CLEAN DEVELOPMENT MECHANISM
PROJECT DESIGN DOCUMENT FORM (CDM-SSC-PDD)
Version 03 - in effect as of: 22 December 2006

CONTENTS

Annexes

Revision history of this document

Version Number	Date	Description and reason of revision
01	21 January 2003	Initial adoption
02	8 July 2005	• The Board agreed to revise the CDM SSC PDD to reflect guidance and clarifications provided by the Board since version 01 of this document. • As a consequence, the guidelines for completing CDM SSC PDD have been revised accordingly to version 2. The latest version can be found at <http://cdm.unfccc.int/Reference/Documents>.
03	22 December 2006	• The Board agreed to revise the CDM project design document for small-scale activities (CDM-SSC-PDD), taking into account CDM-PDD and CDM-NM.

SECTION A. General description of small-scale project activity

A.1 Title of the small-scale project activity:

>>
Municipal Solid Waste processing (MSW) in the city of Rajkot, India
Version 01
Date: 5th June 2007

A.2. Description of the small-scale project activity:

>>
The project utilizes municipal solid waste available in the city of Rajkot to produce Refuse Derived Fuel (RDF) in Nakrawadi of Gujarat. All the waste generated in the city is being presently dumped in open landfills unscientifically, leading to acute shortage of land fill site near the city. The project involves the processing of 300 TPD of Municipal Solid Waste into Refuse Derived Fuel (RDF) pellets and using these pellets as alternative fuel in the industries.

In the project activity, Hanjer Biotech Energies (P) Ltd. (HBEPL) is setting up one Municipal Solid Waste (MSW) processing plant near Rajkot. The facility entails MSW processing to derive Refuse Derived Fuel (RDF), which shall be used as alternative fuel in nearby industries. MSW for processing would be received from various collection centers in Rajkot city. Rajkot Municipal Corporation (RMC) has entered into agreement with HBEPL for supply of MSW and the company will process MSW and produce RDF in Fluff form. The Fluff pellets produced by processing of MSW in the process plant at Rajkot will be transported to nearest processing industries being used as the alternative fuel by thermal route there from.

The conversion of solid wastes into pellets has two major advantages for Indian cites. Firstly, it provides an alternative means for safe disposal of the city garbage, which is currently disposed of into land fills leading to air, water, land pollution and methane emissions. Hence, it would overcome most of the environment hazards associated with poor garbage disposal. Secondly, the technology provides yet another source of renewable energy.

The plant processes 300TPD of MSW wastes in a day and derive 100 TPD of RDF fluff per day. Thus the project activity would result into GHG emission reduction by avoiding methane emission otherwise released due to anaerobic decomposition of MSW in uncontrolled landfill site, which is the current practice of disposal for MSW in the city.

Contribution to sustainable development

The project has contributed to the sustainable development in the following manner:

- The project would help in improvement in the local and national environment conditions.
- The project activity shall help in emission reduction of methane; a potent GHG otherwise generated due to anaerobic decomposition of waste in unsecured landfill site and also generates clean energy using RDF pellets, byproduct of MSW.
- Current practice of MSW dumping attracts animals, flies and birds over the landfill area. By avoiding open dumping, the aesthetics of the city would be enhanced and overall hygiene of the area in and around the landfill sites would be appreciably improved.
- This also helped in reduction in GHG emissions due to the energy generation using fossil fuels.

- Reserves of fossil fuels are depleting with increasing demand for energy in the country, the project activity shall help in conservation of fossil fuels and in enhancing nation's energy security.
- The project also contributed in terms of streamlining the collection and segregation process before further treatment and increases the chances of recovery of products that can be reused and recycled.
- The project also generated direct and indirect employment to the local people in the city.
- It also helped in creating hygienic working and environment condition for the locals engaged in waste collection and segregation from the dumping site.
- The project has provided the local bodies relief from ever increasing problem of finding dumpsites for disposal of MSW and contributed to renewable energy in the country.
- This shall encourage more industries to adopt this technology not only in the region but also on the national level. This shall encourage more and more municipal corporations to go ahead with similar type of MSW management systems.

Hence the project is helping to the sustainable development by improving economic, social and environmental conditions.

A.3. Project participants:

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Name of Party involved (*) ((host) indicates a host Party)	Private and/or public entity(ies) project participants (*) (as applicable)	Kindly indicate if the Party involved wishes to be considered as project participant (Yes/No)
Ministry of Environment and Forest, Government of India	Hanjer Biotech Energies (P) Ltd. (Private entity, project participant)	No

A.4. Technical description of the small-scale project activity:

A.4.1. Location of the small-scale project activity:

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A.4.1.1. Host Party(ies):

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India

A.4.1.2. Region/State/Province etc.:

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Gujarat State

A.4.1.3. City/Town/Community etc:

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Nakrawadi Village of Rajkot City

A.4.1.4. Details of physical location, including information allowing the unique identification of this small-scale project activity :

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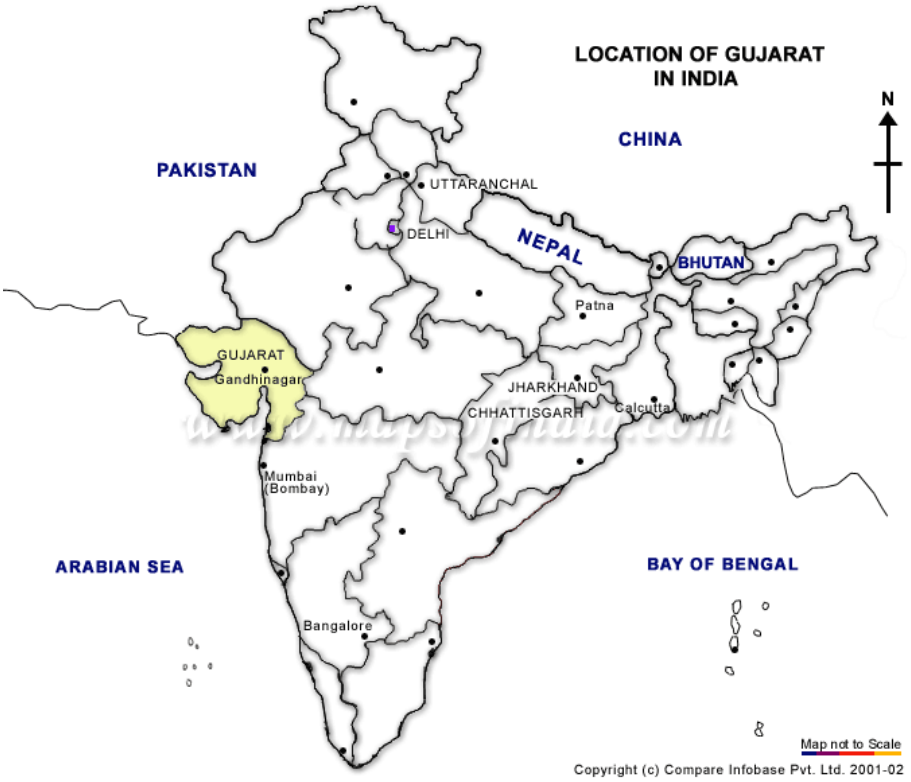
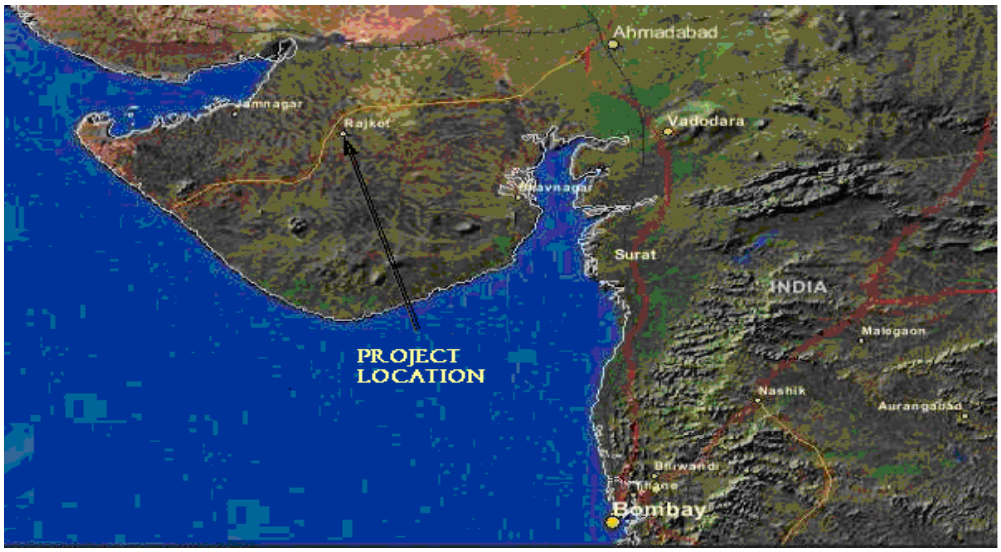
The power plant at Nakrawadi, District Rajkot is in the state of Gujarat. The site location is depicted in the pictures shown below –





A.4.2. Type and category(ies) and technology/measure of the small-scale project activity:

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The project activity is a small scale project activity and conforms to Appendix B of the simplified modalities and procedures for small-scale CDM project activities.

As per Type III.E of Appendix B of **simplified modalities and procedures for small-scale CDM project activities (Version 12/EB 31),** if project category comprises measures that avoid the production of methane from biomass or other organic matter that:

(a) Would have otherwise been left to decay under clearly anaerobic conditions throughout the crediting period in a solid waste disposal site without methane recovery, or

(b) Is already deposited in a waste disposal site without methane recovery.

Due to the project activity, decay is prevented through controlled combustion of the wastes of type referred to in paragraph 1(a) and/or 1(b) above. Measures are limited to those that result in emission reductions of less than or equal to 60 kt CO2 equivalent annually.

This project involves avoidance of methane through combustion of MSW and emits project emissions less than 60kt per annum. The proposed project activity shall result in avoidance of uncontrolled decay of MSW in landfill sites. The decay is prevented through controlled combustion of the project proponent. Hence, the project activity falls under III.E category and Sectoral Scope 13. It does not recover or combust methane and directly result in emission reductions of less than or equal to 60 kt CO2 equivalent annually.

Main Category: TYPE III: Other Project Activities
Sub Category IIIE: "Avoidance of methane production from biomass decay through controlled combustion", Version 12, Scope 13 (EB 31)

Also, as per Type I.C of Appendix B of **simplified modalities and procedures for small-scale CDM project activities (Version 10: EB 31),** if project category comprises renewable energy technologies that supply individual households or users with thermal energy that displaces fossil fuels

The project involves the technology that provides thermal energy that displaces fossil fuel for which the capacity of the thermal energy generation shall not exceed the limit of 45MWth, for the project to qualify as a small-scale CDM project. Therefore, the proposed project activity can also be defined under

Main Category: Type I - Renewable Energy Projects (Small Scale)
Sub Category: I.C. "Thermal energy for the user", Version 10, EB 31

Hence the project activity falls on Type III.E and Type I.C categories of small scale project activities.

Technology details:

The technical description of the project activity is as follows:

Preprocessing of MSW is primarily intended to remove large debris and large objects of inerts that are typical of littering culture in India. Processing of MSW into RDF involves a series of processes

Sources and quantity of waste generated

The total waste generated in the city is approximately 500 Metric Tonnes per day. Rajkot Municipal Corporation does not have any facility for processing the solid waste. It has two landfill sites viz. Sokhada having an area 11 acres of land, 12 kms away from the city and Manda dungar 2.5 acres, 7 kms away from the city. Both the land fill sites are about to take fill fully and RMC has already put forward a proposal for new landfill site near Nakrawadi, 15 kms away from the city. The major sources of solid waste generation are household domestic waste, industrial waste, commercial establishments, plastic, rubber, metals etc. Out of the total estimated collection of 500 Metric tones per day of waste, 300 Metric tones per day of waste will be dumped at Nakrawadi for treatment of solid waste.

Primary and secondary collection
RMC have many primary collection points for collecting waste from various generation points. The waste is collected through RCC bins. In addition to this the corporation has supplied tri-cycles, wherein the people will deliver the waste to these rickshaw pullers, who in turn convey it to the collection points.

The waste from the primary collection points are transported by the conservancy workers (ULBs or private) to the secondary collection points and dumper placers through wheel borrows and hand carts. From the secondary collection points, collection vehicles of capacities varying from 6 tons to 1 tons pick up the waste and transport to nearest transfer stations. Half of the city area is privatized for lifting from the collection points (RCC bins) and transportation of the waste. In the other half of the city area, RMC vehicles are used for the purpose of collection, lifting and transportation of the waste.

Treatment and processing
The solid waste, unloaded in the premises of the plant, is stacked as heaps. A specific chemical is sprayed on the heaps to accelerate the bacteriological decomposition, to reduce the volume and to control odour nuisance. These chemicals also decompose plastics and polythenes. The processed heap is sorted manually for removal of glass, stones and then allowed on to the sieves for separation of sand, dust and other inorganic substances. These screened materials are allowed on to the magnetic separators for segregation of iron pieces.

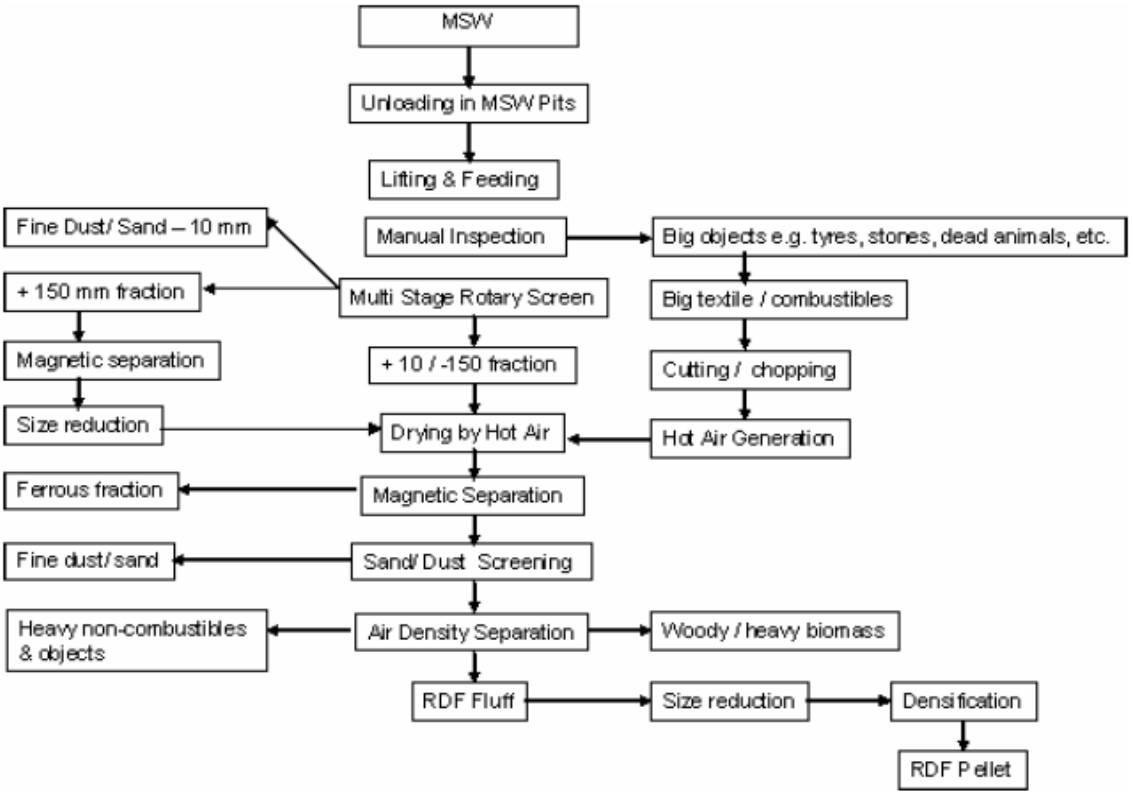
MSW then is homogenized and taken to the rotary screen for separating different size articles. Large size fractions are passed through magnetic separators before taking into primary shredder for further size reduction.

MSW in India contains high moisture percentage and requires to be dried up by hot air generated in a hot air generator is again screened to separate sand/ grit material. The heavy non-combustibles like stones or glass are separated by Air Density Separator. The light combustibles like paper/ textile/ biomass separated in the process are called RDF fluff. RDF fluffs are further processed in secondary shredder and densification unit to produce RDF pellets. Dried combustible material having 5 x 12 inches is RDF (Refuse Derived Fuel) and its calorific value is about 3500 kcal/kg.

Fuel Pelletisation Technology could be adopted for energy recovery from municipal solid waste. Fuel pellets or Refused - Derived-Fuel (RDF) are small cubes made from the solid waste/garbage and are used as a fuel for kilns, boilers to produce steam or electricity. The calorific value of this product is less than coal and therefore can be a good substitute for coal which is used as fuel. The calorific value of RDF depends on the densification of the waste and its combustion characteristics.

1. The Plant has been designed to handle MSW with a minimal manual intervention e.g. there is no yard for spreading the incoming garbage and hence no yard segregation.

2. The incoming MSW is dumped into two engineered pits and immediately sprayed with herbal disinfectants through fogging nozzles to control the associated odour and elimination of any disease vectors such as flies, mosquitoes, rodents etc. Further more the raw MSW is not allowed to stay in plant for more than 24 hours.
3. The storage and processing of MSW is completely carried out in a multi-floor enclosed building kept under slightly negative pressure to avoid spread of dust and odour (if any) to the surrounding areas. The air removed to maintain this negative pressure is filtered and scrubbed before letting it off to the atmosphere.
4. Sound pollution is minimized by isolating moving machinery such as blowers etc with suitable enclosed sound barriers.
5. To eliminate occupational hazards to the plant personals each manned place/station will be provided fresh air through air incoming ducting. Furthermore the dust emanating machinery and materials transfer points will have individual dust aspiration hoods and ducting to have dust free environment in the plant.
6. Unwanted materials including inert rejected during processing are either recycled in the plant or properly taken out as segregated items for their utilization as raw materials to other recycling industries. In short, integrated inert management is an important feature of the plant.
7. Adequate fuel back up has been provided, where the arrival of the MSW itself may not be possible due to wet conditions.



Thus the solid waste is converted to RDF pellets which are then loaded on to the boiler or kilns at the nearest industries at Nakrawadi for burning along with other fuels for their thermal energy which displaces coal.

A.4.3 Estimated amount of emission reductions over the chosen crediting period:

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Total estimated amount of emission reductions over the fixed crediting period is tabulated below:

Net Emission Reductions due to avoidance of methane production

Years	Annual estimation of emission reductions in tonnes of CO2e
April 2005 – May 2006	532
April 2006 – May 2007	2,576
April 2007 – May 2008	4,540
April 2008 – May 2009	6,425
April 2009 – May 2010	8,236
April 2010 – May 2011	9,975
April 2011 – May 2012	11,645
April 2012 – May 2013	13,249
April 2013 – May 2014	14,790
April 2014 – May 2015	16,270
Total estimated reductions for crediting period (tonnes of CO2e)	88,237
Total number of crediting years	10y-0m
Annual average over the first crediting period of estimated reductions (tonnes of CO2e)	8,823

In the above table, the year April 2005 – May 2006 corresponds to the period starting from 01.04.2005 to 31.05.2006. Similar interpretation shall apply for remaining years. The crediting period will start from the date of registration of the project with CDM EB.

Net Emission Reductions from RDF

Years	Annual estimation of emission reductions in tonnes of CO2e
April 2005 – May 2006	27,300
April 2006 – May 2007	27,300
April 2007 – May 2008	27,300
April 2008 – May 2009	27,300
April 2009 – May 2010	27,300
April 2010 – May 2011	27,300
April 2011 – May 2012	27,300
April 2012 – May 2013	27,300
April 2013 – May 2014	27,300
April 2014 – May 2015	27,300
Total estimated reductions for crediting period (tonnes of CO2e)	273,000
Total number of crediting years	10y-0m
Annual average over the first crediting period of estimated reductions (tonnes of CO2e)	27,300

In the above table, the year April 2005 – May 2006 corresponds to the period starting from 01.04.2005 to 31.05.2006. Similar interpretation shall apply for remaining years. The crediting period will start from the date of registration of the project with CDM EB.

A.4.4. Public funding of the small-scale project activity:

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No public funding envisaged for the project activity.

A.4.5. Confirmation that the small-scale project activity is not a debundled component of a large scale project activity:

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As per Appendix C of the Simplified Modalities and Procedures for Small-Scale CDM project activities - "A proposed small-scale project activity shall be deemed to be a debundled component of a large project activity if there is a registered small-scale CDM project activity or an application to register another small-scale CDM project activity:

- With the same project participants;
- In the same project category and technology/measure; and
- Registered within the previous 2 years; and
- Whose project boundary is within 1 km of the project boundary of the proposed small-scale activity at the closest point"

The project activity is not a debundled component of a large project activity as there is no small scale CDM project activity or an application registered by HBEPL, in the same project category in the last two years within 1 km of the project boundary of the proposed small-scale project activity.

SECTION B. Application of a baseline and monitoring methodology

B.1. Title and reference of the approved baseline and monitoring methodology applied to the small-scale project activity:

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The project is a small scale CDM project activity and is based on Appendix B of the simplified modalities and procedures for small-scale CDM project activities. The project activity conform to the following categories –

Main Category: TYPE III: Other Project Activities
Sub Category IIIE: "Avoidance of methane production from biomass decay through controlled combustion", Version 12, Scope 13 (EB 31) and

Main Category: Type I - Renewable Energy Projects (Small Scale)
Sub Category: I.C. "Thermal energy for the user", Version 10 (EB 31)

Avoidance of methane production from biomass decay is covered in category III.E and renewable technologies that supply thermal energy are covered in category I.C. Category III.E comprises measures that avoid the production of methane from biomass or other organic matter that would have otherwise been left to decay anaerobically in a solid waste disposal site without methane recovery. The category I.C comprises renewable fuel that displaces fossil fuel for thermal energy generation.

B.2 Justification of the choice of the project category:

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Main Category: TYPE III: Other Project Activities
Sub Category IIIE: "Avoidance of methane production from biomass decay through controlled combustion", Version 12, Scope 13 (EB 31) and

Main Category: Type I - Renewable Energy Projects (Small Scale)
Sub Category: I.C. "Thermal energy for the user", Version 10 (EB 31)

Justification of the choice of baseline methodology and its applicability to the project activity:

Category	Applicability Criteria	Project Status
Type III.E. **Avoidance of methane production from biomass decay through controlled combustion**	This project category comprises measures that avoid the production of methane from biomass or other organic matter that would have otherwise been left to decay anaerobically in a solid waste disposal site without methane recovery. Due to the project activity, decay is prevented through controlled combustion.	Project activity entails processing of MSW in the city of Rajkot, which otherwise left to decay in unsecured landfill site.
	Due to the project activity, decay is prevented through controlled combustion and less methane is	Decay is prevented through MSW processing in a treatment plant.

	produced and emitted to the atmosphere	
	The project activity does not recover or combust methane (unlike III G).	It avoids methane generation and thus does not capture methane in the process.
	Measures shall both reduce anthropogenic emissions by sources, and directly emit less than 60 kilotonnes of carbon dioxide equivalent annually.	Project activity reduces CH4 emissions and directly emits less than 60kilotonnes of CO2e annually.
	If the combustion facility is used for heat and electricity generation the project can use a corresponding methodology under type I project activities.	As the project activity involves both avoidance of methane and subsequent generation of thermal energy through controlled combustion and displacing the fossil fuel, the project also eligible under small scale methodology AMS I.C.
Type I.C. **Thermal energy for the user**	This category comprises renewable energy technologies that supply individual households or users with thermal energy that displaces fossil fuels and involves technologies that provide thermal energy that displaces fossil fuel, Where generation capacity is specified by the manufacturer, it shall be less than 45MWth.	As the project activity involves the generation of RDF pellets which displaces fossil fuels in thermal energy generation, with the generating capacity less than 15MW. The project also eligible under small scale methodology AMS I.C

The RDF produced from the MSW avoids the generation of methane, which would have otherwise been produced because of uncontrolled disposal of MSW in landfills and left to decay as a result of anthropogenic activity. The RDF is then burnt in the kilns and boilers as an alternative fuel under controlled combustion conditions. Thus due to the project activity, decay of MSW is prevented through the proper waste management (by production of RDF) thus less methane is produced and emitted to the atmosphere.

Hence the applicable baseline scenario as per simplified modalities and procedures is the scenario where in the absence of the project activity, biomass and other organic matter is left to decay within the project boundary and methane is emitted to the atmosphere, and the usage of coal in boilers and kilns for thermal energy generation in absence of this RDF production. The baseline emissions are the amount of methane from the decay of organic waste treated in the project activity and emissions from combustion of coal.

B.3. Description of the project boundary:

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As per TYPE IIIE of appendix B, The project boundary are the physical, geographical sites:

- where the solid waste would have been disposed or is already deposited and the avoided methane emission occurs in absence of the proposed project activity,

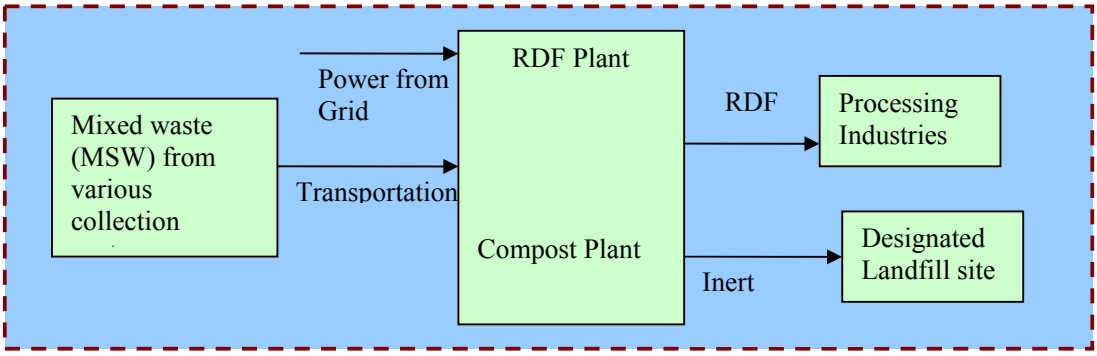
- where the treatment of biomass through controlled combustion takes place,
- where the final residues of the combustion process will be deposited,
- and in the itineraries between them, where the transportation of wastes and combustion residues occurs.

As per Type I.C of Appendix B, The project boundary is the physical, geographical site of the renewable energy generation delineates the project boundary.

The project site in Rajkot has been taken as the project boundary for calculating methane emissions and emission reductions due to replacement of fossil fuel. Part of the Waste collected from different areas of Rajkot will reach to project site. The collected waste will be processed in to RDF in processing plant. The processed RDF in Rajkot will be transported to other processing industries and be burnt in kilns / boilers for thermal energy generation. The project boundary for the project is as shown below:

Thus in the proposed project the project boundary includes the existing MSW landfill site, RDF plant, transportation of MSW from various collection centers to RDF plant, of inert to the disposal site, of RDF to other industries.

Project Boundary



B.4. Description of baseline and its development:

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The baseline scenario is the situation where, in the absence of the project activity, biomass and other organic matter are left to decay within the project boundary and methane is emitted to the atmosphere. The baseline emissions are the amount of methane from the decay of the biomass or organic waste treated in the project activity. The yearly methane generation potential is calculated using the first order decay model based on the discrete time estimate method of the IPCC guidelines, as described in category AMS III-G.

The method mentioned in the methodology is used to evaluate the yearly methane generation potential in the landfill. The quantity of methane projected to be formed during a given year is estimated using a first order decay model based on the discrete time estimate method proposed in the IPCC Guidelines. Percent DOC for various waste streams in the project activity is taken as per the values given in SSC methodology III.E.

The amount of waste combusted in the project activity (fluff quantity) in each year (Qy) is also measured and recorded, as well as its composition through representative sampling, to provide above information for estimating the baseline emissions.

As per the latest guidelines in I.C to estimate the baseline emissions, the emission factor is calculated as per the procedures laid in paragraph 6. The simplified baseline is the fuel consumption of the technologies that would have been used in the absence of the project activity times an emission coefficient for the fossil fuel displaced.

B.5. Description of how the anthropogenic emissions of GHG by sources are reduced below those that would have occurred in the absence of the registered small-scale CDM project activity:

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According to indicative simplified baseline and monitoring methodologies for selected small scale CDM project activity categories, project participants shall provide qualitative explanation to show that the project activity would not have occurred anyways, atleast one of the listed elements should be identified in concrete terms to show that the activity is either beyond the regulatory and policy requirement or improves compliance to the requirement by removing barriers. The additionality of the project activity is shown according to Attachment A to Appendix B of the simplified modalities and procedures for small-scale CDM project activities.

Investment barrier:

MSW handling and management are both labor and investment intensive. As municipal corporations in India are in poor financial health and lack resources, they need private cooperation for finances, technology and management of such projects. HBEPL is providing this support to the municipal authority in Rajkot.

The tangible output from the project activity is the production of renewable fuel RDF which can be used in industrial facilities for thermal energy generation. HBEPL is supplying this RDF to other industries where the RDF replaces coal for thermal energy generation. So, the financial viability of RDF is tested against the gains HBEPL would have in terms of coal savings.

Summary of Financial analysis of project	
Project Cost	17.46 Crores
CER Revenues	~1 Crore per year
Interest Rate on term loan	11%
RDF revenue	248.40 Lakhs
Project IRR without CERs	6.73%
Project IRR with CERs	15.58%

Financial viability of RDF is tested against the gains HBEPL would have in terms of coal savings, however the participant decided to invest in the project primarily due to the following reasons:

- The project was environmentally positive
- The project became viable for investment after accounting for the benefits from carbon credits

From the above discussions and IRR projections, it is established that the company has been facing many financial barriers since implementation of the project.

Technological barrier:

Processing of municipal solid waste is an emerging technology which incorporates a wide variety of diversity of systems designed both for processing of solid waste as well the combustion of the same. It is also established that a number of problems need to be resolved and technical developments to be carried out in this sector. However, the fact remains that countries like India still have limited experience with the processing systems meant for MSW processing and have to cope up with lack of long term experimental data for these processes for making a fool proof & established cost indices. Earlier to year of setting of this plant, few attempts made in India resulted in to varying degrees of success, while establishing a fact that unlike European experience, the Indian MSW has lower calorific value and mass combustion of MSW as received is not suitable in Indian context.

There is no mechanical facility provided other than screening machine which cannot separate wet and dry waste for segregation of MSW. Because of the very high cost of facilities for the sorting, separation and recycling of waste, it is uneconomical for the project participants.

RDF firing energy plant facilities are complex and regardless of size, call for specialized design, automatic control sophistication and construction. Materials handling, fuel feeding, ash removal, air pollution control and overall operating procedures are far more complicated than those of a similarly sized biomass based power plant. In RDF firing, the garbage / MSW received is separated, classified and reclaimed in various ways to yield high calorific value fuel. The combustion of RDF poses its own set of unique problems to a boiler designer in the areas like fuel handling system, combustion, staging/fouling and corrosion/erosion, which can be quite different from those, encountered in a mass burn boiler system.

In India management of Municipal Solid Waste is governed in accordance with "Municipal Solid Wastes (Management and Handling) Rules 2000" formulated by Ministry of Environment and Forests (MoEF). It makes mandatory for the municipal corporations to implement a scientific solid waste management system. The rules give guidelines on collection, segregation, storage, transportation, processing and disposal of municipal solid wastes in a scientific sanitary landfill site.

Though the dateline for compliance was December 31, 2003 by all the municipal authorities for setting up of waste processing and disposal facilities, however due to a number of constraints only few of them could comply with it. These constraints primarily are lack of infrastructure and poor financial status of municipal authorities, lack of awareness, unavailability of technology, poor enforcement of rules & regulations and the multiplicities of agencies involved etc.

The HBEPL has no experience in waste handling and processing systems. From the above, it is clear that the project may face many technological barriers in implementing the project which leads to the frequent shut down of the plant and hence the significant revenue loss of the company. Additional revenue from CDM would definitely help the plant in maintaining the sustainability of the project to greater extent.

Prevailing practice:

The technology of converting MSW into RDF is still in nascent state in India. Apart from that, HBEPL has no prior experience on similar projects and this is the first of its kind in the state of Gujarat implemented for management of 300TPD of municipal solid waste and being submitted to CDM. List of MSW processing plants in operation on commercial basis in India based on pelletisation technology and have been developed under CDM are:

- MSW processing plant, Jaiprakash Associates Limited, Chandigarh (Punjab)
- Grasim Industries Limited – Tamil Nadu
- Selco International (P) Ltd – Andhra Pradesh
- Shriram Energy Systems Limited – Andhra Pradesh

Also technology constraints in designing the systems to handle Indian municipal waste with low calorific value and high moisture content prevents the successful operation of the plant. Though MOEF through the municipal solid wastes (management and handling) rules (2000) identify various technical options fro treatment and disposal of MSW, including pelletisation, that has to be in place by December 2003, the implementation of the same has been very poor in India due to lack of substantial financial resources to implement the rule.

From the analysis in the above sections, it is clear that the project is clearly additional.

Impact of CDM Registration
As per the above mentioned steps the project activity is additional and the anthropogenic emission of the GHG by the sources will be reduced below those that would have occurred in the absence of the project activity or in other words the approval and registration of the CDM project activity will alleviate the identified barriers by providing additional revenue to plant from the sale of emission reductions.

This adequately demonstrates that the project activity cannot proceed on a business-as-usual basis. Therefore, all measures adopted are over and above any requirement under national law or regulation.

B.6. Emission reductions:

B.6.1. Explanation of methodological choices:

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The project is a small scale CDM project activity and is based on Appendix B of the simplified modalities and procedures for small-scale CDM project activities. The project activity conform to the following categories –

Main Category: TYPE III: Other Project Activities
Sub Category IIIE: "Avoidance of methane production from biomass decay through controlled combustion", Version 12, Scope 13 (EB 31) and

Main Category: Type I - Renewable Energy Projects (Small Scale)
Sub Category: I.C. "Thermal energy for the user", Version 10 (EB 31)

Avoidance of methane production from biomass decay is covered in category III.E and renewable technologies that supply thermal energy are covered in category I.C. Category III.E comprises measures that avoid the production of methane from biomass or other organic matter that would have otherwise been left to decay anaerobically in a solid waste disposal site without methane recovery. The category I.C comprises renewable fuel that displaces fossil fuel for thermal energy generation.

B.6.2. Data and parameters that are available at validation:

(Copy this table for each data and parameter)

Data / Parameter:	Average return trip distance between RDF plant to combustion site

Data unit:	Km
Description:	Average return trip distance between RDF plant to combustion site
Source of data used:	Plant Data
Value applied:	-
Justification of the choice of data or description of measurement methods and procedures actually applied :	Site for RDF and boiler site is fixed
Any comment:	Based on daily reports of RDF outage, trucks loading at the RDF plant.

Data / Parameter:	Average CO2 emission factor in transportation
Data unit:	tCO2e/Km
Description:	Average CO2 emission factor in transportation
Source of data used:	Plant data/ truckers data/ IPCC default values
Value applied:	-
Justification of the choice of data or description of measurement methods and procedures actually applied :	Based on Fuel consumed in transportation
Any comment:	Based on daily reports of RDF outage, trucks loading at the RDF plant.

Data / Parameter:	Compliance of MSW Rules 2000 in India
Data unit:	%
Description:	Compliance of MSW Rules 2000 in India
Source of data used:	CPCB annual report
Value applied:	-
Justification of the choice of data or description of measurement methods and procedures actually applied :	Based on CPCB annual report on MSW Management Status report
Any comment:	Central Pollution Control Board annual report on compliance of MSW Rules 2000

B.6.3 Ex-ante calculation of emission reductions:

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Baseline Emissions:

The baseline scenario is the situation where, in the absence of the project activity, biomass and other organic matter are left to decay within the project boundary and methane is emitted to the atmosphere. The baseline emissions are the amount of methane from the decay of the biomass content of the waste

treated in the project activity. The Yearly Methane Generation Potential is calculated using the first order decay model based on the discrete time estimate method of the IPCC Guidelines, as described in EB26 Meeting report, Annex 14, Methodological tool "Tool to determine methane emissions avoided from dumping waste at a solid waste disposal site".

Baseline emissions shall exclude methane emissions that would have to be removed or combusted to comply with national or local safety requirement or legal regulations.

$BEy = MB,y * GWP\_CH4 – MDy,reg* GWP\_CH4$

where,

MB,y	methane generation potential in the year "y" (tonnes of CH4), estimated as in AMS III-G
MDy,reg	methane that would be destroyed or removed in the year "y" for safety or legal regulation
CH4_GWP	GWP for CH4 (value of 21 is used for the first commitment period)

Project Emissions:

Project activity emissions consist of

a. CO2 emissions related to the combustion of the non-biomass carbon content of the waste (plastics, rubber and fossil derived carbon) and auxiliary fuels used in the combustion facility,
b. Incremental CO2 emissions due to incremental distances between the collection points to the controlled combustion site and to the baseline disposal site as well as transportation of combustion residues and final waste from controlled burning site to disposal site,
c. CO2 emissions related to the power used by the project activity facilities, including the equipments for air pollution control required by regulations. In case the project activity consumes grid-based electricity, the grid emission factor (kgCO2e/kWh) is used, or it is assumed that diesel generators would have provided a similar amount of electric power, calculated as described in category I.D.

$PEy = PEy,comb + PEy,transp + PEy,power$

Where:

PEy	project activity direct emissions in the year "y" (tonnes of CO2 equivalent)
PEy,comb	emissions through combustion of non-biomass carbon in the year "y"
PEy,transp	emissions through incremental transportation in the year "y"
PEy,power	emissions through electricity or diesel consumption in the year "y"

The expected annual amount and composition of the waste combusted by the project activity during the crediting period shall be described in the project design document, including the biomass and non-biomass carbon content of the waste. Also the expected consumption of auxiliary fuel for the incineration process should be reported in the project design document.

These data will be used to estimate the annual baseline emissions, and the ex-post project activity emissions. CO2 emissions from the combustion of the non-biomass carbon content of the wastes and from the auxiliary fuel consumed will be estimated assuming the complete oxidation of carbon to CO2 in the combustion.

PEy,comb = Qy,non-biomass * 44/12 + Qy,fuel * Ey,fuel

where:

Qy,,non-biomass:	Non-biomass carbon of the waste combusted in the year "y" (tonnes of Carbon)
Qy,fuel	Quantity of auxiliary fuel used in the year "y" (tonnes)
Ey,fuel	CO2 emission factor for the combustion of the auxiliary fuel (tonnes CO2 per tonne fuel, according to IPCC Guidelines)

Some negligible and unimportant quantity of plastics is also burnt along with RDF fluff combusted in the boiler. Based on the test reports on % of non-biomass materials combusted in the boiler, 2% of non-biomass material is considered for calculations. No fossil fuel is used in this project apart from MSW. Hence the emissions due to the usage of fossil fuel for combustion are considered as zero.

The project emissions due to the usage of non-biomass materials are estimated as below:
Plastic combusted per day = 2% of the total fluff burned
= 2,059 tonnes CO2 per annum

Project activity emissions from trucks for incremental collection activities will be estimated and considered as project activity emissions.

PEy,transp = (Qy/ CTy) * DAF * EFCO2 + (Qy,ash/ CTy,ash) * DAFash * EFCO2
where:

Qy :	Quantity of waste combusted in the year "y" (tonnes)
CTy :	Average truck capacity for waste transportation (tonnes/truck)
DAF:	Average incremental distance for waste transportation (km/truck)
EFCO2:	CO2 emission factor from fuel use due to transportation (kgCO2/km, IPCC default values or local values can be used.
Qy,ash :	Quantity of combustion residues produced in the year "y" (tonnes)
CTy,ash :	Average truck capacity for combustion residues transportation (tonnes/truck)
DAFash:	Average distance for combustion residues transportation (km/truck)

The project site for RDF plant is close to the existing dumping yard of MSW and to the designated yard for inert material and however the project emissions through the incremental transportation have been accounted. However, RDF would be transported to other manufacturing plants near to the RDF unit which is 15km from the RDF plant and emissions due to transportation of RDF to power plant have been considered in estimation of project emissions.
Emission leakage from trucks transporting RDF fluff to processing plants and fly ash to brick manufacturers

PEy,transp = (Qy/ CTy) * DAF * EFCO2 + (Qy,ash/ CTy,ash) * DAFash * EFCO2
PEy,transp = 92.5 tonnes CO2 per annum

Apart from the above project emissions, processing plant consumes certain amount of electricity for the internal power consumption. The emissions due to the usage of electricity at these location should be considered. Electricity consumption at processing plant is being measured with the installed energy meters and readings of the same are documented.

No. of units (kWh) consumed per annum in processing Plant : 1.86 Million kWh
Total CO2 emissions due to electricity consumption : 1.86 x 0.89 = 1664.7 tCO2/annum

Leakage Emissions:

As per the methodology "If the controlled combustion technology is equipment transferred from another activity or if the existing equipment is transferred to another activity, leakage effects at the site of the other activity are to be considered" as this is no the case in the project activity, hence leakage emissions are considered as zero.

Project emissions towards fluff burning are estimated for entire quantity of the fluff that is being produced in the plant and used for energy generation. There is no leakage due to the use of fuel for other plants and uses.

Considering no leakages envisaged in the project activity, the total project activity emissions are 3,816 tCO2/annum.

B.6.4 Summary of the ex-ante estimation of emission reductions:

>>

The emission reduction achieved by the project activity will be measured as the difference between the baseline emission and the sum of the project emission and leakage.

ERy = BEy – (PEy + Leakagey)
where:
ERy Emission reduction in the year "y" (tonnes of CO2 eq)

Net Emission Reductions due to avoidance of methane production

Years	Annual estimation of emission reductions in tonnes of CO2e
April 2005 – May 2006	532
April 2006 – May 2007	2,576
April 2007 – May 2008	4,540
April 2008 – May 2009	6,425
April 2009 – May 2010	8,236
April 2010 – May 2011	9,975
April 2011 – May 2012	11,645
April 2012 – May 2013	13,249
April 2013 – May 2014	14,790
April 2014 – May 2015	16,270
Total estimated reductions for crediting period (tonnes of CO2e)	88,237
Total number of crediting years	10y-0m
Annual average over the first crediting period of estimated reductions (tonnes of CO2e)	8,823

In the above table, the year April 2005 – May 2006 corresponds to the period starting from 01.04.2005 to 31.05.2006. Similar interpretation shall apply for remaining years. The crediting period will start from the date of registration of the project with CDM EB.

Net Emission Reductions from RDF

Years	Annual estimation of emission reductions in tonnes of CO2e
April 2005 – May 2006	27,300
April 2006 – May 2007	27,300
April 2007 – May 2008	27,300
April 2008 – May 2009	27,300
April 2009 – May 2010	27,300
April 2010 – May 2011	27,300
April 2011 – May 2012	27,300
April 2012 – May 2013	27,300
April 2013 – May 2014	27,300
April 2014 – May 2015	27,300
Total estimated reductions for crediting period (tonnes of CO2e)	273,000
Total number of crediting years	10y-0m
Annual average over the first crediting period of estimated reductions (tonnes of CO2e)	27,300

B.7 Application of a monitoring methodology and description of the monitoring plan:

B.7.1 Data and parameters monitored:

(Copy this table for each data and parameter)

Data / Parameter:	**Qy**
Data unit:	TPD
Description:	Quantity of MSW processed in the plant
Source of data to be used:	Plant Records
Value of data applied for the purpose of calculating expected emission reductions in section B.5	300
Description of measurement methods and procedures to be applied:	Each load of MSW to be weighed at the plant entry and then processed to produce RDF fluff. 100% quantity is measured and the data is archived for crediting period+2years

QA/QC procedures to be applied:	Quantity of waste processed in the plant is measured using the weigh bridge at the entrance of the plant. Weigh bridge is calibrated on regular basis as per the procedures of Department of Weighs and Measurements, Government of Gujarat, India.
Any comment:	Each load of MSW to be weighed at the plant entry and then processed to produce RDF fluff.

Data / Parameter:	Composition of waste proposed in the plant
Data unit:	%
Description:	Composition of waste proposed in the plant
Source of data to be used:	Plant Records
Value of data applied for the purpose of calculating expected emission reductions in section B.5	-
Description of measurement methods and procedures to be applied:	100% quantity is measured and calculated and the data is archived for crediting period+2years
QA/QC procedures to be applied:	Composition of the MSW received in the plant is analyzed for representative sampling in Government accredited Laboratories. Representative sampling of the same will be furnished to the lab. As the composition is likely to change with the seasonal changes, the monitoring frequency of the same is considered monthly and the same will be reviewed time to time.
Any comment:	Composition of the representative sampling of the waste processed will be analyzed in the accredited laboratories

Data / Parameter:	No of truck loads from sites to RDF plant
Data unit:	No./day
Description:	No of truck loads from sites to RDF plant
Source of data to be used:	Plant Records
Value of data applied for the purpose of calculating expected emission reductions in section B.5	-
Description of measurement methods and procedures to be applied:	100% quantity is calculated and the data is archived for crediting period+2years
QA/QC procedures to be applied:	All the truck movements from sites to RDF plant are recorded at the entrance and maintained. Cross check with trucking bills
Any comment:	To be cross checked with trucking bills. All the truck movements from the city to the processing plant are recorded.

Data / Parameter:	No of truck loads from processing plant to RDF supplying industries
Data unit:	No./day
Description:	No of truck loads from processing plant to RDF supplying industries
Source of data to be used:	Plant Records
Value of data applied for the purpose of calculating expected emission reductions in section B.5	-
Description of measurement methods and procedures to be applied:	100% quantity is calculated and the data is archived for crediting period+2years
QA/QC procedures to be applied:	To be cross checked with trucking bills. All the truck movements from HBEPL processing plant to other industries are recorded on daily basis along with the quantity of Fluff received. This is used to calculate project emissions owing to the use of diesel consumption.
Any comment:	Cross check with trucking bills

Data / Parameter:	Calorific value of RDF
Data unit:	Kcal/kg
Description:	Energy content of RDF
Source of data to be used:	Plant Records
Value of data applied for the purpose of calculating expected emission reductions in section B.5	3500
Description of measurement methods and procedures to be applied:	100% quantity is calculated and the data is archived for crediting period+2years
QA/QC procedures to be applied:	Use of certified laboratory The calorific value of the produced RDF is measured once in a year. The lab records along with the quantity of fluff produced will be maintained.
Any comment:	Sampling by certified laboratory

B.7.2 Description of the monitoring plan:

>>

HBEPL will collect and store relevant data in a systematic and reliable way, evaluate them regularly, generate reports, and ensure the availability of pertinent information for monitoring. The plant head, department head and shift incharge on-site will be the CDM co-ordinators for HBEPL, responsible for the implementation of the monitoring plan. The basic reporting structure as currently planned is described below.

HBEPL maintains all production/purchase/sales records as per audit guidelines. In this project activity too, HBEPL would have procedures in place for operation and maintenance of the plant machinery, equipments and instruments and maintain data on calibration of the equipments. The equipments used for CDM project would be the part of these procedures and document on maintenance and rectification done on all the monitoring equipments would also be maintained.

The methodology requires monitoring of data as described in the above section. A CDM team will be constituted with participation from Operation, Maintenance, Purchase & Stores, laboratory and accounts. This team will first be trained about CDM concepts and then they will be given the responsibility of collecting & maintaining data. This team will meet periodically to review CDM project activity and also to check data collected to estimate emissions reduction. One person dedicated to CDM related activity will be appointed. This person would be responsible for gathering data from all relevant functions, and to keep records of the same. This person will report to CDM team.

Plant data shall be collected on operation under the supervision of the respective Shift-in-charge and record would be kept in daily logs.

Formation of CDM Team:
A CDM project team would be constituted with participation from relevant departments. People would be trained on CDM concept and monitoring plan. This team will be responsible for data collection and archiving. This team will meet periodically to review CDM project activity check data collected, emissions reduced etc. On a monthly basis, the monitoring reports are checked and discussed by the seniors CDM team members/managers. In case of any irregularity observed by any of the CDM team member, it is informed to the concerned person for necessary actions. On monthly basis, these reports are forwarded to the management level.

- ***Plant Head:*** Overall responsibility of compliance with the CDM monitoring plan.
- ***Department Head:*** Responsibility for completeness of data, reliability of data (calibration of meters), and monthly report generation
- ***Shift In-charge:*** Responsibility of daily report generation

Training of CDM team personnel:

The training of the CDM team and plant personnel will be carried out on CDM principle, CDM activities, monitoring of data and record keeping through a planned schedule made in advance and a record of various training programmes undertaken would be kept for verification. The training on technology will be provided by technology provider and a record shall be kept on training programs conducted.

Day to day data collection and record keeping:
Plant data shall be collected on operation under the supervision of the respective Shift-in-charge and record would be kept in daily logs.

Reliability of data collected-
The reliability of the equipments is checked by testing them on yearly basis. Documents pertaining to testing of equipments shall be maintained.

Frequency-The frequency for data monitoring shall be as per the monitoring plan of this document.

Archiving of data:

The data shall be kept for a period of two years after the crediting period.

Calibration of instruments:
HBEPL have procedures well defined for the calibration of instruments. A log of calibration records would be maintained. Instrumentation department in the company would be responsible for the upkeep of instruments in the plant.

Maintenance of instruments and equipments used in data monitoring:
The operation department shall be responsible for the proper functioning of the equipments/ instruments and shall inform the concerned department for corrective action if found not operating as required. Corrective action shall be taken by the concerned department and a report on corrective action taken shall be maintained as done time to time along with the details of problems rectified.

Checking data for its correctness and completeness:
The CDM team would have the overall responsibility of checking data for its completeness and correctness.

Internal audits of CDM project compliance:
CDM audits shall be carried out to check the correctness of procedures and data monitored by the internal auditing team entrusted for the work. Report on internal audits done, faults found and corrective action taken shall be maintained and kept for external auditing.

Emergency preparedness:
Following situations have been considered as emergency situations

Unavailability of RDF plant due to shutdown/ breakdown of plant & machinery
RDF plant will have storage capacity for atleast 10 days for MSW as per the "Implementation Agreement" with RMC. Plant shall have adequate inventory for spare parts to avoid such situations. RDF storage facility will be able to store RDF at plant site.

During rainy season
The RDF will be transported to the others plant site in covered trucks only to avoid water entry in RDF. Storage facilities will also be in covered areas. So, the project activity does not result in any unidentified activity that can result in substantial emissions from the project activity.

Report generation on monitoring:
After verification of the data and due diligence on correctiveness if required an annual report on monitoring and estimations shall be maintained by the CDM team and record to this effect shall be maintained for verification.

B.8 Date of completion of the application of the baseline and monitoring methodology and the name of the responsible person(s)/entity(ies)

>>
Hanjer Biotech Energies (P) Ltd. (HBEPL) and its consultants
Date of methodology application: 04/02/2007

SECTION C. Duration of the project activity / crediting period

C.1 Duration of the project activity:

C.1.1. Starting date of the project activity:

>>
20/06/2003

C.1.2. Expected operational lifetime of the project activity:

>>
30y-0m

C.2 Choice of the crediting period and related information:

Fixed crediting period

C.2.1. Renewable crediting period

Not Applicable

C.2.1.1. Starting date of the first crediting period:

>>
Not Applicable

C.2.1.2. Length of the first crediting period:

>>
Not Applicable

C.2.2. Fixed crediting period:

C.2.2.1. Starting date:

>>
01/04/2005 (or Starting Date of registration)

C.2.2.2. Length:

>>
10y-0m

SECTION D. Environmental impacts

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D.1. If required by the host Party, documentation on the analysis of the environmental impacts of the project activity:

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The project being a municipal solid waste based power project it does not fall under the purview of the Environmental Impact Assessment (EIA) notification of the Ministry of Environment and Forest, Government of India. As per the government of India notification dated June 13, 2002 based on environment protection rule, 1986, public hearing and EIA is required for those industries/projects which are listed in the predefined list of ministry of environment and forest. Thermal power projects with investment of less than Rs. 100 crore have been excluded from the list. Hence, it is not required by the host party. Plant maintains all the statutory requirements as per the conditions mentioned in the consent for operation from Gujarat PCB.

Following aspects of the project activity and their impacts are taken into account in during construction and later on in operation of the project activity–

Plant Construction Phase

The project activity shall ensure to keep the pollution potential level in the construction phase to a minimum. The following are few important parameters to be appropriately managed to minimize the pollution load.

Site Preparation

During the site preparation some amount of soil movement is involved due to site levelling operations at the site. During the dry season it is necessary to control uplift of dust during the excavation, levelling and transportation by spraying water in the paths, and along the temporary roads.

Sanitation at Site

The facilities like toilets, drinking water and proper shelter for the persons staying in the construction site are provided with utmost importance. The toilets are attached to septic tank so as to minimize the percolation and to control the subsequent impact on the environment. These facilities are properly maintained to ensure minimum environmental impact.

Waste from Construction equipments

The construction activity may involve movement of heavy vehicles for earth moving and to move the equipment like dozers etc. The vehicles will be maintained properly so as to minimize the emissions from exhaust

Plant Operation Phase

Air Pollution

1. Hot air is generated by combustion of biomass in Rotary Dryer. For this chimney height will not be less than 9 m or 2.5 times the height of neighboring building which ever is higher, and discharge from dryer shall passed through cyclone separator for dust removal and clean air will be discharged through chimney. 2. From ADS Cyclone, air will be passed to air-washer system
3. Secondary shredder will be provided with dust bag filters before air is let out to atmosphere

4. Following aspiration points are envisaged for dust collection:
    a. Rotary trammel – 10 mm discharge chute
    b. Dryer discharge chute
    c. Discharge chute of rotary trammel
    d. Coarse fluff discharge duct
    e. Secondary cyclone discharge duct
5. Air will be sent to cyclone for primary collection and air washing for final collection

Water Pollution
There is no need of water for process requirement and hence no contaminated water will be discharged from the project. However during monsoon, some amount of the surface moisture of MSW dumped by Municipality might run off, which would be very small (~25 m3 only). This water run off is organic in nature and carry nutrients which are beneficial to plant life.

Solid Rejects
The solid rejects from the processing would be inert containing stone, sand, ceramic and earth. These will be dumped in designated dump yard.

Noise Pollution
Noise level of plant machinery including fans, blowers shall be within norms.

General Protection
All the workmen handling MSW/ RDF would be provided with Personal Protective Equipments (PPEs) like hand gloves, boots, head-gears and masks. Unauthorized entry of rag pickers will not be allowed inside the plant. Street animals will not be allowed inside the plant.

Leachate
MSW will not be stored in the processing facility so there will not be any leachate generation in the plant.

D.2. If environmental impacts are considered significant by the project participants or the host Party, please provide conclusions and all references to support documentation of an environmental impact assessment undertaken in accordance with the procedures as required by the host Party:

>>
The project being a municipal solid waste based power project it does not fall under the purview of the Environmental Impact Assessment (EIA) notification of the Ministry of Environment and Forest, Government of India.

SECTION E. Stakeholders' comments

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E.1. Brief description how comments by local stakeholders have been invited and compiled:

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Stakeholders to the project activity are identified as under –

- Local community
- Rajkot Municipal Corporation (RMC)
- Gujarat Pollution Control Board (GPCB)

Local Community:
Letters were first sent to the local gram-panchayat of Nakrawadi village and Municipal Commissioner-Rajkot to take their views on the project activity. PP then conducted meetings with the Gram –Panchayat of Nakrawadi and with Municipal Commissioner. He explained them about the project from HBEPL and discussed about the impacts it would make on the city's environ and its people.

Members of Local community who are residing in the vicinity of the plant gave positive feedback on the project and are appreciative of improvements to create better environment and employment in the locality in addition to highlighting the benefits they are enjoying with the plant. Project participant invited the entire local stakeholders through one to one in-person invitation as all the identified stakeholders reside nearer to the plant. Senior officials from the plant had personally visited the stakeholder places and invited to attend the meeting. This arrangement has been made as most of the stakeholders for the project are either uneducated or know very less about these kind of meetings.

Rajkot Municipal Corporation:
HBEPL had made an agreement with Rajkot Municipal Corporation, RMC for setting up the MSW processing plant. The agreement is for 30 years. The agreement is signed by Deputy Commissioner, Rajkot Municipal Corporation and Director, HBEPL.

Gujarat Pollution Control Board:
Air and water consents have been received as required for setting up the plant from Gujarat Pollution Control Board, GPCB for the project activity.

The project does not require displacement of any local population. In addition, the population is also an indirect beneficiary of the project due to improvement of environment due to effective handling and management of municipal solid waste. The non-sanitary land filling practice being followed earlier has been controlled to control methane evolution in the dump yards besides hazardous gases like CO, CO2, SO2 etc. Gujarat Pollution Control Board (GPCB) has prescribed standards of environmental compliance and monitors the adherence to the standards. The project has already received No Objection Certificate (NOC) from GPCB to operate the plant which is renewed every year.

E.2. Summary of the comments received:

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As mentioned above, HBEPL has already received the approvals and clearances for their project from the following stakeholders:

- Gujarat Pradesh Pollution Control Board;
- Agreements with Rajkot Municipal Corporation

Plant has also been getting Consent for Operation renewed regularly from state Pollution Control Board. Although, in India, public participation at any stage of project implementation is not required, being a CDM activity, project proponent has invited the local stakeholders. The summary of comments from various stakeholders is as below:

Most of the stakeholders expressed that as this project came up collecting and management of MSW has improved than earlier. In addition to these, they also felt that project has created jobs to local people. Most of the local community is of the opinion that disposal of garbage is regularised after the plant is installed as against earlier. They also expressed that electricity supply conditions are improved with the plant existence. They mentioned that there are no health related problems or diseases known to be due to the plant in the locality and the same has been confirmed by the health specialist in the local community who was also present. The Local community has appreciated the social service rendered by the plant management during times of distress like natural calamities, cyclones etc. The local community has also confirmed reduction in sound and noise from the plant than earlier. More effective steps have been solicited for control of odour.

Most of the stakeholders strongly believe that these kinds of projects in the state and country would reduce the environmental compliance costs significantly. They also felt that successful implementation and operation of project would make a path clear for setting up of more plants of similar kind and meet the potential available in the state and country.

In the meeting with PP, Deputy Municipal Commissioner of Rajkot told that he already knew about the project activity and expressed his pleasure that RMC and HBEPL are coming up with this project, which is good for the city of Rajkot and would help mitigate the problem of MSW mis-management in the city.

Sarpanch of Gram panchayat congratulated HBEPL for setting up the processing plant. He also told that with this project, the problems of bad odor would be prevented unlike the current dumping practice in Rajkot and in Gujarat.

In summary, every stakeholder expressed that the project activity is helping the socio-economic development without affecting the local environment adversely.

E.3. Report on how due account was taken of any comments received:

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No adverse comment was received on the project activity from any of the stakeholders consulted. They in general expressed their happiness that Rajkot would not have problems related to open dumping of MSW due to this project. They said that this project would further add to the aesthetics of the city. All required consents have also been taken from competent authorities for the establishment and operating the process plant.

Annex 1

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Annex 2

INFORMATION REGARDING PUBLIC FUNDING

No public funding in the project activity.

Annex 3

BASELINE INFORMATION

Please refer section B for detailed baseline information

Annex 4

MONITORING INFORMATION

Please refer section B for detailed monitoring information

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