



مركز الإحصاء  
STATISTICS CENTRE



# Waste Statistics in the Emirate of Abu Dhabi 2011

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## Introduction

This report presents statistics on waste generation in the Emirate of Abu Dhabi for the year 2011, comprising statistics on waste by source activity, composition and method of disposal, in addition to municipal and hazardous solid waste statistics. The Centre of Waste Management – Abu Dhabi considered as the main source of the report statistics.

The “Explanatory Notes” section at the end of this report defines the key terms and technical concepts related to waste statistics. Readers are encouraged to refer to that section while reading the statistics and information outlined in the report.

## Key Points

### Solid Waste Generation

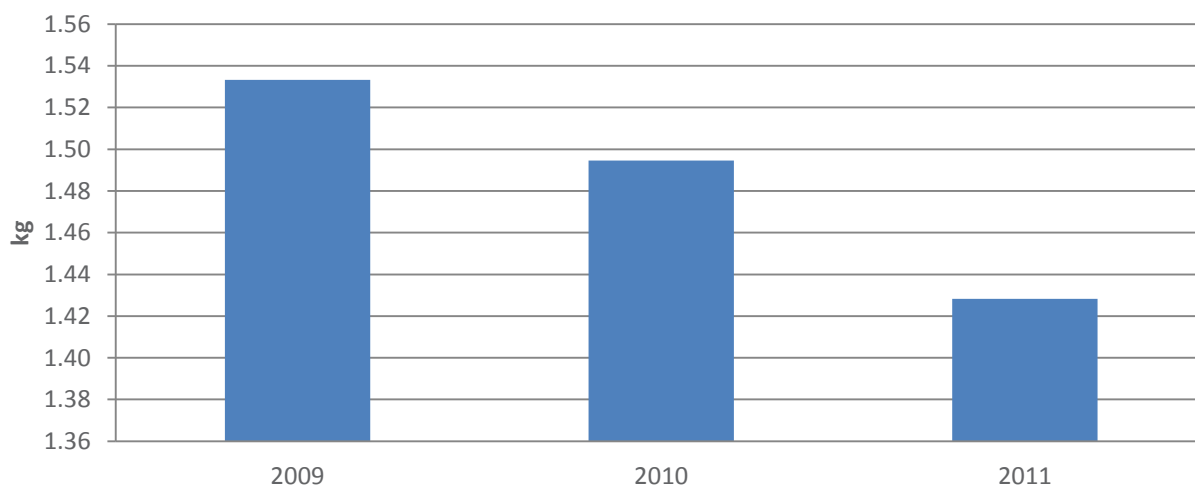
Table (1) shows the quantity of solid waste generated in the Emirate of Abu Dhabi by source activity. In addition, it illustrates the changes between 2009 and 2011, showing that the quantity of waste increased by 8.2 per cent, where waste generated by construction and demolition activities accounted for 72 per cent. The daily per capita of municipal waste decreased from 1.5 kg/per day to 1.4 kg/ per day.

**Table (1): Non-hazardous solid waste generation by source activity**  
(Tons)

Source	2009	2010	2011
<b>Total</b>	<b>9,768,363</b>	<b>10,476,887</b>	<b>10,565,031</b>
<b>Construction and demolition waste</b>	<b>7,050,000</b>	<b>7,402,500</b>	<b>7,624,575</b>
C & D waste	4,692,857	4,927,500	5,075,325
C & D mixed waste	2,357,143	2,475,000	2,549,250
<b>Industrial and commercial waste</b>	<b>594,857</b>	<b>624,600</b>	<b>643,338</b>
<b>Agriculture waste</b>	<b>754,571</b>	<b>792,300</b>	<b>816,069</b>
General agriculture waste	58,571	61,500	63,345
Agriculture mixed waste	551,714	579,300	596,679
Animal waste	144,286	151,500	156,045
<b>Municipal waste</b>	<b>1,022,286</b>	<b>1,073,400</b>	<b>1,105,602</b>
Households, streets, and public gardens waste	794,571	834,300	859,329
Bulky waste	227,714	239,100	246,273
<b>Sludge</b>	<b>124,827</b>	<b>131,068</b>	<b>135,000</b>
<b>Oil and Gas Waste</b>	<b>210,679</b>	<b>441,319</b>	<b>228,396</b>
<b>Other (Tires waste)</b>	<b>11,143</b>	<b>11,700</b>	<b>12,051</b>

Source: The Centre of Waste Management - Abu Dhabi , ADNOC.

**Chart (1): Daily per capita of municipal waste**



Source: Statistic Centre - Abu Dhabi.

Table (2) reveals the quantity of non-hazardous solid waste by region, showing that the daily waste generation in the Emirate of Abu Dhabi accounted for 28,945 tons/ per day in 2011, making a total waste of 10,565 thousand tons/ per year. Abu Dhabi region contributed 80 per cent from the entire amount. Figure (2) displays the relative distribution of non-hazardous solid waste generation by source activity.

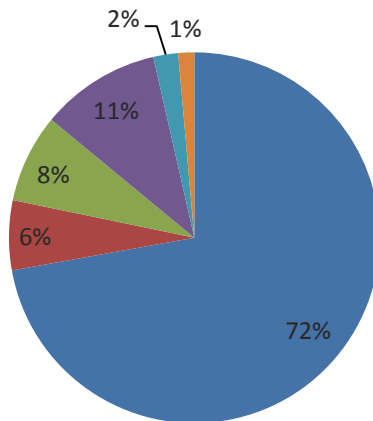
**Table (2): Non-hazardous solid waste generation by region and source activity, 2011**  
(Tons)

Source	Total	Abu Dhabi	Al Ain	Al Gharbia
<b>Total</b>	<b>10,565,031</b>	<b>8,484,489</b>	<b>1,226,421</b>	<b>854,121</b>
<b>Daily average</b>	<b>28,945</b>	<b>23,245</b>	<b>3,360</b>	<b>2,340</b>
<b>Construction and demolition waste</b>	<b>7,624,575</b>	<b>6,785,331</b>	<b>724,914</b>	<b>114,330</b>
C & D waste	5,075,325	4,316,730	679,800	78,795
C & D mixed waste	2,549,250	2,468,601	45,114	35,535
<b>Industrial and commercial waste</b>	<b>643,338</b>	<b>590,808</b>	<b>37,080</b>	<b>15,450</b>
<b>Agriculture waste</b>	<b>816,069</b>	<b>239,166</b>	<b>175,203</b>	<b>401,700</b>
General agriculture waste	63,345	42,024	10,506	10,815
Agriculture mixed waste	596,679	150,792	132,252	313,635
Animal waste	156,045	46,350	32,445	77,250
<b>Municipal waste</b>	<b>1,105,602</b>	<b>726,768</b>	<b>287,679</b>	<b>91,155</b>
Households, streets, and public gardens waste	859,329	540,750	241,329	77,250
Bulky waste	246,273	186,018	46,350	13,905
<b>Sludge</b>	<b>135,000</b>	<b>135,000</b>	<b>0</b>	<b>0</b>
<b>Oil and Gas</b>	<b>228,396</b>	<b>0</b>	<b>0</b>	<b>228,396</b>
<b>Other (Tires waste)</b>	<b>12,051</b>	<b>7,416</b>	<b>1,545</b>	<b>3,090</b>

Source: Statistic Centre - Abu Dhabi, ADNOC.

**Chart (2): Percentage distribution of Non-hazardous solid waste by source activity, 2011**

- Construction and demolition waste
- Industrial and commercial waste
- Agriculture waste
- Municipal waste
- Oil and gas waste
- Other\*



Source: Statistic Centre - Abu Dhabi.

\* Includes sludge and Tires waste.

## Solid Waste Disposal

Table (3) displays the quantity of solid waste by method of disposal, showing that waste recycling increased from 23.6 per cent in 2009 to 36 per cent in 2011 compared with the waste generated in the same years. Solid waste composted increased as well from 1.7 per cent to 2.5 per cent during the same years.

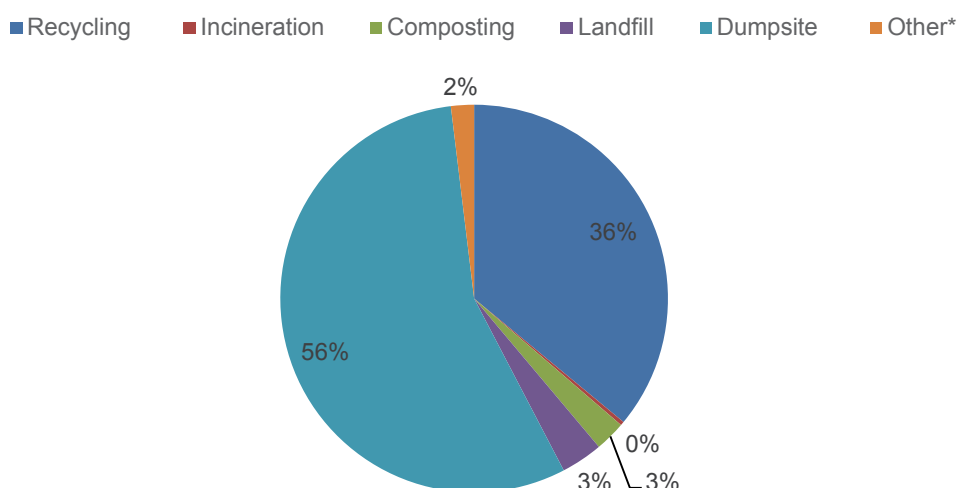
**Table (3): Solid waste generation by method of disposal, 2011**  
(Tons)

Source	2009	2010	2011
<b>Total</b>	<b>9,768,364</b>	<b>10,476,887</b>	<b>10,565,031</b>
Recycling	2,308,000	2,423,400	3,802,848
Incineration	na	0	34,029
Composting	170,667	179,200	269,786
Landfill	137,429	144,300	367,263
Dumpsite	6,941,589	7,288,668	5,888,132
Other*	210,679	441,319	202,973

Source: The Centre of Waste Management - Abu Dhabi, ADNOC.

\*Disposed through other specialized companies.

**Chart (3): Percentage distribution of solid waste by source and method of disposal**



Source: Statistic Centre - Abu Dhabi.

\*Disposed through other specialized companies.

## Municipal solid waste

Municipal solid waste in the Emirate of Abu Dhabi reached about 1,105 thousand tons in 2011, of which 61 per cent was disposed in dumpsite, while 16 per cent was composted to be used in the agricultural field as shown in Table (4). Figure (4) shows that municipal waste consisted of: 39 per cent organic materials, 25 per cent paper/ paper board and 19 per cent plastic. The remaining share was glass, metals and textile.

**Table (4): Municipal solid waste\* by method of disposal, 2011**

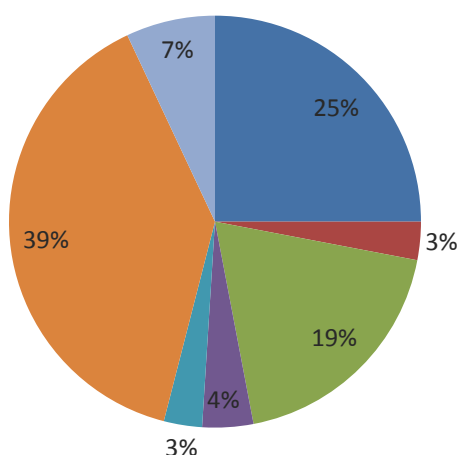
Source	2011	%
<b>Total</b>	<b>1,105,603</b>	<b>100</b>
Recycling	164,659	15
Composting	180,000	16
Landfill	85,933	8
Dumpsite and other	675,011	61

Source: The Centre of Waste Management - Abu Dhabi.

\* Municipal solid waste includes household waste, waste from streets and parks. Except of oil and gas sector waste.

**Chart (4): Percentage distribution of municipal solid\* waste Composition**

■ paper/paper board ■ textile ■ plastic ■ glass ■ metals ■ organic material ■ others



Source: The Centre of Waste Management - Abu Dhabi.

\* Does not include waste of oil and gas sector.

## Hazardous Waste

The hazardous solid waste consists of medical and biohazardous waste and waste generated by industrial and oil/ gas sectors. Hazardous solid waste in 2011 amounted to 126 thousand tons. Table (6) reveals that 60.4 per cent of the hazardous solid waste received a special treatment, while 33.1 per cent was sent to hazardous waste special dump and 6.5 per cent was incinerated. 9,852 tons of liquid hazardous waste been disposed in 2011 originating from industrial activities in the emirate.

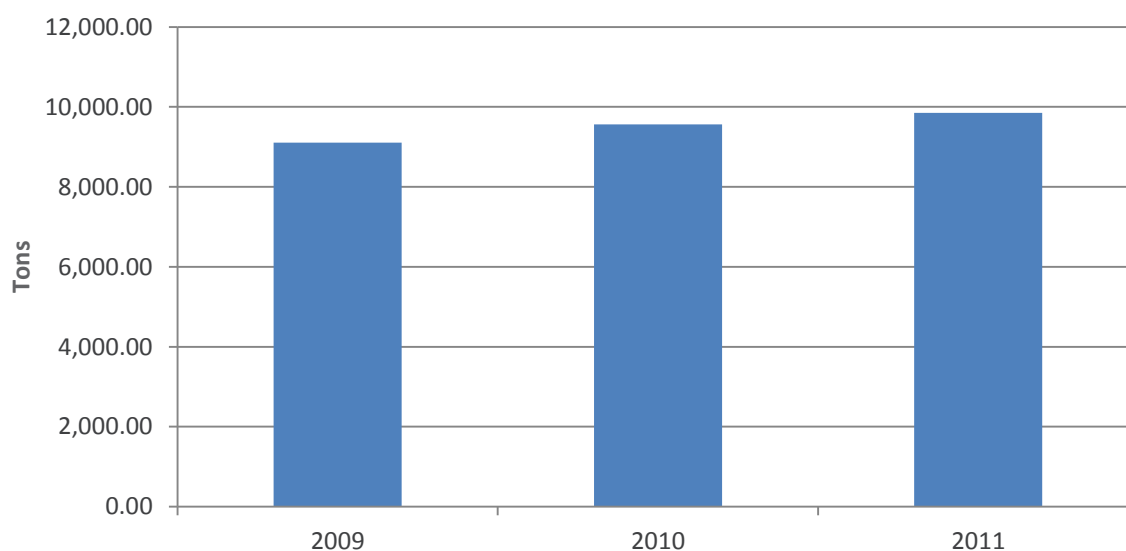
**Table (5): Hazardous solid waste generation by source activity**

(Tons)

Source	2009	2010	2011
Industrial	18,033	18,935	19,503
Medical	4,657	4,890	5,037
Slaughterhouses Wastes	24,857	26,100	26,883
Fallen stocks Other	9,714	10,200	10,506
Oil and Gas sector	13,581	72,388	64,226
<b>Total</b>	<b>70,842</b>	<b>132,513</b>	<b>126,155</b>

Source: The Centre of Waste Management - Abu Dhabi, ADNOC.

**Chart (5): Industrial hazardous liquid waste generated**



Source: The Centre of Waste Management - Abu Dhabi.



**Table (6): Hazardous waste generation by disposal method and source activity, 2011**

(Tons)

Source	Total	Hazardous Waste dump	Incineration and ash to hazardous waste dump	Special treatment in the general dump and other
Industrial	29,355.0	19,503.0	na	9,852.0
Medical	5,036.7	na	1,421.4.0	3,615.3
Wastes Slaughterhouses	26,883.0	18,540.0	na	8,343.0
Fallen stocks Other	10,506.0	3,708.0	6,798.0	na
Oil and Gas sector	64,226.0	na	na	64,226.0
<b>Total</b>	<b>136,006.7</b>	<b>41,751.0</b>	<b>8,219.4</b>	<b>86,036.3</b>

Source: The Centre of Waste Management - Abu Dhabi, ADNOC.

## Waste Management Plants

The total number of waste management projects in the Emirate of Abu Dhabi in 2011 was 35 plants, of which there are 11 dumpsites and 6 special treatment projects.

**Table(7): Waste management plants in Emirate of Abu Dhabi**

Region	Dumpsite	incineration	Composting	Special treatment	Other	Total
Abu Dhabi	1	0	2	4	6	13
Al Ain	2	2	1	2	6	13
Al Gharbia	8	0	1	0	0	9
<b>Total</b>	<b>11</b>	<b>2</b>	<b>4</b>	<b>6</b>	<b>12</b>	<b>35</b>

Source: The Centre of Waste Management - Abu Dhabi.

## Explanatory Notes

### Technical Terms

This report contains certain terms related to waste; these terms play an important role when analyzing waste statistics for the Emirate of Abu Dhabi. The report includes the following terms:

#### **Municipal Solid Waste (MSW)**

The waste that consists of organic materials and trash generated in the kitchen and other households uses. MSW is generated by households and buildings in the residential areas.

#### **Commercial and Industrial Waste**

It basically includes municipal waste generated by restaurants, hotels, shopping malls, labour camps and other public and private facilities.

#### **Industrial Hazardous Waste**

The waste generated from industrial activities, laboratories, workshops and other public and private facilities that deal with hazardous materials.

#### **Medical Hazardous Waste**

The waste generated from hospitals, clinics and medical laboratories. It consists of human parts, tissues, blood, and waste resulting from surgical operations.

#### **Mixed Waste**

The waste composed of household trash mixed with building materials and sand in storage locations and / or during the collection.

#### **Safe Waste Landfill**

The site, where waste is buried and processed in secure cells. Unlike medical waste landfill, safe waste landfill has no sewage system for contaminated water.

#### **Waste Tires**

Waste tires collected from factories and repair workshops.

#### **Construction and Demolition Waste**

The waste results from construction and demolition activities.

#### **Slaughterhouse Waste**

The waste that composed of animals remains and is generated from slaughterhouses and animal shelters.

#### **Large-scale Waste**

The waste composed of unwanted household items and packaging materials resulted from commercial activities.

## Data Source

The main sources of the statistics are the Centre of Waste Management – Abu Dhabi, and Abu Dhabi National Oil Company (ADNOC). Data was processed in the Statistics Centre – Abu Dhabi (SCAD) for more editing and research.

## Technical Notes

### Methodology

Waste generation data in Abu Dhabi, Al Ain and Al Gharbia regions was calculated based on truck scale reports. In case reports were not available, data was calculated based on reports collected from waste contractors and waste sites.

Medical waste data in Abu Dhabi and Al Gharbia regions was estimated based on Al Ain data (actual data derived from truck scale reports of medical waste incineration sites).

## Notes on Tables

Changes (levels and per cent) in all tables are based on unrounded numbers.

## More information

For more information about waste and other official statistics for Abu Dhabi Emirate, please visit the statistics link on the SCAD website at <http://www.scad.ae>

Next release is expected in February 2013 covering 2011 data.

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