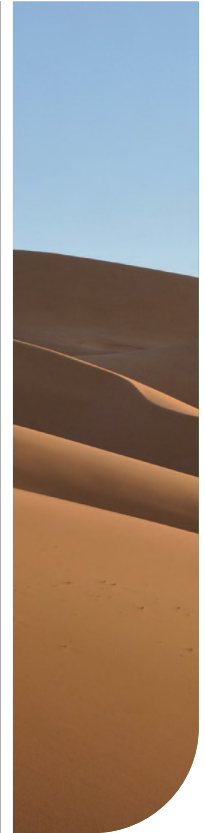
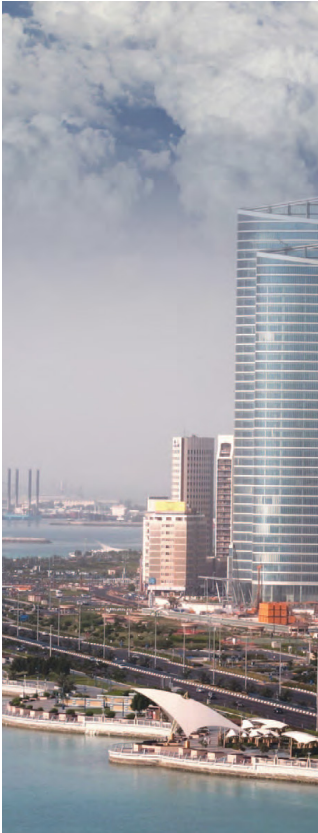




مركز الإحصاء  
STATISTICS CENTRE



# Waste Statistics 2013

Release Date: December 2014

## Contents

<b>Introduction</b> .....	<b>3</b>
Waste in Abu Dhabi Emirate .....	4
Non-hazardous waste .....	5
Solid waste generation .....	5
Solid Waste Disposal .....	8
Municipal solid waste .....	9
Hazardous Waste .....	10
Waste Management Plants .....	11
<b>Explanatory Notes</b> .....	<b>12</b>
Technical Terms .....	12
<b>Data Sources</b> .....	<b>13</b>
<b>Technical Notes</b> .....	<b>13</b>
Methodology .....	13
<b>Notes on Tables</b> .....	<b>13</b>
<b>More information</b> .....	<b>13</b>

## Introduction

This report presents statistics on waste generation in the Emirate of Abu Dhabi for the year 2013, 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 and Abu Dhabi National Oil Company (ADNOC) are the main sources 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.

## Waste in Abu Dhabi Emirate

Waste known as the unwanted materials caused by the daily activities of human beings, whether domestic or municipal or industrial activities. Waste management and treatment are of particular interest to the government of Abu Dhabi Emirate in order to minimize the waste effects on health.

The amount of solid waste generated in the Emirate of Abu Dhabi totaled about 11.9 million tons in 2013; non-hazardous waste formed 99.6%, while hazardous waste accounted for a small proportion of about 0.4% as shown in Table (1).

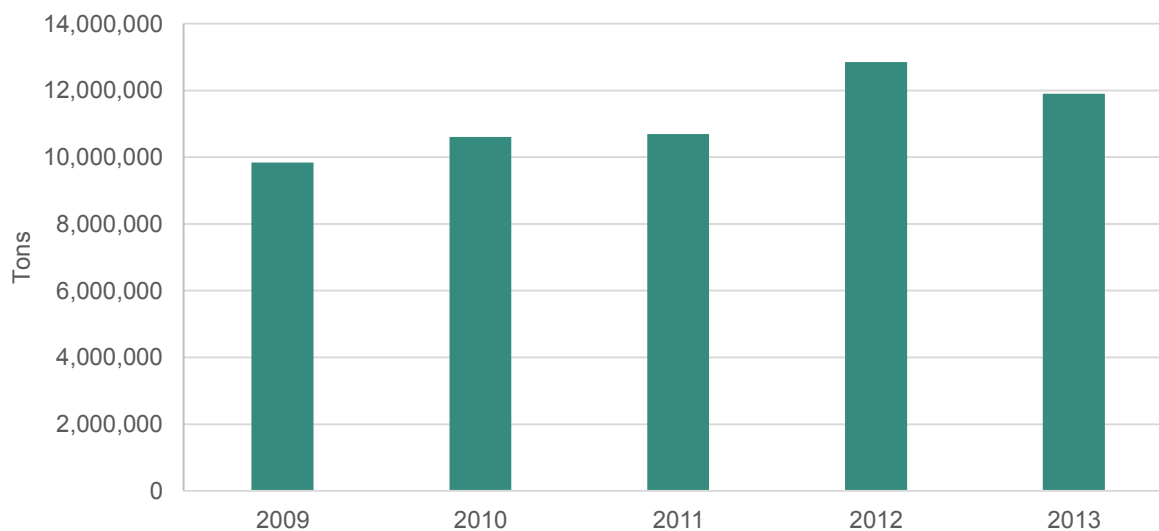
**Table (1): Total Non-hazardous and hazardous solid waste in Abu Dhabi Emirate**

(Tons)

Source	2009	2011	2012	2013
<b>Total</b>	<b>9,839,206</b>	<b>10,691,186</b>	<b>12,845,934</b>	<b>11,942,922</b>
Non-hazardous waste	9,768,364	10,565,031	12,765,163	11,856,076
Hazardous waste	70,842	126,155	80,771	86,848

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

**Figure (1): Total of solid waste in Abu Dhabi Emirate**



Source: Statistics Center – Abu Dhabi.

## Non-hazardous waste

Non-hazardous waste refers to materials that cause no serious environmental problems and are easy to dispose in an environmentally safe manner. The economic growth witnessed by the Emirate in various fields such as construction and demolition activities, in addition to industrial, commercial and agricultural activities caused an increase in the amount of waste generated over the years. Over the years, waste treatment and management have been developed to cope with the increase of waste amount.

## Solid waste generation

Table (2) refers to the amount of waste generated in the Emirate of Abu Dhabi by source, and economic activity. It also illustrates the change happened between 2009 and 2013. Data shows that the total amount of waste in 2013 increased by 20.9%; construction and demolition waste accounted for more than 64.9%. The daily per capita municipal waste was approximately 1.7 kg /day as shown in figure (2).

**Figure (2): Amount of municipal waste per capita**



Source: Statistics Center – Abu Dhabi.

**Table (2): Non-hazardous solid waste generation by source activity**

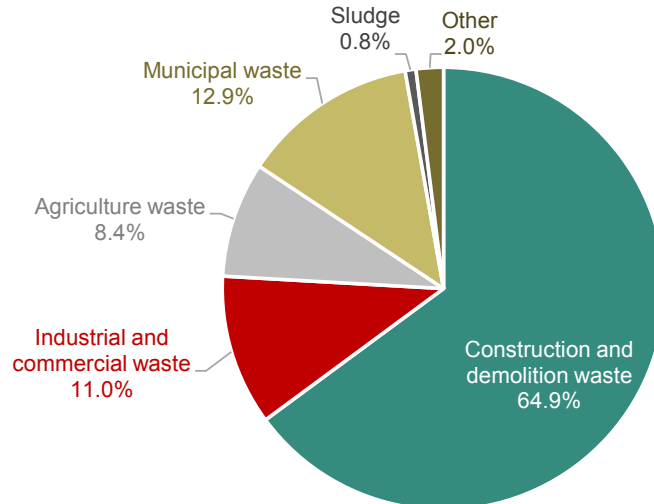
(Tons)

Source	2009	2011	2012	2013
<b>Total</b>	<b>9,768,363</b>	<b>10,565,031</b>	<b>12,765,163</b>	<b>11,856,076</b>
<b>Construction and demolition waste</b>	<b>7,050,000</b>	<b>7,624,575</b>	<b>9,628,309</b>	<b>7,692,921</b>
C & D waste	4,692,857	5,075,325	5,721,367	2,767,342
C & D mixed waste	2,357,143	2,549,250	3,906,942	4,925,578
<b>Industrial and commercial waste</b>	<b>594,857</b>	<b>643,338</b>	<b>804,174</b>	<b>1,305,556</b>
<b>Agriculture waste</b>	<b>754,571</b>	<b>816,069</b>	<b>898,258</b>	<b>999,239</b>
General agriculture waste	58,571	63,345	305,749	339,078
Agriculture mixed waste	551,714	596,679	449,114	488,474
Animal waste	144,286	156,045	143,395	171,687
<b>Municipal waste</b>	<b>1,022,286</b>	<b>1,105,602</b>	<b>1,272,668</b>	<b>1,528,093</b>
Households, streets, and public gardens waste	794,571	859,329	1,059,219	1,234,336
Bulky waste	227,714	246,273	213,449	293,757
<b>Sludge</b>	<b>124,827</b>	<b>135,000</b>	<b>59,261</b>	<b>93,474</b>
<b>Other *</b>	<b>221822</b>	<b>240447</b>	<b>102493</b>	<b>236793</b>

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

\* include oil and gas sector waste and tires waste

**Figure (3): Percentage distribution of Non-hazardous solid waste by source activity - 2013**



Source: Statistic Centre - Abu Dhabi.

Table (3) shows the amount of non-hazardous solid waste by region; the average daily production of waste in the Emirate of Abu Dhabi in 2013 was about 32.5 thousand tons / day, while the total amount of waste was about 11.9 million tons / year. Abu Dhabi region generated about 57.8%. Chart (4) shows a comparison of waste generated between the regions.

**Table (3): Non-hazardous solid waste generation by region and source activity, 2013**

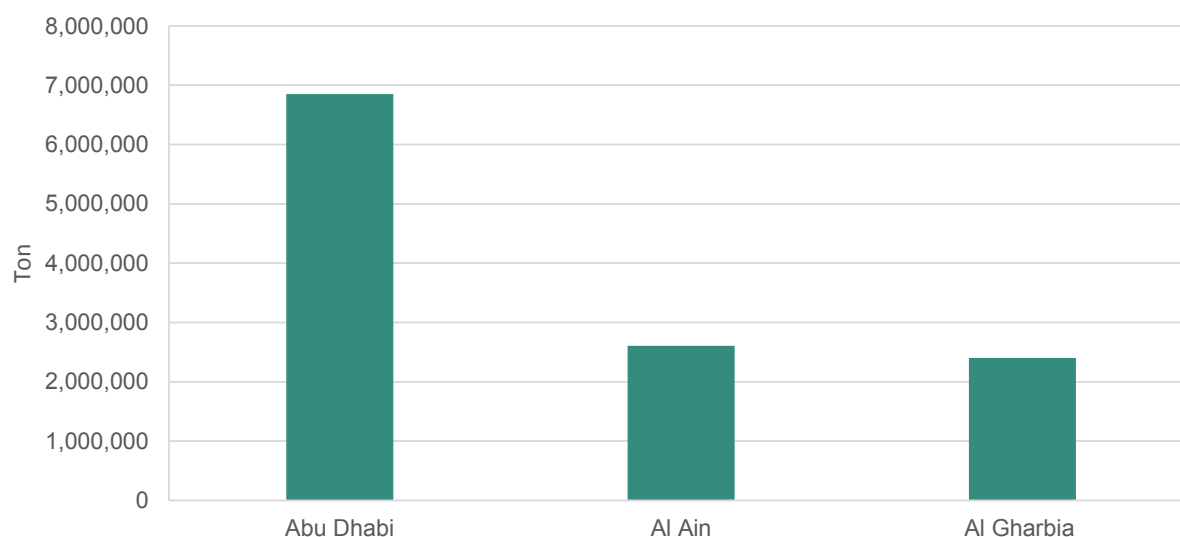
(Tons)

Source	Total	Abu Dhabi	Al Ain	Al Gharbia
<b>Total</b>	<b>11,856,076</b>	<b>6,850,287</b>	<b>2,605,633</b>	<b>2,400,156</b>
<b>Daily average</b>	<b>32,482</b>	<b>18,768</b>	<b>7,139</b>	<b>6,576</b>
<b>Construction and demolition waste</b>	<b>7,692,921</b>	<b>4,662,356</b>	<b>1,386,252</b>	<b>1,644,313</b>
C & D waste	2,767,342	1,721,818	474,346	571,178
C & D mixed waste	4,925,578	2,940,538	911,905	1,073,135
<b>Industrial and commercial waste</b>	<b>1,305,556</b>	<b>550,250</b>	<b>380,000</b>	<b>375,306</b>
<b>Agriculture waste</b>	<b>999,239</b>	<b>370,979</b>	<b>459,696</b>	<b>168,564</b>
General agriculture waste	339,078	120,000	142,078	77,000
Agriculture mixed waste	488,474	190,107	237,279	61,088
Animal waste	171,687	60,872	80,339	30,476
<b>Municipal waste</b>	<b>1,528,093</b>	<b>991,105</b>	<b>327,627</b>	<b>209,361</b>
Households, streets, and public gardens waste	1,234,336	857,831	232,430	144,075
Bulky waste	293,757	133,274	95,197	65,286
<b>Sludge</b>	<b>93,474</b>	<b>56,834</b>	<b>36,062</b>	<b>578</b>
<b>Other *</b>	<b>236,793</b>	<b>218,763</b>	<b>15,996</b>	<b>2,034</b>

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

\* include oil and gas sector waste and tires waste

**Figure (4): Non-hazardous solid waste by region- 2013**



Source: Statistic Centre - Abu Dhabi.

## Solid Waste Disposal

Table (4) displays the quantity of solid waste by method of disposal, showing that waste recycling increased from 23.6% in 2009 to 27% in 2013. Solid waste composted increased as well from 1.7% to 3.9% during the same years.

**Table (4): Solid waste generation by method of disposal - 2013**

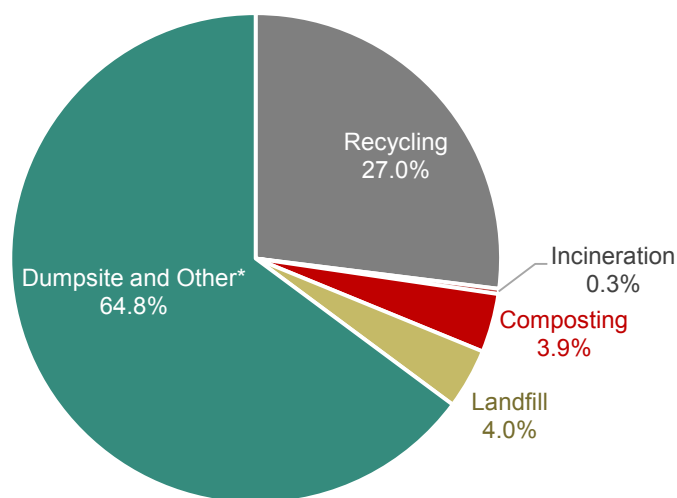
(Tons)

Source	2009	2011	2012	2013
<b>Total</b>	<b>9,768,364</b>	<b>10,565,031</b>	<b>12,765,163</b>	<b>11,856,076</b>
Recycling	2,308,000	3,802,848	3,805,411	3,198,113
Incineration	-	34,029	37,830	40,917
Composting	170,667	269,786	367,273	458,491
Landfill	137,429	367,263	452,704	470,725
Dumpsite and Other *	7,152,268	6,091,105	8,101,945	7,687,830

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

\* Disposed through other specialized companies.

**Figure (5): Percentage distribution of solid waste by source and method of disposal**



Source: Statistic Centre - Abu Dhabi.

\*Disposed through other specialized companies.



## Municipal solid waste

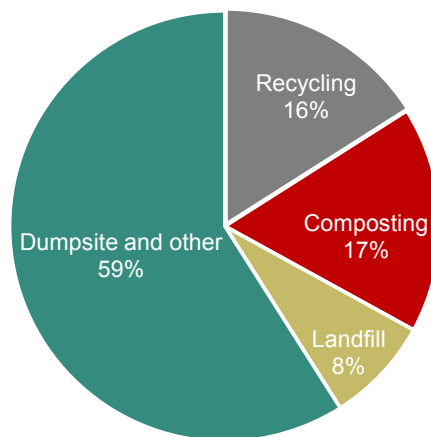
Municipal solid waste in the Emirate of Abu Dhabi totaled 1.5 million tons in 2013, of which 59% was disposed in dumpsite, while 17% was composted to be used in agricultural field as shown in Table (5). Figure (6) shows the relative distribution of municipal solid waste.

**Table (5): Municipal solid waste by method of disposal**  
(Tons)

Method of disposal	2012	2013
<b>Total</b>	<b>1,272,668</b>	<b>1,528,093</b>
Recycling	197,590	244,495
Composting	216,000	259,776
Landfill	103,120	122,247
Dumpsite and other	755,958	901,575

Source: The Centre of Waste Management - Abu Dhabi.

**Figure (6): Percentage distribution of municipal solid waste by method of disposal - 2013**



Source: The Centre of Waste Management - Abu Dhabi.

## Hazardous Waste

Hazardous solid waste consists of medical waste in addition to waste generated by industrial and oil/ gas sectors. Hazardous solid waste totaled 42.2 thousand tons in 2013. Table (7) reveals that 20% of the hazardous solid waste received a special treatment, while 63% was sent to hazardous waste dump and 17% was incinerated.

**Table (6): Hazardous solid waste generation by source activity**

(Tons)

Source	2009	2011	2012	2013
Industrial waste	18,033	19,503	30,758	-
Medical waste	4,657	5,037	6,000	6,000
Slaughterhouses waste	24,857	26,883	31,931	11,768
Other fallen stocks waste	9,714	10,506	-	20,257
Oil and Gas sector waste	13,581	64,226	12,082	44,649
<b>Total</b>	<b>70,842</b>	<b>126,155</b>	<b>80,771</b>	<b>82,674</b>

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

**Table (7): Hazardous waste generation by disposal method and source activity - 2013**

(Tons)

Source	Total	Hazardous Waste dump	Incineration and ash to hazardous waste dump	Special treatment in the general dump and other
Industrial waste	-	-	-	-
Medical waste	6,000	2,000	-	4,000
Slaughterhouses waste	11,768	11,768	-	-
Other*	64,900	12,973	7,284	-
<b>Total</b>	<b>82,674</b>	<b>26,741</b>	<b>7,284</b>	<b>4,000</b>

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

\* Include oil and gas sector waste

## Waste Management Plants

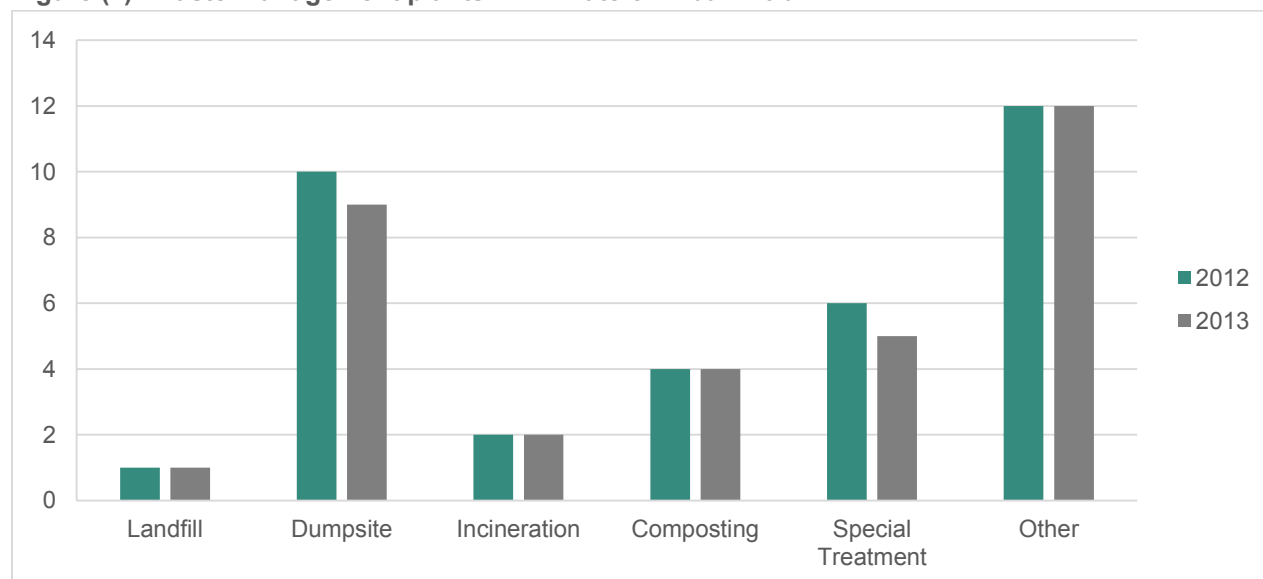
The Government of Abu Dhabi is keen to provide a healthy environment and it pays a special attention to advanced waste treatment methods. The total number of waste management projects in the Emirate of Abu Dhabi reached 35 projects in 2013, including 9 landfills, and 7 special treatment projects.

**Table (8): Waste management plants in Emirate of Abu Dhabi - 2013**

Item	Abu Dhabi	Al Ain	Al Gharbia
<b>Total</b>	<b>13</b>	<b>14</b>	<b>8</b>
Landfill	0	1	0
Dumpsite	1	1	7
Incineration	0	2	0
Composting	2	1	1
Special Treatment	4	3	0
Other	6	6	0

Source: The Centre of Waste Management - Abu Dhabi.

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



Source: Statistic Centre - 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 Sources

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 December 2015 covering 2014 data.

w w w . s c a d . a e

Tel: +971 2 8100000 - Fax: +971 2 8100800

P.O. Box: 6036, Abu Dhabi, U.A.E.