in accordance with Good Industry Practice. It is also agreed that a copy of the results of such tests shall be sent by the Concessionaire to the Independent Engineer forthwith.

### 13.4 Delays during construction

13.4.1 If the Concessionaire does not achieve any of the Project Milestones or the Independent Engineer shall have reasonably determined that the rate of progress of Construction Works is such that the



Project Milestone is not likely to be achieved, it shall notify the Concessionaire to this effect, and the Concessionaire shall, within 15 (fifteen) days of such notice, by a communication inform the Independent Engineer in reasonable detail about the steps it proposes to take to expedite progress and the period within which it shall achieve the Scheduled Completion Date indicated in Project Completion Schedule.

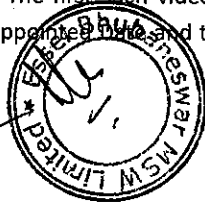
### 13.5 Suspension of unsafe Construction Works

13.5.1 Upon recommendation of the Independent Engineer to this effect, the Authority may, by notice, require the Concessionaire to suspend forthwith the whole or any part of the Construction Work if, in the reasonable opinion of the Authority, such work is unsafe and potential safety hazard.

13.5.2 The Concessionaire shall, pursuant to notice under Clause 13.5.1, suspend the Construction Works or any part thereof for such time and in such manner as may be specified by the Authority and thereupon carry out remedial measure to secure the safety of suspended works. The Concessionaire may by notice require the Independent Engineer to inspect such remedial measure forthwith and make a report to the Authority recommending whether or not such suspension hereunder may be revoked. Upon receiving the recommendations of the Independent Engineer, the Authority shall either revoke such suspension or instruct the Concessionaire to carry out such other and further remedial measures as may be necessary in the reasonable opinion of the Authority, and the procedure set forth in Clause 13.5.1 shall be repeated until the suspension hereunder is revoked.

### 13.6 Video recording

During the Construction Period, the Concessionaire shall provide to the Authority for every calendar quarter, a video recording, which will be compiled into a 3 (three)-hour compact disc or digital video disc, as the case may be, covering the status and progress of Construction Works in that quarter. The first such video recording shall be provided to the Authority within 7 (seven) days of the Appointed Date and thereafter, no later than 15 (fifteen) days after the close of each quarter.

  
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## 14. Completion Certificate

### 14.1 Tests

14.1.1 At least 30 (thirty) days prior to the likely completion of the construction of Project Facilities, the Concessionaire shall notify the Independent Engineer of its intent to subject the Construction Works to Tests. The date and time of each of the Tests shall be determined by the Independent Engineer in consultation with the Concessionaire, and notified to the Authority who may designate its representative to witness the Tests. The Concessionaire shall provide such assistance as the Independent Engineer may reasonably require for conducting the Tests. In the event of the Concessionaire and the Independent Engineer failing to mutually agree on the dates for conducting the Tests, the Concessionaire shall fix the dates by not less than 10 (ten) days' notice to the Independent Engineer.

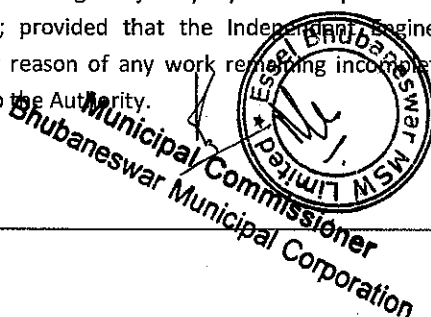
14.1.2 All Tests shall be conducted in accordance with Schedule 7. The Independent Engineer shall observe, monitor and review the results of the Tests to determine compliance of the Construction Works with Specifications and Standards and if it is reasonably anticipated or determined by the Independent Engineer during the course of any Test that the performance of the Project or any part thereof does not meet the Specifications and Standards, it shall have the right to suspend or delay such Test and require the Concessionaire to remedy and rectify the defects or deficiencies. Upon completion of each Test, the Independent Engineer shall provide to the Concessionaire and the Authority copies of all Test data including detailed Test results. For the avoidance of doubt, it is expressly agreed that the Independent Engineer may require the Concessionaire to carry out or cause to be carried out additional Tests, in accordance with Good Industry Practice, for determining the compliance of the Construction Works with Specifications and Standards.

### 14.2 Completion Certificate

Upon completion of Construction Works and the Independent Engineer determining the Tests to be successful, it shall forthwith issue to the Concessionaire and the Authority a certificate substantially in the form set forth in Schedule 8 (the "Completion Certificate").

### 14.3 Provisional Certificate

14.3.1 The Independent Engineer may, at the request of the Concessionaire, issue a provisional certificate of completion substantially in the form set forth in Schedule 8 (the "Provisional Certificate") if the Tests are successful and the Project Facilities can be safely and reliably placed in commercial operation though certain works or things of a minor or nagging nature forming part thereof are outstanding and not yet complete, but do not affect commercial operation of the Project. In such an event, the Provisional Certificate shall have appended thereto a list of outstanding items signed jointly by the Independent Engineer and the Concessionaire (the "Punch List"); provided that the Independent Engineer shall not withhold the Provisional Certificate for reason of any work remaining incomplete if the delay in completion thereof is attributable to the Authority.




#### 14.4 Completion of Punch List items

- 14.4.1 All items in the Punch List shall be completed by the Concessionaire within 90 (ninety) days of the date of issue of the Provisional Certificate and for any delay thereafter, other than for reasons solely attributable to the Authority or due to Force Majeure, the Authority shall be entitled to recover Damages from the Concessionaire to be calculated as 0.1% (zero point one per cent) of the Performance Security and paid for each day of delay until all items are completed. Subject to payment of such Damages, the Concessionaire shall be entitled to a further period not exceeding 120 (one hundred and twenty) days for completion of the Punch List items. For the avoidance of doubt, it is agreed that if completion of any item is delayed for reasons solely attributable to the Authority or due to Force Majeure, the Completion Date thereof shall be determined by the Independent Engineer in accordance with Good Industry Practice, and such completion date shall be deemed to be the date of issue of the Provisional Certificate for the purposes of Damages, if any, payable for such item under this Clause 14.4.1.
- 14.4.2 Upon completion of all Punch List items, the Independent Engineer shall issue the Completion Certificate. Failure of the Concessionaire to complete all the Punch List items within the time set forth in Clause 14.4.1 for any reason, other than conditions constituting Force Majeure or for reasons solely attributable to the Authority, shall entitle the Authority to terminate this Agreement.
- 14.4.3 If the Concessionaire fails to complete the Punch List items within said period of 90 days, the Authority 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 the Authority in completing the Punch List items, as certified by the Independent Engineer / the Authority, shall be reimbursed by the Concessionaire to the Authority within 7 (seven) days from the date of receipt of a claim in respect thereof from the Authority.



#### 14.5 Withholding of Provisional Certificate

- 14.5.1 If the Independent Engineer determines that the Construction Works or any part thereof does not conform to the provisions of this Agreement and cannot be safely and reliably placed in commercial operation, it shall forthwith make a report in this behalf and send copies thereof to the Authority and the Concessionaire. Upon receipt of such a report from the Independent Engineer and after conducting its own inspection, if the Authority is of the opinion that the Construction Works is not fit and safe for commercial service, it shall, within 7 (seven) days of receiving the aforesaid report, notify the Concessionaire of the defects and deficiencies in the Construction Works and direct the Independent Engineer to withhold issuance of the Provisional Certificate. Upon receipt of such notice, the Concessionaire shall remedy and rectify such defects or deficiencies and thereupon Tests shall be undertaken in accordance with this Article 14. Such procedure shall be repeated as necessary until the defects or deficiencies are rectified.
- 14.5.2 Notwithstanding anything to the contrary contained in Clause 14.5.1, the Authority may, at any time after receiving a report from the Independent Engineer under that Clause, direct the Independent Engineer to issue a Provisional Certificate under Clause 14.3, and such direction shall be complied forthwith.

  
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#### 14.6 Rescheduling of Tests

- 14.6.1 If the Independent Engineer certifies to the Authority and the Concessionaire that it is unable to issue the Completion Certificate or Provisional Certificate, as the case may be, because of events or circumstances on account of which the Tests could not be held or had to be suspended, the Concessionaire shall be entitled to re-schedule the Tests and hold the same as soon as reasonably practicable.

  
  
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## 15. Entry into Commercial Service

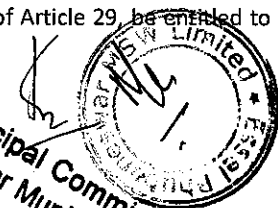
### 15.1 Commercial Operation Date (COD)

The Construction Works of the Project shall be deemed to be complete when the Completion Certificate or the Provisional Certificate, as the case may be, is issued under the provisions of Article 14, and accordingly the commercial operation date of the Project shall be the date which is notified on such Completion Certificate or the Provisional Certificate is issued by the Independent Engineer (the "COD"). The Project shall enter into commercial service on COD, whereupon the Concessionaire shall be entitled to receive Tipping Fee in accordance with the provisions of Article 17.

### 15.2 Damages for delay

If COD does not occur prior to the 61<sup>st</sup> (sixty first) day after the Scheduled COD, unless the delay is on account of reasons solely attributable to the Authority or due to Force Majeure, the Concessionaire shall pay Damages to the Authority in a sum calculated at the rate of 0.1% (zero point one per cent) of the amount of Performance Security for delay of each day until COD is achieved.

Provided that if COD is delayed beyond 60 (sixty) days after the Scheduled COD, the Authority shall, subject to the provisions of Article 29, be entitled to terminate this Agreement and to appropriate the Performance Security.

  
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## 16. Operation and Maintenance

### 16.1 Operation & Maintenance Requirements

The Concessionaire shall procure that at all times during the Operation Period, the Project conforms to the operation & maintenance requirements set forth in Schedules 10, 12, 13, 14 and 15 (the "Operation & Maintenance Requirements").

### 16.2 Operation & Maintenance Manual

16.2.1 No later than 180 (one hundred and eighty) days prior to the Scheduled Completion Date, the Concessionaire shall, in consultation with the Independent Engineer, evolve an operation and maintenance manual (the "Operation & Maintenance Manual") for the Operation & Maintenance Requirements (Schedules 10, 12, 13, 14 and 15), Safety Requirements (Schedule 13) and Good Industry Practice, and shall provide 5 (five) copies thereof to the Authority and 2 (two) copies to the Independent Engineer. The Operation & Maintenance Manual shall be revised and updated once every 3 (three) years and the provisions of this Clause 16.2 shall apply, mutatis mutandis, to such revision.

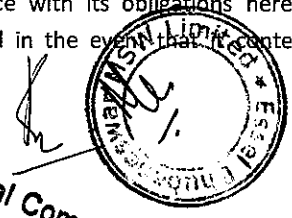
16.2.2 The Operation & Maintenance Manual shall, in particular, include provisions for maintenance of Project Assets and shall provide for life cycle maintenance, routine maintenance and reactive maintenance which may be reasonably necessary for maintenance and repair of the Project Assets, including replacement thereof, such that their overall condition conforms to Good Industry Practice.

### 16.3 Damages for breach of operation & maintenance obligations

16.3.1 In the event that the Concessionaire fails to repair or rectify any defect or deficiency set forth in the Operation & Maintenance Requirements within the period specified therein, it shall be deemed to be in breach of this Agreement and the Authority shall be entitled to recover, in addition to the specific Damages provided in Schedule 12, Damages, to be calculated and paid for each day of delay until the breach is cured, at the higher of (a) 0.5% (zero point five per cent) of daily Tipping Fee, and (b) 0.1% (zero point one per cent) of the cost of such repair or rectification as estimated by the Independent Engineer.

16.3.2 Recovery of such Damages shall be without prejudice to the rights of the Authority under this Agreement, including the right of Termination thereof.

16.3.3 The Damages set forth in Clause 16.3 may be assessed and specified forthwith by the Independent Engineer; provided that the Authority may, in its discretion, demand a smaller sum as Damages, if in its opinion, the breach has been cured promptly and the Concessionaire is otherwise in compliance with its obligations hereunder. The Concessionaire shall pay such Damages forthwith and in the event that it contests such Damages, the Dispute Resolution Procedure shall apply.

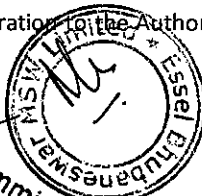
  
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#### 16.4 Authority's right to take remedial measures

- 16.4.1 In the event the Concessionaire does not maintain and /or repair the Project Facilities or part thereof in conformity with the Operation & Maintenance Requirements or the Maintenance Manual, as the case may be, and fails to commence the remedial works within 15 (fifteen) days of receipt of the O&M Inspection Report or notice on this behalf from the Authority or the Independent Engineer, as the case may be, the Authority shall, without prejudice to its right under this Agreement including Termination thereof, be entitled to undertake such remedial measure at the risk and cost of the Concessionaire, and to recover its cost for the Concessionaire. In addition to recovery as aforesaid, a sum equal to 20% (twenty per cent) of such cost shall be paid by the Concessionaire to the Authority as Damages. For avoidance of doubt, the right of the Authority under this Clause 16.4, shall be without prejudice to its rights and remedies provided under Clause 16.3.

#### 16.5 Overriding powers of the Authority

- 16.5.1 If in the reasonable opinion of the Authority, the Concessionaire is in material breach of its obligations under this Agreement, and such breach is causing or likely to cause the Project to violate environmental norms or cause nuisance to the surrounding areas, the Authority may, without prejudice to any of its rights under this Agreement including Termination thereof, by notice require the Concessionaire to take reasonable measures immediately for rectifying or removing such hardship or danger, as the case may be.
- 16.5.2 If the Concessionaire fails to rectify or remove such hardship or danger, the Authority may, without prejudice to any other rights or remedy available to it under this Agreement, have such remove such hardship at the risk and costs of the Concessionaire. The cost incurred by the Authority in rectifying such default of the Concessionaire, as certified by the Independent Engineer / the Authority, shall be reimbursed by the Concessionaire to the Authority within 7 (seven) days from the date of receipt of a claim in respect thereof from the Authority, failing which the Authority shall have right to adjust and recover such cost from Concessionaire
- 16.5.3 In the event of national emergency, civil commotion or any other Indirect Political Event specified in Clause 26.3, the Authority may take over the performance of any or all of the obligations of the Concessionaire to the extent deemed necessary by it and exercise such control over the Project and give such direction to the Concessionaire as may be deemed necessary. It is agreed that the Concessionaire shall comply with such directions issued by the Authority and shall provide necessary assistance and cooperation to the Authority, on best effort basis, for performance of its obligations hereunder.

  
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## 17. Tipping Fee

### 17.1 Tipping Fee

17.1.1 Subject to the provisions of this Agreement and bid documents, 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, the Authority agrees and undertakes to pay the Concessionaire a Tipping Fee, which shall be the only fee paid by the Authority to the Concessionaire for performing the services under this Agreement. The Concessionaire has quoted the Tipping Fee per ton of MSW (also called the base Tipping Fee) received and weighed at the gate of the Transfer Station. The Tipping Fee shall be calculated in accordance with Schedule 21, subject to any deduction(s) as allowed under the terms of this Agreement.

17.1.2 The Concessionaire shall, on or before the 15<sup>th</sup> of every month or in case the 15<sup>th</sup> day of a month being a holiday then on the following working day of such Month, submit to the Independent Engineer a consolidated statement ("Monthly Statement") providing the following details.

- a. Records maintained and certified by the Independent Engineer in accordance with Clause 5.9.
- b. Amount of Tipping Fee for the previous Month calculated in accordance with Schedule 21.

17.1.3 The Tipping Fee shall be payable from COD. For the avoidance of doubt, the Concessionaire shall issue the Tipping Fee Statement for the first payment on or before the 15<sup>th</sup> of the Month following the Month of COD.

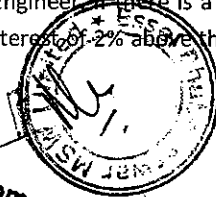
17.1.4 The quantity of Conforming MSW received from Other Local Bodies / Entities referred in clause 18.2, shall not be considered for calculation of Tipping Fee under this clause.

### 17.2 Revolving Letter of Credit

17.2.1 At least 30 (thirty) days before the expected COD of the Project Facilities, BMC shall cause to establish a Letter of Credit for an amount equivalent to the estimated Tipping Fee for 3 (three) months of operations. This Letter of Credit shall be established with a Scheduled Public Sector Bank. BMC shall at the start of each year, after the expiry of the first year from the COD, revise the amount of said Letter of Credit to reflect the estimated Tipping Fee for next year and shall continue to do so till the end of the Concession Period.

### 17.3 Mechanism of Payment during the Concession Period

17.3.1 Tipping Fees shall be paid to Concessionaire by the Authority within a period of 30 (thirty) days from the date of submission of Monthly Statement by Concessionaire, duly certified by the Independent Engineer. If there is a delay in the payment beyond 30 (thirty) days, the Authority shall pay an interest of 2% above the corresponding State Bank of India (Medium Term) Lending Rate.

  
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- 17.3.2 Any delay of more than 30 (thirty) days from the Receipt of Tipping Fee Statement, by BMC in making the payment of Tipping Fee, shall allow the Concessionaire to recover the same by encashing the Letter of Credit established in accordance with Clause 17.2.1 and recovering the amount due. The Concessionaire shall give a written notice to BMC at least 7 (seven) days before encashment of the Letter of Credit.
- 17.3.3 BMC shall before the expiry of 30 (thirty) days from the date of receipt of Notice of Encashment as per clause 17.3.3 issue a fresh Letter of Credit of the amount specified in Clause 17.2.1.
- 17.3.4 In case BMC fails to issue a fresh Letter of Credit in conformance with clause 17.2.1 within 30 (thirty) days of receipt of Notice of Encashment, the Concessionaire shall promptly notify the Department of Housing and Urban Development, Government of Odisha ("H&UDD"). The H&UDD shall deposit an amount of money equivalent to the shortfall in the Revolving Letter of Credit and recovering the same from any payment that is due from the H&UDD to BMC.
- 17.3.5 Notwithstanding the provisions of Clause 17.3.4, failure of BMC to issue a fresh Letter of Credit in conformance with Clause 17.2.1 within 30 (thirty) days of receipt of Notice of Encashment shall be deemed as an Authority Event of Default as per Clause 29.1.3.
- 17.3.6 The Authority shall deduct / withhold the following charges:
- a. The applicable statutory deductions, such as Income Tax
  - b. 2% of the total Tipping Fee receivable from the Authority shall be held in Post Closure Activities Escrow Account towards post closure obligations after the Concession Period (the "Retention Fee"). The mechanism shall be operated through an escrow account with a scheduled Bank. The amounts shall be utilized for the purpose of Post Closure obligations after the Concession Period only, and released to the Concessionaire in equal quarterly installments during the Post Concession Period, and to be detailed out in the said escrow agreement with the bankers. In an event of Termination due to any reason whatsoever, the amounts in the escrow account will be appropriated by the Authority to be utilized towards Post Closure obligations.
  - c. Any Damages for operational breaches, which is determined to be due and payable, as specified in Schedule 12.
  - d. Any other recoveries under the terms of this Agreement. All payments to the Concessionaire by the Authority shall be made by way of cheque payable at par at Bhubaneswar.



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## 18. Supply of MSW

### 18.1 Supply of MSW by the Authority

- 18.1.1 BMC shall undertake to supply MSW at the specified entry point of the Transfer Station everyday during the Operations Period in conformance with the daily Obligated Waste Quantities specified for each year of the Operations Period in Schedule 22.
- 18.1.2 In case the MSW contains Hazardous Waste and / or Biomedical Waste as defined under the Hazardous Waste (Management and Handling) Rules, 1989 and the Biomedical Waste (Management & Handling) Rules, 1998, the Concessionaire on inspection shall decline to accept such MSW ("Non Conforming Waste"), and may cause the same to be unloaded in a separate area for inspection by the Independent Engineer. In such case, the Independent Engineer shall inspect and certify whether the particular lot of MSW is fit for being accepted by the Concessionaire. In case the Independent Engineer certifies that the said waste is not fit for acceptance by the Concessionaire, BMC shall remove the same, at its cost and risk, to the appropriate hazardous waste processing site or any other locations as identified by BMC within 24 (twenty four) hours from the time of such confirmation. In case BMC fails to remove the waste within 24 (twenty four) hours, the Concessionaire may choose to transfer the waste to the appropriate waste processing location and claim the costs incurred for the same from BMC.
- 18.1.3 Any Non Conforming Waste supplied at the specified entry point of the Transfer Station shall not be considered for calculating the MSW quantity supplied for the purpose of Clause 18.1.1
- 18.1.4 In the event that during any month, the average daily MSW supplied at the entry point of the Transfer Station(s) for the said month is less than the specified daily Obligated Waste Quantity as per Schedule 22 for the respective year, BMC shall be liable to pay Tipping Fee for the month, considering daily Obligated Waste Quantity supplied for every day of the said month.
- 18.1.5 In the event the average daily supply of Conforming Waste is lower than the daily Obligated Waste Quantity for 6 (six) months or more during any continuous period of 12 (twelve) months, it shall be treated as a Authority Event of Default under Clause 29.1.3.
- 18.1.6 The Authority and the Concessionaire shall mutually review the daily Obligated Waste Quantity specified for each year of the Concession Period at the 3rd Anniversary of COD and subsequently after every 3 (Three) Years. Both parties can mutually agree for an interim review at any time during the operations period.

### 18.2 Supply of MSW from Other Local Bodies

- 18.2.1 The Concessionaire may accept Conforming Waste from Local Bodies other than BMC or Cuttack Municipal Corporation located in the vicinity of Bhubaneswar (hereinafter referred to as "Other Local Bodies") at the Processing Facility. The Concessionaire shall obtain permission from the Authority for accepting and treating MSW at the Site. The acceptance of the Conforming Waste from Other Local Bodies shall be governed by the Waste Supply Agreement between the Concessionaire and Other Local Bodies.

18.2.2 Notwithstanding any other provision of this Agreement, the Concessionaire shall accord highest priority to the waste received from the BMC and Cuttack Municipal Corporation for treatment and disposal of MSW at the Regional Processing Plant.

18.2.3 [Deleted].

### 18.3 Weighbridge at Transfer Station

18.3.1 The Authority has installed a weighbridge of 60 MT capacity at the site for Transfer Station located at Gadakan (TSB-1). The Concessionaire shall use the same facility for the purpose of its obligations under this Agreement, under mutually agreed terms with the Authority. The Concessionaire shall be responsible, at its own cost, to ensure that the said Weigh Bridge conforms and continues to conform during the Concession Period to the specifications listed in this Clause 18.3.

  
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## 19. Safety Requirements

### 19.1 Safety Requirements

- 19.1.1 The Concessionaire shall comply with the provisions of this Agreement, Applicable Laws and Applicable Permits and conform to Good Industry Practice for securing the safety of the personnel at the Project Site. In particular, the Concessionaire shall develop, implement and administer a surveillance and safety programme for providing a safe environment on or about the Project, and shall comply with the safety requirements set forth in Schedule 13 (the "Safety Requirements").

### 19.2 Expenditure on Safety Requirements

All costs and expenses arising out of or relating to Safety Requirements shall be borne by the Concessionaire to the extent such costs and expenses form part of the works and services included in the scope of the Project.

  
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## 20. Monitoring of Operation and Maintenance

### 20.1 Monthly status reports

During Operation Period, the Concessionaire shall, no later than 7 (seven) days after the close of each month, furnish to the Authority and the Independent Engineer a monthly report stating in reasonable detail the condition of the Project Facilities including its compliance or otherwise with the Operation & Maintenance Requirements, Operation & Maintenance Manual, and Safety Requirements, and shall promptly give such other relevant information as may be required by the Independent Engineer. In particular, such report shall separately identify and state in reasonable detail the defects and deficiencies that require rectification.

### 20.2 Inspection

The Independent Engineer shall inspect the Project Facilities at least once a month. It shall make a report of such inspection (the "O&M Inspection Report") stating in reasonable detail the defects or deficiencies, if any, with particular reference to the Operation & Maintenance Requirements, Operation & Maintenance Manual, and Safety Requirements, and send a copy thereof to the Authority and the Concessionaire within 7 (seven) days of such inspection.

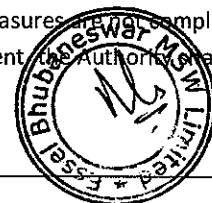
### 20.3 Tests

For determining that the Project Facilities conforms to the Operation & Maintenance Requirements, the Independent Engineer shall require the Concessionaire to carry out, or cause to be carried out, tests specified by it. The Concessionaire shall, with due diligence, carry out or cause to be carried out all such tests in accordance with the instructions of the Independent Engineer and furnish the results of such tests forthwith to the Independent Engineer. The costs incurred on the Tests shall be borne solely by the Concessionaire.

### 20.4 Remedial measures

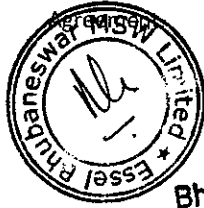
20.4.1 The Concessionaire shall repair or rectify the defects or deficiencies, if any, set forth in the O&M Inspection Report or in the test results referred to in Clause 20.3 and furnish a report in respect thereof to the Independent Engineer and the Authority within 15 (fifteen) days of receiving the O&M Inspection Report or the test results, as the case may be; provided that where the remedying of such defects or deficiencies is likely to take more than 15 (fifteen) days, the Concessionaire shall submit progress reports of the repair works once every week until such works are completed in conformity with this Agreement.

20.4.2 The Independent Engineer shall require the Concessionaire to carry out or cause to be carried out tests, at its own cost, to determine that such remedial measures have brought the Project Facilities into compliance with the Operation & Maintenance Requirements and the procedure set forth in this Clause 20.3 shall be repeated until the Project Facilities conforms to the Operation & Maintenance Requirements. In the event that remedial measures are not completed by the Concessionaire in conformity with the provisions of this Agreement, the Authority shall be



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entitled to recover Damages from the Concessionaire in accordance with Clause 16.3 this Agreement. For avoidance of doubts, levy and recovery of Damages by the Authority from the Concessionaire shall not absolve the Concessionaire for its obligation and the Authority shall be entitled to seek specific performance by the Concessionaire of its obligations under this



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## 21. Independent Engineer

### 21.1 Procedure for Appointment & Scope of Independent Engineer

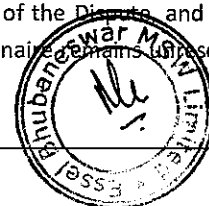
- 21.1.1 Independent Engineer shall be a third party agency, appointed within 90 (ninety) days of this Agreement. The broad scope of nature of work of the Independent Engineer is set out in Schedule 16, but may be refined after discussions between the Authority and the Concessionaire. A single agency will be appointed as the Independent Engineer for both the Authority and BMC.
- 21.1.2 The Authority shall invite expressions of interest from consulting engineering firms or bodies corporate and thereupon shortlist qualified firms in accordance with pre-determined criteria. The Authority shall convey the aforesaid list of firms to the Concessionaire for scrutiny and comments, if any. The Concessionaire shall be entitled to scrutinise the relevant records of the Authority to ascertain whether the selection of firms has been undertaken in accordance with the prescribed procedure and it shall send its comments, if any, to the Authority within 15 (fifteen) days of receiving the aforesaid list of firms. Upon receipt of such comments, if any, the Authority shall, after considering all relevant factors, finalise and constitute a panel of 5 (five) firms and convey its decision to the Concessionaire. The Authority shall select one firm as Independent Engineer from the above list, based on a transparent competitive bid process and a Quality and Cost based approach shall be adopted for the same.
- 21.1.3 The Independent Engineer shall be appointed for the Concession Period. The initial term of the Independent Engineer shall extend upto 3 (three) years. On expiry of the aforesaid period, the Authority may in its discretion renew the appointment, or appoint another firm from a fresh panel to be the Independent Engineer for a term of 3 (three) years, and such procedure shall be repeated after expiry of each appointment.

### 21.2 Payments to Independent Engineer

- 21.2.1 The Authority shall pay the Independent Engineer all fees, costs, charges and expenses payable to the Independent Engineer in accordance with the terms of its appointment (collectively the "Remuneration"). However, the Authority, CMC and Concessionaire shall share this expense on a 25:25:50 basis. The Authority and CMC shall recover the pro-rated costs payable to the Independent Engineer as Remuneration from amounts payable to the Concessionaire.

### 21.3 Replacement of the Independent Engineer

- 21.3.1 The Authority may, in its discretion, terminate the appointment of the Independent Engineer at any time, but only after appointment of another Independent Engineer in accordance with Clause 21.1.
- 21.3.2 If the Concessionaire has reason to believe that the Independent Engineer is not discharging its duties and functions in a fair, efficient and diligent manner, it may make a written representation to the Authority and seek termination of the appointment of the Independent Engineer. Upon receipt of such representation, the Authority and BMC shall hold a tripartite meeting with the Concessionaire and Independent Engineer for an amicable resolution of the Dispute, and if any difference or disagreement between the Authority and the Concessionaire remains unresolved,



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the Dispute shall be settled in accordance with the provisions of the Dispute Resolution set out in Clause 36.1. In the event that the appointment of the Independent Engineer is terminated hereunder, the Authority shall appoint forthwith another Independent Engineer in accordance with Clause 21.1.

#### 21.4 Authorized signatories

The Authority shall require the Independent Engineer to designate and notify to the Authority and the Concessionaire up to 2 (two) persons employed in its firm to sign for and on behalf of the Independent Engineer, and any communication or document required to be signed by the Independent Engineer shall be valid and effective only if signed by any of the designated persons; provided that the Independent Engineer may, by notice in writing, substitute any of the designated persons by any of its employees.



  
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## 22. Handover of Project Facilities

### 22.1 Ownership during the Concession Period

22.1.1 Without prejudice and subject to the Concession, the ownership of the Project Facilities, including all improvements made therein by Concessionaire, during the Concession Period shall at all times remain as mentioned below:

- a. That of all immovable assets including site and civil structures created for Processing facility site shall remain with the Authority.
- b. That of all movable assets including equipments & machinery and vehicles shall remain with Concessionaire and in accordance with the Financing Documents and first prior charge to Senior Lenders privileges.

### 22.2 Concessionaire's Obligations

#### 22.2.1 Transfer Station and Processing Facility

Concessionaire shall on the date of expiry of the Concession Period, hand back peaceful possession of the Project facilities to the Authority free of cost and free from all encumbrances and in good operational condition.

Upon service of the Termination Notice or at least 12 (twelve) months before the expiry of the term of agreement, a joint inspection of the Project Facilities shall be undertaken by Independent Engineer/ the Authority and Concessionaire. Concessionaire shall promptly undertake and complete such works/jobs on its own cost and expense, as may be required by the Authority at least three months prior to the expiry of Concession Period and ensure that the Project Facilities may continue to meet such requirements even after the same are handed back to the Authority.

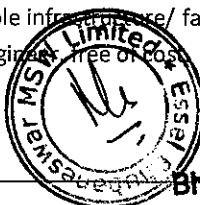
#### 22.2.2 Landfill

Upon service of the Termination Notice or at least 12 (twelve) months before the expected expiry of the Landfill Life, the Parties jointly with the Independent Engineer shall, discuss and jointly prepare the closure plan for scientific closure of the Landfill, under the provisions of the prevailing Applicable Laws ("Closure Plan").

Upon the Closure of the Landfill, Concessionaire shall maintain the Landfill in accordance with an appropriate post-closure maintenance plan and hand back peaceful possession of the Landfill to the Authority free of cost and in reasonable condition at the end of 15 (fifteen) years from the Closure of the Scientific Landfill.

22.2.3 The Concessionaire shall provide training to the selected team comprising of Authority's staff and appointed by the Authority for taking over the Project Facilities from the Concessionaire for at least 3 (three) months.

22.2.4 On completion of the Concession Period, the Concessionaire shall transfer all movable infrastructure and facilities including vehicles, equipment, workshop, offices, communication arrangements etc. and immovable infrastructure/ facilities to the Authority, in working condition and certified by Independent Engineer free of cost.

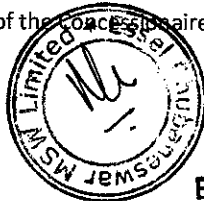


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## 22.3

**The Authority's obligations**

The Authority shall, subject to the Authority's right to encash Performance Security for getting executed the works / jobs listed under Clause 22.2 at Concessionaire cost and risk, and which have not been carried out by Concessionaire, or any outstanding dues, which may have accrued in respect of the Project during the Concession Period, duly discharge and release to Concessionaire bank Guarantees of the Concessionaire.



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## **PART IV – FINANCIAL COVENANTS**

## 23. Financial Close

### 23.1 Financial Close

23.1.1 The Concessionaire hereby agrees and undertakes that it shall achieve Financial Close within 150 (one hundred and fifty) days from the date of this Agreement and in the event of delay, it shall be entitled to a further period not exceeding 30 (thirty) days, subject to payment of Damages to the Authority in a sum calculated at the rate of 0.2% (zero point two per cent) of the Performance Security for each day of delay, or for a further period not exceeding 100 (one hundred) days, subject to payment of Damages specified in Clause 4.3; provided that the Damages specified herein shall be payable every week in advance and the period beyond the said 150 (one hundred and fifty) days shall be granted only to the extent of Damages so paid; provided further that no Damages shall be payable if such delay in Financial Close has occurred solely as a result of any default or delay by the Authority in procuring satisfaction of the Conditions Precedent specified in Clause 4.1.2 or due to Force Majeure. For the avoidance of doubt, the Damages payable hereunder by the Concessionaire shall be in addition to the Damages, if any, due and payable under the provisions of Clause 4.3.

23.1.2 The Concessionaire shall, upon occurrence of Financial Close, notify the Authority forthwith, and shall have provided to the Authority, at least 2 (two) days prior to Financial Close, 3 (three) true copies of the Financial Package and the Financial Model, duly attested by a Director of the Concessionaire, along with 3 (three) soft copies of the Financial Model in MS Excel version or any substitute thereof, which is acceptable to the Senior Lenders.

### 23.2 Termination due to failure to achieve Financial Close

23.2.1 Notwithstanding anything to the contrary contained in this Agreement, in the event that Financial Close does not occur, for any reason whatsoever, within the period set forth in Clause 21.1.1 or the extended period provided thereunder, all rights, privileges, claims and entitlements of the Concessionaire under or arising out of this Agreement shall be deemed to have been waived by, and to have ceased with the concurrence of the Concessionaire, and the Concession Agreement shall be deemed to have been terminated by mutual agreement of the Parties. For the avoidance of doubt, it is agreed that in the event the Parties hereto have, by mutual consent, determined the Appointed Date to precede the Financial Close, the provisions of this Clause 23.2.1 shall not apply.

23.2.2 Upon Termination under Clause 23.2.1, the Authority shall be entitled to encash the Bid Security and appropriate the proceeds thereof as Damages; provided, however, that if Financial Close has not occurred solely as a result of the Authority being in default of any of its obligations under Clause 4.2, it shall, upon Termination, return the Bid Security forthwith along with the Damages due and payable under Clause 4.2. For the avoidance of doubt, it is expressly agreed that if the Bid Security shall have been substituted by Performance Security, the Authority shall be entitled to encash therefrom an amount equal to Bid Security.



*[Signature]*  
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### 23.3 Escrow Account

- 23.3.1 The Concessionaire shall, prior to the Appointed Date, open and establish an Escrow Account with a Bank (the "**Escrow Bank**") in accordance with this Agreement read with the Escrow Agreement.
- 23.3.2 The nature and scope of the Escrow Account are fully described in the agreement (the "**Escrow Agreement**") to be entered into amongst the Concessionaire, the Authority, the Escrow Bank and the Senior Lenders through the Lenders' Representative, which shall be substantially in the form set forth in Schedule 20.

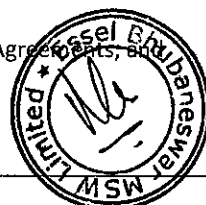
### 23.4 Deposits into Escrow Account

- 23.4.1 The Concessionaire shall deposit or cause to be deposited the following inflows and receipts into the Escrow Account:
- all funds constituting the Financial Package;
  - all Tipping Fee and any other revenues from or in respect of the Project, including the proceeds of any rentals, deposits, capital receipts or insurance claims; and
  - all payments by the Authority, after deduction of amounts specified in Clause 17.3.6:

Provided that the Senior Lenders may make direct disbursements to the EPC Contractor in accordance with the express provisions contained in this behalf in the Financing Agreements.

### 23.5 Withdrawals during Concession Period

- 23.5.1 The Concessionaire shall, at the time of opening the Escrow Account, give irrevocable instructions, by way of an Escrow Agreement, to the Escrow Bank instructing, inter alia, that deposits in the Escrow Account shall be appropriated in the following order every month, or at shorter intervals as necessary, and if not due in a month then appropriated proportionately in such month and retained in the Escrow Account and paid out therefrom in the month when due:
- all taxes due and payable by the Concessionaire for and in respect of the Project;
  - all payments relating to construction of the Project, subject to and in accordance with the conditions, if any, set forth in the Financing Agreements;
  - O&M Expenses, subject to the ceiling, if any, set forth in the Financing Agreements;
  - O&M Expenses and other costs and expenses incurred by the Authority in accordance with the provisions of this Agreement, and certified by the Authority as due and payable to it;
  - License fees due and payable to the Authority;
  - monthly proportionate provision of Debt Service due in an Accounting Year;
  - all payments and Damages certified by the Authority as due and payable to it by the Concessionaire, including repayment of Revenue Shortfall Loan;
  - monthly proportionate provision of debt service payments due in an Accounting Year in respect of Subordinated Debt;
  - any reserve requirements set forth in the Financing Agreements, and



j. balance, if any, in accordance with the instructions of the Concessionaire.

23.5.2 The Concessionaire shall not in any manner modify the order of payment specified in Clause 23.5.1, except with the prior written approval of the Authority.

## 23.6 Withdrawals upon Termination

23.6.1 Notwithstanding anything to the contrary contained in this Agreement, all amounts standing to the credit of the Escrow Account shall, upon Termination, be appropriated in the following order:

- a. all taxes due and payable by the Concessionaire for and in respect of the Project;
- b. 90% (ninety per cent) of Debt Due excluding Subordinated Debt;
- c. outstanding License Fees;
- d. all payments and Damages certified by the Authority as due and payable to it by the Concessionaire, including {Premium and} repayment of Revenue Shortfall Loan;
- e. retention and payments relating to the liability for defects and deficiencies set forth in Article 31;
- f. outstanding Debt Service including the balance of Debt Due;
- g. outstanding Subordinated Debt;
- h. incurred or accrued O&M Expenses;
- i. any other payments required to be made under this Agreement; and
- j. balance, if any, in accordance with the instructions of the Concessionaire:

Provided that no appropriations shall be made under Sub-clause (j) of this Clause 23.4.1 until a Vesting Certificate has been issued by the Authority under the provisions of Article 30.4.

23.6.2 The provisions of Clause 23.3 to Clause 23.6 and the instructions contained in the Escrow Agreement shall remain in full force and effect until the obligations set forth in Clause 23.4.1 have been discharged.



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## **24. Insurance**

### **24.1 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 Practices. The Concessionaire shall also effect and maintain such insurances as may be necessary for mitigating the risks that may devolve on the Authority as a consequence of any act or omission of the Concessionaire during the Construction Period. The Concessionaire shall procure that in each insurance policy, the Authority shall be a co-insured and that the insurer shall pay the proceeds to insurance into the Escrow Account. For the avoidance of doubt, the level of insurance to be maintained by the Concessionaire after repayment of Senior Lenders' dues in full shall be determined on the same principles as applicable for determining the level of insurance prior to such repayment of Senior Lenders' dues.

### **24.2 Notice of the Authority**

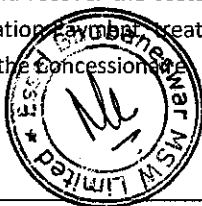
No later than 45 (forty-five) days prior to commencement of the Construction Period and the Operation Period, as the case may be, the Concessionaire shall by notice furnish to the Authority, in reasonable detail, information in respect of the insurances that it proposes to effect and maintain in accordance with this Clause 24. Within 30 (thirty) days of receipt of such notice, the Authority may require the Concessionaire to effect and maintain such other insurances as may be necessary pursuant hereto, and in the event of any difference or disagreement relating to any such insurance, the Dispute Resolution Procedure shall apply.

### **24.3 Evidence of Insurance Cover**

All insurances obtained by the Concessionaire in accordance with this Clause 24 shall be maintained with insurers on terms consistent with Good Industry Practice. Within 15 (fifteen) days of obtaining any insurance cover, the Concessionaire shall furnish to the Authority, notarized true copies of the certificate(s) of insurance, copies of insurance policies and premium payment receipts in respect of such insurance, and no such insurance shall be cancelled, modified, or allowed to expire or lapse until the expiration of at least 45 (forty five) days after notice of such proposed cancellation, modification or non-renewal has been delivered by the Concessionaire to the Authority. The Concessionaire shall maintain a register of entry in order of premiums paid towards Insurance of the Project Facilities.

### **24.4 Remedy for failure to insure**

If the Concessionaire shall fail to effect and keep in force all insurances for which it is responsible pursuant hereto, the Authority shall have the option to either keep in force any such insurances, and pay such premium and recover the costs thereof from the Concessionaire, or in the event of computation of a Termination Payment, treat an amount equal to the Insurance Cover as deemed to have been received by the Concessionaire.



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#### 24.5 **Waiver of Subrogation**

All insurance policies in respect of the insurance obtained by the Concessionaire pursuant to this Clause 24 shall include a waiver of any and all right of subrogation or recovery of the insurers thereunder against, inter alia, the Authority, and its assigns, successor, underrating and their subsidiaries, affiliates, employees, insurers and underwriters and of any right of the insurers of any set-off or counterclaim or any other deduction, whether by attachment or otherwise, in respect of any liability of any such person insured under any such policy or in any way connected with any loss, liability or obligation covered by such policies of insurance.

#### 24.6 **Concessionaire's waiver**


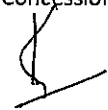
The Concessionaire hereby further releases, assigns and waives any and all rights of recovery against, inter alia, the Authority, and its assigns, undertaking, and their affiliates, subsidiaries, employees, successors, assigns, insurers and underwriters, which the Concessionaire may otherwise have or acquire in or from or in any way connected with any loss, liability or obligations covered by policies of insurance maintained or required to be maintained by the Concessionaire pursuant to this Agreement (other than Third Party liability insurance policies) or because of deductible Articles in or inadequacy of limits of any such policies of insurance.

#### 24.7 **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 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 shall designate the Authority as the beneficiary for the assets under ownership of the Authority as per Clause 22.1 and may designate the Senior Lenders as the beneficiaries for the assets under the Concessionaire ownership as per Clause 22.1 or assign the insurance policies in their favour as security for the financial assistance provided by them to the Project. The Concessionaire shall carry 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 to the extent possible in the same condition as it were prior to such damage or destruction, normal wear and tear accepted.

#### 24.8 **No Breach of Insurance Obligation**

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, Concessionaire shall not be in breach of its obligations regarding insurance under this Agreement.

  
  
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## 25. Accounts and Audit

### 25.1 Audited accounts

25.1.1 The Concessionaire shall maintain books of accounts recording all its receipts (including all Tipping Fee and other revenues derived/collected by it from or on account of the Project and/or its use), income, expenditure, payments (including payments from the Escrow Account), assets and liabilities, in accordance with this Agreement, Good Industry Practice, Applicable Laws and Applicable Permits. The Concessionaire shall provide 2 (two) copies of its Balance Sheet, Cash Flow Statement and Profit and Loss Account, along with a report thereon by its Statutory Auditors, within 90 (ninety) days of the close of the Accounting Year to which they pertain and such audited accounts, save and except where expressly provided to the contrary, shall form the basis of payments by either Party under this Agreement. The Authority shall have the right to inspect the records of the Concessionaire during office hours and require copies of relevant extracts of books of accounts, duly certified by the Statutory Auditors, to be provided to the Authority for verification of basis of payments, and in the event of any discrepancy or error being found, the same shall be rectified and such rectified account shall form the basis of payments by either Party under this Agreement.

25.1.2 The Concessionaire shall, within 30 (thirty) days of the close of each quarter of an Accounting Year, furnish to the Authority its unaudited financial results in respect of the preceding quarter, in the manner and form prescribed by the Securities and Exchange Board of India for publication of quarterly results by the companies listed on a stock exchange.

### 25.2 Appointment of auditors

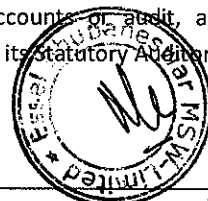
25.2.1 The Concessionaire shall appoint, and have during the subsistence of this Agreement as its Statutory Auditors, a firm chosen by it from the mutually agreed list of 10 (ten) reputable firms of chartered accountants (the "Panel of Chartered Accountants"). All fees and expenses of the Statutory Auditors shall be borne by the Concessionaire.

25.2.2 The Concessionaire may terminate the appointment of its Statutory Auditors after a notice of 45 (forty five) days to the Authority, subject to the replacement Statutory Auditors being appointed from the Panel of Chartered Accountants.

25.2.3 Notwithstanding anything to the contrary contained in this Agreement, the Authority shall have the right, but not the obligation, to appoint at its cost from time to time and at anytime, another firm (the "Additional Auditors") from the Panel of Chartered Accountants to audit and verify all those matters, expenses, costs, realisations and things which the Statutory Auditors are required to do, undertake or certify pursuant to this Agreement.

### 25.3 Certification of claims by Statutory Auditors

Any claim or document provided by the Concessionaire to the Authority in connection with or relating to receipts, income, payments, costs, expenses, accounts, or audit, and any matter incidental thereto shall be valid and effective only if certified by its Statutory Auditors.



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**25.4 Set-off**

- 25.4.1 In the event any amount is due and payable by the Authority to the Concessionaire, it may set-off any sums payable to it by the Concessionaire and pay the balance remaining. Any exercise by the Authority of its rights under this Clause shall be without prejudice to any other rights or remedies available to it under this Agreement or otherwise.

**25.5 Dispute resolution**

- 25.5.1 In the event of there being any difference between the findings of the Additional Auditors and the Statutory Auditors, such Auditors shall meet to resolve the differences and if they are unable to resolve the same, such Dispute shall be resolved by the Authority by recourse to the Dispute Resolution Procedure.



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## **PART V - FORCE MAJEURE AND TERMINATION**

## 26. Force Majeure

### 26.1 Force Majeure

As used in this Agreement, the expression "Force Majeure" or "Force Majeure Event" shall mean occurrence in India of any or all of Non-Political Event, Indirect Political Event and Political Event, as defined in Clauses 26.2, 26.3 and 26.4 respectively, if it affects the performance by the Party claiming the benefit of Force Majeure (the "Affected Party") of its obligations under this Agreement and which act or event (i) is beyond the reasonable control of the Affected Party, and (ii) the Affected Party could not have prevented or overcome by exercise of due diligence and following Good Industry Practice, and (iii) has Material Adverse Effect on the Affected Party.

### 26.2 Non-Political Event

A Non-Political Event shall mean one or more of the following acts or events:

- a. act of God, epidemic, extremely adverse weather conditions, lightning, earthquake, landslide, cyclone, flood, volcanic eruption, chemical or radioactive contamination or ionizing radiation, fire or explosion (to the extent of contamination or radiation or fire or explosion originating from a source external to the Site);
- b. strikes or boycotts (other than those involving contractors, or their respective employees/representatives, or attributable to any act or omission of any of them) interrupting supplies and services to the Project for a continuous period of 7 (seven) days and an aggregate period exceeding 14 (fourteen) days in an Accounting Year, and not being an Indirect Political Event set forth in Clause 26.3;
- c. any failure or delay of a Contractor but only to the extent caused by another Non-Political Event and which does not result in any offsetting compensation being payable to Concessionaire, by, or on behalf of such Contractor;
- d. any judgment or order of any court competent jurisdiction or statutory authority made against the Concessionaire in any proceedings for reasons other than (i) failure of the Concessionaire to comply with any Applicable Law or Applicable Permit, or (ii) on account of breach of any Applicable Law or Applicable Permit or of any contract, or (iii) enforcement of this Agreement, or (iv) exercise of any of its rights under this Agreement by the Authority;
- e. the discovery of geological conditions, toxic contamination or archaeological remains on the Site that could not reasonably have been expected to be discovered through a site inspection; or
- f. any event or circumstances of a nature analogous to any of the foregoing.

### 26.3 Indirect Political Event

An Indirect Political Event shall mean one or more of the following acts or events:



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- a. an act of war (whether declared or undeclared), invasion, armed conflict or act foreign enemy, blockade, embargo, riot, insurrection, terrorist or military action, civil commotion or politically motivated sabotage;
- b. industry-wide or State-wide strikes or industrial action for a continuous period of 7 (seven) days and exceeding an aggregate period of 14 (fourteen) days in an accounting Year;
- c. any civil commotion, boycott or political agitation which prevents collection of Tipping Fee by Concessionaire for an aggregate period exceeding 7 (seven) days in an accounting Year;
- d. any failure or delay of a Contractor to the extent caused by any Indirect Political Event and which does not result in any offsetting compensation being payable to Concessionaire by or on behalf of such Contractor; and
- e. any Indirect Political Event that causes a Non-Political Event;
- f. any event or circumstances of a nature analogous to any of the foregoing.

#### 26.4 Political Event

A Political Event shall mean one or more of the following acts or events by or on account of any Government Instrumentality:

- a. change in Law, only if consequences thereof cannot be dealt with under and in accordance with the provisions of Article 33 and its effect, in financial terms, exceeds the sum specified in Clause 33.2;
- b. compulsory acquisition in national interest or expropriation of any Project Assets or rights of Concessionaire or of the Contractors;
- c. unlawful or unauthorized or without jurisdiction revocation of or refusal to renew or grant without valid cause, any clearance, license, permit, authorization, no objection certificate, consent, approval or exemption required by Concessionaire or any of the Contractors to perform their respective obligations under this Agreement and the Project Agreements; provided that such delay, modification, denial, refusal or revocation did not result from Concessionaire or any Contractor's inability or failure to comply with any condition relating to grant, maintenance or renewal of such clearance, license, authorization, no objection certificate, exemption, consent, approval or permit;
- d. any failure or delay of a Contractor but only to the extent caused by another Political, Event and which does not result in any offsetting compensation being payable to Concessionaire by or on behalf of such Contractor; or
- e. any event or circumstance of a nature analogous to any of the foregoing.

#### 26.5 Duty to report Force Majeure Event

26.5.1 Upon occurrence of a Force Majeure Event, the Affected Party shall by notice report such occurrence to the other Party forthwith. Any notice pursuant hereto shall include full particulars of:

- a. the nature and extent of each Force Majeure Event which is the subject of any claim for relief under this Article 26 with evidence in support thereof.



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- b. the estimated duration and the effect or probable effect which such Force Majeure Event is having or will have on the Affected Party's performance of its obligations under this Agreement;
- c. the measures which the Affected Party is taking or proposes to take for alleviating the impact of such Force Majeure Event; and
- d. any other information relevant to the Affected Party's claim.

26.5.2 The Affected Party shall not be entitled to any relief for or in respect of a Force Majeure Event unless it shall have notified the other Party of the occurrence of the Force Majeure Event as soon as reasonably practicable, and in any event not later than 14 (fourteen) days after the Affected Party knew, or ought reasonably to have known, of its occurrence, and shall have given particulars of the probable material effect that the Force Majeure Event is likely to have on the performance of its obligations under this Agreement.

26.5.3 For so long as the Affected Party continues to claim to be materially affected by such Force Majeure Event, it shall provide the other Party with regular (and not less than weekly) reports containing information as required by Clause 26.5.2, and, such other information as the other Party may reasonably request the Affected Party to provide.

## 26.6 Effect of Force Majeure Event on the Concession

26.6.1 Upon the occurrence of any Force Majeure Event prior to the Appointed Date, the period set forth in Clause 23.1.1 for achieving Financial Close shall be extended by a period equal in length to the duration of the Force Majeure Event.

26.6.2 At any time after the Appointed Date, if any Force Majeure Event occurs:

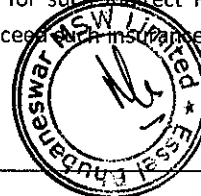
- a. before COD, the Concession Period and the dates set forth in the Project Completion Schedule shall be extended by a period equal in length to the duration for which such Force Majeure Event subsists; or
- b. after COD, if the collection of the Tipping Fee is suspended, the Concession Period shall be extended by a period equal in length to the period during which the collection of the Tipping Fee is suspended.

## 26.7 Allocation of costs arising out of Force Majeure

26.7.1 Upon occurrence of any Force Majeure Event prior to the Appointed Date, the Parties shall bear their respective costs and no Party shall be required to pay to the other Party any costs thereof.

26.7.2 Upon occurrence of a Force Majeure Event after the Appointed Date, the costs incurred and attributable to such event and directly relating to the Project (the; "Force Majeure Costs") shall be allocated and paid as follows:

- a. upon occurrence of a Non-Political Event, the Parties shall bear their respective Force Majeure costs and neither Party shall be required to pay to the other Party any costs thereof;
- b. upon occurrence of an Indirect Political Event, all Force Majeure costs attributable to such Indirect Political Event, and not exceeding the insurance cover for such Indirect Political Event, shall be borne by, and to the extent Force Majeure costs exceed such insurance cover,



25% (twenty five percent) of such excess amount shall be reimbursed by the Authority to Concessionaire; and

- c. Upon occurrence of a Political Event, all Force Majeure costs attributable to such Political Event shall be reimbursed by the Authority to Concessionaire.

For the avoidance of doubt, Force Majeure costs may include interest payments on debt, O&M Expenses, any increase in the cost of Construction Works on account of inflation and all other costs directly attributable to the Force Majeure Event, but shall not include loss of Tipping Fee revenues or debt repayment obligations, and for determining such costs, information contained in the Financing Documents may be relied upon to the extent that such information is relevant.

- 26.7.3 Save and except as expressly provided in this Article 26, neither Party shall be liable in any manner whatsoever to the other Party in respect of any loss, damage, cost, claims, demands and proceedings relating to or arising out of occurrence or existence of any Force Majeure event or exercise of any right pursuant hereto.

## 26.8 Termination Notice for Force Majeure Event

If a Force Majeure Event subsists for a period of 180 (one hundred and-eighty) days or more within a continuous period of 365 (three hundred and sixty five) days, either Party may in its discretion terminate this Agreement by issuing a Termination Notice to the other Party without being liable in any manner whatsoever, save, as provided in this Article 26, and upon issue of such Termination Notice, this Agreement shall, notwithstanding anything to the contrary contained herein, stand terminated forthwith; provided that before issuing such Termination Notice, the Party intending to issue the Termination Notice shall inform the other Party of such intention and grant 15 (fifteen) days time to make a representation, and may after the expiry of such 15 (fifteen) days period, whether or not it is in receipt of such representation, in its sole discretion issue the Termination Notice.

## 26.9 Termination Payment for Force Majeure Event

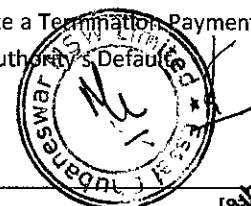
- 26.9.1 Upon Termination on account of a Non-Political Event, the Authority shall make no Payment to Concessionaire. The Concessionaire shall have the right to remove all movable assets which are part of the Project Facilities and shall be entitled to withdraw the Performance Security, if subsisting.

- 26.9.2 If Termination is on account of an Indirect Political Event, the Authority shall make a Termination Payment to Concessionaire in an amount equal to:

- a. 50% (fifty percent) of Debt Due less Insurance Cover for assets under Concessionaire ownership; provided that if any Insurance claims forming part of the Insurance Cover are not admitted and paid, then 25% (twenty five per cent) of such unpaid claims shall be included in the computation of Debt Due; and
- b. 55% (fifty five per cent) of the Adjusted Equity

The Concessionaire shall be entitled to withdraw the Performance Security, if subsisting.

- 26.9.3 If Termination is on account of a Political Event, the Authority shall make a Termination Payment to Concessionaire in an amount that would be payable as if it were an Authority's Default



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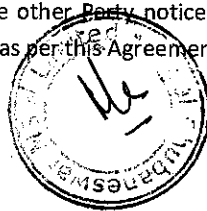
## 26.10 Dispute Resolution

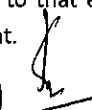
In the event that the Parties are unable to agree in good faith about the occurrence or existence of a Force Majeure Event, such Dispute shall be finally settled in accordance with the Dispute Resolution Procedure; provided that the burden of proof as to the occurrence or existence of such Force Majeure Event shall be upon the Party claiming relief and/or excuse on account of such Force Majeure Event.

## 26.11 Excuse from Performance of Obligations

If the Affected Party is rendered wholly or partially unable to perform its obligations under this Agreement because of a Force Majeure Event, it shall be excused from performance of such of its obligations to the extent it is unable to perform on account of such Force Majeure Event; provided that;

- a. the suspension of performance shall be of no greater scope and of no longer duration than is reasonably required by the Force Majeure Event;
- b. the Affected Party shall make all reasonable efforts to mitigate or limit damage to the other party arising out of or as a result of the existence or occurrence of such Force Majeure Event and to cure the same with due diligence; and
- c. when the Affected Party is able to resume performance of its obligations under this Agreement, it shall give to the other Party notice to that effect and shall promptly resume performance of its obligations as per this Agreement.



  
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## **27. Compensation for Breach of Agreement**

### **27.1 Compensation for default by the Concessionaire**

Subject to the provisions of Clause 27.5, in the event of the Concessionaire being in material default or breach of this Agreement, it shall pay to the Authority by way of compensation, all direct costs suffered or incurred by the Authority as a consequence of such material default, within 30 (thirty) days of receipt of the demand supported by necessary particulars thereof; provided that no compensation shall be payable under this Clause 27.1 for any breach or default in respect of which Damages are expressly specified and payable under this Agreement or for any consequential losses incurred by the Authority.

### **27.2 Compensation for default by the Authority**

Subject to the provisions of Clause 27.5, in the event of the Authority being in material default or breach of this Agreement at any time after the Appointed Date, it shall pay to the Concessionaire by way of compensation, all direct costs suffered or incurred by the Concessionaire as a consequence of such material default within 30 (thirty) days of receipt of the demand supported by necessary particulars thereof; provided that no such compensation shall be payable for any breach or default in respect of which Damages have been expressly specified in this Agreement. For avoidance of doubt, compensation payable may include interest payment on debt, O&M Expenses, any increase in capital cost and all other similar costs directly attributable to such material default but shall not include loss of Tipping Fee, debt repayment obligations or other consequential losses and for determining such compensation, information contained in the Financial Package and Financial Model may be relied upon to the extent it is relevant.

### **27.3 Extension of Concession Period**

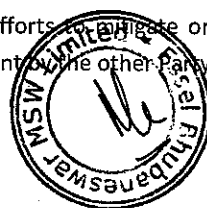
Subject to the provisions of Clause 27.5, in the event that a material default or breach of this Agreement set forth in Clause 27.2 causes delay in achieving COD or leads to suspension, as the case may be, the Authority shall, in addition to payment of compensation under Clause 27.2, extend the Concession Period, such extension being equal in duration to the period by which COD was delayed.

### **27.4 Compensation to be in addition**

Compensation payable under this Article 27 shall be in addition to, and not in substitution for, or derogation of, Termination Payment, if any.

### **27.5 Mitigation of costs and damage**

The Affected Party shall make all reasonable efforts to mitigate or limit the costs and damage arising out of or as a result of breach of Agreement by the other Party.



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## **28. Suspension of Concessionaire's Rights**

### **28.1 Suspension upon Concessionaire Event of Default**

Upon occurrence of a Concessionaire Event of Default, the Authority shall, without prejudice to its other rights and remedies under this Agreement including its rights of Termination hereunder, to (i) suspend all rights of the Concessionaire under this Agreement including the Concessionaire's right to collect Tipping Fee, and (ii) be entitled to exercise such rights itself and perform the obligations hereunder or authorise any other person to exercise or perform the same on its behalf during such suspension (the "**Suspension**"). Suspension hereunder shall be effective forthwith upon issue of notice by the Authority to the Concessionaire and may extend up to a period not exceeding 180 (one hundred and eighty) days from the date of issue of such notice; provided that upon written request from the Concessionaire and the Lenders' Representative, the Authority shall extend the aforesaid period of 180 (one hundred and eighty) days by a further period not exceeding 90 (ninety) days.

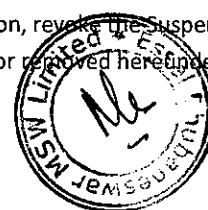
### **28.2 Authority to act on behalf of Concessionaire**

28.2.1 During the period of Suspension, the Authority shall withhold all Tipping Fee payments to the Concessionaire. The Tipping Fee shall be deposited by the Authority in a separate bank account. The Authority shall be entitled to make withdrawals from this account for meeting the costs incurred by it for remedying and rectifying the cause of Suspension, and thereafter for defraying the expenses.

28.2.2 During the period of Suspension hereunder, all rights and liabilities vested in the Concessionaire in accordance with the provisions of this Agreement shall continue to vest therein and all things done or actions taken, including expenditure incurred by the Authority for discharging the obligations of the Concessionaire under and in accordance with this Agreement and the Project Agreements, shall be deemed to have been done or taken for and on behalf of the Concessionaire and the Concessionaire undertakes to indemnify the Authority for all costs incurred during such period. The Concessionaire hereby licences and sub-licences respectively, the Authority or any other person authorized by it under Clause 28.1 to use during Suspension, all Intellectual Property belonging to or licenced to the Concessionaire with respect to the Project and its design, engineering, construction, operation and maintenance, and which is used or created by the Concessionaire in performing its obligations under the Agreement.

### **28.3 Revocation of Suspension**

28.3.1 In the event that the Authority shall have rectified or removed the cause of Suspension within a period not exceeding 90 (ninety) days from the date of Suspension, it shall revoke the Suspension forthwith and restore all rights of the Concessionaire under this Agreement. For the avoidance of doubt, the Parties expressly agree that the Authority may, in its discretion, revoke the Suspension at any time, whether or not the cause of Suspension has been rectified or removed hereunder.



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- 28.3.2 Upon the Concessionaire having cured the Concessionaire Event of Default within a period not exceeding 90 (ninety) days from the date of Suspension, the Authority shall revoke the Suspension forthwith and restore all rights of the Concessionaire under this Agreement.

**28.4 Substitution of Concessionaire**

At any time during the period of Suspension, the Lenders' Representative, on behalf of Senior Lenders, shall be entitled to substitute the Concessionaire under and in accordance with the Substitution Agreement, and upon receipt of notice thereunder from the Lenders' Representative, the Authority shall withhold Termination for a period not exceeding 180 (one hundred and eighty) days from the date of Suspension, and any extension thereof under Clause 28.1, for enabling the Lenders' Representative to exercise its rights of substitution on behalf of Senior Lenders.

**28.5 Termination**

- 28.5.1 At any time during the period of Suspension under this Article 28, the Concessionaire may by notice require the Authority to revoke the Suspension and issue a Termination Notice. Subject to the rights of the Lenders' Representative to undertake substitution in accordance with the provisions of this Agreement and within the period specified in Clause 28.4, the Authority shall, within 15 (fifteen) days of receipt of such notice, terminate this Agreement under and in accordance with Article 29.

- 28.5.2 Notwithstanding anything to the contrary contained in this Agreement, in the event that Suspension is not revoked within 180 (one hundred and eighty) days from the date of Suspension hereunder or within the extended period, if any, set forth in Clause 28.1, the Concession Agreement shall, upon expiry of the aforesaid period, be deemed to have been terminated by mutual agreement of the Parties and all the provisions of this Agreement shall apply, mutatis mutandis, to such Termination as if a Termination Notice had been issued by the Authority upon occurrence of a Concessionaire Event of Default.

  
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## 29. Events of Default and Termination

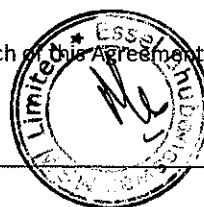
### 29.1 Events of Default

29.1.1 Event of Default shall mean either Concessionaire Event of Default or Authority Event of Default or both as the context may admit or require.

#### 29.1.2 Concessionaire Event of Default

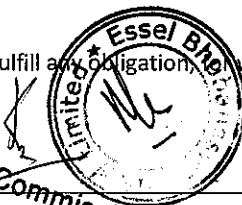
Save as otherwise provided in this Agreement, in the event that any of the defaults specified below shall have occurred, and the Concessionaire fails to cure the default within the Cure Period and where no cure period is specified, within the Cure Period of 30 (thirty) days, the Concessionaire shall be deemed to be in default of this Agreement (the "**Concessionaire Event of Default**"), unless the default has occurred solely as a result of any breach of this Agreement by the Authority or due to Force Majeure. The defaults referred to herein shall include:

- a. the Performance Security has been encashed and appropriated in accordance with Clause 9.2 and the Concessionaire fails to replenish or provide fresh Performance Security within 30 (thirty) days;
- b. subsequent to the replenishment or furnishing of fresh Performance Security in accordance with Clause 9.2, the Concessionaire fails to cure, within a Cure Period of 90 (ninety) days, the Concessionaire Event of Default for which whole or part of the Performance Security was appropriated;
- c. the Concessionaire fails to achieve any of the Project Milestones due in accordance with respective Scheduled Project Milestone Date, as set in the Schedule 5 and continues in default for 180 (one hundred and eighty) days;
- d. the Concessionaire has failed to achieve COD within 18 (eighteen) months of the Appointed Date;
- e. the Concessionaire abandons or manifests intention to abandon the construction or operation of the Project without the prior written consent of the Authority;
- f. the Punch List items have not been completed within the period set forth in Clause 14.4.1;
- g. the Concessionaire is non-compliant to the Performance Standards as specified in the Schedule 12, Clause 12.2 and remains non-compliant such that it becomes an Event of Default;
- h. the Concessionaire is in breach of the Operation and Maintenance Requirements or the Safety Requirements, as the case may be;
- i. upon occurrence of a Financial Default, the Lenders' Representative has by notice required the Authority to undertake Suspension or Termination, as the case may be, in accordance with the Substitution Agreement and the Concessionaire fails to cure the default within the Cure Period specified hereinabove;
- j. a breach of any of the Project Agreements by the Concessionaire has caused a Material Adverse Effect;
- k. the Concessionaire creates any Encumbrance in breach of this Agreement;





- l. the Concessionaire repudiates this Agreement or otherwise takes any action or evidences or conveys an intention not to be bound by the Agreement;
- m. a Change in Ownership has occurred in breach of the provisions of Clause 5.12;
- n. the Equity holding of the Concessionaire is not in line with Clause 5.12.1.
- o. there is a transfer, pursuant to law either of (i) the rights and/or obligations of the Concessionaire under any of the Project Agreements, or of (ii) all or part of the assets or undertaking of the Concessionaire, and such transfer causes a Material Adverse Effect;
- p. an execution levied on any of the assets of the Concessionaire has caused a Material Adverse Effect;
- q. the Concessionaire is adjudged bankrupt or insolvent, or if a trustee or receiver is appointed for the Concessionaire or for the whole or material part of its assets that has a material bearing on the Project;
- r. the Concessionaire has been, or is in the process of being liquidated, dissolved, wound-up, amalgamated or reconstituted in a manner that would cause, in the reasonable opinion of the Authority, a Material Adverse Effect;
- s. a resolution for winding up of the Concessionaire is passed, or any petition for winding up of the Concessionaire is admitted by a court of competent jurisdiction and a provisional liquidator or receiver is appointed and such order has not been set aside within 90 (ninety) days of the date thereof or the Concessionaire is ordered to be wound up by Court except for the purpose of amalgamation or reconstruction; provided that, as part of such amalgamation or reconstruction, the entire property, assets and undertaking of the Concessionaire are transferred to the amalgamated or reconstructed entity and that the amalgamated or reconstructed entity has unconditionally assumed the obligations of the Concessionaire under this Agreement and the Project Agreements; and provided that:
  - i. the amalgamated or reconstructed entity has the capability and operating experience necessary for the performance of its obligations under this Agreement and the Project Agreements;
  - ii. the amalgamated or reconstructed entity has the financial standing to perform its obligations under this Agreement and the Project Agreements and has a credit worthiness at least as good as that of the Concessionaire as at the Appointed Date; and
  - iii. each of the Project Agreements remains in full force and effect;
- t. any representation or warranty of the Concessionaire herein contained which is, as of the date hereof, found to be materially false or the Concessionaire is at any time hereafter found to be in breach thereof;
- u. the Concessionaire submits to the Authority any statement, notice or other document, in written or electronic form, which has a material effect on the Authority's rights, obligations or interests and which is false in material particulars;
- v. the Concessionaire has failed to make any payment to the Authority within period specified in this Agreement
- w. the Concessionaire has failed to fulfill any obligation, which failure Termination has been specified in this Agreement; or



- x. the Concessionaire commits a default in complying with any other provision of this Agreement if such a default causes a Material Adverse Effect on the Authority.

#### 29.1.3 Authority Event of Default

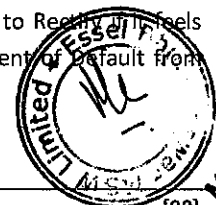
In the event that any of the defaults specified below shall have occurred, and the Authority fails to cure such default within a Cure Period of 90 (ninety) days or such longer period as has been expressly provided in this Agreement, the Authority shall be deemed to be in default of this Agreement (the "**Authority Event of Default**") unless the default has occurred as a result of any breach of this Agreement by the Concessionaire or due to Force Majeure. The defaults referred to herein shall include:

- a. The Authority is in Material Breach of any of its obligations under this Agreement and has failed to cure such breach within 60 (sixty) days of receipt of notice thereof issued by the Concessionaire.
- b. The Authority has unlawfully repudiated this Agreement or otherwise expressed its intention not to be bound by this Agreement.

### 29.2 Termination due to Event of Default

#### 29.2.1 Termination for Concessionaire Event of Default

- a. Without prejudice to any other right or remedy which the Authority may have in respect thereof under this Agreement, upon the occurrence of a Concessionaire Event of Default, the Authority shall, subject to the provisions of the "**Substitution Agreement**" (if any, with the Senior Lenders, pursuant to which, in case of Default by Concessionaire, Senior Lenders shall be allowed to take charge of Concessionaire's roles and responsibilities under this Agreement), be entitled to terminate this Agreement in the manner as set out under Sub-clause (b) of Clause 29.2.1. Provided however that upon the occurrence of a Concessionaire Event of Default as specified under Sub-clause 29.1.2(s), the Authority may terminate this Agreement by issue of Termination Notice in the manner set out under Clause 29.2.3.
- b. If the Authority decides to terminate this Agreement pursuant to preceding Clause (a), it shall in the first instance issue Preliminary Notice to Concessionaire. Within 30 (thirty) days of receipt of the Preliminary Notice, Concessionaire shall submit to the Authority in sufficient detail and if applicable the manner in which inter-alia it proposes to cure the underlying Event of Default or prevent the Event of Default from reoccurring (the "**Concessionaire Proposal to Rectify**"). The same shall be reasonably considered by the Authority. In case of non-submission of Concessionaire Proposal to Rectify within the said period of 30 (thirty) days, the Authority shall be entitled to terminate this Agreement by issuing Termination Notice, and to appropriate the Performance Security, if subsisting. In case Concessionaire has made a Proposal to Rectify within the period stipulated therefore, and the same is accepted by the Authority as reasonable, the Concessionaire shall be allowed a Cure Period of 60 (sixty) days. If, however the Concessionaire fails to remedy / cure the underlying Event of Default or the factors causing the Event of Default within such further period allowed, the Authority shall be entitled to terminate this Agreement, by issue of Termination Notice and to appropriate the Performance Security, if subsisting. For the avoidance of doubt, the Authority, at its sole discretion, can reject the Concessionaire Proposal to Rectify if it feels that it is not adequate to cure the Event of Default or prevent the Event of Default from reoccurring.



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#### 29.2.2 Termination for Authority Event of Default

- a. Without prejudice to any other right or remedy which Concessionaire may have in respect thereof under this Agreement, upon the occurrence of a Authority Event of Default, Concessionaire shall be entitled to terminate this Agreement by issuing Termination Notice.
- b. If Concessionaire decides to terminate this Agreement pursuant to preceding Sub-clause (a) it shall in the first instance issue Preliminary Notice to the Authority. Within 30 (thirty) days of receipt of Preliminary Notice, if applicable, Authority shall forward to Concessionaire its proposal to remedy / cure the underlying Event of Default (the "**Authority Proposal to Rectify**"). In case of non-submission of Authority Proposal to Rectify within the period stipulated therefore, Concessionaire shall be entitled to terminate this Agreement by issuing Termination Notice.
- c. In case Authority Proposal to Rectify is forwarded to Concessionaire within the period stipulated therefore, the Authority shall have further period of 60 (sixty) days to remedy / cure the underlying Event of Default. If, however the Authority fails to remedy / cure the underlying Event of Default within such further period allowed, Concessionaire shall be entitled to terminate this Agreement by issuing Termination Notice.

#### 29.2.3 Termination Notice

If a Party having become entitled to do so decides to terminate this Agreement pursuant to the preceding Clause 29.2.1 or Clause 29.2.2, it shall issue Termination Notice setting out:

- a. in sufficient detail the underlying Event of Default;
- b. the Termination Date which shall be a date occurring not earlier than 90 (ninety) days from the date of Termination Notice;
- c. the estimated termination payment including the details of computation thereof; and,
- d. any other relevant information.

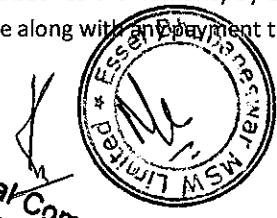
The Parties hereby agree that any Termination Notice shall also be sent to all Senior Lenders , by registered post / courier and a public notice of default of the Concessionaire in leading daily newspaper (of both English and the prevalent local language) of Bhubaneswar.

#### 29.2.4 Obligation of Parties

Following issue of Termination Notice by either Party, the Parties shall, subject to the provision of the Financing Documents and the rights of the Senior Lenders provided therein, promptly take all such steps as may be necessary or required to ensure that:

- a. 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.
- b. The Termination Payment, if any, payable by the Authority in accordance with the Clause 29.2.6 is paid to Concessionaire on the Termination Date and
- c. The Project Facilities are handed back to the Authority by Concessionaire on the Termination Date free from any Encumbrance along with any payment that may be due by Concessionaire to the Authority

#### 29.2.5 Withdrawal of Termination Notice

  
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Notwithstanding anything inconsistency 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 actual 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 or as mutually agreed upon by both parties.

#### 29.2.6

##### Termination Payments

Upon Termination of this Agreement on account of Authority Event of Default, the Concessionaire shall be entitled to the following termination payments in addition to payment from the Authority that may have accrued to Concessionaire prior to the Termination:

a. Authority Event of Default before COD:

Upon Termination of this Agreement on account of the Authority Event of Default before occurrence of COD, the Concessionaire shall receive from the Authority,

Termination payment = 50% (fifty percent) of Debt Due + 55% (fifty five percent) of Adjusted Value of the equity on Termination Date.

The Concessionaire shall be entitled to withdraw the Performance Security, if subsisting, provided that the Performance Security shall be withdrawn only after substitution of the Concessionaire in accordance with the provisions of Substitution Agreement, if any.

b. Concessionaire Event of Default before COD:

Upon Termination on account of a Concessionaire Event of Default before COD, the Project Facilities shall be taken over by the Authority. The Concessionaire shall have the right to remove all movable assets which are part of the Project Facilities. For the avoidance of doubt, the Concessionaire hereby acknowledges that no Termination Payment shall be due or payable on account of a Concessionaire Event of Default.

Upon Termination of this Agreement on account of Concessionaire Event of Default the Performance Security, if subsisting, shall be invoked by the Authority. The Concessionaire expressly agrees that Termination Payment under this Clause 29.2 shall constitute a full and final settlement of all claims of the Concessionaire on account of Termination of this Agreement for any reason whatsoever and that the Concessionaire or any shareholder thereof shall not have any further right or claim under any law, treaty, convention, contract or otherwise.

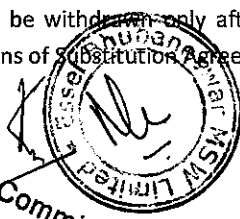
c. Authority Event of Default after COD:

Upon Termination of this Agreement on account of the Authority Event of Default after occurrence of COD, the Concessionaire shall receive from the Authority,

Termination payment = 50% (fifty percent) of Debt Due + 60% (sixty percent) of Adjusted Value of the equity on Termination Date.

The Concessionaire shall be entitled to withdraw the Performance Security, if subsisting, provided that the Performance Security shall be withdrawn only after substitution of the Concessionaire in accordance with the provisions of Substitution Agreement, if any.

d. Concessionaire Event of Default after COD:

  
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Upon Termination on account of a Concessionaire Event of Default after COD, the Project Facilities shall be taken over by the Authority. The Concessionaire shall have the right to remove all movable assets which are part of the Project Facilities. For the avoidance of doubt, the Concessionaire hereby acknowledges that no Termination Payment shall be due or payable on account of a Concessionaire Event of Default.

Upon Termination of this Agreement on account of Concessionaire Event of Default the Performance Security, if subsisting, shall be invoked by the Authority. The Concessionaire expressly agrees that Termination Payment under this Clause 29.2 shall constitute a full and final settlement of all claims of the Concessionaire on account of Termination of this Agreement for any reason whatsoever and that the Concessionaire or any shareholder thereof shall not have any further right or claim under any law, treaty, convention, contract or otherwise.

### 29.3 Rights of the Authority on Termination

- a. Upon Termination of this Agreement for any reason whatsoever, the Authority shall have the power and authority to:
  - i. Enter upon and take possession and control of the Project Facilities, Plant, and Site, forthwith free from any encumbrances;
  - ii. Prohibit Concessionaire and any person claiming through or under Concessionaire from entering upon dealing with the Project Facilities, Plant, and Site or permit as required for pending resolution of any issues to a limited number of representatives of Concessionaire.
  - iii. Appropriate the amounts in the Post Closure Activities Escrow Account on account of the Retention Fee towards post-closure obligations;
- b. Notwithstanding anything contained in this Agreement, the Authority 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 regularization of employment, absorption or re-employment on any ground, in relation to any person in the employment of or engaged by Concessionaire in connection with the Project, and the handover of the Project Facilities by Concessionaire to the Authority shall be free from any such obligation.

### 29.4 Survival of 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 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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## 30. Divestment of Rights and Interest

### 30.1 Divestment Requirements

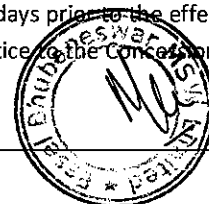
30.1.1 Upon Termination, the Concessionaire shall comply with and conform to the following Divestment Requirements:

- a. notify to the Authority forthwith the location and particulars of all Project Assets;
- b. deliver forthwith the actual or constructive possession of the Project and Project Facilities as specified in the Article 22, save and except to the extent set forth in the Substitution Agreement;
- c. cure all Project Assets, including structures and equipment, of all defects and deficiencies so that the Project is compliant with the Operation and Maintenance Requirements; provided that in the event of Termination during the Construction Period, all Project Assets shall be handed over on 'as is where is' basis after bringing them to a safe condition;
- d. deliver and transfer relevant records, reports, Intellectual Property and other licences pertaining to the Project and its design, engineering, construction, operation and maintenance, including all programmes and manuals pertaining thereto, and complete 'as built' Drawings as on the Transfer Date. For the avoidance of doubt, the Concessionaire represents and warrants that the Intellectual Property delivered hereunder shall be adequate and complete for the design, engineering, construction, operation and maintenance of the Project and shall be assigned to the Authority free of any encumbrance;
- e. transfer and/or deliver all Applicable Permits to the extent permissible under Applicable Laws;
- f. execute such deeds of conveyance, documents and other writings as the Authority may reasonably require for conveying, divesting and assigning all the rights, title and interest of the Concessionaire in the Project, including manufacturers' warranties in respect of any plant or equipment and the right to receive outstanding insurance claims to the extent due and payable to the Authority, absolutely unto the Authority or its nominee; and
- g. comply with all other requirements as may be prescribed or required under Applicable Laws for completing the divestment and assignment of all rights, title and interest of the Concessionaire in the Project, free from all Encumbrances, absolutely unto the Authority or to its nominee.

30.1.2 Subject to the exercise by the Authority of its rights under this Agreement or under any of the Project Agreements to perform or procure the performance by a third party of any of the obligations of the Concessionaire, the Parties shall continue to perform their obligations under this Agreement, notwithstanding the giving of any Termination Notice, until the Termination of this Agreement becomes effective in accordance with its terms.

### 30.2 Inspection and cure

Not earlier than 90 (ninety) days prior to Termination but not later than 15 (fifteen) days prior to the effective date of such Termination, the Independent Engineer shall verify, after giving due notice to the Concessionaire



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of the time, date and venue of such verification, compliance by the Concessionaire with the Operation and Maintenance Requirements, and if required, cause appropriate tests to be carried out at the Concessionaire's cost for this purpose. Defaults, if any, in the Operation and Maintenance Requirements shall be cured by the Concessionaire at its cost and the provisions of Article 31 shall apply, mutatis mutandis, in relation to curing of defects or deficiencies under this Article 30.

### **30.3 Cooperation and assistance on transfer of Project**

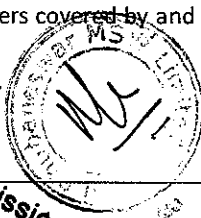
- 30.3.1 The Parties shall cooperate on a best effort basis and take all necessary measures, in good faith, to achieve a smooth transfer of the Project in accordance with the provisions of this Agreement so as to protect the safety of and avoid undue delay or inconvenience, other members of the public or the lawful occupiers of any part of the Site.
- 30.3.2 The Parties shall provide to each other, 9 (nine) months prior to the Transfer Date in the event of Termination by efflux of time and immediately in the event of either Party conveying to the other Party its intent to issue a Termination Notice, as the case may be, as much information and advice as is reasonably practicable regarding the proposed arrangements for operation of the Project following the Transfer Date. The Concessionaire shall further provide such reasonable advice and assistance as the Authority, its other concessionaire or agent may reasonably require for operation of the Project until the expiry of 6 (six) months after the Transfer Date.
- 30.3.3 The Authority shall have the option to purchase or hire from the Concessionaire at a fair market value and free from any encumbrance all or any part of the plant and machinery used in connection with the Project but which does not form part of the assets specified in Clause 30.1.1 and is reasonably required in connection with operation of the Project. For the avoidance of doubt, in the event of dispute or difference relating to fair market value, the Dispute Resolution Procedure shall apply.

### **30.4 Vesting Certificate**

The divestment of all rights, title and interest in the Project shall be deemed to be complete on the date when all of the Divestment Requirements have been fulfilled, and the Authority shall, without unreasonable delay, thereupon issue a certificate substantially in the form set forth in Schedule 17 (the "Vesting Certificate"), which will have the effect of constituting evidence of divestment by the Concessionaire of all of its rights, title and interest in the Project, and their vesting in the Authority pursuant hereto. It is expressly agreed that any defect or deficiency in the Divestment Requirements shall not in any manner be construed or interpreted as restricting the exercise of any rights by the Authority or its nominee on, or in respect of, the Project on the footing that all Divestment Requirements have been complied with by the Concessionaire.

### **30.5 Divestment costs etc.**

- 30.5.1 The Concessionaire shall bear and pay all costs incidental to divestment of all of the rights, title and interest of the Concessionaire in the Project in favour of the Authority upon Termination, save and except that all stamp duties payable on any deeds or Documents executed by the Concessionaire in connection with such divestment shall be borne by the Authority.
- 30.5.2 In the event of any dispute relating to matters covered by and under this Article 30, the Dispute Resolution Procedure shall apply.

  
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## **31. Defects Liability after Termination**

### **31.1 Liability for defects after Termination**

- 31.1.1 The Concessionaire shall be responsible for all defects and deficiencies in the Project for a period of 120 (One hundred and twenty) days after Termination, and it shall have the obligation to repair or rectify, at its own cost, all defects and deficiencies observed by the Independent Engineer in the Project during the aforesaid period. In the event that the Concessionaire fails to repair or rectify such defect or deficiency within a period of 15 (fifteen) days from the date of notice issued by the Authority in this behalf, the Authority shall be entitled to get the same repaired or rectified at the Concessionaire's risk and cost so as to make the Project conform to the Operation and Maintenance Requirements. All costs incurred by the Authority hereunder shall be reimbursed by the Concessionaire to the Authority within 15 (fifteen) days of receipt of demand thereof, and in the event of default in reimbursing such costs, the Authority shall be entitled to recover the same from the Performance Security for Operation and Maintenance Requirements in accordance with Article 9 or / and Escrow Account.

  
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## **PART V – OTHER PROVISIONS**

## 32. Assignment and Charges

### 32.1 Restrictions on assignment and charges

- 32.1.1 Subject to Clauses 32.2 and 32.3, this Agreement shall not be assigned by the Concessionaire to any person, save and except with the prior consent in writing of the Authority, which consent the Authority shall be entitled to decline without assigning any reason.
- 32.1.2 Subject to the provisions of Clause 32.2, the Concessionaire shall not create nor permit to subsist any Encumbrance, or otherwise transfer or dispose of all or any of its rights and benefits under this Agreement or any Project Agreement to which the Concessionaire is a party except with prior consent in writing of the Authority, which consent the Authority shall be entitled to decline without assigning any reason.

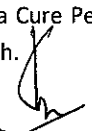
### 32.2 Permitted assignment and charges

The restraints set forth in Clause 32.1 shall not apply to:

- a. liens arising by operation of law (or by an agreement evidencing the same) in the ordinary course of business of the Project;
- b. mortgages / pledges / hypothecation of goods / assets other than Project Assets and their related documents of title, a charge on the Escrow account arising or created in the ordinary course of business of the Project, and as security only for indebtedness to the Senior Lenders under the Financing Agreements and/or for working capital arrangements for the Project;
- c. assignment of rights, interest and obligations of the Concessionaire to or in favour of the Lenders' Representative as nominee and for the benefit of the Senior Lenders, to the extent covered by and in accordance with the Substitution Agreement as security for financing provided by Senior Lenders under the Financing Agreements; and
- d. liens or encumbrances required by any Applicable Law.

### 32.3 Substitution Agreement

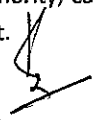
- 32.3.1 The Lenders' Representative, on behalf of Senior Lenders, may exercise the right to substitute the Concessionaire pursuant to the agreement for substitution of the Concessionaire (the "Substitution Agreement") to be entered into amongst the Concessionaire, the Authority and the Lenders' Representative, on behalf of Senior Lenders, substantially in the form set forth in Schedule 18.
- 32.3.2 Upon substitution of the Concessionaire under and in accordance with the Substitution Agreement, the Nominated Company substituting the Concessionaire shall be deemed to be the Concessionaire under this Agreement and shall enjoy all rights and be responsible for all obligations of the Concessionaire under this Agreement as if it were the Concessionaire; provided that where the Concessionaire is in breach of this Agreement on the date of such substitution, the Authority shall by notice grant a Cure Period of 120 (one hundred and twenty) days to the Concessionaire for curing such breach.

  
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#### 32.4 Assignment by the Authority

Notwithstanding anything to the contrary contained in this Agreement, the Authority may, after giving 60 (sixty) days' notice to the Concessionaire, assign and/ or transfer any of its rights and benefits and/or obligations under this Agreement to an assignee who is, in the reasonable opinion of the Authority, capable of fulfilling all of the Authority's then outstanding obligations under this Agreement.

  
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### 33. Change in Law

#### 33.1 Change in Law

Change in law shall mean the occurrence or coming into force of any of the following, after the Commencement Date:

- i. The enactment of any new Indian law;
- 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.
- iv. The commencement of any Indian Law which has not entered into effect until the date of this Agreement
- v. Change in notified Service Area

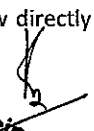
a. Provided that change in law shall not include


- i. Coming into effect, after the Commencement Date, of any provision or statute which is already in place as of the Commencement 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 Commencement Date which is a matter of public knowledge,
- iii. Any change in the rates of taxes

#### 33.2 Increase in costs

If as a result of Change in Law, the Concessionaire suffers an increase in costs or reduction in net after tax return or other financial burden, the aggregate financial effect of which exceeds the higher of Rs. 1 crore (Rupees one crore) and 0.5% (zero point five percent) of the Tipping Fee in respective Accounting Year, the Concessionaire may so notify the Authority and propose amendments to this Agreement so as to place the Concessionaire in the same financial position as it would have enjoyed had there been no such Change in Law resulting in the cost increase, reduction in return or other financial burden as aforesaid. Upon notice by the Concessionaire, the Parties shall meet, as soon as reasonably practicable but no later than 30 (thirty) days from the date of notice, and either agree on amendments to this Agreement or on any other mutually agreed arrangement.

Provided that if no agreement is reached within 90 (ninety) days of the aforesaid notice, the Concessionaire may by notice require the Authority to pay an amount that would place the Concessionaire in the same financial position that it would have enjoyed had there been no such Change in Law, and within 15 (fifteen) days of receipt of such notice, along with particulars thereof, the Authority shall pay the amount specified therein; provided that if the Authority shall dispute such claim of the Concessionaire, then same shall be settled in accordance with the Dispute Resolution Procedure. For avoidance of doubt, it is agreed that this Clause 33.2 shall be restricted to changes in law directly suffering the Concessionaire's costs of performing its obligations under this Agreement.

  
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### 33.3 Reduction in costs

If as a result of Change in Law, the Concessionaire benefits from a reduction in costs or increase in net after-tax return or other financial gains, the aggregate financial effect of which exceeds the higher of Rs. 1 crore (Rupees one crore) and 0.5% (zero point five percent) of the Tipping Fee in any Accounting Year, the Authority may so notify the Concessionaire and propose amendments to this Agreement so as to place the Concessionaire in the same financial position as it would have enjoyed had there been no such Change in Law resulting in the decreased costs, increase in return or other financial gains as aforesaid. Upon notice by the Authority, the Parties shall meet, as soon as reasonably practicable but no later than 30 (thirty) days from the date of notice, and either agree on such amendments to this Agreement or on any other mutually agreed arrangement:

Provided that if no agreement is reached within 90 (ninety) days of the aforesaid notice, the Authority may by notice require the Concessionaire to pay an amount that would place the Concessionaire in the same financial position that it would have enjoyed had there been no such Change in Law, and within 15 (fifteen) days of receipt of such notice, along with particulars thereof, the Concessionaire shall pay the amount specified therein to the Authority; provided that if the Concessionaire shall dispute such claim of the Authority, the same shall be settled in accordance with the Dispute Resolution Procedure. For the avoidance of doubt, it is agreed that this Clause 33.3 shall be restricted to changes in law directly affecting the Concessionaire's costs of performing its obligations under this Agreement.

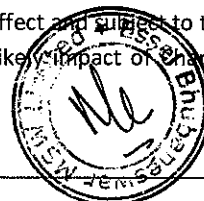
### 33.4 Protection of NPV

Pursuant to the provisions of Clauses 33.2 and 33.3 and for the purposes of placing the Concessionaire in the same financial position as it would have enjoyed had there been no Change in Law affecting the costs, returns or other financial burden or gains, the Parties shall rely on the Financial Model to establish a net present value (the "NPV") of the net cash flow and make necessary adjustments in costs, revenues, compensation or other relevant parameters, as the case may be, to procure that the NPV of the net cash flow is the same as it would have been if no Change in Law had occurred.

### 33.5 Restriction on cash compensation

The Parties acknowledge and agree that the demand for cash compensation under this Article 33 shall be restricted to the effect of Change in Law during the respective Accounting Year and shall be made at any time after commencement of such year, but no later than one year from the close of such Accounting Year. Any demand for cash compensation payable for and in respect of any subsequent Accounting Year shall be made after the commencement of the Accounting Year to which the demand pertains, but no later than two years from the close of such Accounting Year.


- a. Upon receipt of the notice of Change in Law issued by the Concessionaire pursuant to preceding sub clause, Authority and the Concessionaire shall along with the Project Officer hold discussions and take all such steps as may be necessary including determination / certification by the Project Officer of the quantum of the Additional Cost to be borne and paid by the Authority.
- 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, then Authority shall subsequently reimburse to the Concessionaire with 20% of such Additional Costs incurred annually in any one financial year. Similarly subject to the Change in Law if the Concessionaire enjoys a reduction in the cost and/ or is financially benefited, then the Concessionaire shall reimburse to the Authority 20% of such gains made in any one financial year.

- c. An Independent Consultant shall be appointed by Authority for calculating the gain or loss due to the Change in Law. The figures mentioned by the Independent Consultant shall be considered final and the Parties shall agree to the same. The cost of such Independent Consultant shall be borne equally by the Concessionaire and Authority.



  
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## 34. Liability and Indemnity

### 34.1 General indemnity

34.1.1 The Concessionaire will indemnify, defend, save and hold harmless the Authority and its officers, servants, agents, Government Instrumentalities and Government owned and/or controlled entities/enterprises, (the "**Authority Indemnified Persons**") against any and all suits, proceedings, actions, demands and claims from third parties for any loss, damage, cost and expense of whatever kind and nature, whether arising out of any breach by the Concessionaire of any of its obligations under this Agreement or any related agreement or on account of any defect or deficiency in the provision of services by the Concessionaire to any User or from any negligence of the Concessionaire under contract or tort or on any other ground whatsoever, except to the extent that any such suits, proceedings, actions, demands and claims have arisen due to any negligent act or omission, or breach or default of this Agreement on the part of the Authority Indemnified Persons.

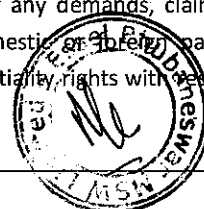
34.1.2 The Authority will indemnify, defend, save and hold harmless the Concessionaire against any and all suits, proceedings, actions, demands and claims from third parties for any loss, damage, cost and expense of whatever kind and nature arising out of (i) defect in title and/or the rights of the Authority in the land comprised in the Site, and/or (ii) breach by the Authority of any of its obligations under this Agreement or any related agreement, which materially and adversely affect the performance by the Concessionaire of its obligations under this Agreement, save and except that where any such claim, suit, proceeding, action, and/or demand has arisen due to a negligent act or omission, or breach of any of its obligations under any provision of this Agreement or any related agreement and/or breach of its statutory duty on the part of the Concessionaire, its subsidiaries, affiliates, contractors, servants or agents, the same shall be the liability of the Concessionaire.

### 34.2 Indemnity by the Concessionaire

34.2.1 Without limiting the generality of Clause 34.1, the Concessionaire shall fully indemnify, hold harmless and defend the Authority and the Authority Indemnified Persons from and against any and all loss and/or damages arising out of or with respect to:

- a. failure of the Concessionaire to comply with Applicable Laws and Applicable Permits;
- b. payment of taxes required to be made by the Concessionaire in respect of the income or other taxes of the Concessionaire's contractors, suppliers and representatives; or
- c. non-payment of amounts due as a result of materials or services furnished to the Concessionaire or any of its contractors which are payable by the Concessionaire or any of its contractors.

34.2.2 Without limiting the generality of the provisions of this Article 34, the Concessionaire shall fully indemnify, hold harmless and defend the Authority Indemnified Persons from and against any and all suits, proceedings, actions, claims, demands, liabilities and damages which the Authority Indemnified Persons may hereafter suffer, or pay by reason of any demands, claims, suits or proceedings arising out of claims of infringement of any domestic or foreign patent rights, copyrights or other intellectual property, proprietary or confidentiality rights with respect to any



materials, information, design or process used by the Concessionaire or by the Concessionaire's Contractors in performing the Concessionaire's obligations or in any way incorporated in or related to the Project. If in any such suit, action, claim or proceedings, a temporary restraint order or preliminary injunction is granted, the Concessionaire shall make every reasonable effort, by giving a satisfactory bond or otherwise, to secure the revocation or suspension of the injunction or restraint order. If, in any such suit, action, claim or proceedings, the Project, or any part thereof or comprised therein, is held to constitute an infringement and its use is permanently enjoined, the Concessionaire shall promptly make every reasonable effort to secure for the Authority a licence, at no cost to the Authority, authorising continued use of the infringing work. If the Concessionaire is unable to secure such licence within a reasonable time, the Concessionaire shall, at its own expense, and without impairing the Specifications and Standards, either replace the affected work, or part, or process thereof with non-infringing work or part or process, or modify the same so that it becomes non-infringing.

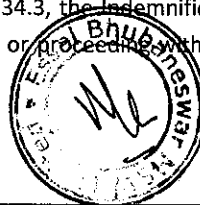
### 34.3 Notice and contest of claims

In the event that either Party receives a claim or demand from a third party in respect of which it is entitled to the benefit of an indemnity under this Article 34 (the "Indemnified Party") it shall notify the other Party (the "Indemnifying Party") within 15 (fifteen) days of receipt of the claim or demand and shall not settle or pay the claim without the prior approval of the Indemnifying Party, which approval shall not be unreasonably withheld or delayed. In the event that the Indemnifying Party wishes to contest or dispute the claim or demand, it may conduct the proceedings in the name of the Indemnified Party, subject to the Indemnified Party being secured against any costs involved, to its reasonable satisfaction.

### 34.4 Defence of claims

34.4.1 The Indemnified Party shall have the right, but not the obligation, to contest, defend and litigate any claim, action, suit or proceeding by any third party alleged or asserted against such Party in respect of, resulting from, related to or arising out of any matter for which it is entitled to be indemnified hereunder, and reasonable costs and expenses thereof shall be indemnified by the Indemnifying Party. If the Indemnifying Party acknowledges in writing its obligation to indemnify the Indemnified Party in respect of loss to the full extent provided by this Article 34, the Indemnifying Party shall be entitled, at its option, to assume and control the defence of such claim, action, suit or proceeding, liabilities, payments and obligations at its expense and through the counsel of its choice; provided it gives prompt notice of its intention to do so to the Indemnified Party and reimburses the Indemnified Party for the reasonable cost and expenses incurred by the Indemnified Party prior to the assumption by the Indemnifying Party of such defence. The Indemnifying Party shall not be entitled to settle or compromise any claim, demand, action, suit or proceeding without the prior written consent of the Indemnified Party, unless the Indemnifying Party provides such security to the Indemnified Party as shall be reasonably required by the Indemnified Party to secure the loss to be indemnified hereunder to the extent so compromised or settled.

34.4.2 If the Indemnifying Party has exercised its rights under Clause 34.3, the Indemnified Party shall not be entitled to settle or compromise any claim, action, suit or proceeding without the prior





written consent of the Indemnifying Party (which consent shall not be unreasonably withheld or delayed).

34.4.3 If the Indemnifying Party exercises its rights under Clause 34.3, the Indemnified Party shall nevertheless have the right to employ its own counsel, and such counsel may participate in such action, but the fees and expenses of such counsel shall be at the expense of the Indemnified Party, when and as incurred, unless:

- a. the employment of counsel by such party has been authorized in writing by the Indemnifying Party; or
- b. the Indemnified Party shall have reasonably concluded that there may be a conflict of interest between the Indemnifying Party and the Indemnified Party in the conduct of the defence of such action; or
- c. the Indemnifying Party shall not, in fact, have employed independent counsel reasonably satisfactory to the Indemnified Party, to assume the defence of such action and shall have been so notified by the Indemnified Party; or
- d. the Indemnified Party shall have reasonably concluded and specifically notified the Indemnifying Party either:
  - i. that there may be specific defences available to it which are different from or additional to those available to the Indemnifying Party; or
  - ii. that such claim, action, suit or proceeding involves or could have a material adverse effect upon it beyond the scope of this Agreement:
  - iii. Provided that if Sub-clauses (b), (c) or (d) of this Clause 34.4.3 shall be applicable, the counsel for the Indemnified Party shall have the right to direct the defence of such claim, demand, action, suit or proceeding on behalf of the Indemnified Party, and the reasonable fees and disbursements of such counsel shall constitute legal or other expenses hereunder.

#### 34.5 **No consequential claims**

Notwithstanding anything to the contrary contained in this Article 34, the indemnities herein provided shall not include any claim or recovery in respect of any cost, expense, loss or damage of an indirect, incidental or consequential nature, including loss of profit, except as expressly provided in this Agreement.

#### 34.6 **Survival on Termination**

The provisions of this Article 34 shall survive Termination.

  
**Municipal Commissioner**  
**Bhubaneswar Municipal Corporation**



## **35. Rights and Title over the Site**

### **35.1 Licensee rights**

For the purpose of this Agreement, the Concessionaire shall have rights to the use of the Site as sole Licensee subject to and in accordance with this Agreement, and to this end, it may regulate the entry and use of the Project by third parties in accordance with and subject to the provisions of this Agreement.

### **35.2 Access rights of the Authority and others**

35.2.1 The Concessionaire shall allow free access to the Site at all times for the authorized representatives and vehicles of the Authority, Senior Lenders, and the Independent Engineer, and for the persons and vehicles duly authorized by any Government Instrumentality to inspect the Project or to investigate any matter within their authority, and upon reasonable notice, the Concessionaire shall provide to such persons reasonable assistance necessary to carry out their respective duties and functions.

35.2.2 The Concessionaire shall, for the purpose of operation and maintenance of any utility or road specified in Article 11, allow free access to the Site at all times for the authorized persons and vehicles of the controlling body of such utility or road.

### **35.3 Property taxes**

All applicable statutory taxes shall be payable by the Concessionaire, including the property taxes, rent and cess on the Site, under Applicable Laws for use of the Site shall be its sole responsibility and same shall not be reimbursed or payable by the Authority.

### **35.4 Restriction on sub-letting**

The Concessionaire shall not sublet the whole or any part of the Site, save and except as may be expressly set forth in this Agreement; provided that nothing contained herein shall be construed or interpreted as restricting the right of the Concessionaire to appoint Contractors for the performance of its obligations hereunder including for operation and maintenance of all or any part of the Project.

  
Municipal Commissioner  
Bhubaneswar Municipal Corporation



## 36. Dispute Resolution

### 36.1 Dispute resolution

36.1.1 Any dispute, difference or controversy of whatever nature howsoever arising under or out of or in relation to this Agreement (including its interpretation) between the Parties, and so notified in writing by either Party to the other Party (the "**Dispute**") shall, in the first instance, be attempted to be resolved amicably in accordance with the conciliation procedure set forth in Clause 36.2.

36.1.2 The Parties agree to use their best efforts for resolving all Disputes arising under or in respect of this Agreement promptly, equitably and in good faith, and further agree to provide each other with reasonable access during normal business hours to all non-privileged records, information and data pertaining to any Dispute.

### 36.2 Conciliation

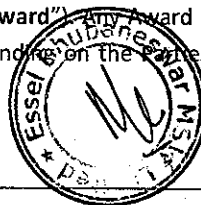
In the event of any Dispute between the Parties, either Party may call upon the Independent Engineer to mediate and assist the Parties in arriving at an amicable settlement thereof. Failing mediation by the Independent Engineer or without the intervention of the Independent Engineer, either Party may require such Dispute to be referred to the Commissioner of BMC and the Chairman of the Board of Directors of the Concessionaire for amicable settlement, and upon such reference, the said persons shall meet no later than 7 (seven) days from the date of reference to discuss and attempt to amicably resolve the Dispute. If such meeting does not take place within the 7 (seven) day period or the Dispute is not amicably settled within 15 (fifteen) days of the meeting or the Dispute is not resolved as evidenced by the signing of written terms of settlement within 30 (thirty) days of the notice in writing referred to in Clause 36.1.1 or such longer period as may be mutually agreed by the Parties, either Party may refer the Dispute to arbitration in accordance with the provisions of Clause 36.3.

### 36.3 Arbitration

36.3.1 Any Dispute which is not resolved amicably by conciliation, as provided in Clause 36.2, shall be finally decided by reference to arbitration by a Board of Arbitrators appointed in accordance with Clause 36.3.2. Such arbitration shall be held in accordance with the Rules of Arbitration of the International Centre for Alternative Dispute Resolution, New Delhi (the "**Rules**"), or such other rules as may be mutually agreed by the Parties, and shall be subject to the provisions of the Arbitration Act. The venue of such arbitration shall ordinarily be Bhubaneswar but by agreement of the Parties, the arbitration hearing, if required, may be held elsewhere, and the language of arbitration proceedings shall be English.

36.3.2 There shall be a Board of three arbitrators, of whom each Party shall select one, and the third arbitrator shall be appointed by the two arbitrators so selected, and in the event of disagreement between the two arbitrators, the appointment shall be made in accordance with the Rules.

36.3.3 The arbitrators shall make a reasoned award (the "**Award**") Any Award made in any arbitration held pursuant to this Article 36 shall be final and binding on the Parties as from the date it is



Municipal Commissioner  
Bhubaneswar Municipal Corporation

made, and the Concessionaire and the Authority agree and undertake to carry out such Award without delay.

36.3.4 The Concessionaire and the Authority agree that an Award may be enforced against the Concessionaire and/or the Authority, as the case may be, and their respective assets wherever situated.

36.3.5 This Agreement and the rights and obligations of the Parties shall remain in full force and effect, pending the Award in any arbitration proceedings hereunder.

#### 36.4 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.

#### 36.5 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.

  
**Municipal Commissioner**  
Bhubaneswar Municipal Corporation



## 37. Disclosure

### 37.1 Disclosure of Specified Documents

The Concessionaire shall make available for inspection by any person, copies of this Concession Agreement, the Operation & Maintenance Manual, and the Operation and Maintenance Requirements (hereinafter collectively referred to as the "**Specified Documents**"), free of charge, during normal business hours on all working days at the Project Site and at the Concessionaire's Registered Office.

### 37.2 Disclosure of Documents relating to safety

The Concessionaire shall make available for inspection by any person copies of all Documents and data relating to safety of the Project, free of charge, during normal business hours on all working days, at the Concessionaire's Registered Office. The Concessionaire shall make copies of the same available to any person upon payment of copying charges on a 'no profit no loss' basis.

Notwithstanding the provisions of Clauses 37.1 and 37.2, the Authority shall be entitled to direct the Concessionaire, from time to time, to withhold the disclosure of Protected Documents (as defined herein below) to any person in pursuance of the aforesaid Clauses.

Explanation:

The expression Protected Documents shall mean such of the Specified Documents or documents referred to in Clauses 37.1 and 37.2, or portions thereof, the disclosure of which the Authority is entitled to withhold under the provisions of the Right to Information Act, 2005.



  
**Municipal Commissioner**  
Bhubaneswar Municipal Corporation

## **38. Redressal of Public Grievances**

### **38.1 Complaints Register**

- 38.1.1 The Concessionaire shall maintain a public relations office at the Project Site and shall keep registers at the Project Site (the "Complaint Register") open to public access at all times for recording of complaints by any person (the "Complainant"). Information relating to the availability of and access to the Complaint Register shall be prominently displayed by the Concessionaire at the Plant Site. The Authority shall also maintain a Complaint Register at its SWM Cell office at Bhubaneswar, open to public access at all times for recording of complaints by the Complainant.
- 38.1.2 The Complaint Register shall be securely bound and each page thereof shall be duly numbered. It shall have appropriate columns including the complaint number, date, name and address of the Complainant, substance of the complaint and the action taken by the Concessionaire. Immediately after a complaint is registered, the Concessionaire shall give a receipt to the Complainant stating the date and complaint number.
- 38.1.3 Without prejudice to the provisions of Clauses 38.1.1 and 38.1.2, the Authority may, in consultation with the Concessionaire, specify the procedure for making complaints in electronic form and for responses thereto.

### **38.2 Redressal of complaints**

- 38.2.1 The Concessionaire shall inspect the Complaint Register every day and take prompt and reasonable action for redressal of each complaint. The action taken shall be briefly noted in the Complaint Register and a reply stating the particulars thereof shall be sent by the Concessionaire to the Complainant under a certificate of posting.
- 38.2.2 Within 7 (seven) days of the close of each month, the Concessionaire shall send to the Authority and to the Independent Engineer a true photocopy each of all the pages of the Complaint Register on which any entry has been recorded during the course of such month, and upon perusal thereof, the Authority may, in its discretion, advise the Concessionaire to take such further action as the Authority may deem appropriate for a fair and just redressal of any grievance. The Concessionaire shall consider such advice and inform the Authority of its decision thereon, and if the Authority is of the opinion that the Complainant is entitled to further relief, it may refer the matter to the competent forum for its disposal under the Consumer Protection Act, 1986, and advise the Complainant to pursue the complaint at his own risk and cost.



  
**Municipal Commissioner**  
**Bhubaneswar Municipal Corporation**

## **39. Miscellaneous**

### **39.1 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 owned 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 hereof until the same is paid to or otherwise realized by the Party entitles 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 Clause 39.1 shall neither be deemed nor construed to authorized 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 obligation.

### **39.2 Governing Law and Jurisdiction**

This agreement shall be governed by the laws of India. The Courts at Bhubaneswar shall have jurisdiction over all matter arising out of or relating to this Agreement.

### **39.3 Waiver**

Waiver by either party of any default by the other party in the observation and performance of any provision of or obligation under this Agreement:

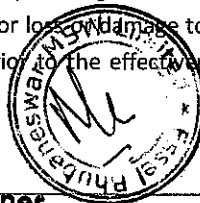
- a. shall not operate or be construed as a waiver of any other or subsequent default hereof or of other provisions or obligation under this agreement;
- b. shall not be effective unless it is in writing and executed by a duly authorized representative of such Party; and
- c. shall not affect the validity or enforceability of this agreement in any manner.

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.

### **39.4 Survival**

Termination of this agreement shall not relive the Authority of any obligations already incurred hereunder which expressly or by implication survives Termination hereof, and expect 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.

  
**Municipal Commissioner**  
**Bhubaneswar Municipal Corporation**



### 39.5 Amendments

This Agreement and the Schedules / Annexures 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.

### 39.6 Notice

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 given by hand delivery, recognized international courier, mail, telex or facsimile transmission and delivered or transmitted to the Parties at their respective addresses set forth below;

If to Authority:

To,

**Dr. Krishan Kumar, IAS**

The Municipal Commissioner,

Bhubaneswar Municipal Corporation,

Vivekananda Marg, Bhubaneswar - 751014

Phone: 0674-2431403

Fax: 0674-2432895

If to Concessionaire:

**Mr. Manoj Nainani**

Assistant Vice President,

Essel Infraprojects limited,

513/A, 5<sup>th</sup> Floor, Kohinoor City, Kirol Road,

Off LBS Marg,

Kurla (W)

Mumbai – 400070

Email: [manoj.nainani@infra.esselgroup.com](mailto:manoj.nainani@infra.esselgroup.com)

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:

- a. in the case of any communication made by letter, when delivered by hand, by recognized international courier or by mail (registered, return receipt requested) at that address; and
- b. in the case of any communication made by telex or facsimile, when properly addressed to such telex number or facsimile number.

  
**Municipal Commissioner**  
**Bhubaneswar Municipal Corporation**





**39.7 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 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 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.

**39.8 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.

**39.9 Waiver of immunity**

Each Party unconditionally and irrevocably:

- a. agrees that the execution, delivery and performance by it of this Agreement constitute commercial acts done and performed for commercial purpose;
- b. agrees that, should any proceedings be brought against it or its assets, property or revenues in any jurisdiction in relation to this Agreement or any transaction contemplated by this Agreement, no immunity (whether by reason of sovereignty or otherwise) from such proceedings shall be claimed by or on behalf of the Party with respect to its assets;
- c. waives any right of immunity which it or its assets, property or revenues now has, may acquire in the future or which may be attributed to it in any jurisdiction; and
- d. consents generally in respect of the enforcement of any judgement or award against it in any such proceedings to the giving of any relief or the issue of any process in any jurisdiction in connection with such proceedings (including the making, enforcement or execution against it or in respect of any assets, property or revenues whatsoever irrespective of their use or intended use of any order or judgement that may be made or given in connection therewith).

**39.10 Depreciation and Interest**

**39.10.1** For the purposes of depreciation under the Applicable Laws, the property representing the capital investment made by the Concessionaire in the Project shall be deemed to be acquired and owned by the Concessionaire. For the avoidance of doubt, the Authority shall not in any manner be liable in respect of any claims for depreciation to be made by the Concessionaire under the Applicable Laws.

**39.10.2** Unless otherwise specified, any interest payable under this Agreement shall accrue on a daily outstanding basis and shall be compounded on the basis of quarterly rests.

  
**Municipal Commissioner**  
**Bhubaneswar Municipal Corporation**

**39.11 Delayed payments**

The Parties hereto agree that payments due from one Party to the other Party under the provisions of this Agreement shall be made within the period set forth therein, and if no such period is specified, within 30 (thirty) days of receiving a demand along with the necessary particulars.

**39.12 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 or any representation by either Party not contained in a binding legal agreement executed by both Parties.

**39.13 Entire Agreement**

This Agreement and the Schedules together constitute a complete and exclusive statement 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 such modification or amendment is agreed to in writing by the Parties and duly executed by persons especially empowered in this behalf by the respective Parties. All prior written or oral understandings, offers or other communications of every kind pertaining to this Agreement are abrogated and withdrawn. For the avoidance of doubt, the Parties hereto agree that any obligations of the Concessionaire arising from the Request for Proposals, as the case may be, shall be deemed to form part of this Agreement and treated as such.

**39.14 Third Parties**

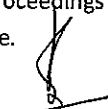
This Agreement is intended solely for the benefit of the Parties, and their respective successors and permitted assigns, and nothing in this Agreement shall be construed to create any duty to, standard of care with reference to, or any liability to, any person not a Party to this Agreement.

**39.15 Successors and Assigns**

This Agreement shall be binding upon, and inure to the benefit of the Parties and their respective successors and permitted assigns.

**39.16 Language**

All notices required to be given by one Party to the other Party and all other communications, Documentation and proceedings which are in any way relevant to this Agreement shall be in writing and in English language.

  
**Municipal Commissioner**  
**Bhubaneswar Municipal Corporation**



### 39.17 Counterparts

This Agreement may be executed in two counterparts, each of which, when executed and delivered, shall constitute an original of this Agreement.

**IN WITNESS WHEREOF THE PARTIES HAVE EXECUTED AND DELIVERED THIS AGREEMENT AS OF THE DAY, MONTH AND YEAR FIRST ABOVE WRITTEN.**

SIGNED SEALED AND DELIVERED

For and on behalf of BMC by:

SIGNED SEALED AND DELIVERED

For and on behalf of Concessionaire by:

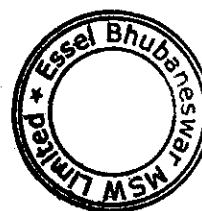
  
Dr. Krishan Kumar, IAS

The Municipal Commissioner,  
Bhubaneswar Municipal Corporation.  
Vivekananda Marg, Bhubaneswar - 751014

29/5/14  
Municipal Commissioner  
Bhubaneswar Municipal Corporation

  
Mr. Manoj Nainani

Director,  
ESSEL BHUBANESWAR MSW LIMITED,  
Essel House, B-10, Lawrence Road, Industrial Area,  
New Delhi - 110035



THE COMMON SEAL OF CONCESSIONAIRE has been affixed pursuant to the resolution passed by the Board of Directors of the Concessionaire at its meeting held on the 26<sup>th</sup> day of February 2014 hereunto affixed in the presence of Mr. Manoj Nainani, Director, who has signed these presents in token thereof and Mr. Parthapratim Ata Authorized Personal who has countersigned the same in token thereof:

In the presence of:

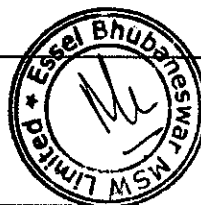
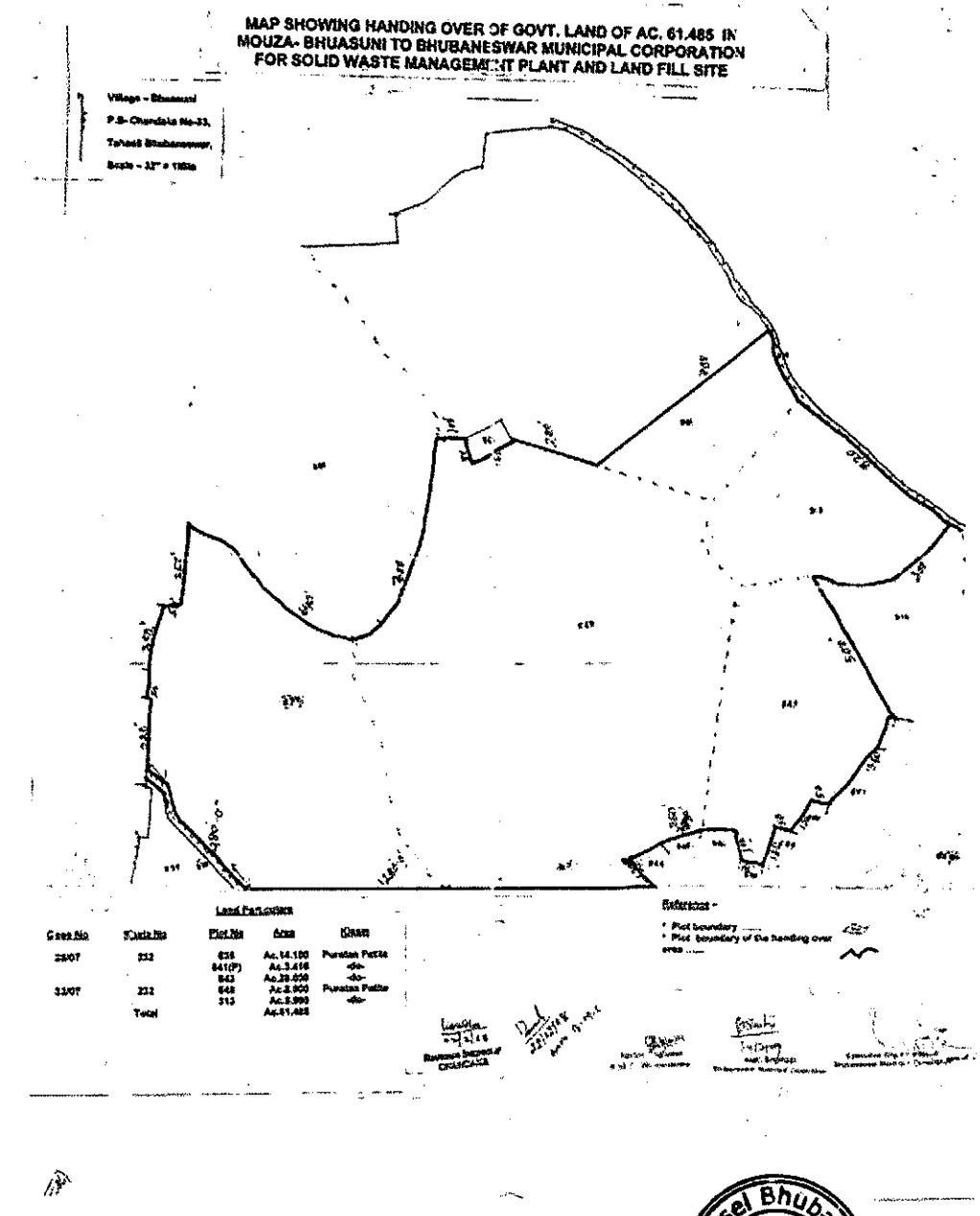
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## **SCHEDULES**

# 1. Project Site

## 1.1 Part A: Site for Regional Processing and Scientific Landfill Facility at Bhuasuni

### Land Fill

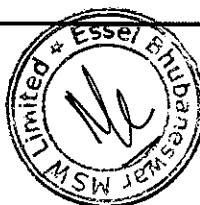
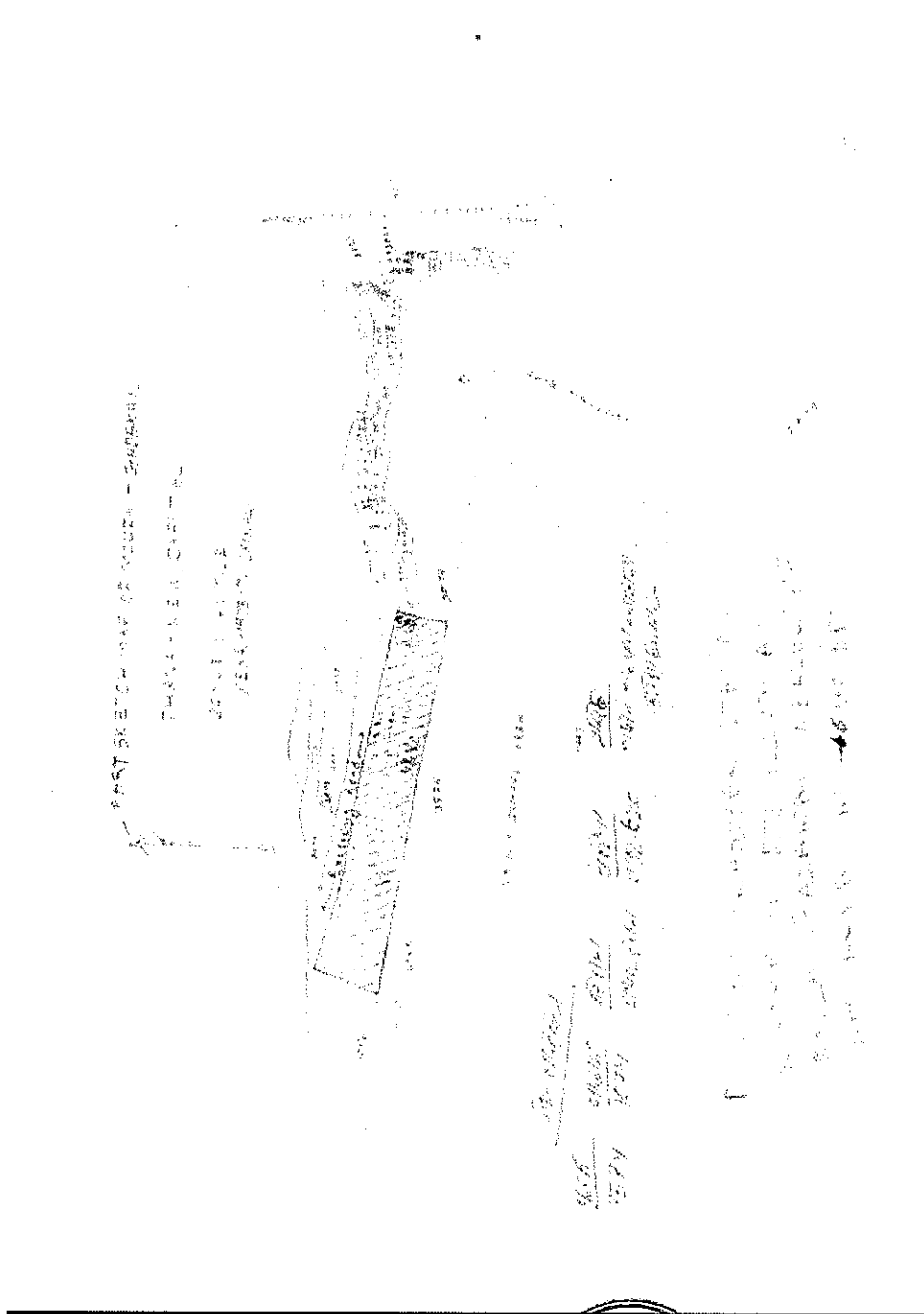


**Municipal Commissioner  
Bhubaneswar Municipal Corporation**

## 1.2 Part B: Site for TSB 1 at Gadakan

The approximate distance of TSB1 from the Processing and Scientific Landfill Facility at Bhuasuni is approximately 24.00 Km. The area of the land for the Transfer Station at Gadakana is admeasuring approximately 27,872 square meters.

Location: 20.3105 North and 85.8416 East



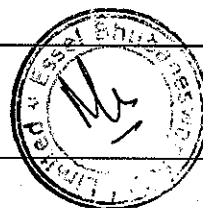
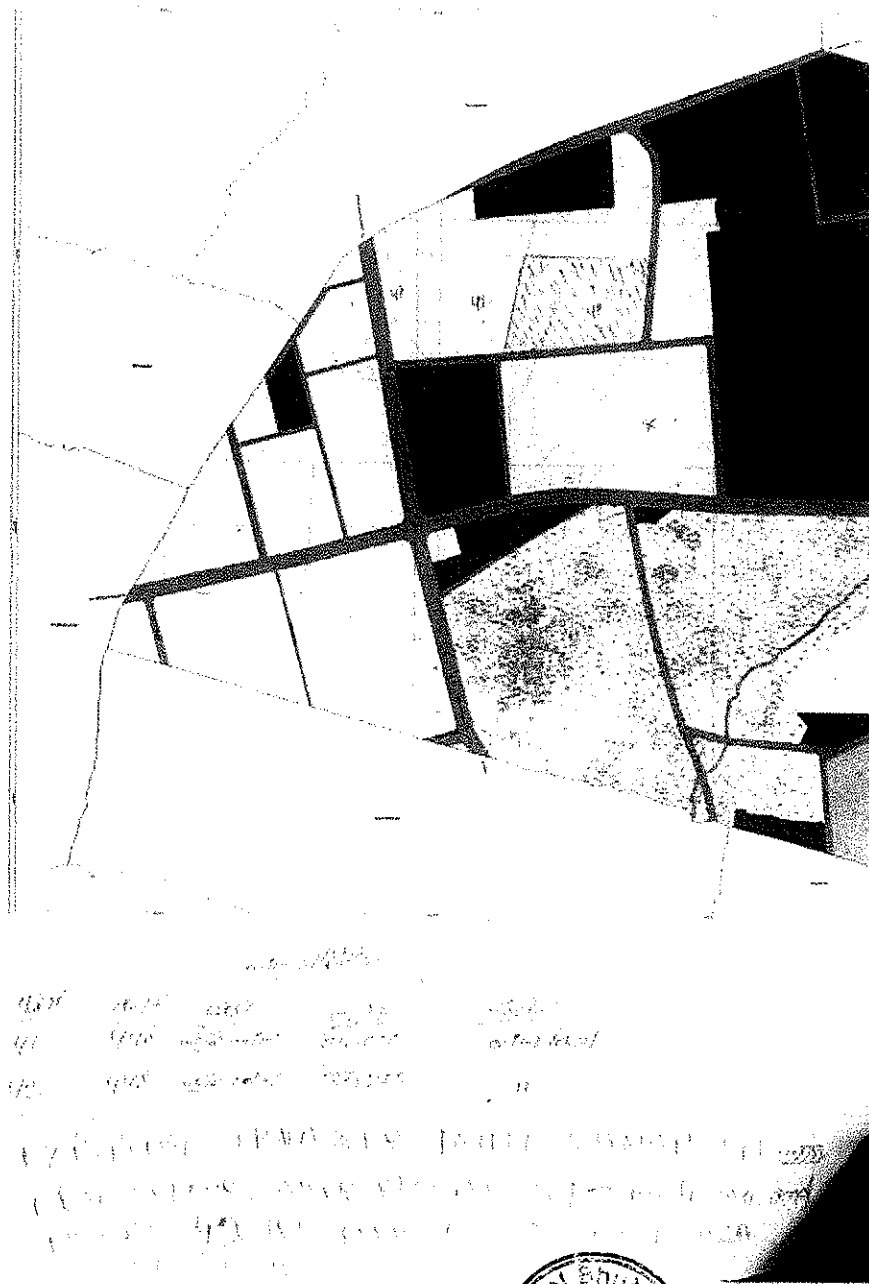
  
Municipal Commissioner  
Bhubaneswar Municipal Corporation

### 1.3 Part C: Site for TSB 2 at Ghatikia, Bhubaneswar

The approximate distance of TSB2 from the Processing and Scientific Landfill Facility at Bhuasuni is approximately 18.00 Km. The area of the land for the Transfer Station at Ghatikia is admeasuring approximately 24,282 square meters.

Location: 20.2722 North and 85.7702 East (approximate)

#### T.S Ghatikia



Municipal Commissioner  
Bhubaneswar Municipal Corporation

Location of TSB 1 at Godabarua (Near Sainik School)  
20.21 N and 85.94 E

Location of TSB 2 at Ghatik  
20.27 N and 85.78 E

## Bhuasuni

Compound wall construction work is in progress.

A rest shed is proposed to be constructed

Installation of 60 MT weighbridge is planned

Installation of bore well is planned

### Gadakan (TSB 1)

Construction of compound wall over 5 acre area (allocated for Transfer Station)

Construction of Platform (10000 sqft.)

Installation of 60 MT weighbridge is planned

Improvement of approach road is proposed

  
Municipal Commissioner  
Bhubaneswar Municipal Corporation



## 2. Applicable Permits

### 2.1 Applicable Permits

- 2.1.1 The Concessionaire shall obtain, as required under the Applicable Laws, the following Applicable Permits on or before the Appointed Date, save and except to the extent of a waiver granted by the Authority in accordance with Clause 4.1.3

Sr No	Approval/ Clearance	Concerned Agency	Responsibility
1	Environmental clearance	MoEF	Concessionaire
2	Site Authorization under MSW Rules	OSPCB	Concessionaire
3	License in accordance with the rules and provisions of Labour (Regulation and Abolition) Act, 1970	MoLE	Concessionaire
4	Consent to establish under Air and Water Act	OSPCB	Concessionaire
5	Consent to operate under Air and Water Act	OSPCB	Concessionaire
6	NOC from Odisha Fire Services	Home Department	Concessionaire
7	Disaster Management Plan	Orissa State Disaster Management Authority	Concessionaire
8	Vehicle Registration	RTO	Concessionaire
9	Electricity Approval	Distribution Company	Concessionaire
10	Power Generation and Purchase	OERC	Concessionaire
11	Airport Authority clearance	ATC/ AAI	Concessionaire
12	Industrial Setup Approval	Dol	Concessionaire
13	All drawings and document approval	Authority	Concessionaire
14	Water Supply	Authority	Concessionaire

Where;

OSPCB- Orissa State Pollution Control Board

MoLE-Ministry of Labour and Employment

MoEF – Ministry of Environment and Forest

RTO- Regional Transport Office

OERC- Orissa Electricity Regulatory Commission

Dol- Directorate of Industries, Orissa

ATC – Air Traffic Control

AAI- Airports Authority of India



  
**Municipal Commissioner**  
**Bhubaneswar Municipal Corporation**

### 3. Performance Security for Construction Requirements

Refer Clause 9.1

The Municipal Commissioner

Bhubaneswar Municipal Corporation

Bhubaneswar, Orissa

WHEREAS

1. ESSEL BHUBANESWAR MSW LIMITED (The "Concessionaire") and the Bhubaneswar Municipal Corporation (the "Authority") have entered into a Concession Agreement dated 29<sup>th</sup> May 2014 (the "Agreement") whereby BMC has agreed to the Concessionaire undertaking the Development of Regional MSW Management Facility, subject to and in accordance with the provisions of the Agreement.
2. The Agreement requires the Concessionaire to furnish a Performance Security to BMC in a sum of Rs 1,25,00,000 (Rupees One crore twenty five lakhs only) (The "Guarantee Amount") as security for due and faithful performance of its obligations, under and in accordance with the Agreement, during the Construction Period (as defined in the Agreement).
3. We ...through our Branch at..... (The "Bank") have agreed to furnish this Bank Guarantee by way of Performance Security.

NOW THEREFORE, The Bank hereby, unconditionally and irrevocably, guarantees and affirms as follows:

1. The Bank hereby unconditionally and irrevocably guarantees the due and faithful performance of the Concessionaire's obligations during the Construction Period, under and in accordance with the Agreement, and agrees and undertakes to pay to BMC, upon its mere first written demand, and without any demur, reservation, recourse, contest or protest, and without any reference to the Concessionaire, such sum or sums up to an aggregate sum of the Guarantee Amount as BMC shall claim, without BMC being required to prove or to show grounds or reasons for its demand and/or for the sum specified therein.
2. A letter from BMC, under the hand of the Municipal Commissioner, stating that the Concessionaire has committed default in the due and faithful performance of all or any of its obligations under and in accordance with the Agreement shall be conclusive, final and binding on the Bank. The Bank further agrees that BMC shall be the sole judge as to whether the Concessionaire is in default in due and faithful performance of its obligations during the Construction Period under the Agreement and its decision that the Concessionaire is in default shall be final, and binding on the Bank, notwithstanding any differences between BMC and the Concessionaire, or any dispute between them pending before any court, tribunal, arbitrators or any other authority or body, or by the discharge of the Concessionaire for any reason whatsoever.
3. In order to give effect to this Guarantee, BMC shall be entitled to act as if the Bank were the principal debtor and any change in the constitution of the Concessionaire and/or the Bank, whether by their absorption with any other body or corporation or otherwise, shall not in any way or manner affect the liability or obligation of the Bank under this Guarantee.
4. It shall not be necessary, and the Bank hereby waives any necessity, for BMC to proceed against the Concessionaire before presenting to the Bank its demand under this Guarantee.
5. The Authority shall have the liberty, without affecting in any manner the liability of the Bank under this Guarantee, to vary at any time, the terms and conditions of the Agreement or to extend the time

Concession Agreement



Municipal Commissioner  
Bhubaneswar Municipal Corporation

or period for the compliance with, fulfilment and/ or performance of all or any of the obligations of the Concessionaire contained in the Agreement or to postpone for any time, and from time to time, any of the rights and powers exercisable by BMC against the Concessionaire, and either to enforce or forbear from enforcing any of the terms and conditions contained in the Agreement and/or the securities available to BMC, and the Bank shall not be released from its liability and obligation under these presents by any exercise by BMC of the liberty with reference to the matters aforesaid or by reason of time being given to the Concessionaire or any other forbearance, indulgence, act or omission on the part of BMC or of any other matter or thing whatsoever which under any law relating to sureties and guarantors would but for this provision have the effect of releasing the Bank from its liability and obligation under this Guarantee and the Bank hereby waives all of its rights under any such law.

6. This Guarantee is in addition to and not in substitution of any other guarantee or security now or which may hereafter be held by BMC in respect of or relating to the Agreement or for the fulfillment, compliance and/or performance of all or any of the obligations of the Concessionaire under the Agreement.
7. Notwithstanding anything contained hereinbefore, the liability of the Bank under this Guarantee will remain in force until compliance of the conditions specified in paragraph 8 below and unless a demand or claim in writing is made by the Authority on the Bank under this Guarantee, no later than 6 (six) months from the date of expiry of this Guarantee, all rights of the Authority under this Guarantee shall be forfeited and the Bank shall be relieved from its liabilities hereunder.
8. The Performance Security will be valid for 120 days after COD.
9. The Bank undertakes not to revoke this Guarantee during its currency, except with the previous express consent of BMC in writing, and declares and warrants that it has the power to issue this Guarantee and the undersigned has full powers to do so on behalf of the Bank.
10. Any notice by way of request, demand or otherwise hereunder may be sent by post addressed to the Bank at its above referred Branch, which shall be deemed to have been duly authorized to receive such notice and to effect payment thereof forthwith, and if sent by post it shall be deemed to have been given at the time when it ought to have been delivered in due course of post and in proving such notice, when given by post, it shall be sufficient to prove that the envelope containing the notice was posted and a certificate signed by an officer of BMC that the envelope was so posted shall be conclusive.
11. This Guarantee shall come into force with immediate effect and shall remain in force and effect for a period of one year and six months from the date hereof or until it is released earlier by BMC pursuant to the provisions of the Agreement.

Signed and sealed this ..... day of....., 20..... at .....

SIGNED, SEALED AND DELIVERED

For and on behalf of the BANK by:

(Signature)

(Name)

(Designation)

(Address)

NOTES:

The bank guarantee should contain the name, designation and code number of the officer(s) signing the guarantee.

The address, telephone number and other details of the Head Office of the Bank as well as of issuing Branch should be mentioned on the covering letter of issuing Branch.

Concession Agreement



*[Signature]*  
Municipal Commissioner  
Bhubaneswar Municipal Corporation

#### 4. Performance Security for Operation & Maintenance Requirements

Refer Clause 9.4

The Municipal Commissioner

Bhubaneswar Municipal Corporation

Bhubaneswar, Orissa

WHEREAS

1. ESSEL BHUBANESWAR MSW LIMITED (The "Concessionaire") and the Bhubaneswar Municipal Corporation (the "Authority") have entered into a Concession Agreement dated 29<sup>th</sup> May 2014 (the "Agreement") whereby BMC has agreed to the Concessionaire undertaking the Development of Regional MSW Management Facility, subject to and in accordance with the provisions of the Agreement.
2. The Agreement requires the Concessionaire to furnish a Performance Security to BMC in a sum of Rs 75,00,000 (Rupees Seventy Five Lakhs only) (The "Guarantee Amount") as security for due and faithful performance of its obligations, under and in accordance with the Agreement, during the Construction Period (as defined in the Agreement).
3. We ...through our Branch at..... (The "Bank") have agreed to furnish this Bank Guarantee by way of Performance Security.

NOW THEREFORE, The Bank hereby, unconditionally and irrevocably, guarantees and affirms as follows:

1. The Bank hereby unconditionally and irrevocably guarantees the due and faithful performance of the Concessionaire's obligations during the Construction Period, under and in accordance with the Agreement, and agrees and undertakes to pay to BMC, upon its mere first written demand, and without any demur, reservation, recourse, contest or protest, and without any reference to the Concessionaire, such sum or sums up to an aggregate sum of the Guarantee Amount as BMC shall claim, without BMC being required to prove or to show grounds or reasons for its demand and/or for the sum specified therein.
2. A letter from BMC, under the hand of the Municipal Commissioner, stating that the Concessionaire has committed default in the due and faithful performance of all or any of its obligations under and in accordance with the Agreement shall be conclusive, final and binding on the Bank. The Bank further agrees that BMC shall be the sole judge as to whether the Concessionaire is in default in due and faithful performance of its obligations during the Construction Period under the Agreement and its decision that the Concessionaire is in default shall be final, and binding on the Bank, notwithstanding any differences between BMC and the Concessionaire, or any dispute between them pending before any court, tribunal, arbitrators or any other authority or body, or by the discharge of the Concessionaire for any reason whatsoever.
3. In order to give effect to this Guarantee, BMC shall be entitled to act as if the Bank were the principal debtor and any change in the constitution of the Concessionaire and/or the Bank, whether by their absorption with any other body or corporation or otherwise, shall not in any way or manner affect the liability or obligation of the Bank under this Guarantee.
4. It shall not be necessary, and the Bank hereby waives any necessity, for BMC to proceed against the Concessionaire before presenting to the Bank its demand under this Guarantee.
5. The Authority shall have the liberty, without affecting in any manner the liability of the Bank under this Guarantee, to vary at any time, the terms and conditions of the Agreement or to extend the time or period for the compliance with fulfilment and/ or performance of all or any of the obligations of

Concession Agreement



Municipal Commissioner  
Bhubaneswar Municipal Corporation

the Concessionaire contained in the Agreement or to postpone for any time, and from time to time, any of the rights and powers exercisable by BMC against the Concessionaire, and either to enforce or forbear from enforcing any of the terms and conditions contained in the Agreement and/or the securities available to BMC, and the Bank shall not be released from its liability and obligation under these presents by any exercise by BMC of the liberty with reference to the matters aforesaid or by reason of time being given to the Concessionaire or any other forbearance, indulgence, act or omission on the part of BMC or of any other matter or thing whatsoever which under any law relating to sureties and guarantors would but for this provision have the effect of releasing the Bank from its liability and obligation under this Guarantee and the Bank hereby waives all of its rights under any such law.

6. This Guarantee is in addition to and not in substitution of any other guarantee or security now or which may hereafter be held by BMC in respect of or relating to the Agreement or for the fulfillment, compliance and/or performance of all or any of the obligations of the Concessionaire under the Agreement.
7. Notwithstanding anything contained hereinbefore, the liability of the Bank under this Guarantee is restricted to the Guarantee Amount and this Guarantee will remain in force in compliance of the conditions specified in paragraph 8 below and unless a demand or claim in writing is made by the Authority on the Bank under this Guarantee, no later than 6 (six) months from the date of expiry of this Guarantee, all rights of the Authority under this Guarantee shall be forfeited and the Bank shall be relieved from its liabilities hereunder.
8. The Performance Security will be valid for the period of the Concession.
9. The Bank undertakes not to revoke this Guarantee during its currency, except with the previous express consent of BMC in writing, and declares and warrants that it has the power to issue this Guarantee and the undersigned has full powers to do so on behalf of the Bank.
10. Any notice by way of request, demand or otherwise hereunder may be sent by post addressed to the Bank at its above referred Branch, which shall be deemed to have been duly authorized to receive such notice and to effect payment thereof forthwith, and if sent by post it shall be deemed to have been given at the time when it ought to have been delivered in due course of post and in proving such notice, when given by post, it shall be sufficient to prove that the envelope containing the notice was posted and a certificate signed by an officer of BMC that the envelope was so posted shall be conclusive.
11. This Guarantee shall come into force with immediate effect and shall remain in force and effect for a period of one year and six months from the date hereof or until it is released earlier by BMC pursuant to the provisions of the Agreement.

Signed and sealed this ..... day of....., 20..... at .....

SIGNED, SEALED AND DELIVERED

For and on behalf of the BANK by:

(Signature)

(Name)

(Designation)

(Address)

NOTES:

The bank guarantee should contain the name, designation and code number of the officer(s) signing the guarantee.

The address, telephone number and other details of the Head Office of the Bank as well as of issuing Branch should be mentioned on the covering letter of issuing Branch.

Concession Agreement



*[Signature]*  
Municipal Commissioner  
Bhubaneswar Municipal Corporation

## 5. Project Completion Schedule

Refer Clause 12.2.8

### 5.1 Project Completion Schedule

- 5.1.1 The milestones stated in the table below are tentative<sup>2</sup> and Concessionaire can start some of the activities simultaneously to meet the Project Completion Schedule and achieve COD on or before completion of 18 months from the Appointed Date.

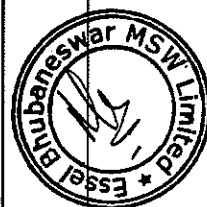


<sup>2</sup> Note to Bidders: Project Milestone will be finalized prior to execution of the Concession Agreement

  
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**Bhubaneswar Municipal Corporation**

S. No.	Description	Months																	
		Condition Precedent						Construction Period											
		1	2	3	4	5	6	1	2	3	4	5	6	7	8	9	10	11	12
1	Preparation of the all Project drawings & approval from the required approval authority or the BMC appointed agency from Letter of Award (LoA)																		
2	Obtain all applicable permits such as licenses, consents, permissions, NOCs & approvals from the concerned and Govt. agencies from Letter of Award (LoA)																		
3	Submission and approval of all drawings and plans (refer to Schedule – 6 ) to the Independent Engineer																		
4	Complete provision of all the utilities such as water, power, internal roads, boundary wall, lighting facility, storm water drain at Transfer Station and processing/ Scientific Landfill from Letter of Award (LoA)																		
5	Complete construction of Transfer Stations where Sites has been handed over to Concessionaire by Participating ULBs acting through the Authority after completion of Sr.No.1, 2 and 3.																		
6	Complete construction of Processing and Landfill facilities at the site after completion of Sr.No.1, 2 and 3.																		
7	Procurement of all the vehicles, equipment, machinery and implements in accordance with the Implementation Plan for providing transportation services after completion of Sr.No.1 and 2.																		
8	Plant installation, machinery including electrical, mechanical and instrumentation facilities/utilities at Transfer Station and at processing site. Completed construction of landfill cell in all aspects to meet																		

  
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**Bhubaneswar Municipal Corporation**



Concession Agreement

S. No.	Description	Months																							
		Condition Precedent						Construction Period																	
		1	2	3	4	5	6	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
	the Landfill requirements. Completion of construction works for collection, storage and treatment of leachate, etc. after completion of Sr.No.1 and 2.																								
9	Three months as the testing period to monitor the plant, machinery and equipments at Transfer stations and processing facility after the completion certificate received from Independent Engineer.																								
10	Final commissioning with full load capacity after completion of Sr.No.9																								



**Municipal Commissioner**  
Bhubaneswar Municipality



## 6. Drawings

Sr. No.	Description
1.	Transfer Stations
	General layout and construction drawing details such as fencing/boundary wall, building sectional view, etc.
	Facilities drawing like internal roads, weigh bridges, ramps, machinery, hoppers, maneuvering of vehicles, container storage area & operation, etc.
	Utilities drawing such security arrangement, rest room, etc.
	Electric supply, water supply, storm water drainage and leachate treatment
2.	Processing and Treatment Facility
	General layout and construction details such as fencing/boundary wall, building sectional view, etc.
	Plantation and greenbelt area with species details
	Facilities drawing like internal roads, machinery, weigh bridges, maneuvering of vehicles, MRF, processing/ treatment, recycling, etc.
	Utilities drawing such security arrangement, rest room, etc.
	Electric supply, water supply storm water drainage, leachate treatment, etc.
	Any additional facilities drawing provided by Concessionaire such as rainwater harvesting, solar power or/wind power, etc.
3.	Scientific Landfill
	General layout drawing and construction details such as fencing/boundary wall, landfill cells including sectional view, etc.
	Facilities drawing such as weigh bridges, gas collection system, leachate treatment, etc
	Electrification, water supply (wherever applicable), storm water drainage, leachate treatment, etc.

**Note:** Drawing - mean all of the drawings including working drawings for the Project Facilities, designs, calculations and documents pertaining to the Project in accordance with the Construction and O&M Requirements



*[Signature]*  
**Municipal Commissioner**  
 Bhubaneswar Municipal Corporation

## 7. Tests

Refer Clause 14.1.2

### 7.1 Tests

- 7.1.1 For determining that the Construction Works conform to the Specifications and Standards, the Independent Engineer shall require the Concessionaire to carry out or cause to be carried out tests, at such time and frequency and in such manner as may be specified by the Independent Engineer from time to time, in accordance with Good Industry Practice for quality assurance.
- 7.1.2 In the event that results of any tests conducted, any defects or deficiencies in the Construction Works observed, the Concessionaire shall carry out remedial measures and furnish a report to the Independent Engineer on this behalf.
- 7.1.3 During the Construction Period, Independent Engineer to carry tests to determine whether the Construction is being carried out in conformance with the Construction Requirements given in the Schedules to this Agreement and whether the Construction Milestones of the Project have been achieved.
- 7.1.4 At least 90 (ninety) days prior to the likely completion of the Project Facilities, the Concessionaire shall notify the Independent Engineer of its intent to subject the Project Facilities to Tests. The date and time of each of the Tests shall be determined by the Independent Engineer in consultation with the Concessionaire and notified to BMC who may designate its representative to witness the Tests. The Concessionaire shall provide such assistance as the Independent Engineer may reasonably require for conducting the Tests.
- 7.1.5 Before the civil construction starts, the Concessionaire shall needs to follow the entire standards test such as soil investigations, ground water levels, hydro-geological tests, concrete grades tests, etc.
- 7.1.6 The Concessionaire shall arrange the tests as per recommendations of the manufacturer of all electrical and mechanical machinery and equipments, and the test results shall be recorded in presences of the Independent Engineer.
- 7.1.7 The Concessionaire shall arrange the tests of electrical equipments as per the requirement of the supply company and the test reports shall be furnished to them to get the electric supply. Similarly, any test required to be carried out as per Supply Company requirements shall be carried out in presence of the Independent Engineer.
- 7.1.8 All tests in relation to the electrical equipment shall be conducted by the licensed electrical contractors only.
- 7.1.9 The relevant tests to be conducted shall be finalized by the Concessionaire in consultation with the Independent Engineer from time to time.



*Municipal Commissioner*  
*Bhubaneswar Municipal Corporation*

## 8. Completion Certificate

Refer Clauses 14.2 and 14.3

### 8.1 Completion Certificate

1. I, ..... (Name of the Independent Engineer), acting as Independent Engineer, under and in accordance with the Concession Agreement dated 29<sup>th</sup> May 2014 (the "Agreement"), for Regional Municipal Solid Waste Management Facility, Bhuasuni, on design, build, finance, operate and transfer (DBFOT) basis, through ESSEL BHUBANESWAR MSW LIMITED, hereby certify that the Tests specified in Article 14 and Schedule 7 of the Agreement have been successfully undertaken to determine compliance of the Project with the provisions of the Agreement, and I am satisfied that the Project can be safely and reliably placed in commercial service.
2. It is certified that, in terms of the aforesaid Agreement, all works forming part of Project have been completed, and the Project is hereby declared fit for entry into commercial operation on this the ..... day of ..... 20.....

SIGNED, SEALED AND DELIVERED

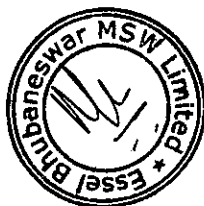
For and on behalf of the INDEPENDENT ENGINEER by:

(Signature)

(Name)

(Designation)

(Address)



  
Municipal Commissioner  
Bhubaneswar Municipal Corporation

## 8.2 Provisional Certificate

1. I, ..... (Name of the Independent Engineer), acting as Independent Engineer, under and in accordance with the Concession Agreement dated 29<sup>th</sup> May 2014 (the "Agreement"), for Regional Municipal Solid Waste Management Facility, Bhuasuni, on design, build, finance, operate and transfer (DBFOT) basis, through ESSEL BHUBANESWAR MSW LIMITED, hereby certify that the Tests specified in Article 14 and Schedule 7 of the Agreement have been undertaken to determine compliance of the Project with the provisions of the Agreement.
2. Construction Works that were found to be incomplete and/or deficient have been specified in the Punch List appended hereto, and the Concessionaire has agreed and accepted that it shall complete and/or rectify all such works in the time and manner set forth in the Agreement. (Some of the incomplete works have been delayed as a result of reasons attributable to the Authority or due to Force Majeure and the Provisional Certificate cannot be withheld on this account. Though the remaining incomplete works have been delayed as a result of reasons attributable to the Concessionaire, I am satisfied that having regard to the nature and extent of such incomplete works, it would not be prudent to withhold commercial operation of the Project, pending completion thereof.
3. In view of the foregoing, I am satisfied that the Project can be safely and reliably placed in commercial service, and in terms of the Agreement, the Project is hereby provisionally declared fit for entry into commercial operation on this the ..... day of ..... 20.....

ACCEPTED, SIGNED, SEALED AND DELIVERED

For and on behalf of CONCESSIONAIRE by:

(Signature)

(Name)

(Designation)

(Address)

SIGNED, SEALED AND DELIVERED

For and on behalf of the INDEPENDENT ENGINEER by:

(Signature)

(Name)

(Designation)

(Address)



*Municipal Commissioner*  
**Bhubaneswar Municipal Corporation**

## 9. Construction Requirements

### 9.1 General

9.1.1 The facilities to be provided in the Transfer Stations, Processing and Landfill, which is to be implemented by the Concessionaire as part of the Project, have been highlighted in this Schedule.

9.1.2 The Concessionaire shall adhere to all applicable rules, regulations, acts, guidelines, standards and laws which are applicable for this Project. Some of these important rules, regulations, acts, guidelines, standards, etc. are as follows:

- a. All applicable rules, regulations, acts, guidelines, standards and laws of Government of India and Government of Odisha
- b. All applicable Indian Standards (IS)
- c. All applicable standards by the Bureau of Indian Standard (BIS)
- d. All norms of the Indian Road Congress (IRC)
- e. All norms of the National Building Code (NBC)
- f. Municipal Solid Wastes (Management and Handling) Rules, 2000
- g. Environment (Protection) Act, 1986
- h. Environment (Protection) Rules, 1986
- i. EIA Notification, 2006 and amendments
- j. Guidelines and recommendation of Central Public Health & Environmental Engineering Organisation (CPHEEO), MoUD, GoI
- k. Electricity Rules, 2005
- l. Electricity Act, 2003
- m. Orissa Energy Regulatory Commission (OERC) Guidelines
- n. All applicable norms of the Central Electricity Authority (CEA)
- o. All applicable rules, regulations, acts, guidelines, standards of Central Pollution Control Board (CPCB) and Orissa State Pollution Control Board (OSPCB)
- p. Motor Vehicle Act and Vehicle Emission Control
- q. Labour Laws – Minimum Wages, Contract Labour Abolition and Regulations
- r. Construction standards by Orissa Public Works Department and BMC and any other GoO departments

### 9.2 Vehicles

- a. All the vehicles should conform to Bharat Stage III/Euro III or applicable standards of emission and upgraded from time to time as per statutory requirements.

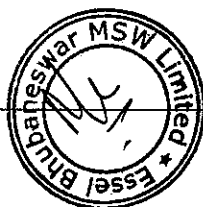


- b. A wireless communication network shall be provided by the Concessionaire for the supervisors as well as on the vehicles and equipment for drivers with a base station at the control room at Processing Facility.
- c. All vehicles shall be equipped by advanced vehicle tracking system and should be capable of being monitored from the control room, Transfer Station and Processing Facility.
- d. The type of system shall be two way communication wireless or mobile phone.
- e. All the vehicles or their replacement shall be returned to the Authority after the Concession Period in best possible condition.

### 9.3 Transfer Stations

The Transfer Stations shall be provided following facilities

- a. It is required that the Concessionaire shall prepare engineering drawings that will be presented to Independent Engineer and BMC for review and approvals.
- b. Concessionaire shall be responsible for providing appropriate engineering drawings (recommended scale 1:100) showing construction details including plan and layout of the transfer station, structural details, cross sectional & structural drawings, roads, utilities, etc.
- c. During all construction activities, the Concessionaire shall be responsible for maintaining quality control over all suppliers, services, site conditions, and workmanship. The Concessionaire shall prepare a construction and quality control plan that describes the QA/QC measures that will be employed during construction. The Concessionaire shall submit the plan to Independent Engineer and BMC for approvals.
- d. Continuous inspection and field supervision by qualified personnel provided by the Concessionaire.
- e. Laboratory testing of construction materials as per IS/BIS standards.
  - i. Utilizing experienced Concessionaires and workers having a minimum of 5 (five) years of experience in their profession or trades.
  - ii. Conformance to manufacturer's installation QC procedures.
- f. The Concessionaire must construct the facilities in strict accordance with the approved design drawings. They should also be advised that any changes of the approved design would require approvals of Independent Engineer.
- g. The Transfer Stations shall be sufficient to handle at least present MSW quantities received every day and large enough for future expansion to 150-200 MT per day additionally.
- h. The Transfer Stations shall be provided with two weigh bridges located at the entrance and at the exit of the Transfer Stations. The weighbridge shall be equipped with a computerized system for billing and tracking vehicle movement. The platform scales shall have the capability of accurately measuring tare and net weights of range of vehicles. The scales should have a minimum designated level of accuracy (i.e.,  $\pm 5$ kg). The weighbridge should be permanent structure furnished with appropriate space to maintain and operate the computerized weight recording system, store historical records and have sufficient room for two weighbridge operators. The minimum weighing capacity of the weigh bridge shall be 30-40 tons.



- i. The Transfer Stations shall be provided with boundary walls with minimum 8 (eight) feet of height. The transfer stations shall be provided with security cabins at entrance and exit sufficient enough to accommodate 2 (two) persons. The Transfer Stations shall be provided with approach and internal roads to allow for two-way traffic and be designed to accommodate vehicles having a minimum 40-ton gross weight.
- j. The Transfer Stations shall be provided with container maintenance facilities for repair and maintenance of containers.
- k. The Transfer Stations shall be provided with green belt not less than 1-2 m width and garden/lawns wherever possible to improve the aesthetic.
- l. The Transfer Stations shall be fully covered with dome supported by RCC and steel structures. The Transfer Stations shall have sufficient ventilation. All the steel structure shall be painted with anti-corrosive paints.
- m. The Transfer Stations shall be provided with properly design hoppers for the compactors for loading the MSW received or with any other design that ensures that there is no manual handling of waste and that the waste is not left in open at any time at Transfer Stations.
- n. The Transfer Stations shall be provided with sufficient vehicle parking facility.
- o. The Transfer Stations shall be provided with leachate collection and treatment system. The Transfer Stations shall be provided with odour control mechanism and management system.
- p. The Transfer Stations shall be provided with office premises which should be a permanent structure. It should be equipped with an office area for Transfer Station management and supervisory control.
- q. The Concessionaire shall be responsible for design and construction of onsite utilities and facilities required for Transfer Stations.

#### 9.4 Workshop / Vehicle Maintenance Facility

The workshops shall be such that it allows for systematic use of designated parking of vehicles, easy way for in and outbound vehicles and separate sections with all required infrastructure for repair, maintenance and washing/cleaning of vehicles at Processing Facilities.

#### 9.5 Processing / Scientific Landfill facility

9.5.1 The Concessionaire shall prepare the design and engineering drawings during the preparation period. At a minimum, require that the Concessionaire provide the following engineering drawings as follows:

- a. It is required that the Concessionaire shall prepare engineering drawings that will be presented to Independent Engineer and BMC for review and approvals
- b. Location and Vicinity Maps: These shall show the site location and vicinity. The vicinity map should include the site boundary and all major roads, structures, industries, commercial and residential areas within a 2 (two) km radius of the site.
- c. Site Layout: These shall show locations and dimensions of all proposed site structures including roads, buildings, fencing, amenities, utilities, etc.



- d. **Construction Phasing Plan:** These shall the ultimate use of the site in a planned phasing approach. Interfacing of construction and operation shall be noted. At a minimum, it shall require an overall drawing (recommended scale 1:100) as well as construction phase drawings (recommended scale 1:100) showing the construction phasing details. The construction phasing details shall include details on processing facility development, phasing of cells, leachate collection system, roads, and all other components of the processing facility.
- e. **Layout Plans and Structural drawings:** These shall be the layout plan and structural drawings for all the components of processing facility.
- f. **Excavation and Grading Plans:** These shall be the excavation and base grading for the landfill and cells and required earth work for construction. At a minimum over all drawing (recommended scale 1:100) as well other drawings (recommended scale 1:100) showing the excavation and grading plans shall be required.
- g. **Cell Construction Details:** These shall show cell profiles with liner, leachate collection pipe, lateral drainage layer, ditches, access roads, final cover tie-in to the bottom liner at the edge of the fill area (recommended scale 1:100), etc.
- h. **Leachate Management Plan:** The Concessionaires shall provide a drawing (recommended scale 1:100) that shows the leachate collection, transport, and treatment system. This plan shall include all inverts of the collector pipes, transport pipes, manholes, tanks, etc.
- i. **Landfill Gas Management Plan:** This plan shall show landfill gas migration control and monitoring measures and venting system (recommended scale 1:100).
- j. **Odour Control Management Plan:** This plan shall show odour control mechanism and management plan (recommended scale 1:100).
- k. **Construction Details:** These shall show leachate management and treatment system, roadways, other infrastructure, etc. (recommended scale 1:100).
- l. **Cross Sections:** Detailed cross sections showing the construction of solid waste lifts and slopes (recommended scale 1:100).
- m. The landfill site bottom composite liner of specifications shall complies with Municipal Solid Waste Rule and CPHEEO manual.

#### 9.5.2 Quality Control

During all construction of Processing Facility /Scientific Landfill activities, the Concessionaire shall be responsible for maintaining quality control over all suppliers, services, site conditions, and workmanship. The Concessionaire shall prepare a construction and quality control plan that describes the QA/QC measures that will be employed during construction. Require that the Concessionaire should submit the plan to Independent Engineer and BMC for approval. QA/QC plan procedures and requirement should include the following:

- a. Continuous inspection and field supervision by qualified personnel provided by the Concessionaire.
- b. Laboratory testing of construction materials.
- c. Utilizing experienced Concessionaires and workers having a minimum of 5 years of experience in their profession or trades.
- d. Conformance to manufacturer's installation QC procedures.





Facility Construction: The Concessionaire must construct the facilities in strict accordance with the approved design drawings by the Independent Engineer. They shall also be advised that any changes of the approved design would require approvals.

#### 9.5.3 Construction Phasing Plan

- a. For each phase, The Concessionaire shall prepare engineering drawings that will be presented to Independent Engineer for review and approvals.
- b. The construction phasing plan shall demonstrate that the site has sufficient disposal capacity. The phasing plan shall show how interfacing of the landfill construction and operation would take place.
- c. Concessionaire is responsible for providing appropriate engineering drawings (recommended scale 1:100) showing cell construction details including profile of the cell leachate collection pipes, perimeter roads, and access roads and other important details. The final cover system shall be based on the recommendations of MoEF and CPHEEO Manual.
- d. The office building shall be a permanent structure and shall be equipped with an office area for facility management and supervisory control.
- e. The Concessionaire is responsible for design and construction of on-site utilities and facilities.

#### 9.5.4 On-Site Access Road

It is also required that the design include an appropriate access road from the site entrance to the working face. This access road shall be designed to accommodate vehicles having a minimum 40 ton gross weight. The access road shall be at a minimum of 15m wide to handle two-way transfer trailer traffic. The access road shall be design and construct to include ditching and drainage.

#### 9.5.5 Separation Barrier

It is required that the landfill design, confirming to MSW Rules and CPHEEO Manual, shall include provisions for a minimum 2 m separation between the maximum groundwater elevation and bottom of the landfill liner. The design shall include a separation barrier to ensure that water does not penetrate or destroy the integrity of the bottom and side slopes liners. Design documentation shall include details on the materials, permeability, strength, thickness and physical characteristics of the separation barrier.

#### Side Slope Liner

As a minimum service specification, it is required that the side slopes, confirming to MSW Rules and CPHEEO Manual, shall have a liner hydraulic barrier performance equal to that of the bottom liner. The Concessionaire shall responsible for the design of any side slope lining system required within the landfill design.

#### Site Access Road

Through the service specification, it shall require that the access road design allow for two-way traffic to and from the facilities and shall be design to accommodate vehicles having a minimum 40-ton gross weight.

#### Site Fencing



  
**Municipal Commissioner**  
Bhubaneswar Municipal Corporation

The processing facility shall be fully secured by boundary wall and wire mesh fencing having a height of at least 2.4m above plinth area with top 0.6 m being barbed wire fencing with mild steel angles.

**9.5.6 Storm Water Drainage and Rainwater Harvesting System**

The Concessionaire shall design and implement a storm water drainage and rainwater harvesting system within the processing facility.

**9.5.7 Lighting**

The Concessionaire shall provide 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, achieve a minimum lux level of 20 for the working area and street lighting with permanent steel light posts for internal roads and access roads.

**9.5.8 Green Belt**

The Concessionaire shall provide a vegetative cover in a strip of minimum width of 20 meter outside the site boundary. The species of the trees for providing vegetative cover shall be approved by the Independent Engineer and as listed in EIA Report. The green cover requirements within the processing facility shall be minimum of 3 m wide along the site boundary. Garden/lawns wherever possible, shall be created to improve the aesthetics of the Processing Facility.

**9.6 Procedure**

**9.6.1 Before commencement of any construction activity, the Concessionaire shall finalize a construction plan for the Project (the "Construction Plan") in consultation with the Independent Engineer. The Construction Plan shall, inter alia, include:**

A detailed plan of implementation of putting up and operationalizing the Project, which shall specify at least four major milestones

- a. 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),
- b. 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 mobilization/ utilization plans;
- c. Details of the quality assurance and quality control procedures and
- d. Format of the Monthly Project Progress Report giving details of the physical progress in implementation of the Project and operations and maintenance activities undertaken (Monthly Project Progress Report).

Prior to commencement of any implementation/ construction, the Concessionaire shall also finalise in consultation with the Independent Engineer an appropriate schedule for submission of all the documents for review.

**9.6.2 During Construction**



**Municipal Commissioner**  
**Bhubaneswar Municipal Corporation**

The Concessionaire shall:

- a. ensure that the construction of the Project is undertaken with no inconvenience to the traffic;
- 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 which would include measures such as the provision and maintenance of barricades, and illumination during night in consultation with the Independent Engineer;
- d. adhere to the Construction Plan and O&M Plan
- e. Deploy adequate number of qualified and competent personnel having relevant experience and skills for implementation of the Project and interaction with the Independent Engineer / BMC
- f. Ensure smooth operations of the current waste disposal activities till the completion of the Construction Period.

#### 9.6.3 Positions and Levels

The Concessionaire shall be responsible for:

- a. The accurate setting-out survey control points, lines and levels of reference,
- b. The correctness of the positions, levels, dimensions and alignment of all components of the Project,
- c. The provision of all necessary instruments, appliances and labour in connection with the foregoing responsibilities,
- d. At any time during execution of the works, any error is noticed in the position, levels, dimensions or alignment of any component of the Project, the Concessionaire, on being asked to do so by the Independent Engineer, shall at his own cost, rectify such errors to the satisfaction of the Independent Engineer
- e. The checking of any setting-out or of any line or level by the Independent Engineer 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.

#### 9.6.4 Tests

Various tests ("Tests"), as mentioned in Schedule 7, would be undertaken for the Project as per the standards prescribed under Applicable Laws. 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 works or part thereof shall be agreed upon with the Independent Engineer prior to implementation/construction.

#### 9.6.5 Reporting Requirements and Documents to be provided

- a. During the Construction Period, the Concessionaire shall submit to the Independent Engineer/ BMC, Monthly Project Progress Reports (for each calendar month or part thereof) within 5 working days of the last day of the month.
- b. The report shall review the progress made, identify slippages and issues, if any, and Project the future activities to be undertaken (including rectifications), construction activities



undertaken and would, inter alia, include all studies, surveys, investigations and test carried out.

- c. The Concessionaire shall submit the copies of documents in the form of three hardcopies (printed) and two in electronic form.

#### 9.7 Schedule for Land Requirement at the Site

Purpose of land hand over	Milestone for land transfer	Land	
Land delineated for Construction of Transfer Station TSB 1	Appointed Date		Transfer 1
Land delineated for Construction of Transfer Station TSB 2	Appointed Date		
Land delineated for Construction of the Processing Facility and Green Belt	Appointed Date		
Land delineated for Landfilling for 10 years	Appointed Date		
Complete site handover	COD		Transfer 2
Maximum land hand over: a + b + c + d + e			



  
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## 10. Operation and Maintenance Requirements

### 10.1 General

The Concessionaire shall comply with the O&M requirements set out in this Schedule. In doing so, the Concessionaire shall ensure that the Project is 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.

In the design, planning and implementation of all works and functions associated with the operation and maintenance of the Project, 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 :

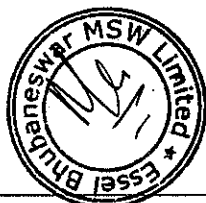
- a. Ensure the safety of personnel deployed on and users of the Project or part thereof;
- b. Keep the equipment and machinery employed for the Project from undue deterioration and wear
- c. Permit unimpaired performance of statutory duties and functions of any Party in relation to the Project;

During the Concession Period, the Concessionaire shall, in respect of the Project, ensure that:

- d. Applicable and adequate safety measures are taken
- e. Adverse effects on the environment and to the owners and occupiers of property and/or land in the vicinity of the Project components and the roads used by the vehicles used for transportation of the waste, due to any of its actions, is minimised
- f. 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;
- g. Disturbance or damage or destruction to property of third party by operations of the Project or Project components is controlled/minimised
- h. Data relating to the operation and maintenance of the Project is collected
- i. All materials used in the operation, maintenance of any of the Project component shall meet the Construction Requirements and the specifications from the original manufacturer in case of vehicles and equipment used in the Project;
- j. 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.

### 10.2 Operations & Maintenance Manual and Plans

The Concessionaire shall finalise the O&M Plan and the O&M Manual for the Project in the manner as set out below:



  
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- a. Prior to making application for the Readiness Certificate for the Project the Concessionaire shall finalise in consultation with the Independent Engineer:
  - i. The O&M Manual (including the formats for the reports to be submitted during the Operations Period and the Post Closure Period)
  - ii. The O&M Plan for the first five years of operations and shall be modified for subsequent years
  - iii. If applicable, the month-on-month maintenance schedule for each module of Waste to Energy plants and other vital equipment and plants (as proposed in Schedule 10.3) for the first five years of the Concession Period.
- b. Six weeks prior to the anniversary of COD each year, the Concessionaire shall submit to the Independent Engineer and BMC an annual O&M Plan for the next year of operations.

### 10.3 General Requirements

#### 10.3.1 Vehicles

- a. Vehicle garages/workshops shall be maintained at the locations as agreed by BMC for repair and maintenance of all the vehicles. The vehicle garage/workshops shall have facilities to attend following but not limited to periodical, routine and preventive maintenance.
- b. The garage/workshop shall support preventive maintenance of vehicles. The working of the preventive maintenance should be devised on the recommendations of the vehicle manufacturers.
- c. Based on which a schedule shall be prepared for daily checking, monthly checking and periodic checking and repairs, replacements and history card of each vehicle shall be prepared.
- d. Sufficient number of recovery vehicles for attending break downs shall be provided.
- e. The vehicles shall be kept clean and regularly painted at least twice in a year with anti corrosive paint and sufficient trained staff shall be deployed to attend the repair and maintenance of vehicles.
- f. All the vehicles shall have fitness certificate from Road Transport Authority, Government of Odisha or any other agency approved by Government of Odisha.

#### 10.3.2 Installation of Close Circuit Cameras

The Concessionaire shall install a close circuit camera at each weighbridge to record the vehicles being weighed. The camera shall record clearly the registration details of the vehicle and face of the vehicle driver along with time. At the end of each day a back-up copy of the close circuit camera recording of the day shall be produced on compact disc (CD).

#### 10.3.3 Weighing of Vehicles at the Transfer Station

- a. Each vehicle shall pass through the weigh bridge with computer control and obtain weight slip at the time of entry or exit.
- b. Unauthorized vehicles bringing waste from elsewhere shall be stopped near the entrance gate for inspection, record and instructions for acceptance or rejection.



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- c. All the vehicles leaving the Transfer Station shall be weighed and the data record shall be matching with the MSW reception at the Processing Facility.
- d. In the event that the weighbridge is not in operation, the following methodology shall, unless modified with mutual consent of Parties, be adopted for computing the weight of MSW supplied by the BMC:

$$WS = W_{avg} \times NT$$

Where,

WS, is the weight of MSW supplied during the period for which the weighbridge was inoperable

$W_{avg}$ , is the average weight of MSW carried per truck based on the data available for the 6 (six) months prior to the month in which the weighbridge was render inoperable

NT, is the number of truckloads of MSW accepted by the Concessionaire during the period for which the weighbridge was inoperable.

#### 10.3.4 Weighing of Vehicles at the Processing Facility

- a. Each vehicle shall pass through the weigh bridge with computer control and obtain weight slip at the time of entry or exit.
- b. Unauthorized vehicles bringing waste from elsewhere shall be stopped near the entrance gate for inspection, record and instructions for acceptance or rejection.
- c. All the vehicles leaving the Processing Facility shall be weighed and the data record shall be matching with the MSW leaving the Transfer Station(s) and reception at the Landfill Site.
- d. In the event that the weighbridge is not in operation, the following methodology shall, unless modified with mutual consent of Parties, be adopted for computing the weight of Municipal Solid Waste supplied by the BMC:

$$WS = W_{avg} \times NT$$

Where,

WS, is the weight of MSW supplied during the period for which the weighbridge was inoperable

$W_{avg}$ , is the average weight of MSW carried per truck based on the data available for the 6 (six) months prior to the month in which the weighbridge was render inoperable

NT, is the number of truckloads of MSW accepted by the Concessionaire during the period for which the weighbridge was inoperable.

#### 10.3.5 Weighing of Vehicles at Landfill Site

- a. Each vehicle shall pass through the weigh bridge with computer control and obtain weight slip at the time of entry or exit.
- b. Unauthorized vehicles bringing waste from elsewhere shall be stopped near the entrance gate for inspection, record and instructions for acceptance or rejection.
- c. All the vehicles received at the landfill Site shall be weighed and the data record shall be matching with the MSW leaving the Processing Facility.
- d. In the event that the weighbridge is not in operation, the following methodology shall, unless modified with mutual consent of Parties, be adopted for computing the weight of Municipal Solid Waste supplied by the BMC:



$$WS = W_{avg} \times NT$$

Where,

WS, is the weight of MSW supplied during the period for which the weighbridge was inoperable

W<sub>avg</sub>, is the average weight of MSW carried per truck based on the data available for the 6 (six) months prior to the month in which the weighbridge was render inoperable

NT, is the number of truckloads of MSW accepted by the Concessionaire during the period for which the weighbridge was inoperable.

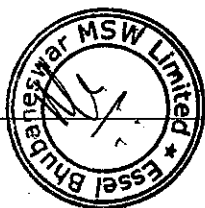
#### 10.3.6 Waste inspection in waste receiving area of processing plant

- a. Waste shall be unloaded at the designated area for its inspection and if found acceptable then its onward handling.
- b. In case the waste is found to contain more than 12% (twelve percent) construction material/debris, it will be returned back in the same vehicle.
- c. The accepted waste shall be sprayed with herbal sanitizers for control of mal odors and flies.
- d. sanitized waste shall be subjected to up front segregation in to compostable, combustible, recyclable streams.
- e. hand sorting of large size objects (LSO) such as tyres, wooden articles etc. shall be done at two or three stages from tipping floor to sorting belts.
- f. Each category of sorted out material shall be deposited in to its assigned holding cell/area on daily basis.
- g. Provision to be made for receiving of source segregated waste in to their respective processing sections so as to minimise multiple handling.
- h. Tipping floor shall have sufficient area for waste unloading so as to minimise waiting period of incoming vehicles (e.g. about 2 sqm/MT MSW and holding time of up to 3 hours).
- i. Some reserved area should be earmarked for receiving of waste under emergency situations and/or extra quantities during festival season or religious ceremonies.
- j. The waste receiving facility shall have concrete floor with channelization for leachate collection and monsoon shed.
- k. Waste receiving operation shall be on all 365 days of the year and as per notified timings.

#### 10.3.7 Processing Facility

- a. Processing treatment of MSW shall be carried out in accordance with the schedule II of MSW Rules 2000 and further orders of the Hon'ble Supreme Court.
- b. The technological adaptation will be as per tender submissions. Integration of technologies for multiple product recovery is preferred so as to utilize more than 80.00% contents of MSW and restrict land fill disposals to less than 20%.(Twenty percent)
- c. Electromechanical processing can be done in 240 to 280 days after discounting for holidays and maintenance period. However all 365 days waste will be processed during the working of processing facility.
- d. specifications of the by products

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- i. The recovered product compost (organic fertilizer) will be as the specifications notified by the Ministry of Agriculture GOI vide Gazette notification No. 17.98 of 3rd Oct 2009 and subsequent notification under Fertiliser Control(3rd Amendment ) order.
- ii. Other recovered products like Fuel Pellets (RDF) or electricity/energy (Methane) shall be as per Standards from the concerned controlling authority (ies).
- iii. Recyclable materials like plastics, metals, glass to be as per good industrial practice.
- iv. Scientific principles and best industry practices shall be followed processing treatment sequences in terms of windrow height, width, bulking or structure building, particle sizing, aeration and humidity requirements. Short cuts and process avoidance can attract penalties.
- v. Plant can be operated in usual two shifts or three shifts provided that the noise levels are maintained as per the Pollution Control Board norms for a given zone.
- vi. Concessionaire is free to use/add on materials for quality enhancement of MSW derived products.
- vii. Leachates shall be collected treated and reused for composting and greenification or discharge as per State Pollution Control Boards (SPCB) norms and Schedule IV of MSW Rules 2000.
- viii. Adequate control measures shall be adapted for control of pathogens, flies, rodents, vultures, dusty Particulate matters, smoke and fire.

#### 10.3.8 Sanitary Landfill Site

- a. Development, Operation and Maintenance : This will be as per the provisions given in Schedule II Cl. 6 and Schedule III Cl. 1 to 29 of MSW Rules 2000
- b. Closure and Post Closure care: This will be as per the provisions given in Schedule III Cl. 31 to 33 of MSW Rules 2000.

#### 10.3.9 Maintenance of Structures

- a. The CC, RCC, Masonry, Steel and other structures within the Transfer Station, Processing Facility shall be reported to the Independent Engineer shall be maintained in good conditions.
- b. The CC, RCC, Masonry and other structures shall be checked for cracks and other deformations and shall be attended immediately
- c. Periodic maintenance including plastering, cementing, painting, etc. shall be done for CC, RCC, Masonry and other structures periodically (atleast once in two years)
- d. Periodic maintenance including welding, riveting, painting, etc. shall be done for steel structures periodically (atleast once in two years)

#### 10.3.10 Maintenance of Utilities and Services

- a. The utilities and services like water supply, wastewater collection and treatment, leachate management system, lighting, green belt, etc. shall be attended immediately for any repairs and shall be maintain in good conditions. The same shall be brought into the notice of the Independent Engineer.
- b. Maintain Hygienic and Aesthetic Conditions



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- c. The Transfer Stations, MRF, Processing Facility shall be maintained hygienic and aesthetic conditions by taking proper measures as suggested by Independent Engineer.

#### 10.3.11 Hazardous Waste Disposal

The Concessionaire shall dispose of the Hazardous Waste generated by the processing units of MSW and/or any other waste such as batteries, used oil in machineries, etc. under the Hazardous Waste (Management and Handling) Rules, 1989.

### 10.4 Scientific Landfill facility

#### 10.4.1 Temporary Roads

No traffic shall be allowed directly on top of drainage layer in the landfill cells or on the intermediate dikes. The landfill staff shall establish and maintain access ramps and temporary roads over the dikes.

The landfill staff shall establish and maintain access ramps and temporary roads over the already deposited Residual Inert Waste inside the landfill cells, securing the safe access of waste delivery trucks for unloading in the cells.

#### 10.4.2 Unloading and Control

When the truck arrives at the landfill cell, the operator of the compactor should point out to the vehicle driver, the exact location for unloading the rejects. After unloading at the appointed position, the landfill compactor or a bulldozer spreads the Residual Inert Waste and the operator visually inspects the Residual Inert Waste for compliance with the waste type and composition, which is acceptable in the landfill cell. The delivery truck shall not be allowed to leave the landfill cell before the waste has been finally accepted or rejected. In case the waste is rejected the waste shall be loaded back into the truck and the truck driver shall be instructed to return for processing.

A detail O&M plan for unloading and compaction of rejects shall be prepared by the Concessionaire and shall be approved by the Independent Engineer.

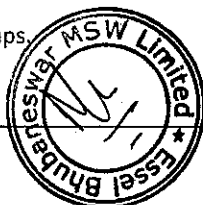
#### 10.4.3 Daily and Intermediate Cover

Planning for adequate quantity of soil for daily cover and intermediate cover shall be estimated and arrangement for at least period of 6-8 months shall be taken into consideration by the Concessionaire.

#### 10.4.4 Gas Collection Wells

The wells shall be established using coarse grained gravel and stones or crushed mineral debris wastes installed as vertical "chimneys" through the waste body. Installation takes place using a steel tube as casing. When the final top cover system has been installed the remaining components of the gas collection well shall be installed.

- a. Leachate Management System
- b. Leachate management at the landfill includes the operation of the following units.
- c. Leachate drainage system
- d. Inspection and leachate collection shafts
- e. Leachate pumps



  
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- f. Leachate pipes,
- g. Leachate treatment and disposal

To ensure an effective operation of the systems the periodical inspections and maintenance must be exercised.

#### 10.4.5 Wastewater Management

The wastewater generated in the facilities and buildings in the reception area shall be treated to meet the applicable standards under Applicable Laws. The system shall be inspected on a regular basis for sedimentations or other blockages impeding the function of the system.

#### 10.4.6 Measures for Reduction of Nuisances

Odours, dust, wind-blown litter, vermin and noise can become significant nuisance factors for the surroundings during the operation of the Scientific Landfill.

The most effective practice in the control of vermin is rapid and complete compaction and covering of all the waste. The territory of the landfill must be maintained clean and tidy. The accumulation of stagnant water anywhere on the Site must be prevented by proper grading, filling lower spots, and placing cover soil over waste material.

Nuisance from noise mainly may arise from vehicles and mechanical equipment operating or moving at the Landfill site. In order to mitigate noise, all vehicles and mechanical equipment shall be kept in good working order at all times. Special attention shall be given to the fitting and maintenance of any sound reducing equipment to machinery and to the plant. The strict enforcement of speed limits will reduce noise from vehicles moving in the area.

### 10.5 Cleaning and Maintenance Requirements

The Concessionaire shall plan and execute cleaning and maintenance procedures ensuring, that

- a. The buildings, structures, seeded and planted areas, paved and un-paved traffic areas etc. are maintained clean and proper without damages, that may impede their functionality or appearance.
- b. All moving or fixed equipment, Vehicles and machinery are maintained clean and in good working condition.
- c. All service facilities, e.g. outdoor sewage system, leachate management system, etc., are inspected regularly, cleaned and maintained.
- d. Every day at closing time the internal roads and other paved areas shall be inspected, and any spillage of MSW shall be collected. If necessary the paved areas shall be swept using a sweeping machine. During dry periods dust emission shall be controlled by sprinkling the surfaces with water in connection with sweeping activities.

### 10.6 Monitoring Procedures

The monitoring at integrated facility shall be carried out during implementation/ Construction Period, Operation Period and Post Closure Period. The monitoring plan shall be prepared in accordance to the applicable Orissa State Pollution control Board (OSPCB) requirements.



## 10.7 Management of Labour and Prevention of Accidents

The Concessionaire shall comply with all the provisions of the laws regarding deployment of labour under the contract; The Abolition of contract Labour Act, The Minimum wages Act, The Workmen's Compensation Act and the provisions of the MSW Rules 2000.

It shall be the liability and responsibility of the Concessionaire to implement the provisions of these acts. In addition to;

- a. The Concessionaire shall not employ in connection with the work any person who has not completed 18 years of age.
- b. The Concessionaire shall furnish to the BMC and Independent Engineer; information on the various categories of labour employed by him and the facilities given to the employees in the form prescribed for the purpose at such intervals as may be specified in the work specification.
- c. The Concessionaire shall keep all records desired under the said labour laws, with one copy of such records to the Independent Engineer, and submit periodical returns to the respective statutory authorities.
- d. The Concessionaire shall in respect of labour employed by him comply with provisions of the various labour Laws and the Rules and Regulations as applicable to them in regards to matters provided therein and shall indemnify BMC in respect of all claims that may be raised against BMC for non-compliance thereof by the Concessionaire.

The Concessionaire shall report, register and inform the Independent Engineer all occurrences of;

- a. Accidents involving risks for human health and security;
- b. Other incidents connected with occupational health and security; and
- c. Unscheduled interruptions to the planned operations including fires, explosions, break-down of vehicles, break-down of essential machinery and equipment, etc.

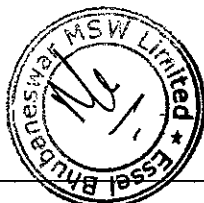
The reports shall be forwarded to the Independent Engineer, BMC and relevant authorities. The registered information shall be kept in the "Report Book". The accident and other incident record formats and record keeping procedure shall be approved by Independent Engineer and BMC.

## 10.8 Facilities and Benefits for the Work Force Employed

The Concessionaire 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.

- a. Uniform with ID approved by BMC (visible distinctly at night)
- b. Safety and protective gears;
- c. primary medical facilities
- d. Follow all safety requirements in accordance with Schedule 13

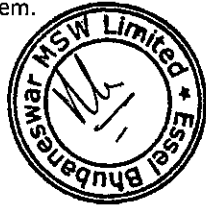


  
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10.9

**Training, Social Programmes and Public Grievances**

- a. The Concessionaire shall provide training and awareness to labourers at plant, which should be a continuous activity and maintain the records.
- b. The Concessionaire shall maintain health records of all the artisans and labour staff. The health record formats and record keeping procedure shall be approved by BMC/concerned medical representative.
- c. The Concessionaire should create a system to register public grievances and redressal system.



  
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## 11. Operational Plan

(To be submitted by the Concessionaire)

The operational plans should include the following key points:

- a. Transfer Stations
  - i. Machineries/equipment operational plan
  - ii. Vehicles supply and arrangements
  - iii. Routine and breakdown maintenance plan
  - iv. Container storage and their movements
  - v. Any other relevant plans (Vehicle washing, odour control, etc)
- b. Transportation
  - i. Route planning
  - ii. Operational control of vehicular movements
  - iii. Time management plan
- c. Processing Facility
  - i. Number of processing lines and their operational plan for MRF
  - ii. Number of processing lines and their operational plan for processing
  - iii. Machineries/equipments operational plan
  - iv. Routine and breakdown maintenance plan
- d. Scientific Landfill facility
  - i. Daily operational plan for Landfill
  - ii. Landfill Machineries/equipments operational plan
  - iii. Maintenance plan for Machineries/equipments
  - iv. Closure plan
- e. Environmental Management Plans
  - i. Monitoring plan
  - ii. Quick response mechanism
  - iii. Maintenance plan for plantation and green belt
  - iv. Health and safety plan
  - v. Pollution control units and their operational plan
  - vi. Environmental and Social Impact Assessment Plan in accordance with Schedule 23
- f. Disaster Management Plan
  - i. Month-on-month maintenance schedule of Waste-to-Energy plants, if applicable



  
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## 12. Performance Standards and Damages

### 12.1 Performance Standards

12.1.1 The Concessionaire shall have the following requirements related to Operations and Maintenance of the Transfer Stations

- a. The Concessionaire shall ensure that the Transfer Stations shall be maintained cleaned throughout the day with hygienic conditions and its vicinity
- b. The Concessionaire shall ensure that there shall not be any backlog of MSW at Transfer Stations and no point of time, waste shall be unloaded on the ground. There shall be no manual handling of the MSW at the Transfer Stations
- c. The Concessionaire shall ensure that logbooks are provided to the vehicles and shall be maintained with details such as vehicle nos., timing, name of the driver and cleaner, name of the ULB from where MSW has been transported
- d. The Concessionaire shall ensure that a calibration test of the weigh bridges at Transfer Stations, Processing Facility and Scientific Landfill Site are carried out twice in a year starting from the Appointed Date and a copy of the calibration test result is submitted to authorize representative immediately after the test. Stamping of weighbridge shall be done through Weights and Measures Department (WMD), Govt. of Odisha
- e. Independent Engineer shall carry out an audit of the weigh bridge data maintained and made available by the Concessionaire at least once in every month starting from the appointed date and submit the result of such audit to BMC.
- f. The Concessionaire shall ensure that all waste containers, vehicles, weigh bridge operated at the Transfer Stations are maintained clean all the time. The Transfer Stations shall be provided with proper draining arrangement and sumps to collect wash down water and proper disposal of contaminated water is treated and disposed through the sewer network
- g. The daily records of receipt of the MSW at each Transfer Stations and transported MSW to the processing facility together with weighment shall be maintained shift-wise at BMC.

12.1.2 The Concessionaire shall have the following specific requirements related to Operations and Maintenance of the Processing Facility and Scientific Landfill:

- a. The Concessionaire shall ensure that the MSW Processing is in compliance with Municipal Solid Waste (Management and Handling) Rules 2000 and the terms and conditions of this Agreement
- b. The Concessionaire shall ensure that the process of MSW should be continuous and will not emits smell, odour, and all precautionary measure shall be taken to ensure that such nuisance will not be created
- c. The process remnants shall not be stored and shall be disposed off at Scientific Landfill immediately
- d. The Concessionaire shall ensure that the quality of compost shall conform to compost quality standards and shall not be stored more than the shelf life. The Concessionaire shall ensure



that the off-take arrangement of the produced compost is in place (in case composting is being adopted for processing)

- e. The Concessionaire shall ensure that the Waste to Energy Plant is in compliance with the guidelines of Ministry of New and Renewable Energy, Government of India (in case waste to energy approach is being adopted for processing)
- f. The Concessionaire shall ensure that proper pollution control measures are installed and operated for processing technology used as per as per applicable Indian Standards, rules, Guidelines, Acts, Laws and as directed by the Independent Engineer.
- g. The Concessionaire shall free to sell products such as compost, organic manure, energy (power) and/ or other material recovered after processing the MSW, at the Project Facilities at such price and to such persons/organizations and using such marketing and selling arrangements and strategies as it may deem appropriate.
- h. The Concessionaire shall process the recyclables materials such as plastics, paper, or other materials with as environmentally sound processing at the plant site.
- i. The Concessionaire shall ensure that a calibration test of the weigh bridge is carried out twice in a year starting from the Appointed Date and a copy of the calibration test result is submitted to authorize representative immediately after the test. Stamping of weighbridge shall be done through Weights and Measures Department (WMD), Govt. of Odisha
- j. Independent Engineer shall carry out an audit of the weigh bridge data maintained and made available by the Concessionaire at least once in every month starting from the appointed date and submit the result of such audit to BMC.
- k. The Concessionaire shall undertake to ensure that the remnant disposed in the Landfill does not exceed 20% of the total MSW received at the processing facility. The Concessionaire shall be liable to Damages if it exceeds more than 20%.
- l. The Concessionaire shall ensure that it maintains daily records of the quantities of MSW and submit the same to the Independent Engineer on a Monthly Basis, before the expiry of 2 (Two) working days from the end of the Month:
- m. Quantity of MSW received at the Transfer Station.
- n. Quantity of MSW at the input of Processing Plant
- o. Quantity of inert / remnants received at the Scientific Landfill facility
- p. The daily records of receipt of the MSW at Processing Facility /Scientific Landfill shall be maintained shift-wise by preparing respective data sheets
- q. Independent Engineer shall review the records and certify the same within 3 (Three) working days of submission. Only certified records would be considered for the payment of Tipping Fee in accordance with the provisions of the Concessionaire Agreement.
- r. With effect from the COD, the Concessionaire shall not suspend at any time receiving of MSW at the Transfer Stations on any day during the Concession Period



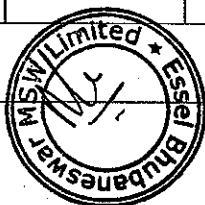
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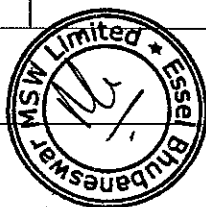
## 12.2 Damages

A key objective of the facility is to reduce the environmental impact of Municipal Solid Waste. The Performance Standards for which the Authority has zero tolerance and violation of which could lead to termination are as described in the table below

Sl. No.	Performance Standard	Acceptable level	Cure Period	Penalty	Tracking mechanism	Event of Default
<b>Transfer Station and Transportation</b>						
1	Non-acceptance of MSW and failure to compact the accepted MSW within 3 hours at any Transfer Station*	Incidence in $\leq$ 8 shifts per year at any transfer station and $\leq$ 2 continuous shifts		25% of Average Tipping Revenue for each shift in which such instance above acceptable level	Daily Report	Event of Default in case $>20$ shifts per year or $>6$ continuous shifts
2	Instances when MSW accepted at the Transfer Stations is not transported to the Processing Facility within 8 hours	Incidence in $\leq$ 20 shifts per year		25% of Average Tipping Revenue for each shift in which such instance above acceptable level	Daily Report	Event of Default in case $>25$ shifts per year
<b>Processing Plant</b>						
3	Suspension of MSW processing	Incidence in $\leq$ 16 shifts per year and $\leq$ 6 continuous shifts		25% of Tipping Revenue for each shift in which such instance is above acceptable level	Daily Report	Event of Default in case $>20$ shifts per year or $>8$ continuous shifts
4	Total quantity of unprocessed MSW stored at the Processing Plant	$\leq$ 20 days of MSW quantity (calculated from the 15 days trailing average)	7 days	25% of Tipping Revenue for each day of MSW storage in excess of 20 days of MSW quantity	Daily Report	Event of Default in case not cured in the cure period
5	Noncompliance to compost quality standards, if applicable	No variation	180 days	5% of Tipping Revenue for period between non-compliance and demonstration of compliance	Checks conducted by Independent Engineer and other agencies	Event of Default in case not cured in the cure period
<b>Scientific Landfill</b>						
6	Instances when MSW is found to be landfilled without	Nil	N/A	10 times Average Tipping Revenue for each such instance	Random checks	Event of Default for third instance in the



Sl. No.	Performance Standard	Acceptable level	Cure Period	Penalty	Tracking mechanism	Event of Default
	processing					concession period
7	Maximum percentage of MSW (inerts & process remnants) landfilled	≤ 20% of MSW quantity received at the Processing Facility	N/A	100% Tipping Fee for the MSW quantity landfilled in excess of the acceptable quantity	Monthly Report	Event of Default in case 3 months of average MSW quantity landfilled exceeds 20% of the MSW quantity received
8	Noncompliance to standards applicable to Scientific Landfilling	No variation	30 days	25% of Average Tipping Revenue for period between non-compliance and demonstration of compliance	Checks conducted by Independent Engineer and other agencies	Event of Default in case not cured in the cure period
9	Noncompliance to standards applicable to leachate processing	No variation	30 days	25% of Average Tipping Revenue for period between non-compliance and demonstration of compliance	Checks conducted by Independent Engineer and other agencies	Event of Default in case not cured in the cure period
Environmental Compliance and Other Compliance						
10	Noncompliance to air quality standards as mentioned in the Schedule 12	No variation	30 days	25% of Tipping Revenue for period between non-compliance and demonstration of compliance	Checks conducted by Independent Engineer and other agencies	Event of Default in case not cured in the cure period
11	Noncompliance to ground water quality standards as mentioned in the Schedule 12	No variation	30 days	25% of Tipping Revenue for period between non-compliance and demonstration of compliance	Checks conducted by Independent Engineer and other agencies	Event of Default in case not cured in the cure period
12	Noncompliance to any other applicable standards as mentioned in the Schedule 12	No variation	30 days	25% of Tipping Revenue for period between non-compliance and demonstration of compliance	Checks conducted by Independent Engineer and other agencies	Event of Default in case not cured in the cure period



\* Unless the 15-day trailing average of MSW quantity received at the Processing Weighbridge is greater than the Obligated Quantity

Additional Performance Standards and the associated penalty are described in the table below

Sl. No.	Performance Standard	Acceptable level	Penalty	Tracking mechanism
<b>Transfer Station</b>				
1	Instances of downtime of weighbridges when standby arrangements are also not operational	Nil	10% of Average Tipping Revenue for each shift in which such an instance has occurred for each Transfer Station	Daily Report and Monthly Report
2	Downtime of Transfer Station	≤ 6 shifts per year for any Transfer Station	10% of Average Tipping Revenue for each shift of downtime more than that accepted at each Transfer Station	Daily Report and Monthly Report
3	Downtime of vehicle tracking system	≤ 30 shifts	5% of Average Tipping Revenue for each shift of downtime more than that accepted at each Transfer Station	Daily Report and Monthly Report
<b>MSW Processing Plant</b>				
4	Instances of downtime of weighbridges (at the processing plant when standby arrangements are also not operational	Nil	20% of Tipping Revenue for each shift in which such an instance has occurred	Daily Report
5	Downtime of MRF	</= 15 shifts	5% of Tipping Revenue for each shift of downtime more than that accepted	Daily Report
6	Downtime of any module of the Processing Plant	</=90 days	5% of Tipping Revenue for each shift of downtime more than that accepted for each module	Daily Report
7	Instances when recyclables are sold in loose form	Nil	100% of Tipping Revenue for each such instance	Random checks
<b>Scientific Landfilling</b>				
8	Instances of downtime of weighbridges (at Scientific Landfill facility) when standby arrangements are also not operational	Nil	20% of Average Tipping Revenue for each shift in which such an instance has occurred	Daily Report
9	Downtime of Scientific Landfill facility	Nil	10% of Average Tipping Revenue for each shift of downtime	Daily Report

Note: Duration of one shift is considered to be 8 hours



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## 13. Safety Requirements

Refer Clause 17

### 13.1 Safety Requirements

Concessionaire is responsible for maintaining an incident/hazard free work environment. In compliance with these provisions, the Concessionaire shall comply with the latest edition of the Contractor Safety Requirements and perform the following:

- a. Concessionaire is expected to pre-plan all work to minimize the potential for personal injury and property damage.
- b. Develop the plan in a Project specific nature, which is designed to anticipate and identify hazards before work begins. Know in advance what measures will be taken to eliminate hazards or adequately control the anticipated risks for each scope of work. This information shall include, but is not limited to: scope of work, sequence of activities, site specific fall protection, high angle rescue procedures, safety control methods, training records, competent persons, lead abatement, asbestos abatement and excavations. The planning does not stop at the pre-planning stage, but is a continuous process of assessment and evaluation. When changes occur or new hazards are identified during the course of the Project, the work should be suspended while the plan is revised.
- c. Ensure all subcontractors, suppliers and vendors are informed of their obligations with regard to safety and of the Contractor Safety Requirements.
- d. Plan and execute all work to comply with the stated objectives and safety requirements contained in the Contractor Safety Requirements, contract provisions, federal, state, and local laws and regulations, and standards.
- e. Concessionaire or their contractors/subcontractors with 25 or more employees on a single shift will establish a fulltime position of a Contractor Safety Manager to perform safety inspections and training services. In addition, for every additional 100-job site employees added, an additional Safety Management Representative shall be required. In the event that the Contractor has less than 25 employees, the contractor shall appoint an onsite person who along with other concurrent duties shall serve as the Contractor's Safety Representative.
- f. Concessionaire shall maintain its own orientation program for its employees that shall include as a minimum a review of (1) hazards present in the area in which they will be working and (2) the personal protective equipment and apparel the workers will be required to use or wear as specified under Occupational Safety and Health Administration (OSHA).
- g. Concessionaire shall provide and maintain a chemical and flammable material storage area as described in the Contractor Safety Requirements. Be responsible for the control, availability and use of necessary safety equipment, including personal Protective equipment (PPE) and apparels for the Concessionaire employees.
- h. Take an active part in all supervisory safety meetings, including the discussion of observed unsafe work practices or conditions and a review of any incidents and corrective actions.



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Additionally, encourage, solicit and follow up on safety related suggestions from Concessionaire employees.

- i. Report all injuries and incidents in a timely manner in accordance with federal and/or state laws and regulations and the Contractor Safety Requirements.
- j. Analyze all incidents and implement immediate corrective action.
- k. Provide job supervisors with appropriate training materials to conduct weekly safety meetings and attend said meetings to evaluate their effectiveness.
- l. Review safety meeting reports submitted by job supervisors and take necessary action to ensure that the job supervisors hold meaningful weekly safety meetings.
- m. Implement safety-training programs for Contractor supervisors and employees applicable to their specific responsibilities.
- n. Maintain list on-site of personnel available for first aid and emergency treatment for injured Contractor employees.
- o. Concessionaire will be responsible for providing a safety orientation training session for all workers before they are allowed to begin work. The orientation safety training will be conducted by the authorized representative as suggested by BMC and will include a summary of the Contractor Safety requirements/ Heads-Up Safety Training and awareness.
- p. At a minimum Contractor representative to adequately train its employees according to applicable safety standards. This training may include but is not limited to: fall protection, fire watch, scaffolds, forklifts, excavation, ladders, confined space entry, respiratory protection, OSHA-PSM (Process Safety Management), grounding, shoring and traffic control etc.
- q. In the event of a work-related incident resulting in a Contractor employee injury or near miss, Contractors shall notify their Appointed Representative immediately.
- r. Contractors shall provide the appointed representative with an initial report of incident, in writing, within 24 hours of the accident. Hard copy or electronic formats are acceptable.
- s. Contractors shall provide a completed accident investigation report within three (3) working days of the incident. In the event, their investigation requires more time to investigate due to the complexity of the incident, Contractors shall communicate to the appointed Representative in writing including intimation to higher authorities of availability and use of necessary safety equipment, including personal Protective equipment (PPE) and apparels for the Concessionaire employees.
- t. All first aid injuries shall be documented for record keeping purposes. In the event a first aid case develops into a Contractor employee injury, accident reporting and investigation procedure be initiated as outlined previously.
- u. In order to maintain a safe and healthy work environment in emergency situations, Concessionaire has developed this emergency action plan to help safeguard Contractor employees while working on BMC Sites. All Contractor employees will be trained in the use of this plan and informed of their role in implementing it during their required safety orientation training. This policy is mandatory and must be strictly followed by all Contractors and their personnel while working on Sites.
- v. When notified of an emergency evacuation (an audible alarm/verbal announcement will be used by Concessionaire to alert employees of an evacuation), Contractors must immediately



evacuate their personnel from the Project Site, perform a head count and report missing personnel to concerned in-charge of the facility and take appropriate steps for investigation. When evacuating any building, structure or job site, employees should utilize the nearest exit to them. Personnel will remain at the designated site until an all-clear is announced or further evacuation steps are ordered.

- w. Concessionaire shall comply with the latest revision Safety Rules & Procedures Permit. Contractors shall provide adequate fire protection equipment in each of their storage areas, offices and other temporary structures.
- x. Concessionaire is responsible for orienting employees on the specific safety rules that must be followed by all persons working on Project Facilities. Other personal protective equipment (PPE) is also required in accordance with the appropriate safety standards and equipment as set by the manufacture's specifications. A list of the minimum personal protective requirements is as follows:
  - i. The Concessionaire shall be responsible for providing and ensuring the use of required personal protective equipment for its employees.
  - ii. Approved hard hats, shall be worn at all times while on the Site. It is required that each employee use an American National Standards Institute (ANSI) approved hardhat.
  - iii. Safety glasses, which meet applicable ANSI standards, are required at all times while on the Site and should include approved side shields. Only clear safety glasses are allowed to be used inside buildings or enclosed structures. Shaded goggles or hoods may be used while welding or cutting requires. Prescription safety glasses with self-tinting capabilities may be worn on-site.
  - iv. PPE shall be worn while travelling from the security gate, while travelling through the plants, working outside or otherwise engaged in work at each station, except in areas specifically designated as PPE not required.
  - v. Concessionaire's vendors and visitors will be required to meet these same standards.
- y. Good housekeeping affects safety, quality and production. It is the responsibility of Concessionaire onsite to keep their work area clean. Concessionaire are responsible or trash and debris that is generated by their work. Trash and debris must be collected and placed in proper containers on a daily basis.
- z. Trash shall not be randomly thrown off a floor or through openings in the floor. Trash chutes, trash boxes, or other approved means such as barricading and/or flagging shall be utilized.
- aa. Safety requirement mentioned in the Environment and Social Impact Assessment (ESIA) Report shall be complied in accordance to Schedule 23 and Schedule 14.



  
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## 14. Environmental and Social Standards

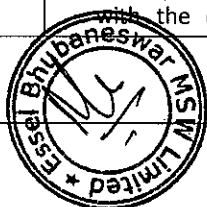
### 14.1 Environmental Standards

- a. The Concessionaire shall follow all the environmental standards for processing facility as per Municipal Solid Wastes (Management and Handling) Rules, 2000 and any amendments thereto till date. It shall also follow all those additional or stricter standards as per applicable Indian Standards, rules, Guidelines, Acts and as directed by the Independent Engineer..
- b. The Concessionaire shall implement the recommendations of the Environmental and Social Impact Assessment (ESIA) and Environment Management Plan (EMP) report prepared in accordance to the terms of reference mentioned in the Schedule 23.
- c. The Concessionaire shall meet the standards during the construction period as per the instruction or suggestion by the Independent Engineer from time to time based on the environmental standards applicable.
- d. The Concessionaire shall meet the standards during the operation period as per the instruction or suggestion by the Independent Engineer from time to time as per the design requirement and applicable standards.
- e. The Concessionaire shall form the Environmental Monitoring Cell (EMC) to review the effectiveness of environment management system during construction and operation phase of the Project Facilities. Independent Engineer shall be the Governing Authority over the EMC functions.
- f. EMC shall meet regularly to review the effectiveness of the EMP (Environmental Monitoring Programme) implementation. The data collected on various EMP measures would be reviewed by EMC and if needed corrective action will be formulated for implementation purposes.
- g. The Concessionaire through EMC shall co-ordinate all monitoring programmes at Project Site and data thus generated shall be regularly furnished to the state regulatory agencies. The Environmental Audit reports and review shall be prepared for the entire year of operations and shall be regularly submitted to regulatory authorities.
- h. The Concessionaire shall setup a well-equipped laboratory for monitoring and analysis of environmental parameters for air quality, meteorology, water, wastewater, noise, groundwater, etc based on the overall monitoring requirements.
- i. The Concessionaire shall follow the QA/QC procedures for all laboratory services and strive to get the certified laboratory status from quality point of view such as ISO 9000 and other similar standards. The overall goal should also be to acquire the status of certified and recognized laboratory under MOEF, Government of India. The Concessionaire shall strive to get ISO 14001 certification for the entire facility. (i) The Concessionaire shall follow the environmental issues with management action along with responsibilities as mentioned in the following table.



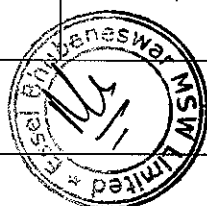
  
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Environmental Issues	Management Action	Implementation Responsibilities
<b>Project Location</b>		
Tree Clearance	<ul style="list-style-type: none"> <li>EMC will prepare a detailed Transplantation and Plantation plan and monitoring the implementation</li> </ul>	Concessionaire
Increase in power consumption	<ul style="list-style-type: none"> <li>EMC will prepare a detailed Energy Conservation plan and monitoring the implementation</li> </ul>	Concessionaire
Loss of local fauna	<ul style="list-style-type: none"> <li>EMC to create plan as per EIA report and implement the same</li> </ul>	Concessionaire
Loss of trees & vegetation in the Project area	<ul style="list-style-type: none"> <li>EMC will prepare a detailed plantation plan and monitoring the implementation</li> <li>BMC / Independent Engineer to closely oversee the work of trees and vegetation removal or plantation</li> </ul>	BMC/ Concessionaire
Increase in the water requirement for domestic purpose	<ul style="list-style-type: none"> <li>EMC to monitor and prevent the excess water consumption</li> </ul>	Concessionaire
Stress on the surrounding marine ecosystem (if any)	<ul style="list-style-type: none"> <li>EMC will plan the earth movement in consultation with the Concessionaire and see to it that the mitigation measures are implemented by the contractor/ operator</li> </ul>	Concessionaire/ BMC
Change in land use pattern	<ul style="list-style-type: none"> <li>Preparation the landscaping and greenery plan</li> </ul>	Concessionaire
Loss of any archeological / cultural/historic site	<ul style="list-style-type: none"> <li>The operator of the facility will be planned to eliminate any odour or pollution</li> </ul>	Concessionaire
<b>Processing / Landfill Facility</b>		
Air Pollution	<ul style="list-style-type: none"> <li>The EMC would look into the action of the operator on regular basis</li> <li>The EMC would look into the action of the contractor on a regular basis.</li> </ul>	Concessionaire
High dust level	<ul style="list-style-type: none"> <li>BMC through Independent Engineer can receive a feedback and direct the agency for corrective measures</li> </ul>	BMC/Concessionaire
Sediment runoff	<ul style="list-style-type: none"> <li>EMC will plan the excavation, etc in consultation with the contractor and see to it that the</li> </ul>	Concessionaire





Environmental Issues	Management Action	Implementation Responsibilities
	mitigation measures are implemented by the contractor	
Safety of workers	<ul style="list-style-type: none"> <li>EMC to monitor and ensure the security and safety of workers</li> </ul>	Concessionaire
Interference with the natural drainage of the local ecosystem	<ul style="list-style-type: none"> <li>Possible changes in natural drainage system to be avoided</li> <li>BMC to closely oversee any changes in natural drainage system</li> </ul>	BMC /Concessionaire
Flooding in other low lying areas	<ul style="list-style-type: none"> <li>EMC to monitor the construction and layout plan</li> </ul>	Concessionaire
Noise Pollution	<ul style="list-style-type: none"> <li>Make provision in the contract to limit the noise pollution</li> <li>EMC will monitor noise</li> <li>Low noise vehicles with proper maintenance and monitoring</li> </ul>	Concessionaire
Disposal of excavated material	<ul style="list-style-type: none"> <li>EMC to monitor the quantity and disposal</li> </ul>	Concessionaire
Safety hazard during the erection and operation	<ul style="list-style-type: none"> <li>Regular monitoring and reporting</li> </ul>	Concessionaire
<ul style="list-style-type: none"> <li>Landfill Construction</li> </ul>		
Extremely high dust levels	<ul style="list-style-type: none"> <li>The EMC would look into the action of the contractor on a regular basis</li> </ul>	Concessionaire
Air Pollution due to equipment fuel usage	<ul style="list-style-type: none"> <li>EMC to monitor the air pollution</li> </ul>	Concessionaire
Air Pollution due to land cell creation	<ul style="list-style-type: none"> <li>these requirements are a part of the tender document for the contractor carrying out this activity.</li> <li>The EMC would look into the action of the contractor on a regular basis</li> </ul>	Concessionaire
Air Pollution due to other construction activity	<ul style="list-style-type: none"> <li>EMC to monitor the air pollution and set the construction working schedule</li> </ul>	Concessionaire
Accident during the construction stage	<ul style="list-style-type: none"> <li>Make provision for reporting and action</li> </ul>	Concessionaire



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Environmental Issues	Management Action	Implementation Responsibilities
Fire hazard during the construction stage	<ul style="list-style-type: none"> <li>Make provision for reporting and action</li> </ul>	Concessionaire
Noise Pollution	<ul style="list-style-type: none"> <li>Make provision for reporting and action</li> </ul>	Concessionaire
Lack of Sewerage and Sewage Treatment Facilities leading to unhygienic condition	<ul style="list-style-type: none"> <li>Make provision for reporting and action</li> </ul>	Concessionaire
Indoor air pollution in the camp due to biomass fuel for cooking	<ul style="list-style-type: none"> <li>EMC to monitor the air pollution.</li> </ul>	Concessionaire
Air Pollution due to construction vehicle usages	<ul style="list-style-type: none"> <li>EMC to monitor the air pollution</li> </ul>	Concessionaire
Water logging and cross drainage issue during construction	<ul style="list-style-type: none"> <li>Make provision for reporting and action</li> <li>EMC will monitor</li> </ul>	Concessionaire
Solid waste generation and inadequate disposal	<ul style="list-style-type: none"> <li>Make provision for reporting and action.</li> <li>EMC to monitor the adequacy of the solid waste disposal</li> </ul>	Concessionaire
Disposal of excavated Material	<ul style="list-style-type: none"> <li>To make available the land for disposal of excavated material</li> </ul>	Concessionaire
Pollution of land, ground water and surface water arising from wastes and spillage due to construction	<ul style="list-style-type: none"> <li>make provision for reporting and action</li> <li>EMC to monitor the adequacy of waste disposal</li> </ul>	Concessionaire
Incomplete post-use clearance and rein- statement of base camp, leading to degradation of soil	<ul style="list-style-type: none"> <li>make provision for reporting and action</li> </ul>	Concessionaire
<b>Operation Phase</b>		
Air pollution due to the MSW vehicles and processing plants	<ul style="list-style-type: none"> <li>EMC to ensure the air pollution of facility meets the norms</li> <li>Regular noise monitoring and reporting</li> </ul>	Concessionaire
Increase in power	<ul style="list-style-type: none"> <li>EMC will prepare a detailed Energy Conservation plan and monitor the implementation with the</li> </ul>	Concessionaire



Environmental Issues	Management Action	Implementation Responsibilities
consumption	operator of the facility	
High air pollution along the various transport corridors leading to and away from the site	■ EMC will monitor pollution and inspection log of vehicles	Concessionaire
Noise pollution due to the operational activities	■ EMC to monitor noise and give feedback for control	Concessionaire
Noise pollution along the various transport corridors leading to and away from the landfill site	■ EMC to monitor the noise pollution	Concessionaire
Solid waste management issues	■ EMC to monitor and report	Concessionaire
Sewage/leachate treatment issues	■ to maintain the STP as per the standard prescribed norms. ■ EMC to monitor the same	Concessionaire
Periphery Development	■ BMC initiatives to be communicated to Concessionaire for its implementation	Concessionaire

#### 14.2 Social Standards

- The Concessionaire shall provide a separate clinic at the Project Site where people can approach for primary health advice
- The Concessionaire shall provide community and training center within the Project Site wherein multiple employments related capacity building and training activities shall be undertaken and necessary skills shall be imparted.
- The Concessionaire shall provide an employment opportunity based on training and skill assessment. The secondary employment and/or business opportunity shall be created through the facility operator or support services.
- The Concessionaire shall provide training and awareness to labors at plant, which should be a continuous activity.
- The Concessionaire shall setup MSW management and innovation center for every-one which will be useful to locals, students and others who would wish to work in this field.
- The Concessionaire shall give prior importance to nearby population to get involved in the activities of horticulture, garden maintenance, energy management, etc at the Project Facilities.



## 15. Waste Reports

Refer Clause 5.8

### 15.1 Report for each Transfer Station

#### 15.1.1 Daily Report for vehicles incoming to Transfer Station

Date:					
Shift: First /Second /Third					
Sr.No. (1)	Vehicle No. (2)	Time (3)	Laden* Wt. (4)	Un laden Wt ** (5)	Net wt. (4)-(5)
Total					

\* weight of incoming vehicles

\*\* weight of outgoing empty vehicles

#### 15.1.2 Daily Report for Hook lift Vehicles Incoming to Transfer Station

Date:								
Shift: First /Second /Third								
Sr.No. (1)	Vehicle No. (2)	Logsheets No. (3)	Time (4)		Travelled time (5)	Laden Wt. (6)	Unladen Wt (7)	Net wt. (6)-(7)
			In	Out				

#### 15.1.3 Daily Report for other details of the Transfer Stations

Date:	Transfer Station:
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Downtime of Transfer Station (hrs):	
Downtime of weighbridges (hrs):	
Downtime of vehicle tracking system (hrs):	

#### 15.1.4 Monthly Report for each Transfer Station

Date from:	Date to:	Transfer Station	
Total downtime of Transfer Station (no. of shifts):			
Total downtime of weighbridges (no of shifts):			
Total downtime of vehicle tracking system (no of shifts):			
Total quantity of MSW received	100%	__ (tonnes)	
Total quantity of MSW compacted and delivered to the Processing Plant	__%	__ (tonnes)	
Quantity of leachate produced	__ (cubic meter)	__% (by weight)	__ (tonnes)
Note on compliance to applicable standards			

#### 15.2 Report for Processing Plant

##### 15.2.1 Daily Report for Hooklift Vehicles Incoming to Processing Facility

Date:								
Shift: First /Second /Third								
Sr.No. (1)	Vehicle No. (2)	Logsheet No. (3)	Time (4)		Travelled time (5)	Laden Wt. (6)	Unladen Wt (7)	Net wt. (6)-(7)
			In	Out				
Total								

##### 15.2.2 Daily Report for other details of the Processing Facility

Date:
Downtime of weighbridges (hrs):



Downtime of MRF (hrs):			
Downtime of Processing Plant module (hrs):		Description of the module:	
Total quantity of MSW received:		100%	___ (tonnes)
Quantity of recyclable MSW recovered:		___%	___ (tonnes)
Quantity of biodegradable and combustible MSW:		___%	___ (tonnes)
Quantity of waste landfilled	Inert waste:	___%	___ (tonnes)
	Process remnants:	___%	___ (tonnes)
	Total (b):	___%	___ (tonnes)
Quantity of unprocessed MSW at the Processing Plant			___ (tonnes)
15 days trailing average of the quantity of MSW received at the Processing Plant:			___ (tonnes)
Quantity of MSW rejected:	___ (tonnes)	Reasons for the rejection:	

### 15.2.3 Monthly Report

Date from:		Date to:	
Total downtime of weighbridges (no of shifts):			
Total downtime of MRF (no of shifts):			
Downtime of each Processing Plant module (no of shifts):	S. No.	Module Description	Downtime
Total quantity of MSW received:		100%	___ (tonnes)
Total quantity of recyclable MSW recovered:		___%	___ (tonnes)
Total quantity of biodegradable and combustible MSW:		___%	___ (tonnes)
Total quantity of waste landfilled	Inert waste:	___%	___ (tonnes)
	Process remnants:	___%	___ (tonnes)
	Total:	___%	___ (tonnes)
Total quantity of unprocessed MSW at the Processing Plant			___ (tonnes)
Total quantity of MSW rejected:	___ (tonnes)	Reasons for the rejection:	
Note on compliance to applicable standards			

### 15.3 Report for Landfilling Weighbridges

#### 15.3.1 Daily Report



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Date:								
Downtime of Scientific Landfill Facility (hrs):								
Downtime of weighbridges (hrs):								
Sr.No. (1)	Vehicle No. (2)	Logsheets No. (3)	Time (4)		Travelled time (5)	Laden Wt. (6)	Unladen Wt (7)	Net wt. (6)-(7)
			In	Out				
Total								

#### 15.3.2 Monthly Report

Date from:		Date to:	
Total downtime of Transfer Station (no of shifts):			
Total downtime of weighbridges (no of shifts):			
Total quantity of waste landfilled			__ (tonnes)
Note on compliance to applicable standards			

#### 15.4 Consolidated Monthly Report

Monthly Waste Report		
Date from:		Date to:
Total quantity of MSW received at Transfer Stations	BMC	__ (tonnes)
	Cuttack Municipal Corporation	__ (tonnes)
	Total	__ (tonnes)
Total quantity of MSW received at the Processing Facility	100%	
Total quantity of waste landfilled	__%	



  
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## 16. Scope of Work of Independent Engineer

Refer Clause 21.1

### 16.1 Role of the Independent Engineer

- a. Review of Project drawings and milestones submitted by the Concessionaire in conformance with Schedule 5 and 6.
- b. Review, inspection and monitoring of construction works as set out in Schedule 9.
- c. Conducting tests on completion of construction and issuing Completion/Provisional Certificate as set forth in Schedule 8.
- d. Review, inspection and monitoring of operations and maintenance as set out in Schedule 10.
- e. Determining as required under the Agreement the cost of any works or services or their reasonableness
- f. Determining as required under the Agreement, the period or any extension thereof, for performing any duty or obligations
- g. Assisting the parties in case of any dispute
- h. Undertaking all other duties and functions in accordance with the Agreement
- i. The Independent Engineer shall discharge its duties in a fair, impartial and efficient manner, consistent with the highest standards of professional integrity and Good Industry Practice.
- j. During the Development Period, the Independent Engineer shall undertake a detailed review of the Drawings to be furnished by the Concessionaire along with supporting data. The Independent Engineer shall complete such review and send its comments/observations to BMC and the Concessionaire within 15 (fifteen) days of receipt of such Drawings. In particular, such comments shall specify the conformity or otherwise of such Drawings with the Scope of the Project and Specifications and Standards.
- k. The Independent Engineer shall review any modified Drawings or supporting Documents sent to it by the Concessionaire and furnish its comments within 7 (seven) days of receiving such Drawings or Documents.
- l. The Independent Engineer shall undertake a detailed review of the Construction Milestones defined and submitted by the Concessionaire and send its comments/ observations to BMC and the Concessionaire within 15 (fifteen) days of receipt.
- m. Upon reference by BMC, the Independent Engineer shall review and comment on the contracts entered into by the Concessionaire for the purpose of execution of this Agreement.
- n. The Independent Engineer shall review the monthly progress report furnished by the Concessionaire and send its comments thereon to BMC and the Concessionaire within 7 (seven) days of receipt.
- o. The Independent Engineer shall cross check the specifications of the machinery and equipment (including vehicles) with the specifications submitted by the manufacturer.





- p. The Independent Engineer shall inspect the Project Facilities twice in a month, preferably after receipt of the monthly progress report from the Concessionaire, and make out a report of such inspection (the "Inspection Report") setting forth an overview of the status, progress, quality and safety of construction, including the work methodology adopted, the materials used and their sources, and conformity of construction works with the Scope of the Project and the Specifications and Standards.
- q. The Independent Engineer may inspect the Project Facilities more than 2 times in a month if any lapses, defects or deficiencies require such inspections.
- r. For determining that the construction conforms to construction requirements, the Independent Engineer shall require the Concessionaire to carry out, or cause to be carried out, tests on a sample basis, to be specified by the Independent Engineer in accordance with Good Industry Practice for quality assurance.
- s. In the event that the Concessionaire fails to achieve any of the Project Milestones, the Independent Engineer shall undertake a review of the progress of construction and identify potential delays, if any. If the Independent Engineer shall determine that completion of the Project Facilities is not feasible within the time specified in the Agreement, it shall require the Concessionaire to indicate within 10 (ten) days the steps proposed to be taken to expedite progress, and the period within which the Project construction would be completed. Upon receipt of a report from the Concessionaire, the Independent Engineer shall review the same and send its comments to BMC and the Concessionaire forthwith.
- t. Independent Engineer during operation period shall review the monthly report furnished by the Concessionaire, and shall submit its comments on the same to BMC and to the Concessionaire within 7 days of the receipt of the report.
- u. Independent Engineer during operation period shall inspect the Project Facilities and processes at least twice in a month and carry out tests as might be deemed necessary and furnish the observations of the inspection to the Concessionaire and to BMC within 7 days of such inspection.
- v. Independent Engineer during operation period is authorized to conduct surprise checks on the Project Facilities and processes to ensure that they comply with the Project specifications.
- w. Independent Engineer during operation period shall report the results of surprise checks to BMC within 7 days of such checks.
- x. Independent Engineer during operation period is authorized to require the Concessionaire to carry out such tests/ arrange to carry out such tests as it deems necessary and present the result and inferences of the same to BMC.
- y. In case any deficiency or maintenance requirement is observed by the Independent Engineer during operation period during the inspection or tests, it shall report the same to BMC along with the possible impact on the Project Facilities and the cost of rectification of the same.
- z. Independent Engineer during operation period shall inspect the Project Facilities once the Concessionaire rectifies the defect and report the results of such inspection to BMC
- aa. Independent Engineer during operation period shall audit and certify the weighbridges located at the Processing site atleast once a month and submit the results of such review to BMC and the Concessionaire.



- bb. Independent Engineer during operation period shall audit the MSW quantity supply data recorded at the Processing site to ensure that the data reported by the Concessionaire for charging Tipping Fee is accurate and that the provisions of this agreement are conformed with. The Independent Engineer during operation period is authorized to conduct surprise checks and tests for this purpose.



  
Municipal Commissioner  
Bhubaneswar Municipal Corporation

## 17. Vesting Certificate

1. The Commissioner, Bhubaneswar Municipal Corporation (the "Authority") refers to the Concession Agreement dated 26<sup>th</sup> May 2014 (the "Agreement") entered into between the Authority and ESSEL BHUBANESWAR MSW LIMITED (the "Concessionaire") for Regional MSW Management Facility at Bhuasuni on design, build, finance, operate and transfer ("DBFOT") basis.
2. The Authority hereby acknowledges compliance and fulfillment by the Concessionaire of the Divestment Requirements set forth in Clause 30.1 of the Agreement on the basis that upon issue of this Vesting Certificate, the Authority shall be deemed to have acquired, and all title and interest of the Concessionaire in or about the Project shall be deemed to have vested unto the Authority, free from any encumbrances, charges and liens whatsoever.
3. Notwithstanding anything to the contrary contained hereinabove, it shall be a condition of this Vesting Certificate that nothing contained herein shall be construed or interpreted as waiving the obligation of the Concessionaire to rectify and remedy any defect or deficiency in any of the Divestment Requirements and/or relieving the Concessionaire in any manner of the same.

Signed this ..... day of ....., 20..... at Bhubaneswar.

AGREED, ACCEPTED AND SIGNED

For and on behalf of CONCESSIONAIRE by:

(Signature)

(Name)

(Designation)

(Address)

SIGNED, SEALED AND DELIVERED

For and on behalf of the Bhubaneswar Municipal Corporation by:

(Signature)

(Name)

The Municipal Commissioner,

Vivekananda Marg, Bhubaneswar -751014, Odisha India

In the presence of:

1.

2.

  
Municipal Commissioner  
Bhubaneswar Municipal Corporation



## 18. Substitution Agreement

THIS SUBSTITUTION AGREEMENT is entered into on this the ..... day of ..... 20.....

### AMONGST

1. Bhubaneswar Municipal Corporation, a Municipal Corporation established vide Housing & Urban Development Department Notification No. 24148/dated 28.7.1994 and operating under Orissa Municipal Corporation Act of 2003 and having its offices at Vivekanda Marg, Gautam Nagar, Bhubaneswar – 751014, acting through The Municipal Commissioner (hereinafter referred to as the **"BMC"** or **"Authority"** which expression shall, unless repugnant to the context or meaning thereof, mean and include its successors and assigns) of the FIRST PART,
2. **ESSEL BHUBANESWAR MSW LIMITED**, a company incorporate in India under the Companies Act of 1956 and having its registered offices at Essel House, B-10, Lawrence Road, Industrial Area, New Delhi - 110035, Delhi, INDIA (hereinafter referred to as the **"Concessionaire"**, which expression shall, unless repugnant to the context or meaning thereof, mean and include its successors and assigns)
3. .... name and particulars of Lenders Representative and having its registered office at ....., acting for and on behalf of the Senior Lenders as their duly authorized agent with regard to matters arising out of or in relation to this Agreement (hereinafter referred to as the **"Lenders' Representative"**, which expression shall unless repugnant to the context or meaning thereof include its successors and substitutes);
  - A. The Authority has entered into a Concession Agreement dated 26<sup>th</sup> May 2014 with the Concessionaire (the **"Concession Agreement"**) for the Project on Design, build, finance, operate and transfer basis (DBFOT), and a copy of which is annexed hereto and marked as Annex-A to form part of this Agreement.
  - B. Senior Lenders have agreed to finance the Project in accordance with the terms and conditions set forth in the Financing Agreements.
  - C. Senior Lenders have requested BMC to enter into this Substitution Agreement for securing their interests through assignment, transfer and substitution of the Concession to a Nominated Company in accordance with the provisions of this Agreement and the Concession Agreement.
  - D. In order to enable implementation of the Project including its financing, construction, operation and maintenance, BMC has agreed and undertaken to transfer and assign the Concession to a Nominated Company in accordance with the terms and conditions set forth in this Agreement and the Concession Agreement.

NOW, THEREFORE, in consideration of the foregoing and the respective covenants and agreements set forth in this Agreement, the receipt and sufficiency of which is hereby acknowledged, and intending to be legally bound hereby, the Parties agree as follows:

### 18.1 Definitions and Interpretations

#### 18.1.1 Definitions

In this Substitution Agreement, the following words and expressions shall, unless repugnant to the context or meaning thereof, have the meaning hereinafter respectively assigned to them:

**"Agreement"** means this Substitution Agreement and any amendment thereto made in accordance with the provisions contained in this Agreement;



Municipal Commissioner  
Bhubaneswar Municipal Corporation

**"Financial Default"** means occurrence of a material breach of the terms and conditions of the Financing Agreements or a continuous default in Debt Service by the Concessionaire for a minimum period of 3 (three) months;

**"Lenders' Representative"** means the person referred to as the Lenders Representative in the foregoing Recitals;

**"Nominated Company"** means a company, incorporated under the provisions of the Companies Act, 1956, selected by the Lenders Representative, on behalf of Senior Lenders, and proposed to BMC for assignment/transfer of the Concession as provided in this Agreement;

**"Notice of Financial Default"** shall have the meaning ascribed thereto in Clause 18.3.2(a); and

**"Parties"** means the parties to this Agreement collectively and "Party" shall mean any of the Parties to this Agreement individually.

#### 18.1.2 Interpretations

- a. References to Lenders Representative shall, unless repugnant to the context or meaning thereof, mean references to the Lenders Representative, acting for and on behalf of Senior Lenders.
- b. References to Clauses are, unless stated otherwise, references to Clauses of this Agreement.
- c. The words and expressions beginning with capital letters and defined in this Agreement shall have the meaning ascribed thereto herein, and the words and expressions used in this Agreement and not defined herein but defined in the Concession Agreement shall, unless repugnant to the context, have the meaning ascribed thereto in the Concession Agreement.
- d. The rules of interpretation stated in Clauses 1.2, 1.3 and 1.4 of the Concession Agreement shall apply, mutatis mutandis, to this Agreement.

### 18.2 Assignment

#### 18.2.1 Assignment of rights and titles

The Concessionaire hereby agrees to assign the rights, title and interest in the Concession to, and in favour of, the Lenders Representative pursuant to and in accordance with the provisions of this Agreement and the Concession Agreement by way of security in respect of financing by the Senior Lenders under the Financing Agreements.

### 18.3 Substitution of the Concessionaire

#### 18.3.1 Rights of substitution

- a. Pursuant to the rights, title and interest assigned under Clause 2.1, the Lender's Representative shall be entitled to substitute the Concessionaire by a Nominated Company under and in accordance with the provisions of this Agreement and the Concession Agreement.
- b. The Authority hereby agrees to substitute the Concessionaire by endorsement on the Concession Agreement in favour of the Nominated Company selected by the Lenders Representative in accordance with this Agreement. (For the avoidance of doubt, the Senior



Lenders or the Lenders Representative shall not be entitled to operate and maintain the Project Highway as Concessionaire either individually or collectively).

**18.3.2 Substitution upon occurring of financial default**

- a. Upon occurrence of a Financial Default, the Lenders Representative may issue a notice to the Concessionaire (the "Notice of Financial Default") along with particulars thereof, and send a copy to BMC for its information and record. A Notice of Financial Default under this Clause 18.3 shall be conclusive evidence of such Financial Default and it shall be final and binding upon the Concessionaire for the purposes of this Agreement.
- b. Upon issue of a Notice of Financial Default hereunder, the Lenders Representative may, without prejudice to any of its rights or remedies under this Agreement or the Financing Agreements, substitute the Concessionaire by a Nominated Company in accordance with the provisions of this Agreement.
- c. At any time after the Lenders Representative has issued a Notice of Financial Default, it may by notice require BMC to suspend all the rights of the Concessionaire and undertake the operation and maintenance of the Project Facilities in accordance with the provisions of the Concession Agreement, and upon receipt of such notice, BMC shall undertake Suspension under and in accordance with the provisions of the Concession Agreement. The aforesaid Suspension shall be revoked upon substitution of the Concessionaire by a Nominated Company, and in the event such substitution is not completed within 180 (one hundred and eighty) days from the date of such Suspension, BMC may terminate the Concession Agreement forthwith by issuing a Termination Notice in accordance with the provisions of the Concession Agreement; provided that upon written request from the Lenders Representative and the Concessionaire, BMC may extend the aforesaid period of 180 (one hundred and eighty) days by a period not exceeding 90 (ninety) days. For the avoidance of doubt, BMC expressly agrees and undertakes to terminate the Concession Agreement forthwith, upon receipt of a written request from the Lenders Representative at any time after 240 (two hundred and forty) days from the date of Suspension hereunder.

**18.3.3 Substitution upon occurrence of Concessionaire default**

- a. Upon occurrence of a Concessionaire Default, BMC shall by a notice inform the Lenders Representative of its intention to issue a Termination Notice and grant 15 (fifteen) days time to the Lenders Representative to make a representation, stating the intention to substitute the Concessionaire by a Nominated Company.
- b. In the event that the Lenders Representative makes a representation to BMC within the period of 15 (fifteen) days specified in Clause 18.3.3(a), stating that it intends to substitute the Concessionaire by a Nominated Company, the Lenders Representative shall be entitled to undertake and complete the substitution of the Concessionaire by a Nominated Company in accordance with the provisions of this Agreement within a period of 180 (one hundred and eighty) days from the date of such representation, and BMC shall either withhold Termination or undertake Suspension for the aforesaid period of 180 (one hundred and eighty) days; provided that upon written request from the Lenders Representative and the Concessionaire, BMC shall extend the aforesaid period of 180 (one hundred and eighty) days by a period not exceeding 90 (ninety) days

**18.3.4 Procedure for substitution**



*Municipal Commissioner*  
Bhubaneswar Municipal Corporation

- a. The Authority and the Concessionaire hereby agree that on or after the date of Notice of Financial Default or the date of representation to BMC under Clause 18.3.3(b), as the case may be, the Lenders Representative may, without prejudice to any of the other rights or remedies of the Senior Lenders, invite, negotiate and procure offers, either by private negotiations or public auction or tenders for the take over and transfer of the Project Facilities including the Concession to the Nominated Company upon such Nominated Company's assumption of the liabilities and obligations of the Concessionaire towards BMC under the Concession Agreement and towards the Senior Lenders under the Financing Agreements.
- b. To be eligible for substitution in place of the Concessionaire, the Nominated Company shall be required to fulfill the eligibility criteria that were laid down by BMC for shortlisting the bidders for award of the Concession; provided that the Lenders Representative may represent to BMC that all or any of such criteria may be waived in the interest of the Project, and if BMC determines that such waiver shall not have any material adverse effect on the Project, it may waive all or any of such eligibility criteria.
- c. Upon selection of a Nominated Company, the Lenders Representative shall request BMC to:
  - i. accede to transfer to the Nominated Company the right to construct, operate and maintain the Project Facilitied in accordance with the provisions of the Concession Agreement;
  - ii. endorse and transfer the Concession to the Nominated Company, on the same terms and conditions, for the residual Concession Period; and
  - iii. enter into a Substitution Agreement with the Lenders Representative and the Nominated Company on the same terms as are contained in this Agreement.
- d. If BMC has any objection to the transfer of Concession in favour of the Nominated Company in accordance with this Agreement, it shall within 15 (fifteen days) days from the date of proposal made by the Lenders Representative, give a reasoned order after hearing the Lenders Representative. If no such objection is raised by BMC, the Nominated Company shall be deemed to have been accepted. The Authority thereupon shall transfer and endorse the Concession within 15 (fifteen days) of its acceptance/deemed acceptance of the Nominated Company; provided that in the event of such objection by BMC, the Lenders Representative may propose another Nominated Company whereupon the procedure set forth in this Clause 18.3.4 shall be followed for substitution of such Nominated Company in place of the Concessionaire.

#### 18.3.5 Selection to be binding

The decision of the Lenders Representative and BMC in selection of the Nominated Company shall be final and binding on the Concessionaire. The Concessionaire irrevocably agrees and waives any right to challenge the actions of the Lenders Representative or the Senior Lenders or BMC taken pursuant to this Agreement including the transfer/assignment of the Concession in favour of the Nominated Company. The Concessionaire agrees and confirms that it shall not have any right to seek revaluation of assets of the Project or the Concessionaires shares. It is hereby acknowledged by the Parties that the rights of the Lenders Representative are irrevocable and shall not be contested in any proceedings before any court or Authority and the Concessionaire shall have no right or remedy to prevent, obstruct or restrain BMC or the Lenders Representative



**Municipal Commissioner**  
Bhubaneswar Municipal Corporation

from effecting or causing the transfer by substitution and endorsement of the Concession as requested by the Lenders Representative.

#### **18.4 Project Agreements**

##### **18.4.1 Substitution of Nominated Company in Project Agreements**

The Concessionaire shall ensure and procure that each Project Agreement contains provisions that entitle the Nominated Company to step into such Project Agreement, in its discretion, in place and substitution of the Concessionaire in the event of such Nominated Company's assumption of the liabilities and obligations of the Concessionaire under the Concession Agreement.

#### **18.5 Termination of the Concession Agreement**

##### **18.5.1 Termination upon occurrence of Financial Default**

At any time after issue of a Notice of Financial Default, the Lenders Representative may by a notice in writing require BMC to terminate the Concession Agreement forthwith, and upon receipt of such notice, BMC shall undertake Termination under and in accordance with the provisions of Article 29 of the Concession Agreement.

##### **18.5.2 Termination when no nominate company is selected**

In the event that no Nominated Company acceptable to BMC is selected and recommended by the Lenders Representative within the period of 180 (one hundred and eighty) days or any extension thereof as set forth in Clause 18.3.3(b), BMC may terminate the Concession Agreement forthwith in accordance with the provisions thereof.

##### **18.5.3 Realisation of debt due**

The Authority and the Concessionaire hereby acknowledge and agree that, without prejudice to their any other right or remedy, the Lenders Representative is entitled to receive from the Concessionaire, without any further reference to or consent of the Concessionaire, the Debt Due upon Termination of the Concession Agreement. For realisation of the Debt Due, the Lenders Representative shall be entitled to make its claim from the Escrow Account in accordance with the provisions of the Concession Agreement and the Escrow Agreement.

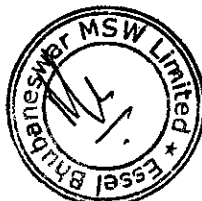
#### **18.6 Duration of the Agreement**

##### **18.6.1 Duration of the Agreement**

This Agreement shall come into force from the date hereof and shall expire at the earliest to occur of the following events: (a) Termination of the Agreement; or (b) no sum remains to be advanced and no sum is outstanding to the Senior Lenders, under the Financing Agreements.

#### **18.7 Indemnity**

##### **18.7.1 General indemnity**



  
**Municipal Commissioner**  
**Bhubaneswar Municipal Corporation**



- a. The Concessionaire will indemnify, defend and hold BMC and the Lenders Representative harmless against any and all proceedings, actions and third party claims for any loss, damage, cost and expense of whatever kind and nature arising out of any breach by the Concessionaire of any of its obligations under this Agreement or on account of failure of the Concessionaire to comply with Applicable Laws and Applicable Permits.
- b. The Authority will indemnify, defend and hold the Concessionaire harmless against any and all proceedings, actions and third party claims for any loss, damage, cost and expense arising out of failure of BMC to fulfill any of its obligations under this Agreement, materially and adversely affecting the performance of the Concessionaire's obligations under the Concession Agreement or this Agreement, other than any loss, damage, cost and expense, arising out of acts done in discharge of their lawful functions by BMC, its officers, servants and agents.
- c. The Lenders Representative will indemnify, defend and hold the Concessionaire harmless against any and all proceedings, actions and third party claims for any loss, damage, cost and expense arising out of failure of the Lenders Representative to fulfill its obligations under this Agreement, materially and adversely affecting the performance of the Concessionaires obligations under the Concession Agreement, other than any loss, damage, cost and expense, arising out of acts done in discharge of their lawful functions by the Lenders Representative, its officers, servants and agents.

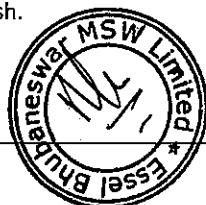
#### 18.7.2 Notice and contest of claims

In the event that any Party hereto receives a claim from a third party in respect of which it is entitled to the benefit of an indemnity under Clause 18.7.1 or in respect of which it is entitled to reimbursement (the "Indemnified Party"), it shall notify the other Party responsible for indemnifying such claim hereunder (the "Indemnifying Party") within 15 (fifteen) days of receipt of the claim and shall not settle or pay the claim without the prior approval of the Indemnifying Party, such approval not to be unreasonably withheld or delayed. In the event that the Indemnifying Party wishes to contest or dispute the claim, it may conduct the proceedings in the name of the Indemnified Party and shall bear all costs involved in contesting the same. The Indemnified Party shall provide all cooperation and assistance in contesting any claim and shall sign all such writings and documents as the Indemnifying Party may reasonably require.

### 18.8 Dispute Resolution

#### 18.8.1 Dispute Resolution

- a. Any dispute, difference or claim arising out of or in connection with this Agreement which is not resolved amicably shall be decided by reference to arbitration to a Board of Arbitrators comprising one nominee each of BMC, Concessionaire and the Lenders Representative. Such arbitration shall be held in accordance with the Rules of Arbitration of the International Centre for Alternative Dispute Resolution, New Delhi (the "Rules") or such other rules as may be mutually agreed by the Parties, and shall be subject to provisions of the Arbitration and Conciliation Act, 1996.
- b. The Arbitrators shall issue a reasoned award and such award shall be final and binding on the Parties. The venue of arbitration shall be Bhubaneswar and the language of arbitration shall be English.



*[Signature]*  
Municipal Commissioner  
Bhubaneswar Municipal Corporation

## 18.9 Miscellaneous Provisions

### 18.9.1 Governing law and jurisdiction

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

### 18.9.2 Waiver of sovereign immunity

The Authority unconditionally and irrevocably:

- a. agrees that the execution, delivery and performance by it of this Agreement constitute commercial acts done and performed for commercial purpose;
- b. agrees that, should any proceedings be brought against it or its assets, property or revenues in any jurisdiction in relation to this Agreement or any transaction contemplated by this Agreement, no immunity (whether by reason of sovereignty or otherwise) from such proceedings shall be claimed by or on behalf of BMC with respect to its assets;
- c. waives any right of immunity which it or its assets, property or revenues now has, may acquire in the future or which may be attributed to it in any jurisdiction; and
- d. consents generally in respect of the enforcement of any judgement or award against it in any such proceedings to the giving of any relief or the issue of any process in any jurisdiction in connection with such proceedings (including the making, enforcement or execution against it or in respect of any assets, property or revenues whatsoever irrespective of their use or intended use of any order or judgement that may be made or given in connection therewith).

### 18.9.3 Priority of agreements

In the event of any conflict between the Concession Agreement and this Agreement, the provisions contained in the Concession Agreement shall prevail over this Agreement.

### 18.9.4 Alteration of terms

All additions, amendments, modifications and variations to this Agreement shall be effectual and binding only if in writing and signed by the duly authorized representatives of the Parties.

### 18.9.5 Waiver

- a. Waiver by any Party of a default by another 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 of or obligations under this Agreement;
  - ii. shall not be effective unless it is in writing and executed by a duly authorized representative of the 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 thereunder nor time or other indulgence granted by a Party to another Party shall be treated or deemed as waiver of such breach or acceptance of any variation or the relinquishment of any such right hereunder.



**Municipal Commissioner**  
**Bhubaneswar Municipal Corporation**

18.9.6 No third party beneficiaries

This Agreement is solely for the benefit of the Parties and no other person or entity shall have any rights hereunder.

18.9.7 Survival

a. Termination of this Agreement:

- i. shall not relieve the Parties of any obligations hereunder which expressly or by implication survive termination hereof; and
- ii. 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.

- b. All obligations surviving the cancellation, expiration or termination of this Agreement shall only survive for a period of 3 (three) years following the date of such termination or expiry of this Agreement.

18.9.8 Severability

If for any reason whatever any provision of this Agreement is or becomes invalid, illegal or unenforceable or is declared by any court of competent jurisdiction or any other 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 will negotiate in good faith with a view to agreeing to one or more provisions which may be substituted for such invalid, unenforceable or illegal provisions, as nearly as is practicable to such invalid, illegal or unenforceable provision. Failure to agree upon any such provisions shall not be subject to dispute resolution under Clause 18.8 of this Agreement or otherwise.

18.9.9 Successors and assigns

This Agreement shall be binding on and shall inure to the benefit of the Parties and their respective successors and permitted assigns.

18.9.10 Notices

All notices or other communications to be given or made under this Agreement shall be in writing, shall either be delivered personally or sent by courier or registered post with an additional copy to be sent by facsimile or e-mail. The address for service of each Party, its facsimile number and e-mail address are set out under its name on the signing pages hereto. A notice shall be effective upon actual receipt thereof, save that where it is received after 5.30 (five thirty) p.m. on any day, or on a day that is a public holiday, the notice shall be deemed to be received on the first working day following the date of actual receipt. Without prejudice to the foregoing, a Party giving or making a notice or communication by facsimile or e-mail shall promptly deliver a copy thereof personally, or send it by courier or registered post to the addressee of such notice or communication. It is hereby agreed and acknowledged that any Party may by notice change the address to which such notices and communications to it are to be delivered or mailed. Such change shall be effective when all the Parties have notice of it.

18.9.11 Language



  
Municipal Commissioner  
Bhubaneswar Municipal Corporation

All notices, certificates, correspondence and proceedings under or in connection with this Agreement shall be in English.

**18.9.12 Authorized Representative**

Each of the Parties shall by notice in writing designate their respective authorized representatives through whom only all communications shall be made. A Party hereto shall be entitled to remove and/or substitute or make fresh appointment of such authorized representative by similar notice.

**18.9.13 Original Document**

This Agreement may be executed in three counterparts, each of which when executed and delivered shall constitute an original of this 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 Bhubaneswar Municipal Corporation by:

**Dr. Krishan Kumar, IAS**

**The Municipal Commissioner,**

**Bhubaneswar Municipal Corporation**

Vivekanda Marg, Gautam Nagar, Bhubaneswar – 751014

Fax: 0674-2432895,

THE COMMON SEAL OF CONCESSIONAIRE has been affixed pursuant to the resolution passed by the Board of Directors of the Concessionaire at its meeting held on the 26<sup>th</sup> day of February 2014 hereunto affixed in the presence of ....., Director, who has signed these presents in token thereof and ....., Company Secretary / Authorized Officer who has countersigned the same in token thereof:

SIGNED, SEALED AND DELIVERED

For and on behalf of SENIOR LENDERS by the Lenders' Representative:

(Signature)

(Name)

(Designation)

(Address)

(Fax)

(E-mail address)

In the presence of:

1.

2.



  
**Municipal Commissioner**  
**Bhubaneswar Municipal Corporation**

19. [DELETED]



A handwritten signature in black ink, positioned above the title of the Municipal Commissioner.

Municipal Commissioner  
Bhubaneswar Municipal Corporation

## 20. Escrow Agreement

THIS ESCROW AGREEMENT is entered into on this the ..... Day of ..... 20....

### AMONGST

1 ESSEL BHUBANESWAR MSW LIMITED, a company incorporated under the provisions of the Companies Act, 1956 and having its registered office at Essel House, B-10, Lawrence Road, Industrial Area, New Delhi - 110035, Delhi, INDIA (Hereinafter referred to as the "**Concessionaire**" which expression shall, unless repugnant to the context or meaning thereof, include its successors, permitted assigns and substitutes);

2 .....name and particulars of Lenders' Representative and having its registered office at .....acting for and on behalf of the Senior Lenders as their duly authorized agent with regard to matters arising out of or in relation to this Agreement (hereinafter referred to as the "**Lenders' Representative**" which expression shall, unless repugnant to the context or meaning thereof, include its successors and substitutes);

3 .....name and particulars of the Escrow Bank and having its registered office at .....(hereinafter referred to as the "**Escrow Bank**" which expression shall, unless repugnant to the context or meaning thereof, include its successors and substitutes); and

4 Bhubaneswar Municipal Corporation ("**BMC**"), a Municipal Corporation established vide Housing & Urban Development Department Notification No. 24148/dated 28.7.1994 and operating under Orissa Municipal Corporation Act of 2003 and having its offices at Vivekanda Marg, Gautam Nagar, Bhubaneswar - 14, acting through The Municipal Commissioner (hereinafter referred to as the "**BMC**" or "**Authority**" which expression shall, unless repugnant to the context or meaning thereof, mean and include its successors and assigns) of the ONE PART

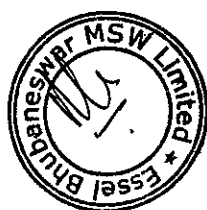
### WHEREAS:

The Authority has entered into a Concession Agreement dated 29<sup>th</sup> May 2014 with the Concessionaire (the "**Concession Agreement**") for enabling construction of Transfer Stations, transportation of MSW from the Transfer Stations to the Processing Facility, construction of Processing Facility, processing of MSW, construction of Scientific Landfill and disposal of MSW, ("**Project**") on design, build, finance, operate and transfer (DBFOT) basis.

Senior Lenders have agreed to finance the Project in accordance with the terms and conditions set forth in the Financing Agreements.

The Concession Agreement requires the Concessionaire to establish an Escrow Account, inter alia, on the terms and conditions stated therein.

**NOW, THEREFORE**, in consideration of the foregoing and the respective covenants and agreements set forth in this Agreement, the receipt and sufficiency of which is hereby acknowledged, and intending to be legally bound hereby, the Parties agree as follows:



  
Municipal Commissioner  
Bhubaneswar Municipal Corporation

## 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 hereinafter respectively assigned to them:

**"Agreement"** means this Escrow Agreement and any amendment thereto made in accordance with the provisions contained herein;

**"Concession Agreement"** means the Concession Agreement referred to in Recital (A) above and annexed hereto as Annex-A, and shall include all of its Recitals and Schedules and any amendments made thereto in accordance with the provisions contained in this behalf therein;

**"Cure Period"** means the period specified in this Agreement for curing any breach or default of any provision of this Agreement by the Concessionaire, and shall commence from the date on which a notice is delivered by the Authority or the Lenders' Representative, as the case may be, to the Concessionaire asking the latter to cure the breach or default specified in such notice;

**"Escrow Account"** means an escrow account established in terms of and under this Agreement, and shall include the Sub-Accounts;

**"Escrow Default"** shall have the meaning ascribed thereto in Clause 6.1;

**"Lenders' Representative"** means the person referred to as the Lenders' Representative in the foregoing Recitals;

**"Parties"** means the parties to this Agreement collectively and "Party" shall mean any of the Parties to this Agreement individually;

**"Payment Date"** means, in relation to any payment specified in Clause 4.1, the date(s) specified for such payment; and

**"Sub-Accounts"** means the respective Sub-Accounts of the Escrow Account, into which the monies specified in Clause 4.1 would be credited every month and paid out if due, and if not due in a month then appropriated proportionately in such month and retained in the respective Sub Accounts and paid out therefrom on the Payment Date(s).

### 1.2. Interpretation

1.2.1. References to Lenders' Representative shall, unless repugnant to the context or meaning thereof, mean references to the Lenders' Representative, acting for and on behalf of Senior Lenders.

1.2.2. The words and expressions beginning with capital letters and defined in this Agreement shall have the meaning ascribed thereto herein, and the words and expressions used in this Agreement and not defined herein but defined in the Concession Agreement shall, unless repugnant to the context, have the meaning ascribed thereto in the Concession Agreement.

1.2.3. References to Clauses are, unless stated otherwise, references to Clauses of this Agreement.

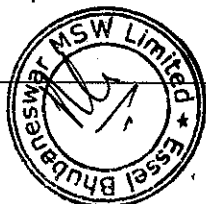
1.2.4. The rules of interpretation stated in Clauses 1.2, 1.3 and 1.4 of the Concession Agreement shall apply, mutatis mutandis, to this Agreement.

## 2. ESCROW ACCOUNT

### 2.1. Escrow Bank to act as trustee

2.1.1. The Concessionaire hereby appoints the Escrow Bank to act as trustee for the Authority, the Lenders' Representative and the Concessionaire in connection herewith and authorizes the

Concession Agreement



Municipal Commissioner  
Bhubaneswar Municipal Corporation

Escrow Bank to exercise such rights, powers, authorities and discretion as are specifically delegated to the Escrow Bank by the terms hereof together with all such rights, powers, authorities and discretion as are reasonably incidental hereto, and the Escrow Bank accepts such appointment pursuant to the terms hereof.

- 2.1.2. The Concessionaire hereby declares that all rights, title and interest in and to the Escrow Account shall be vested in the Escrow Bank and held in trust for the Authority, the Lenders' Representative and the Concessionaire, and applied in accordance with the terms of this Agreement. No person other than the Authority, the Lenders' Representative and the Concessionaire shall have any rights hereunder as the beneficiaries of, or as third party beneficiaries under this Agreement.

2.2. Acceptance of Escrow Bank

The Escrow Bank hereby agrees to act as such and to accept all payments and other amounts to be delivered to and held by the Escrow Bank pursuant to the provisions of this Agreement. The Escrow Bank shall hold and safeguard the Escrow Account during the term of this Agreement and shall treat the amount in the Escrow Account as monies deposited by the Concessionaire, Senior Lenders or the Authority with the Escrow Bank. In performing its functions and duties under this Agreement, the Escrow Bank shall act in trust for the benefit of, and as agent for, the Authority, the Lenders' Representative and the Concessionaire or their nominees, successors or assigns, in accordance with the provisions of this Agreement.

2.3. Establishment and operation of Escrow Account

- 2.3.1. Within 30 (thirty) days from the date of this Agreement, and in any case prior to the Appointed Date, the Concessionaire shall open and establish the Escrow Account with the ..... (name of Branch) Branch of the Escrow Bank. The Escrow Account shall be denominated in Rupees.

- 2.3.2. The Escrow Bank shall maintain the Escrow Account in accordance with the terms of this Agreement and its usual practices and applicable regulations, and pay the maximum rate of interest payable to similar customers on the balance in the said account from time to time.

- 2.3.3. The Escrow Bank and the Concessionaire shall, after consultation with the Lenders' Representative, agree on the detailed mandates, terms and conditions, and operating procedures for the Escrow Account, but in the event of any conflict or inconsistency between this Agreement and such mandates, terms and conditions, or procedures, this Agreement shall prevail.

2.4. Escrow Bank's fee

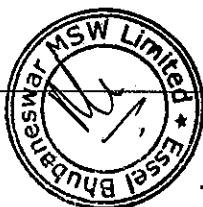
The Escrow Bank shall be entitled to receive its fee and expenses in an amount, and at such times, as may be agreed between the Escrow Bank and the Concessionaire. For the avoidance of doubt, such fee and expenses shall form part of the O&M Expenses and shall be appropriated from the Escrow Account in accordance with Clause 4.1.

2.5. Rights of the parties

The rights of the Authority, the Lenders' Representative and the Concessionaire in the monies held in the Escrow Account are set forth in their entirety in this Agreement and the Authority, the Lenders' Representative and the Concessionaire shall have no other rights against or to the monies in the Escrow Account.

2.6. Substitution of the Concessionaire

  
Municipal Commissioner  
Bhubaneswar Municipal Corporation





The Parties hereto acknowledge and agree that upon substitution of the Concessionaire with the Nominated Company, pursuant to the Substitution Agreement, it shall be deemed for the purposes of this Agreement that the Nominated Company is a Party hereto and the Nominated Company shall accordingly be deemed to have succeeded to the rights and obligations of the Concessionaire under this Agreement on and with effect from the date of substitution of the Concessionaire with the Nominated Company.

3. DEPOSITS INTO ESCROW ACCOUNT

3.1. Deposits by the Concessionaire

3.1.1. The Concessionaire agrees and undertakes that it shall deposit into and/or credit the Escrow Account with following in accordance to Clause 23.4.1:

- a. all funds constituting the Financial Package;
- b. all Tipping Fee and any other revenues from or in respect of the Project, including the proceeds of any rentals, deposits, capital receipts or insurance claims; and
- c. all payments by the Authority, after deduction of amounts specified in Clause 17.3.6:

Provided that the Senior Lenders may make direct disbursements to the EPC Contractor in accordance with the express provisions contained in this behalf in the Financing Agreements..

3.1.2. The Concessionaire may at any time make deposits of its other funds into the Escrow Account, provided that the provisions of this Agreement shall apply to such deposits.

3.2. Deposits by the Authority

The Authority agrees and undertakes that, as and when due and payable, it shall deposit into and/or credit the Escrow Account with:

- a. Grant and any other monies disbursed by the Authority to the Concessionaire;
- b. Revenue Shortfall Loan;
- c. all Fee collected by the Authority in exercise of its rights under the Concession Agreement; and
- d. Termination Payments:

Provided that, notwithstanding the provisions of Clause 4.1.1, the Authority shall be entitled to appropriate from the aforesaid amounts, any Concession Fee due and payable to it by the Concessionaire, and the balance remaining shall be deposited into the Escrow Account.

3.3. Deposits by Senior Lenders

The Lenders' Representative agrees, confirms and undertakes that the Senior Lenders shall deposit into and/or credit the Escrow Account with all disbursements made by them in relation to or in respect of the Project; provided that notwithstanding anything to the contrary contained in this Agreement, the Senior Lenders shall be entitled to make direct payments to the EPC Contractor under and in accordance with the express provisions contained in this behalf in the Financing Agreements.

3.4. Interest on deposits

The Escrow Bank agrees and undertakes that all interest accruing on the balances of the Escrow Account shall be credited to the Escrow Account; provided that the Escrow Bank shall be entitled



to appropriate therefrom the fee and expenses due to it from the Concessionaire in relation to the Escrow Account and credit the balance remaining to the Escrow Account.

#### 4. WITHDRAWALS FROM ESCROW ACCOUNT

##### 4.1. Withdrawals during Concession Period

4.1.1. At the beginning of every month, or at such shorter intervals as the Lenders' Representative and the Concessionaire may by written instructions determine, the Escrow Bank shall withdraw amounts from the Escrow Account and appropriate them in the following order by depositing such amounts in the relevant Sub-Accounts for making due payments, and if such payments are not due in any month, then retain such monies in such Sub-Accounts and pay out therefrom on the Payment Date(s):

- a. all taxes due and payable by the Concessionaire for and in respect of the Project;
- b. all payments relating to construction of the Project, subject to and in accordance with the conditions, if any, set forth in the Financing Agreements;
- c. O&M Expenses, subject to the ceiling, if any, set forth in the Financing Agreements;
- d. O&M Expenses incurred by the Authority, provided it certifies to the Escrow Bank that it had incurred such expenses in accordance with the provisions of the Concession Agreement and that the amounts claimed are due to it from the Concessionaire;
- e. Concession Fee due and payable to the Authority;
- f. monthly proportionate provision of Debt Service due in an Accounting Year;
- g. {(g) Premium due and payable to the Authority;}
- h. all payments and Damages certified by the Authority as due and payable to it by the Concessionaire pursuant to the Concession Agreement, including repayment of Revenue Shortfall Loan;
- i. monthly proportionate provision of debt service payments due in an Accounting Year in respect of Subordinated Debt;
- j. any reserve requirements set forth in the Financing Agreements; and
- k. balance, if any, in accordance with the instructions of the Concessionaire.

4.1.2. No later than 60 (sixty) days prior to the commencement of each Accounting Year, the Concessionaire shall provide to the Escrow Bank, with prior written approval of the Lenders' Representative, details of the amounts likely to be required for each of the payment obligations set forth in this Clause 4.1; provided that such amounts may be subsequently modified, with prior written approval of the Lenders' Representative, if fresh information received during the course of the year makes such modification necessary.

##### 4.2. Withdrawals upon Termination

Upon Termination of the Concession Agreement, all amounts standing to the credit of the Escrow Account shall, notwithstanding anything in this Agreement, be appropriated and dealt with in the following order:

- a. all taxes due and payable by the Concessionaire for and in respect of the Project;
- b. outstanding Concession Fee;



- c. all payments and Damages certified by the Authority as due and payable to it by the Concessionaire pursuant to the Concession Agreement, including {Premium,} repayment of Revenue Shortfall Loan and any claims in connection with or arising out of Termination;
- d. retention and payments arising out of, or in relation to, liability for defects and deficiencies set forth in Article 39 of the Concession Agreement;
- e. outstanding Debt Service including the balance of Debt Due;
- f. outstanding Subordinated Debt;
- g. incurred or accrued O&M Expenses;
- h. any other payments required to be made under the Concession Agreement; and
- i. balance, if any, in accordance with the instructions of the Concessionaire.

Provided that the disbursements specified in Clause 4.2(i) shall be undertaken only after the Vesting Certificate has been issued by the Authority.

**4.3. Application of insufficient funds**

Funds in the Escrow Account shall be applied in the serial order of priority set forth in Clauses 4.1 and 4.2, as the case may be. If the funds available are not sufficient to meet all the requirements, the Escrow Bank shall apply such funds in the serial order of priority until exhaustion thereof.

**4.4. Application of insurance proceeds**

Notwithstanding anything in this Agreement, the proceeds from all insurance claims, except life and injury, shall be deposited into and/or credited to the Escrow Account and utilized for any necessary repair, reconstruction, reinstatement, replacement, improvement, delivery or installation of the Project, and the balance remaining, if any, shall be applied in accordance with the provisions contained in this behalf in the Financing Agreements.

**4.5. Withdrawals during Suspension**

Notwithstanding anything to the contrary contained in this Agreement, the Authority may exercise all or any of the rights of the Concessionaire during the period of Suspension under Article 36 of the Concession Agreement. Any instructions given by the Authority to the Escrow Bank during such period shall be complied with as if such instructions were given by the Concessionaire under this Agreement and all actions of the Authority hereunder shall be deemed to have been taken for and on behalf of the Concessionaire.

**5. OBLIGATIONS OF THE ESCROW BANK**

**5.1. Segregation of funds**

Monies and other property received by the Escrow Bank under this Agreement shall, until used or applied in accordance with this Agreement, be held by the Escrow Bank in trust for the purposes for which they were received, and shall be segregated from other funds and property of the Escrow Bank.

**5.2. Notification of balances**

7 (seven) business days prior to each Payment Date (and for this purpose the Escrow Bank shall be entitled to rely on an affirmation by the Concessionaire and/or the Lenders' Representative as to the relevant Payment Dates), the Escrow Bank shall notify the Lenders' Representative of the



balances in the Escrow Account and Sub-Accounts as at the close of business on the immediately preceding business day.

**5.3. Communications and notices**

In discharge of its duties and obligations hereunder, the Escrow Bank:

- a. may, in the absence of bad faith or gross negligence on its part, rely as to any matters of fact which might reasonably be expected to be within the knowledge of the Concessionaire upon a certificate signed by or on behalf of the Concessionaire;
- b. may, in the absence of bad faith or gross negligence on its part, rely upon the authenticity of any communication or document believed by it to be authentic;
- c. shall, within 5 (five) business days after receipt, deliver a copy to the Lenders' Representative of any notice or document received by it in its capacity as the Escrow Bank from the Concessionaire or any other person hereunder or in connection herewith; and
- d. shall, within 5 (five) business days after receipt, deliver a copy to the Concessionaire of any notice or document received by it from the Lenders' Representative in connection herewith.

**5.4. No set off**

The Escrow Bank agrees not to claim or exercise any right of set off, banker's lien or other right or remedy with respect to amounts standing to the credit of the Escrow Account. For the avoidance of doubt, it is hereby acknowledged and agreed by the Escrow Bank that the monies and properties held by the Escrow Bank in the Escrow Account shall not be considered as part of the assets of the Escrow Bank and being trust property, shall in the case of bankruptcy or liquidation of the Escrow Bank, be wholly excluded from the assets of the Escrow Bank in such bankruptcy or liquidation.

**5.5. Regulatory approvals**

The Escrow Bank shall use its best efforts to procure, and thereafter maintain and comply with, all regulatory approvals required for it to establish and operate the Escrow Account. The Escrow Bank represents and warrants that it is not aware of any reason why such regulatory approvals will not ordinarily be granted to the Escrow Bank.

**6. ESCROW DEFAULT**

**6.1. Escrow Default**

**6.1.1.** Following events shall constitute an event of default by the Concessionaire (an "Escrow Default") unless such event of default has occurred as a result of Force Majeure or any act or omission of the Authority or the Lenders' Representative:

- a. the Concessionaire commits breach of this Agreement by failing to deposit any receipts into the Escrow Account as provided herein and fails to cure such breach by depositing the same into the Escrow Account within a Cure Period of 5 (five) business days;
- b. the Concessionaire causes the Escrow Bank to transfer funds to any account of the Concessionaire in breach of the terms of this Agreement and fails to cure such breach by depositing the relevant funds into the Escrow Account or any Sub-Account in which such transfer should have been made, within a Cure Period of 5 (five) business days; or
- c. the Concessionaire commits or causes any other breach of the provisions of this Agreement and fails to cure the same within a Cure Period of 5 (five) business days.



- 6.1.2. Upon occurrence of an Escrow Default, the consequences thereof shall be dealt with under and in accordance with the provisions of the Concession Agreement.

## 7. TERMINATION OF ESCROW AGREEMENT

### 7.1. Duration of the Escrow Agreement

This Agreement shall remain in full force and effect so long as any sum remains to be advanced or is outstanding from the Concessionaire in respect of the debt, guarantee or financial assistance received by it from the Senior Lenders, or any of its obligations to the Authority remain to be discharged, unless terminated earlier by consent of all the Parties or otherwise in accordance with the provisions of this Agreement.

### 7.2. Substitution of Escrow Bank

The Concessionaire may, by not less than 45 (forty five) days prior notice to the Escrow Bank, the Authority and the Lenders' Representative, terminate this Agreement and appoint a new Escrow Bank, provided that the new Escrow Bank is acceptable to the Lenders' Representative and arrangements are made satisfactory to the Lenders' Representative for transfer of amounts deposited in the Escrow Account to a new Escrow Account established with the successor Escrow Bank. The termination of this Agreement shall take effect only upon coming into force of an Escrow Agreement with the substitute Escrow Bank.

### 7.3. Closure of Escrow Account

The Escrow Bank shall, at the request of the Concessionaire and the Lenders' Representative made on or after the payment by the Concessionaire of all outstanding amounts under the Concession Agreement and the Financing Agreements including the payments specified in Clause 4.2, and upon confirmation of receipt of such payments, close the Escrow Account and Sub-Accounts and pay any amount standing to the credit thereof to the Concessionaire. Upon closure of the Escrow Account hereunder, the Escrow Agreement shall be deemed to be terminated.

## 8. SUPPLEMENTARY ESCROW AGREEMENT

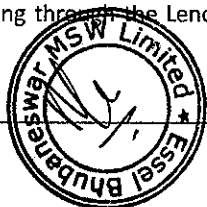
### 8.1. Supplementary escrow agreement

The Lenders' Representative and the Concessionaire shall be entitled to enter into a supplementary escrow agreement with the Escrow Bank providing, inter alia, for detailed procedures and documentation for withdrawals from Sub-Accounts pursuant to Clause 4.1.1 and for matters not covered under this Agreement such as the rights and obligations of Senior Lenders and lenders of Subordinated Debt, investment of surplus funds, restrictions on withdrawals by the Concessionaire in the event of breach of this Agreement or upon occurrence of an Escrow Default, procedures relating to operation of the Escrow Account and withdrawal therefrom, reporting requirements and any matters incidental thereto; provided that such supplementary escrow agreement shall not contain any provision which is inconsistent with this Agreement and in the event of any conflict or inconsistency between provisions of this Agreement and such supplementary escrow agreement, the provisions of this Agreement shall prevail.

## 9. INDEMNITY

### 9.1. General indemnity

- 9.1.1. The Concessionaire will indemnify, defend and hold the Authority, Escrow Bank and the Senior Lenders, acting through the Lenders' Representative, harmless against any and all proceedings,



actions and third party claims for any loss, damage, cost and expense arising out of any breach by the Concessionaire of any of its obligations under this Agreement or on account of failure of the Concessionaire to comply with Applicable Laws and Applicable Permits.

9.1.2. The Authority will indemnify, defend and hold the Concessionaire harmless against any and all proceedings, actions and third party claims for any loss, damage, cost and expense arising out of failure of the Authority to fulfill any of its obligations under this Agreement materially and adversely affecting the performance of the Concessionaire's obligations under the Concession Agreement or this Agreement other than any loss, damage, cost and expense arising out of acts done in discharge of their lawful functions by the Authority, its officers, servants and agents.

9.1.3. The Escrow Bank will indemnify, defend and hold the Concessionaire harmless against any and all proceedings, actions and third party claims for any loss, damage, cost and expense arising out of failure of the Escrow Bank to fulfill its obligations under this Agreement materially and adversely affecting the performance of the Concessionaire's obligations under the Concession Agreement other than any loss, damage, cost and expense, arising out of acts done in discharge of their lawful functions by the Escrow Bank, its officers, servants and agents.

9.2. Notice and contest of claims

In the event that any Party hereto receives a claim from a third party in respect of which it is entitled to the benefit of an indemnity under Clause 9.1 or in respect of which it is entitled to reimbursement (the "Indemnified Party"), it shall notify the other Party responsible for indemnifying such claim hereunder (the "Indemnifying Party") within 15 (fifteen) days of receipt of the claim and shall not settle or pay the claim without the prior approval of the Indemnifying Party, which approval shall not be unreasonably withheld or delayed. In the event that the Indemnifying Party wishes to contest or dispute the claim, it may conduct the proceedings in the name of the Indemnified Party and shall bear all costs involved in contesting the same. The Indemnified Party shall provide all cooperation and assistance in contesting any claim and shall sign all such writings and documents as the Indemnifying Party may reasonably require.

10. DISPUTE RESOLUTION

10.1. Dispute resolution

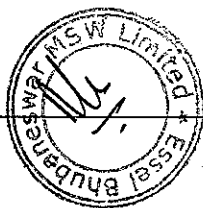
10.1.1. Any dispute, difference or claim arising out of or in connection with this Agreement, which is not resolved amicably, shall be decided finally by reference to arbitration to a Board of Arbitrators comprising one nominee of each Party to the dispute, and where the number of such nominees is an even number, the nominees shall elect another person to such Board. Such arbitration shall be held in accordance with the Rules of Arbitration of the International Centre for Alternative Dispute Resolution, New Delhi (the "Rules") or such other rules as may be mutually agreed by the Parties, and shall be subject to the provisions of the Arbitration and Conciliation Act, 1996.

10.1.2. The Arbitrators shall issue a reasoned award and such award shall be final and binding on the Parties. The venue of arbitration shall be Delhi and the language of arbitration shall be English.

11. MISCELLANEOUS PROVISIONS

11.1. Governing law and jurisdiction

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



11.2. Waiver of sovereign immunity

The Authority unconditionally and irrevocably:

- a. commercial acts done and performed for commercial purpose;
- b. agrees that, should any proceedings be brought against it or its assets, property or revenues in any jurisdiction in relation to this Agreement or any transaction contemplated by this Agreement, no immunity (whether by reason of sovereignty or otherwise) from such proceedings shall be claimed by or on behalf of the Authority with respect to its assets;
- c. waives any right of immunity which it or its assets, property or revenues now has, may acquire in the future or which may be attributed to it in any jurisdiction; and
- d. consents generally in respect of the enforcement of any judgement or award against it in any such proceedings to the giving of any relief or the issue of any process in any jurisdiction in connection with such proceedings (including the making, enforcement or execution against it or in respect of any assets, property or revenues whatsoever irrespective of their use or intended use of any order or judgement that may be made or given in connection therewith).

11.3. Priority of agreements

In the event of any conflict between the Concession Agreement and this Agreement, the provisions contained in the Concession Agreement shall prevail over this Agreement.

11.4. Alteration of terms

All additions, amendments, modifications and variations to this Agreement shall be effectual and binding only if in writing and signed by the duly authorized representatives of the Parties.

11.5. Waiver

11.5.1. Waiver by any Party of a default by another Party in the observance and performance of any provision of or obligations under this Agreement:

- a. shall not operate or be construed as a waiver of any other or subsequent default hereof or of other provisions of or obligations under this Agreement;
- b. shall not be effective unless it is in writing and executed by a duly authorized representative of the Party; and
- c. shall not affect the validity or enforceability of this Agreement in any manner.

11.5.2. Neither the failure by any Party to insist on any occasion upon the performance of the terms, conditions and provisions of this Agreement or any obligation thereunder nor time or other indulgence granted by any Party to another Party shall be treated or deemed as waiver of such breach or acceptance of any variation or the relinquishment of any such right hereunder.

11.6. No third party beneficiaries

This Agreement is solely for the benefit of the Parties and no other person or entity shall have any rights hereunder.

11.7. Survival

11.7.1. Termination of this Agreement:

- a. shall not relieve the Parties of any obligations hereunder which expressly or by implication survive 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.

11.7.2. All obligations surviving the cancellation, expiration or termination of this Agreement shall only survive for a period of 3 (three) years following the date of such termination or expiry of this Agreement.

11.8. Severability

If for any reason whatever any provision of this Agreement is or becomes invalid, illegal or unenforceable or is declared by any court of competent jurisdiction or any other 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 will negotiate in good faith with a view to agreeing to one or more provisions which may be substituted for such invalid, unenforceable or illegal provisions, as nearly as is practicable to such invalid, illegal or unenforceable provision. Failure to agree upon any such provisions shall not be subject to dispute resolution under Clause 10.1 of this Agreement or otherwise.

11.9. Successors and assigns

This Agreement shall be binding on and shall inure to the benefit of the Parties and their respective successors and permitted assigns.

11.10. Notices

All notices or other communications to be given or made under this Agreement shall be in writing and shall either be delivered personally or sent by courier or registered post with an additional copy to be sent by facsimile or e-mail. The address for service of each Party, its facsimile number or e-mail are set out under its name on the signing pages hereto. A notice shall be effective upon actual receipt thereof, save that where it is received after 5.30 (five thirty) p.m. on a business day, or on a day that is not a business day, the notice shall be deemed to be received on the first business day following the date of actual receipt. Without prejudice to the foregoing, a Party giving or making a notice or communication by facsimile or e-mail shall promptly deliver a copy thereof personally, or send it by courier or registered post to the addressee of such notice or communication. It is hereby agreed and acknowledged that any Party may by notice change the address to which such notices and communications to it are to be delivered or mailed. Such change shall be effective when all the Parties have notice of it.

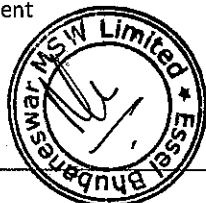
11.11. Language

All notices, certificates, correspondence and proceedings under or in connection with this Agreement shall be in English.

11.12. Authorized representatives

Each of the Parties shall, by notice in writing, designate their respective authorized representatives through whom only all communications shall be made. A Party hereto shall be entitled to remove and/or substitute or make fresh appointment of such authorized representative by similar notice.

11.13. Original Document



  
Municipal Commissioner  
Bhubaneswar Municipal Corporation

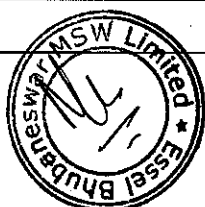


This Agreement may be executed in four counterparts, each of which when executed and delivered shall constitute an original of this Agreement.

**IN WITNESS WHEREOF THE PARTIES HAVE EXECUTED AND DELIVERED THIS AGREEMENT AS OF THE DATE FIRST ABOVE WRITTEN.**

THE COMMON SEAL OF CONCESSIONAIRE has been affixed pursuant to the resolution passed by the Board of Directors of the Concessionaire at its meeting held on the ..... day of 20..... hereunto affixed in the presence of ....., Director, who has signed these presents in token thereof and ....., Company Secretary / Authorized Officer who has countersigned the same in token thereof \$:	SIGNED, SEALED AND DELIVERED  For and on behalf of  SENIOR LENDERS by the  Lenders' Representative:  (Signature) .
--	--

(Name) (Designation) (Address) (Fax No.) (e-mail address)	
SIGNED, SEALED AND	SIGNED, SEALED AND
DELIVERED	DELIVERED
For and on behalf of	For and on behalf of
ESCROW BANK by:	Bhubaneswar Municipal Corporation by:
(Signature)	(Signature)
(Name)	(Name)
(Designation)	The Municipal Commissioner,
(Address)	Vivekananda Marg, Bhubaneswar - 751014
(Fax No.)	Fax No. 0674-2432895
In the presence of:	
1.	2.



**Municipal Commissioner**  
**Bhubaneswar Municipal Corporation**

## 21. Calculation and Payment of Tipping Fee

### 1. Calculation of Tipping Fee

The Tipping Fee for a particular month would be calculated using the formula given below:

$$A_n = Q_n \times T_Y$$

Where,

$A_n$  = Tipping Fee Amount for month n

$Q_n$  = Quantity of MSW supplied at the input of the Transfer Stations during the month N

$T_Y$  = Tipping Fee rate applicable for the corresponding year

(Please note that for the purpose of calculation of Tipping fee, if during any month the daily average quantity of MSW supplied for that month by BMC is less than the minimum quantity specified for the year as per Schedule 22 of this Agreement, the minimum quantity would be considered as the daily quantity for each day of the month for calculation of total MSW supplied in the month)

### 2. Calculation of Tipping Fee rate applicable for the year

The Tipping Fee rate for a particular year would be calculated using the following formula:

$$T_n = T_0 \times (1+5\%)^n$$

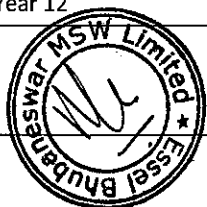
Where,

$T_n$  = Tipping Fee rate applicable for the year n

$T_0$  = Rs. 324/- (Rupees three hundred and twenty four only)

To clarify, the Tipping Fee would be paid in accordance with the following table

Sr. No.	Year after COD	Tipping Fee per Tonne
1	Year 1	$T_0$
2	Year 2	$T_0 \times 1.05$
3	Year 3	$T_0 \times 1.10$
4	Year 4	$T_0 \times 1.16$
5	Year 5	$T_0 \times 1.22$
6	Year 6	$T_0 \times 1.28$
7	Year 7	$T_0 \times 1.34$
8	Year 8	$T_0 \times 1.41$
9	Year 9	$T_0 \times 1.48$
10	Year 10	$T_0 \times 1.55$
11	Year 11	$T_0 \times 1.63$
12	Year 12	$T_0 \times 1.71$



Sr. No.	Year after COD	Tipping Fee per Tonne
13	Year 13	$T_0 \times 1.80$
14	Year 14	$T_0 \times 1.89$
15	Year 15	$T_0 \times 1.98$
16	Year 16	$T_0 \times 2.08$
17	Year 17	$T_0 \times 2.18$
18	Year 18	$T_0 \times 2.29$
19	Year 19	$T_0 \times 2.41$
20	Year 20	$T_0 \times 2.53$

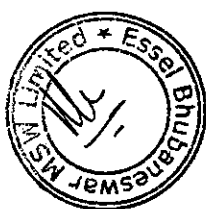


  
Municipal Commissioner  
Bhubaneswar Municipal Corporation

## 22. Daily Obligated Waste Quantities

The following table presents the Daily Obligated Waste Quantities for each year during the Concession Period:

S. No.	Year	Daily Obligated Waste Quantity (MT per day) - BMC	Daily Obligated Waste Quantity (MT per day) - Cuttack Municipal Corporation
1.	2013	Construction Period	Construction Period
2.	2014	334.00	122.40
3.	2015	345.79	125.64
4.	2016	375.89	135.40
5.	2017	387.17	138.98
6.	2018	398.78	142.65
7.	2019	410.75	146.42
8.	2020	423.07	150.28
9.	2021	448.89	161.97
10.	2022	453.60	166.24
11.	2023	458.36	170.64
12.	2024	463.18	175.14
13.	2025	468.04	179.77
14.	2026	496.60	193.74
15.	2027	501.82	198.86
16.	2028	507.08	204.25
17.	2029	512.41	209.78
18.	2030	517.79	215.47
19.	2031	549.39	232.37
20.	2032	555.16	238.67



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## 23. Terms of Reference for Environment and Social Impact Assessment

### 1. Project Description and Objectives

The Housing and Urban Development Department (H&UDD), Government of Odisha (GoO), is taking steps to improve the solid waste management (SWM) services for Bhubaneswar Municipal Corporation (BMC) and Cuttack Municipal Corporation (CMC). Currently BMC and CMC have partly outsourced collection and transportation of municipal solid waste ("MSW"). At present BMC and CMC, do not have any waste processing and engineered landfill for scientific disposal of waste.

In order to develop a solid waste management system including tertiary transportation, BMC and CMC envisages the development of a Regional treatment and disposal facility on a PPP basis ("Project") in compliance with the MSW Rules, 2000, under the aegis of the Environment (Protection) Act 1986. The H&UDD has allotted a land at Bhuasuni village, at distance of approximately 19 km from city has been earmarked for development of the waste processing and disposal facility.

H&UDD now desires to undertake an Environmental and Social Impact Assessment (ESIA) Study for the proposed waste processing and disposal facility at Bhuasuni. in conformance with Indian regulatory requirements and obtain the necessary prior Environmental Clearance in line with EIA Notification, 2006. The ESIA Study will also conform to relevant requirements specified KfW Sustainability Guidelines, January 2011.

### 2. Scope of Work

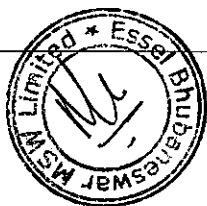
All Common Municipal Solid Waste Management Facilities (CMSWMF) " listed under project/activity 7(i) of the EIA Notification, 2006 have been classified as Category "B" projects and are required to obtain prior Environmental Clearance (EC) from the concerned State Environmental Impact Assessment Authority (SEIAA) through submission of prescribed application. Technical Guidance Manual for CMSWMF, has been published by MoEF, GoI in September 2010 which highlights operational aspects of the EIA with model Terms of Reference (TOR) specific to CMSWMF. The TOR presented below is based on the guidelines presented under Clause 4.3.6 of this Manual. Besides the Concessionaire is also expected to comply with following framework documents and their requirements while undertaking the ESIA process:

- Chapter 4 - Operational aspects of EIA, Technical Guidance Manual for CMSWMF, September 2010, MoEF in GoI
- Terms of Reference (TOR) to be issued by SEIAA/MoEF when concessionaire approaches them for Environmental Clearance (EC) for the project under EIA Notification, 2006
- KfW Sustainability Guidelines, January 2011; and
- Manual on MSW Management, May 2000 published by MoUD in GoI.

It is to be mentioned here that the concessionaire must carry out individual ESIA study for new project proposed Bhuasuni site. The ESIA study must be undertaken concurrently before the construction work is initiated and comply with the requirements of the aforementioned framework guidelines.

ToR for ESIA studies in respect of the proposed Regional Municipal Solid Waste (MSW) processing and disposal facility at Bhuasuni may include, but not limited to the following:

Executive Summary



*[Signature]*  
Municipal Commissioner  
Bhubaneswar Municipal Corporation

1. Executive Summary of the project providing a *prima facie* idea of the objectives of the proposal, use of resources, justification, etc. In addition, it should provide a compilation of EIA Report including EMP and the post-project monitoring plan in brief.

#### **Project Description**

---

2. Justification for selecting the design period and capacities of waste processing facility (recovery, treatment and disposal).
3. Land requirement for the project including its break up for various purposes, its availability and optimization.
4. Details on each unit in the facility describing its operations.
5. Details on the waste collection system – compliance to the statutory requirements and description of proposed operations
6. Details on site investigations – topographical surveys, geotechnical investigations (soil bearing capacity, permeability, etc).
7. Details on proposed protocol for waste acceptance (systems for sampling, parameters, analysis methods, time lags, number of people, qualifications, manifest systems, etc.)
8. Details of the proposed solid waste management system covering the following<sup>3</sup>:
  - Coverage area for collection of MSW specifying population covered
  - Climate and rainfall data
  - Expected quantity of municipal solid waste generated (based on population or actual survey of waste quantity)
  - Quantity of MSW actually collected (average figure)
  - Details on seasonal variation on figures for actual collection
  - Physical and chemical characteristics of MSW
  - Methodology for collection of MSW
  - Methodology for street sweeping and drain cleaning
  - Transportation of MSW – type of vehicles, frequency of transportation, distance of transportation
  - Details on existing accumulated MSW at disposal sites
  - Details on protocol for scientific renovation of existing landfill/disposal sites or scientific capping of landfills. Provide findings of the field investigations on possible contamination, etc. engineering designs and specifications
  - Ultimate disposal of the waste – details of the methodology of disposal including life span and design of the proposed site
  - Details on proposed recovery, treatment and disposal mechanism.

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<sup>3</sup> Components of the SWM value chain which are not in the scope of the concessionaire shall be prepared in conjunction with the BMC and CMC



- Details on the chosen waste treatment process / technology and its compliance with applicable law (MSW Rules 2000)
  - Details on process flow diagram and specific operational features
  - List of plant and equipment to be set up and vehicles to be used with clear description of their environmental implication (emission, noise level, dust level, leachate generation, etc.)
  - Details of infrastructure facilities including storm water drainage
  - Source of water and electric power
  - Precaution for avoiding unwanted material such as bio-medical waste
  - Details of safety measures for health and environment
  - Quality of compost to be produced and arrangements for marketing of compost
9. A site for setting up the new MSW facility has been identified, the concessionaire is expected to, as part of ESIA process to check compliance to stringent siting criteria defined in any of the following framework documents:
- Schedule III of MSW Rules, 2000 and
  - Guidelines presented under Section 17.4 in the Manual on MSW Management, May 2000, MoUD, GoI
10. Details on laboratory facilities for routine sampling and statement on adequacy including proposal for accreditation, etc.
11. Details of MSW storage facilities – capacities, operating practices, compliance with statutory requirements and description of proposed operating practices
12. Internal transportation mechanisms for MSW
13. Specific details on leachate generation rates, collection, treatment and disposal
14. Details of the landfill operation – filling, layers, equipment, compaction levels, crosschecking mechanism, stability considerations, troubleshooting mechanism, etc.
15. Details of proposed monitoring wells, locations, frequency of monitoring, parameters etc.
16. Proposed financial model, creation of fund for future liabilities till 15 years of post-closure including monitoring, etc.
17. Firefighting, safety and health protection measure in the project design and operations

#### **Description of Regulatory Framework Applicable to Project**

18. Describe the regulatory framework applicable to the Project in respect of
- Indian/Orissa State/Bhubaneswar and Cuttack Municipal/Local Panchayat Policies and Regulations
  - KfW Sustainability Guidelines, January 2011

#### **Description of the Environment**

19. The study area shall specifically comprise of 2 separate areas up to a distance of 5 km from the boundary of the existing and proposed project sites.



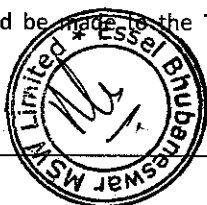
Concession Agreement

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20. Maps indicating the location of proposed MSW facility and existing open dumpsite, township and nearest villages, industries and distance from the facility shall be included.
21. Location of the project sites, nearest habitats as well as landfill to be demarcated on the topo sheet (1:50000 scale).
22. Land-use for the study area based on satellite imagery including location of specific sensitivities
23. Topography details of the project areas.
24. Demography details of all the villages (population, list of existing industries, etc.) falling within study area.
25. Baseline data of the study area w.r.t. different components of environment viz air, noise, water, soil, land, biology and socio-economics shall be collected. Actual monitoring and field studies on baseline environmental components shall be strictly according to requirements specified in the ToR issued for this project by SEIAA/MoEF and Chapter 4 - Operational aspects of EIA, Technical Guidance Manual for CMSWMF, September 2010, MoEF in GoI
26. One complete season Ambient Air Quality (AAQ) data (except monsoon) to be given along with dates of monitoring. The parameters to be covered shall include PM10, PM2.5, SO<sub>2</sub>, NO<sub>x</sub>, CH<sub>4</sub>, Fly Index Test, etc. The location of the monitoring station should be so decided to take into consideration the predominant downwind direction, population zone and sensitive receptors. There should be at least one monitoring station in the upwind direction and one in downwind direction where maximum GLC is likely to fall.
27. One season site-specific meteorological data
28. Surface water quality of nearby water sources and other surface drains shall be ascertained
29. Geological features and geo-hydrological status of the facility are essential
30. Details on groundwater such as water depth, water quality, drainage pattern, yield potential, etc.
31. Details on ecological status (Terrestrial and Aquatic) such as habitat type and quality, species, diversity, rarity, fragmentation, ecological linkage, age, abundance, etc.
32. Details on noise levels at sensitive/commercial receptors.
33. If any incompatible land use attributes fall within 5 Km radius of the project boundary, the sensitivity (distance, area and significance) of the same shall be described and additional points proposed based on significance for review and acceptance by the State Expert Appraisal Committee (SEAC) / Expert Appraisal Committee (EAC) of Ministry of Environment and Forest (MoEF). The list of incompatible land-use attributes can be referred from Clause 4.3.6 of the Technical Guidance Manual for CMSWMF
34. If ecologically sensitive attributes fall within the study area, the sensitivity (distance, area and significance) of the same shall be described and additional points proposed based on significance for review and acceptance by the SEAC/EAC. The general list of ecological sensitive attributes can be referred from Clause 4.3.6 of the Technical Guidance Manual for CMSWMF

#### **Anticipated Environmental Impacts and Mitigation Measures**

35. All anticipated environmental impacts of significance due to the proposed project should be assessed and adequate measures should be considered for mitigation of the impacts. Appropriate reference in this regard should be made to the Technical EIA Guidance Manual for Common Municipal SWM





Facilities of MoEF and all points specified in the ToR issued by State Environmental Impact Assessment Authority (SEIAA)/MoEF for this project should be adequately addressed.

36. Assessment of Impacts and Risks on Environment, Society and Climate and formulation of safeguards and mitigation measures that may need to be considered will be consistent with requirements under KfW Sustainability Guidelines.
37. While identifying the likely impacts, the following shall also be included for analysis of significance and required mitigation measures:
  - Impacts due to transportation of waste and transport system
  - Impacts due to leachate generation on groundwater, drainage and surroundings
  - Impacts due to breeding of vectors
  - Impacts on community health effects
  - Impact on drainage of the area and surrounding
  - Impacts due to fire hazards in waste dump
  - Impacts due to noise
38. Impact on AAQ due to the MSW facility. Details of the model used and input parameters for modeling. Also wind rose diagrams to be demarcated on the map.
39. Proposed measures for occupational safety and health of the workers and community health impacts, if any
40. Scheme for storm water management within and around the proposed facility
41. Details on impact of landfill gases and its preventive measures
42. Action plan for greenbelt development including the details of species, width of plantation, planning schedule, etc.

#### **Analysis of Alternatives**

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1. Alternative sites considered and Technologies explored
2. Other alternatives (such as in construction methods, materials, manpower deployment, site layout etc) considered
3. Justification for choosing the environmentally sustainable one among the alternatives discussed

#### **Environmental Monitoring Program**

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4. Monitoring of qualitative environmental parameters at source
5. Monitoring of pollutants at receiving environment for all the appropriate notified parameters for air quality, groundwater, surface water, soil, etc.
6. Specific programme to monitor safety and health protection of workers. Specific reference to improving rag pickers quality of life, health concerns, etc.
7. Programme for monitoring of pathogenic density and fly index test.
8. Appropriate monitoring network has to be designed and proposed for regulatory compliance and, to assess the possible residual impacts



9. Yearly monitoring of the ground water quality in and around the MSW facility to record fluctuations and to report.
10. Details of in-house monitoring capabilities and the recognized agencies proposed for conducting the monitoring.

#### **Additional Studies**

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11. Details on risk assessment and damage control during different phases of the project and proposed safeguard measures
12. Enumeration survey for all existing rag-pickers in the existing system and developing a Livelihood restoration plan for them
13. Plan for integration of the private / casual workforce presently associated with the current SWM practices into the Project or alternatively a plan for their livelihood restoration (including capacity / skill building)
14. Grazing land restoration plan at Bhuasuni site
15. Detailed plans for any other project affected stakeholder concerns
16. Details on welfare measures for personnel involved in MSW collection and processing including health checkups
17. Climate change assessment/climate proofing of project activities/assessment of CDM potential for project activities as required under KfW Sustainability Guidelines, January 2011.
18. Details on socio-economic development activities such as commercial property values, generation of jobs, education, social conflicts, cultural status, accidents, etc.
19. Proposed plan to handle the socio-economic influence on the local community. The plan should include quantitative dimension as far as possible.
20. Points identified in the public hearing and commitment of the project proponent to the same. Detailed action plan addressing the issues raised, and the details of necessary allocation of funds.

#### **Environmental and Social Management Plan**

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21. An Environmental and Social Management Plan (ESMP) shall be drawn up to integrate all safeguards/mitigation/management measures/action plans identified through the ESIA process. The ESMP shall comprehensively describe all measures that need to be taken to avert, mitigate, offset and monitor any negative consequences that have been identified by the ESIA
22. The ESMP shall include a post-project monitoring programme to ensure compliance with the approved management plan including administrative and technical organizational structure
23. ESMP shall include a budget (item-wise cost) for its implementation (capital and recurring costs).
24. ESMP shall include allocation of resources and responsibilities for plan implementation
25. Details of the emergency preparedness plan and disaster management plan shall be included as part of the ESMP

Above points shall be addressed in the ESIA Report at corresponding chapters, in addition to the contents given in the reporting structure specified under the EIA Notification, 2006. In addition all issues raised in the specific ToR issued by SEIAA/MoEF for this project shall be duly addressed in the ESIA Report.



## 24. Process of Bio-remediation of old accumulated MSW at the proposed processing & Sanitary Landfill Site

### Objective

The BMC has been disposing off MSW collected from the city at the newly acquired site at Bhuasuni which meant for establishment of scientific MSW processing and disposal facility. A part of quarry (mined area) has been occupied by dumping of the MSW. This needs to be properly treated through bio remediation process to clean up the site for use as engineered SLF.

### Time schedule for bio remediation

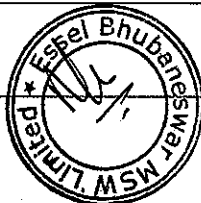
Since large enough vacant area with elevation is available for setting of Processing Plant and required infrastructure, the Concessionaire can consider remediation work about 3 (three) months before Commissioning of the Processing Facility but not later than 3 (three) months after Project Commissioning. This is important as process remnants are to be disposed off in SLF in Synchronization with the Plant Commissioning.

### Use of bio-remediated materials

- At least 80% of the reclaimed land is to be used for construction of SLF.
- Bio earth (compost like material) can be used for creation of green space and landscaping.
- Combustible materials should be sorted out and stocked separately after proper densification for its use during the process of RDF/ or recycling.
- Non usable inert should be land filled along with process remnants.

### Schedule of Operation for bio remediation work

Sr No	Activity	Requirement	Remarks
01	Sanitization treatment for control of bad odors, pathogens and insect vectors	Use of herbal or biological products as pre conditioning treatment	Important for safety workers and surroundings
02	Proper stacking of heaps by control emplacement	Leveling and slope stabilization, Drain out seepage into holding Pond to prevent water pollution	Confinement of waste in lesser area
03	Induction of bio thermal cycle to achieve exothermic ( $> 55^{\circ}\text{C}$ ) temp.	Dosing of bio inoculants in layer by layer treatment followed by 12 to 15 days resident time	This will enable easy separation of bio earth and recyclables
04	Physical separation of usable materials	Use of light weight cage drums/ trommel	Prevention of material loss



Sr No	Activity	Requirement	Remarks
		material separation	
05	Consolidation of recovered materials	The low density high volume materials must be compacted to around 600 Kg/m <sup>3</sup>	For easy stocking
06	Receive and treat incoming MSW during project construction phase	Completion of windrow platform on priority so that crude dumping of MSW is avoided at the earliest	Suitable arrange for cost sharing can be made in consultation with Govt Authorities
07	Convert at least one SLF cell equivalent (mined area) into water harvesting Pond	Make use of already digged out quarry for water storage	Use this water for construction and site Greenification
08	Any other action specific to the site	Include in the action plan	Systematic approach



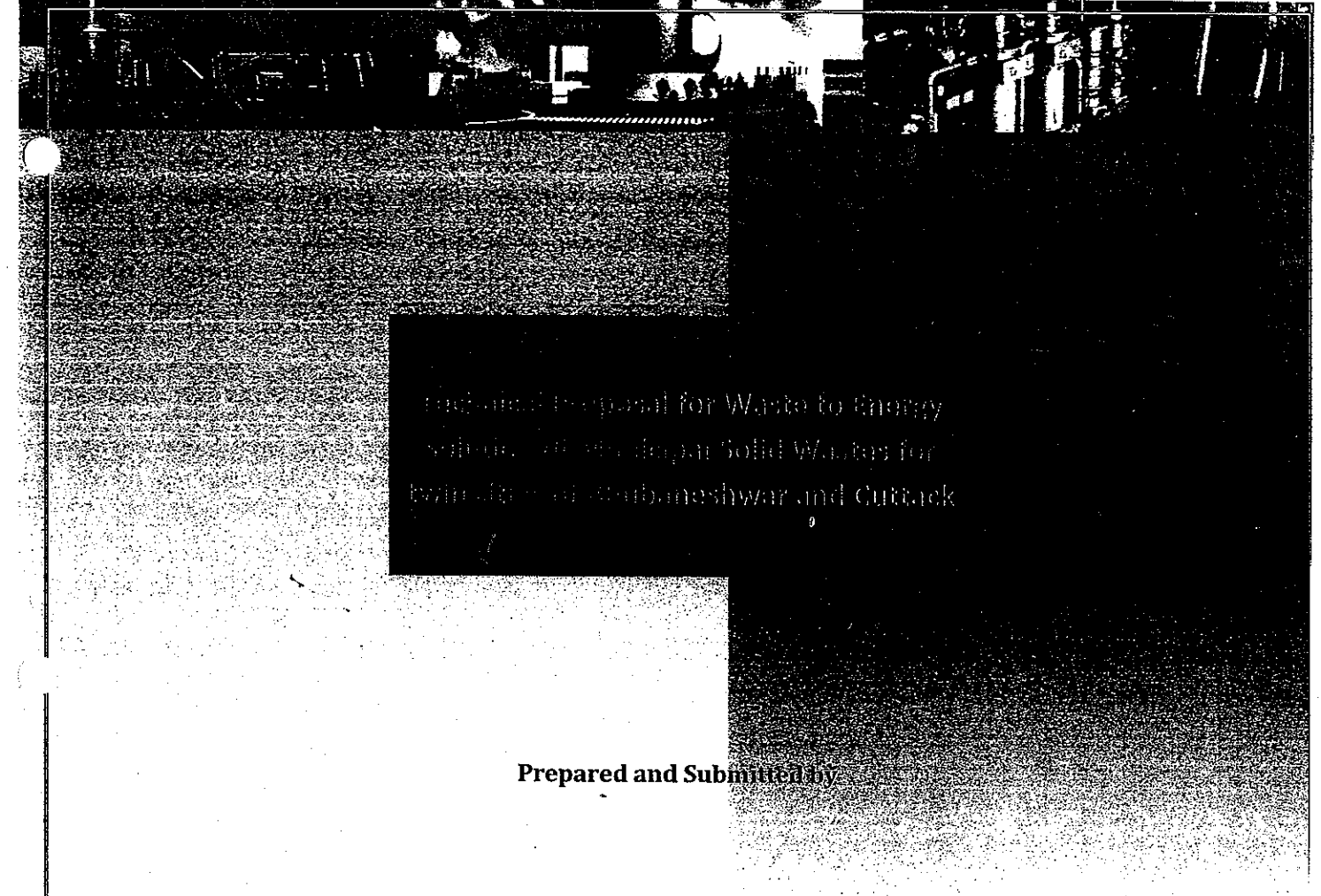
  
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**25. Technical Proposal of the Concessionaire**



  
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## Appendix VII Annexure III Proposed Approach and Methodology



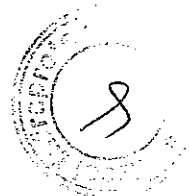
Technical Proposal for Waste to Energy  
Subsidy of Municipal Solid Waste for  
Twin Cities of Bhubaneswar and Cuttack

Prepared and Submitted by

**ESSEL INFRAPROJECTS LTD - ROCHEM SEPARATION SYSTEMS (I) PVT. LTD. CONSORTIUM**

**CONFIDENTIALITY**

This document is being submitted by Essel Infraprojects Ltd - Rochem Separation Systems (I) Pvt. Ltd Consortium on the explicit understanding that the contents would not be divulged to any third party without prior written consent from the consortium.







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**PROPOSED ORGANIZATION CHART**





## **Transfer station Technical Features of Transfer Station & Operation Plan**

This includes

- Transfer station –Construction & O&M
- Secondary Transportation (from transfer station to processing plant)

### **Technical Features of Transfer Station & Operation Plan**

By combining the loads of several individual waste collection vehicles into a single large transport vehicle after compaction, cost on the labour and operating cost of transporting the waste to processing facility can be saved. The type of transfer station required will be of simple type i.e. receiving waste from local waste vehicles & then can be compacted into one large semitrailor/ Bulk Refuse Carriers for long distance transportation to the processing facility. The design of transfer station will be done keeping in mind proper platform for waste unloading, weighbridge, ease in compaction, proper lifting arrangement

### **CONTAINERS OF 16 CU.M VOLUMETRIC CAPACITY COMPATIBLE WITH THE HOOK LOADER.**

#### **1. GENERAL DESCRIPTION:-**

The closed top, side loading type containers will be compatible with Hook loader, Portable Compactor as well as stationary compactor to be installed at transfer stations. The container will have rear door opening by ratcheting arrangement for loading refuse at the Transfer Station. They will also have mechanical locking arrangement to lock them with stationery/portable compactor while loading the refuse.

#### **2. TECHNICAL SPECIFICATION:-**

- |                       |                                     |
|-----------------------|-------------------------------------|
| ➤ Volumetric Capacity | 16 Cu.M                             |
| ➤ Floor Plate         | 5 mm reinforced with hollow section |
| ➤ Side Panels         | 3 mm reinforced with hollow section |
| ➤ Rollers             | 2 Nos. rear side                    |
| ➤ Material            | As per BIS 2062                     |

The design of container shall be compatible to the Hook Loader with all safety arrangement i.e. locking while tipping etc.

Proper sealing arrangement shall be provided to the container to avoid spillage of garbage & leach ate during transportation.

The container shall have arrangement to collect leach ate formed during compaction and the same shall not spill on road during transportation.

The container shall be painted with anti-corrosive paint from inside & outside.

All the containers shall be numbered for an identification & record purpose.



## **SPECIFICATIONS OF HOOK LOADER**

### **Product Description:**

Truck Mounted Hook Loader , suitable for lifting 15 M<sup>3</sup> capacity container is designed to pick up the loaded or empty Roll on – Roll off containers, transport, dumping of material and thereafter unload the skip containers safely and faster.

The telescopic jib enables proper load distribution on the chassis.

### **Technical Features:**

Designed to handle containers of 15 M<sup>3</sup> capacity. The dumping mode is achieved by operating the main rams, actuating arm and tilting frame, with jib extended, pivoting around the rear shaft.

- A sub-frame made out of bend steel plates and cross members is mounted on the truck chassis frame.
- A tilting frame hinged to the sub frame with a steel shaft carry the rear centering rollers.
- A main arm hinged on the tilting frame with a mechanical locking mechanism allows the dumping mode.
- A telescopic jib, sliding in the arm, supporting a wide-open lifting hook enables loading of container.

### **Hydraulic Specifications:**

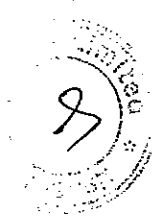
Pump	-	Axial piston, 7-9 GPM @ 1,500 RPM
Controls	-	low pressure hydraulic – Manual
Hydraulic Tank	-	100 Liters
Filter	-	10 micron, return line with replaceable cartridge

Arm cylinders (lift cylinders) - 2 Nos., double acting, equipped with counter balance valves and built in by pass valves.

Jib cylinder (slide cylinders) – 1 No. Double acting, equipped with built in counter balance valve Hoses, tubes & fittings.

### **SAFETY DEVICES**

- Safety valve prevents jib operation during  
dump Mode
- Automatic locks on arm
- Slide through container catches



## TECHNICAL SPECIFICATION

### 1.0 STATIC REFUSE COMPACTOR

1.1 The offered Transfer Station is suitable for compacting medium to heavy duty waste.

#### Specifications

- Compactor in heavy duty design with extra strong sheet thickness and straight single cylinder system
- Hydraulic System comes with regenerative control for faster cycle time
- Fail safe hydraulic ram control without limit switches, press plate comes in low maintenance plastic guides
- Container 75% full warning as standard
- Extra pressure boost and automatically plate positioning for closure operation
- Offered model can be supplied with any type of hopper chute, side or rear loader attachments, left or right hand loadings, or to suit any specific requirements as may be decided during ordering.
- Standard electrical control with Moeller parts, available world wide
- Control Panel with main switch, emergency stop button, function button and function lights
- All, hydraulic functions are controlled via a central, maintenance free valve Hydraulic Unit with oil filter and oil level gauge.
- Manufactured in accordance to EC requirements 89/392/EEG conforming to EC health and safety regulations

Charge box volume approx. 3.34 m<sup>3</sup>

Charge box opening l/w 2000 x 1700 mm

Cycle time 54 sec

Max. throughput per hour 199 cum/hr

Compaction force 380 kN

Boost force 400 kN

Motor 15kW, 3 Phase

Power Supply 400V, 50 Hz, 50A

Overall dimensions	Length 5920 mm x Width 2500mm x height 1500 mm
Weight approx	4850kg
Loading height	1350 mm
Floor, thickness charge box	10 mm
Thickness side of charge box	8mm
<u>Surface treatment</u>	
* All Sheets sandblasted SA 2½	
* 60 µm priming coat	
* 40 µm cover paint	
<u>Manuals and documents</u>	
* Installation manual	
1.2	<u>Hydraulic Compaction Container Coupling</u> Hydraulic Container Coupling which pulls the container to the compactor by means of a centrally mounted connection hook. After filling the device, pushes the container away from the compactor.
1.3	<u>Hydraulic Vertical Locking Mechanism</u> The Container opening is locked by a steel plate move by a hydraulic vertical locking mechanism. After the container is loaded, the locking device mounted on the compactor forces the container's Plate down from above into the press in opening and closes it. The complete Operation is controlled by means of push button.
1.4	<u>Oil Cooler</u> Oil Cooler completely integrated
2.0	<u>Receiving Hopper</u> 20 cum. Storage Hopper shall be provided with each Stationary compactor unit.
3.0	<u>Container Traversing Station</u> Rail Mounted Container change over system for placing empty container and removing loaded container when detached from contact.

## **APPROACH & METHODOLOGY**

### **Approach**

In order to meet the key objectives, our overall approach to undertaking this project will be as below:

- Develop a close and supportive working relationship with the Civic body staff and management.
- Develop a close and cordial relationship and working atmosphere with the officials, residents of the locality.
- Provide up-keeping and maintaining equipment.
- Provide the ideal number of appropriate machineries for unloading the garbage at TS, keeping in mind the Govt. of India Rules on MSW 2000.
- Provide a local office with the best possible staff in terms of experience and as far as possible within or as close as possible to the project area.
- Provide experienced technicians to carry out timely maintenance of equipment to ensure smooth and regular operations.
- Provide sufficient number of spares as stand by to cater to any contingency that may arise.
- Be flexible and develop solutions that fully respond to varying local needs within the service area.
- Understanding and respecting local sentiments.
- Monitor the progress closely through periodic visits by senior personnel of consortium.

### **Methodology**

After studies at the Project Area, we are pleased to submit the following methodology to be adopted by us, in the event of us being appointed contractors for the subject work. However, we would be flexible and look forward to further refining our methodology in partnership with the Civic body's concerned staff.

Note : The numbers of personnel are as defined is standard and may vary during operational phase as per actual requirement.

### **Deployment of our men and machines**

We will deploy collection vehicles with driver and labour to cater to the refuse being collected and ready for disposal in the period beyond our working hours if situation demands.

To program the collection of refuse, we shall hold meetings with officials of Civic body to mutually agree on the time schedule from time to time if required to utilise the fleet with optimum level.

These meetings would be repeated on a regular basis to overcome any shortcomings and would also enable us to provide improved services.

A detailed study of refuse flow patterns and Time-movement plan shall be submitted on actual access and on award of the contract.

Our supervisors will be continuously moving around the service area and will be interacting with the officials to discuss problems with the service being provided. In the event of complaints not being attended to by our supervisors the user will have the choice to register their complaints with our complaint registering centre.

During the transportation process, signatures of some of the users will be obtained on regular basis to establish the proof service rendered.

8



### **TERTIARY TRANSPORTATION PLANNING (FROM TRANSFER STATION TO PROCESSING PLANT)**

With the problem of growing urbanization, municipal bodies have been unable to manage the increased supply of waste generated by an ever-expanding population. In accordance with a Supreme Court ruling, a committee of experts was formed to make guidelines and suggest rules for waste management handling. The findings resulted in the drafting of the Municipal Solid Waste Rules 2000. The rules charged State and local governments with the responsibility for establishing "any infrastructure development for collection, storage, segregation, transportation, processing and disposal of municipal solid wastes,".

To accomplish this, municipal bodies have been ordered to implement regular door-to-door waste collection, promote recycling and waste segregation, provide transportation of waste in closed containers designed to prevent multiple handling of waste materials by labor, and to reduce the strain on landfills by limiting its use to "non-biodegradable inert waste and other waste unsuitable for waste processing." Local bodies are also to provide daily street sweeping to clear the waste produced by shops and markets, and place litterbins every 25 – 250 meters, depending on local requirements, for the easy disposal of wrappers, used cans, and papers.

With the passing of time, it was realized the existing resources of the Municipal Corporation / Councils, it would be difficult to achieve Door to Door Collection & Segregation. It has therefore been decided to accept the Integrated Concept of Primary Collection, Segregation & Secondary Transportation by most of the Urban Local Bodies through Public Private Partnership (PPP) route.

We have developed alternative models for the sustainable management of domestic waste that links household efforts to the services of the municipal bodies. The principle goal of the waste management model is to improve the quality of life in cities by creating an infrastructure that promotes public awareness on the appropriate management of waste, segregating waste during the collection phase, improving the quality of life for street sweepers and mitras (rag pickers), utilizing waste and minimizing the burden of landfills.

- **Secondary collection**

For Market areas, Commercial Complexes etc. 4.5 cubic capacity containers are proposed. Care must be taken as following:

- The container should be placed on cement concrete or asphalt flooring having a gradual slope towards the road to keep the site clean.
- The flooring should be flushed along with the border of the road to maintain hygienic conditions and facilitate the transfer of waste from the hand craft / tricycle in the container.

- **Transportation of Waste**

Transportation of waste is proposed at daily basis. Frequency and number of trips of each transporting vehicle would depend on the quantity, type of waste, number of containers, type of vehicles etc.

- **Vehicle characteristics –**

- All the vehicles will be adequately covered as per MSW Rules 2000.

- We will ensure that all the transport vehicles will move during non peak hours so that the regular traffic is not affected.
- The vehicles will be fitted with GPS system for proper monitoring of the same which will reduce the break down and will ensure efficient transport of MSW from transfer station to the processing site.

### **Deployment of spare vehicles**

In the event of any delay, breakdown or any vehicle being off road for regular servicing, the spare vehicles will be sent for duty immediately. By and large all regular servicing will be undertaken during the free time without causing any interference to the regular service.

### **Communication**

Supervisors would be provided with mobile phones to enable communication with our local Office and Civic body to ensure rapid responses to any contingency.

### **Reporting System**

Reports on the operations will be maintained in a Computerized system and submitted to the Municipality as and when required. Meetings between The Project Manager and key personnel with the Municipality staff will be carried out at regular, mutually agreed intervals to overcome shortcomings and to further improve the services provided.

### **Local Site office**

A site office headed by a Project Manager is available at Civic body which will also act as a Complaint Registering Centre. The Project Manager would have the power to take most of the important decisions in routine matters without having to refer back to the head office at Mumbai. This would ensure faster decision making and action.

### **Complaint Handling Cell :**

Complaints will be received in the cell in person and also through voice communication and electronic media. On receipt of the complaint the same will be stored in the computer. Immediate action will be taken to organize the redressal of the complaint. In case of any delay in attending the complaint the same will be communicated to the complainant. After attending the complaint the confirmation will be given to the party. The complaint is of the serious nature special arrangement will be made to attend to the complaints by deputing the senior staff and the progress report and complaints will be given as the case may be.

### **Benefits of our Approach and Methodology to Civic body**

Our approach will add value to Civic body's Sanitation and Environmental efforts by ensuring rapid mobilization and establishment of an early close working relationship with concerned municipal Staff.

Some of the unique advantages that we will bring to City will include.

- An organization whose constituents have most reliable equipments
- A broad range of experience in Waste Management and a proven track record that demonstrates our ability to deliver and meet the performance expectations.

- A proposed work approach, which we know from experience, maximizes refuse collection & disposal, creates effective functioning of sewers and drains and keeps the roads clean.
- A motivated project team selected from in-house staff with extensive experience in their specialist areas.
- Efforts by ensuring rapid mobilization and establishment of an early close working relationship with concerned municipal Staff.

***Our strength:***

- For this important project, we have ensured that the proposed team of core personnel is from the Solid Waste Management Business, hence, are sure that they will meet the preference of municipality. These personnel have the necessary experience and qualifications to undertake their respective components of this assignment. They have been brought together into a team that has a broad skill base that will enable all aspects of the operations to be under taken.
- The equipments/machineries chosen are very importantly selected which are economical, durable and can sustain the Indian condition of working and environment.
- Our constituents and its associates and group companies have been fortunate to have worked with various Civic bodies. With the benefit of the prior knowledge, we consider ourselves to be very appropriate for fulfilling the role of contractors for the works under the subject above. Furthermore, we believe that our past and on going experience, demonstrate our capability to satisfy municipality's particular needs to the timescales required and to the high quality you would rightly expect.

**ROLES AND RESPONSIBILITY OF PERSONNEL**

**PROJECT MANAGER:** The project shall be headed by the Project Manager who will be based locally. The main job is to see the project is executed efficiently and effectively. He will be responsible for day to day interactions with officials of municipality and to meet them regularly to sort out any problems during the project period.

**ZONAL MANAGER:** The Zonal Manager shall head each zone and shall report to the Project Manager on daily basis. The main function of the Zonal Manager shall be to see the day to day operation at site with controlling the zonal operation staff for optimum utilisation of the vehicles vis a vis PROCESSING of MSW within the schedule.

**DRIVERS:** The trained and skilled drivers shall be allotted the vehicles who will be fully conversant with the operation. They will be trained regularly.

**MAINTENANCE STAFF:** A full fledged maintenance team shall be positioned headed by maintenance engineer to give technical support for the processing and disposal facility as well as to carryout regular maintenance/painting of vehicles.

**OFFICE STAFF:** A full fledged office with complete modern gadgets shall be deployed at municipality for data entry, accounting etc.

The waste generation rate varied as per the lifestyle and income groups prevalent in Pallavpuram. Broadly, the following types of waste generation rates were observed:

Income Group	Average waste in Kgs/Day
High Income Group	1.14
Middle Income Group	1.02
Low Income Group	0.86

On an average, we estimate the waste generation rate to be 300-400 gms/person/day based on our surveys.

This would imply, a solution that is catered towards handling 200 MT/day of waste generation by the date of project design, with an additional 100-200 MT/day being provisioned for the years to come.

The types of waste taken into account are as follows:

Wood Waste	Industrial (textile)	Thermocole	Rubber	Glass (for landfill)
Poly bags	Leather	School Bags	Metals	Flowers
Green Leaves	Agri Waste	Green Matter	Vegetables' waste	Animal Waste
Dry matter	Sand/earth/soil	Stones & Bricks	Ceramics	Miscellaneous

### Objectives of the stated solution

EIPL Group would adhere to the MSW rules stated by the Govt. Of India:

- Transportation in Covered vehicles
- Processing of waste through onsite green power generation;
- Disposal of Inerts and Rejects in Scientifically engineered sanitary landfill;

### Transfer Stations

We shall design & construct 2 numbers of small Transfer Stations with handling capacities of 200 TPD of MSW at Bhubaneswar and another Transfer station with handling capacity of 150TPD of MSW at Cuttack, at its own cost on the sites as and when they are made available to it by the Authority on a token lease rent. Each Transfer Station shall be simple, but so designed that waste can be directly transferred from small vehicles to large vehicles without manual handling of Waste.

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The Waste collected in small transport vehicles would be able to go over a ramp and tip into large refuse collection vehicle or mechanically tip in large vehicle. The Transfer Station would be capable of handling peak loads during its working hours.

The Transfer Station is and when constructed shall be well equipped to handle requisite quantum of Waste with a provision to scale of additional 25-50 TPD load on a future date where considered necessary. The movement of vehicles within & outside the Transfer Station shall be smooth ensuring no congestion of vehicles within or outside the Transfer Station.

The Transfer Station shall be maintained very clean all the time, disinfected daily and all measure shall be taken to maintain the site odour free and free from flies. The Waste brought to the Transfer Station shall be transferred directly into large covered vehicles/containers and transferred immediately to the MSW Processing Facility / Landfill Facility as may be directed by the Authority from time to time.

Facilities to be provided at the transfer station:

### **Waste reception Segment**

#### Waste Reception Facilities

The Waste Reception facilities would mainly comprise of the following:

- a) Heavy duty scale deck
- b) Concrete foundation, approach road and ramp, platforms, guardrails and traffic light system
- c) Load cells and electronic weight display system
- d) An approach road to accommodate two way traffic, of adequate length to provide for queuing of traffic
- e) Site board displaying license conditions, hours of operations and site regulations,
- f) Secure lockable gates at the entrance of the area
- g) Cattle grid at the entrance to the waste reception area
- h) Weighbridge of requisite capacity
- i) Weigh booking office with all amenities and computer logging facilities
- j) By pass lane for non waste vehicles and emergency services
- k) Video surveillance

### **2. Storage Area**

2.1. The storage area would be designed, constructed and operated to prevent any migration of wastes or accumulated liquid out to soil, groundwater or surface water at any time and would be capable of detecting and collecting releases and accumulated liquids until the collected material is removed.

- a) Storage area would have adequate capacity to store about 2 days of MSW



- b) After unloading the MSW at the pit it would be sprayed with herbal insecticide to prevent further degradation and odour; Additionally there would be misting systems and biofilters to mask the odour
- c) The storage building would be completely enclosed with a floor, walls and a roof to prevent exposure to the elements
- d) The storage area would be provided with floor base free of cracks or gaps and would be sufficiently impervious to contain leaks, spills and accumulated liquid
- e) It would be constructed of lined material that are compatible with the waste and have sufficient strength and thickness to support themselves, the waste contents, personnel and heavy equipment that operate in the area
- f) The storage area would be provided with enough slope or is otherwise designed and operated to drain and remove any liquid
- g) The storage area would be provided with a means to protect against the formation, accumulation and ignition of vapours in the storage area

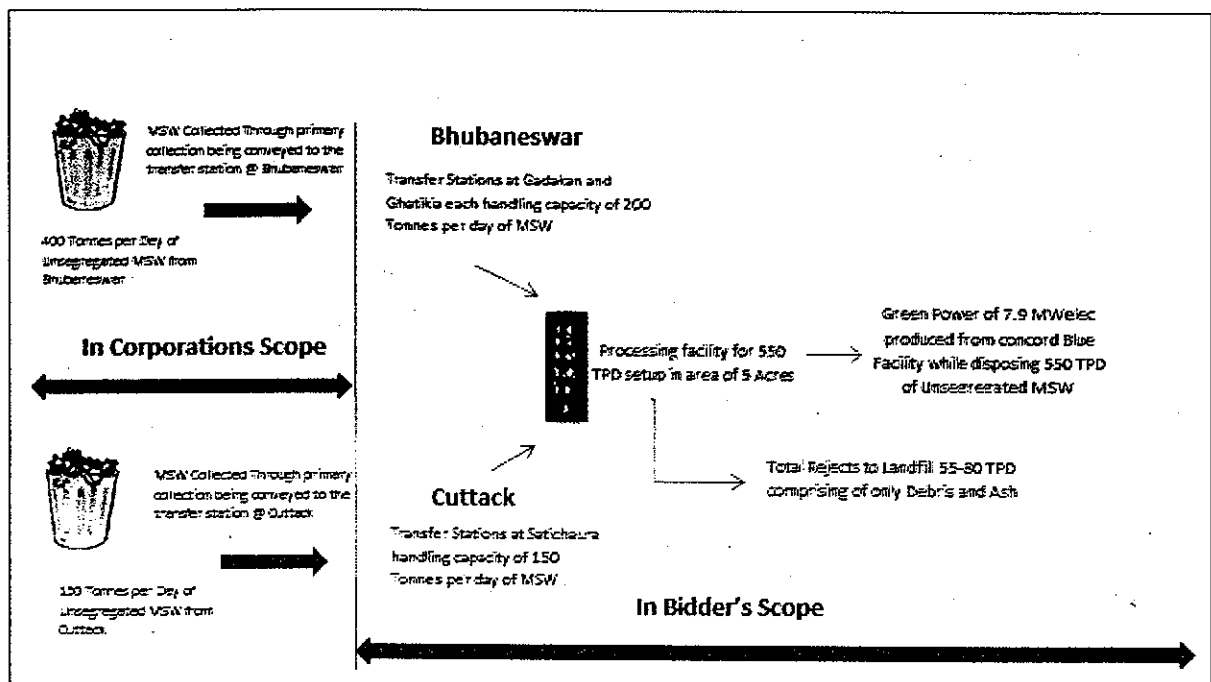
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## PROPOSED TECHNOLOGY TO BE ADOPTED FOR THE PROJECT

Essel Infraprojects Limited (EIPL) along with its consortium member Rochem Separation System(I) Pvt. Ltd, is delighted to offer a novel **solution** in managing a load of minimum 550 tonnes per day of Municipal Solid Waste (The Plant is designed in a modular scale to accept additional incoming waste during subsequent years of concession period of 22 Years) and **generating green power** from therein. We would implement our turn-key, customized waste to energy solution under the **DBFOT model** in disposition of its **Municipal Solid Wastes (MSW)** as well as generate high quality syngas to produce a total of **7.9 MW per hour of clean electric power** from a load of **550 Tonnes per day** of MSW.

We would utilize its unique patented know-how for the treatment and disposal of solid wastes to ensure minimal emissions to the atmosphere and ground while adhering to the established norms within the industry for waste management. Further to this, we would deliver a clean, non noxious, green solution in this venture

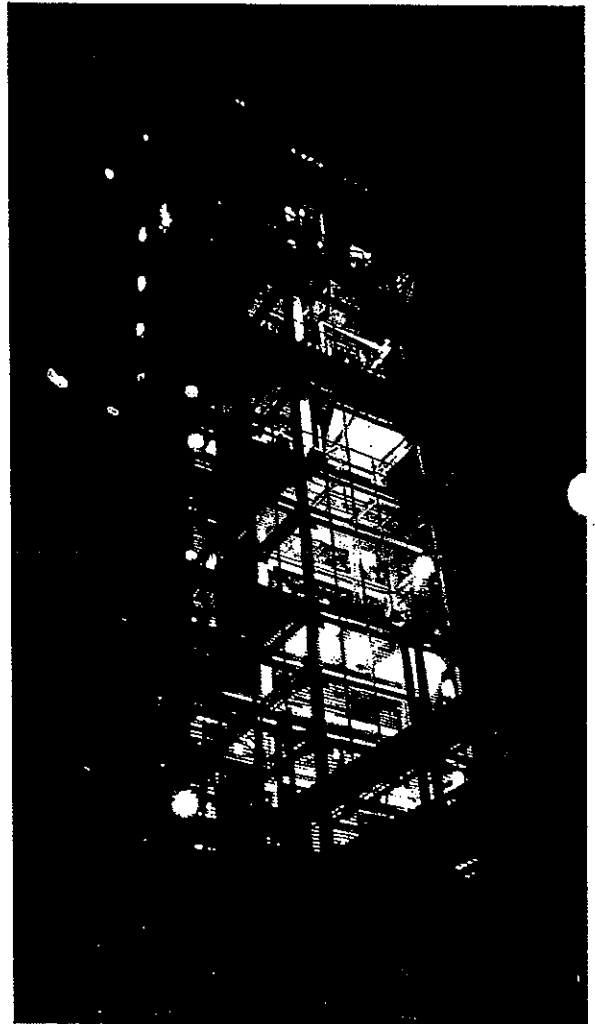
The schematic of the proposed solution is presented in the following flow diagram:



## Overview

In a bid to economize the solution while enhancing its efficacy, we hereby propose a **solution**. The solution is as under:

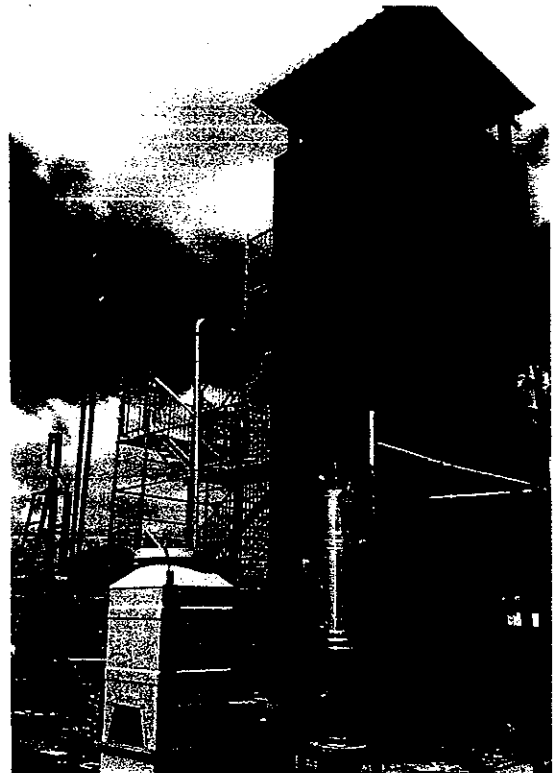
- We propose to set up its processing facility – the revolutionary Concord Blue System (CBS) allocated at Bhuasuni site;
- The facility will receive 550 tpd (or higher) unsegregated MSW at the Processing Facility;
- The CBS would process the waste in an environment friendly **non incineration based** thermal process to convert it into green power that would be injected to the local grid;
- The facility would generate rejects to the tune of only 10-15% of the total incoming waste. These rejects would comprise of only debris and ash;
- The rejects would then be transported to the landfill site allocated at Bhuasuni.
- Since the rejects are reduced to the tune of only 10-15%, it'd ensure that the life of the landfill is commensurately increased, while simultaneously saving land for the Corporation at the designated site.





The salient parameters of the offer are as under:

- Amount of unsegregated MSW processed per day –
  - BHUBANESHWAR – 400 TONNES PER DAY OF UNSEGREGATED MSW (1,46,000 TONNES PER ANNUM)
  - CUTTACK – 150 TONNES PER DAY OF UNSEGREGATED MSW (54,750 TONNES PER ANNUM)
- Completely environmentally friendly. Waste is not burnt at all;
- Net electricity Generated –
  - Waste processed – 550 tonnes per day (modular system and hence can handle additional incoming waste)
  - Power produced – 7.9 MWelec Net Sellable
- Total Electricity generated per annum – 59,250 MWhrs (@7500 hrs, Per annum);
- Total Rejects to Bhuasuni landfill from the processing facilities – 55–80 tonnes per day. This reject would comprise of inert C&D debris and ash;
- Land –
  - For Processing – 5 acres area;
- Total area for Landfill – 12.0 acres (for waste disposal, which would be sufficient for incremental quantum of waste for the next 22 years)
- Concession Period (As per the tender document) – 22 years;
- Electricity – Property of Rochem;
- Carbon Credits – (as per the tender);

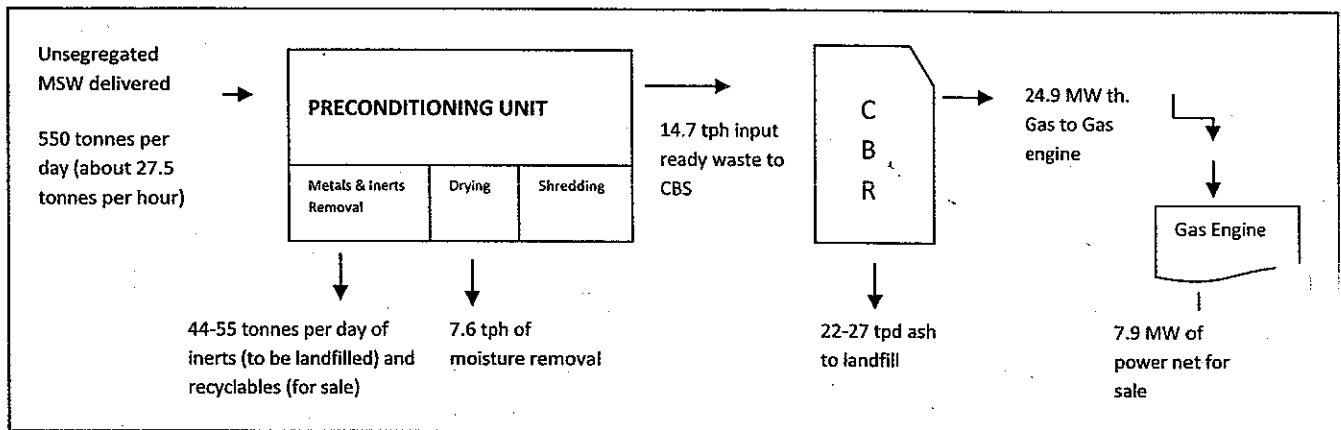


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## Summary of the process of converting waste to power

We propose to set up a non-incineration based Waste to Energy facility at the site of the Transfer station. The waste would be converted into a clean, energy rich syngas which would be utilized to produce power. The residue comprising of debris and ash from the system can be subsequently disposed to the landfill.

The proposed solution is an integration of the following segments that is further detailed in subsequent sections:



The solution for processing of waste comprises of the following three sections:

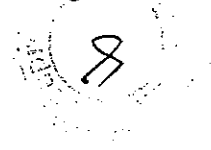
- **Receipt and Preconditioning of Waste**
- **Converting Pre-Conditioned waste into Syngas**
  - Transportation and scientific landfilling of rejects;
- **Converting Syngas to Power (and evacuating the same)**

### Segment A – Receipt and Preconditioning of Waste

- The facility would receive unsegregated MSW at the transfer station of Bhubaneswar and Cuttack respectively delivered by the Municipal Corporation;
- The MSW shall then be transported to Processing Plant at Bhuasuni;
- On receipt the MSW would be tipped at storage bays;
- The storage area is completely enclosed and equipped with suitable misting/filtering agents to ensure **no foul smell leaks out**;
- The leachate from the fresh MSW is collected and recycled through an R.O system to extract water for the process and the balance is mixed with the MSW for processing. Thus, there's **no mixing of leachate with the ground water**.
- This MSW would be pre-conditioned as follows:



Our facility at Pune – SEG/SORT SYS.



- Drying – The Waste is expected at 35-60% moisture (gross). It would be dried to 15% moisture level by utilizing the waste heat emanating from the system;
- It would then be segregated and sorted for
  - Metals;
    - Ferrous Metals – Magnetic Separators;
    - Non Ferrous – Eddy Current Separators;
  - Miscellaneous – Trommel Screens;
  - Sand, Debris and Glass – Star Screen Separator
- Shredding – The waste would be shredded to about <3 cms. Dia. To ensure a smooth flow within the Concord Blue System.
- The recyclable material as obtained from the segregation and sorting unit is sold to appropriate third party buyers;

### **Segment B – Gasification of Waste**

- The preconditioned waste is conveyed to the feed bunker from wherein it is fed to the Thermolyser.
- High temperature resistant heat carrier media is let into the Thermolyser (reactor chamber) by control valves wherein it mixes with the feed. The atmosphere inside the Thermolyser is completely inertized by nitrogen addition and steam blanketing, and this ensures that there is no addition of air/oxygen in the reaction. This ensures non-dilution of the resultant gases and also makes it energy intensive.
- The heat carrier media owing to its size offers the maximum surface area, thereby maximizing the heat exchange efficiency, and this result in the feed to undergo a phase change to gas, and leaves behind a solid carbon rich residue –char.
- The char alongside the heat carrier media are let into a drum sieve separator, wherein they are taken apart in different silos. The media is conveyed in enclosed elevators to the Heat Carrier Bunker. The char is combusted in a char combustor to supply the process heat.
- The gas generated in the Thermolyser is then taken to a Reformer wherein it is further heated to a higher temperature in the presence of steam to effect a steam reformation. This ensures that the hydrocarbons associated with tar formations are eliminated (they break into short chain hydrocarbons which when condensed does not produce tar) and the water-gas shift reaction occurs that makes the syngas hydrogen intensive.
- The Syngas is then taken for cleaning and cooling and subsequently conveyed to the engine for power production;



**THE CONCORD BLUE SYSTEM**



### **Segment C – Gas Cleaning and Power production**

- The resultant syngas from the reformer is cooled and the sensible heat is transferred to the process to optimize its heat balance.
- Further it is cleaned by filtering & scrubbing for pollutants and is subsequently conveyed to the engine thereby resulting in a very clean fuel to engine.
- The engine is a reciprocating type internal combustion mechanism which processes this clean syngas to produce power (38-40% electrical efficiency);
- The power produced (7.9 MWelec cumulative) is suitably stepped upto 11 (or 22) KV and is then evacuated to the grid by a switch yard/substation.
- The final exhaust is treated as stated above to adhere to the regulatory emission standards.
- The final rejects from the system which are to be landfilled are as under:
  - Bottom Ash\* – from the char combustor;
  - Construction and Demolition Debris;

\*No Fly Ash generated from the system leading to complete inhibition of pollution.

### **WHAT WE PROMISE AS A WASTE TO ENERGY SOLUTION PROVIDER**

- No Smell / Open dumping of Waste
- No mixing of Leachate with Ground Water
- No Burning of Waste.
- Minimal Rejects to Landfill
- Minimum Space should be utilized for waste disposal



**An efficient and environmentally friendly waste to energy solution**

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## **BHUBANESHWAR / CUTTACK - AS IS SCENARIO**

### **Bhubaneswar**

Bhubaneswar is the capital city of Odisha and the "Temple Metropolis of India". The demographics of Bhubaneswar as per the 2001 Census is as follows:

Parameter	Value	Parameter	Value
Number of Households	144,279	Average Household Size(per Household)	4.0
Population-Total	648,032	Proportion of Urban Population (%)	100
Population-Rural	0	Sex Ratio	796
Population-Urban	648,032	Sex Ratio(0-6 Year)	913
Population(0-6Years)	70,519	Sex Ratio (SC)	845
SC Population	51,675	Sex Ratio (ST)	839
ST Population	28,876	Proportion of SC (%)	8.0
Literates	505,593	Proportion of ST (%)	4.0
Illiterates	142,439	Literacy Rate (%)	88.0
Total Workers	216,033	Work Participation Rate (%)	33.0
Main Worker	204,702	% of Main Workers	32.0

Factoring in the rate of increase of the population, the total MSW generation alongwith its source is as follows:

Source	Quantity (TPD)	Percentage Contribution
Households	229	57.4%
Institutions	24	6.0%
Commercial Establishments	28	7.0%
Hotels, Restaurants & food Stalls	20	5.0%
Temples	6	1.4%
Marriage Halls	9	2.3%
Street Sweeping	2	0.5%
Construction & Demolition Waste	16	4.0%
MSW from Hospitals	4	1.0%
Dairies	62	15.5%
Total	400	100.0%

## CUTTACK

Cuttack is the former capital and the commercial capital of State of Odisha. It is the headquarters of the Cuttack district and is located about 20km to the northeast of Bhubaneswar, the capital of Odisha.

The demographics of Cuttack as per the 2001 Census is as follows:

Parameter	Value	Parameter	Value
Number of Households	101.153	Average Household Size(per Household)	5.0
Population-Total	534.654	Proportion of Urban Population (%)	100
Population-Rural	0	Sex Ratio	870
Population-Urban	534654	Sex Ratio(0-6 Year)	947
Population(0-6Years)	57,699	Sex Ratio (SC)	926
SC Population	69,502	Sex Ratio (ST)	800
ST Population	6,223	Proportion of SC (%)	13.0
Literates	405,353	Proportion of ST (%)	1.0
Illiterates	129,301	Literacy Rate (%)	85.0
Total Workers	171,761	Work Participation Rate (%)	32.0
Main Worker	158,124	% of Main Workers	30.0
Marginal Worker	13,637	% of Marginal Worker	3.0
Non Worker	362,893	% of non Workers	68.0

The current quantum of MSW\* generation and collection is as follows:

Source	Quantity, TPD)	Percentage Contribution
Households	101	67.69%
Street Sweeping	16	10.47%
Commercial & Industrial	11	6.98%
Hotels & Restaurants	8	5.58%
Vegetable & Fish/Meat Markets	13	8.37%
MSW from Hospitals	1	0.91%
Total	150	100.0%

\*In line with published reports, the total quantum of generation of MSW per capita ranges from 0.3-0.8 kg/person/day. Also, in our experience, and from the surveys conducted, we expect the waste generation at Cuttack to be higher at around 200-220 tonnes per day and hence, our facility would be designed to accommodate the additional quantum of waste if we receive the same;

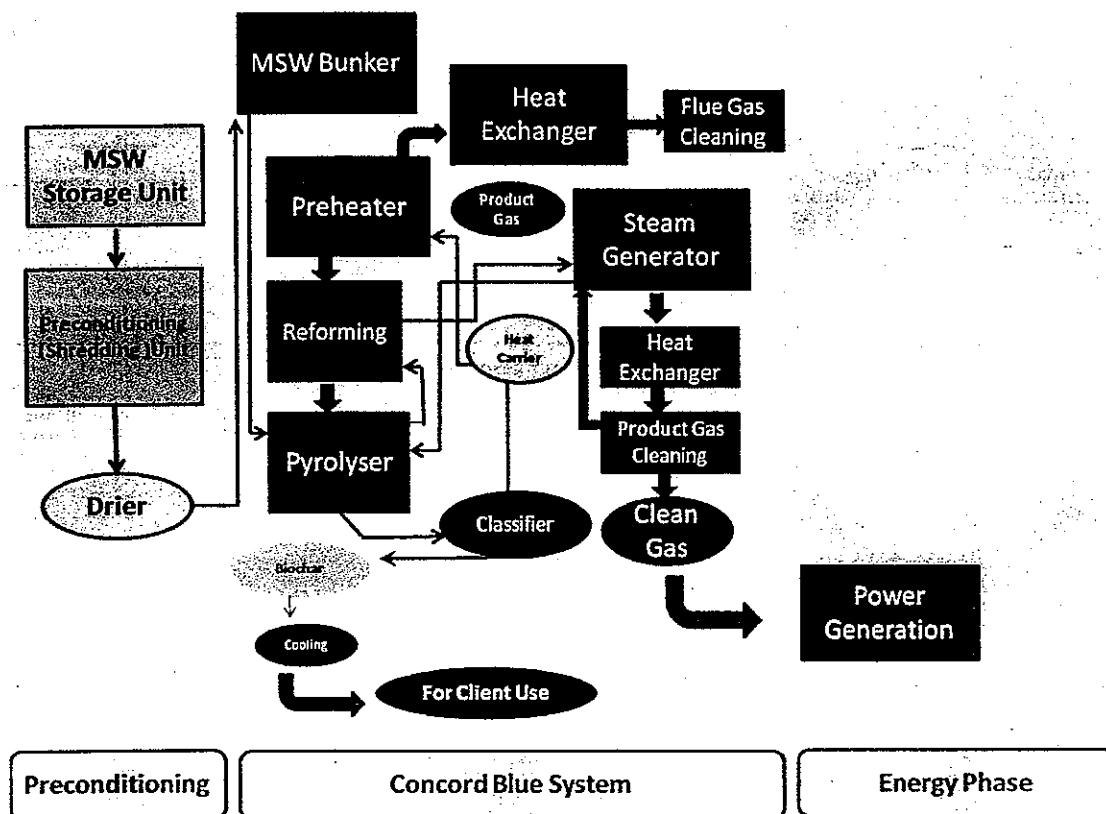
## PROCESSING METHODOLOGY

### Know-How

As mentioned earlier, the CBS uses regenerative feedstock like **municipal solid waste**, woody biomass, household garbage/**municipal solid waste**, hospital and related bio-medical waste, hazardous industry waste, plastic, manure or agriculture waste to produce clean, renewable, CO<sub>2</sub>-neutral, high energy content syngas.

We turn classical gasification upside down. Conventional gasification plants typically turn input biomass material into a product (also called producer gas, syngas or synthesis gas) by means of pyrolyzing it into biochar and gasifying the material by introducing air (as an oxygen source). The poor quality, low energy syngas that results is then used to create energy through heat via steam turbines.

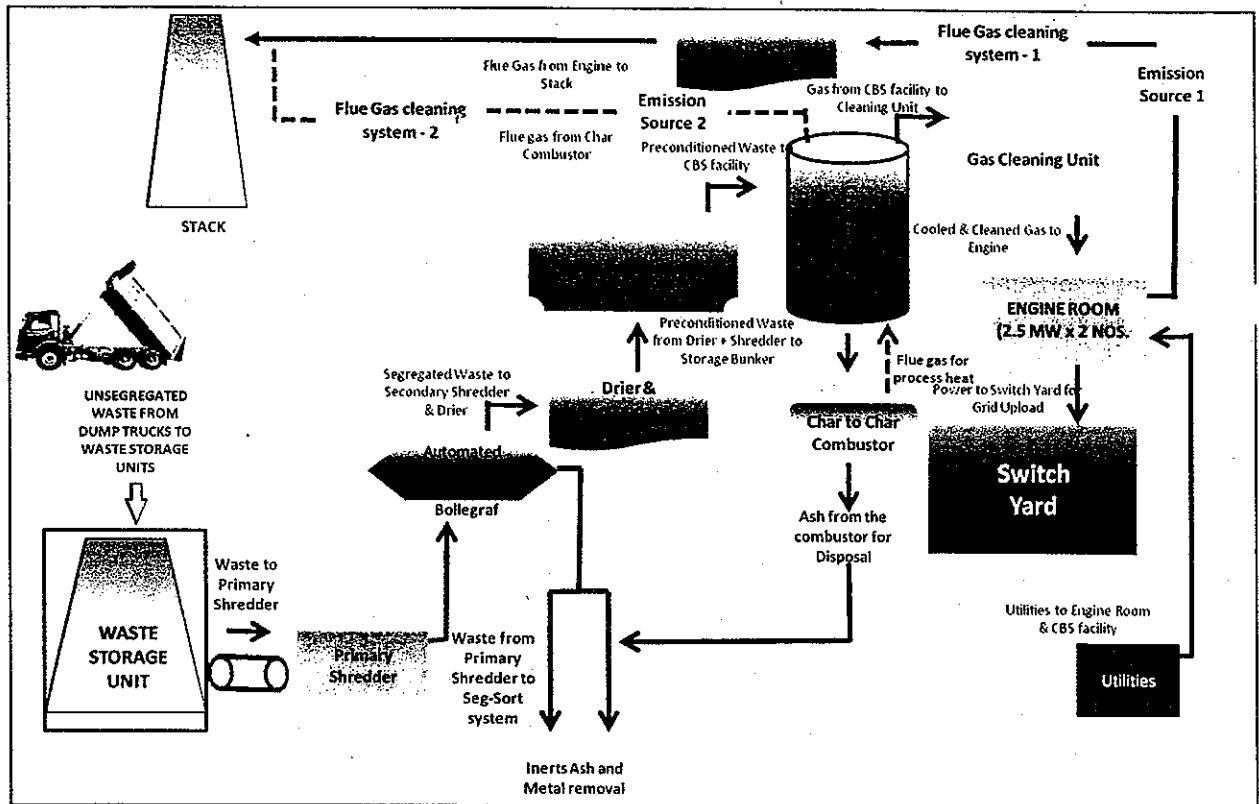
In contrast, the CBS uses a multi-stage process, beginning with Pyrolysis of the solid organic waste to create a product gas. The product gas is subsequently passed through a reformation stage with steam addition that results into a tar free, high calorific hydrogen intensive *syngas* which can be utilized to produce power via a gas engine or steam by dint of a boiler. The following image outlines the Concord Blue process flow for MSW:



### The Process

The Concord Blue System is a pure Steam Thermolysis technology that enhances the quality of its gas by inhibiting any dilution with oxygen (the gas never comes in contact with the atmosphere). We employ high temperature resistant heat carrier media which maximizes the

available surface area and hence, also the heat transfer between the media and the solid waste. The high temperature heat carrier media mixes with the solid waste in a completely inertized atmosphere (blanketed by Nitrogen or any suitable inertizing agent) to thermally degrade the solid waste to gas and high quality char. The gas is subsequently reformed in the presence of steam which causes the water gas-shift reaction ( $\text{CO} + \text{H}_2\text{O} \rightarrow \text{H}_2 + \text{CO}_2$ ) thereby resulting into a hydrogen intensive high calorific value syngas which is taken to a gas engine post cooling and pre-treatment to produce power at maximum efficiency.

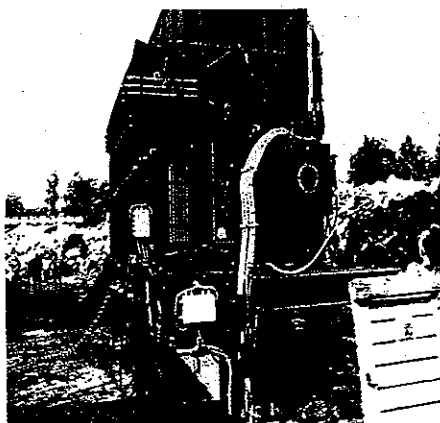


**SCHEMATICS OF PROCESS FLOW**



## Summary of Operation

- The unsegregated MSW is delivered by trucks (or any suitable conveyance) and delivered to the CBS (Concord Blue System) designated site;
- On entry, the trucks come upon a weigh bridge wherein, the load cells feed the data pertaining to weight, time e.t.c to the data monitoring unit within the control panel. This is imperative for ascertaining the amount of waste being disposed off per day. Since the dead weight of the trucks is already fed to the system, it automatically calculates the weight of the MSW being delivered in situ.
- Post weighing, the trucks move into the waste storage unit, wherein they tip the waste on to the delivery floor. They are then driven out of the site or parked. The MSW is then channelled to the roller feeders within the waste storage unit by a paddle mechanism which conveys it therein.
- The waste storage unit, as well as the pre conditioning unit is closed sheds operating under a slightly negative pressure which ensures that the air does not leak out of the system (rather it goes in) and hence there's **no putrescence** within the CBS site.
- The roller feeders then convey the waste to the pre conditioning unit.
- The **preconditioning unit** comprises of the following three activities:
  - **Shredding** – In order to make the feed input ready and achieve optimum pyrolysis, the MSW would be shredded to about a dia.< 3 cms;
  - **Drying** – We will utilize the waste heat from the system to dry the MSW to the appropriate moisture level; This waste heat is utilized from within the Concord Blue System itself from its heat recovery units;
  - **Sorting** – The MSW herein is sorted and segregated by the sorting machines to rid itself of the glass and metals and other inorganics;



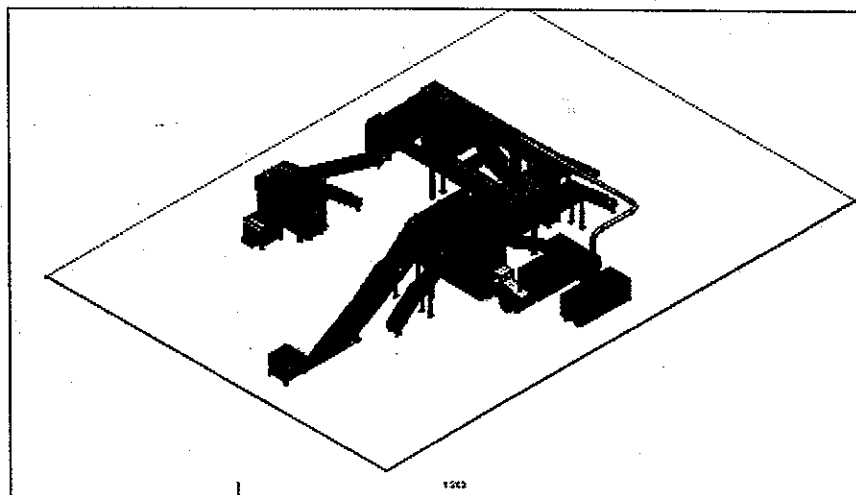
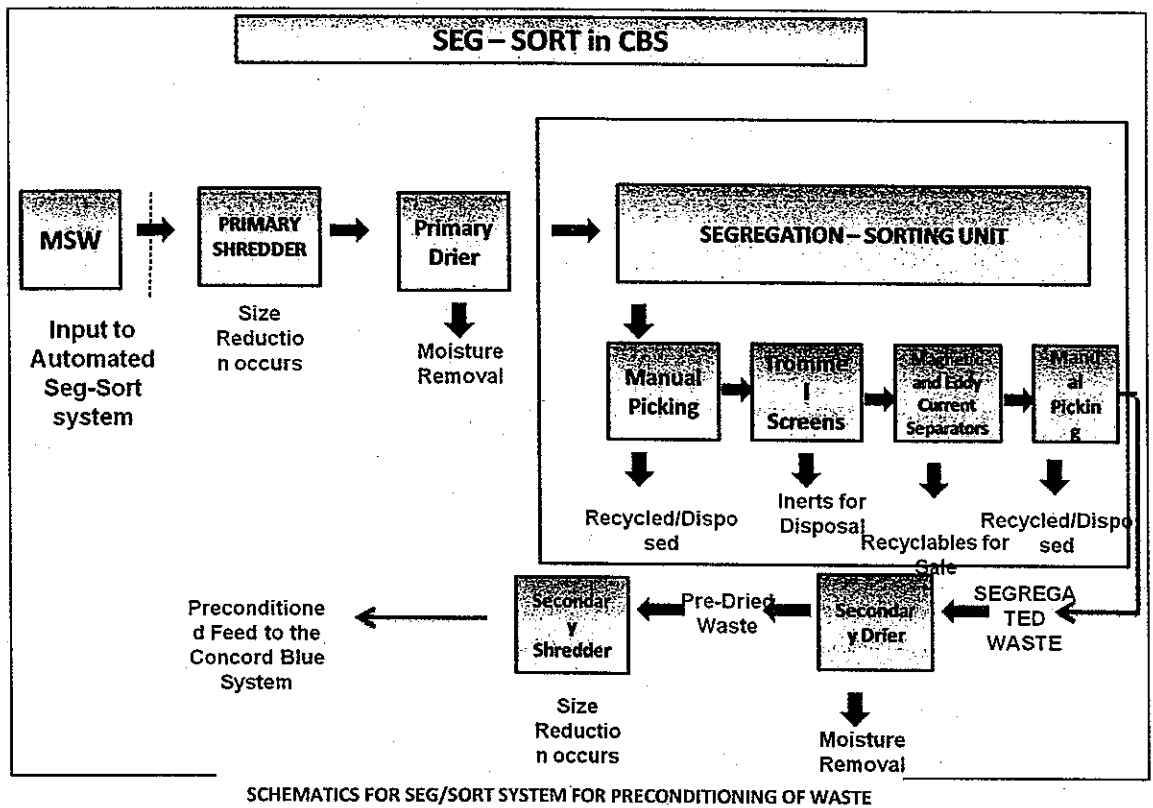
SHREDDING SYSTEM



ROTARY DRIER FOR MOISTURE REMOVAL

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The following image provides the flow of material in the pre-conditioning equipment



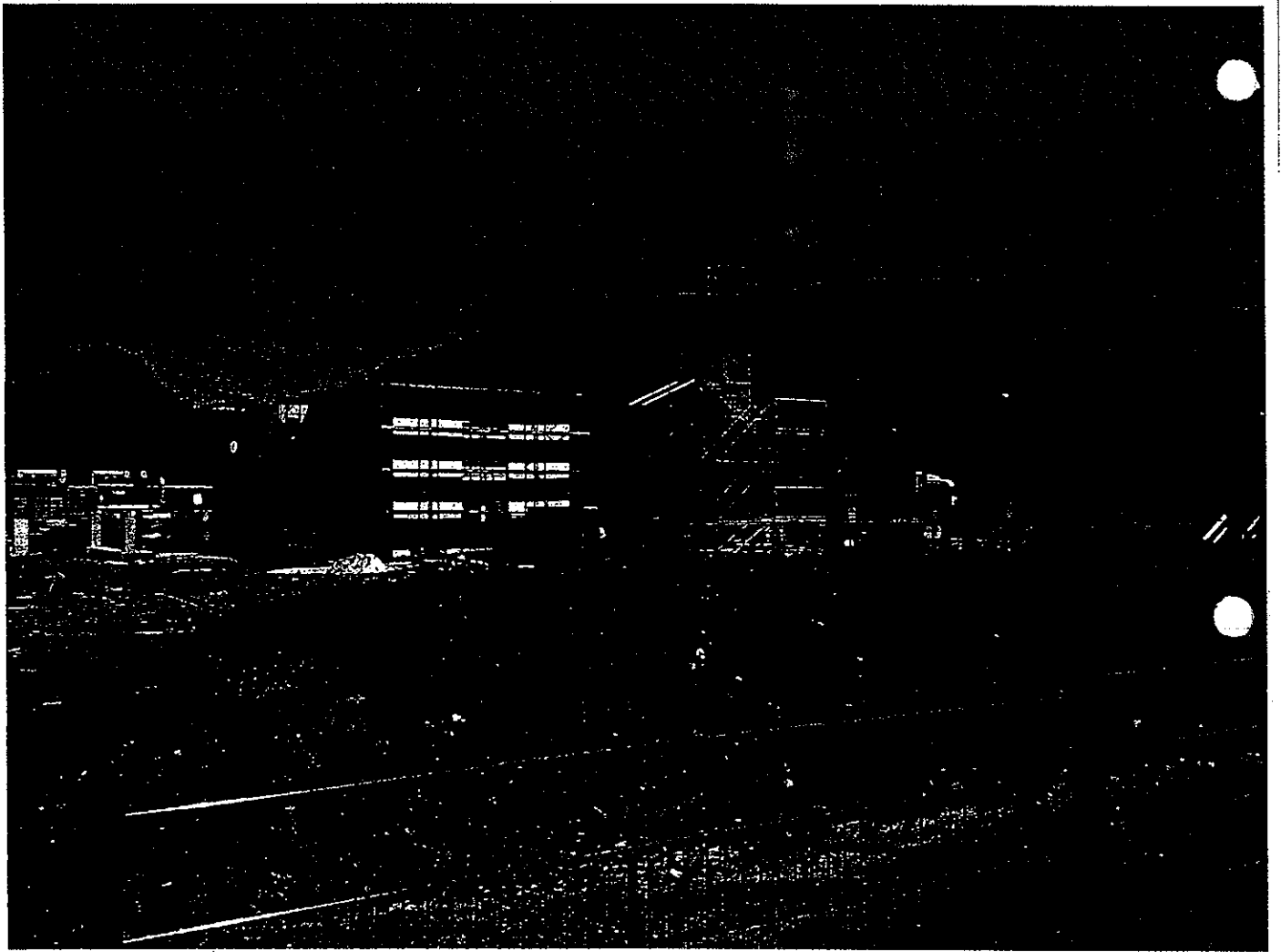
**AERIAL RENDITION OF THE SEGREGATION SORTING EQUIPMENT**

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- The pre-conditioned feed is subsequently loaded in the feed bunker.
- From herein, the feed is fed to the Pyrolyser by appropriate screw conveyor.
- The Heat carrier bunker is stationed atop the Pyrolyser.
- The high temperature Media in the Heat Carrier Bunker is heated to a temperature of about 750 – 850° C. This media is then regulated by appropriate control valves and are let into the Pyrolyser. Their flow rate is regulated as per the heat addition requirements. It depends on the plant design.
- The media and the feed mix in the Pyrolyser in the presence of steam produced by the steam generator. This results into the feed thermally degrading into product gas and char. The Product gas moves up from the Pyrolyser and comes to the reformer. The media and the char are left in the Pyrolyser.
- The product gas comes to the reformer, wherein it is further heated to about 950° C by a bed of high temperature heat carrier media, which causes the hydrocarbons associated with tar creation to break, and thereby the resulting syngas is reformed. Also, due to the process of steam, apart from reformation, we also witness the water gas shift reaction wherein additional hydrogen is liberated, resulting into a hydrogen intensive tar free gas.
- This syngas, is then subsequently, taken to a gas cooler from wherein the cooled gas is taken to appropriate scrubbing unit. Herein, the gas is scrubbed of any contaminants present in the feed and the waste water in the scrubbing unit is taken to a water treatment plant wherein the contaminants are separated and disposed along with the ash from char combustion (in Pyrolyser II).
- The gas from the outlet of the scrubbing unit is taken to a gas engine for power generation;
- The Heat Carrier Bunker and the Reformer are heated by combusting a fraction of the syngas in the Syngas Furnace and generating hot flue gas. This ensures that there are no emissions due to any fossil fuel combustion.
- The mixture of media and char are then let into a bunker beneath the Pyrolyser, from wherein they are separated by a Drum-sieve Separator.
- The Char that is separated from the Pyrolyser is taken to the char combustor. The resulting flue gas is taken satisfying the captive heat requirements. The ash from the Pyrolyser is sold to appropriate users/disposed.
- There are temperature monitors in the Pyrolyser, Reformer and Heat carrier bunker to ensure that the process parameters are met.
- The safety features include Rupture discs and safety valves which are installed to ensure that the equipments are not affected by pressure surges within the system.
- The Pyrolysis process as well as the Reformation of gas occurs in a completely inertized atmosphere. For this purpose, Nitrogen is introduced in the Pyrolyser, reformer as well as the valves regulating the flow of media and gas beneath the HCB.
- Cooling water is circulated in the bunker beneath the Pyrolyser as well as the gas cooler to bring down the temperature of the gas as well as the media-char mixture.
- The plant parameters are displayed in the control panel, and can be centrally controlled from therein and all control valves and flow regulation are executed from the PLC terminal.

*In order to maximize plant profitability, Concord Blue can control each plant's operation to accommodate different waste streams and maximize production of selected end-products (Electricity, Char, Hydrogen, e.t.c).*

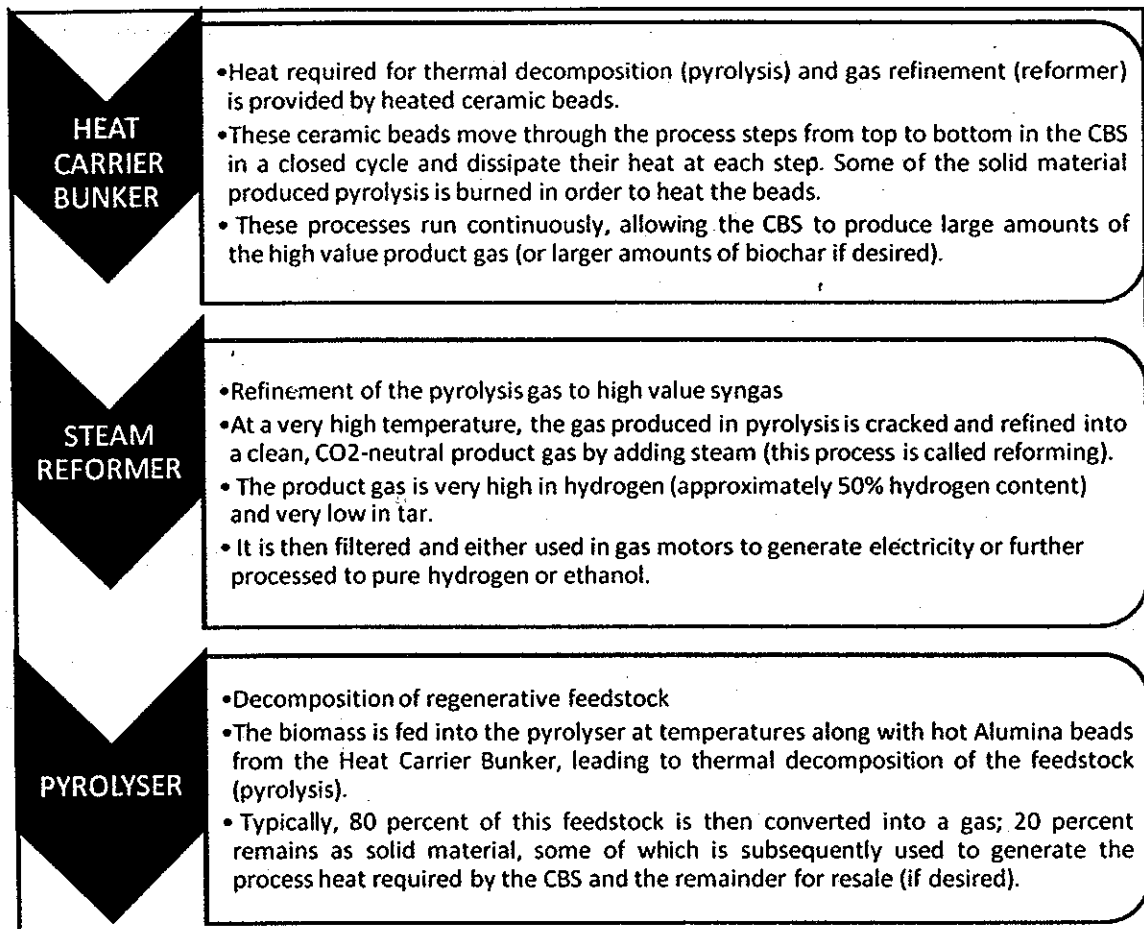
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## Process Details

The flow chart outlines the process details as well as the flow of various lines within the system:



8

## **High Quality Product Gas**

The CBS-generated product gas is extremely high in quality because it is unaffected by the flue gas from the innovative biochar combustion. Other methods achieve a product gas with only 30% to 50% calorific value efficiency, whereas CBS product gas achieves 80% efficiency. CBS's high quality product gas has five alternative applications:

- Fuel for a gas motor for high-efficiency electric power production;
- Hydrogen production;
- Ethanol production;
- Replacement or blender gas for natural gas;
- Raw material for synthesis gases.

## **Heat Carrier Technology**

CBS utilizes a unique, circulating bulk material (ceramic beads) as its heat-distribution medium. This has the important added benefit of ensuring that all heat-carrying surfaces are always clean, making it possible to use any waste input that in other systems would cause slagging, fouling and corrosion.

## **Heat Process**

The heat is transferred from the biochar combustion flue gas to the inert bulk heat carrier (ceramic beads) inside a simple moving bed reactor. During this process (circulation from bottom to top), the heat carrier first gives off its heat in the Reformer and then in the pyrolyser.

The advantage of using separate heat carrier and motor flue gas circuits is that the different waste heats can be collected and used to supply the collected heat where it is needed.

## **Intelligent Process - Only Simple Equipment Required**

The pyrolyser and the System have separate gravity-driven bed reactors with no further equipment mounted inside the plant. The heat-carrying ceramic beads are moved up by a mechanical drive (conveyor bucket system) and down by gravity. The CBS automatically records all emission and performance data and continuously streams data online to the company's central engineering/monitoring station.

8

### ***Advantages from CBS***

Some of the advantages from the CBS are listed as under:

- Highly Profitable
- 80% Concord Blue System process efficiency
- Produces a high quality product gas – which has 30-50% more energy output than comparable waste to energy technologies known to us
- Eco-friendly and lucrative disposal of all sorts of waste, solid and liquid
- Minimal remaining residual materials
- Qualifies to operate in residential area
- Produces a hydrogen-rich gas product (estimated 30-50% higher than conventional waste-to-energy)
- Low floor space requirements with modern architecture
- Independent of complex infrastructures
- Automation of the plant to the greatest possible extent
- Process has a very high level of safety
- Economization of disposal costs

*\*Depending on the level of Volatile Organics present in the feedstock. Actual values can be ascertained after specific chemical lab analysis;*



## Technology Comparison

The following image provides a comparison with the prevalent technologies with the CBS:

Technology	Composting	Landfill	Incineration	Gasification – Waste to Energy
Features				
Emissions to Atmosphere	Low	Medium	High	Negligible
Recovery of Energy	Low	Nil	Low	High
Suitability for various kinds of wastes	Low	High	Low	High
Rejects back to Landfill	High (> 60%)	High	Low	Low (<10%)
Seasonal Variation	High	High	Low	Low
Land Area for a 200 tpd MSW disposal	Very high (> 10 acres)	Very High	Median	Low (< 1.5 acres)
Smell emitted	High	High	Median	Low (as system is completely covered)
Processing Time	High (> 30 days)	N/A	Low	Low (Waste gets disposed off in the same day)
Construction Time	High	Very High	Low	Low

## Emissions

Concord Blue waste to energy plants are among the most environmentally friendly in the world. This technology meets or exceeds the strict EU and EPA environmental standards. No pollutants are created within the Concord Blue system. The system proposed for AMC would be completely compliant with the local applicable norms for emissions.

Of course, as with any process, the output is directly related to the input. Therefore, with some types of input, additional adaptations to our Concord Blue system and more complex filtering and treating may be necessary, but easily workable.

In fact, most organic pollutants (dioxins, furans, etc.) are "cracked" and reformulated in the steam reforming stage. Carbon monoxide gas is an essential part of every gasification plant. However, in the Concord Blue, the product gas is handled in a manner that is completely separated from the atmosphere and thus, only negligible CO or other components of the product gas are set free. All required filtering is included in the turn-key plant. The Engine is suitably fine tuned to ensure lowest Raw emissions. The engine is fitted with suitably designed SCR and Oxicat low emissions of NOX and CO. The process creates no fly ash, which is often found in most other incineration/power plants.

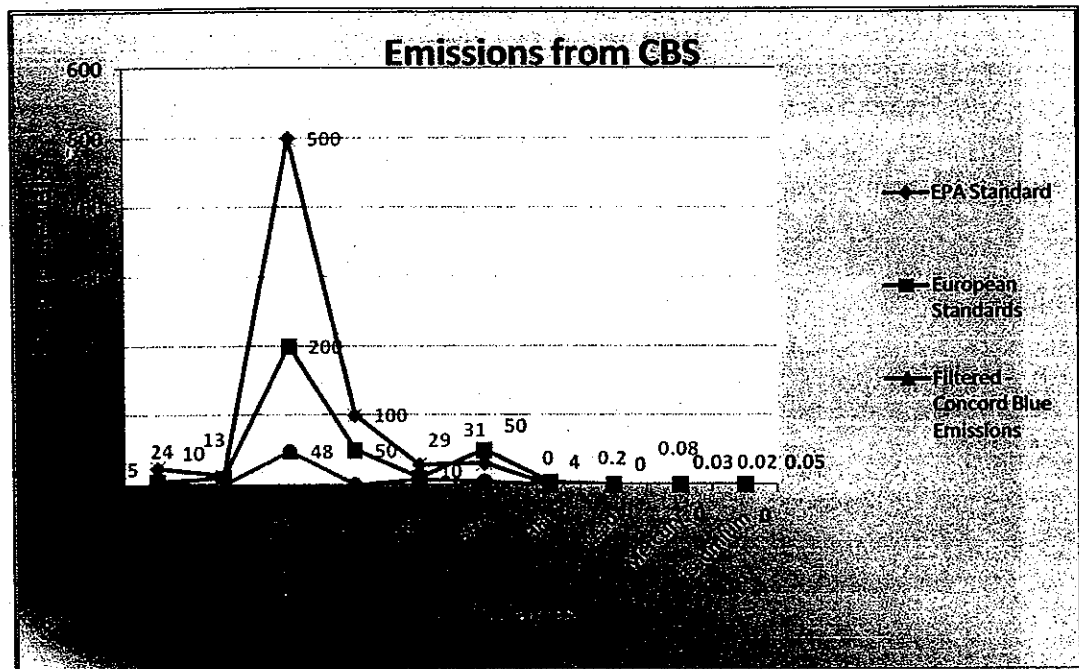
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### Environmental Highlights of CB:

- Closed-circuit system
- Process creates no pollutants or heavy metals
- Organic pollutants are decomposed in the process
- Practically no components of the product gas are set free

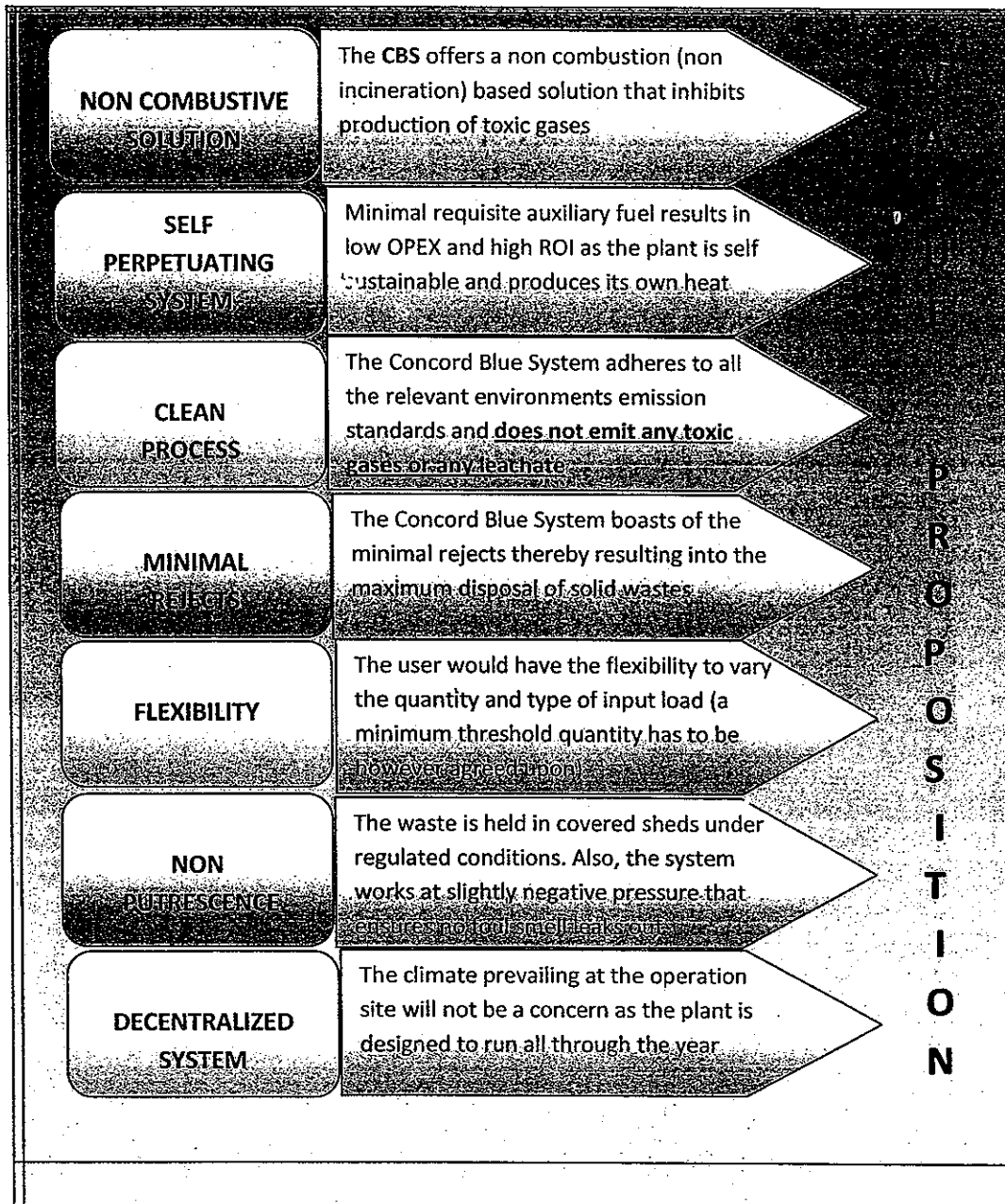
The following image gives the emission levels achieved by the CBS:



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## Value Proposition

The Concord Blue System (CBS) offers substantial values as enumerated below:



Limit  
8

## In Addition

### Reduced Cost of Transportation of Waste

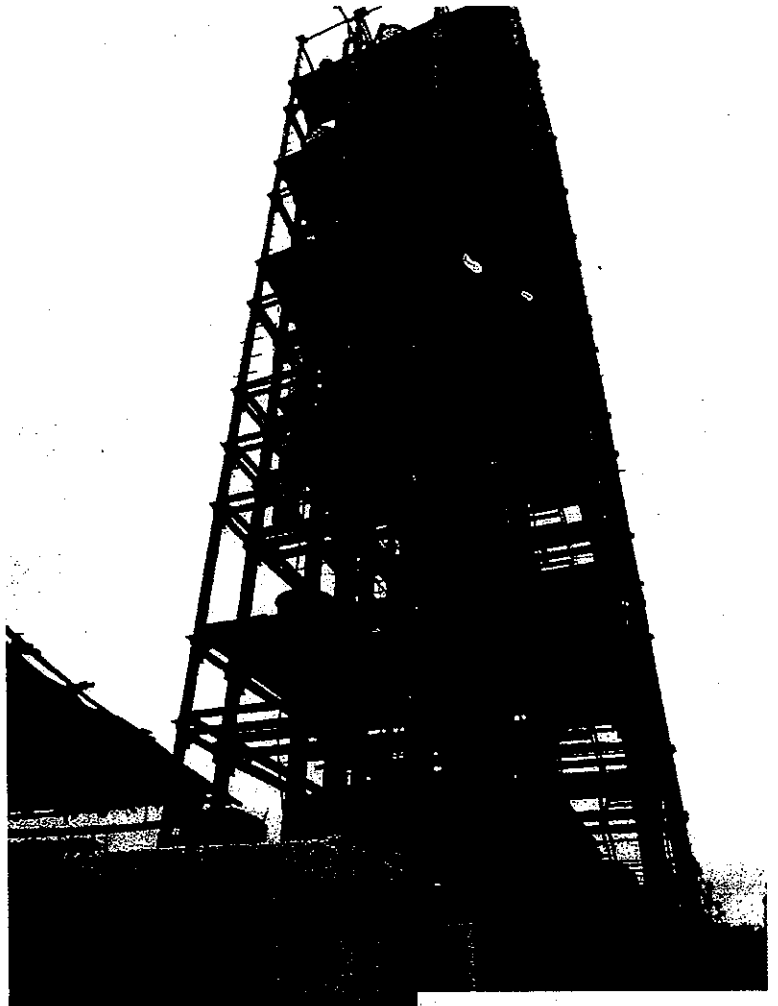
We propose a solution for waste disposal upto a quantum of 85-90% of the unsegregated MSW. This would result into a transportation of only rejects to the tune of 10-15% of the total incoming waste to the landfill. This would result into fewer trucks/vehicles for conveyance and hence, substantially reduced conveyance costs.

### SAVINGS IN LANDFILL

The proposed solution takes up minimal horizontal footprint (only 13 acres for waste disposal, which would be sufficient for incremental quantum of waste for the next 22 years).

The rejects from the proposed solution will only be 10-15% of the total waste received.

This would result into substantial savings in land, and thereby reduce the requirement of acreage for landfill, saving the Corporation a significant portion of their land which not only minimizes the **burden on the landfill** but also increases its life manifold.



OUR FACILITY AT MAHAD

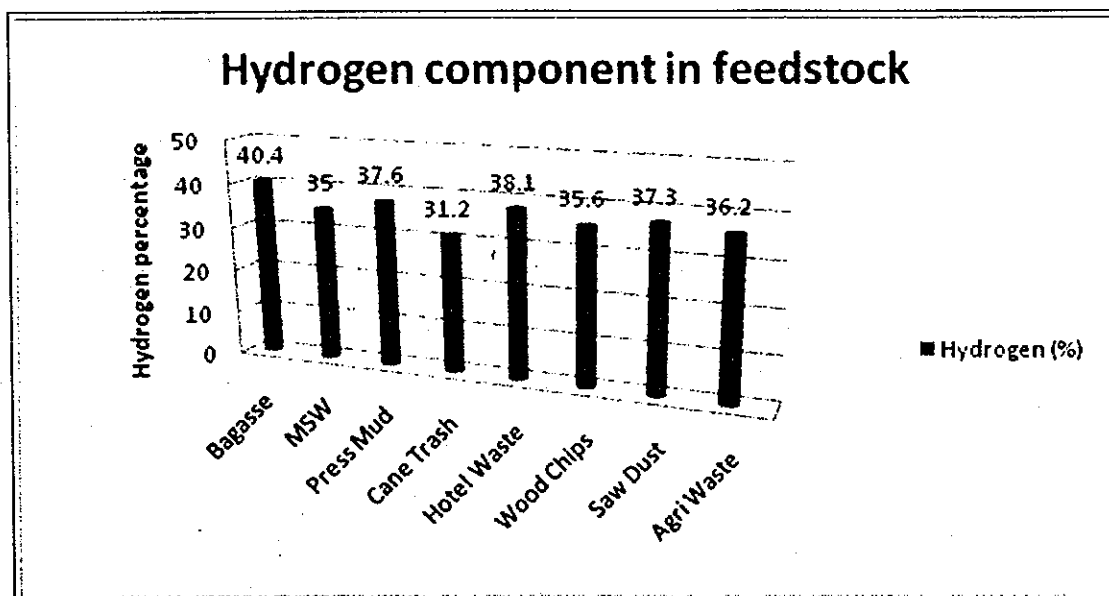
### ZERO LEACHATE DISCHARGE

The proposed facility boasts of a Zero Leachate discharge, since the generated leachate would be collected in a holding tank, and recycled, wherein the process water extracted would be utilized for the system requirements, and the concentrate would be disposed off with the MSW by dint of gasification.

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### Quality of our Syngas:

The energy content in our syngas is directly related to the H<sub>2</sub> content therein. The following image lists the same for some of the feed to the CBS:



The calorific value is dependent on the feedstock to the plant. Typically, we have observed our syngas to have a calorific value of around 3000 kcal/kg.\* of gas.

\*will vary with input material;

### Converting Waste to Energy in India

The high economic and environmental costs of transporting waste in India – whether for land filling, incineration or recycling – can be transformed with waste-to-energy processing using state-of-the-art, non-combustion, Concord Blue multi-feedstock pyrolysis-gasification technology. Ideally located at or near the site where the waste is produced, virtually ANY waste stream - including woody biomass, municipal waste, biosolids (animal manure, sewage sludge), plastics, hospital/medical waste, agricultural residues, hazardous waste, contaminated soil and much more – can be converted efficiently, environmentally and safely into pure energy.

India is now perfectly positioned to resolve some of the most challenging solid waste problems anywhere in the world, spurred by heightened government, industry and public consciousness and new incentive programs.

India also produces great amounts of solid waste that is infinitely sustainable if managed properly. This Solid Waste can be efficiently and sustainably transformed into a variety of green energy end-products with high commercial value that can also earn carbon offset credits; this includes green electricity, biofuels and densified (pelletized) Biochar or biocoal pellets that can be used for residential and industrial heating or co-fired with coal for cleaner power generation.

Concord Blue offers an affordable solution to multiple waste-related problems by providing an environmentally friendly, long term, economically sustainable solution that can process huge amounts of biomass – and virtually any other waste material – to meet today's energy and environmental challenges.

## Plant Data

The business model for a viable waste-to-energy solution typically includes:

- A committed amount of waste input material;
- A committed avenue for the sale of the high quality / high value output products:
  - Electricity, product gas, biochar, hydrogen or ethanol.

## Electrical Output and Cogeneration –

Plant data estimated for this proposed configuration of the Concord Blue System are based on the following assumptions:

- Feed Stock load equaling 550 tonnes per day ;
- 35-60% moisture content of waste input (20% is excess water);
- 10% inerts present in the solid wastes;
- Total uptime considered is 7500 hours;
- Calorific value is 10.5 GJ/ton (on dry basis);
- 59,250 MW hours of electricity generated annually.

As our thermal plant efficiency for the CB system is always equally high at around 80% regardless of scale and the costing is linear, project economics are relatively close to one another. The CB system does not have an ideal size or capacity. Thus, we have prepared the option maximizing the electricity production herein;

## Input

For purposes of this preliminary proposal, We will propose a waste to energy system taking 400 tons per day as input material (as received basis) in Bhubaneswar and 150 tonnes per day as input material (as received basis) at Cuttack.

The input MSW would be dried to 15-20% moisture content. Drying is achieved automatically as part of the turn-key CBS by utilizing waste heat from the process. The segregation usually entails an automated sieve and magnet system which takes out inert materials (in this case metals, glass, soil, etc.).

This CB System will incorporate a sieve and shredder system to prepare the MSW material for system input, which will be automatically fed into the plant from a small, covered / contained storage bunker with a two-day supply of input material. The fully automated system can include (optionally) a fully enclosed conveyor system so that no moisture can be added / escape during delivery to the CB system, additionally no odors or harmful greenhouse gases will be emitted into the atmosphere.

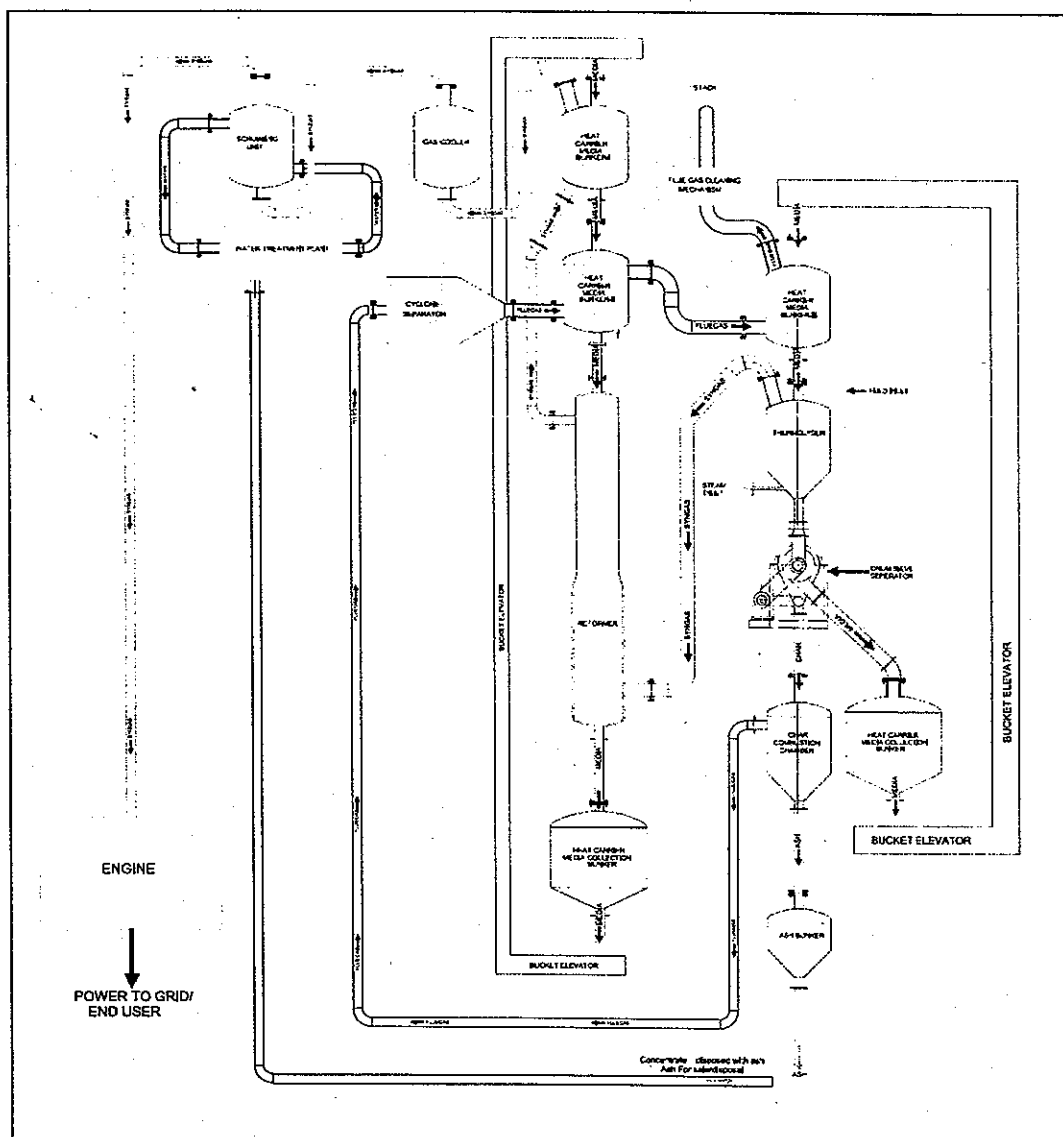
## Output

The plant depicted shows electrical output as follows:

- Power produced – 7.9 MWelec Net Sellable



The CBS also prides itself on generating CERs on account of producing green power as well as for Methane Mitigation. The Carbon credits would be shared with the respective Municipal Corporations as per tender documents.



## THE CONCORD BLUE SYSTEM INTERNAL PROCES FLOW

The following table summarizes the technical data for Rochem for this proposal:

For Bhubaneswar and Cuttack

CONCORD BLUE WASTE TO ENERGY - DATA SUMMARY		
CALCULATION PARAMETERS	UNIT OF MEASUREMENT	VALUES
Input per Day (as received basis)	Tonnes per day	550
Operating hours per year	Hours	7500
Energy Value of Input	GJ/Tonne	10.5
Thermal Plant Capacity	MW <sub>th</sub>	24.9
Net Electrical Energy from CBS	Net MW <sub>el</sub>	7.9

## ENERGY BALANCE

### MSW WORKSHEET

WASTE ANALYSIS - CV		
	as recd	dry + seg
H <sub>2</sub> O	50%	15%
C	16%	27%
H	3.00%	4.80%
N	0.07%	0.10%
S	0.06%	0.09%
O	16%	31%
Ash	14%	17%
Cl	0.60%	0.10%
Total	100%	95%
CV	5447.4	10204.95
kcal/kg	1301.34	2437.876

input	550 tpd	Unsegregated
input	293.3 tpd 14.7 tph	Segregated
removal	146.7 tpd 55.0 inert	% removal moisture
drying energy @ 60% dryer efficiency		
		17.0 MW

CBR2 operation		
input	293.3 tpd	
dry + seg	2437.0 kcal/kg	
Gross IN		17.0 MW
Cold Gas eff	0.60	
Gas Out		1.6 MW
Engine Efficiency	0.38	
Elec Gross	9.5 MW	
less plant load	0.17	
	1.6	
Net Exportable		7.9 MW

Waste Heat CBR		17 MW
useable Heat	40%	6.6 MW
Waste Heat Engine		15.5 MW
useable Heat	50%	7.7 MW
total useable Heat		14.4 MW

3

## Design Methodology and Parameters

Our project design is based on the following parameters:

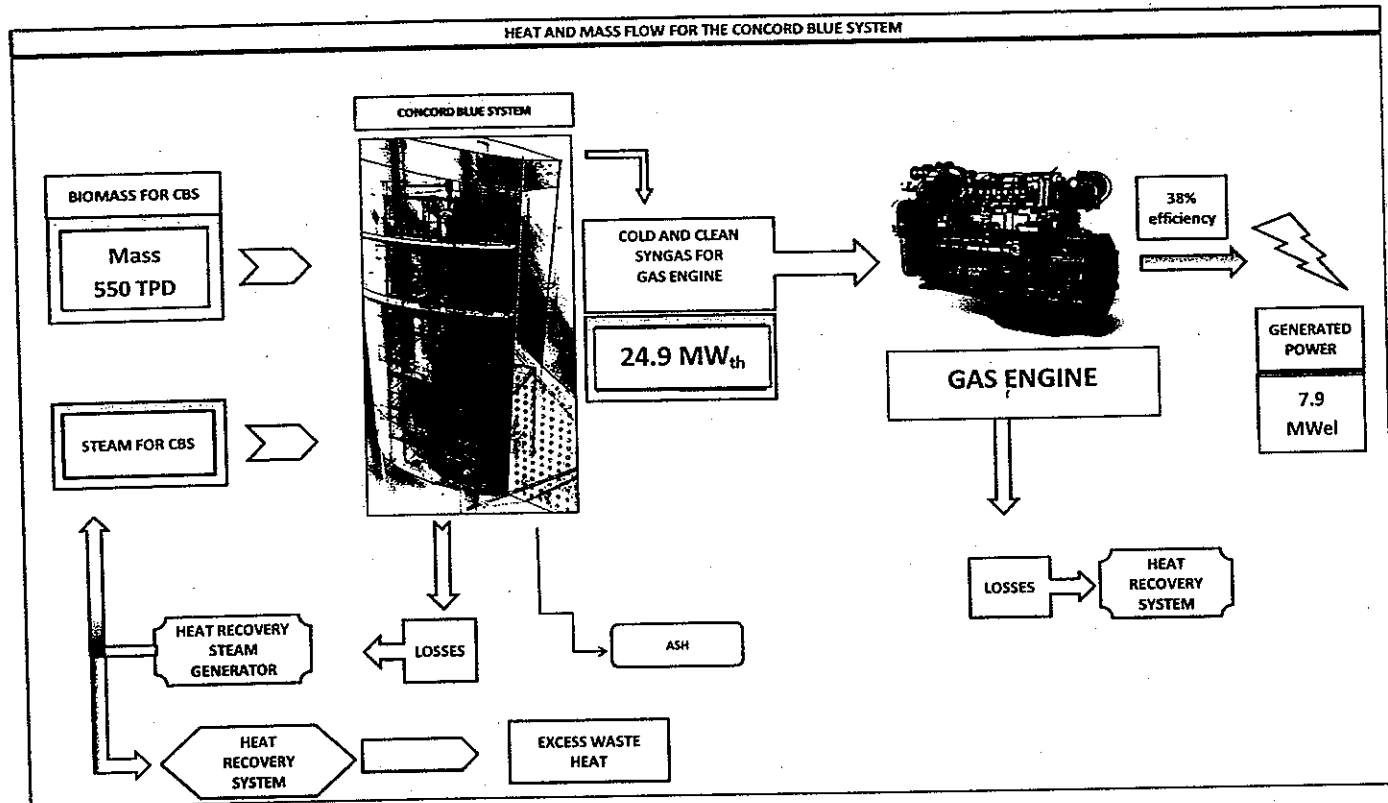
- Waste Analysis – Current Composition;
- Waste Quantity;
- Waste Disposal Goals (Peak Hours/Off Peak hours); Syngas Char ratio;
- Client's timeframe;
- Plant restrictions as regards:
  - Building/Construction;
  - Emissions – Noise, Pollution, smell;
  - Capacity;
  - Required Land/space;
  - Height of plant;
- Suitability of waste composition;
- Requisite outlet availability viz:
  - Gas
  - Water
  - Energy (to start the plant)
  - Electric Grid
- Client Stakeholders
- Project Sustainability

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# Mass & Energy Flow for the CBS -

HEAT AND MASS FLOW FOR THE CONCORD BLUE SYSTEM



## **1. COOLING TOWER**

For the purpose of engine cooling as well as Hot air cooling from CBR and decarbonisation step as well as Quench systems. The cooling tower utilized shall be an INDUCED DRAFT COUNTER FLOW of FRP construction designed with low drift loss of < 0.02 %.

## **2. AIR COMPRESSOR - 100 CFM**

A suitably sized reciprocating Air compressor with tank, filter for dry air supply to instrument and control system is provided.

## **3. FUEL GAS FLARE**

In case of any process interruptions of emergency conditions leading to activation of fail safe mechanism, the Fuel Gas produced shall be diverted to FLARE.

The Flare system is designed in compliance with latest relevant regulations to ensure > 99% destruction efficiency.

The flare shall also be utilized during startup and shutdown periods when Engine is not operational. Maximum 300 hours per year.

## **4. NITROGEN BANK - 30-50 m<sup>3</sup>/hour for the first 2 hours; 1-2 m<sup>3</sup>/hr. thereafter;**

Nitrogen cylinder bank is maintained onsite, to supply N<sub>2</sub> for the purpose of initial plant inertization, and operation purging of requisite process components to maintain air/oxygen free environment in the CBR Thermolyser.

## **5. STARTUP HOT AIR GENERATOR**

A Hot Air Generator is provided to supply Hot Air for Heat Carrier heating during initial plant startup, and also to supply the dryer for startup while the engine is not operational and exhaust gas of engine is not available.

This is only utilized during startup periods and the operation of this device is limited to a maximum of 500 hrs per annum.

Estimated quantum of use - 2-3 KL/day for 3 days;

Also, a DG set would be used to generate the startup power of about 300-400 KW for 3 days (consider 18-20 hour working per day).

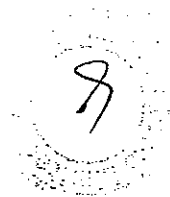
## **6. FUEL GAS QUENCH + SCRUBBER**

The FUEL Gas from CBR system is led to a Quench for temperature reduction and then led to a 2 step scrubber process for cleanup which includes reduction of H<sub>2</sub>S, other Acid Gases and Tar polishing.

At the Quench a mixture of Biodiesel and Water is utilized to ensure polishing of any residual tars as maybe present in the Fuel Gas.

The Scrubbing is conducted by means of suitable Scrubbing with:-

- H<sub>2</sub>O<sub>2</sub> for H<sub>2</sub>S control
- NaOH for other Acid Gas control

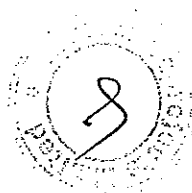


Scrubbing is done in Packed Column Scrubber towers. This clean, low Sulfur FUEL Gas is obtained which is reliably and cleanly utilized as fuel for electricity generation in the Engine Generators.

### **Scope of Work**

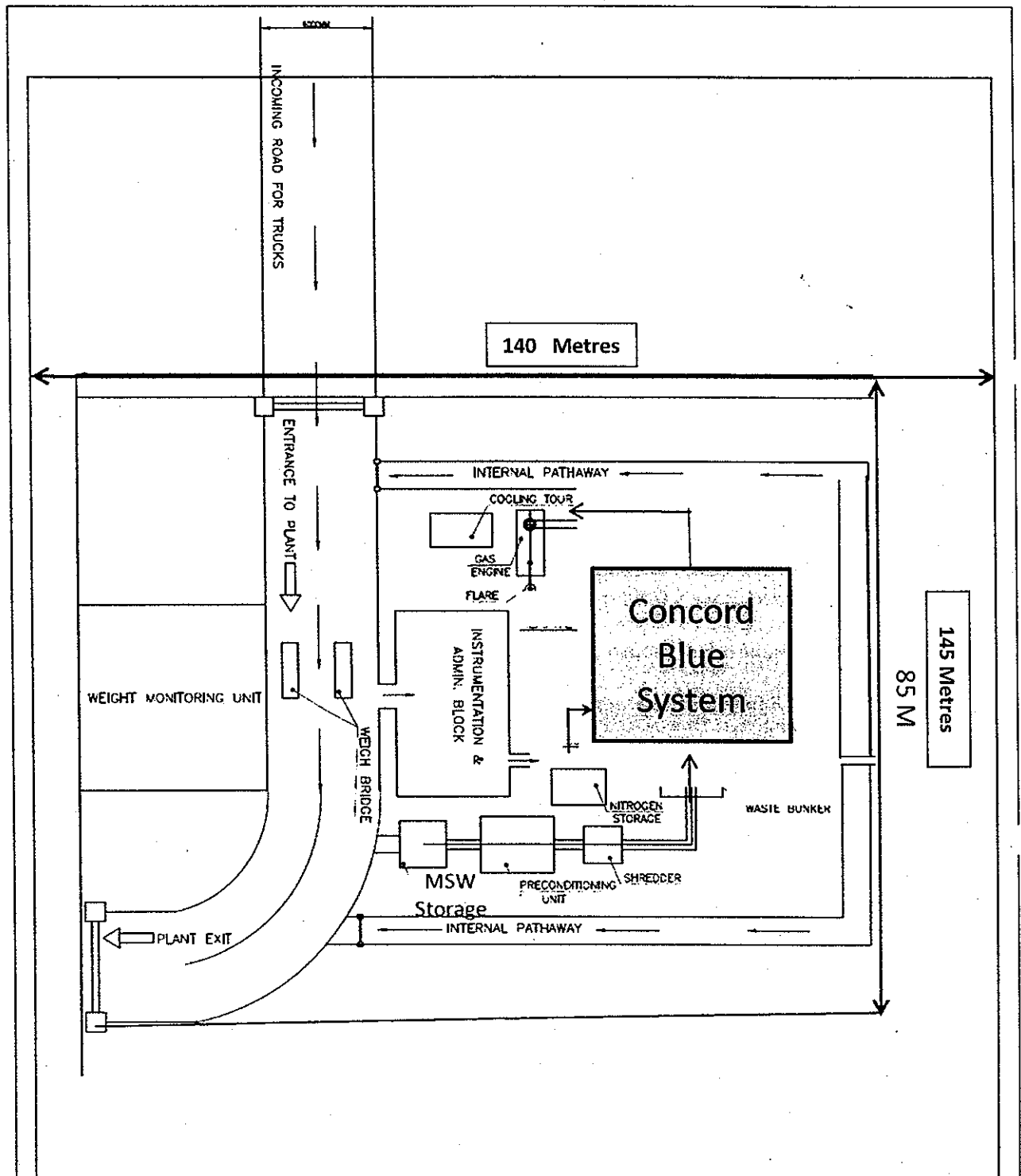
Concord Blue will provide the following support leveraging its delivery capability. The following activities are considered as Concord Blue's scope of work for this engagement:

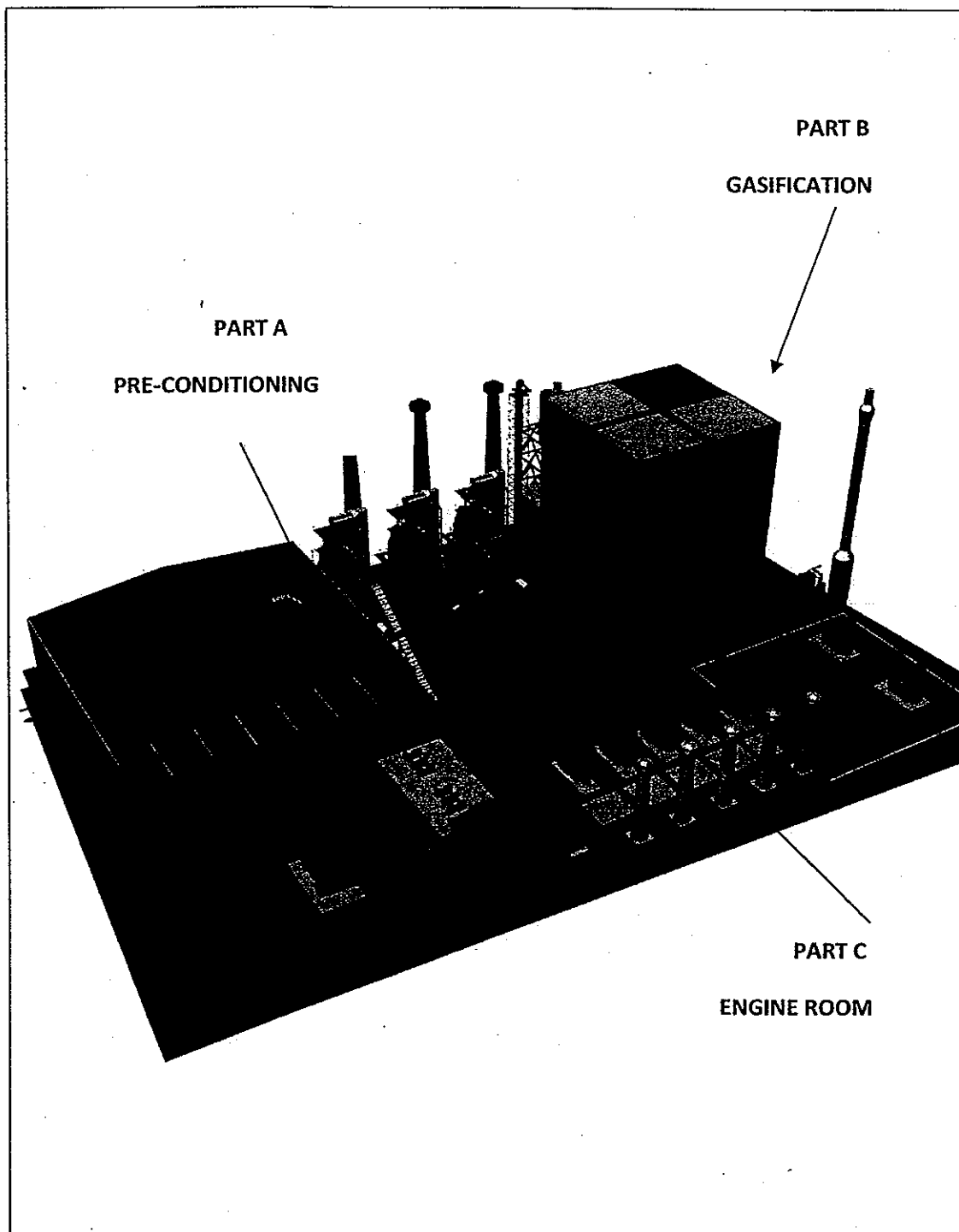
- Preparation of detailed project design for requisite quantum of Municipal Solid Waste (MSW) as per the relevant norms of the Pollution Control Board;
- Engineering of requisite components;
- Construction of Transfer Station of requisite quantum TPD Municipal Solid Waste plant at Bhubaneswar(Gadakan and Ghatikia) and Cuttack(Satichaura).
- Procurement and supply of CB system components;
- Pre conditioning of MSW;
- Construction of processing facilities of requisite quantum TPD Municipal Solid Waste plant at the allocated site provided within a period of 40 weeks excluding monsoon;
- Site Preparation - Construction of project related activities such as compound wall, weighing platform, internal roads, water lines, drainage lines, storm water drain, watchman quarter etc.;
- Design, erection and commissioning;
- All instrumentation and cabling within the CB system;
- All equipments for erection and commissioning;
- Conveyance of rejects from the facility to the SLF;
- Preparation of SLF of requisite standards;
- O&M of SLF for the tender period;



## Layout for the CBS

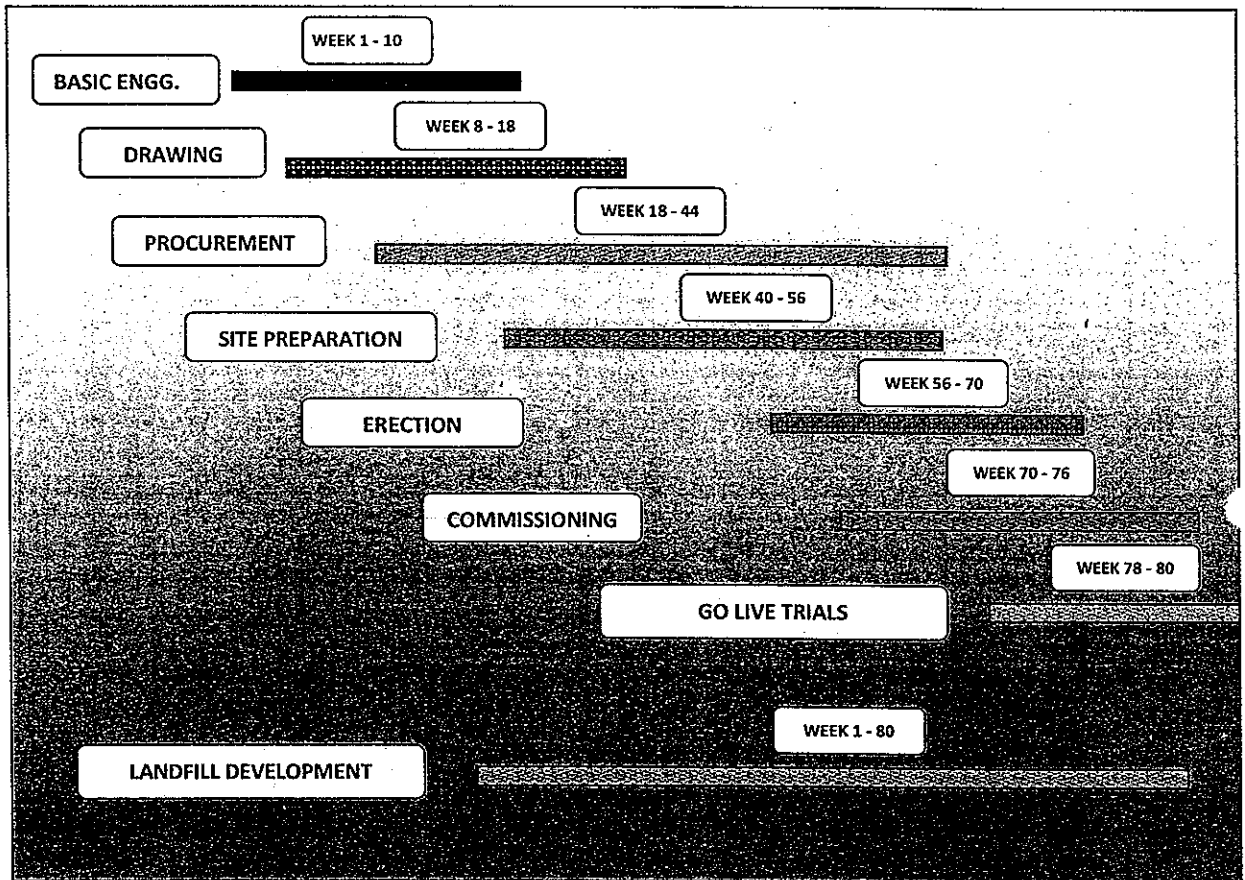
The following image gives the layout for the CBS - BHUBANESHWAR:





## Timelines

The following image details the project schedule for its primary activities:



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## Activity Phase

The following table gives the phase wise activities as well as deliverables for successful completion of the project:

Phase	Key Activities/ Steps	Deliverables
Data Collection	<ul style="list-style-type: none"><li>The Concord Blue team would conduct detailed surveys/interviews to gather specific data regarding the prevailing conditions</li></ul>	<ul style="list-style-type: none"><li>Ensure that complete data regarding the waste quantity, chemical composition, topography, resource availability, legal policies and permits are obtained</li></ul>
Engineering	<ul style="list-style-type: none"><li>Detailed engineering drawing based on inputs received during the data collection phase;</li></ul>	<ul style="list-style-type: none"><li>Engineering drawings to be furnished</li></ul>
Procurement	<ul style="list-style-type: none"><li>Post approval, all engineered components have to be sent for fabrication and OTS (Off the Shelf Products) to be requisitioned for;</li></ul>	<ul style="list-style-type: none"><li>All fabrications completed and other requisite components to be shipped off to site;</li></ul>
Site Preparation	<ul style="list-style-type: none"><li>Drawings to be handed over from phase 2 to the client with necessary instructions for site preparation</li></ul>	<ul style="list-style-type: none"><li>The site has to be ready for erection and commissioning of the Concord Blue System;</li></ul>
Erection and Commissioning	<ul style="list-style-type: none"><li>Ensure proper project management methodology is followed to implement the erection and commissioning of the Concord Blue Tower;</li></ul>	<ul style="list-style-type: none"><li>The plant should be commissioned and be prepared to be handed over to our operators;</li></ul>



## Problem Resolution and Escalation Process

The detailed responsibilities and activities in this regard are indicated in the table below:

Activity	Responsibility	Activity Description
Issue Identification	All Team Members	<ul style="list-style-type: none"><li>• Identify issues or barriers to progress.</li><li>• Verify if the issue has not been previously identified and documented.</li></ul>
Issue Documentation	All Team Members	<ul style="list-style-type: none"><li>• Enter issue into the Issue Log, filling in as much information as possible.</li><li>• Discuss questions regarding issue categorization with Project Manager.</li></ul>
Issue Resolution	Responsible Team Member	<p>For each assigned issue:</p> <ul style="list-style-type: none"><li>• Research alternatives and discuss with stakeholders directly impacted by the issue's outcome.</li><li>• Evaluate pros and cons of each alternative; develop a well-supported recommendation.</li><li>• Document activities and recommended resolution in the Issues Log.</li><li>• Mark the issue as "Resolved" in the Issue Log.</li></ul>
Issue Reviewing and Tracking	Track Leads	<ul style="list-style-type: none"><li>• Review issue resolution status in the Issues Log.</li><li>• Track outstanding issues and ensure that the assigned team member is making progress in resolving the issue.</li><li>• Discuss new issues and issue resolution status during weekly team lead meetings.</li><li>• Include high priority open issues on the status report.</li></ul>
Issue Escalation	Project Managers	<ul style="list-style-type: none"><li>• Escalate issues that have not been resolved within a specified time frame or those that require the steering committee's attention.</li></ul>

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## **Project Quality**

Our project adheres to the accepted industry norms with our vendors conforming to International Standards like ISO in their product quality. We will strive to achieve emissions below the EPA specified ranges and produce Syngas of the highest quality suitable for the client.

### **Our Quality Objectives:**

- To achieve uninterrupted plant operation (Optimum Reliability);
- To meet rated output;
- To comply with local and international emission standards;
- To deliver the optimum value Product gas and/or Bio char to the client as per requisite demand;

### **Quality Processes**

Subsequent to freezing the plant capacity (dependant on the organic waste inflow), the requisite engineering is delved into. Subsequent to this, the P&I diagrams as well as flow sheets for the process are generated. These are reviewed and validated at multiple levels of the management to ensure the accuracy of the same. On final approval from the CTO (the Chief Technical Officer), the design is completed following relevant ASME codes.

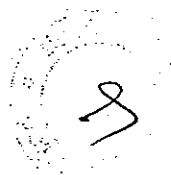
Concord Blue has developed a stringent process to appraise its vendors and our current pool of suppliers represent a highly quality conscious group which adhere to the highest norms as defined by the standards of the corresponding product.

Post manufacturing, we carry out a stage inspection at the vendor's premises to check for any anomalies and the records are logged in our inspection template. The bought out items are checked against applicable standards and we only adhere to the best in the industry.

The structures are designed by reputed structural engineers conforming to various design codes/standards like ISO 800 – 1973 (working stress).

At Concord Blue, we cross train our staff at various disciplines, encompassing technical and managerial functions to ensure an all round development of the individual. It also provides an alternate line of resources should the assigned personnel be unavailable for any reasons.

We would like to reiterate our respect for the environment, a key reason for us to be in business and would strive to ensure the growth, profitability, leadership, social responsibility, environmental, safety of the society and its inhabitants at large by sound quality policies in order to assure the success of this company.



## Turnkey Packages

The following are representative of the groups we work with for our W2E systems:

### Turnkey packages

Sr. No.	Item	Vendor
1	Gas Gensets	MWM Germany
2	BOP - Gas Gensets Auxiliaries and Accessories	Green Power International
3	Shredders	M&J, Wiema
4	Segregation	Bollegraaf
5	Dryers	Arrow head Separation Systems Pvt. Ltd.
6	CBS Gasifier + Utilities	Concord Blue
7	Power Evacuation Equipment & Controls	Voltage -Infra Pvt. Ltd.

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### **Proposed Construction & Operations and management of the Landfill**

The proposed Landfill involves remediation and Upgradation the dumping ground and its subsequent expansion as an engineered landfill and existing operations are improved and sanitary landfill practices followed.

The site is in operation for a long time as an uncontrolled open disposal site by BMC for disposal of part of the MSW that is generated in the city.

The sides of the Landfill are low-lying, partially waterlogged, marshy lands with no provision for environmental protection. Current methods of site operation are unsanitary and present significant health risk to residential communities in the adjacent area.

#### **Key Objectives:**

The main features of the Landfill will be as follows:

- Development in phases in a progressive manner to provide adequate control over site operations and minimize the environmental impacts.
- Provision for Engineered embankments around each phase and periphery for flood water control, since the said land gets over flown during the monsoon period and the land gets easily inundated and water logged for a long period.
- Prevention of pollution by containing pollutants within the Landfill site through basal, lateral and top containment measures.
- Collection of leachate into sumps and abstraction for re- circulation within the landfill and final treatment and evaluating disposal of treated leachate.
- Management of Landfill gas by having a series of vertical and horizontal feeder wells and pipes for passive venting to the atmosphere.
- Provision of storm water drainage for surface water drainage
- Provision of appropriate landfill plant and equipment to carry out operations
- Provision of vegetative cover and allowing the site to be restored as an open grass land and after completion of filling operations and capping of the landfill and
- Improved Operation and Site Management measures to provide for weighing and recording waste quantities, placement of waste in operational cells within each landfill phase and compacting and covering of waste on a daily basis

- Measuring and analyzing pollutant levels and planning the deposition and closure.
- Baseline water quality analysis from water surrounding the site, ground water quality and level.
- Air quality, including smoke and odors, leachate quality and quantity,
- Ecological Impacts.

### **Landfill development methodology**

#### **Design Approach.**

Field investigation results from surveys and studies conducted as inputs and Ministry of Environment and Forest (MoEF) guidelines as basis, the design concepts for different components of landfill are developed under this task. Apart from MoEF guidelines other manuals like CPHEEO manual and other Guidelines from BMC will also be referred. The concepts would be developed for each of the landfill component in line with stipulated guidelines.

Considering the aforesaid criteria and site conditions the project activities have been divided into the following stages:

1. Clearing of site , geo- technical investigations and design
2. Construction of Landfill and processing facility

#### **1. Clearing of the project site :**

After site investigation, the arrangement for cleaning, grubbing, removal of old garbage accumulated , levelling etc. to be carried out phase wise.

#### **2. Topographical and Geo-technical Investigations and Survey ;**

- Topographical surveys of the proposed landfill & other facilities and Processing Plants.etc.
- All the existing structures of significance within the periphery of the site boundary shall be recorded and demarcated on the map
- Sub- soil investigations / Geo- technical surveys regarding Litho logy and water table upto a depth of 10 Meters which shall be necessary for development of site for landfill and other facilities

Design would be prepared. Under this task detailed site layout, details of access roads, design of other facilities like buildings, storage facilities, etc. and specifications for technical elements are prepared. Detailed landfill and processing facility design would be developed in approval with the project engineer appointed for the project. The detailed design will involve:

- Prepare the site layout plans considering non disruption of waste disposal operations on part of the site

- Estimate the scales of the facility based on the planning system developed
- Prepare the design designs using the Indian engineering standards
- Bill of Quantities

The protection of the quality of the ground water has been of prime importance in the designing for the landfill facility. Hence, the design approach aims at sensitive environmental features of the proposed site and is designed to develop the landfill facility to minimize the leachate generation and gas generation with its uncontrolled migration in the atmosphere.

### **CONSTRUCTION OF LANDFILL FACILITY**

Based on the project requirement of Landfill has been proposed for the project for SLF for existing and future waste generation.

The sanitary landfill facility proposed for the accumulated waste shall ensure to accommodate mixed waste from the existing disposal site.

The potential site location for landfill Area of approx. 61 acres, shall be identified and Landfill operations shall be in phased manner.

Approximately 800,000 cum or more old MSW is found piled in heaps for an average height of 2 m. The waste from the accumulated site will be screened and soil cover material and recyclables will be separated. The Reclaimed soil can be used partly as cover material for the landfill for existing and future waste and can be sold off for road construction / low land filling etc.

The site will be developed as a phase landfill with waste emplacement being taken using the cellular method of filling. Each major Landfill phase shall be divided into series of operational areas, the size and arrangement of which is optimised with provision for storm water drainage and control. Active operational areas shall be further sub-divided into a series of daily waste placement cells, the actual size and organisation shall be a balance between:

- Minimising the area open for waste emplacement, in order to exercise the maximum degree of environmental control and,
- Pace to permit vehicles to manoeuvre and unload quickly and safely manner that ensures safe working practices.

Specific factors controlling the size of the working area are:

- The configuration of operational cells and phases
- Minimisation of the uncontrolled ingress of rainwater ( water balance )
- Prevention of nuisances, such as odour, flies, birds, visual impact etc.
- Adopted work practices with good operational control so that the waste is restricted to the defined working area.
- Immediate deposition and compaction of waste
- Providing daily inert cover material over the deposited waste

Daily waste placement cells shall be developed sequentially at floor level until such time that a sufficiently large platform of waste has been constructed to permit the formation of a second lift of waste in one or more daily waste placement cells

### B) Landfill Layout and Earthwork

It is proposed that the ground level of the Landfill will be raised by min. 0.5 M and slope of the ground section would be 1:2 and 1:4 respectively. The soil & dust from screened out old MSW and inerts received shall be used as daily covering material.

The landfill for the new and existing landfill shall be phased to allow the progressive use of the entire site such that at any given time a part of the site may have a final cover, apart being actively filled, a part being prepared to receive waste and a part undisturbed. These phases shall be structurally designed and filling of new phase shall always start from the end of approach road toward beginning so that these phases can always be accessed by road. The waste from waste receiving platform will be tipped to the landfill area and spread into strips of suitable size. The side of the strip will be maintained at a suitable slope. At the end of each day these strips shall be covered with soil of 150 mm depth on all exposed sides. The phase filled shall be closed simultaneously after reaching the desired height. These phases shall also be closed prior to onset of monsoon season.

### C) Liner System:

The leachate control in the landfill involves a prevention of migration of leachate from landfill sides and landfill base to the subsoil by a suitable liner system and drainage of leachate collection at the base of a landfill to the side of the landfill and removal of the leachate from within the landfill. The liner system will be as per guidelines of CPHEEO Manual and standard practices.

The construction of liner system shall start with preparation of ground. All loose particles like boulders, lumps, tree roots, rubbish of any organic deleterious matter shall be removed and base layer shall be compacted by rollers/ vibratory rollers to achieve maximum dry density. After this clay liner will be constructed. The **Figure 7** shows a liner system section for the proposed landfills:

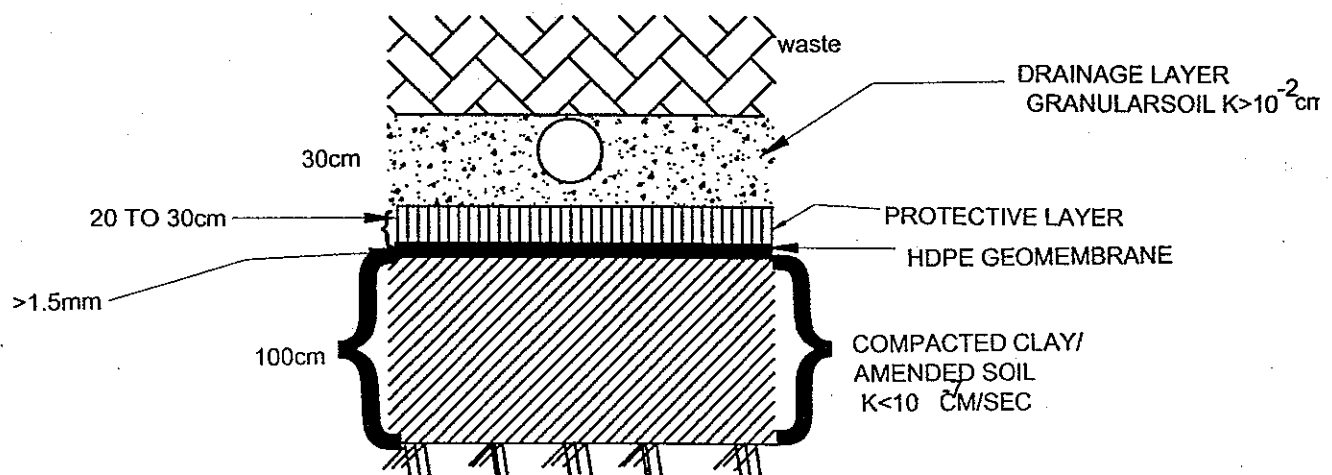


Figure : Liner System Section

#### i) Clay Liner

Once ground excavation and surface compaction has been done a thin clay layer of 20-25 cm thickness is laid and compacted to achieve a smoother ground. On this the soil of permeability  $k < 10^{-7} \text{ cm/sec}$  of and thickness 900m shall be laid to form clay liner. The available soil within

the premises shall be amended by adding Bentonite powder as per requirement to meet the desired permeability requirement. After laying the clay mix it shall be compacted by using vibrator/rollers and water. The following tests shall be conducted to find out the proportion of mix:

- Classification Test (grain size distribution and plasticity) as per IS:1498 and IS:2720. (Part 4 & 5).
- Compaction Tests (Standard proctor and modified proctor or equivalent)(host material only) as per IS:2720 (part 7 & 8)
- Permeability test on as-compacted-then saturated samples (host material only) as per ASTM:D-5084 or Olson and Daniel (1979).

The borrow soil areas will be identified and having the requisite properties as mentioned above and make our own approach and access roads from the borrow area to the demarcated landfill area.

The clay liner shall be constructed in layers. These layers shall be in thin lifts so that they can be compacted well and have homogeneous bonding between lifts. After the soil is placed, a small amount of water may be added to offset evaporative losses, and soil may be tilled one last time prior to compaction. Each lift of clay liner shall bond to the underlying and overlying lifts. The surface of previously compacted lift must be rough so that the new and old lifts blend into one another. Drying of layers leading to cracks shall be eliminated completely. Liners on the slopes shall be parallel to slope. Each layer in the field shall be tested for Moisture Content, Dry Density and permeability before laying the next layer.

#### **ii) Geomembrane/ HDPE layer**

Once the clay liner is laid down satisfactorily a surface free of irregularities, excessive water etc shall be prepared to lay down HDPE layer. The HDPE laid down shall be procured of 1.5mm thickness, tensile strength at yield greater than 18KN/m, tensile strength at break greater than 30KN/m, tear resistance greater than 150N and puncture resistance greater than 250 N. The HDPE liner shall be used only after its full assurance of meeting the desired specifications. Standard quality assurance and quality control procedures shall be followed while laying down the liner on the horizontal surface as well as slopes. Special precautions shall be taken while seaming the liner. Moreover to ensure quality 100% length of seem would be tested and all other standard tests like air pressure test, vacuum test etc shall be conducted. The equipments deployed shall be such that they do not puncture or destroy the liner.

#### **iii) Protective layer and Drainage layer**

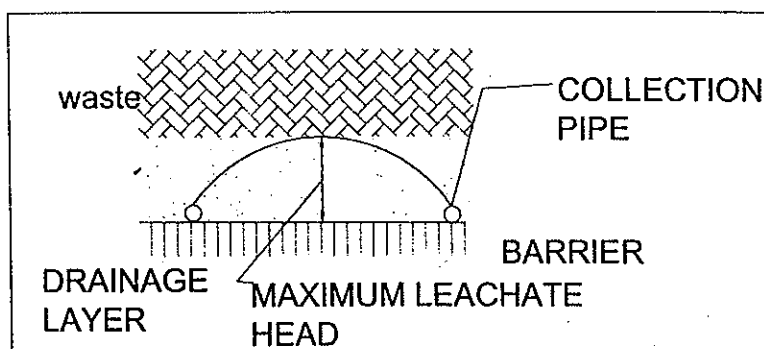
Above the HDPE layer there shall be protective layer of silty soil of thickness between 20cm to 30 cm thick. A leachate drainage layer 300 mm thick made of granular soil having permeability greater than  $10^{-2}$  mm/s will be placed above protective layer.

#### **D) Leachate Collection System**

The leachate collection system shall be laid above the liners. The leachate collection pipes shall be made of slotted HDPE pipe of 150 mm diameter and shall be placed at 25m c/c spacing as shown in Figure. Leachate from this network of pipes shall flow in a leachate collection sump

under gravity. Leachate collection sump will be of suitable capacity. Leachate collected shall be recirculated back to the landfill or sprinkled over windrows. Generally leachate collected from landfills in non hazardous but still leachate shall be tested for heavy metals. If the test results show presence of any heavy metal then it would be precipitated. Leachate shall be pumped using a pump to the desired destination.

It is worth mentioning here that to minimize generation of leachate each phase of the landfill shall be provided with adequate storm water drainage system. The drainage system designed shall be designed to the maximum rainfall intensity and shall be made to divert the surface water from entering the site and to curtail runoff towards the waste disposal facility. This drainage water collected shall be passed through settling tank to capture sediments before its final disposal.



**Figure 8: Leachate Collection Facility.**

#### **E) Gas Recovery/Collection System**

Landfill gas (LFG) is produced as a result of biodegradation at a high temperature. LFG is high in methane and methane is known to be combustible having good calorific value. Methane also has a high global warming potential. However, methane generation will take place after minimum 3 to 4 years of disposal of waste in landfill. Hence, gas venting layers with gas venting pipes will be provided for venting of the gases on filling of the cells. These venting pipes shall be perforated HDPE pipes in the vertical wells surrounded with pebbles.

#### **F) Closure of Landfill**

The closure of landfill means putting final layer for restoration for after use of facility. Apart from restoration the basic aim of the final cover is to minimize infiltration of water into landfill by increasing run off, separate secured waste from animals, give a neat look and also to control LFG migration. The final layer shall have the following components:

- Vegetative soil layer of 450 mm thickness
- Drainage layer of 150 mm made up of granular material
- A 600 mm barrier layer of clay or amended soil
- A gas venting layer of 200 mm thick made up of granular material

Other facilities include:

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- Water Supply System
- QC Lab
- Facilities for Workers
- Internal Roads as per statutory norms
- Lighting and associated Electrical works
- Boundary Wall and Fencing
- Green Belt
- Fire and Safety Equipment
- Sign Board

### **Codes and Standards**

The following codes and standards would be adhered to:

- a) MSW Rules
- b) Any other standards specified by statute and Applicable Laws
- c) Bureau of Indian Standards (BIS)
- d) Any other standard proposed by the Rochem and approved by the Independent Engineer

### **Building Code**

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).

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## **Common Facilities**

### Waiting area, entrance and security cabin

Cautionary boards in appropriate languages and in readable letter size shall be displayed at various locations within and on the periphery of the WPLF. One entry / exit point will be designed for the WPLF site plus one additional emergency exit. The security cabin will be designed with data and telecommunication facilities. A designated waiting area is designed for all vehicles reaching during the night, on the approach road of the facility in a designated site outside the fenced area, but within the WPLF site. A dedicated vehicle parking/waiting area will be designed for incoming vehicles carrying waste. These parking areas will be concrete paved. There will be a separate parking area for cars of visitors and staff.

### Administration building

The Administration/ Operation building will consist of office space for managers and other office staff. It also has the basic amenities for workers and visitors. The area of the Administration/ Operation Building has to be appropriate for the purpose foreseen. This building will include the following units:

#### **Analytical Laboratory/Storage Facility**

An analytical laboratory to perform the necessary analysis of compost samples as well as samples from the leachate/process water for discharge will be installed at the WPLF. The laboratory installation shall comply with the relevant regulations for occupational health and safety features. Sufficient sets of minor equipment for a routine test lab for leachate/process water from the composting and treated solid waste samples to assess the compost qualities have to be provided. This can include e. g. glass ware (beakers, flasks, pipettes, etc.), other tools and devices such as laboratory and analytical balances, heating and cooling devices, stirring equipment and basic and advanced sets of chemicals and standard substances for trace and non-trace analysis.

Other amenities include

- Information Centre
- Meeting Room
- Administrative Staff Room
- Authority Room
- Canteen
- Cloak Room and Toilets

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## **OPERATION OF LANDFILL**

The landfill facility at Bhuasuni would be receiving a total of 55-80 tonnes per day of inerts comprising of ash and construction and demolition debris. The following are some of the broad features of the landfill facilities:

The Landfill Facilities shall conform to the minimum design requirements set out in the Concession Agreement and to the MSW Rules

The landfill area would be designed in such a manner that a total expected accumulated waste quantity arising in the project area in a 22 year period can be disposed. The average quantity of MSW inerts / rejects to be landfilled is estimated at 26,000 tons per year. Additional quantities might arise from the restoration of wild dumpsites.

The planned capacity for landfillable wastes and the construction of the respective landfill sections would be established within a phased manner. Based on a topographical survey the total landfill area would be divided into different construction phases which each consist of a defined number of cells.

### **Overall Design Parameters**

The minimum area earmarked for treatment plant and landfill facility is **18 acres**. We shall utilise the Landfill Site for the purpose of setting up the Landfill Facility in accordance with the Construction Requirements and O&M Requirements.

### **Capacity**

The landfill facility shall be developed to accommodate 7,79,382cum of rejects from the Processing Facility.

### **Survey and Excavation**

We 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 Engineer.

We shall excavate to a depth from the existing Natural Ground Level ("NGL") based on the results of the detailed topographic survey.

The design would consider that all planned areas have sufficient inclination to guarantee an unhindered run off of leachate and storm water. The design of the landfill would be prepared in such a manner, that the amount of cut and fills are finally in a balance. Required cover material need to be considered and has to be made available. Filling and compacting would be carried out in layers of up to 40 cm maximum.

### **Composite Liner System**

A composite liner system consisting of drainage layer, HDPE layer and compacted clay shall be provided. Alternatively, We can use geo-synthetic clay layer (GCL) in place of compacted clay, to avoid utilization of valuable clay. Typically the Composite Liner System would have the following components:

- a) Drainage layer of 15cm thick granular soil material of permeability value of  $1 \times 10^{-2}$  cm / sec.
- b) A 1.5mm thick Grade I 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,  $1 \times 10^{-7}$  cm/sec.

#### **Intermediate Liner System**

We shall, in accordance with the O&M Requirements, provide an Intermediate Liner, which shall consist of a 600 mm thick compacted soil amended with additives as per IS: 6186-1986 to reach the required permeability value  $1 \times 10^{-7}$  cm/sec.

#### **Daily Cell Cover**

We shall, in accordance with the O&M Requirements, at its own cost and expense provide the Daily Cell Cover which shall consist of a 150 mm thick compacted soil amended with additives as per IS: 6186-1986 to reach the required permeability value not greater than  $1 \times 10^{-7}$  cm/sec.

#### **Final Cover System**

We shall in accordance with the O&M Requirements, provide the Final Cover which shall consist of:

- 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  $1 \times 10^{-7}$  cm/sec
- b) Geo-membrane Layer of 1.5mm thick Grade I HDPE liner as per IS: 10889-1984.
- c) Drainage Layer of 150mm thick granular soil material of permeability value not greater than  $1 \times 10^{-2}$  cm/sec
- d) Vegetative Layer of 450mm thick with good clay soil as per MSW Rules and as approved by the Independent Engineer.

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## **Leachate Collection and Removal System**

We shall provide the LCRS, which shall consist of:

- a) a leachate drainage layer consisting of 150 mm thick granular soil material of permeability value of  $1 \times 10^{-2}$  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 tank/s and a leachate collection network

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## **PROJECT SUSTAINABILITY**

### **Identification of Revenue Streams**

#### **Sources of Funds**

The consortium partners bring the equity required in the ratio as per the tender norms. The balance required for the project will be through debt from the Bank/Financial institutions.

The working capital gap will be arranged through bank/financial debt. Any profits from the business over a period of time will be under Reserves & Surplus.

#### **Application of Funds**

The major funds will be utilized in the project in civil works and Plant & Machinery. A portion of the funds will be in the form of current assets. The pre-operative expenses will be amortized to the fixed assets and depreciated along with the fixed assets as per the rates mentioned in the Companies Act, 1956.

#### **Profit & Loss A/C**

##### **Revenue**

The major source of revenue is from power generation. The power will be sold to Electricity board as per the agreed tariff rates. Tipping fee from the BMC will be another source of revenue. Apart from this there are by products like ash products, which can be taken at a very low or nil revenue generating activity.

The power generation will be calculated at 85% PLF and the internal consumption will be 15%. The balance power is available for sale to the electricity board.

##### **Expenses**

The main expenses will be operating and maintenance cost including staff salaries, consumables for flue gas cleaning, spares and periodic maintenance and landfill operations. Other costs include general administrative expenses like communication cost, travelling cost, audit fee, etc. The other major cost will be interest on the debt burden. The balance Profit/(Loss) will be carry forwarded to the balance sheet under Reserves & Surplus head.

The consortium will maintain the debt equity as 70:30. Estimated repayment of the term loan will be 10 years. The working capital loan will be arrived as per the bank Credit Monitoring Arrangement (CMA).

The waste which is converted into energy are obtained as by products which can be converted into energy. From the by products the identified revenue stream are as below -

- a. Sale of Power.
- b. Sale from scrap.
- c. Carbon credits.

Other sources of revenue include Tipping Fees, Advertisements and other sources.

We hereby declare that our proposed project will sustain in terms of Technology and Price which will be beneficial to Bhubaneswar & Cuttack Municipal Corporations.

## DETAILS OF SOCIAL AND ENVIRONMENT IMPACT MANAGEMENT PLAN

The proposed facility is completely enclosed and free of foul smell. Once constructed, the waste would never be seen post its entry into the facility.

As an environmentally friendly technology, the CBS ensures that not only are the common emissions compliant with global norms, but also hazardous pollutants like dioxins and furans are mitigated to the greatest degree. As an illustration, please refer to the following image that states the CBS's dioxin and furan emissions to be at one tenth the level of the allowable emission limits:

As evidenced from the image above, the emission of dioxin and furan is at a level that is one tenth that of the allowable limits by CPCB.

The W2E facility is a job enhancing proposition while simultaneously ensuring that no worker would have to directly touch the waste as the process is optimized and automated to ensure that people perform a supervisory role.

### DIOXIN & FURAN FLARE STACK (2210002602)

Extraction: 20.01.2011

11:00Hrs - 15:20Hrs

- Oxygen content: 11.7(vol-%)
- Moisture: 0.40(vol-%)
- Stack Temperature: 568[°C]
- Extracted volume: 4.582[m<sup>3</sup>/dry]

Congener	amount (ng)	I-TEF	I-TEQ (ng)
2,3,7,8-TCDF	0.033	0.1	0.0033
2,3,7,8-TCDD	<0.0038	1	<0.0038
1,2,3,7,8-PeCDF	0.041	0.05	0.002
2,3,4,7,8-PeCDF	0.044	0.5	0.022
1,2,3,7,8-PeCDD	<0.0076	0.5	<0.0038
1,2,3,4,7,8-HxCDF	0.034	0.1	0.0034
1,2,3,6,7,8-HxCDF	0.035	0.1	0.0035
2,3,4,6,7,8-HxCDF	0.042	0.1	0.0042
1,2,3,7,8,9-HxCDF	<0.0095	0.1	<0.00095
1,2,3,4,7,8-HxCDD	0.012	0.1	0.0012
1,2,3,6,7,8-HxCDD	0.017	0.1	0.0017
1,2,3,7,8,9-HxCDD	0.015	0.1	0.0015
1,2,3,4,6,7,8-HpCDF	0.15	0.01	0.0015
1,2,3,4,7,8,9-HpCDF	<0.038	0.01	<0.00038
1,2,3,4,6,7,8-HpCDD	0.27	0.01	0.0027
OCDF	<0.19	0.001	<0.00019
OCDD	0.73	0.001	0.00073
TOTAL PCDD/PCDF			0.048-0.057
TOTAL PCDD/PCDF (ng TEQ/Nm <sup>3</sup> )			0.012
TOTAL PCDD/PCDF (ng TEQ/Nm <sup>3</sup> )	at 10 [%] O <sub>2</sub> (EMR)		0.01

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भारत संस्कृत संस्कृत

## भारत का राजपत्र The Gazette of India

अधिसूचना

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## DETAILS OF PROPOSED COMMUNICATIONS PLAN

### **Seminars**

We would conduct adequate knowledge sharing seminars to educate the various stakeholders of the society to spread awareness of the benefits of the proposed solution, namely:

- The waste is disposed without any incineration and hence there'd no emissions to the atmosphere;
- No smell from the system;
- The groundwater would be safe from leachate
- Over 85-90% of the waste from Bhubaneswar and Cuttack would be disposed in an environmentally friendly manner and also an hourly power injection of 7500 units would be made to the local grid;
- The balance rejects would be transported by covered vehicles to ensure there'd no site of the waste;
- Also, since the rejects are of negligible quantum, the amount of trucks required to convey the same to the landfill would be minimal, reducing the pollution from their emissions.

### **Project description handouts**

We would ensure that there'd be adequate material representing the salient features of the project at the site, alongside its safety features and standards specified for the consumption of all those who'd wish to know more of the project.

Adequate signboards with brief description would be put up for each part of the facility to delineate the activity therein.



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## Typical Communications Plan

### Proposed communications plan

A well planned project has a well-planned Communication strategy. The following are guidelines and options when creating a Project Communication Plan.

What	Who/Target	Purpose	When/Frequency	Type/Method(s)
Initiation Meeting	All stakeholders*	Gather information for Initiation Plan	FIRST Before Project Start Date	Meeting
Distribute Project Initiation Plan	All stakeholders*	Distribute Plan to alert stakeholders of project scope and to gain buy in.	Before Kick Off Meeting Before Project Start Date	Document distributed via hardcopy or electronically. May be posted on project website or OIT Blackboard site. PPM Templates: Project Snapshot or "Lite" Initiation Plan
Project Kick Off	All stakeholders*	Communicate plans and stakeholder roles/responsibilities. Encourage communication among stakeholders.	At or near Project Start Date	Meeting
Status Reports	All stakeholders and Project Office	Update stakeholders on progress of the project.	Regularly Scheduled. Monthly is recommended for large/midsize projects.	Distribute electronically and post via web/OIT Blackboard site. ppm Template: Status Report
Team Meetings	Entire Project Team. Individual meetings for sub-teams, technical team, and Functional teams as appropriate.	To review detailed plans (tasks, assignments, and action items).	Regularly Scheduled. Weekly is recommended for entire team. Weekly or bi-weekly for sub-teams as appropriate.	Meeting PPM Template: Detailed Plan



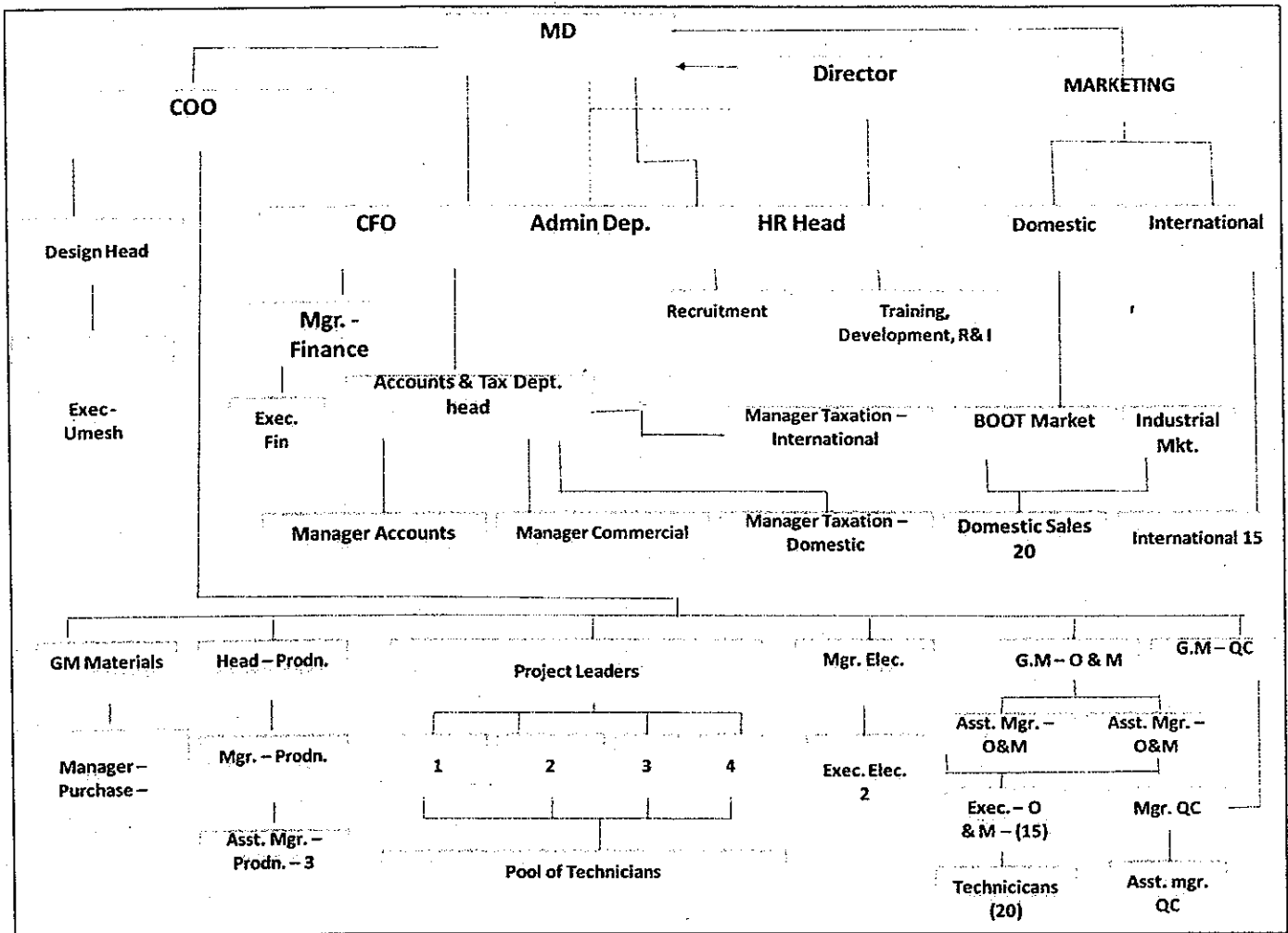
What	Who/Target	Purpose	When/Frequency	Type/Method(s)
Project Advisory Group Meetings (this may apply only to larger projects)	Project Advisory Group and Project Manager	Update Project Advisory Group on status and discuss critical issues. Work through issues and change requests here before escalating to the Sponsor(s).	Regularly Scheduled. Monthly is recommended.	Meeting
Sponsor Meetings	Sponsor(s) and Project Manager	Update Sponsor(s) on status and discuss critical issues. Seek approval for changes to Project Plan.	Regularly scheduled Recommended biweekly or monthly and also as needed when issues cannot be resolved or changes need to be made to Project Plan.	Meeting
Executive Sponsor Meetings (this may apply only to larger projects)	Executive Sponsor(s) and Project Manager	Update Sponsor(s) on status and discuss critical issues. Seek approval for changes to Project Plan.	Not regularly scheduled. As needed when issues cannot be resolved or changes need to be made to Project Plan.	Meeting
PPO Audit/Review	Project Office, Project Manager, select stakeholders, and possibly Sponsor(s) if necessary.	Review status reports, issues, and risks. To identify and communicate potential risks and issues that may effect the schedule, budget, or deliverables.	Monthly Scheduled by the Project Office	Meeting/Report Project Office will produce report using their template.
Post Project Review	Project Office, Project Manager, key stakeholders, and sponsor(s).	Identify improvement plans, lessons learned, what worked and what could have gone better. Review accomplishments.	End of Project or end of major phase	Meeting/Report Project Office will produce report.
Quarterly Project Review	Project Office, Project Manager, and key stakeholders.	Review overall health of the project and highlight areas that need action.	Quarterly depending on size and criticality of the project. Scheduled by the Project Office.	Meeting/Report Project Office will produce report using internal template.

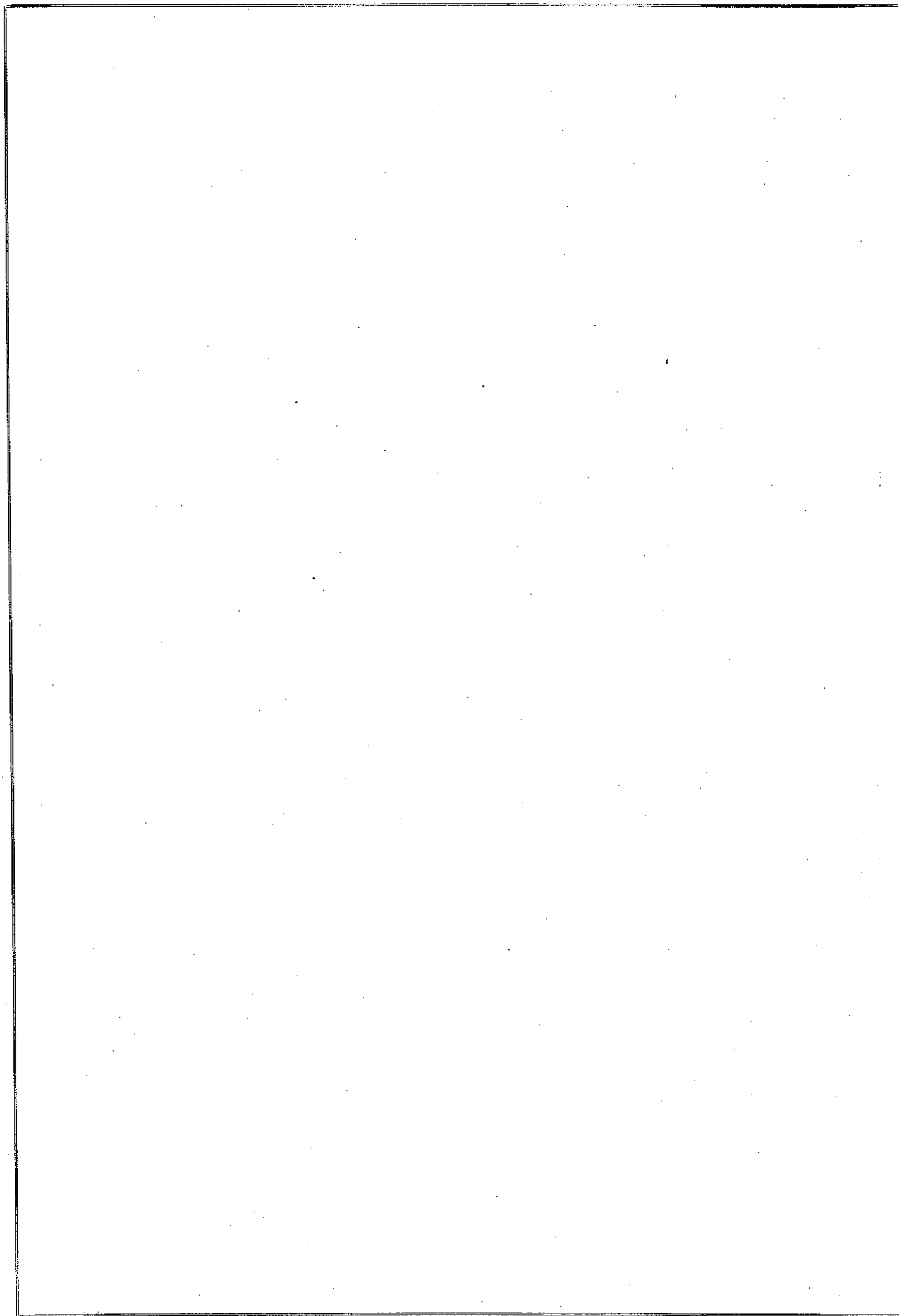
What	Who/Target	Purpose	When/Frequency	Type/Method(s)
Presentations to Special Interest Groups	Examples: PMT (Project Managers Team), OIT Leadership Group, AIS Quarterly Review, AMG (Academic Managers Group), etc.	To update external groups to promote communication and create awareness of project interdependencies.	At project milestones so as to communicate with other interested parties of changes that will be introduced outside of the Project Team.	Presentation/Demonstration
OIT Blackboard Site	ALL OIT and OIT Project Team Members.	Central location to house Status Reports, meeting minutes, Project description, and Project Plan. For any communications that can be shared with all OIT staff.	Update monthly with Status Reports; otherwise, as necessary.	Electronic Communications Venue
Periodic Demos and Target Presentations	Specific Focus Groups or End Users. Examples: AMG (Academic Managers Group), Students, Power Users, Help Desk, Dept Mgrs., etc.	To gain input from special groups and keep them abreast of the Project's status.	Once product has enough to "show". As you complete critical phases or make major enhancements.	Presentation/Discussion
Other...	To be determined by the Project Team	General communications	As needed	PAW, PWB, Lunch n Learns, email lists, PU home page announcements, etc.

\*Princeton Project Methodology (PPM) describes stakeholders as: "...any person or group who has a vested interest in the success of the project, i.e. either provides services to the project, or receives services from the project. A key stakeholder is defined as: A person whose support is critical to the project - if the supports of a key stakeholder were to be withdrawn, the project would fail."

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**PROPOSED ORGANIZATION CHART AND KEY PROFESSION**





## Appendix XI Declaration of Undertaking of Kfw

1. The Government of the State of North Rhine-Westphalia (hereinafter referred to as the "Government") has entered into a Declaration of Undertaking of Kfw (hereinafter referred to as the "Declaration") with the Federal Government of the German Democratic Republic (hereinafter referred to as the "Federal Government") on the 1st day of January 1990.

**APPENDIX XI.**  
**Declaration of Undertaking of KfW**

We underscore the importance of a free, fair and competitive procurement process that precludes abusive practices. In this respect we have neither offered nor granted directly or indirectly any inadmissible advantages to any public servant or other person nor accepted such advantages in connection with our bid, nor will we offer or grant or accept any such incentives or conditions in the present procurement process or, in the event that we are awarded the contract, in the subsequent execution of the contract. We also declare that no conflict of interest exists in the meaning of the kind described in the pertinent Guidelines1.

We also underscore the importance of adhering to minimum social standards ("Core Labour Standards") in the implementation of the project. We undertake to comply with the Core Labour Standards ratified by India.

We will inform our staff about their respective obligations and about their obligation to fulfil this declaration of undertaking and to obey the laws of India.

We also declare that our company/all members of the consortium has/have not been included in the list of sanctions of the United Nations, nor of the EU, nor of the German Government, nor in any other list of sanctions and affirm that our company/all members of the consortium will immediately inform the client and KfW if this situation should occur at a later stage.

We acknowledge that, in the event that our company (or a member of the consortium) is added to a list of sanctions that is legally binding for the client and/or KfW, the client is entitled to exclude our company/the consortium from the procurement procedure and, if the contract is awarded to our company/the consortium, to terminate the contract immediately if the statements made in the Declaration of Undertaking were objectively false or the reason for exclusion occurs after the Declaration of Undertaking has been issued.

Place: Mumbai

Date: 16/10/2013

For Essel Infraprojects Ltd:- Rochem Separation System (I) Pvt. Ltd.

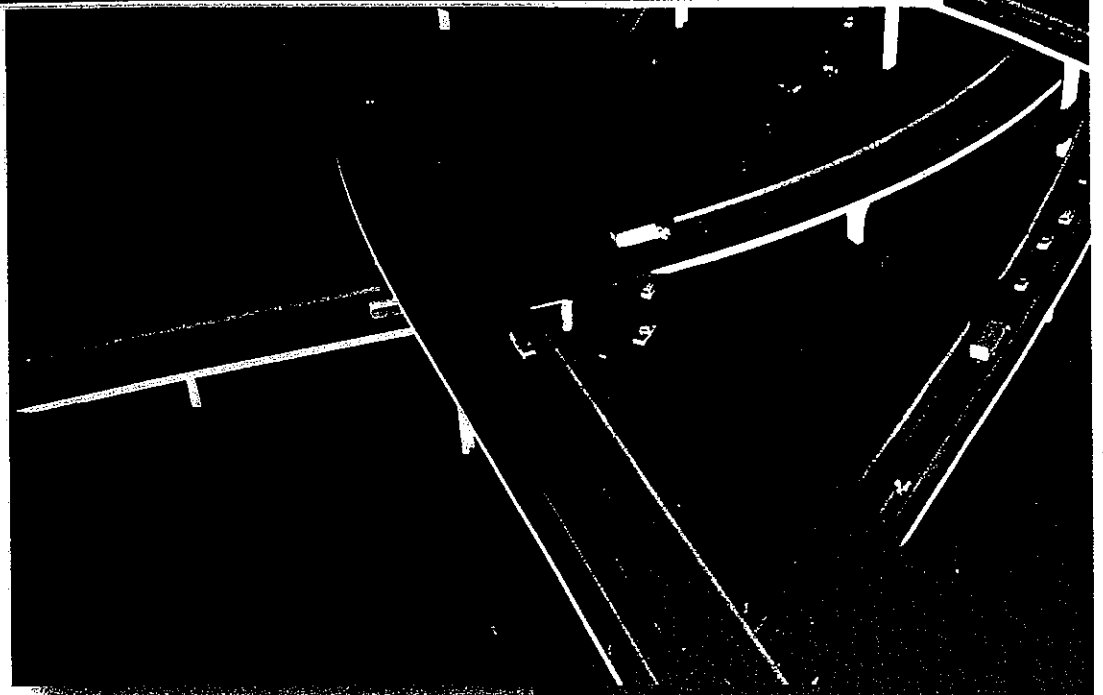
  
Authorized Signatory





2013

# Essel Infraprojects Limited Company Profile



**Corporate Office:**

Essel Infraprojects Ltd.  
Kohinoor City 513, A-Wing,  
Off. LBS Road, Kurla (W),  
Mumbai – 400070

Tel: +91-22-66012323

Fax: +91-22-66012300

Website:

[www.esselinfraprojects.com](http://www.esselinfraprojects.com)

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Zee Network



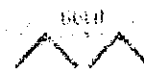
Zee News



Zee Sports



cafe



## Essel Group

Essel Group is one of India's largest and most promising business houses promoted by Mr. Subhash Chandra. Essel group is a perfect example of moving ahead with future to achieve success and growing extensively with its unshakable power of belief. Our strong belief reflects in our motto, 'Faith in innovative and organized growth' that persuades all our business moves.



Started with a commodity trading & export firm, Rama Associates Limited in 1976, the group has evolved as a business giant of India with its worldwide operations and a dedicated workforce of more than 8000 employees. With a wide reach and wider scope of operations, Essel Group has excelled and diversified its business which includes media, technology, entertainment, packaging, infrastructure, education, precious metals and healthy lifestyle & wellness.

The group's listed companies Zee Entertainment Enterprises Ltd., Zee News Ltd, Wire & Wireless India Ltd, Dish TV India Ltd., Essel Propack Ltd. and ETC Networks Ltd.

Driven by consumer preferences, the group has always pioneered a number of businesses and imprinted its mark of leadership in all its endeavors. In 1992, the group entered in television entertainment media sector and launched India's first ever satellite television channel- Zee TV. For providing out of home entertainment, the group launched India's first ever theme parks, Essel World & Water Kingdom in the country. Pioneering the multiplex business of entertainment industry, the group started Fun Cinemas In the name of Fun Multiplex Pvt. Ltd which today aims to reach over 1500 screens in more than 250 cities nationwide. Continuing the legacy of pioneering in consumer centric businesses, the group launched its first in India, Direct to Home (DTH) Entertainment Company- Dish TV, in the year 2005. Essel Group's Playwin is the India's first online gaming company in the Country and Essel Propack, the world's No. 1 in packaging, was also a revolutionary concept introduced by Essel Group in India.

The success of all his businesses is an illustration of Mr. Chandra's pioneering spirit and strong business acumen. Under his leadership, Essel has grown into one of the largest entities and a symbol of Indian ingenuity and power. Because of his par excellence, the group has excelled in all the fields in which it has ventured.

Today, Essel Group is known for setting the benchmarks of success and a leader in every business it undertakes. Assimilating the core thought of believing to achieve & grow, Essel Group is globally creating value in the lives of millions every day, every moment.

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## Essel Infraprojects Limited

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In recent years, a tremendous surge in economy has positively impacted Indian businesses and attracted a large number of economies across the globe. Looking at the present scenario there is an urgent need to develop infrastructure so as to keep the economy flourishing. Moreover to unleash its overall potential, India has to revolutionize the infrastructural facilities through the active participation of both public and private sectors while inducing innovative technologies and introducing new growth prospects.

With an absolute objective to craft immaculate infrastructure and grow steadily adhering to a strong belief to disseminate excellence with the finest contribution to the Indian economy & infrastructural growth, **Essel Infraprojects Limited** came into existence. It's an infrastructure wing of Essel Group and is one of the fastest growing unit having diversified interests in infrastructure projects.

Being the pioneers in developing urban recreational infrastructure in the form of India's top theme parks (Essel World and Water Kingdom), Essel Infraprojects Limited has gained a repute of developing innovative & qualitative infrastructure manifesting its capabilities to create a masterpiece. After having launched various projects in Roads, Urban Infrastructure and Real Estate, the company is accelerating its operations in other segments and working effectively towards creating the best infrastructural solutions that are innovative, qualitative as well as eco-friendly.

Aspiring to contribute prolifically towards overall infrastructural development and growth, the company today focuses on the following verticals of infrastructure: Roads, Urban Infrastructure, Power Projects, Special Economic Zones, Solid Waste Management, Landfill Management & Renewable Power Generation, Sewage / Waste Water Treatment, Recycle & Reuse, Water Treatment, Management & Sea Water Desalination

A handwritten signature in dark ink, appearing to be a stylized 'S' or 'R'.

## **A Mission to Believe in Excellence**

*“To think laterally without shying away from exploring big ideas by assimilating knowledge, tap the Global know-how and convert such ideas into profitable infrastructure as a team and to serve the humanity with green as a core of group.”*

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**Our Management**

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**Promoters:**

Subhash Chandra
Laxmi Narain Goel
Jawaharlal Goel
Ashok Kumar Goel

**Board of Directors:**

Subhash Chandra	Chairman
Jawaharlal Goel	Non Executive Director
Punit Goenka	Non Executive Director

**Mr. Subhash Chandra**, Chairman of the Essel Group, is the main Promoter and Chairman of the Company. He is a successful businessman having amply demonstrated his business acumen through successful promotion of a number of business ventures. He provides crucial management inputs and overall direction to the Essel Group. He is a pioneer in Media, Publishing, Packaging, and Education.

**Mr. Jawaharlal Goel**, a Commerce graduate, is a Director of the Company. He has vast business experience and handles finance, taxation and budgeting related aspects for the Essel Group. He has also led Dish TV, one of a group company, as its Managing Director since 2007 and has been actively involved in the creation and expansion of the Essel Group of Industries.

**Mr. Punit Goenka**, is a Director of the company. He has vast business experience and Participated in various intensive Management Education Programs like Young Managers Program at INSEAD, France and a program on "Birthing of Giants" hosted by Young Entrepreneurs' Organization and MIT Enterprise Forum, Inc., Boston, USA.

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**Management Team:**

**Ashok Agarwal, Chief Executive Officer,** MBA Marketing from IIT Kharagpur and B.E. Hons – Mechanical (Gold Medalist) from MBM Engineering College, Jodhpur. Over 18 years of Business Experience catering to varied industries like Power, Telecom, FMCG and Manufacturing in companies like – Etisalat DB Telecom Pvt. Ltd., Reliance Communication, Bharti Airtel Ltd., Coca Cola, Hindustan Lever Ltd. etc.

**Mr. Kaushik Pal, Chief Operating Officer,** a BE Honours Graduate has successfully completed his MBA from IIM Calcutta. He has an enormous experience of 24 years in Highways, Water Supply, Water & Effluent Treatment. He has worked with reputed organizations like L&T IDPL, L&T and Paharpur Cooling Towers. His last assignment was with L&T IDPL as “Cluster Head and General Manager”. Few other projects that have been under his leadership and guidance, from inception to completion are Vishakhapatnam Industrial Water Supply project (INR 4.5 Billion) for L&T IDPL, BOT Highway Projects in southern states including Maharashtra totaling over 3000 Lane-KMs.

**Mr. Sumeet Dhawan, Sr. Vice President – Corporate Affairs & Special Projects** has rich experience of over 21 years with the best of Aviation/Hospitality/Infrastructure companies, specialized in Strategic Planning, Liasioning, Corporate Affairs, Operations, General Administration, New Projects/Initiatives and Public Relations. Prior to joining Essel Group in 2009, he demonstrated sheer excellence in working with prestigious organizations such as Mumbai International Airport Pvt. Ltd. (GVK Group), Narangs International Hotels Group and East West Airlines. He is an adept administrator and a great leader who possesses excellent interpersonal, communication & organizational skills with proven abilities in team management, customer relationship management & effective crisis management.

**Mr. Devdas Prabhu as “Head - Finance & Strategy”** has pursued his Masters in Financial Management & BE (Mechanical) with 22 years of cross functional experience in Strategy, Corporate Planning, Business Development, Financing and Regulatory Affairs. He has worked in companies like Loha Group, Abhijeet Group, GMR Group, Reliance Energy Ltd, Mukand Ltd, etc.

**Mr. Arvind Kumar Shukla –“Sr. Vice President – Roads** is a Civil Engineering Graduate from IIT Roorkee with M.Tech (Structures) from IIT Bombay. He brings with him 30 years of work experience in executing wide range of civil engineering projects including Roads, Bridges and other infrastructure projects. His last assignment was with GMR Highways and also worked with esteemed organisations like Era Infrastructure, Jaiprakash Associates, SMEC International, Scott Wilson Kirkpatrick. He has also contributed 16 years in Military Engineering Services (Ministry of Defence) in a leadership role.

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**Mr. Manoj Kumar Gupta, "Assistant VP – Energy** has successfully completed his Degree & Diploma in Electric Engineering and MBA in Operation & Project management. He brings with him more than 18 years of work experience in Renewable Power (Solar & Wind) and Power & Steel sector. He has worked in companies like Lanco Solar, Enercon (India) Ltd., BSES Ltd. and Essar Steel Ltd.

**Mr. Kedar Bhagwat, Asst. Vice President – Business Development & Engineering Cell,** has a rich experience of 16 years in business development and Value Engineering for infrastructure projects. In the past he has worked with Hindustan Constructions Company (HCC), Gammon Infrastructures Projects Limited and Consulting Engineering Services.

**Mr. S. Venkateshan, Company Secretary** is a post graduate in law from Mumbai University and has significant experience in legal and secretarial field. He has completed course of Certified Associate of Indian Institute of Bankers (CAIIB) in relation to Banking Sector. He was initially associated with Canara Bank and has come with a background of working in esteemed organizations like MIRC Electronics Ltd, Borosil Glass Works Limited, SLM Industries and Essar Group of companies. He has rich experience of more than 28 years in banking and corporate sector. He is known for his leadership qualities like evaluating and identifying innovative ideas and achieving them.

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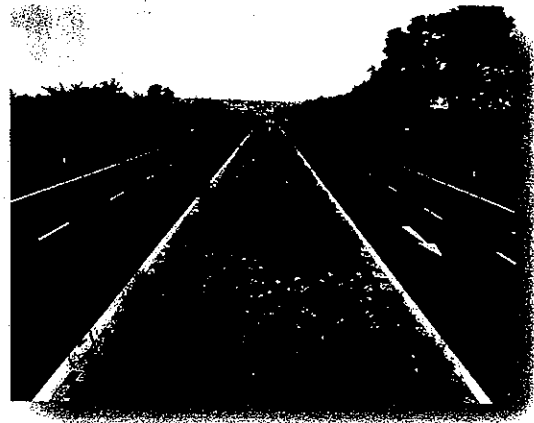


## INFRASTRUCTURE BUSINESS

Every infrastructural development project at Essel Infraprojects Limited is a vision incorporated. Once the overall objective of the process is stated, a team of excellent professionals undertakes the project and ensures the needed support, approach and resources. Demonstrating our propensity to achieve excellence in our all projects, its quality, safety, timely completion & on-time delivery is duly taken into consideration. At every single stage of the project, stringent quality checks are done without failing to ignore the best safety measures which are based on international standards. Keeping the cost factors & customers satisfaction in mind, our all projects are completed in time and delivered rightly in due course thus fortifying our belief to acquire excellence with conviction in everything we do.

### Road Projects

As a result of impressive rise in the economy in past few years, an enormous rise in transport system in the country is experienced. To effectively meet the demands of this revolutionary development and bridging the gap between developing regions with the developed mainstream economy, infrastructural development in form of roads plays a significant role.



Essel Infraprojects Limited is carrying out massive road development projects across the country. With our excellent track record and dynamism in every road project, we are developing, widening and upgrading the roads which will promote better transportation hence giving a boost to the economy and contributing in infrastructural growth of the nation.

Today, we have completed around 200 Lane Km stretch road in Maharashtra, 975 Lane Km road in Madhya Pradesh and presently constructing 3300 Lane Km in various states of India such as Madhya Pradesh, Gujarat, Punjab, Uttar Pradesh, Maharashtra and Tamilnadu. While moving confidently towards the pathways of dynamic success we are proactively pursuing to acquire 3000 Lane Km of road projects in the coming year.

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## **State Highways**

### **+ Malegaon-Manmad-Kopargaon (PWD – Nasik)**

Company has already completed this road project i.e. Malegaon-Manmad-Kopargaon in the State of Maharashtra on BOT basis. The total length of the road is 75.6 Km and the investment incurred was Rs. 113 Crores. The construction of this road stretch commenced in February 2005 and toll collection commenced on its completion in July 2007. The concession period for the project is 21 years. Essel Group holds 50% equity in the SPV.

### **+ Lebad – Jaora Project (MPRDC)**

The Company has also been awarded India's first Design, Build, Finance & Operate Project (DBFO) – Four laning of Lebad – Jaora Road Project on SH-31- on Build Operate Transfer (BOT) basis in the state of Madhya Pradesh by Madhya Pradesh Road Development Corporation Ltd (MPRDC) . This project corridor is a segment of a 125 km long stretch. Concession agreement for the same was signed on 2007. The concession period is 25 years inclusive of construction period of 2 years. Total project cost is Rs. 901.30 Crores. The construction / development of the entire stretch have been completed in June 2011.

### **+ Bhind-Mihona-Gopalpur Project (MPRDC)**

The project road of Bhind-Mihona-Gopalpur starts from Lahar Junction at Bhind and after traversing through Mihona terminates at Gopalpur in the state of Madhya Pradesh. The total length of the project road is 50.86 kms. Concession agreement for the same was signed in 2009. The concession period is 15 years inclusive of construction period of 2 years. The total project cost is approx. 117 cr. The project was commissioned in March 2011 and tolling has been started successfully.

### **+ Bina-Khimlasa-Malthon Project (MPRDC)**

The project road of Bina -Khimlasa -Malthon starts from Bina Town of SH-42 and after traversing through Khimlasa terminates at Malthon in the state of Madhya Pradesh. The total length of the project road under is 39.42 kms. Concession agreement for the same was signed in 2009. The concession period is 25 years inclusive of construction period of 2 years. The project cost is approx. Rs. 92 crore. The project has been successfully commissioned in December 2011.

### **+ Sagar – Damoh Project (MPRDC)**

The project road of Sagar - Damoh starts from Sagar city and terminates at Damoh City in the state of Madhya Pradesh. The total length of the project road under consideration is

68.81 kms. Concession agreement for the same was signed in 2009. The concession period is 12 years inclusive of construction period of 2 years. The project is approx. 155 cr. The project has been successfully commissioned in May 2012.

✦ **Damoh – Jabalpur Project (MPRDC)**

The project road of Damoh-Jabalpur, starts from Damoh city at PWD Km 106 of SH-37 and terminates at Patan Junction in Jabalpur at PWD km 6/8. The total length of the project road under is 98.90 kms. Concession agreement for the same was signed in 2009. The concession period is 12 years inclusive of construction period of 2 years and the investment is to the tune of Rs. 219.56 Crores. The construction / development of the entire stretch will be completed by July 2012.

✦ **Mhow Ghatabillod Road Project (MPRDC)**

The company has recently been awarded a Four Laning road project in the state of Madhya Pradesh by MPRDC on BOT basis. It entails Four Laning of Mhow to Ghatabillod Section of SH -27. The financial closure of the project has been achieved successfully. The concession period is 23 years including the construction period of 2 years. The estimated project cost is Rs. 310 cr.

**National Highways**

✦ **Ahmedabad Godhra Section of NH 59**

Company has been awarded by NHA the project of four laning of Ahmedabad to Godhra section of NH 59 for a total length of 117.60 Kms in the state of Gujarat on DBFOT basis under NHDP III on DBFOT basis in consortium with China Railway 18th Bureau (Group) Corporation Ltd., which is a leading infrastructure player in China. The estimated project cost is around Rs. 1155.40 Crores. The construction of the project is going on ahead of the schedule and the project is expected to be commissioned by June 2013.

✦ **Ludhiana Talwandi Section of NH 95**

Company has been awarded for four laning of NH 95 from Ludhiana to Talwandi for a total length of 78 kms in the state of Punjab under NHDP Phase III on DBFOT basis in consortium with PAN India Network Ltd., which is India's first and largest online gaming company promoted by Essel Group of Companies. The company has achieved the financial closure of the same. The estimated project cost is Rs. 735.34 Crore.

✦ **Gwalior to Shivpuri Section of NH 3**

The company has recently been awarded a prestigious project of Four Laning of Gwalior to Shivpuri Section of NH-3 by National Highways Authority of India in the state of Madhya

### Company Profile

Pradesh on DBFOT basis. The concession period of the project is 29 years. The financial closure of the project is under process.

#### **+ Lucknow Raebareli Section of NH 24B**

The Company has been awarded by NHAI the project of four laning of Lucknow to Raebareli section of NH 24B for a total length of 70 Kms in the state of Uttar Pradesh on DBFOT basis under NHDP Phase IV A. This project is Annuity based. The concession period of the project is 17 years. The financial closure of the project is under process.

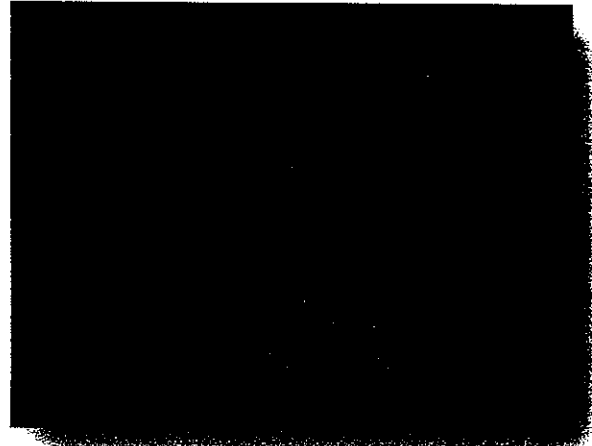
#### **+ Walajahpet Poonamallee Section of NH 4**

The Company has been awarded by NHAI the project of six laning of Walajahpet to Poonamallee section of NH 4 for a total length of 93 Kms in the State of Tamil Nadu on DBFOT basis under NHDP Phase V. The concession period of the project is 17 years. The financial closure of the project is under process.

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## Power Projects

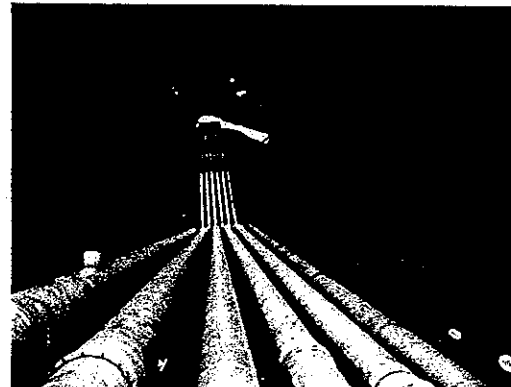
Power plays a pivotal role in changing the face of economy. It is the most critical infrastructure on which the socio-economic development of the country depends. The growth of the economy and its global competitiveness hinges on the availability of power resources and its infrastructure. Power generation sector also needs a well-designed & well-developed infrastructure for its production, channelization and distribution to contribute well towards economic growth.



Along with diversified infrastructural development interests, the company is focusing on power business such as Thermal, Hydel, Solar, Power Transmission and Distribution projects nationwide as well as worldwide.

### A. Hydel Power Project

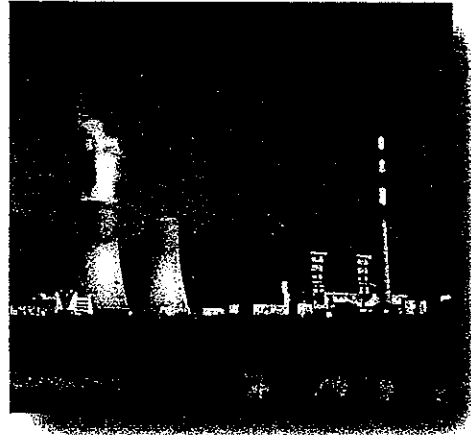
- Company has been awarded project to develop Lower Solu hydroelectric project of 82 MW under Build, Own, Operate and Transfer (BOOT) arrangements in the Solukhumbu District, Nepal in Joint venture with Clean Energy Development Bank Limited. The estimated cost of the project is around Rs. 875 Crores.



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## B. Thermal Power Project

- Company has entered into Memorandum of Understanding in 2010 at Khajuraho with Government of Madhya Pradesh, whereas the company is developing 1320 MW (2 X 660 MW) Thermal Power Station in the state of Madhya Pradesh with the proposed investment of approx. Rs. 6000 Crores in accordance with the provisions of the Madhya Pradesh (Investment in Power Generation Projects) Policy, 2010.



## C. Solar Power Projects

### 1. Maharashtra Solar Power Project

Company has been awarded 20 MW Solar Power PV Project by NTPC Vidyut Vyapar Nigam Limited (NVVN) under Jawaharlal Nehru National Solar Mission (JNNSM) Phase-I, Batch-II scheme at Osmanabad district of Maharashtra. Expected project cost is Rs. 220 crores. The project is expected to be completed by February 2013.



### 2. Karnataka Solar Power Project

Company has been awarded two solar PV projects, to be developed 5MW at Gulbarga district and 5MW at Bagalkot district in the state of Karnataka under Karnataka Renewable Energy Development Limited (KREDL) scheme. Expected project cost is about Rs. 100 crores. The projects are expected to be completed by January 2014.

### 3. Rajasthan Solar Power Project

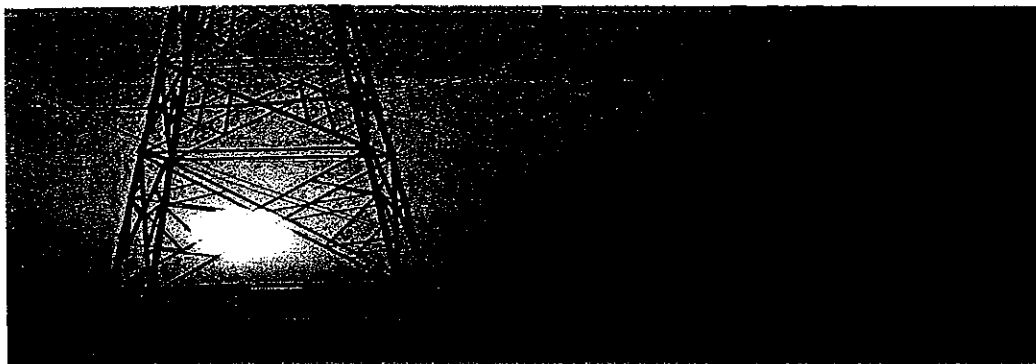
Company has been technically qualified for the 20 MW Solar Power PV Project on Build, Operate and Transfer (BOT) Basis by Jaipur Municipal Corporation (JMC) at Jaipur, Rajasthan.

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#### **4. Solar Power Park, Karnataka**

Essel Infraprojects Ltd. has signed Memorandum of Understanding with the Government of Karnataka for the Development of Solar Power Park with an investment of approx. Rs. 1500 cr.

#### **D. Power Distribution Projects**



##### **1. Gwalior Distribution Franchisee Project**

Company has been awarded franchisee for power distribution for Gwalior city in the state of Madhya Pradesh in consortium with M/s Smart Wireless Pvt Ltd and M/s Pan India Network Infravest Limited. Expected project cost is Rs. 333 crores.

##### **2. Ujjain Distribution Franchisee Project**

Company has been awarded franchisee for power distribution for Ujjain city in the state of Madhya Pradesh in consortium with M/s Smart Wireless Pvt Ltd and M/s Pan India Network Limited. Expected project cost is Rs. 130 crores.

##### **2. Sagar Distribution Franchisee Project**

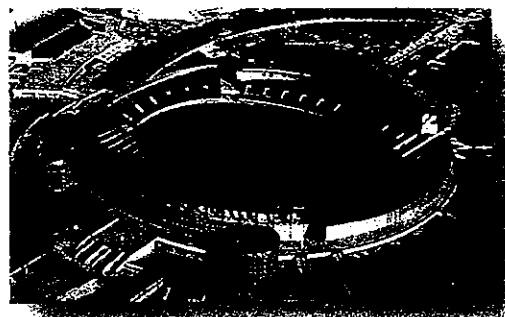
Company has been awarded franchisee for power distribution for Sagar city in the state of Madhya Pradesh in consortium with M/s Smart Wireless Pvt Ltd and M/s Pan India Network Limited. Expected project cost is Rs. 55 crores.

Apart from this, Essel Infraprojects has laid out plans to enter in different Power Transmission & Distribution projects including Extra High Voltage Level (EHV) in India and also concentrating on renewable Energy projects like Solar, Hydro and Wind energy projects in different parts of the country and abroad.

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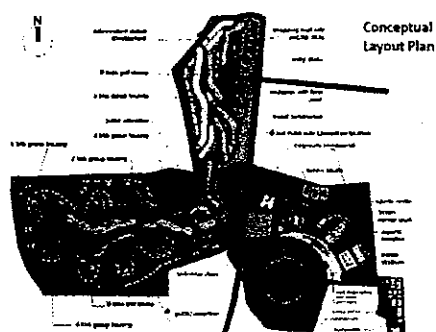
## Urban Infrastructure Projects

Our belief of creating a better world where everybody get best facilities to live happily, invokes us to develop upgraded infrastructure in the urban areas of the country. With an aim to improve and enhance urban infrastructure of the country, Essel Infraprojects Limited is developing a number of projects.



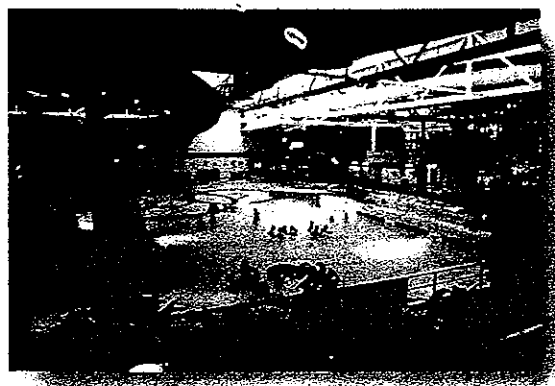
### + Bhopal Sports City

Department of Sports and Youth Welfare (DSYW), Government of Madhya Pradesh (GoMP), Authority has decided to undertake the development of Sports City Project at Satgarhi Village, in Bhopal, Madhya Pradesh ("the Project") comprising of 172 acres of land on Public-Private Partnership (PPP) basis. The Sports City shall comprise of Sports Infrastructure on a land area of 50 acres and Real Estate on an area of 122 acres. The concession is for a period of 99 years. The scope of project includes: Development of Sports Infrastructure on Built & Transfer (BT) basis to be handed over to the Sports Authority, within a period of 3 years and Development of Real Estate which includes 9-hole golf course, 5 star hotel, residential and commercial facilities on Built Own Operate and Transfer (BOOT) basis.



### + Family Recreation Center, Bhopal

With Essel's experience and expertise in development of Theme Parks, the Company is developing a "Family Recreation Centre" (FRC) in Bhopal for which approval from Government of Madhya Pradesh has already been attained and land measuring 50.7 acres has been allocated. The lease deed for the land has been executed and registered after due payment of the stamp duty. FRC will consist of activities like amusement and water parks, resorts, naturopathy, exhibition centre, club house, auditoriums and health





resorts, to cater to the requirement of the residents of Bhopal as well as visiting tourists, and will be a fun destination for all age groups.

✦ **ESSEL Tower- Hyderabad**

EIL is developing a 2.5 million sq ft of area in Kukatpally in Hyderabad, which is considered to be Asia's largest township on a joint development basis. The project comprises of 1.6 million sq ft of residential and 0.9 million sq ft of commercial premises. The property is located on the National Highway and one of the proposed Metro stations is planned opposite this property. The project outlay is Rs. 570 Crores.



✦ **Educational project for TALEEM, BKC, Mumbai**

EIL will be the developer of a school and other educational infrastructure for TALEEM, a trust promoted by ESSEL Group. The infrastructure will be created on a MMRDA plot located in the prime commercial area of the Bandra-Kurla Complex, won in a very competitive bidding process. The project outlay would be Rs. 265 Crores.

✦ **Media city, Tollygunj, Kolkata**

ZEE Entertainment Enterprises Ltd has been allotted a plot by the Government of West Bengal at Tollygunj, for the development of a media city that would include a Studio, Mall and Residential Service Apartments. The project outlay would be Rs. 133 Crores.

✦ **IT Park, Salt Lake city, Kolkata**

India Cable-Net an ESSEL promoted company has been allotted a plot by the West Bengal Electronics Industrial Development Corporation Ltd, where EIL will play a major role as a joint developer. The project outlay would be Rs. 80 Crores.

✦ **Dubai Towers, Dubai**

The Company is also initiating its infrastructural presence beyond the boundary of India. Dubai Tower is its first step towards the attainment of this goal with a project cost of Rs. 90 Crores. It is already completed with construction of 200,000 Sq. ft area comprising of studios, office space and restaurants.

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## Solid Waste Management

Municipal Solid Waste Management (MSWM) has a vital role to play in achieving developmental goals in health and environment sustainability. Looking at such a rapid growth in economy and speedy urbanization, effective delivery of solid waste management infrastructure and services is essential to improving health, environment and overall quality of life for all individuals.

Being a company with the goal to create a healthy environment for all, Essel Infraprojects Limited has ventured in solid waste management infrastructure and successfully providing solutions for collection, transport, processing and recycling of solid waste to efficaciously nullify its effects on health and environment.



Our focus is to generate energy from waste and other organic compost & inorganic byproducts (i.e. W2E Concept) by adopting innovative technologies that are environmental friendly. Applying better technologies in such projects, Essel Infraprojects Limited will contribute a lot in minimizing the emission of Green House Gases which are generated through the usage of fossil fuels for power generation, thus help in developing a pollution-free environment. Moreover the application of advanced solid waste management techniques also helps in minimizing the rejects from the treatment plant and save enormous landfill space, creating a healthy environment for the society.

### Municipal Solid Waste Management (MSWM) Project in Gujarat

Company has signed Memorandum of Understanding (MoU) with the Government of Gujarat during Vibrant Gujarat 2011 summit for setting up of Municipal Solid Waste Management Plants in Ahmedabad and Surat. The total estimated investment for these projects would be approx. Rs. 1200 Crores. The company has tied up with M/s Arrow Ecology, Israel and adopting state of the art Zero-discharge-to-the-Environment technology.

### Municipal Solid Waste Management (MSWM) Project in Karnataka

Company has signed Memorandum of Understanding (MoU) with the Government of Karnataka during Global Investor's Meet, 2012 for setting up of Municipal Solid Waste Management Plants in Bangalore, Manglore, Hubli, Dharwar and Mysore. The total estimated investment for these projects would be approx. 750 Crores.

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## Landfill Management and Renewable Power Generation

Innovative solutions to deal with the challenges of urbanization have become the need of the hour. Landfill Management & Renewable Power generation is one such novel solution that utilizes the waste to generate energy.

In this system, CH<sub>4</sub> gas is captured from the landfills before getting it emitted into the atmosphere and is consumed to generate power. As we know that CH<sub>4</sub> is the second most harmful gas after CO<sub>2</sub> that can affect our atmosphere adversely, so using it & utilizing it for energy generation is a perfect innovative solution which comes as a value addition in our resources, creates an environment of healthy living and equally helps to curb global warming issues.



Assimilating knowledge by exploring the global know-how and converting it into eco-friendly infrastructure, Essel Infraprojects Limited pioneers this vertical and continues to explore excellent opportunities of growth in this area. With a solid base and profound expertise, we are ready to rejuvenate lives of many.

### Landfill Gas (LFG) Project in Gujarat

Company has signed MoU with Government of Gujarat during Vibrant Gujarat 2011 Summit for setting up Land Fill Gas Capture and Electricity Generation Projects at the closed dumping site in Ahmedabad and Vapi. The total estimated investment for these projects would be 400 Crores. The company has tied up with the leading technology provider M/s GE Jenbacher for this field.

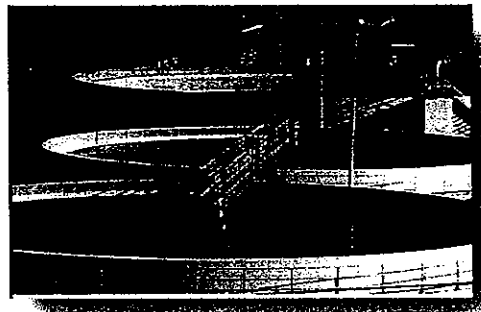
### Landfill Gas (LFG) Project in Karnataka

The company has signed MoU with Government of Karnataka during Global Investor's Meet, 2012 for setting up Land Fill Gas Capture and Electricity Generation Projects at the closed dumping site in Bangalore, Manglore, Hubli – Dharwar and Mysore. The total estimated investment for these projects would be 600 Crores.

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### Sewage/Waste Water Treatment, Recycle & Reuse

Clean water has been a concern nationwide and it is considered as a basic requirement to live a hygienic life full of health & wellness. To make our environment & lifestyle free from water-borne diseases there is an ardent need to treat the water before getting it consumed.



Sewage/ Wastewater treatment & recycle is a process of removing soluble & insoluble contaminants (physical, chemical & biological) from domestic sewage & Industrial wastewater and making it pure to consume again by adopting Zero – Discharge Concept. It's a multi-stage process to renovate sewage or wastewater before it re-enters a body of water and contaminate it with its pollutants.

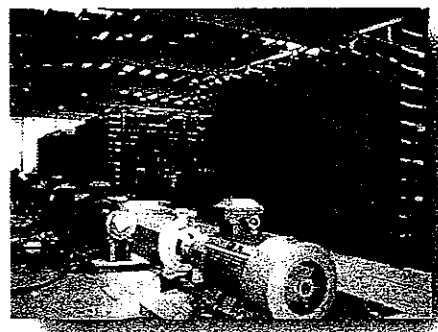
With a clean and clear aim to provide infrastructural solutions for sewage & waste water treatment (primary, secondary & tertiary using conventional & advanced technologies) & reuse, Essel Infrastructure is exploring best-in-class treatment technologies as a way of delivering pureness in the lives of people. Moving ahead with a precise knowledge and proficiency in this area, the company is committed to create a world of wellness where everyone is in best of their health.

#### STP Project in Gujarat

Company has signed MoU with Govt. of Gujarat during Vibrant Gujarat 2011 Summit for setting up of Sewage Treatment Plants in Ahmedabad and Surat. The estimated investment for these projects would be 1200 Crores. The company has tied up with TAHAL Group, Israel for providing the latest technology in this field.

#### Water Management & Desalination

Day by day, the need for water infrastructure development is increasing at a rapid pace. Today, there is a huge necessity to develop, distribute and manage water system & resources especially for portable applications.



Looking at the tremendous opportunities in this sector, Essel Infraprojects Limited is moving ahead to undertake water treatment, distribution & management for surface water besides desalination projects for seawater where there is no

**Company Profile**

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scope for surface water. At present, we are seeking possibilities for such projects in Rajasthan, Maharashtra, Tamilnadu and other states where there is a huge demand & scarcity of water. With the growing demands of pure water in the country, our company's step towards exploring newer possibilities will surely help in enhancing the lives of people and will channelize the flow of wellness everywhere in a better way.

**Desalination Project in Gujarat**

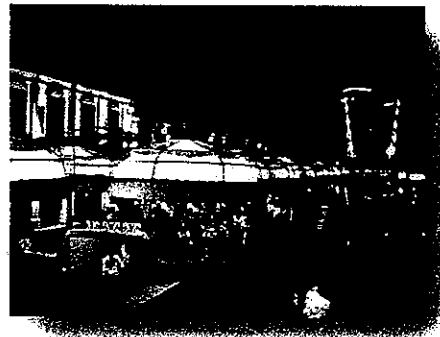
Company has signed MoU with Govt. of Gujarat during Vibrant Gujarat 2011 for setting up of Desalination Plants in Surat and other coastal cities across Gujarat. The estimated investment for these projects would be 2400 Crores. The company has tied up with the leading technology provider in this field.

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### Water Park and Water Sports

The Company has signed MoU with Govt. of Gujarat during Vibrant Gujarat 2011 for developing Water Park and Water Sports facility alongside the Sabarmati River in Ahmedabad. Main objective is the development of Water Sports, Water Park, Amusement and other Recreational facilities including Food & Beverage facility for the promotion of the entertainment industry along with a Multiplex, Conventional Centre, Sports facilities including Gaming and any other Commercial activities. The estimated investment for this project would be 100 Crores.

The company will put up state of the art water sports facility like Ski 360, Kayaking, Canoeing, Speed/Leisure Boating, Jet Ski's, Water Taxi, Water Scooters, etc along with Dinner Cruise, Water café and other recreation facilities.



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### Corporate Social Responsibility

Essel Infraprojects Limited strives to be a socially responsible company and strongly believes in development which is beneficial for people. Our responsibility towards society starts right from conducting our business as per standardized norms and procedures which are laid for the betterment of the communities. As a social responsible company we offer healthy & safe work environment to our employees and ensure fair compensation and equal opportunities to grow.



To safeguard our environment, we have taken positive steps towards preserving our planet and ensure that our every project is in compliance with required regulations & measures.



Along with our social commitments towards our employees & towards environment we have also initiated various programs for the upliftment of the society like Old-Age Homes, Schools etc.

We have taken a caring step to start 'Project Vidya' at Gorai-Manori-Uttan region in Mumbai with an aim to provide food & education infrastructure to needy girls studying in various aided or unaided schools of that region. Today the number of such girls has grown to 125 but for us it's our belief in humanity which is growing more and more. Moreover we also provide bus passes to 50 students of B.M.C school at Gorai.

Apart from this, we are also re-constructed religious places to worship, re-laid water pipelines for villagers that has been removed during accomplishment of one of our road project.

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### Synergy with the Group

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Being an indispensable arm of Essel Group, Essel Infraprojects Limited is providing best infrastructural solutions for all of its group companies. Today we are synergizing with the group and developing various projects for our group's trust, offices for media Group Company, IT parks, Commercial buildings for other companies promoted by our group. We have completed the construction of building tower in Media City at Dubai for our leading group company Zee Entertainment Enterprises Limited.

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### Future Ahead

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With a vision to create best infrastructure of exemplary excellence, today Essel Infraprojects Limited is forging ahead with twice the vigor and commitment. We envision building world-class infrastructure that will boost our economy and change the face of the future. With an aim to maintain consistency in our every endeavor we extend our promise to better ourselves wherever & whenever required. And with our powerful belief to achieve excellence we are sure that with us, future is yours.

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## Company Profile

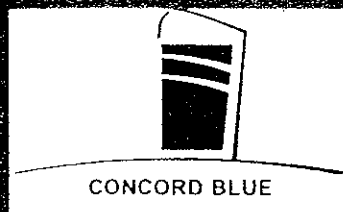
Rochem Separation System (I) Pvt. Ltd.

**ROCHEM SEPARATION SYSTEMS (I) PVT. LTD.**

# CONCORD BLUE TECHNOLOGY

SUMMARY

2012



[www.concordblueenergy.com](http://www.concordblueenergy.com)

101, HDIL TOWERS, ANANT KANEKAR MARG, BANDRA (E),  
MUMBAI 400051

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## THE CONCORD BLUE SYSTEM

### ABOUT US:

A comprehensive waste solution firm, ROCHEM delivers (patented) non-incineration based environmentally friendly, economically viable, turnkey waste to energy solutions. As the official manufacturer and contractor for the Concord blue tower, we hold the world wide sole license for the construction and operation of the carbon neutral waste to energy technology.

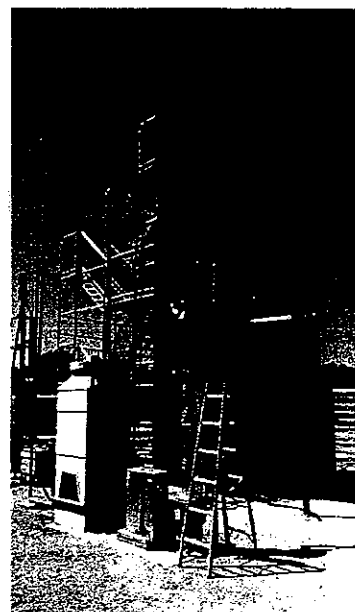
As an all-inclusive waste solution firm, ROCHEM evaluates each client's specific needs and unique circumstances to create a customized solution for their individual success. ROCHEM is dedicated to providing its clients the most efficient, sustainable and economically viable waste and sewage disposal solution for a wide range of energy production needs.

### ROCHEM'S Concord Blue System Waste to Energy Highlights:

- Environmentally Friendly: Green Technology – Fulfills / Exceeds EPA & European Standards
- High Input to Output Ratio: 1 ton input = 0.6-1.2 MWhrs net electric output to grid/end user;
- Self Sustaining Plant: No Additional Fuel Source is Needed to Operate;
- Does not Require Additional Water or Fuel Source post start-up;
- Low Space Requirements;
- Unique Thermolysis Oxygen Free Process
- Staged Reforming – Heat Carrier Bunker – Thermolysis – Steam Reformer
- Product: Hydrogen Rich High Quality Product Gas – BLUE SYNTHESIS GAS

### ABOUT US

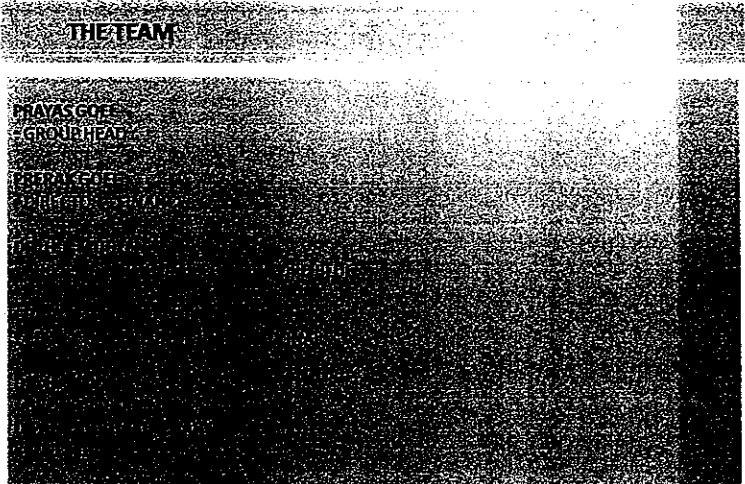
- Part of the ROCHEM Group - A global enterprise with over 20 years in Wastewater & Waste recycling & over 300 satisfied clients in 7 countries, for varied waste & waste water recycling needs.
- World-wide patented (filed) staged reforming waste disposal technology: CONCORDBLUE TOWER™
- The only global Concord Blue Tower general contractor and manufacturer.
- German-Indian Engineering & Manufacturing company with offices in UAE, India, USA, Germany & Turkey
- Currently building six Concord Blue Towers in India, Germany and the USA.
- We develop turn key waste-to-energy solutions for municipalities, private industries, states and even countries.
- Focus on Waste to Energy with non conventional Feedstock



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## HISTORY:

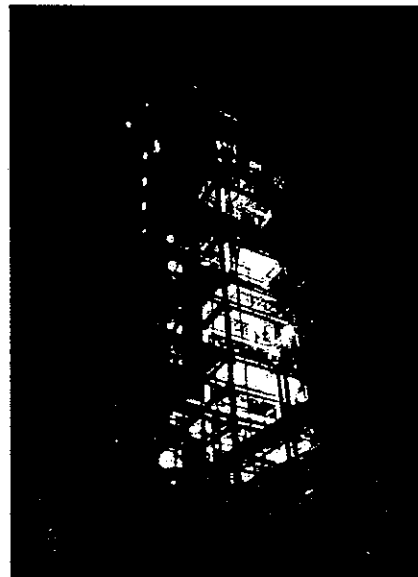
In 2007 – Technology Transfer with DM2 Germany, a company with operating plants at Japan & German since 2004 leading to a joint venture technology development between Indian and German partners which subsequently led to the development of the indigenized Concord blue reformer patented gasification technology for low energy MSW streams. Over the years around, over 7500 hours of pilot operation has taken place on various waste streams, pertaining to areas of process & design validation.



## TECHNOLOGY:

The Concord Blue is a **non-incineration based (unsegregated) Municipal Waste to Energy** solution that is customized to suit the characteristics of the Indian Municipal Solid Waste (alongside other biomass/agri waste) that typically exhibit high moisture, high ash and low calorific value.

Herein, the unsegregated MSW is preconditioned for removal of inerts (only Construction and Demolition Debris, metals/recyclables and glass) in an enclosed unit (foul smell is avoided). The preconditioned waste is subsequently dried and shredded and is hence, conveyed to the Concord Blue System (CBS). The Concord blue system primarily contains 3 main equipments: The Thermolyser at the bottom, the steam reformer in the middle and the pre-heater at the top.



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## THERMOLYSER

- In its first stage the Concord Blue Reformer heats the input material by use of heat carrier pellets in an oxygen free vessel - thermolysing the input material into approximately 20% char and 80% gas.
- The char is further thermolysed and the gas is combusted into a flue gas in order to produce necessary process heat to the heat carrier medium.

## STEAM REFORMER

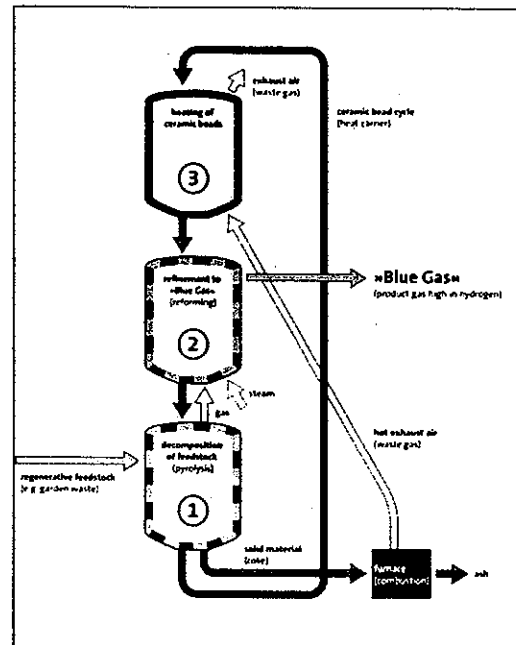
- The remaining 80% moves up into the steam reformer. Here the gas is cracked and reformed into a high quality syngas, consisting mainly of hydrogen and methane.
- Steam is generated by passing the hot product gas through a waste heat recovery boiler before it is then quenched and cleaned.

## STAGED REFORMING

- The steam reformer is a simple homogenous purely gas phased reaction.
- It is spatially separated from the Thermolyser – therefore STAGED REFORMING –; completely inhibits production of dioxins and furans from processing of MSW/Haz. Wastes.

## HIGH QUALITY SYNGAS

- Unlike with other gasification processes the product gas generated in the Concord Blue Reformer is very high in quality because it is unaffected from the flue gas from the char combustion. Thus, we have an undiluted, clean high calorific syngas.
- Common biogas plants achieve a product gas with approximately 30-50 % calorific value contained in the input material, where as the Concord Blue Reformer's product gas achieves around 80% of the energy content originally found in the input feedstock, thus the CBR has a cold gas efficiency of over 80%.



## INPUT TO OUTPUT EFFICIENCY RATIO

- This highly depends on the input material. A very broad estimate for separated dried household waste is 1 ton of input generating 0.3-0.6 MWhrs net electric output. The calorific value of the Concord Blue syngas product is approx. 12 - 14 MJ/Nm<sup>3</sup>.

## FEATURES OF OUR WASTE MANAGEMENT SOLUTION

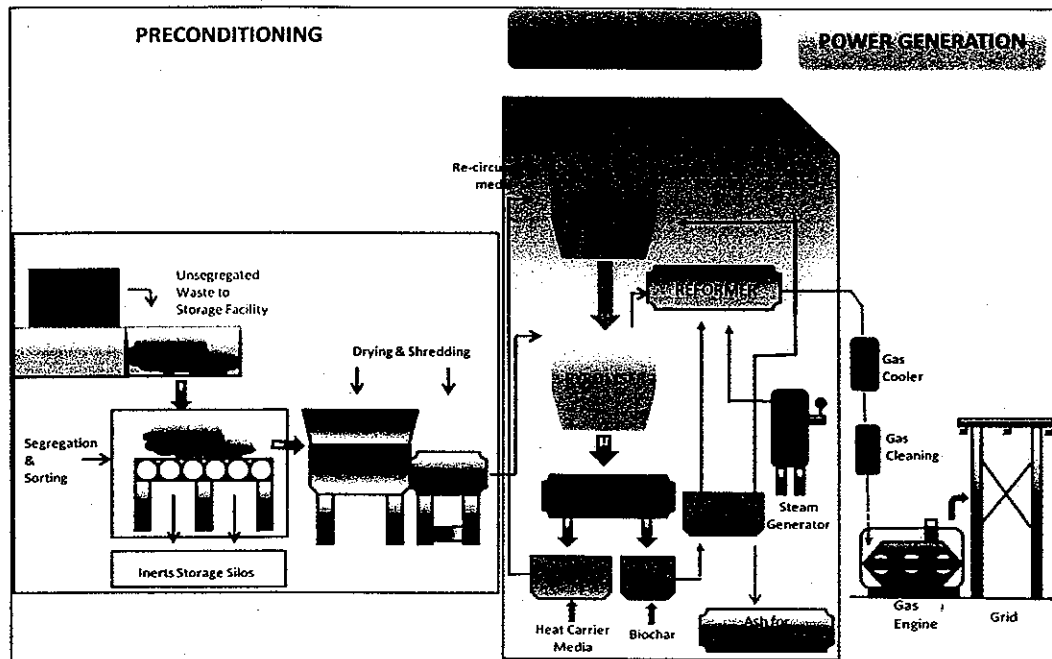
- No Smell / Open dumping of Waste
- No mixing of Leachate with Ground Water
- Optimum recovery of energy from waste
- No Burning of Waste
- Minimal Rejects to Landfill
- Minimum Space should be utilized for waste disposal



The solution is self-sustainable, i.e. no additional fossil fuel is required for the system post start-up as the system caters to its captive heat and power requirements. The solution is completely adherent to MSW Rules 2000. The salient features of the solution are as under:

- Completely modular system with lowest space requirement (e.g. – a 700 tpd MSW to Energy plant takes only 3-4 acres);

- Minimal rejects to landfill – Only construction and demolition debris and ash from the CBS;
- Receipt of waste all days. No stoppage due to climatic variations; Waste disposed on the day of receipt. No pile up of waste;
- Zero Leachate Discharge – No discharge of leachate to the groundwater;
- No Odour or uncovered garbage lying around. The whole system is insulated for smell and the waste is stored in enclosed buildings thereby ensuring that no putrescence or unpleasant visuals are on display.
- Clean disposal of garbage – absolutely no pollution since the waste is not burnt at any stage.
- Minimal land required. Also minimal rejects to landfill. This implies a longer landfill life for Pune city.
- All groundwater and air emissions are completely below the admissible standards.



#### SECTORS:

We cater to different industries: MSW, Distilleries, Pharmaceutical, Hospitals, Agriculture, paper etc.

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## INPUT

Municipal Solid Waste/Bio-garbage/ Restaurant-food waste

DISTILLERY

BIO-MEDICAL WASTE

CEMENT UNITS/FE ALLOY INDUSTRIES

TANNERY/POULTRY LITTER

PHARMA WASTE

TYRE/WEED/PADDY HUSK/PALM OIL



## OUTPUT

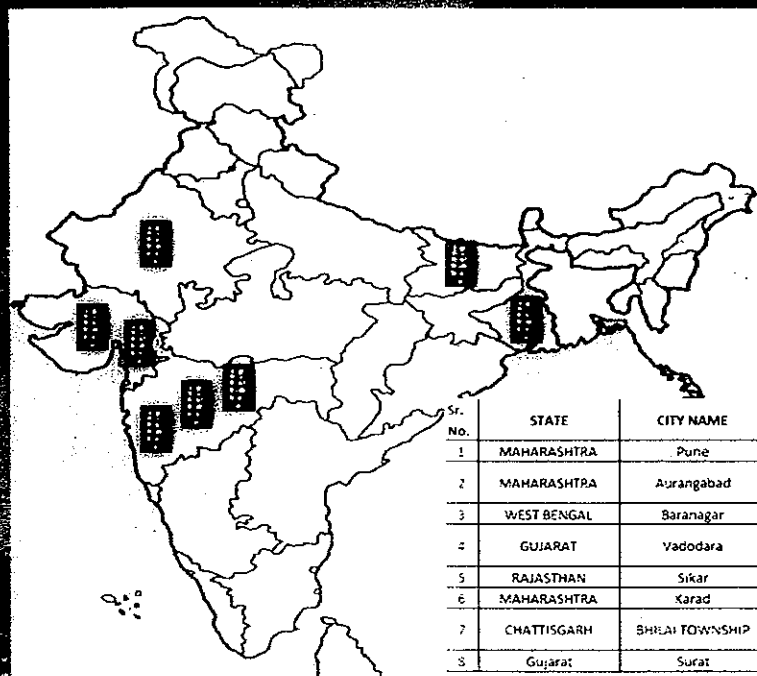
High quality, high energy value syngas:

Hydrogen: Already proven to be one of the most efficient energy carriers;

Electricity: Turn key system creates electricity via proprietary syngas firing gas-motors

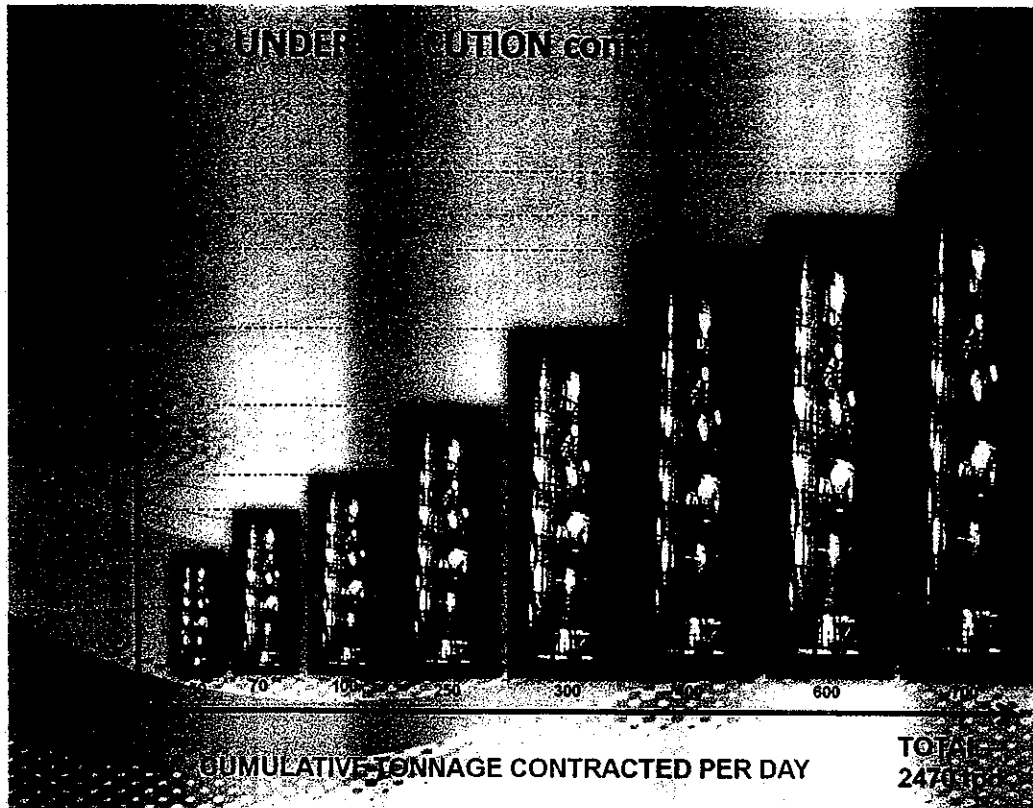
Bio Char: Is currently used in fertilizer and as a soil amendment

Ash, for the Cement Industry



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#### COMMERCIAL MODALITIES OF ENGAGEMENT

Sale & AMC	BOT/BOOT/DBOOT	JV/Partnership
<ul style="list-style-type: none"> <li>• Sale of Equipments by CB</li> <li>• Annual Maintenance Contract for Operation &amp; Maintenance</li> </ul>	<ul style="list-style-type: none"> <li>• No Capital Investment by the end user</li> <li>• Client pays a cost of avoidance (INR/tonne of waste received) only</li> </ul>	<ul style="list-style-type: none"> <li>• Client and CB jointly invest in the project</li> <li>• Complete O&amp;M by CB</li> <li>• Returns commensurate to extent of investment</li> </ul>
<ul style="list-style-type: none"> <li>• <b>A proven non-incineration based Waste-to-Energy solution</b></li> <li>• <b>Environmentally friendly with maximized efficiencies</b></li> <li>• <b>A compact system that offers substantive returns on your waste disposal scheme</b></li> </ul>		

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