

Management of Municipal Solid Waste



CENTRAL POLLUTION CONTROL BOARD
(Ministry of Environment & Forests)
Parivesh Bhawan, East Arjun Nagar,
DELHI-110 032

4.0 IMPLEMENTATION STATUS OF MUNICIPAL SOLID WASTE (MANAGEMENT & HANDLING) RULES, 2000.

1.0 MSW Rules

Municipal Solid Waste (Management & Handling) Rules, 2000 (MSW Rules) are applicable to every municipal authority responsible for collection, segregation, storage, transportation, processing and disposal of municipal solids. The Rules contains four Schedules namely;

* Schedule-I	:	Relates to implementation Schedule
* Schedule-II	:	Specifications relating to collection, segregation, storage, transportation, processing and disposal of municipal solid waste (MSW).
* Schedule-III	:	Specifications for landfilling indicating; site selection, facilities at the site, specifications for landfilling, Pollution prevention, water quality monitoring, ambient air quality monitoring, Plantation at landfill site, closure of landfill site and post care.
* Schedule-IV	:	Indicate waste processing options including; standards for composting, treated leachates and incinerations.

2.0 Local bodies

Population	Class	No. of Cities
>10,00,000 and above (metro only)		35
>1,00,000 and above	Class I	393
50,000 – 99,999	Class II	401
20,000 – 49,999	Class III	1,115
10,000 – 19,999	Class IV	1,344
5,000 - 9,999	Class V	888
> 5,000	Class VI	191
Unclassified		10
		4377

3.0 Authorities and Responsibilities

S.No	Agencies/ Authorities	Responsibility
1	Municipal Authorities	<ul style="list-style-type: none"> i. Ensuring that municipal solid wastes to be handled as per rules. ii. Seeking authorization from State Pollution Control Board (SPCB) for setting up waste processing and disposal facility including landfills. iii. Furnishing annual report. iv. Complying with Schedule I, II, III and IV of the rules
2.	State Government	
(i)	Secretary In-Charge of Department of Urban Development	Overall responsibility for the enforcement of the provisions of the rules in the metropolitan cities.
(ii)	District Magis-trates/ Deputy Commissioner	Overall responsibility for the enforcement of the provisions of the rules within the territorial limits of their jurisdiction.

S.No	Agencies/ Authorities	Responsibility
3	Central Pollution Control Board (CPCB)	i. Co-ordinate with State Boards and Committees with reference to implementation and review of standards and guidelines and compilation of monitoring data. ii. Prepare consolidated annual review report on management of municipal solid wastes for forwarding it to Central Government along with its recommendations before the 15 th of December every year. iii. Laying down standards on waste processing/ disposal technologies including approval of technology.
4.	State Pollution Control Board (SPCB)	i. Monitor the compliance of the standards regarding ground water, ambient air leachate quality and the compost quality including incineration standards as specified under Schedule II, III & IV. ii. Issuance of authorization to the municipal authority or an operator of a facility stipulating compliance criteria and standards. iii. Prepare and submit to the CPCB an annual report with regard to the implementation of the rules.

4.0 Waste Generation and Composition

- Total quantity of waste generated in the country (based on weighment exercise by local bodies) is not reported. However, Ministry of Urban Development in its manual on solid waste management (year 2000) has estimated waste generation of 100,000 MT.
- CPCB with the assistance of NEERI has conducted survey of solid waste management in 59 cities (35 metro cities and 24 state Capitals: 2004-05)
- Quantities and waste generation rate in 59 cities is as under.

S. No	Name of City	Population (As per 2001 census)	Area (Sq. Km)	Waste Quantity (TPD)	Waste Generation Rate (kg/c/day)
1	Kavaratti	10,119	4	3	0.30
2	Gangtok	29,354	15	13	0.44
3	Itanagar	35,022	22	12	0.34
4	Daman	35,770	7	15	0.42
5	Silvassa	50,463	17	16	0.32
6	Panjim	59,066	69	32	0.54
7	Kohima	77,030	30	13	0.17
8	Port Blair	99,984	18	76	0.76
9	Shillong	1,32,867	10	45	0.34
10	Simla	1,42,555	20	39	0.27
11	Agartala	1,89,998	63	77	0.40
12	Gandhinagar	1,95,985	57	44	0.22
13	Dhanbad	1,99,258	24	77	0.39
14	Pondicherry	2,20,865	19	130	0.59
15	Imphal	2,21,492	34	43	0.19

16	Aizwal	2,28,280	117	57	0.25
17	Jammu	3,69,959	102	215	0.58
18	Dehradun	4,26,674	67	131	0.31
19	Asansol	4,75,439	127	207	0.44
20	Kochi	5,95,575	98	400	0.67
21	Raipur	6,05,747	56	184	0.30
22	Bhubaneswar	6,48,032	135	234	0.36
23	Tiruvananthapuram	7,44,983	142	171	0.23
24	Chandigarh	8,08,515	114	326	0.40
25	Guwahati	8,09,895	218	166	0.20
26	Ranchi	8,47,093	224	208	0.25
27	Vijaywada	8,51,282	58	374	0.44
28	Srinagar	8,98,440	341	428	0.48
29	Madurai	9,28,868	52	275	0.30
30	Coimbatore	9,30,882	107	530	0.57
31	Jabalpur	9,32,484	134	216	0.23
32	Amritsar	9,66,862	77	438	0.45
33	Rajkot	9,67,476	105	207	0.21
34	Allahabad	9,75,393	71	509	0.52
35	Vishakhapatnam	9,82,904	110	584	0.59
36	Faridabad	10,55,938	216	448	0.42
37	Meerut	10,68,772	142	490	0.46
38	Nashik	10,77,236	269	200	0.19
39	Varanasi	10,91,918	80	425	0.39
40	Jamshedpur	11,04,713	64	338	0.31
41	Agra	12,75,135	140	654	0.51
42	Vadodara	13,06,227	240	357	0.27
43	Patna	13,66,444	107	511	0.37
44	Ludhiana	13,98,467	159	735	0.53
45	Bhopal	14,37,354	286	574	0.40
46	Indore	14,74,968	130	557	0.38
47	Nagpur	20,52,066	218	504	0.25
48	Lucknow	21,85,927	310	475	0.22
49	Jaipur	23,22,575	518	904	0.39
50	Surat	24,33,835	112	1000	0.41
51	Pune	25,38,473	244	1175	0.46
52	Kanpur	25,51,337	267	1100	0.43
53	Ahmedabad	35,20,085	191	1302	0.37
54	Hyderabad	38,43,585	169	2187	0.57
55	Banglore	43,01,326	226	1669	0.39
56	Chennai	43,43,645	174	3036	0.62
57	Kolkata	45,72,876	187	2653	0.58
58	Delhi	1,03,06,452	1483	5922	0.57

59	Greater Mumbai	1,19,78,450	437	5320	0.45
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- Characterisation of waste is necessary to know changing trends in composition of waste. Based on composition/ characterization of waste, appropriate selection of waste processing technologies could be selected.
- Waste characterisation in 59 cities is indicated below:

S. No	Name of City	Compostables (%)	Recyclables (%)	C/N Ratio	HCV* (Kcal/Kg)	Moisture (%)
1	Kavarati	46.01	27.20	18.04	2242	25
2	Gangtok	46.52	16.48	25.61	1234	44
3	Itanagar	52.02	20.57	17.68	3414	50
4	Daman	29.60	22.02	22.34	2588	53
5	Silvassa	71.67	13.97	35.24	1281	42
6	Panjim	61.75	17.44	23.77	2211	47
7	Kohima	57.48	22.67	30.87	2844	65
8	Port Blair	48.25	27.66	35.88	1474	63
9	Shillong	62.54	17.27	28.86	2736	63
10	Simla	43.02	36.64	23.76	2572	60
11	Agartala	58.57	13.68	30.02	2427	60
12	Gandhinagar	34.30	13.20	36.05	698	24
13	Dhanbad	46.93	16.16	18.22	591	50
14	Pondicherry	49.96	24.29	36.86	1846	54
15	Imphal	60.00	18.51	22.34	3766	40
16	Aizwal	54.24	20.97	27.45	3766	43
17	Jammu	51.51	21.08	26.79	1782	40
18	Dehradun	51.37	19.58	25.90	2445	60
19	Asansol	50.33	14.21	14.08	1156	54
20	Kochi	57.34	19.36	18.22	591	50
21	Raipur	51.40	16.31	223.50	1273	29
22	Bhubaneswar	49.81	12.69	20.57	742	59
23	Tiruvananthapuram	72.96	14.36	35.19	2378	60
24	Chandigarh	57.18	10.91	20.52	1408	64
25	Guwahati	53.69	23.28	17.71	1519	61
26	Ranchi	51.49	9.86	20.23	1060	49
27	Vijaywada	59.43	17.40	33.90	1910	46
28	Srinagar	61.77	17.76	22.46	1264	61
29	Madurai	55.32	17.25	32.69	1813	46
30	Coimbatore	50.06	15.52	45.83	2381	54
31	Jabalpur	58.07	16.61	28.22	2051	35
32	Amritsar	65.02	13.94	30.69	1836	61
33	Rajkot	41.50	11.20	52.56	687	17
34	Allahabad	35.49	19.22	19.00	1180	18
35	Visakhapatnam	45.96	24.20	41.70	1602	53
36	Faridabad	42.06	23.31	18.58	1319	34

37	Meerut	54.54	10.96	19.24	1089	32
38	Nasik	39.52	25.11	37.20	2762	62
39	Varanasi	45.18	17.23	19.40	804	44
40	Jamshedpur	43.36	15.69	19.69	1009	48
41	Agra	46.38	15.79	21.56	520	28
42	Vadodara	47.43	14.50	40.34	1781	25
43	Patna	51.96	12.57	18.62	819	36
44	Ludhiana	49.80	19.32	52.17	2559	65
45	Bhopal	52.44	22.33	21.58	1421	43
46	Indore	48.97	12.57	29.30	1437	31
47	Nagpur	47.41	15.53	26.37	2632	41
48	Lucknow	47.41	15.53	21.41	1557	60
49	Jaipur	45.50	12.10	43.29	834	21
50	Surat	56.87	11.21	42.16	990	51
51	Pune	62.44	16.66	35.54	2531	63
52	Kanpur	47.52	11.93	27.64	1571	46
53	Ahemdabad	40.81	11.65	29.64	1180	32
54	Hyderabad	54.20	21.60	25.90	1969	46
55	Bangalore	51.84	22.43	35.12	2386	55
56	Chennai	41.34	16.34	29.25	2594	47
57	Kolkata	50.56	11.48	31.81	1201	46
58	Delhi	54.42	15.52	34.87	1802	49
59	Greater Mumbai	62.44	16.66	39.04	1786	54

5.0 STATUS OF IMPLEMENTATION OF MSW RULES

Assessment of status of solid waste management is based on annual reports being furnished by local bodies to State Pollution Control Boards and forwarding consolidated Annual Report to CPCB.

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Local bodies are required to forward Annual report for each year to SPCBs/PCCs before 30th June every year and SPCBs in turn, will send their consolidated report for the year before 15th September to CPCB. However, in terms of adhering with stipulated schedule, delay has been observed. As of 31st December, 2007, CPCB could receive Annual reports only from 17 SPCBs/PCCs. Based on information received from 18 SPCBs and the response received with reference to Lok Sabha Starred Question No.238 answered on 29.08.2007, present Annual Report of 2005-06 is prepared.

5.1 Authorizations

- Details on authorization granted by SPCBs is given in *Annexure-I*.
- Except SPCBs Gujarat, Maharashtra and Karnataka, other State Boards have not issued authorizations to the majority of local bodies in their respective states.

5.2 Implementation of Schedule-II

- Efforts are being made by many local bodies for creating awareness in the citizens for ensuing proper management of waste including systematization of procedures relating to waste collection, segregation, storage and transportation. However, such efforts are either restricted to a few localities/ wards within the town or a few ULBs taken up such efforts at entire town level.
- The efforts made by local bodies for bringing improvement in waste collection, segregation, storage and transportation is given in *Annexure-II*.
- Cleanliness varies from town-to-town depending on the initiatives taken by that local body. It has been observed that collection of waste from door-step is the most critical issue in the entire management of MSW.

5.3 Implementation of Schedule-III (Landfilling)

- Disposal of waste is still continued through open dumping.
- As per information of State Boards, landfills have been reported as 'constructed' at; Bangalore, Mangalore, Karwar, Puttur, Ankola, Surat, Alang, Nashik, Sonpeth, Ambad. At other places, landfills are under construction/ or planning stage.
- A status indicating information on landfill is given at *Annexure-III*

5.4 Implementation of Schedule-IV (Waste Processing)

- There has been a positive movement on setting up of waste processing facilities as compared to the efforts made in the previous years. In many States, several towns have responded that there is partial composting/ vermi-composting facilities. Local bodies have not so far preferred waste-to-energy projects except in the State of Andhra Pradesh.
- Statewise information on existing/proposed waste processing plants or where some initiatives have been taken is given at Annexure-IV.
- It has been observed that 'composting' and 'vermi-composting' is preferred as easy technological option by local bodies and other options like thermal processing (incineration, pyrolysis etc.) are not attempted due to non-availability of operating experiences.

6.0 INITIATIVES AT NATIONAL LEVEL

CPCB and MoEF and other Central Ministries such as Ministry of Urban Development (MoUD) and Ministry of Non-Conventional Energy Sources (MNES) have taken initiatives to facilitate implementation of MSW rules. Some of the initiatives taken are briefly summarized as under:

6.1 Demonstration Projects

MoEF and CPCB have instituted a scheme for setting up of demonstration project for solid waste management in accordance with MSW Rule. Objective of the scheme is to demonstrate implementation of MSW Rule in an integrated manner. The scheme is based on cost sharing basis where concerned local body is required to contribute 50% of the total cost of the project. The following project have been taken up.

S.No	State	Town
1	West Bengal	North Dum-Dum New Barrakpore
2	UT Chandigarh	Chandigarh
3	Tamil Nadu	Udumalpet
4	Kerala	Kozhikode (MoEF)
5	Himachal Pradesh	Mandi
6	Andhra Pradesh	Suryapet
7	Nagaland	Kohima
8	Maharashtra	Jalna
9	Arunachal Pradesh	Itanagar
10	Sikkim	South West District
11	Tripura	Agartala
12	Gujarat	AUDA (MoEF)

Salient features of the Demo-schemes are placed at Annexure-V

6.2 Utilisation of Grants Under 12th Finance Commission

The Twelfth Finance Commission has recommended devolution of grants for Urban Local Bodies to the tune of Rs.5000 crores for the period 2005-2010 of which Rs.2500 crores have to be devolved upon local bodies exclusively for setting-up of solid waste management systems in Urban areas to ensure management of MSW in accordance with MSW Rules. Ministry of Urban Development on 6th October, 2005 has circulated guidelines for preparation of DPRs and selection of technologies for processing and final disposal of MSW for different categories of towns for the benefit of State Government/ Local bodies. The emphasis has also be given to implement various activities of solid waste system through private sector participation.

State Governments and Pollution Control Boards have been requested to participate in the process of utilizing the grants and provide assistance to local bodies in preparing DPR for cities and towns

7.0 RECOMMENDATIONS/PROPOSALS FOR CONSIDERATION

7.1 At Central level in appropriate Ministry, a Cell may be designated to provide assistance to the State governments and UT administrations enabling them to take decisions on implementation of MSW Rules particularly relating to setting up of waste processing and disposal facilities. Indicative guidelines on selection of waste processing and disposal technological options, model agreements for Private sector participation in solid waste management, etc., may be widely circulated to the local bodies.

At State level, similar type of Group may be set-up to assist local bodies. States may evolve Plans and Policy to provide technological and financial assistance to the local bodies.

7.2 MoEF and CPCB may continue the on-going scheme on Demo-Pilot Projects for at least one to two towns in each State in addition to the recommended grants under Twelfth Finance Commission to the States. However, smaller towns preferably having population < 5 lakh could be preferred for pilot projects.

7.3 Central Ministries such as Ministry of Urban Development (MoUD), Ministry of Agriculture and Ministry of New and Renewable Energy (MNRE) may continue to provide assistance to the States in terms of technical assistance and in selection of appropriate technologies relating to waste processing and disposal including facilitating States in seeking private sector participation. The proposed action will help States in proper utilization of grants under the schemes like Twelfth Finance Commission, etc.

- 7.4 Ministry of Urban Development may follow-up on implementation of the report of an Inter-ministerial task force on integrated plant nutrient management using city compost which has been filed in the Hon'ble Supreme Court on 06.05.2005 (in the matter of WPC 888/96). This report has brought out various relevant issues on composting particularly technical and financial requirements for setting up of compost plant and will be useful to State Govts, local bodies and other concerned agencies to refer before taking final decisions.
- 7.5 A report of the expert committee for inspection and evaluation of the project for energy recovery from MSW at Lucknow; 2005 (brought out with reference to MNRE Order dated 19.05.2005) may be circulated to State Governments for their reference. The recommendations of Expert Group will be useful to States while taking decisions on selection of waste processing technologies and particularly with reference to waste-to-energy projects. In accordance with Hon'ble Supreme Court directives, MNRE may consider to set-up waste-to-energy demo projects.
- 7.6 MoEF may consider to suitably amend the Schedule-I of MSW rules while taking view on funds being provided under the Twelfth Finance Commission (TFC) which are to be utilized during 2005-2010
- 7.7 Specific issues requiring consideration while amending MSW rules may include ;
- Promotion of regional facilities (common facilities) for setting-up of waste processing and disposal facilities.
 - Aviation authorities may issue appropriate guidelines to States while deciding for identification of sites for waste processing and disposal.
- 7.8 Pollution Control Boards/Local Bodies/ State Governments who have taken initiatives in preparing action plans for solid waste management in metro cities and State Capitals (in pursuance with Supreme Court order dated 04.10.04, WPC 888/96), may get Detailed Project Reports (DPRs) formulated for each metro city and State Capital and initiate implementation. During the Eleventh Plan period, States may target to achieve for covering major local bodies in ensuing their compliance to MSW rules taking benefit of grants released and also meeting balance out of own resources of local bodies through State Plan.
- 7.9 State governments may set up solid waste mission (as set up by Govt. of West Bengal) and evolve state level policies (like Rajasthan, Andhra Pradesh, Karnataka, Maharashtra and others) and providing technical/ financial guidance to local bodies in their State/UT.

7.10 Dissemination of information through Electronic media including mass awareness campaigns and seeking private sector participation in solid waste management should be continued activity. Pollution Control Boards/ State Urban Development Departments may place consolidated status on solid waste management (may also include other sanitation issues of state), Annual reports of local bodies and initiatives taken on web site for public benefit.

7.11 Specific attention is required on;

- (a) Setting up of waste processing and disposal facilities at hilly states and particularly at Defence bases.
- (b) Providing prescription of packages for waste processing and disposal in Defence/Railway and other set-up like Cantonment Boards.

SUMMARY OF ANNUAL REPORT, 2006-07

1. Observations/ Findings of Annual Report -2006-07

1.1 Authorizations

State-wise response of local bodies for seeking authorizations from SPCBs and PCCs varies from State to State. Majority of local bodies existing in the state of Andhra Pradesh, Karnataka, Himachal Pradesh, Tripura, Gujarat, Maharashtra and West Bengal have been covered for authorizations by the respective SPCBs.

1.2 Implementation of Schedule-III

“Setting up of Waste Processing Facilities”

- States like Andhra Pradesh, Karnataka, Himachal Pradesh, Gujarat, Maharashtra and West Bengal have taken steps to set up compost plants, State level policies have been formulated by the States of Andhra Pradesh and West Bengal for setting up of compost plants.
- Regarding waste-to-energy projects, except at four locations in Andhra Pradesh, and a few projects in Karnataka and Kerala, no other States have reported for setting-up of such Plants.

1.3 Implementation of Schedule-IV- ‘Landfilling’

- As per information provided by SPCBs, landfill facilities have been constructed at; Bangalore, Mangalore, Karwar, Puttur, Ankola, Surat, Alang, Nashik, Ambad, Sonpeth, Vizianagaram (AP), Jodhpur, Sirsa and Ambala.
- Regional/common landfill facilities are under construction at Ahmedabad, North Dum-Dum and New Barrackpore and Chandigarh.

2.0 Overall Implementation Status

Unless, Guiding Groups/Cells are set-up at Central, State and District Level to assist local bodies in organizing themselves to comply with the Rules, it will be difficult to achieve satisfactory compliance. There is need to develop good and adequate private entrepreneurship to participate in waste management to cover the country.

Status of Authorisations granted by SCPBs/PCCs

S. No	States/UTs	No. of local bodies	Authorisations granted during 2006-07		Cumulative valid authorization
			No. of applications	Nos Granted	
1	Andaman Nicobar	01	Nil	Nil	01
2	Andhra Pradesh	124	56	27	93 (66+27)
3	Arunachal Pradesh	INR	INR	INR	INR
4	Assam	85	2	1	23
5	Bihar	122	42	Nil	Nil
6	Chandigarh	1	2	2	2
7	Chhatisgarh	110	Nil	01	58
8	Daman Diu	03	Nil	Nil	Nil
9	Delhi	03	03	03	03
10	Goa	13	13	13	13
11	Gujarat	174	6	1	142
12	Haryana	68	Nil	Nil	Nil
13	Himachal Pradesh	56	56 (18+38)	28(11+17)	41
14	Jammu & Kashmir	INR	INR	INR	INR
15	Jharkhand	INR	INR	INR	INR
16	Karnataka	226	226	226	226
17	Kerala	58	09	03	08
18	Lakshadweep	1	Nil	Nil	Nil
19	Madhya Pradesh	339	46	29	85
20	Maharashtra	252	93	79	246
21	Manipur	09	Nil	Nil	Nil
22	Meghalaya	07	Nil	Nil	2
23	Mizoram	01	Nil	Nil	01
24	Nagaland	06	01	01	01
25	Orissa	103	05	Nil	11
26	Puducherry	15	Nil	Nil	3
27	Punjab	103	27	27	27
28	Rajasthan	183	22	06	15
29	Sikkim	01	Nil	Nil	Nil
30	Tamil Nadu	719	17	17	62
31	Tripura	13	13	13	13
32	Uttar Pradesh	INR	INR	INR	INR
33	Uttarakhand	68	35	1	1
34	West Bengal	126	104	49	49

INR - Information not received

Implementation Status of Schedule IV

S.No	States	Compost Plants		Vermi compost	
		Commissioned	Planned/ proposed/ UC	Commissi- oned	Planned
1	Andaman Nicobar	Nil	Nil	Nil	Nil
2	Andhra Pradesh	Vijaywada, Surya pet, Kadapa, Man depet, Ramgun- dam, Adilabad			
3	Arunachal Pradesh	INR	INR	INR	INR
4	Assam	Kamroop	Guwhati, Dibrugarh Silchar Sibsagar	Nil	Nil
5	Bihar	Nil	Nil	Nil	Nil
6	Chandigarh	Nil	Nil	Nil	Nil
7	Chhatisgarh	12	12		
8	Daman Diu	Nil	Nil	Nil	Nil
9	Delhi	Delhi (2)	Nil		
10	Goa	In Vasco, 70 de- centrlaised com- posting plants in Panjim	15 in Panda	Nil	Nil
11	Gujarat	Ahemdabad, Rajkot, Valsod Vadodara	96ULBs+31 New ULBs identified for vermicompost and 34 ULBs for composting	Nil	Nil
12	Haryana	Nil	Nil	Nil	Nil
13	Himachal Pradesh	Shimla, Kullu/ Bunter, Manali, Solan, Kangra/ Nagrota, Nahan, Una and Himirpur	Dharamsala, Poonta, Palampur Nalagarh Mandi		
14	J & K	INR	INR	INR	INR
15	Jharkhand	INR	INR	INR	INR
16	Karnataka	Mangalore, Bangalore	Nirmal Nagar (8 ULBs)	Nil	Nil
17	Kerala	16	12	7	1
18	Lakshadweep	25 units	Nil	(25 units)	Nil
19	Madhya Pradesh	4	67	8	36

S.No	States	Compost Plants		Vermi compost	
		Commissioned	Planned/ proposed/ UC	Commis- ioned	Planned
20	Maharashtra	12 Akola,Pune, Pimpri-Chincha- wad, Kolhapur, Ambad,Nagpur, Sonpath, Murad- Navapur,Janjira, Mira-Bhayander, Nashik, Ahemdnagar	Baramati Jalana	Ambernath	Shegaon, Pondharpur Bhandara Dahanu Panvel
21	Manipur	Nil	Imphal	Nil	Bishnupur Thousbal, Morch Jin Kakching
22	Meghalaya	Shillong	Tura	Nil	Tura
23	Mizoram	Nil	Nil	Nil	Nil
24	Nagaland	Nil	Kohima	Nil	Nil
25	Orissa	(2) Puri Paradeep	14	Nil	1
26	Puducherry	Puducherry, Outgaret, Karaikal, Nedungadu	1+	1+	Nil
27	Punjab	Nil	5	Nil	Nil
28	Rajasthan	Vijaywada Suryapet Kadapa Mandapet Ramgundram Adilabed	All proposed under 12 th FC	Nil	Nil
29	Sikkim				
30	Tamil Nadu	Tiruppur, Namakkal	Udumalpet	Nil	Nil
31	Tirpura	Nil	Agartala	Beleniga Kumarghat	Amapur,Kh owai, Dharmanag ar,Kanalpur Ranibazar Udaipur
32	Uttrakhand	Nil	Pithoragarh, Uttarkashi Nainital	Nil	Nil
33	Uttar Pradesh				
34	West Bengal	Kolkata + 7 ULBs	28	05	Nil

SETTING UP OF WASTE-TO-ENERGY PROJECTS

S.No	States/UTs	Waste to Energy Projects	
		Commissioned	Planned
1	Andaman Nicobar	Nil	Nil
2	Andhra Pradesh	Hyderabad(RDF),Vijaywada (RDF), Guntur (RDF), Vijaywada (Bio-methanisation)	45 (7 WTE for 3.9 ULBS)
3	Arunachal Pradesh	INR *	INR
4	Assam	Nil	Nil
5	Bihar	Nil	Nil
6	Chandigarh		One-under construction
7	Chattishgarh	Nil	Nil
8	Daman Diu		
9	Delhi	Nil	Nil
10	Goa	Nil	One planned for Panjim
11	Gujarat		
12	Haryana	Nil	Nil
13	Himachal Pradesh		
14	Jharkhand	INR	INR
15	Jammu & Kashmir	INR	INR
16	Karnataka	Nil	Bangalore
17	Kerala	15 **	3 **
18	Kohima	Nil	Nil
19	Lakshadweep	Nil	Nil
20	Madhya Pradesh	Nil	Nil
21	Maharashtra	Nil	Nil
22	Manipur	Nil	Nil
23	Mizoram	Nil	Nil
24	Meghalaya	Nil	Nil
25	Orissa	Nil	1 (Cuttak + Bhubanesar)
26	Punjab	Nil	Nil
27	Puducherry	Nil	Nil
28	Rajasthan	2	2
29	Sikkim	Nil	Nil
30	Tamil Nadu	Nil	Nil
31	Tripura	Nil	Nil
32	Uttarakhand	Nil	Nil
33	Uttar Pradesh	INR	INR
34	West Bengal	Nil	Nil

INR* - Information not received

** - Bio gas Plants

SETTING UP OF LANDFILL FACILITIES FOR WASTE DISPOSAL

S. No.	States/UTs	Landfill constructed	Initiatives taken	No. of sites identified
1	Andaman Nicobar	Nil	Port Blair	1
2	Andhra Pradesh	Vizianagaram	Suryapet, Hyderabad, Vijaywada, Vizianagaram	61 (ULBs)
3	Arunachal Pradesh	INR	INR	INR
4	Bihar	Nil	Nil	Nil
5	Chandigarh	Site under construction	-	-
6	Chhatisgarh	Nil	Nil	66
7	Daman Diu	Nil	Daman & DNH	01 (Dadra)
8	Delhi	Nil	Nil	Nil
9	Goa	Nil	Nil	13
10	Gujarat	Surat, Alang	Common site for 12 ULBs of AUDA	142
11	Guwahati	Nil	Nil	1
12	Haryana	Sirsa	Faridabad, Hissar, Ambala, Gurgaon	35
13	Himachal Pradesh	None	Shimla, Chowari, Chamba, Nalagarh, Palampur	52
14	Jharkhand	INR	INR	INR
15	J & K	INR	INR	INR
16	Kerala	Nil	Kozhikode	53
17	Karnataka	Bangalore, Mangalore, Karwar, Puttur, Ankola	Sirsi, Dandeli, Bhatkal, Kundapur, Udipi and Chickmngalore	Remaining 213 local bodies have identified the sites.
18	Lakshadweep	Nil	Nil	Nil
19	Madhya Pradesh	22	130	305
20	Maharashtra	Nasik, Sonpeth, Ambad	Jalna, Navapur, Pune, Meurid-Janjira, Pimpri, Chinchawad	241
21	Manipur	Nil	Imphal, Bishuper, Jin, Thoubal, Kakching, March	One each(6)
22	Mizoram	Nil	Nil	Nil
23	Meghalaya	Nil	Shillong	04
24	Nagaland	Nil	Kohima	01
25	Orissa	Nil	03	51
26	Punjab	Nil	Nil	Nil
27	Puducherry	Nil	Puducherry	1
28	Rajasthan	Jodhpur	Proposed in 14 towns	152
29	Sikkim	Nil	South-West District of Sikkim	1
30	Tamil Nadu	Nil	Namakkal, Tiruppur, Udumalpet	104
31	Tripura	Nil	Agartala	8
32	Uttar Pradesh	INR	INR	INR
33	Uttarakhand	Nil	Nil	Nil
34	West Bengal	Under construction at ND&NB	30	30

Implementation Status of Schedule-II

S. No	States/UT	Local bodies taken initiatives for improving collection, segregation, storage and Transportation of waste
1	Andaman Nicobar	At Port Blair covering 21000 houses
2	Andhra Pradesh	House-to-house collection started in all the local bodies.
3	Arunachal Pradesh	Itanagar-Naharlagun
4	Assam	Guwhati, Silchar
5	Bihar	Yet to be started
6	Chandigarh	House-to-house collection of waste widely practiced.
7	Chhatisgarh	Initiated by 58 local bodies.
8	Daman Diu & DNH	Yet to be started
9	Delhi	On-going in some of the zones and transportation is
10	Goa	Panjim and in other towns.
11	Gujarat	73 local bodies have taken initiatives (Ahemdabad, Surat, Bejalpur, Gandhinagar, Modasa, Himmatnagar, Nadiad, Navsari, Alang, Vasal
12	Haryana	
13	Himachal Pradesh	Initiated at Shimla, Mandi and Hamirpur
14	J&K	INR
15	Jharkhand	INR
16	Karnataka	Initiated by 60 ULBs
17	Kerala	Many towns are covered
18	Lakshadweep	Kavarati
19	Madhya Pradesh	<ul style="list-style-type: none"> • 33 local bodies have taken some initiatives (Bhopal, Indore, Rewa, Gwalior, Shahdol, Amarkantak, Chandi, Ujmariya, etc.) • House-to-house collection of waste is started in 3139 Wards out of 4493 and segregation of waste is started in 1932 Wards
20	Maharashtra	Local bodies at several places have organized collection of MSW by house-to-house collection by using Ghanta Gadies and collection bins. (Pune, Nasik, Nagpur, Mumbai and others)
21	Manipur	Yet to be started
22	Mizoram	Initiated for Aizwal.
23	Meghalaya	Initiated in some of the Wards at :Shillong, Jowai, Tura, Williamnagar, Baghmora, Resubelpara.
24	Nagaland	Kohima, Dimapur
25	Orissa	Yet to be started
26	Punjab	Being proposed at Mandi Gobindgarh and Kartarpur
27	Puducherry	Puducherry, Karaikal
28	Rajasthan	14 ULBs have taken steps
29	Sikkim	Gangtok and S-W Districts
30	Tamil Nadu	Tiruppur, Namakkal, Udumalpet, Ooty and others
31	Tripura	Partially done at Agartala
32	Uttar Pradesh	Lucknow, Kanpur (in selected wards)
33	Uttarnachal	Pithoragarh

S.No	States/UT	Local bodies taken initiatives for improving collection, segregation, storage and Transportation of waste
34	West Bengal	<ul style="list-style-type: none"> • Out of 126 local bodies, 119 have taken some initiatives. • House-to-house collection of waste (>50% coverage) for Barrackpore, Bidhannagar, Dum Dum, Kamarhati Kacharapara, Khardaha, Madhyamgrams, Naihati, New Barrackpore, North Barrackpore, North Dum Dum, Rajarhat-Gopalpur, South Dum Dum, Rajpur-Sonarpur, Kulti, Suri, Cooch Behar, Siliguri, Bhadreswar, Rishra, Uttarpara-Kottang, Bally, Howrah, Kolkata, English Bazar, Kharagpur, Kandi, Nalsadwip, Balurghat

SUMMARY OF DEMO PROJECT ON IMPLEMENTATION OF MSW RULES

S. No	City/Town	Area of City/Town (sq. km)	Population	Quantity of waste generation (MT/day)	No. of Wards	Project components for Demo-Project	Date of start & Duration	Remarks
1	North Dum Dum & Barrackpore (West Bengal)	26.45 16.89	220000 83000	70 25	30 19	<ul style="list-style-type: none"> ▪ <u>Phase-I</u>: Waste Collection, Segregation, Storage and transportation (Schedule-II) ▪ <u>Phase-II</u>: Waste Processing and Disposal 	22.4.03 18 mths --	Completed Phase-II under implementation
2	Chandigarh (UT)	114	9,00,000	300	20 (61 sectors)	<ul style="list-style-type: none"> ▪ <u>Phase-I</u>: Waste collection, segregation, storage and Transportation (Schedule-II) ▪ <u>Phase-II</u> 	16.04.03 18 mths --	Under implementation. 70% completed under Phase-I. Phase-II under construction
3	Udumalpet (Tamil Nadu)	7.41	58,893	30	33	<u>Total Project</u> : Waste collection, segregation, storage, transportation, Processing and disposal	10.10.04 24 mths	Waste collection and transportation covered for 80% town. Work relating to Processing and Disposal is in progress
4	Kohima (Nagaland)	30	78,584	35	19	<ul style="list-style-type: none"> ▪ <u>Phase-I</u> : Waste collection, segregation and transportation ▪ <u>Phase-II</u> : DPR to be received on disposal 	12.09.05 36 mths	After procurement of tools/equipment, waste collection is spread over the town. Site for landfilling and processing is identified.

S. No	City/Town	Area of City/Town (sq. km)	Population	Quantity of waste generation (MT/day)	No. of Wards	Project components for Demo-Project	Date of start & Duration	Remarks
5	Mandi (Himachal Pradesh)	4.26	35,000	24	13	<ul style="list-style-type: none"> ▪ <u>Phase-I:</u> Waste collection, segregation, storage and transportation. ▪ <u>Phase-II:</u> DPR for Processing and disposal to be prepared 	14.09.05 36 mths	Tools/equipment are under procurement
6	Suryapet (Andhra Pradesh)	34	1,03,000	32	34	<u>Total Scheme:</u> Waste collection, segregation, storage, transportation, processing and disposal	22.09.05 24 mths	Work relating to waste collection, segregation, storage and transportation has been completed. Vermicomposed plant has been set up.
7	Itanagar (Arunachal Pradesh)	135	100000	42	59 (35+24)	Total scheme:	12.01.06 24 mths	Tools/ equipment under procurement. Site for landfill is under acquisition.
8	South –West Districts of Sikkim	50	1,16,000	42	--	Total Scheme:	08.02.06 24 mths	Tools/equipments are under procurement and action plans prepared for setting up of compost plant.
9	Jalna (Mahaashtra)	70.87	2,35,000	50	18	Total Scheme	12.01.06 24 mths	Action Plan prepared for waste handling and steps are planned for setting up of waste processing and disposal facility.
10	Agartala (Tripura)	58.84	3,67,822	200	35	<ul style="list-style-type: none"> ▪ <u>Phase-I:</u> Waste collection, segregation, storage and transportation 	07.02.06 36 mths	Tools/equipment (partially) processed and wards in central area selected for execution of waste handling.

						<ul style="list-style-type: none">▪ <u>Phase-II</u>: DPR to be prepared for waste processing and disposal	Plans finalized for setting up of compost plant and landfill facility.
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6.0 DEMONSTRATION PROJECTS

Central Pollution Control Board (CPCB) has sanctioned and has been monitoring various demonstration facility projects on municipal solid waste management for implementing **Municipal Solid Waste (Management & Handling) Rules, 2000** in selected towns/ cities of the country. The demo-projects are being executed through concerned Urban Local Bodies (ULBs) under the supervision of respective State Pollution Control Boards. CPCB is monitoring the progress regularly. The implementation status is as under;

S.No	State	Town	Status as on 30 th November, 2007
1	West Bengal	North Dum-Dum New Barrakpore	<ul style="list-style-type: none"> • Approach road to the landfill Cell-1 is in progress. • Completed construction of 25 sheds for housing 75 vermin-compost beds. • Landfill Cell-1 is under construction.
2	UT Chandigarh	Chandigarh	<ul style="list-style-type: none"> • <u>Closure/Capping of existing landfill</u>: the Civil Works like cutting, dozing, compaction, etc completed. The work of storm water drains is in advance stage of completion. Lying of Geo-synthetic liner work started. • <u>Construction of new landfill</u>: Civil works upto to ridge & valley completed. Construction of bunds and lying of HDPE liners are in progress.
3	Tamil Nadu	Udumalpet	<ul style="list-style-type: none"> • Push-carts and tricycles are used in door-to-door primary collection of waste. • Source segregation is being practiced with two-bin system. • Street sweeping is done with long handled broom. • Dumper placer, tractors, etc. are put in use for mechanical waste handling and transportation. • Compost plant is in operational for waste processing. • Procured land for construction of landfill site.
4	Kerala	Kozhikode	<ul style="list-style-type: none"> • Progress not received.
5	Himachal Pradesh	Mandi	<ul style="list-style-type: none"> • Procured 10 lit. of Twin-bins for source segregation and distributed to 8000 families and procured 100lit. bins for shops. • Procured Hand-carts, wheel barrows and other tools/tackles for primary collection. • Procured MS container for secondary storage at community level. • Procured dumper placer for Transportation. • Mass awareness carried out through printing, banner, pamphlets, rallies, cleanliness drive, etc.

S.No	State	Town	Status as on 30 th November, 2007
6	Andhra Pradesh	Suryapet	<ul style="list-style-type: none"> • Procured twin-bins for 28 wards for source segregation and door-to-door collection. • Procured Push-carts, tricycles and other tools/tackles for primary collection of waste. • Procured Tractor-trolleys for transportation of waste. • Developed Vermi-Compost plant without O&M cost for waste processing. • Public Awareness and documentation through print and electronic media. • Undertaken preparation of DPR for plastic waste, BMW and slaughter -house waste management. • Landfill construction is under planned.
7	Nagaland	Kohima	<ul style="list-style-type: none"> • Procured & Distributed litterbins to 19 wards for primary collection. • Procured tool/tackles including Push-carts for door-to-door collection. • Procured 2 Tipper trucks for waste transportation. • Prepared billboards, electronic media for Mass awareness. • Land identified for waste processing and landfill site.
8	Maharashtra	Jalna	<ul style="list-style-type: none"> • Tender floated for execution of the project. • No physical progress has been reported.
9	Arunachal Pradesh	Itanagar	<ul style="list-style-type: none"> • Procured dumper placer for mechanized waste handling and transporting. • Supply order placed for Litterbins, Push-carts, wheel barrows, community bins, etc. • Public awareness initiated through printed and electronic media.
10	Sikkim	South West Districts	<ul style="list-style-type: none"> • Procured JCB, Tipper and utility trucks for transportation of waste. • Prepared billboards, posters and audio-visual media for mass awareness. • Site identified for compost plant and landfill.
11	Tripura	Agartala	<ul style="list-style-type: none"> • Procured twin bins for household collection of segregated waste. • Procured color-coded bins for tricycles. • Procured Push-Carts for primary collection in narrow lane. • MS-containers are being procured for secondary collection and transportation. • Acquired land at Nagicherra for proposed compost plant and landfill. • Construction work of Compost plant has been awarded to KCDC and landfill design works are finalized for awarding to private firms.

S.No	State	Town	Status as on 30 th November, 2007
12	Gujarat	Clusters of municipalities in Ahemdabad	<ul style="list-style-type: none">• The construction work of landfill Cell-1 has been completed including two leachate collection sumps.• The construction work of compost plant is under progress, around 15% of the works have completed.