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IN THE NATIONAL GREEN TRIBUNAL

ORIGINAL JURISDICTION

ORIGINAL APPLICATION NO: 199 OF 2014

IN THE MATTER OF:

*

Davinder Kumar Vs. Union of India & Ors
And
Almitra H. Patel & Anr. Vs. Union of India & Ors

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AFFIDAVIT

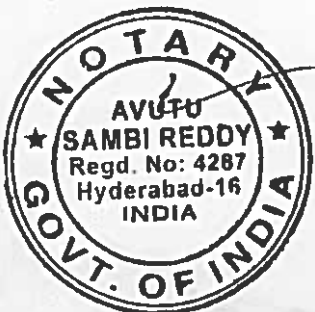
I, Rajeshwar Tiwari S/o, A.N.Tiwari, aged 55 years presently at Hyderabad do hereby solemnly affirm and state as follows:

That I am the Principal Secretary, Environment, Forest, Science and Technology Department, Government of Telangana, and I am competent to swear this affidavit in this Case.

It is submitted that, Hon'ble Tribunal in their order Dated July 13, 2015 has directed the State Government to file their status report with regard to the collection, storage and disposal of Municipal Solid Waste in the entire State.

It is further submitted that, Principal Secretary Municipal Administration & Urban Development Department has filed a status report in the matter before the Hon'ble Tribunal. A copy of the **Status Report on Solid Waste Management** is filed as annexure to this affidavit in compliance to directions of the Hon'ble Court.

The contents of the above affidavit are true and correct and no part of it is false and no material has been concealed there from.



DEPONENT

[Signature]
Principal Secretary to Government
EFS & T Department
Government of Telangana



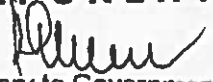
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VERIFICATION

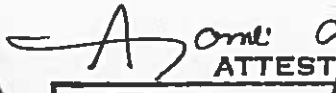
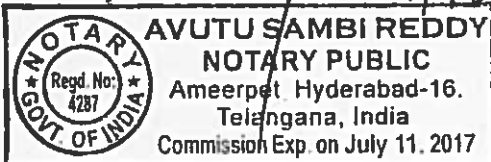
I, the above deponent do hereby verify and declare that the above paras of affidavit are true to my knowledge and upon the legal advice from Counsel.

Verified on this the /st day of August 2015 at Hyderabad.

DEPONENT


Principal Secretary to Government
EFS & T Department
Government of Telangana




ATTESTED 1/8/15


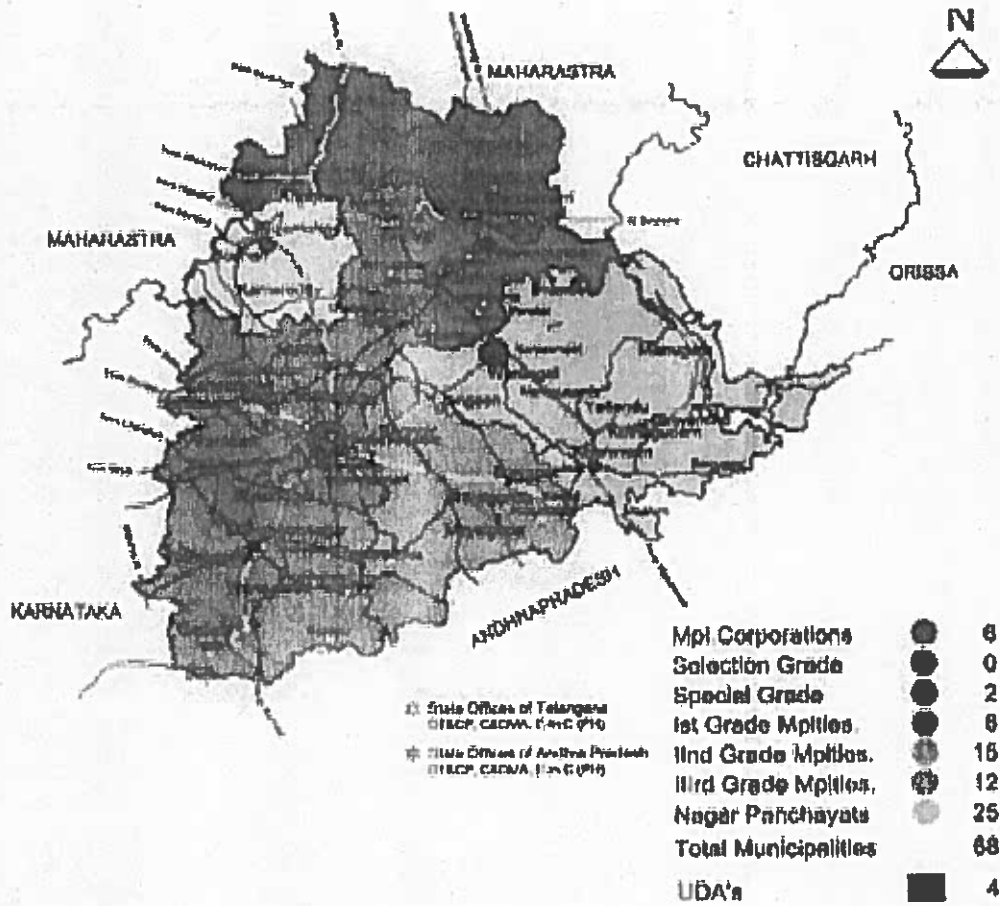


Government of Telangana
Municipal Administration & Urban Development Department



Status Report on Solid Waste Management

Hyderabad
July' 2015





MUNICIPAL SOLID WASTE MANAGEMENT STATUS IN ULBS OF TELANGANA STATE**BACKGROUND:**

The Hon'ble National Green Tribunal, New Delhi in its judgment dated:02.12.2012 in O.A No. 199 of 2014 have issued directions to all the State Governments to study orders in Appeal No.70 of 2014 in the case of Capt. Mall Singh & others Vs Punjab PCB & others regarding the methodology and steps that are to be taken by the States/State Boards for collection and disposal of Municipal solid waste and that if any suggestion are to be moved by the parties in relation to the said judgment is should be moved within two weeks.

Further, the Hon'ble National Green Tribunal in its orders dated:15.01.2015 in O.A No.199 of 2014 directed the Secretaries, Local Bodies and Urban development of the defaulting States, to be personally present before the Tribunal on the next date of hearing with complete records and proposed project reports which should be well considered in all respects including the plan expenditure for establishment of such plants in accordance with judgment of Capt. Mall Singh & others Vs Punjab PCB & Others- Appeal No.70 of 2012. It was also directed to submit report one week prior to the date of hearing. The case is posted to 5.2.2015.

In obedience to the above orders, a detailed affidavit was filed by the Principal Secretary, MA&UD Department, Telangana in the Hon'ble National Green Tribunal on 29.1.2015.

The Hon'ble National Green Tribunal in the Judgment dt 5.2.2015 have cancelled all the report submitted by the States and granted three weeks time by way of last opportunity for filling status reports with complete reply/suggestions based upon and reference to the judgment of the Tribunal in the case of "Capt. Mall Singh & others Vs Panjab PCB & others" in Appeal No. 70 of 2012.

The Hon'ble National Green Tribunal vide order dt 17.3.2015 have considered the Model Status report submitted by the State of Haryana and finally in Judgment dt 20.03.2015 have directed all the concerned States to file comprehensive affidavit within Four weeks in light of the Judgment of the Tribunal in Original Application No. 40(THC) of 2013 in the matter of people for Transparency Through Kamal Anand V State of Panjab, decided on 25th November,2014 and judgment dt 20.3.2015 with regard to the State of Haryana in the matter of Almitra H. Patel Vs Union of India, Original Application No.199 of 2014. The case is posted for further hearing on 30.4.2015 and 1.5.2015.

It is submitted that, the Hon'ble National Green Tribunal in its judgment dated 13.07.2015 has directed the **States to file the status report with regard to the collection, storage and disposal of Municipal Solid Waste in entire State. In view of the above, a comprehensive status of Municipal Solid Waste Management in the State. It was also directed to clarify, if any, MSW disposal plant either RDF or Waste to Energy or any other more plants are functioning or in proposal stage in the State.**

In obedience to the above directions, the following status report is submitted for kind perusal:

A. MSWM STATUS IN ULBs OF TELANGANA STATE:

The newly formed State of Telangana has 10 districts with the population of 352,86,757 as per Census 2011 and with a total geographical area of the state is 114840 Sqkms. The State

comprises Districts of Adilabad, Karimnagar, Medak, Nizamabad, Warangal, Rangareddy, Nalgonda Mahabubnagar, Khammam and Hyderabad. The urban population of the Telangana State as per Census 2011 is 13.72 million representing about 38.89 percent of total population. Total Urban Local Bodies are 68 consisting of 6 Corporations, 37 Municipalities of all grades and 25 Nagar Panchyats.

The ULBs in the Telangana State generates about 6628 Tonns per Day of wastes and in terms of the per capita of waste generation in the ULBs ranges from 0.2-0.4 kg/per day. In terms of Greater Hyderabad Municipal Corporation it is aournd 0.6-0.7 Kg/per head. The quantities of waste are growing 5% annually and the collection efficiency is 90%. The overall composition of the municipal solid wastes is Organic - 50-60%, Inorganic and Recyclables 25% (paper 8.13, Plastic rubber- 9.22, Metal and Glass – 1- 1.5%, Rags – 4-4.5%, others- 4%) remaining inert material (20-25%). The ULB wise Solid Waste Management service levels in terms of Collection, Transportation, Treatment and Disposal is as follows;

MSWM Service Levels in ULBs of Telangana:: As per the CPCB Template

Component	No of ULBs	60-80%	40 – 60%	< 40%
	80 to 100%	60-80%	40 – 60%	< 40%
Door To Door Collection	68			
Segregation	11 (including GHMC)			57
Collection Efficiency of Waste Generated	68			
Treatment of the Waste	1 (GHMC)			67
Scientific Disposal of Waste – Land filling	1 (GHMC)	-	-	Nil
Preparation of ULB wise DPRs for Solid Waste Management as per the indicative action plan given by the Central Pollution Control Board is under process				

Municipal Solid Waste Management Status Report

Status and methods of municipal solid Waste processing

Total No of ULBs	No of ULBs practicing Compost / Vermicompost / Sale of recyclables	No of ULBs with Bio-menthaizati on	No.of Integrated Solid Waste Management Projects	No of ULBs with Waste to Energy Projects
68	10 Nos. (Miryalguda, Nalgonda, Bhongir, Suryapeta, Tandur, Siddipet, Jagityal, Karimnagar, Warangal, Adilabad)	1 No. Warangal Corporation 1ton capacity 12 KV plant is under operational . The waste generated from markets, hotels and dung from slather houses from is being used for the plant.	1 No. Greater Hyderabad Municipal Corporation Integrated Municipal Solid Waste Management project under BOOT mode through M/s Ramky Enviro Engg Ltd.	30 ULBs are being allotted to two wastes to energy projects in the State. 1. The M/s Shalivahana (MSW) Green Energy Ltd has suspended its operations due to non viable of power purchase tariff rate. 2.The M/s Hema Sri Power Projects is under construction

ULBs wise Generation and Treatment of waste in Metric Tonnes per Day (MTD)

Category Based on Quantity of Waste Generated	Name of the ULBs	Quantity Generated	Quantity Collected	Quantity Treated	Quantity disposed
500 & above	GHMC	4000	3800	3040	760
100-500 MTD	Ramagundam Corp	115	113	0	113
	Warangal Coprn.	210	210	20	190
	Nizamabad	218	202	0	202
	Karimnagar Corp.	220	200	20	180
	Khammam	130	65	0	65
	Sub Total	4893	4590	3080	1510
50-100 MTD	Miryalguda	50	50	8	42
	Jagitial	50	50	10	40
	Kothagudem	50	48	2	46
	Siddipet	55	54	15	39
	Khagaznagar	55	53	0	53
	Mahabubnagar	56	52	0	52
	Sangareddy	58	56	0	56
	Sircilla	58	57	5	52
	Nirmal	60	58	0	58
	Suryapet	63	63	5	58
	Adilabad	66	64	10	54
	Sub-Total	621	605	55	550
<50 MTD	leeja	8	7	0	7
	Kalwakurthy	8	7	0	7
	Dubbak	8	7	0	7

Gajwel - Pregnapur	8	6	0	6
Achampet	10	8	0	8
Kollapur	10	8	0	8
Narayanpet	10	8	0	8
Chegunta	10	8	0	8
Armoor	10	9	0	9
Ibrahimpattanam	10	9	0	9
Parkala	10	9	3	6
Andole - Jogipet	12	11	0	11
Bhupalpally	12	10	0	10
Husnabad	12	11	0	11
Wanaparthy	13	11	0	11
PeddaAmberpet	15	14	0	14
Madhira	15	13	0	13
Badangpet	16	15	3	12
Peddapally	16	14	0	14
Vemulavada	17	16	0	16
Sadasivpet	18	16	0	16
Huzurnagar	18	16	0	16
Kodad	18	18	8	10
Medchal	18	16	0	16
Narsampet	18	17	0	17
Manuguru	19	18	0	18
Shadnagar	20	18	0	18
Devarakonda	20	18	0	18
Metpally	24	24	1	23
Huzurabad	24	23	0	23
Koratla	25	23	0	23
Sathupalli	25	23	0	23
Mahaboobabad	26	22	0	22
Bhainsa	27	24	0	24
Nagarkurnool	28	25	0	25
Jangaon	28	27	0	27
Jammikunta	28	25	0	25
Medak	29	27	0	27
Vikarabad	29	29	0	29
Mandamarri	30	28	0	28
Bhongir	32	32	10	22
Yellandu	32	30	0	30
Bellampally	32	32	0	32
Zaheerabad	35	30	0	30
Mancherial	35	34	0	34
Gadwal	36	32	0	32
Kamareddy	37	35	0	35
Tandur	40	40	10	30
Palwancha	40	38	0	38
Nalgonda	45	43	5	38
Bodhan	48	46	0	46
Sub Total	1114	1030	40	990
Grand Total	6628	6225	3175	3050

In the above, Integrated Municipal Solid Waste Management project is being implemented at Greater Hyderabad Municipal Corporation M/s Ramky Enviro Engg under BOOT mode.

Interventions for Improving Solid Waste Management in 67 ULBs:

1. Chetta Pai Kotha Samaram – 'New War on Waste' was launched on Mission mode across the ULBs in State in order to strengthen the Solid Waste Management. Under this program awareness generation through IEC campaign were conducted in all the Urban

Local Bodies (ULBs) across the state. As policy decision, the Women Self Help Groups under the State level agency Mission for Elimination of Poverty in Municipal Areas (MEPMA) were trained and entrusted the task of the IEC in ULBs. Green Caller tunes on concept of 3Rs were introduced in mobiles of ULBs functionaries at all levels. Further, to review the progress of the program Dial Your Director was introduced in which identified 3 ULB commissioners, to dial the Commissioner and Director Municipal Administration (C&DMA), Hyderabad and report the progress from field every day. The program was crucial in improving the overall MSW service delivery and citizen interface.

Outcomes

- Improved Awareness among citizens with improved door to door collection and segregation of waste
- Optimization of Manpower and transportation resulting in effective service delivery and reduction in ULB expenditure
- Improved processing of organic waste and sale of recyclables
- Reduction in littering of waste on roads and dumping of waste drains
- Effective monitoring at the highest level
- About 6500 active SHG's members were trained on segregation and storage of dry and wet waste separately to sensitize the community

Programs are been continued in all ULBs of the State

2. "PARICHAYAM" program or "Know your sanitary worker" – The main objective of the program is effective community monitoring through display of information in wards about the responsible field staff and workers. Under the programme, the names, mobile numbers and other important details such as responsibilities entrusted to a sanitary worker in a concerning Municipal Ward are written on a wall prominently visible to everyone. Before this takes place the Sanitation & SWM department officials visits the ward and introduced the said sanitary worker to the local community in the Ward. Every day the Municipal MSW staff in designated of the area has to signature of minimum of 5 households to validate the same by obtaining signatures from 5 households such as Women SHGs or individual Households (every day one different unit) after completion of their assigned MSWM Duties.

Outcomes

- Successful in cordial relationship between the sanitary worker and the community
- Enhanced self-esteem among PH workers
- Improved complaint redressal
- Social audit and better accountability

3. Implementation of Plastic Waste (M&H) Rules 2011

Guidelines were issued to ULBs across the state for effective implementation of the Plastic Waste (M&H) Rules 2011. IEC campaign were envisaged across the ULBs through RWA's, traders, SHGs and NGOs including school children

Outcomes

- Ban on plastic carry bags <40 microns is been effectively implemented in ULBs like Sircilla, Siddipet, Miryalaguda, Bhongiri & Kodad.

4. Hosting the Regional Review Meetings in Compost yards: The objective of the initiative was to revival of dumpsites which are often neglected and to overcome the NIMBY syndrome. The initiative has not only transformed the dump yards to aesthetically appealing compost parks and but a change in perceptions about dump yards. The response from the Urban Local Bodies was so overwhelming and positive that in three months time nearly 5 Municipal dumpsites were reclaimed.

Outcomes

- Reduction in the dumping area and recovery of land
- Improved aesthetics and green cover in the dump spites

5. Clean City Championship: This is a unique clean up drive to gear up the city to effectively manage the municipal solid waste with public participation by providing competitive outlook of sporting event launched at Waragal City. It aimed at competitive participatory learning for the host city sanitary workers and other ULBs in the region. The main objective of the Clean City program is to sensitize the commitment needed to address the problem and provide hands on training to the stakeholders on effective implementation of segregation, collection and safe transportation. The activity based learning event was carried out intensively for 7 days involving the stakeholders in the city and final day it was transferred to the host Urban Local Body to take it forward the spirit of the event on daily basis.

Outcomes:

- Brings learning from training halls to practical field level experiential learning, on competitive and participatory mode approach.
- **Capacity building and cross learning for about 400 teams participated of 3 members each in the event, 273 teams from WMC and 136 teams from other ULBs and have gained the hands on experience**
- Warangal Municipal Corporation is completely cleared off the community bins and is 'Bin Free'
- The recyclables like plastic, paper, metals, glass etc are bailed and stored.
- Marketing linkages are provided with ACF recycling firm for sale of the dry waste.
- Winner of the HUDCO "Best Practices" award for Year 2012 and other awards at National and International level.
- **Innovative efforts by the COMMISSIONER AND DIRECTOR MUNICIPAL ADMINISTRATION, HYDERABAD was appreciated in the "Satyamave Jayate" the popular program hosted by Amir Khan has set out best example**
- Unique program was discussed in national seminars and workshops and is appreciated in many national level media, news articles and experts in solid waste management sector.

6. 100 Days Clean City Challenge

Sanitation needs to have sustained attention, in view to improve services the revised version of Chetta Pai Kotha Samaram – 100 days Clean City Challenge' has been conceptualized and was implemented during 25.10.2013 to 03.02.2014 across the Urban Local Bodies. Each Urban Local Body implemented the list of interventions over period of 100 days related to Municipal Solid Waste Management components other sanitation in the given time frame. An evaluation was conducted at the end of the program and the best performing Urban Local Bodies were awarded by the Honourable Minister for MA&UD, Govt of AP (erstwhile) during the International Conference on Solid Waste Management.

Outcomes

- Improved Sanitation service delivery and infrastructure in ULBs
- 50 ULBs were appreciated by the Government for the improved SWM services

7. Hosting of Icon-SWM -International Conference on Solid Waste Management 2014:

As part of the Capacity Building initiative the MA&UD Department jointly with ISWMAW, Kolakata and Jadavapur University had organized the 4th International Level workshop on Solid Waste Management at Acharya NG Ranga Agriculture between 28-30th January 2014. About 1400 delegates from International, National level which included representatives from international agencies practitioners, academicians, ULB, state departments and elected representatives participated in the conference.

Outcomes:

- Capacity building of the ULBs on SWM issues and platform for exchange of knowledge and cross learnings
- 10 Best performing Urban Local Bodies at National level Miryalaguda, Jagityal & Tandur, Warangal received Awards as recognition of the Solid Waste Management initiatives

Progressive ULBs:

- M/s Waste Venture India Pvt. Ltd is processing organic waste into compost in Miryalguda and Nalgonda Municipalities and proposed expand Mahbubnagar, Medak, Tandur, Gajwel under PPP mode.
- M/s ITC Ltd under CSR activity has taken up Wealth out of Waste program in Siddipet, Siricilla, Gajwel, Vemulawada, Mahbubnagar and Warangal Corporation in which dry waste is being purchased @Rs.2/- to Rs.3/- from Public Health Workers to incentivize them and motivate them on segregation.
- In Siddipet Municipality, 75% resource recovery is happening, i.e., composting of organic waste and sale of dry resources to M/s ITC for recycling. Similarly, Bhongir, Suryapeta, Tandur, Jagityal, Parkal and Kodad are also recovering resources from waste by transforming it into compost and sale of dry waste to recyclers. Continuous IEC and Awareness programs are being held on source segregation and door to door collection of waste (Photos annexed). The NITI Aayog, New Delhi team Member Dr.V.K.Saraswat and Sri. Ashok Kumar Jain, Advisor, has visited the Siddipet Compost site on 10-04-2015 and appreciated the ULB for its efforts in handling of solid waste generated in the town.

- The Greater Warangal Municipal Corporation has established a one Ton per day 12KV power generation bio-methanation plant in 2012. The organic fractions of waste generated at vegetable market, slaughter house and hotels are being used as a raw material for this unit and the power generated in this plant is used to lit up nearby Children Park. In addition to this a 2 ton/day capacity bio-methanation plant is under construction in GWMC office premises.

Proposed activities:

1. ULB wise DPRs for Solid Waste Management:

As part of the Swachh Bharat – Swachh Telangana program, two agencies were identified (1) M/s Grant Thornton, New Delhi (2) M/s IPE Global Ltd to identify the gaps in existing MSWM system if any and prepare and detailed project report for each of the ULB by end of October, 2015. The DPRs will be considered for improving the solid waste management infrastructure and services by utilizing the funds under the Swachh Bharat Mission. And also explore the PPP options for processing and disposal of waste.

2. 60 Days “Swachhta Samaram”

The MA&UD Department has initiated a **60 Days “Swachhta Samaram”** program. The drive is launched under the Swachh Bharat – Swachh Telangana from **01.08.2015 to 02.10.2015** to sensitize and involve the people by implementing various activities related to sanitation, solid waste management and plastic waste management etc.

The program also focuses on bringing a behavioral change among the school children youth and women. Each day planned activity will be taken up by the ULB in coordination with all the stakeholders. The 60 Day program will culminate on 02.10.2015 on the eve of Gandhi Jayanthi, Father of our Nation. The Day will be marked by felicitating the awards for the school and college level competitions on Swachh Bharat – Swachh Telangana theme including the best performing public health workers.

The best performing Municipal Commissioners will also be felicitated with certificates by C&DMA considering the efforts made by them for successful implementation of the program.

B. Waste to Energy Projects / RDF based MSWM Projects;

The erstwhile State of Andhra Pradesh was pioneer in adopting Waste to Energy (WTE) projects on Public Private Partnership (PPP) mode. The Government had constituted a Technical Committee and State Level Official Committee vide G.O.Rt.No.122 M.A, Dated: 16.02.2001 to undertake Techno Economic Assessment of bids received for Municipal Corporations and Municipalities in the State for Waste to Energy (WTE) Projects.

CLUSTER APPROACH:

In compliance to the MSW (M&H) Rules, 2000, Municipal Administration and Urban Development Department (MA&UD), the erstwhile Government of Andhra Pradesh came up with the comprehensive guidelines/strategy for setting up of MSW Processing Plants in all Municipalities/Municipal Corporation of the state with Power Projects vide G.O. 655 MA on 5th

July 2005. As a pioneering approach in India, the Municipal Administration and Urban Development Department of erstwhile State of Andhra Pradesh has followed a unique cluster approach and had formed 19 clusters from 132 ULBs vide G.O.Rt.No.1424, dated 24.10.2005 comprising of 5 to 12 Urban Local Bodies (depend on distance and financial feasibility) in each cluster covering all the ULBs in the State. The MA&UD Department of erstwhile State of AP planned to develop these clusters on Public-Private-Partnership (PPP) basis as integrated solid waste management projects as per the MSW (M&H) Rules, 2000. Expression of Interest (EOI) were called for to establish Municipal Solid Waste processing projects for the 19 clusters by giving paper notification dt 02.02.2006, giving due preference subject to obtaining of clearance from Andhra Pradesh Pollution Control Board and other statutory agencies. Government of Andhra Pradesh (erstwhile state) have approved 5 WTE projects after the recommendations of the Technical Committee and State Level Official Committee covering 66 ULBs in 10 clusters in 2005. Following, the bifurcation of AP state as per the AP reorganization bill the two WTE projects namely M/s Shalivahana (MSW) Green Energy Ltd, Karimnagar covering 18 ULBs and M/s Hema Sri Power Projects Ltd, Suryapet, 12.6 MW covering 14 ULBs fall the jurisdiction of the new Telangana State. Currently, the Telangana State has three MSW projects under the Public Private Partnership mode.

The following three projects are being sanctioned to process the waste into resource under PPP mode;

1. Integrated Solid Waste Management Project at Greater Hyderabad Municipal Corporation under PPP mode by M/s Ramky Enviro Engg Pvt Ltd
 2. M/s Shalivahana (MSW) Green Energy Ltd, Karimnagar – 12 MW – Waste generated from 18 ULBs
 3. M/s Hema Sri Power Projects Ltd, Suryapet, 12.6 MW – Waste generated from 14 ULBs.
1. **Integrated Solid Waste Management Project – Greater Hyderabad Municipal Corporation:**

The Greater Hyderabad Municipal Corporation has entered into agreement with M/s Ramky Enviro Engineer Ltd., under BOOT mode. The Concession Agreement was entered on 21.02.2009. Presently, Processing and disposal activity is being taken up under this project. The GHMC is paying Rs.678/- per ton per day as a tipping fee to the Concessionaire for processing disposal of waste.

- As per the G.O.Ms.No.264 MA, dated 16.04.2007, the Government has constituted Greater Hyderabad Municipal Corporation duly merging surrounding (12) municipalities.
- Thus, the total area increased from 172 sq. kms to 625 sq. kms and the population has been increased from 40.00 lakh to 80.00 lakh
- The Generation of MSW is about 4000 MTs per day.
- The earlier practice of the GHMC before conceiving ISWM Project is simple open dumping. Due to which air, soil, ground and surface water are contaminated in all the villages in and around Jawaharnagar and spreading the diseases in the public living nearby dumping site.

- Compliance of Municipal Solid Waste (Management & Handling) Rules 2000 is mandatory to all the ULB's as per the directions of Hon'ble Supreme Court of India.
- GHMC desires that its SWM management system shall be a 'model system' for the Country, which would scientifically collect, transport, process and dispose of MSW, have maximum recycling and recovery, and create public awareness and participation.
- Accordingly, the GHMC has conceived an Integrated Solid Waste Management (ISWM) Project of GHMC, Hyderabad, in accordance with the MSW Rules, 2000.
- The GHMC has invited Expression of Interest for having an ISWM Project under BOOT Mechanism with Public Private Partnership (PPP) mode. After following the due procedure M/s. Ramky Enviro Engineers Ltd., was selected as Concessionaire for the project. The Concession Agreement is entered on 21.02.2009.
- Without prejudice to the generality of the foregoing, Concessionaire shall have the right to develop the Project Facilities using such technology that it considers suitable and commercially viable for the purposes of implementing the Project, in accordance with the MSW Rules, 2000. It is acknowledged that it is the intention of Concessionaire to use the technology associated with the concept of an integrated waste processing plant and that Concessionaire shall have the right to modify, adapt, upgrade or change the technology, from time to time, based on actual operations of the Plant and requirements of the Project.
- The estimated project cost as per approved DPR is Rs.727.20 crores. The admissible cost under JNNURM scheme was Rs.500 crores. The financial pattern of the project is ;

○ 35% of admissible cost from JNNURM grant	-Rs.175.00 crores
○ 15% of admissible cost from State Govt.,	- Rs. 75.00 crores
○ 50% Concessionaire share (Rs.250 cr.) + Addl. Cost over and above Rs.500 cr.	
(Rs.227.20 cr) (i.e M/s. Ramky)	-Rs.477.20crores
Total Cost of the Project is	- Rs.727.20 crores
- The scheme is being taken up under 13th Finance Commission Grants. So far, an amount of Rs.290.63 crores was sanctioned and against this an amount of Rs.155.32 crores released to GHMC.
- Further, Annual Development Plans for the project were submitted for consideration under 14th Finance Commission for Rs.485 crores which also includes Processing & Management of Municipal Solid Waste (i.e. tipping fee). Sanction to this is awaited.

- The Concession period of the project is 25 years. The Concessionaire has certain Post Closure obligations for the landfill which it shall continued to fulfill for 15 years after the expiry of the Active Landfill period of 25 years.
- GHMC agreed to pay to Concessionaire, the tipping fee, which shall be the only fee paid by GHMC to the Concessionaire for performing the services. The quoted tipping fee is Rs.1431/- per ton of MSW (also called as base tipping fee) received and weighed at the gate of disposal facility.
- The Tipping Fee covers three main components of work, break up of Tipping Fee for each of the component is given below:
 - i. Primary and secondary collection & transportation of waste upto transfer station: 40% of the Tipping Fee.
 - ii. Transfer station management and transportation of waste from transfer station to the processing facilities: 20% of the Tipping Fee.
 - iii. Treatment & disposal: 40% of the Tipping Fee.
- The base Tipping Fee shall be increased annually, without compounding, by 5% thereof every year plus 0.60 of the WPI escalation.
- The Scope of the project is :

Primary & Secondary Collection: To ensure waste collection from Waste Generators within GHMC Area, including primary and secondary collection, and transportation of waste upto transfer stations. Initially, the two zones for which the Concessionaire, shall be vested with this right and responsibility shall be the East Zone and West Zone of GHMC. The Independent Engineer shall assess the implementation in East and West zones to ascertain adherence to the performance standards as set out. GHMC shall assess and review the same and subject to satisfactory performance by the Concessionaire, permit the Concessionaire to continue the services in East and West zones and extend the services to other zones in a phased manner, on the same terms and conditions.

Collection of Municipal Solid Wastes

Organizing door to door collection of municipal solid wastes through organized door to door collection system by collecting daily on pre-informed timings and scheduling by using bell ringing of musical vehicle (without exceeding permissible noise levels).

Devising organized collection of waste from slums and squatter areas, direct collection of MSW from bulk generators including markets, hotels, restaurants, cinema theaters, malls, multiplexes, function halls, office complexes, commercial areas and other sources as indicated by GHMC time to time.

Waste from fruits and vegetable markets, which are biodegradable in nature, shall be managed to make use of such wastes.

Bio-medical wastes and industrial wastes shall not be mixed with municipal solid wastes and such wastes shall follow the rules separately specified for the purpose. If the bio-medical and industrial waste is observed same shall be reported to GHMC immediately.

Collected waste from residential and other areas shall be transferred to storage bins by suitable vehicles.

Horticultural waste shall be separately collected and disposed off following proper norms. Similarly, wastes generated at dairies shall be regulated in accordance with the applicable regulations.

At any stage the MSW shall not be burnt.

Stray animals shall not be allowed to move around waste storage facilities or at any other place in the city and shall be managed accordingly.

The concessionaire shall notify waste collection schedule and the likely method to be adopted for the public benefit.

The concessionaire shall achieve the binless system over a period of time as finalized in the implementation plan.

Segregation of Municipal Solid Wastes

In order to encourage the citizens, concessionaire shall organize awareness programmes for segregation of wastes and shall promote recycling or reuse of segregated materials.

The awareness programs shall be conducted periodically once in a month for the first two years from COD-C&T and once in every quarter for rest of the concession period. Every six month schedule shall be prepared and submitted for GHMC approval at least 2 months before the program start date.

The concessionaire shall undertake phased programme to ensure community participation in waste segregation. For this purpose, regular meetings at quarterly

intervals shall be arranged by the concessionaire with representatives of local resident welfare associations and non-governmental organizations.

Storage of Municipal Solid Wastes

Concessionaire shall establish and maintain MSW storage facilities/containers/bins in such a manner as they do not create unhygienic and in-sanitary conditions around it. Following criteria shall be taken into account while establishing and maintaining storage facilities,

- i. Storage facilities/containers/bins shall be created and established by taking into account quantities of waste generation in a given area and the population densities. A storage facility shall be so placed that it is accessible to users;
- ii. Storage facilities/containers/bins to be set up by concessionaire shall be so designed that wastes stored are not exposed to open atmosphere and shall be aesthetically acceptable and user-friendly.
- iii. Storage facilities/containers/bins shall have 'easy to operate' design for handling, transfer and transportation of waste. Separate bins for storage of bio-degradable and non-bio-degradable wastes shall be provided separately. The colour code for the storage facilities/containers/bins shall be followed as per the GHMC's directions;
- iv. Manual handling of waste shall be prohibited.
- v. Multiple handling of waste shall be prohibited.
- vi. At no stage of the system the MSW shall touch the ground.

Transportation of MSW:

MSW generated in the GHMC Area and the silt collected from the street sweeping activity would be brought in at the transfer stations being operated and maintained by the Concessionaire and Concessionaire shall be required to transport the waste generated and the silt to the designated waste processing and disposal site(s). While, in the East and West Zones, the Concessionaire shall be responsible for transportation of the waste collected from the generators to the transfer stations, in the balance zones the transportation of the waste collected from the generators to the transfer stations or secondary collection points shall be carried out by GHMC till the time balance zones are handed over to the Concessionaire.

Vehicles used for transportation of waste shall be covered. Waste should not be visible to public, nor exposed to open environment preventing their scattering.

The following criteria shall be met:

- i. The storage facilities shall be daily attended for clearing of wastes. The bins or containers wherever placed shall be cleaned before they start overflowing;
 - ii. Transportation vehicles shall be so designed that multiple handling of wastes, prior to final disposal, is avoided.
 - iii. The transportation system shall be designed in synchronization with the collection system.
- a. Providing bin-less waste collection system in GHMC in a phased manner as specified in this Agreement: To identify the location of secondary collection points and to ensure storage of waste from Waste Generators by providing suitable storage system at such locations.
 - b. **Upgrading, Operation & Maintenance and Management of Existing Transfer Stations:** located at Lower Tank Bund, Yousufguda, and Imliban.
 - c. **Development of New Transfer Stations:** at existing disposal sites and other location in accordance with GHMC: Tentatively, these are proposed at Fathullaguda, Shamshiguda, Gandhamguda, Serilingampally and Kapra.
 - d. **Recycle and Reuse of Wastes.**
 - e. **Processing & Treatment of MSW:** To process MSW as per MSW Rules and other applicable regulations and to transport and dispose the Residual Inert Matter at the Landfill Site.

Concessionaire shall adopt suitable technology or municipal solid technologies to make use of wastes so as to minimize burden on landfill. Following criteria shall be adopted, namely:-

- i. The bio degradable wastes shall be processed by composting, vermin composting, anaerobic digestion or any other appropriate biological processing for stabilization of wastes. It shall be ensured that compost or any other end product shall comply with standards as specified in Schedule-IV of MSW Rules 2000;

- ii. Mixed waste containing recoverable resources shall follow the route of recycling. Incineration with or without energy recovery can also be used for processing MSW. Concessionaire wishing to use other state-of-the-art technologies shall approach the Central Pollution Control Board to get the standards laid down before applying for grant of authorization.

Disposal of Municipal Solid Wastes

Land filling shall be restricted to non-biodegradable inert waste and other waste that are not suitable either for recycling or for processing. Land filling shall also be carried out for residues of waste processing facilities as well as pre-processing rejects from waste processing facilities. Land filling of mixed waste shall be avoided unless the same is found unsuitable for waste processing. Till installation of integrated facility, land-filling shall be done following proper norms. Landfill sites shall meet the specifications as given in schedule- III of MSW Rules 2000.

Leachate Management System

Leachate management at the landfill includes the operation of the following units:

- i. Leachate drainage system (drainage layer and drainpipes at the bottom of the landfill cells, the leachate outlet structures in the lowest and in the highest positioned corners of each cell)
- ii. Inspection and leachate collection shafts positioned outside the membrane covered area.
- iii. Leachate pumps installed in the leachate collection shafts.
- iv. Leachate transportation pipes installed in the surrounding dike.
- v. Leachate treatment

During normal operation the equipment is totally self reliant requiring no input by the site personnel. However care shall be exercised to ensure the proper function of the system at all times.

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

Landfill Gas Management

- (i) General

1102

The emission of landfill gas is controlled by the operation of the gas collection system, which will be installed and set in to operation immediately after the top cover system has been installed. The final design in terms of the final number of necessary gas collection wells cannot be undertaken before actual measurements of the gas production have been performed, which again cannot be performed before the deposition of waste in a landfill cell is completed.

When installed and running at a stable level the gas management system is in principle self reliant. In order to secure the most efficient gas control it is however necessary, that the concessionaire monitors and adjusts the system on a regular basis.

- (ii) In order to adjust a gas well, it is necessary to monitor 3 parameters:
- i. The vacuum or the flow in the boring
 - ii. The methane content (CH₄)
 - iii. The oxygen content (O₂).

Measures for Odour Control:

Principal means of minimizing landfill odours include:

- i. Effective compaction.
- ii. Provision of adequate cover especially the daily cover.
- iii. Immediate deposition and covering of especially malodorous wastes.
- iv. Effective gas collection and treatment system.
- v. Immediate deposition and covering of excavated wastes
- vi. Avoid re-cycling of leachate and the storage of untreated leachate in open lagoons or containers

Measures for Dust Control:

The concessionaire shall organize the operations at the landfill in such a way, that emission of dust is kept to a minimum. The following measures can be used:

- i. Surfaces with dry soil and service roads are sprinkled with water.
- ii. Transportation activities are restricted to the service roads
- iii. Paved service roads are cleaned by sweeping.
- iv. Sprinkling of dry soil or waste during excavation and reposition
- v. Areas with temporary cover area seeded with grass.

Development, Operation, Maintenance, and Management of integrated processing and disposal facility at Jawaharnagar: Subsequently it is proposed to develop new facilities at new sites being identified by GHMC during

the course of time, so that, the processing facilities are located in all the directions of the city.

Reclamation and Alternative Use of Existing Dump Sites: The old dump sites at Jawaharnagar, Fathullaguda, Shamshiguda, and Gandhamguda is to be reclaimed and capped scientifically.

Information, Education, & Communication (IEC) campaigns with the public and all stakeholders in GHMC Area to inculcate good MSW management practices, including recycling, and segregation.

Interfacing with existing organized and unorganized waste-collection and management systems to ensure that there is a smooth and harmonious working of the systems.

- **Independent Engineer:** Environmental Protection Training & Research Institute (EPTRI) a State Govt. agency is appointed as Independent Engineer for this project for better implementation of the ISWM project of GHMC.
- **M/s. Ramky Enviro Engineers Ltd., (REEL)** has taken up the work at site i.e. Jawahar Nagar dumping yard. After the treatment & disposal facilities are completed by the Concessionaire a provisional readiness certificate was issued by EPTRI and the Commercial Operation Date (T&D) was declared on 18.02.2012, in other words T&D of the entire MSW generated in GHMC is being attended by the Concessionaire.
- As per the scope of the work, the Concessionaire is to segregate bio-degradable and non-biodegradable waste at source level itself i.e. at door to door collection. The door to door collection, primary & secondary transportation and tertiary transportation could not be handed over to the Concessionaire for some reasons. At present the same is being attended by GHMC. Segregation at source level i.e. at door to door collection is actively being considered by GHMC and the same will be started shortly.
- The Present Status of the Project is as follows ;

Components completed under the project

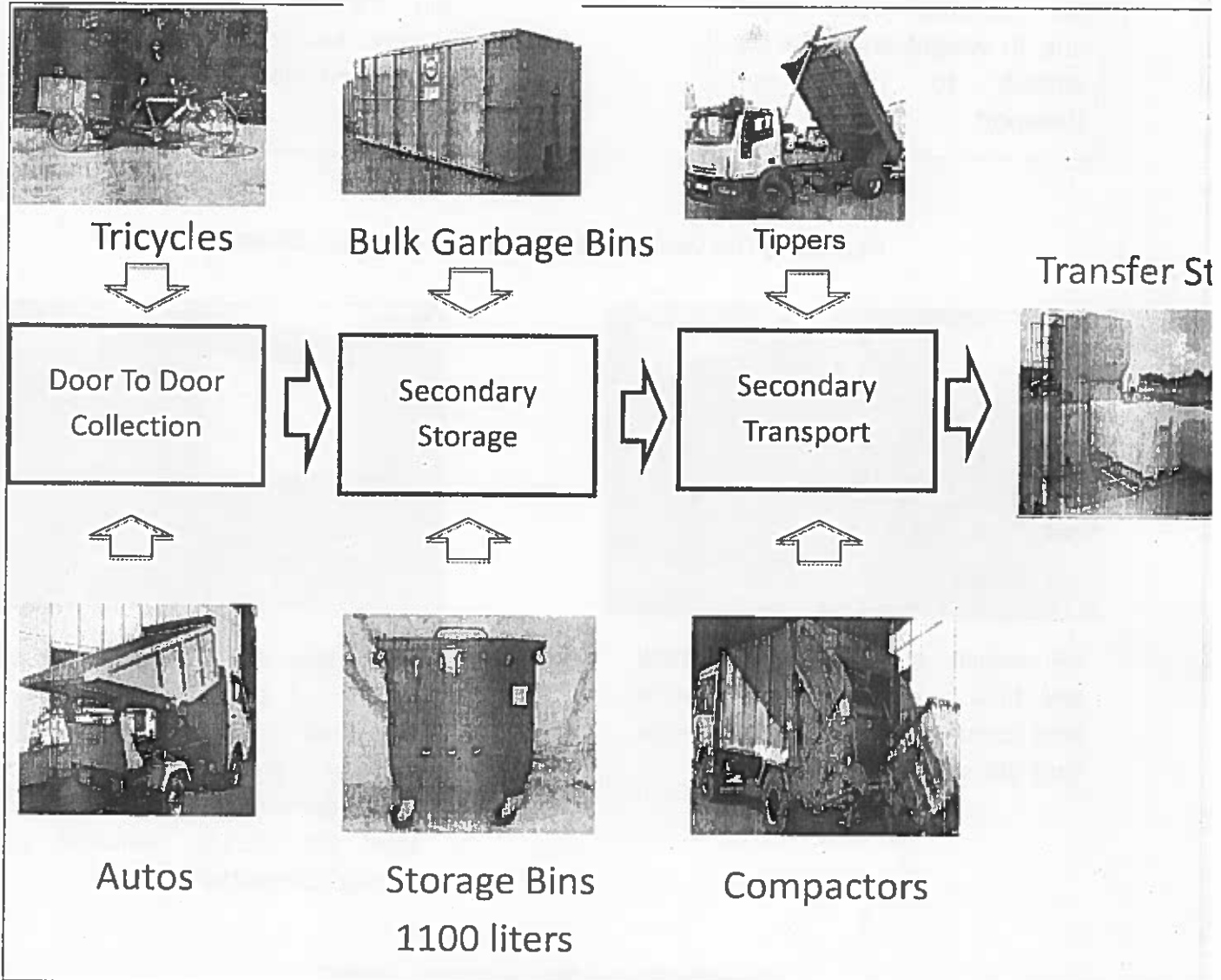
<p><u>Key infrastructure</u></p> <p>Weighbridge Plaza</p> <p>Internal CC Roads – 7.88 km</p> <p>Storm water drain – 15.76 km</p> <p>Leachate drain – 1.16 km</p> <p>Three leachate collection wells and two ponds</p> <p>Waste Receiving Platform and Pre-Segregation facility</p> <p>Compost Plant</p> <p>Coconut Shredding Unit -- 1 No.</p> <p>Recyclables Processing Unit</p>	<p><u>Supporting Infrastructure</u></p> <p>Health Centre</p> <p>Cafeteria</p> <p>Workers change rooms and toilets</p> <p>Material stores</p> <p>Maintenance facilities for vehicles and other mechanical equipments</p> <p>Vehicle wash facility</p> <p>Transformer yards – connected load of ~ 1MW</p> <p>DG and Electrical Panel Room</p>
<p>Components under progress :</p> <p><u>Key Infrastructure</u></p> <p>Compound wall</p> <p>Peripheral roads</p> <p>Green Belt</p> <p>Reclamation</p> <p>Scientific Landfill</p> <p><u>Supporting Infrastructure</u></p>	<p>Components to be taken up :</p> <p><u>Key infrastructure</u></p> <p>Waste to Energy Plant – 19.8 MW (awaiting CFE from TPCB & EFS&T)</p> <p>Transfer stations -- 6 nos.</p> <p>Upgradation – Tankbund, Yousufguda New – Uppal (Fathullaguda), Kapra, Rajendranagar (Gandhamguda), Sherlingampally)</p> <p>RDF plant -- 1 no.</p> <p>Bio-Methanization -- 1 no.</p>

- As of now, Rs.163.00 crores is spent for developing facilities for waste Treatment & Processing at the site, construction and up-gradation of two transfer stations, procurement of Compactors and Dumper bins etc. towards Capital Works.

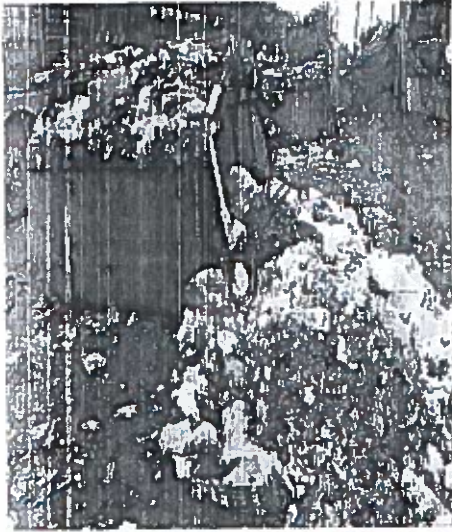
Municipal Solid Waste Management Status Report

- So far, an amount of Rs.164.83crores was paid to the Concessionaire towards tipping fee since 18.02.2012.
- Some of the photographs pertaining to the ISWM project of GHMC are enclosed herewith for kind perusal.

Integrated Municipal Solid Waste Management – Flow Chart - GHMC



Replacing Old Bins to New Bins - GHMC

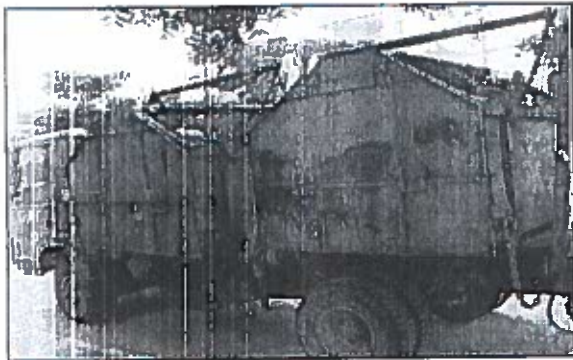


Stationary 3.5 Cum DP bins are currently used which due to weight and size are difficult to clean and transport.

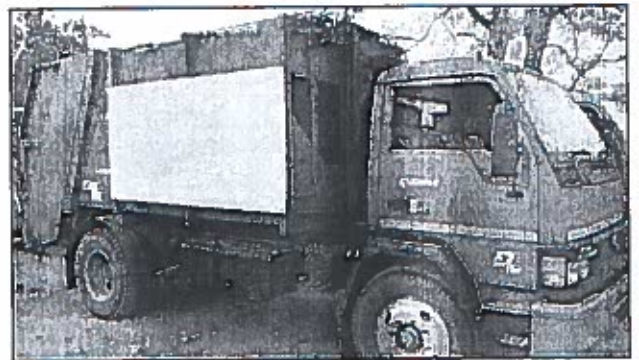


1.1 Cum Galvanized Iron power coated bin meeting EN 840 International quality standards bins. Flexible for placement due to less weight and mobility

Replacing Old Vehicles with New Compactors - GHMC



DP vehicle is restricted to lift only two bins hence very less volume and more trip distances. Leakage and littering

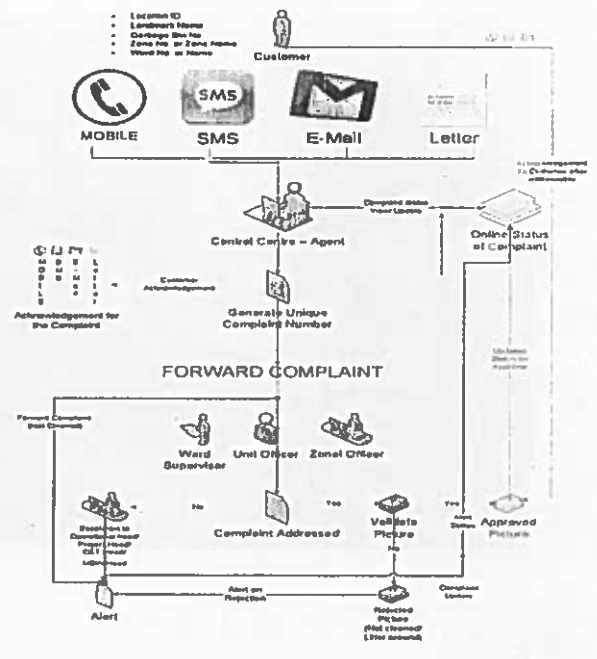
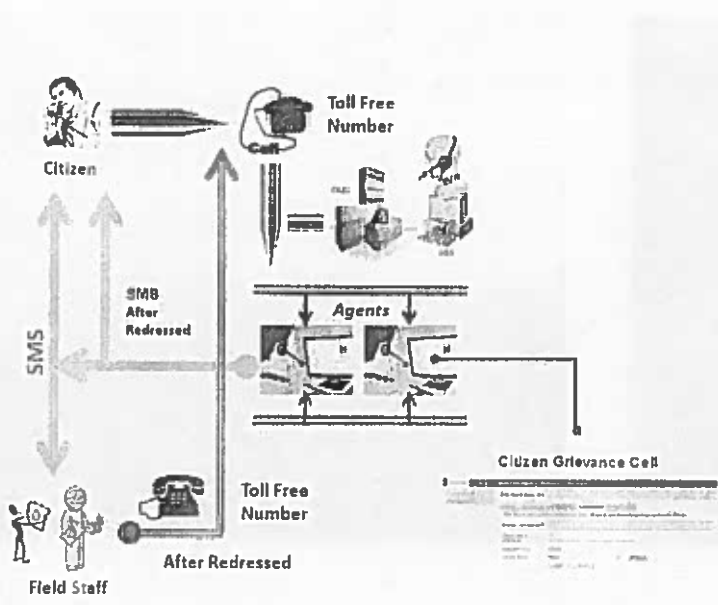


Brand new 8 cum Compactors can lift 16 to 20 1.1 Cum Bins in one trip and facilitates more frequency of higher number of bin points. Completely enclosed with built in leachate collection tank. No littering, leakages and smell during transportation.

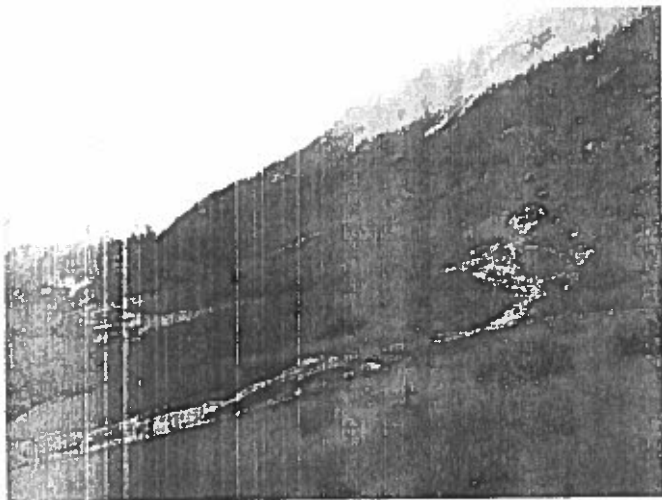
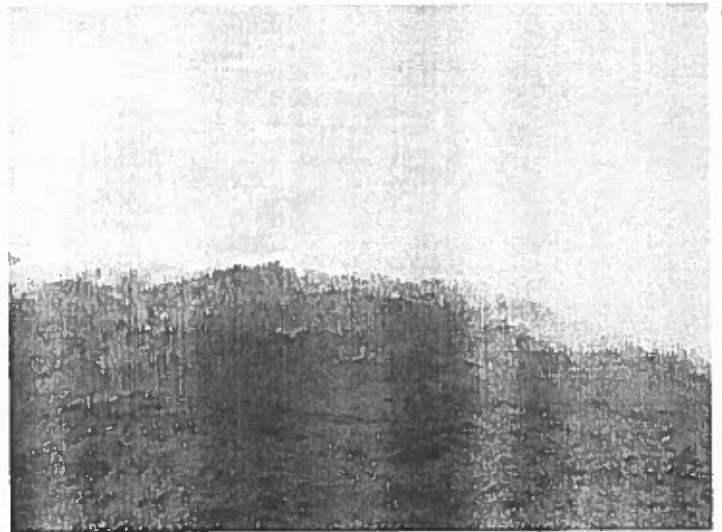
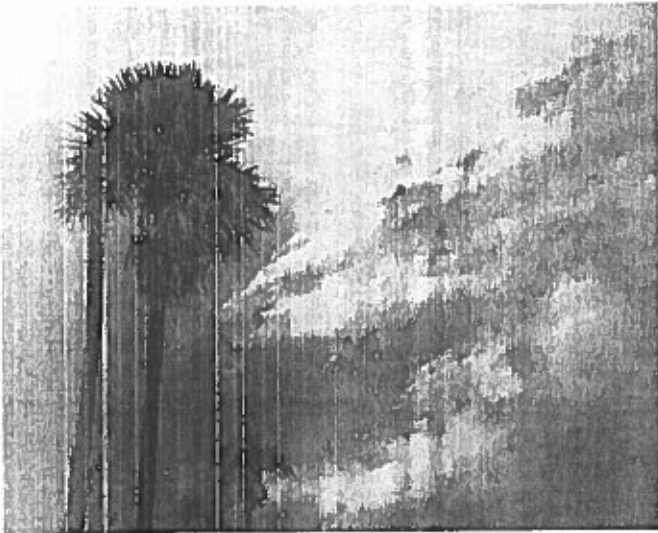
Transfer Station Management - GHMC



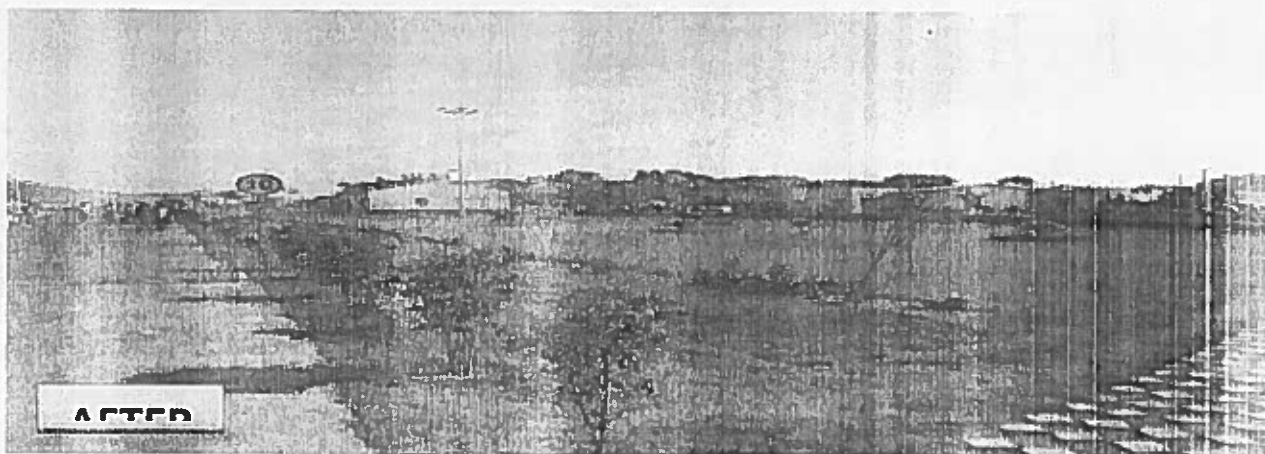
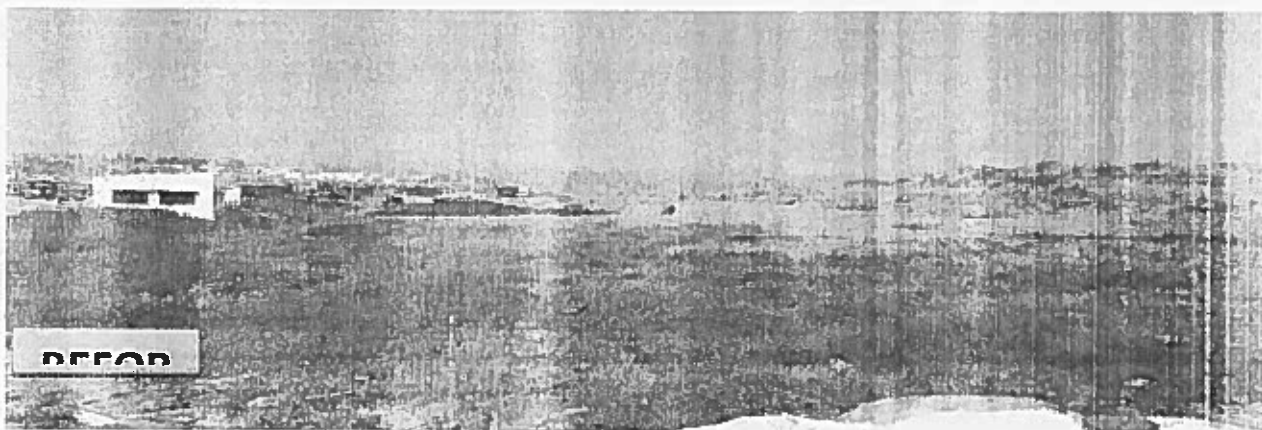
Call Center - GHMC



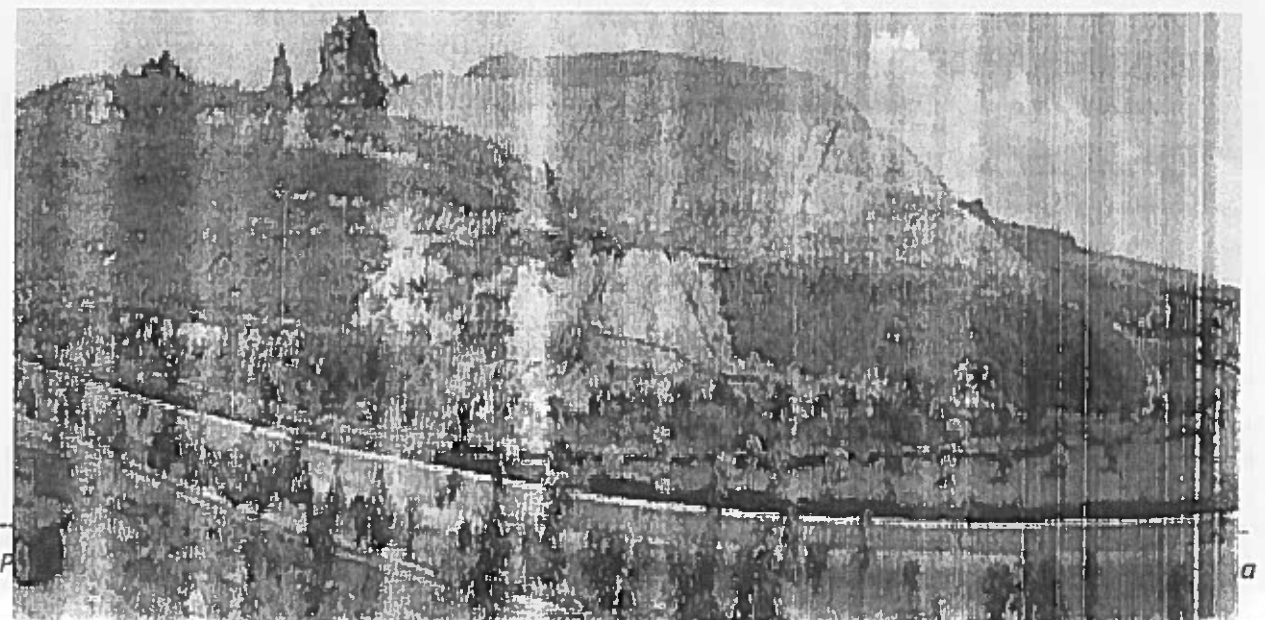
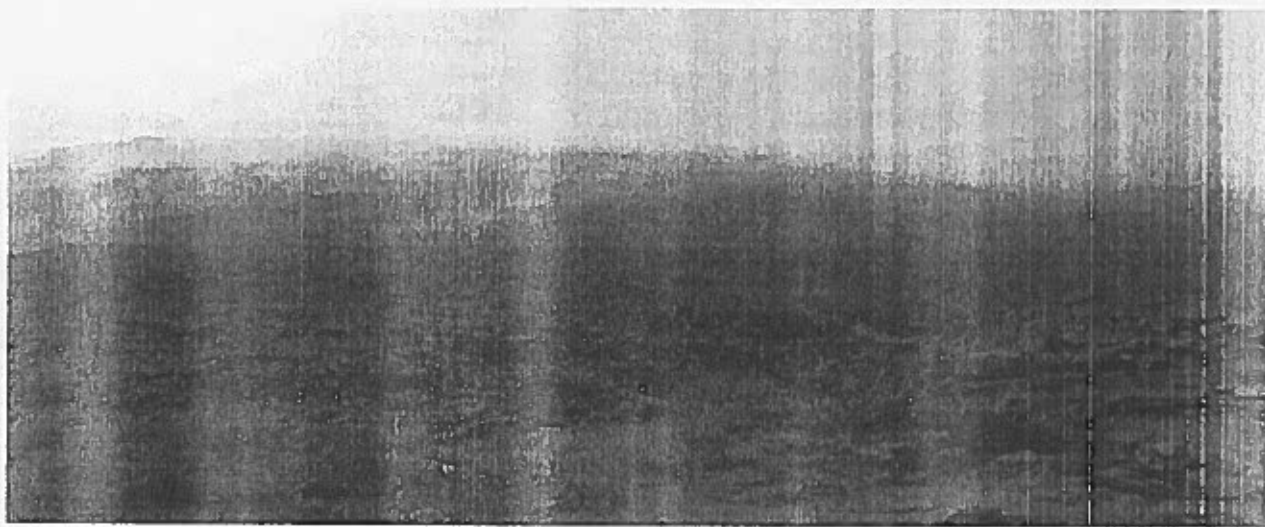
Site Condition before Implementation of IMSWM project - GHMC



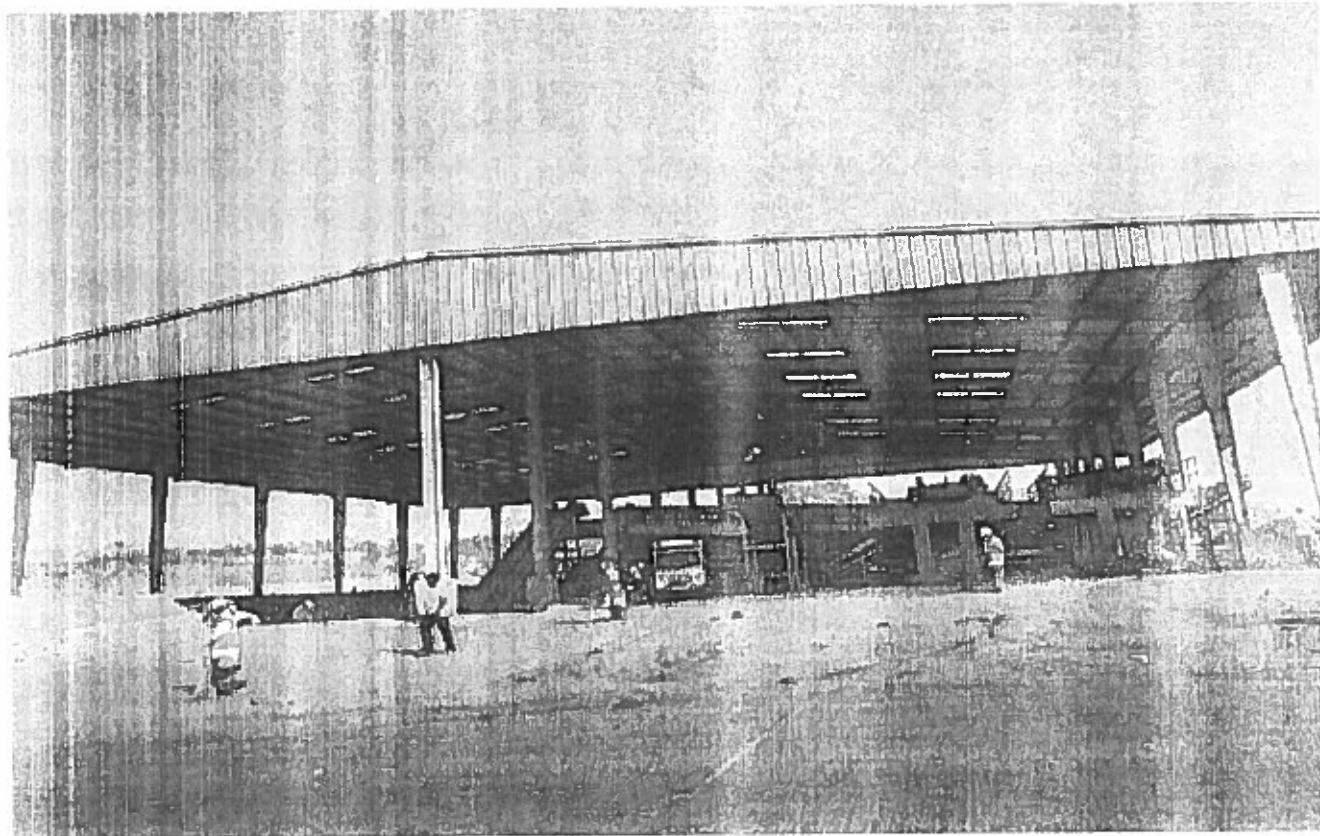
Landscaping development at IMSWM Project -
GHMC



Land Reclamation by Capping - GHMC



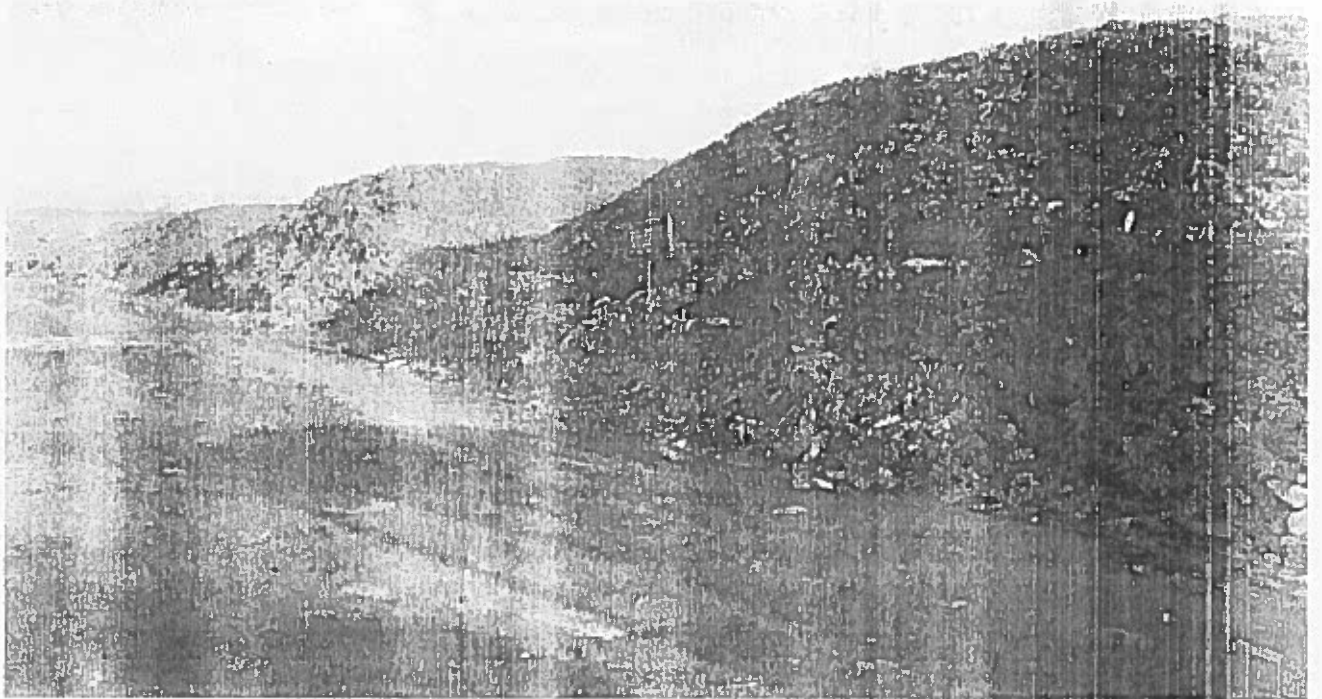
Windrow and Tipping Floor - GHMC



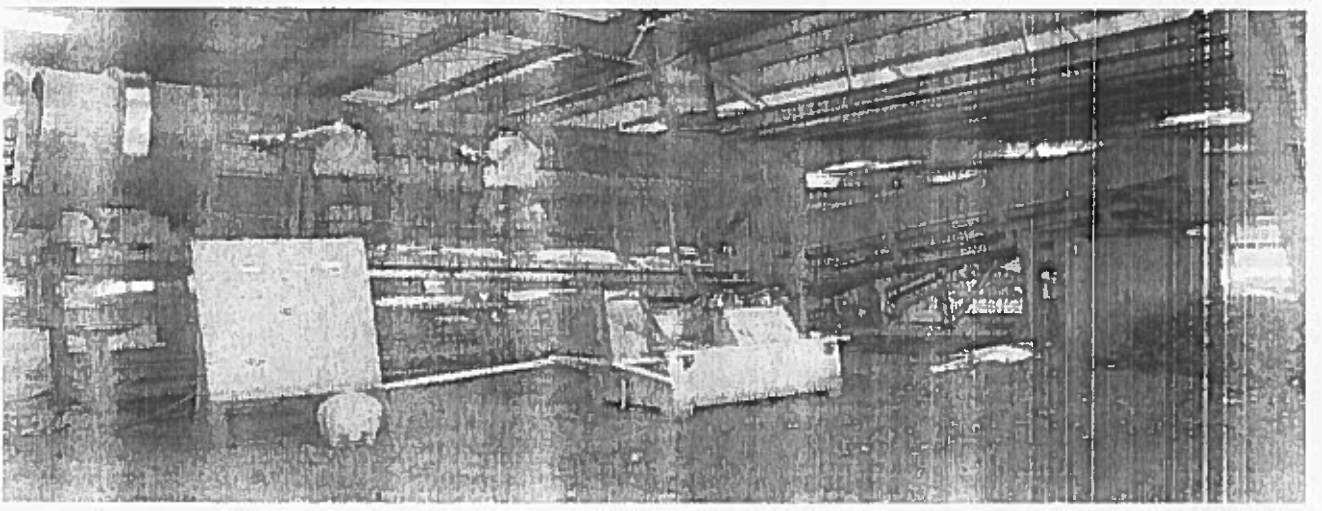
Roads and weigh Bridges -GHMC



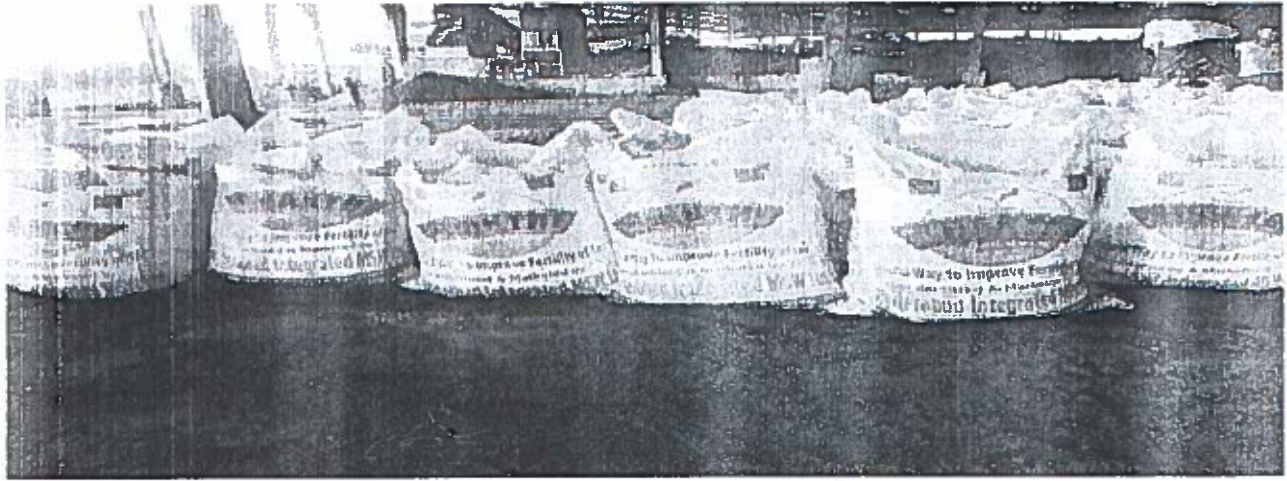
Windrows for Composting - GHMC



Composting Machinery - GHMC



Compost Packed - GHMC



Waste to Energy Projects - WTE (other than GHMC):

The Two WTE Projects are currently under progress, (1) M/s Shalivahana (MSW) Green Energy Ltd – 12 MW, Karimnagar and (2) M/s Hema Sri Power Projects Ltd – 12.6 MW. These projects are taken under PPP mode, ULBs have allotted land at dumpsite for establishment of processing units on lease basis. The above projects are Refuse Derived Fuel (RDF) based power projects and the processed RDF is taken to the Power Plants. The Department is extending full support to the above two projects for their optimum level functioning, which will in turn help the State in addressing the MSWM in allotted 30 ULBs.

COLLECTION AND TRANSPORTATION

As per the Memorandum of Understanding the ULBs are responsible for collection and transportation of the MSW to dumpsite. The WTE project proponents are responsible for transportation of waste from the transit point (dump yard) to the designated processing facility for processing of waste into RDF and Compost. The Refuse Derived Fuel (RDF) processed at processing unit are transported to their power plant for power generation.

2. M/s Shalivahana (MSW) Green Energy Limited:

The M/s Shalivahana (MSW) Green Energy Limited (SMGEL), Waste to Power Plant is located at Rebladevpally Village, Sultanabad Mandal, Karimnagar District, Telangana spread in an area of 23 Acres of land. Total 1165 Tonnes per day (TPD) of municipal solid waste generated in 18 ULBs of 3 Districts Karimnagar, Nizamabad and Adilabad was allotted to the plant. Primarily, the waste is collected from ULBs and is then transported to the processing units at Karimnagar, Ramagundam and Nizamabad Municipalities to prepare RDF. The RDF is then transferred from these processing plants to power plant at Karimnagar which is burned in the boiler to produce the electricity.

STATUS OF THE WASTE TO ENERGY PROJECTS IN THE STATE		
M/s Shalivahana (MSW) Green Energy Ltd.		
S.No	Name and Address of the	M/s Shalivahana (MSW) Green Energy Ltd. Sy. No. 70, Rebladevpalli (V), Sultanabad (M), Karimnagar

Municipal Solid Waste Management Status Report

	Project	District.
1	Govt Orders	1) G.O.M.S.No. 168 M.A, Date :15.04.06, 2) G.O.M.S.No. 236, Dt :02.03.09, 3) G.O.Ms.No.514, Date 20.11.2010
2	Project Capacity	12 MW
3	Extent of Land procured for the Project	Ac. 20.39 cents
4	Cost of the Project	Rs. 10213.00 lakhs
5	Name of the Financial Institution	IL & FS Urban Infrastrucutre Managers Ltd. Chennai.
6	Debt Equity Ratio	80:20
7	PPA (Power Purchase Agreement)	M/s Tata Power Trading Co Ltd (TPTCL)
8	Statuary Permissions	Permissions from NEDCAP, APPCB and other dept have been obtained
9	No.of ULBs allotted	18
10	Waste Allotted	984 MTD
11	% of work completed	Power Project and Processing unit at Karimnagar are completed and running since April 2010. The Processing plant at RamagundemCorpnhas suspendedits operations. Processing plant at NizamabadCorpnunder progress
12	Date of Commissioning	April 2010

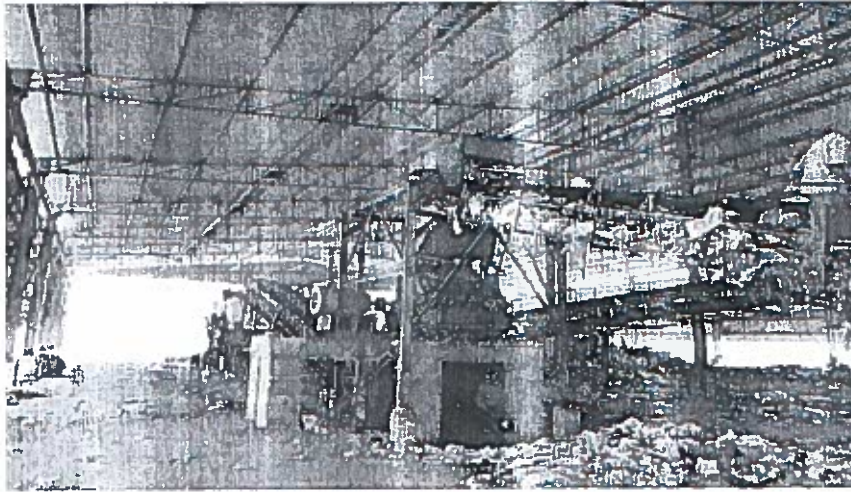
The plant has three processing facilities to process waste to RDF;

- a. Karimnagar Corporation
- b. Ramgundem Corporation
- c. Nizamabad Corporation

a. KARIMNAGAR PROCESSING FACILITY

Karimnagar processing plant is in 3 acres of land at the existing dump yard at Autonagar (survey no.622/1), Karimnagar district, Telangana State. The site is located on the outer fringe of Karimnagar town on Hyderabad-Ramagundam state highway (SH-1) (also called as Karimnagar bypass). Geographical coordinates of the site are 18° 24'769" N and 79°08'632"E. Karimnagar Plant was commissioned in December 2010 and is currently processing approximately 75-100 tonnes of heterogeneous waste per day.

KARIMNAGARWASTEPROCESSING PLAT IMAGE

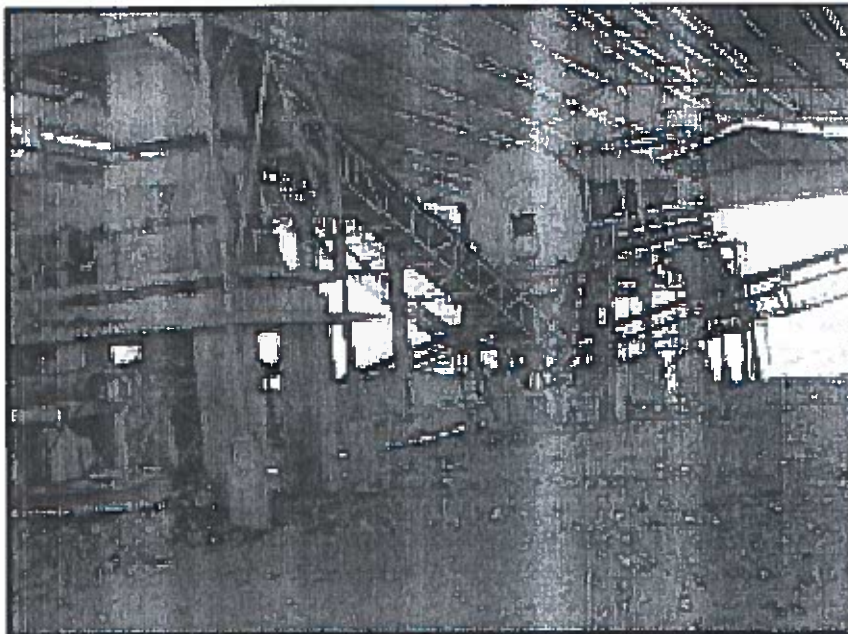


b. **RAMAGUNDAM PROCESSING FACILITY**

Ramagundam processing plant is in a part of 3 acre of land at Ramagundam Municipal Corporations Dump Yard, Karimnagar district, Telangana State in the suburbs of the Ramagundam town. Geo-graphical coordinates of the site are $18^{\circ} 46'0''$ N and $79^{\circ} 26.029''$ E.

Ramagundam Plant was commissioned in February 2011 to process approximately 75-100 tonnes of waste per day. The processing plant was shut down due to frequent disturbances by local people from adjoining colonies.

RAMAGUNDAM WASTE PROCESSING PLANT IMAGE

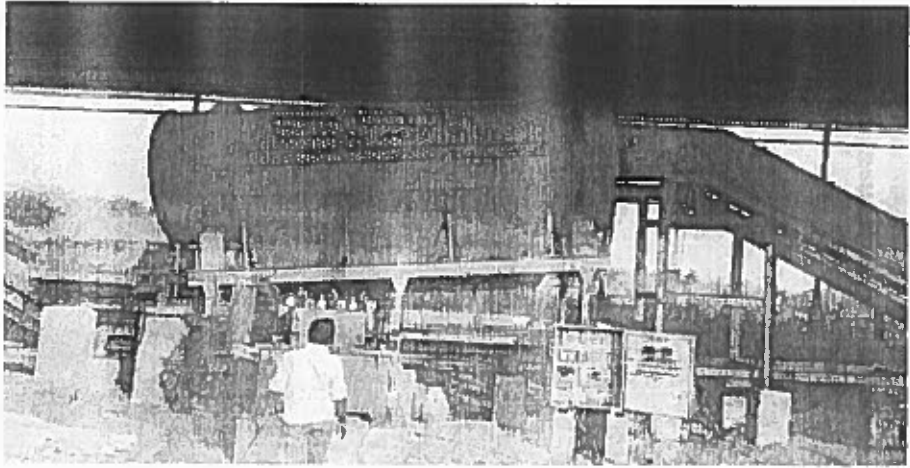


c. **NIZAMABAD PROCESSING FACILITY**

The facility is proposed in the part of 3 acre of land at Nagaram village, 8 km from the city urban local body, on Varni Rd. Geo-graphical coordinates of the site are $18^{\circ}38'61''$ N and $78^{\circ}04'08''$ E. Construction work of the plant is under progress and will be commissioned soon on obtaining power connections.

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NIZAMABADPROCESSING PLANT IMAGE



MORE IMAGES OF M/s SGEL WTE PLANT:



MSW



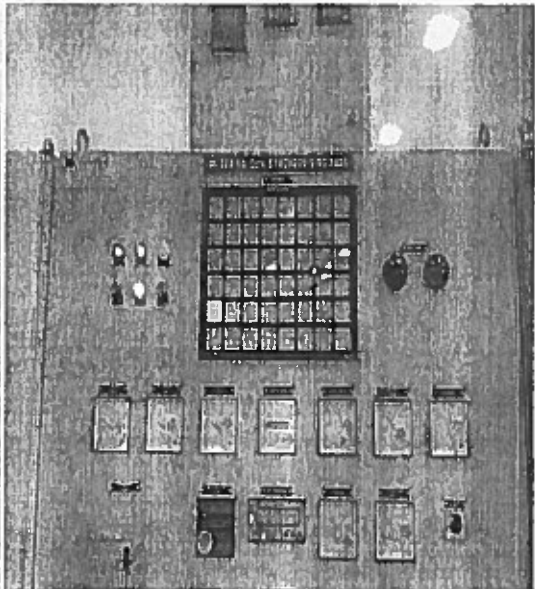
SERVING MSW



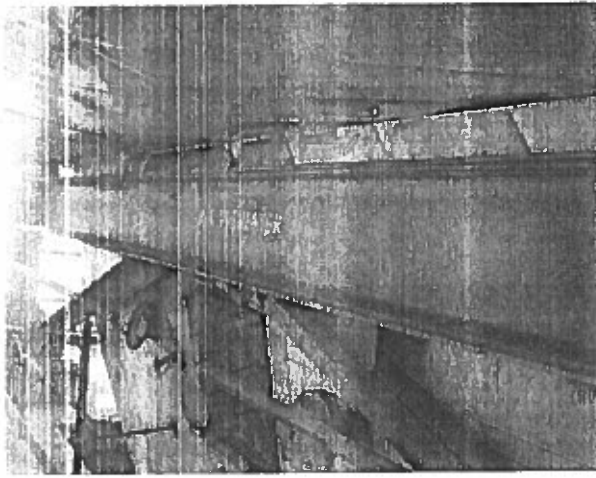
MSW PROJECT OVERVIEW SUBSTATION



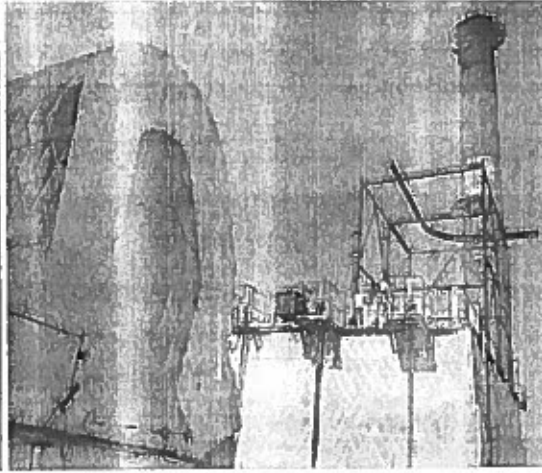
CONVEYER BELTS



METERING CUM SYNCHRONISING PANEL



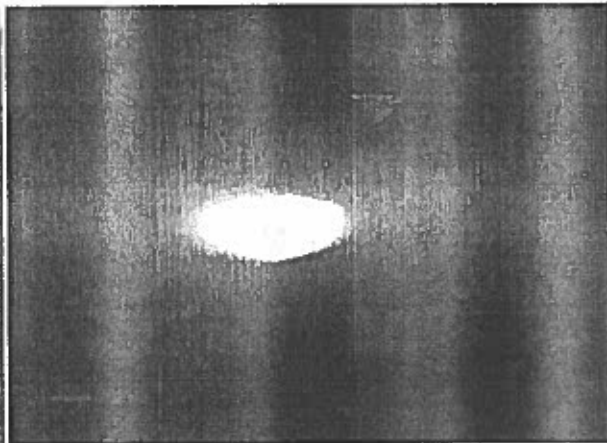
AIR PRE-HEATER



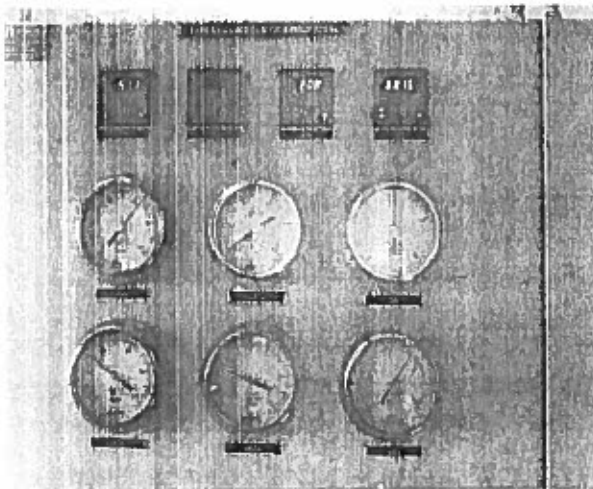
CHIMNEY



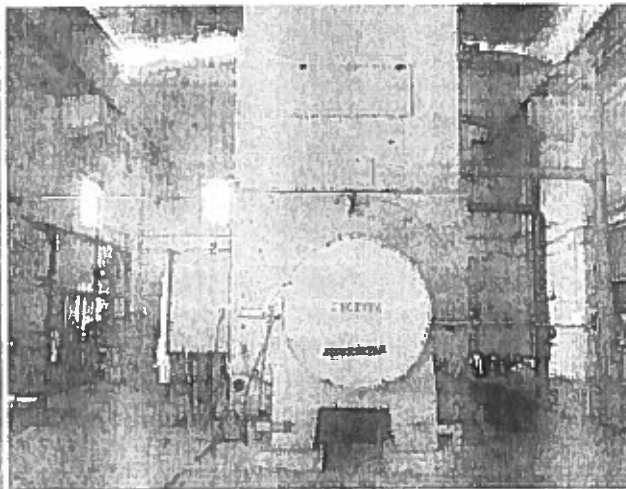
BYPRODUCT



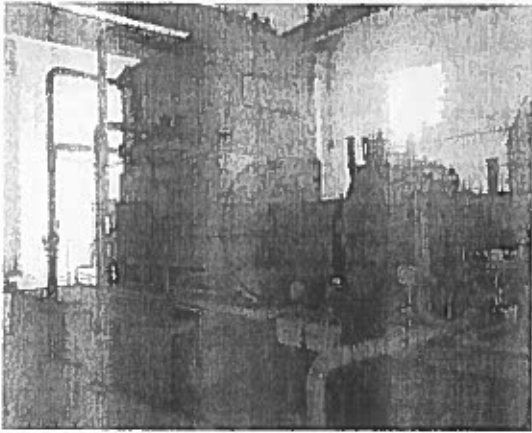
BOILER



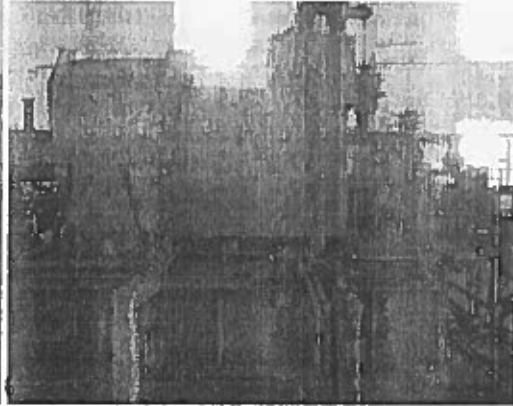
TURBINE GAUGE CUM SWITCH PANEL



EXCITOR



TURBINE, GEAR BOX

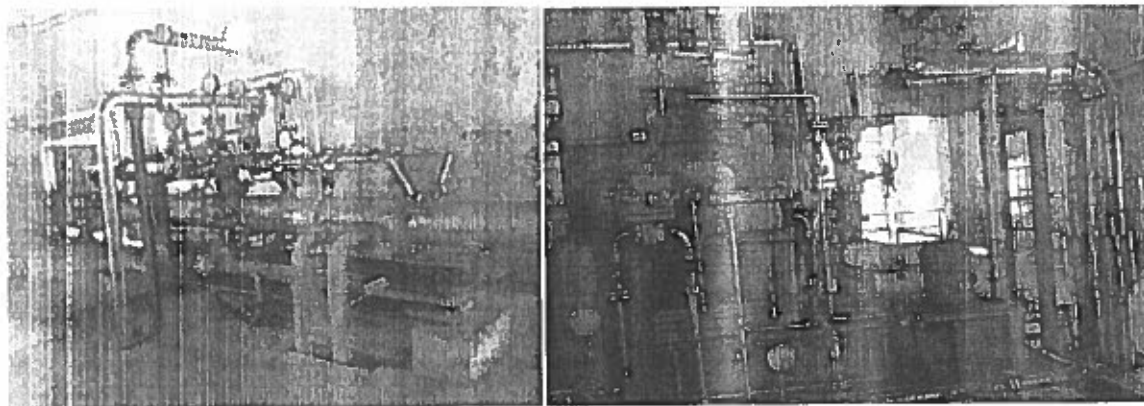


ALTERNATOR(4-POLE)

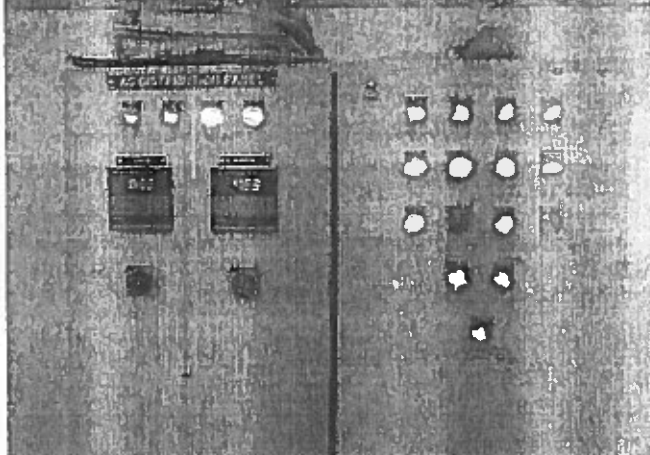
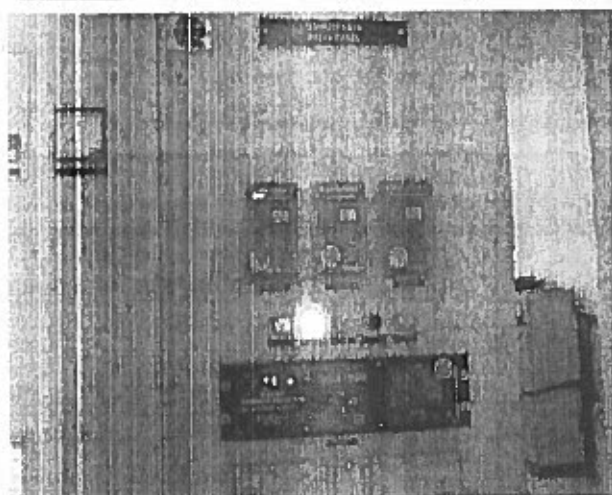
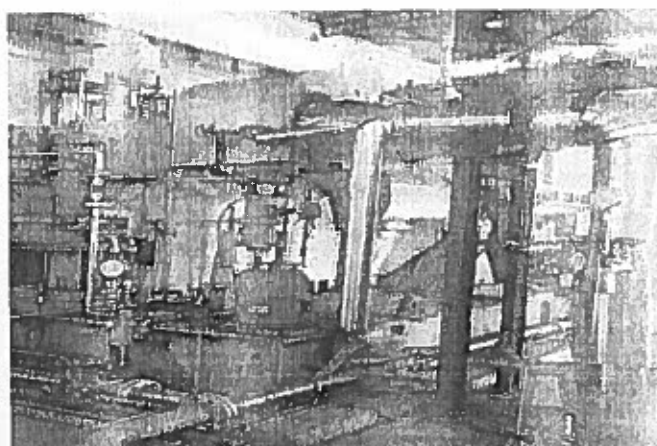
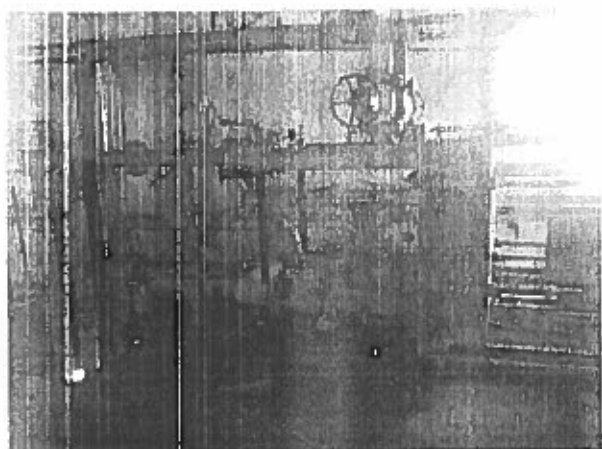


CERTIFICATE ISSUED BY APOLLUTION CONTROL BOARD

SOFTWARE CONTROLLING TURBINE



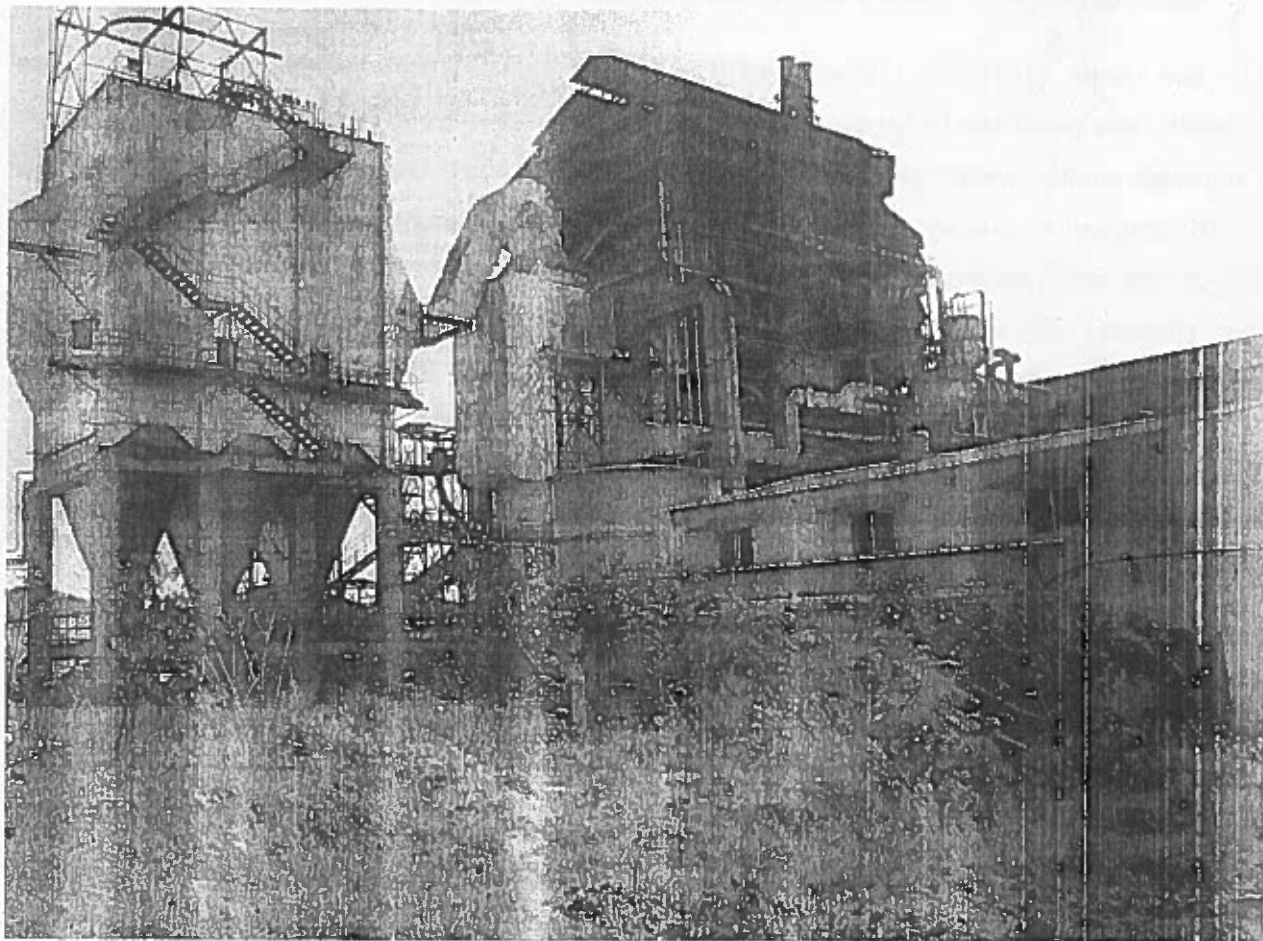
EJECTOR



RELAY PANEL

AC

DISTRIBUTION PANEL



SGEL MSW - WTE WHOLE PLANT

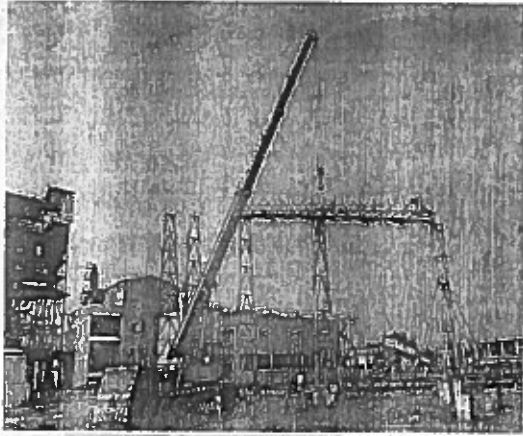
3. M/s Hema Sri Power Projects Ltd

M/S Hema Sri Power Project Ltd, 12.6 MW Waste to Energy Plant at Suryapeta:

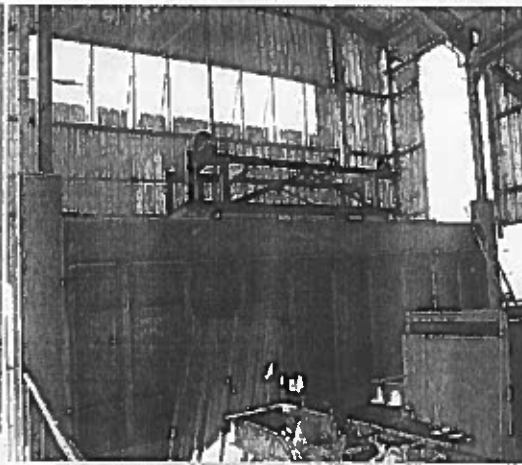
The M/s Hema Sri Power Projects Ltd (HSPPL) at Vibhalapuram (V), Mothe (M), Nalgonda (District), was permitted to set up 12.6 MW capacity Municipal Solid Waste based power project. They were allotted waste generated in 12 Municipalities in the 3 Districts of Nalgonda, Warangal and Khammam to process and to generate power from out of it. As informed, the cost of the project has been estimated as Rs. 8224.9 Lakhs by M/s IL&FS Urban Infrastructure Managers Ltd., Chennai. The Project cost is being financed with an equity share capital of Rs.1644.96 Lakhs and Pooled Municipal Debt Obligation (PMDO) term loan of Rs.6579.92 Lakhs. As informed, due to the delay and escalation of the original project cost, it has been restructured from Rs.8224.9 Lakhs to Rs.13036.00 Lakhs.

Presently, 90% of construction work has been completed, and as informed project will commence its operations from October, 2015. The WTE project proponent has started mass awareness generation programs on segregation and storage of waste at source level in the ULBs allotted to them. The HSPL have distributed pushcarts, bins and bags and IEC material etc., as a motivational aspect in the selected wards of the ULBs allotted to them as a startup activity.

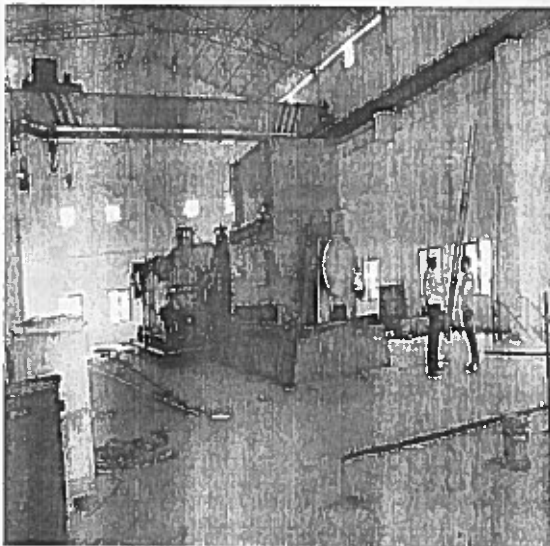
M/s HEMA SRI POWER PROJECTS LTD, Suryapet		
S.No	Name and Address of the Project	M/s Hema Sri Power Projects Ltd. Vibhalapuram (V), Mothe (M), Nalgonda District - 508212 Ph. 08742 - 289534, 289536
1	Govt Orders	1) G.O.M.S.No. 168 M.A, Date :15.04.06, 2) G.O.M.S.No. 236, Dt :02.03.09
2	Project Capacity	12.6 MW
3	Extent of Land procured for the Project	AC. 23.00 cents
4	Cost of the Project	Rs. 13036.30 lakhs
5	Name of the Financial Institution	IL & FS Urban Infrastructure Managers Ltd. Chennai.
6	Debt Equity Ratio	80:20:00
7	PPA (Power Purchase Agreement)	M/s Tata Power Trading Co Ltd (TPTCL) on Nov, 2007 with a price Rs.3.61/Kwh
8	Statuary Permissions	Permissions from NEDCAP, TSPCB and from other dept have been obtained
9	No.of ULBs allotted	12
10	Waste Allotted	724 MTD from ULBs and remaining from surrounding GPs.
11	% of work completed	90% of construction has been completed. Remaining work stopped due to non release funds from financial institutions i.e., IL&FS
12	Date of Commissioning	Expected date of commissioning is October, 2015



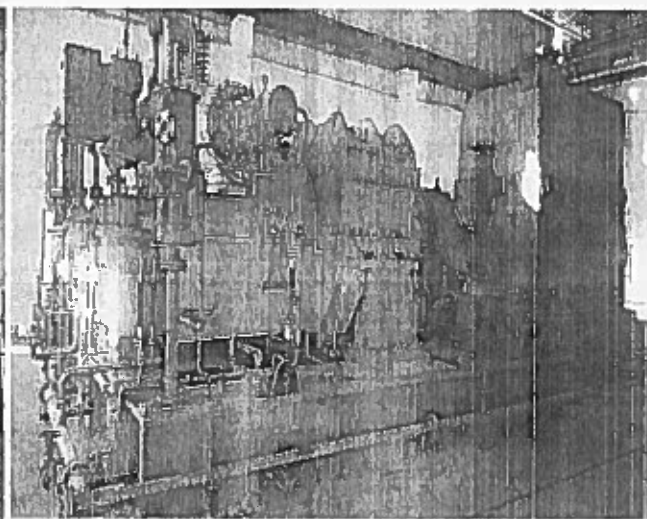
FUEL HANDLING SYSTEM



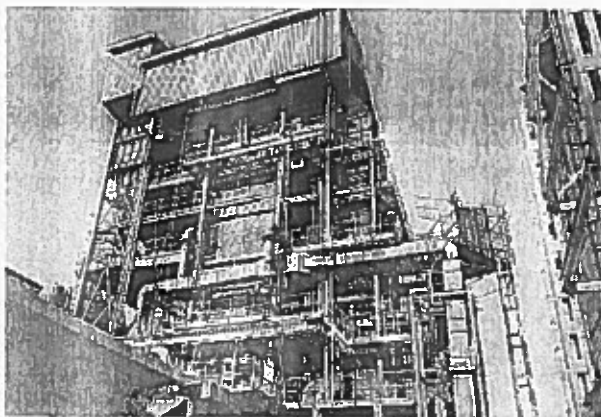
FUEL BUNKER



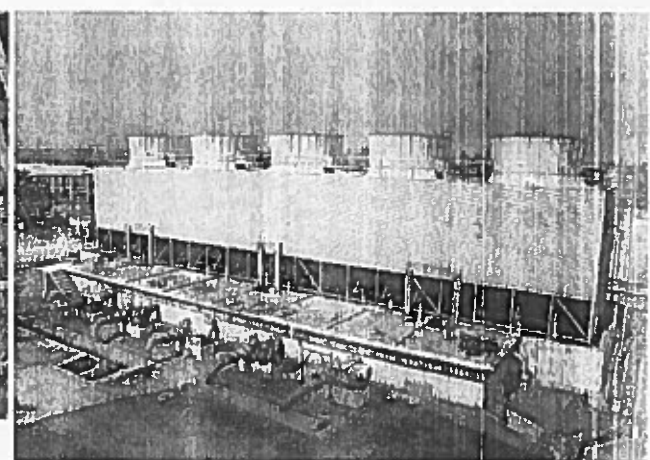
EOT CRANE



TURBINE

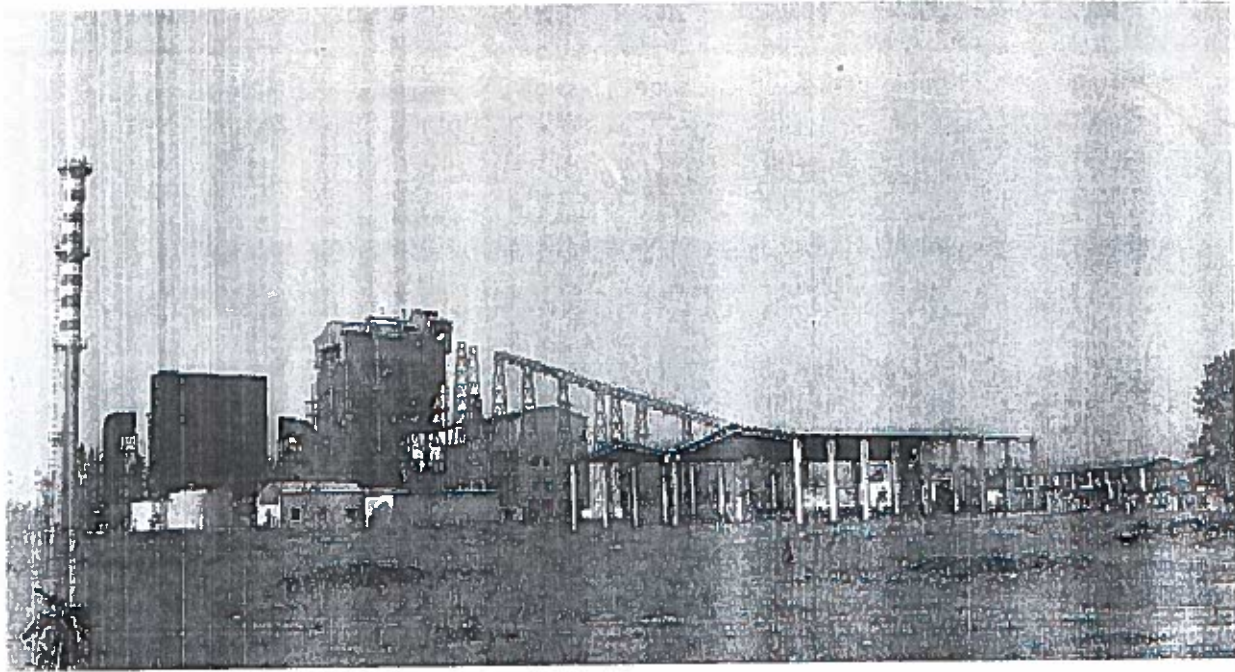


BOILER



COOLING TOWER -1

WHOLE PLANT PHOTO – HSPL - SURYAPET



KEY ISSUES OF THE WTE PROJECTS;

The WTE project proponents have found that it is not economically viable to run the plant at the existing power purchase tariff of Rs.4.48/unit and apprised the same to the State Level Official Committee on MSW. The WTE project proponents have further filed a petition to the State Electricity Regulatory Commission (SERC) to enhance the tariff to Rs.8.50/unit for MSW based power projects. The SERC has appointed an independent consultant to submit the report.

**Sd/- Dr.B.Janardhan Reddy
Commissioner & Director**