

## **EXECUTIVE SUMMARY**

### **1.0 HW Inventory –Background:**

In response to a Public Interest Litigation filed by Research Foundation for Science, Technology and Natural Resource Policy (W.P.No. 657 of 1995), Honorable Supreme Court passed an Order dated 14.10.2003, directing each State Pollution Control Board to prepare a fresh inventory of HW generation in their state and submit the same to The Central Pollution Control Board.

Looking at the diverse nature of industries in Maharashtra, with presence of large chemical industries, taking into account the provisions of amended HW (MH&TM) Rules, 2008, MPCB realized that the task of preparation of inventory requires good knowledge of process chemistry, industrial unit operations and processes, hence, Board appointed M/s. Eco Friend & Co. Mumbai to update the inventory.

While assessing the work it needs to ensure the compliance to HW Rules, it was seen that the HW Inventory is dynamic and since there are continuous changes in the inventory as industrial units expand / modernize / change their product mix or as new units get added or old units stop producing. The Board therefore decided to continue the scientific approach adopted during the Inventory preparation by creating a HWM Cell – a unique model of Public-Private Partnership in environmental jurisprudence i.e. using process Chemistry / Technology Experts in conjunction with Board officials to monitor and effectively manage the HW situation in the state.

The HWM cell has been entrusted with various tasks such as updating and maintaining the Inventory, by monitoring the HW generation, transport and disposal on the basis of returns filed by the industries.

The updated Inventory report presenting HW generation statistics as of March 2015 is prepared. This edition, gives updated status for the period April 2014 to March 2015.

## **2.0 Need for Updating Inventory :**

Need for updating information on HW generation from industrial sources arises due to the following :

1. Waste Generator (industrial/non-industrial) feels that waste information is not correctly reflected in the inventory.
2. Change in manufacturing process due to :
  - establishment of new units / plants
  - modernization / expansion / revamping / debottlenecking of existing units
  - change of product
  - change of technology
3. New Sources are identified
4. Amendment or renewal of the consents.

## **3.0 Methodology/Approach :**

The approach adopted to update the Inventory was as under :

HWM CELL collected copies of the consents issued during April 2014 to March 2015 and updated present inventory, also included new industries which were not included in the previous inventory

Amendment of consents is required to match the Inventory quantities to compare with quantity filed in annual returns, from the findings queries are raised to units about mismatching of quantities as per consented and generation.

## **3.1 Industrial Sources :**

The following aspects are evaluated / documents scrutinized :

- Copies of existing consents / authorization granted by MPCB
- Evaluate other information as available with the Board eg. Annual Returns / manifest / Environmental Statement copies etc.

## **4.0 Findings**

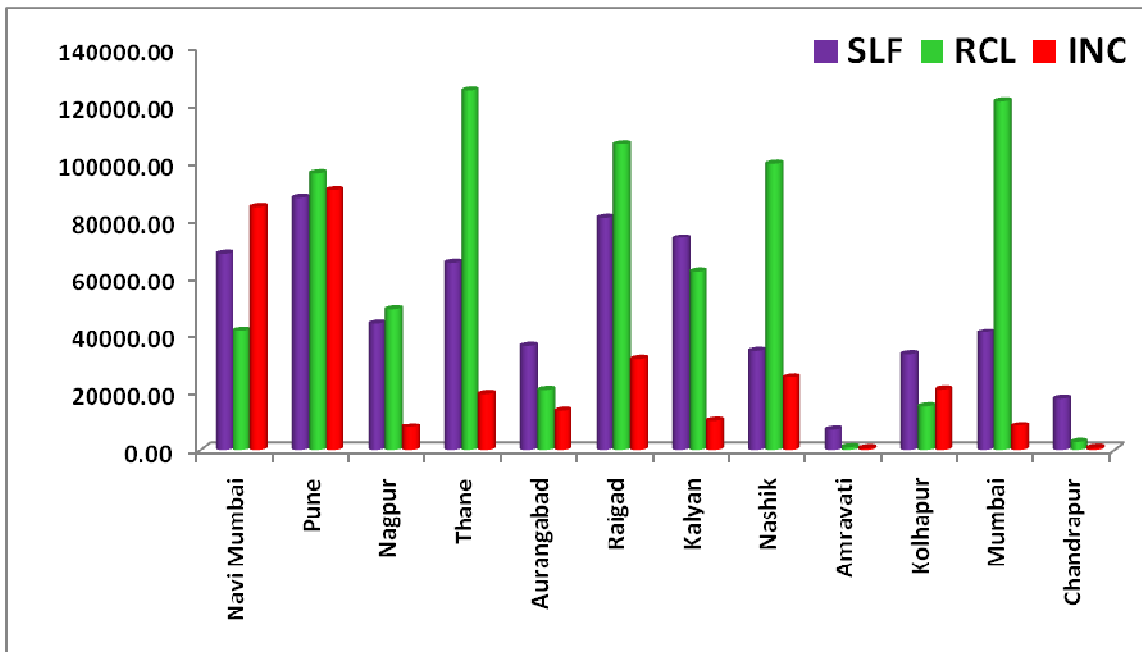
### **4.1 Industrial Statistics**

Maharashtra Pollution Control Board has 12 Regional Offices in the state. Each region being headed by a Regional Officer. The Region wise statistics of consents granted to industrial units classified on the basis of scale of operation and Red/Orange/Green category and expected generation based on disposal method is given below:

## Region-Wise HW Total (MTPA)

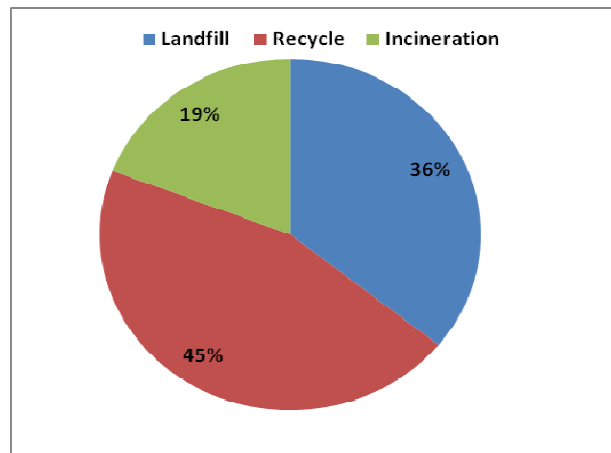
Hazardous Waste Generation Updation as of 31<sup>st</sup> March-2015

Region wise Hazardous Waste generation (SLF, RCL, INC)				
Region	SLF	RCL	INC	Total
Navi Mumbai	68210.93	41601.80	84435.92	194248.65
Pune	87575.15	96300.21	90595.49	274470.85
Nagpur	44096.97	48963.80	7956.08	101016.85
Thane	65132.44	125197.93	19367.03	209697.39
Aurangabad	36138.31	20731.34	13695.74	70565.39
Raigad	80783.91	106490.70	31669.84	218944.45
Kalyan	73700.67	62141.89	10327.71	146170.28
Nashik	34399.78	99524.29	25359.31	159283.38
Amravati	6878.75	878.24	561.83	8318.82
Kolhapur	33313.67	15185.54	20883.65	69382.85
Mumbai	40855.59	121084.12	8413.15	170352.86
Chandrapur	17752.55	2726.02	706.87	21185.44
<b>Total</b>	<b>588838.72</b>	<b>740825.87</b>	<b>313972.62</b>	<b>1643637.20</b>



## 5.2 Total Waste Generation :

As per the present inventory, total HW generation for Maharashtra State is 1643637.20 MT/Annum of which about 36% is landfillable, 45% is recyclable and balance 19% is incinerable.

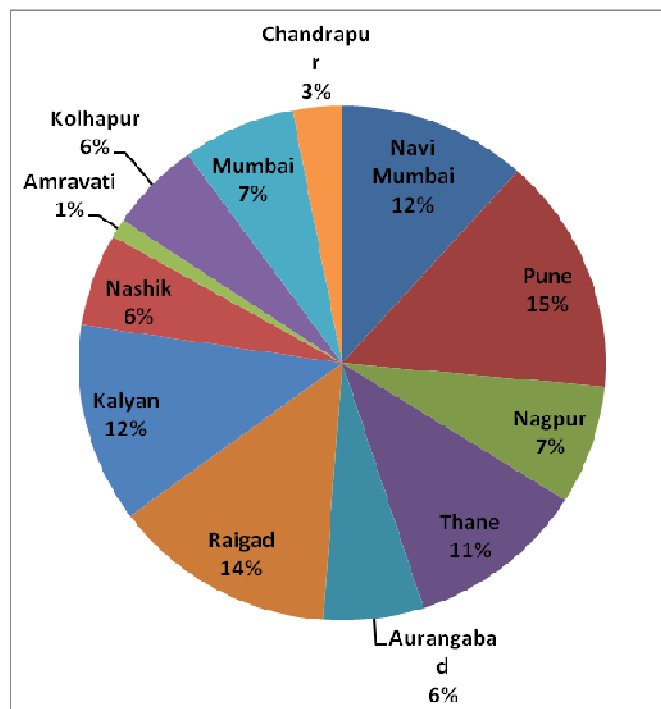


## 5.3 Region Wise Break-up:

Based on disposal method, salient findings are as below :

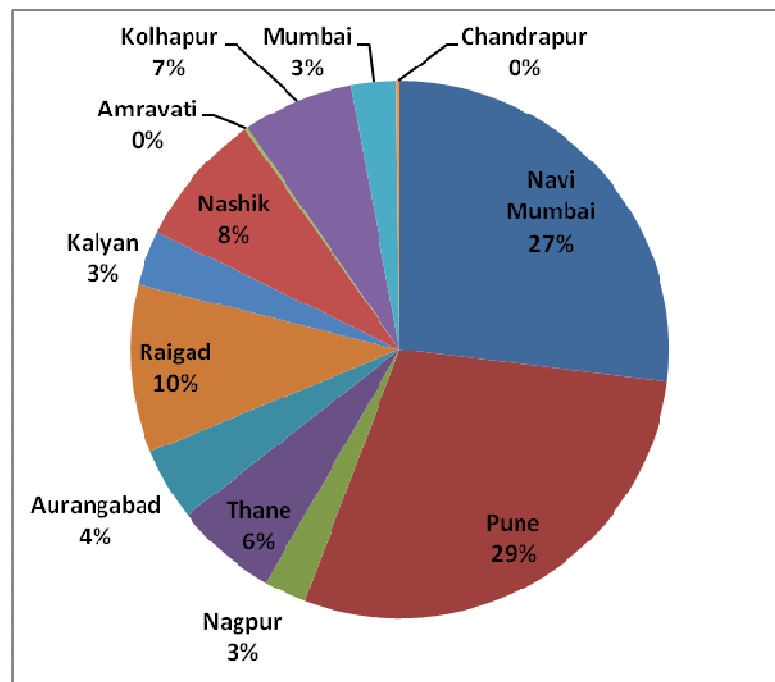
### Landfillable Waste :

The largest generation of landfillable waste was seen in Pune 87575.15 MTPA (15%), followed by Raigad 80783.90 MTPA (14%). The lowest generation was observed in Amravati 6878.74 MTPA (1%). The quantity of Landfillable waste has changed – 603091.14 MTPA in 2014 versus 588838.71 MTPA today.



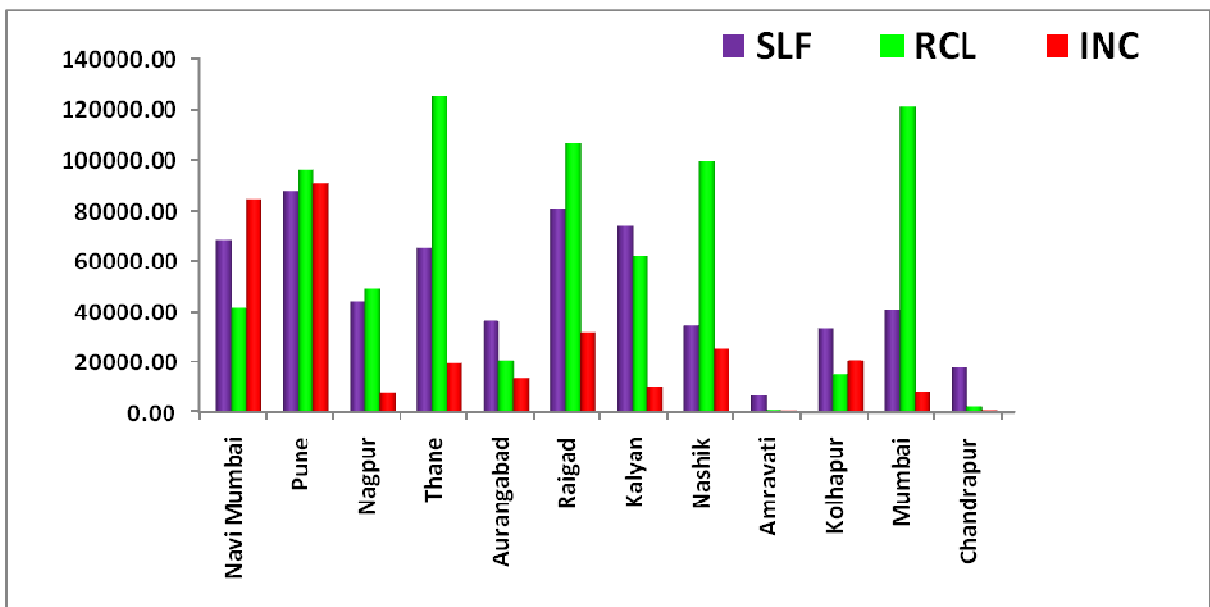
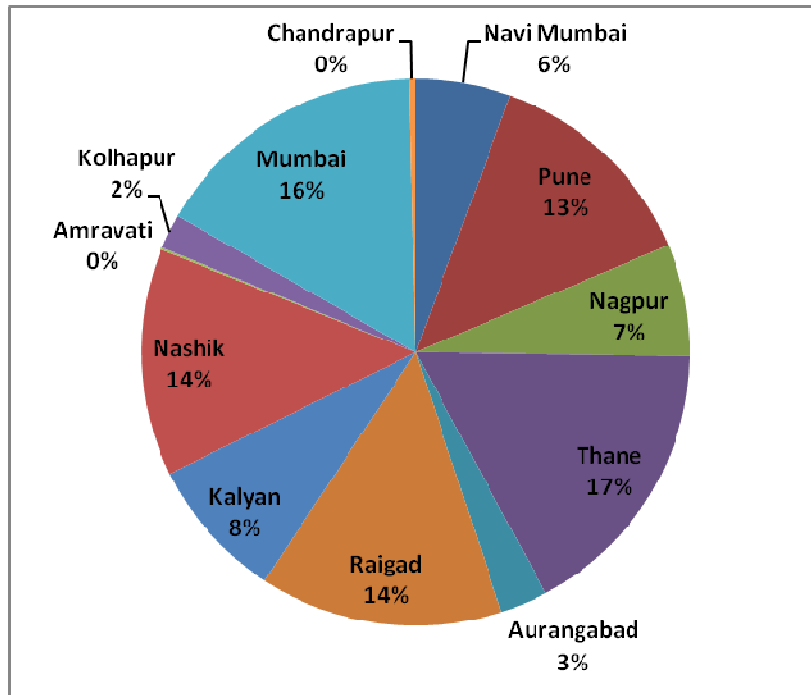
**Incinerable Waste :**

It is observed that the highest incinerable waste generation was in Pune 90595.49 MTPA (29%) followed by Navi Mumbai 84435.92 MT/A (27%). The lowest incinerable waste generation was observed in Amravati 561.83 MTPA. The quantity of incinerable waste has changed – 298546.67 MTPA in 2014 versus 313972.61 MTPA today.



**Recyclable Waste :**

The highest recyclable waste generation was in Thane 125197.93 MTPA (17%) followed by Mumbai 121084.11 MTPA (16%). The lowest recyclable waste generation was observed in Amravati 878.24 MTPA (0.11%). The quantity of recyclable waste has changed – 728151.95 MTPA in 2014 versus 740825.86 MTPA today.

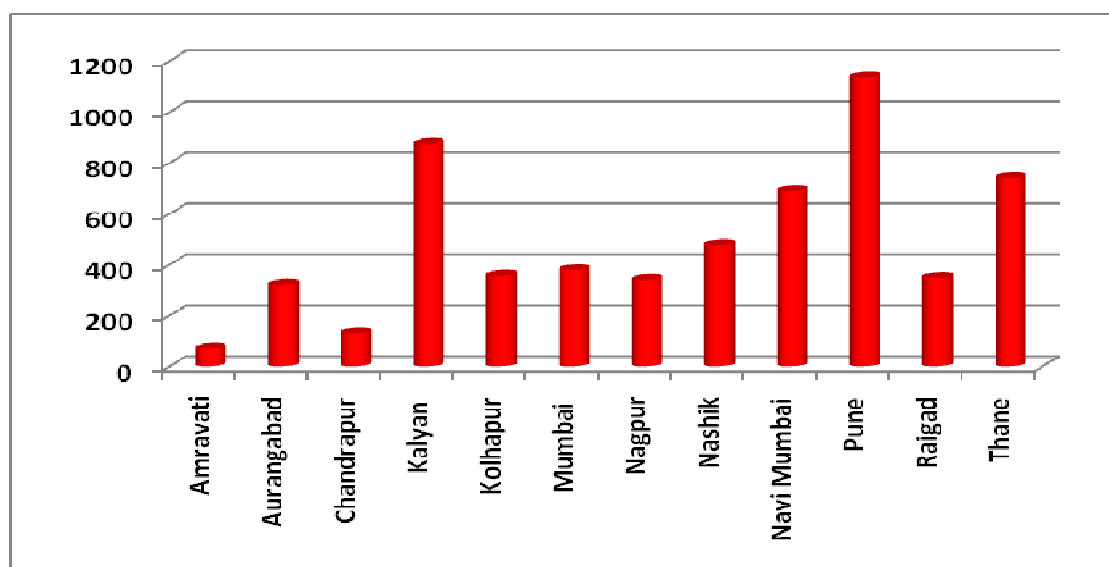


#### 5.4 Classification of Industries Generating Hazardous Waste :

Authorizations – Region wise		
Sr. No.	Region	Total No. of Units
1	Amravati	72
2	Aurangabad	321
3	Chandrapur	131
4	Kalyan	874
5	Kolhapur	356
6	Mumbai	378
7	Nagpur	340
8	Nashik	478
9	Navi Mumbai	690
10	Raigad	348
11	Thane	740
12	Pune	1134
	<b>Total</b>	<b>5862</b>

A total of 5862 authorizations were granted to Hazardous Waste generating units in Maharashtra State. The Table indicates that the highest number of authorisations granted to HW generating units were in Pune Region – 1134 (19%) followed closely by Kalyan Region – 874 (15%). The lowest number of authorizations granted was seen to be in Amravati Region – 72 (1%).

Authorizations – Region wise



**Hazardous Waste generation inventory in Maharashtra for last seven years  
(Qty. in MT) -**

<b>Year</b>	<b>SLF</b>	<b>RCL</b>	<b>INC</b>	<b>Total</b>
<b>2008-09</b>	568135.70	847440.00	152791.17	<b>1568366.87</b>
<b>2009-10</b>	512820.85	1022191.99	208766.23	<b>1743779.07</b>
<b>2010-11</b>	514865.53	1054363.37	236155.87	<b>1805384.77</b>
<b>2011-12</b>	516271.57	1033832.16	255188.93	<b>1805292.66</b>
<b>2012-13</b>	595080.92	853612.53	250974.77	<b>1699668.21</b>
<b>2013-14</b>	603091.14	728151.95	298546.67	<b>1629789.76</b>
<b>2014-15</b>	588838.72	740825.87	313972.62	<b>1643637.20</b>