

# 2019



مركز الإحصاء  
STATISTICS CENTRE



## Waste Statistics in Abu Dhabi Emirates

**Issue Date:**  
Jul 2020

[www.scad.gov.ae](http://www.scad.gov.ae)



## Contents

<b>INTRODUCTION</b> .....	<b>2</b>
OBJECTIVE .....	2
<b>WASTE IN ABU DHABI EMIRATE</b> .....	<b>4</b>
<b>NON-HAZARDOUS WASTE</b> .....	<b>6</b>
<b>NON HAZARDOUS SOLID WASTE GENERATION</b> .....	<b>6</b>
<i>Construction and demolition waste</i> .....	8
<i>Industrial and Commercial Waste</i> .....	10
<i>Agricultural Waste</i> .....	11
<i>Municipal Waste</i> .....	12
<b>SOLID WASTE DISPOSAL</b> .....	<b>13</b>
<b>MUNICIPAL SOLID WASTE</b> .....	<b>15</b>
<b>HAZARDOUS WASTE</b> .....	<b>16</b>
<i>Hazardous Industrial Waste</i> .....	18
<i>Hazardous Medical Waste</i> .....	19
<b>WASTE MANAGEMENT PLANTS</b> .....	<b>20</b>
<b>EXPLANATORY NOTES</b> .....	<b>21</b>
GLOSSARY .....	21
<b>DATA SOURCES</b> .....	<b>22</b>
<b>THE METHODOLOGY USED</b> .....	<b>22</b>
<b>NOTES ON TABLES</b> .....	<b>22</b>
<b>ADDITIONAL INFORMATION AND DETAILED RELEASE</b> .....	<b>22</b>
<b>REVISION POLICY</b> .....	<b>22</b>
<b>DISCLAIMERS AND TERMS OF USE</b> .....	<b>22</b>





## Introduction

Based on the saying of the late Sheikh Zayed bin Sultan Al Nahyan, may God rest his soul in peace: "Cleanliness is a civilizational value that reflects the public awareness of nations and complements their achievements in the form of beautiful cities free from waste and harmful emissions." In light of the great and accelerated economic development and the vast urban expansion of Abu Dhabi Emirate, along with the rapid population growth whether of residents or tourists, Abu Dhabi Emirate is keeping pace with these developments and conducting a statistical study on the waste left behind by the community in the said Emirate.

## Objective

1. Providing the statistical data needed to support policies and decision-making for waste management in the Emirate of Abu Dhabi.
2. Providing the data needed to measure the change in the waste management.
3. Providing support to Abu Dhabi government in projects related to waste statistics for the Emirate of Abu Dhabi.





## Executive summary

The Emirate of Abu Dhabi has undergone a remarkable growth in monitoring the amount of waste generated to approximately 11.2 million tons at an increase of 12% compared to 2018. This is due to the high generation of non-hazardous solid waste from industrial and trade activities at 16%. The growth has also led by the increase of amount of waste generated from construction and demolition activities, which increased by 19%. The waste production monthly monitoring shows that the overall non-hazardous solid waste has reached its peak in March, 2019 at 1.029 million tons. On the other hand, the production of industry and trade activities has reached its peak in January at 433 thousand tons, the production of construction and demolition waste has reached its peak in April at 391 thousand tons. Abu Dhabi Region generate around of 60% of total non-hazardous solid waste, Al Ain Region around 32%, and Al Dhafra Region around 8%.

The Centre of Waste Management - Abu Dhabi (Tadweer) has also undergone a remarkable development in the sustainable treatment and management of waste as the recycled waste increased at 35%, reaching about 3.9 million tons, of which the construction and demolition waste forms about 53%. Moreover, a decrease by around 80% was observed on the amount of agricultural waste converted into compost from 110 thousand tons in 2018 to 21 thousand tons in 2019



## 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 totalled about 11,228 million tons in 2019, non-hazardous waste formed 98 percent, while hazardous waste accounted for a small proportion of about 2 percent, as shown in Figure (1), there is a gradual decrease in the amount of solid waste from 2012 to 2015 and a slight increase between 2016 to 2019.

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

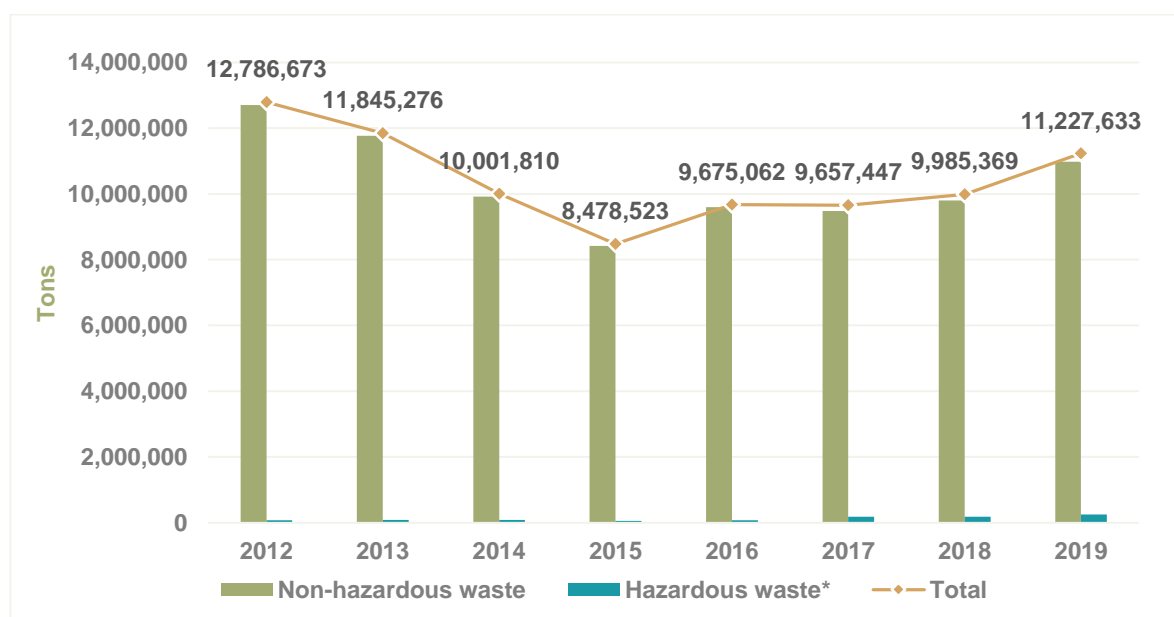
(Tons)

Source	2012	2013	2014	2015	2016	2017	2018	2019
<b>Total</b>	<b>12,786,673</b>	<b>11,845,276</b>	<b>10,001,810</b>	<b>8,478,523</b>	<b>9,675,062</b>	<b>9,657,447</b>	<b>9,985,369</b>	<b>11,227,633</b>
Non-hazardous waste	12,705,902	11,762,602	9,918,590	8,420,998	9,598,969	9,477,037	9,803,432	10,979,476
Hazardous waste*	80,771	82,674	83,220	57,525	76,093	180,410	181,937	248,157

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

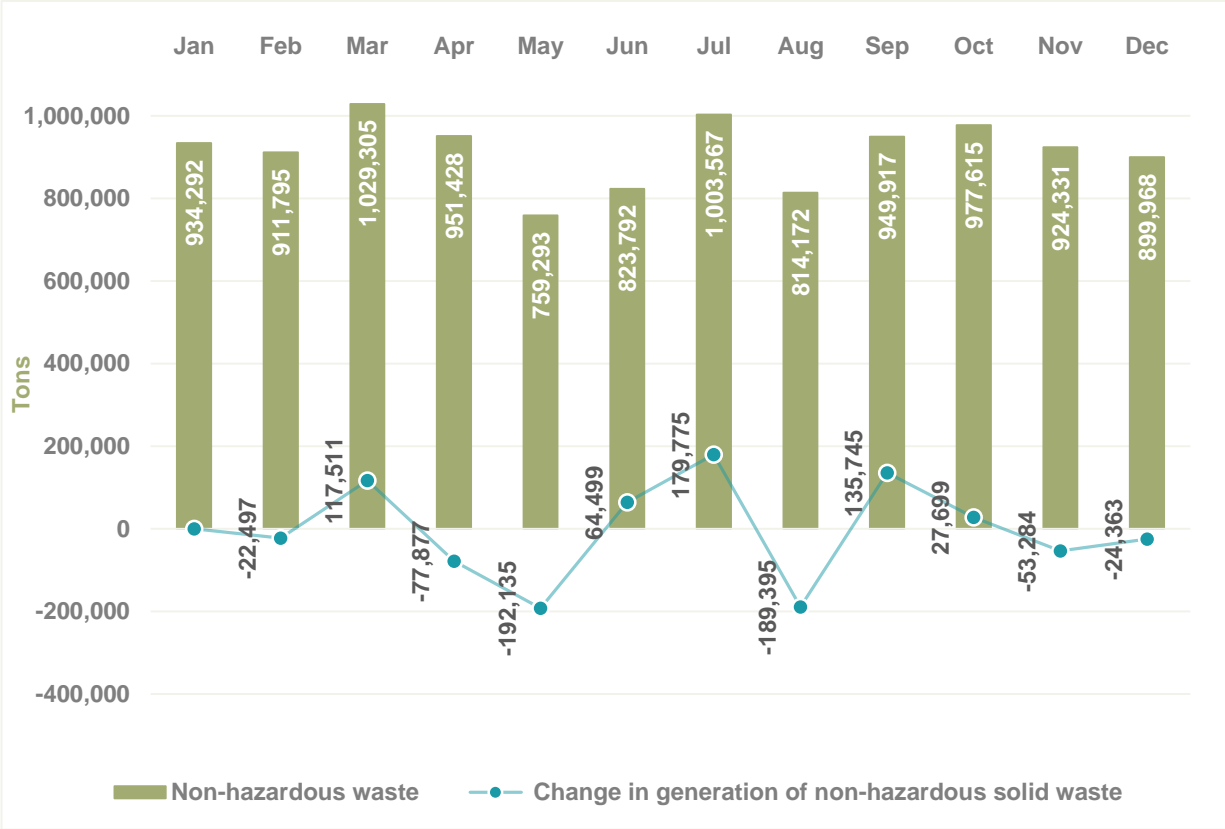
\* Data of hazardous wastes exports were Included in 2019.

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



Source: Statistics Center – Abu Dhabi

**Figure 2: Total of solid waste in Abu Dhabi Emirate by month in 2019**



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 in the Emirate in various fields such as construction and demolition activities, in addition to industrial, commercial and agricultural activities, which required promoting of waste reduction practices to limit the growth in waste generation amounts

### Non hazardous 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 2012 and 2019. Data shows that the total amount of waste in 2019 decreased by 13.6 %, construction and demolition waste reached 37.3% of Total amount Non-hazardous solid waste in 2019.

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

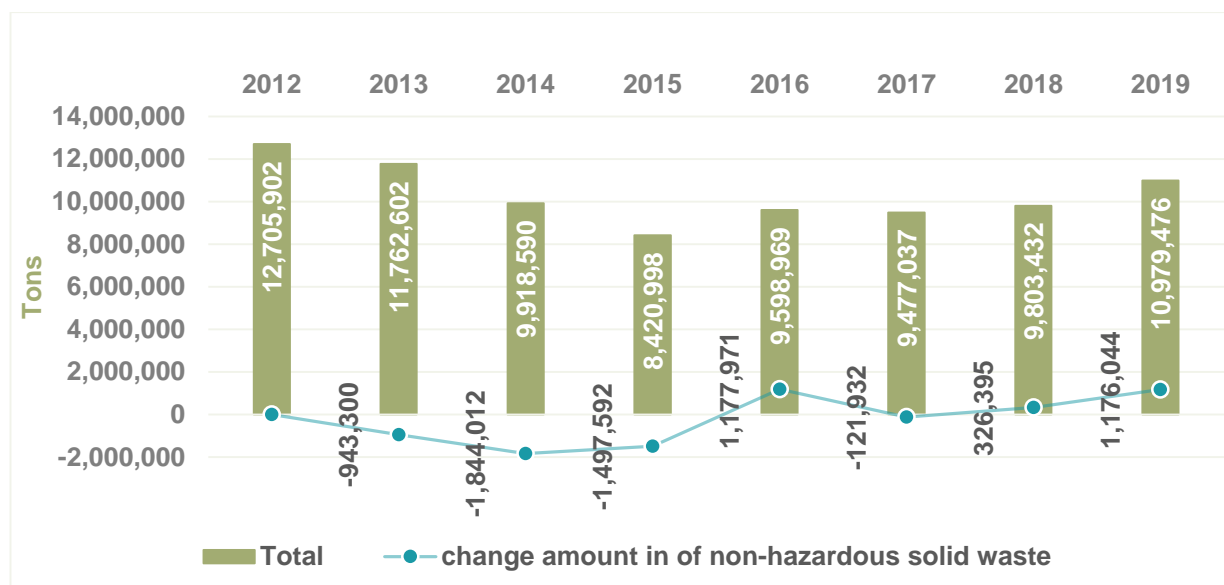
(Tons)

Source	2012	2013	2014	2015	2016	2017	2018	2019
<b>Total</b>	<b>12,705,902</b>	<b>11,762,602</b>	<b>9,918,590</b>	<b>8,420,998</b>	<b>9,598,969</b>	<b>9,477,037</b>	<b>9,803,432</b>	<b>10,979,476</b>
Construction and demolition waste	9,628,309	7,692,921	4,419,665	2,876,313	4,532,379	3,959,319	3,102,631	3,703,033
Industrial and commercial waste	804,174	1,305,556	3,312,125	3,306,644	2,692,768	3,169,212	3,543,264	4,094,397
Agriculture waste	898,258	999,239	561,991	493,106	745,644	933,505	1,310,721	1,198,789
Municipal waste	1,272,668	1,528,093	1,466,590	1,678,983	1,561,680	1,372,140	1,793,542	1,927,065
Other*	102,493	236,793	158,219	65,952	66,498	42,861	53,274	56,192

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

\*Include Oil and Gas sector

**Figure 3: Non-hazardous solid waste generation**



Source: Statistics Center – Abu Dhabi

**Table 3: Non-hazardous solid waste generation by region and source activity- 2019**

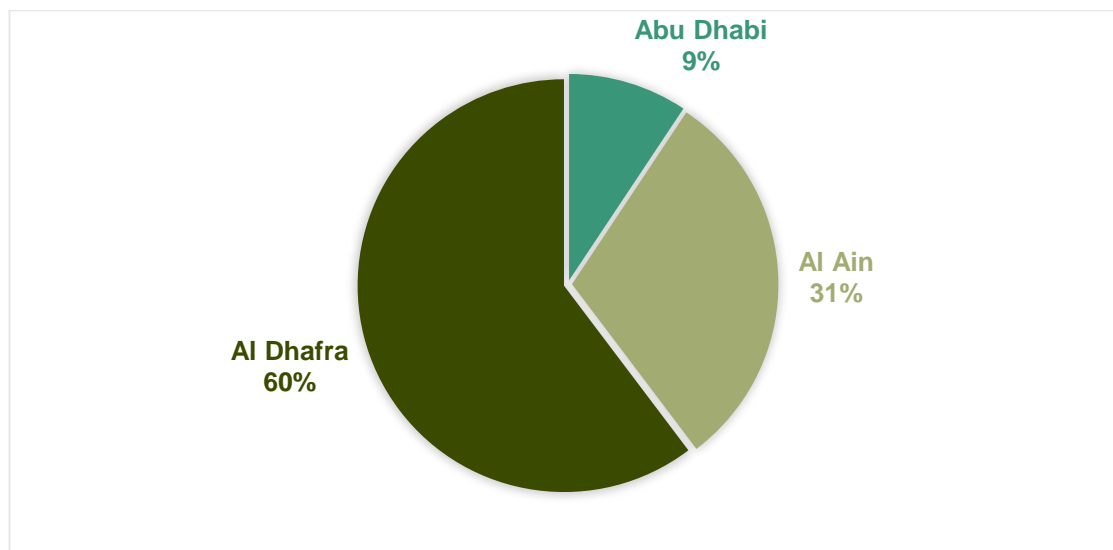
(Tons)

Source	Total	Abu Dhabi	Al Ain	Al Dhafra
<b>Total</b>	<b>10,979,476</b>	<b>6,620,550</b>	<b>3,332,798</b>	<b>1,026,128</b>
Daily average	30,081	18,138	9,131	2,811
Construction and demolition waste	3,703,033	1,808,292	1,313,379	581,363
Industrial and commercial waste	4,094,397	3,210,296	800,944	83,158
Agriculture waste	1,198,789	397,737	602,619	198,433
Municipal waste	1,927,065	1,148,033	615,856	163,175
Other *	56,192	56,192	-	-

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

\* Waste from oil and Gas sector.

**Figure 4: Percentage distribution of Non-hazardous solid waste generation by region- 2019**



Source: Statistics Center – Abu Dhabi



## Construction and demolition waste

Construction waste consists of insulation materials, nails, electrical wires, reinforcing steel, etc. As for demolition waste, it is caused by the destruction of buildings, roads, bridges, or other structures including concrete, wood products, asphalt shingles, brick tiles, clay, steel, and dry walls. It may also contain hazardous materials. Figure (5) & Figure (6) indicates the amount of Non-hazardous solid waste generation by construction and demolition waste, it shows the decrease that occurred in 2019 by 62% compared to 2012.

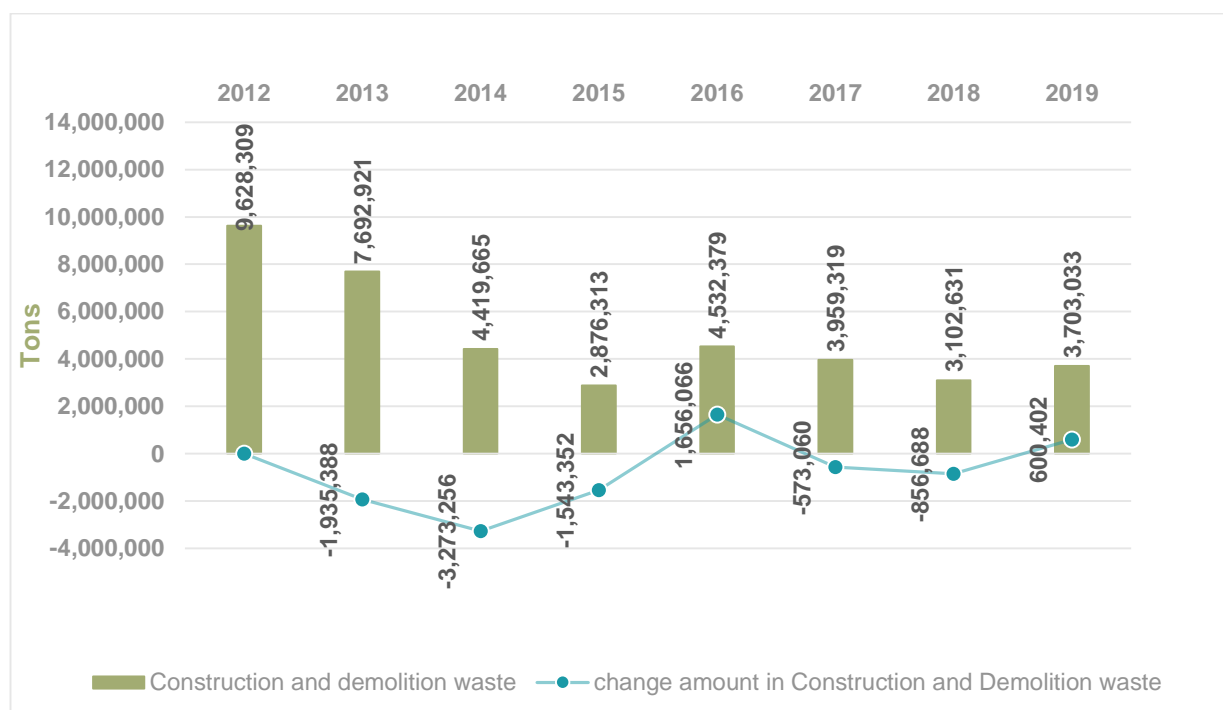
**Table 4: Construction and demolition waste**

(Tons)

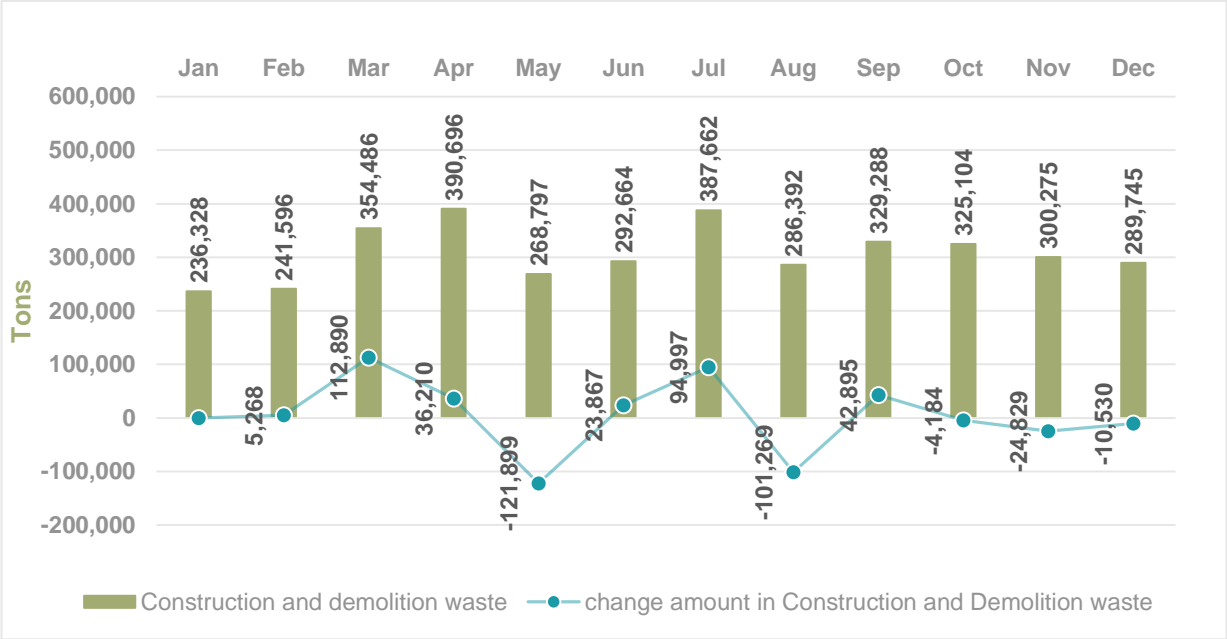
Source	2012	2013	2014	2015	2016	2017	2018	2019
<b>Total</b>	<b>9,628,309</b>	<b>7,692,921</b>	<b>4,419,665</b>	<b>2,876,313</b>	<b>4,532,379</b>	<b>3,959,319</b>	<b>3,102,631</b>	<b>3,703,033</b>
C & D waste	5,721,367	2,767,342	1,723,497	2,042,883	2,580,914	2,589,660	1,884,940	2,070,974
C & D mixed waste	3,906,942	4,925,579	2,696,168	833,430	1,951,465	1,369,659	1,217,691	1,632,059

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

**Figure 5: The annual amount of Non-hazardous solid waste generation by C&D waste**



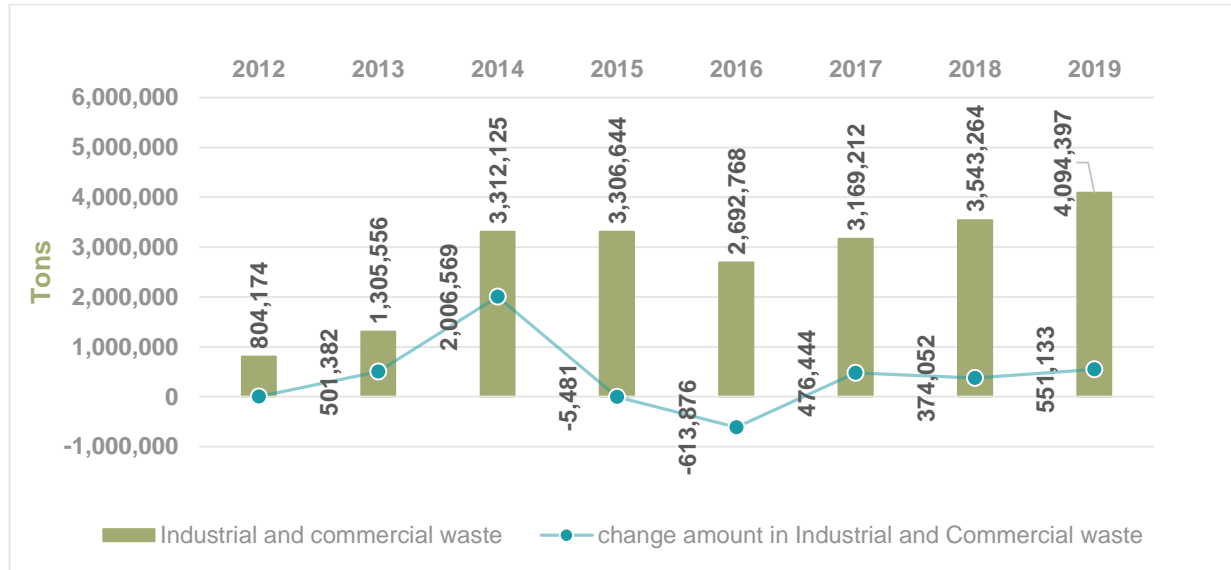
**Figure 6: Non-hazardous solid waste generation by C&D waste by month in 2019**



## Industrial and Commercial Waste

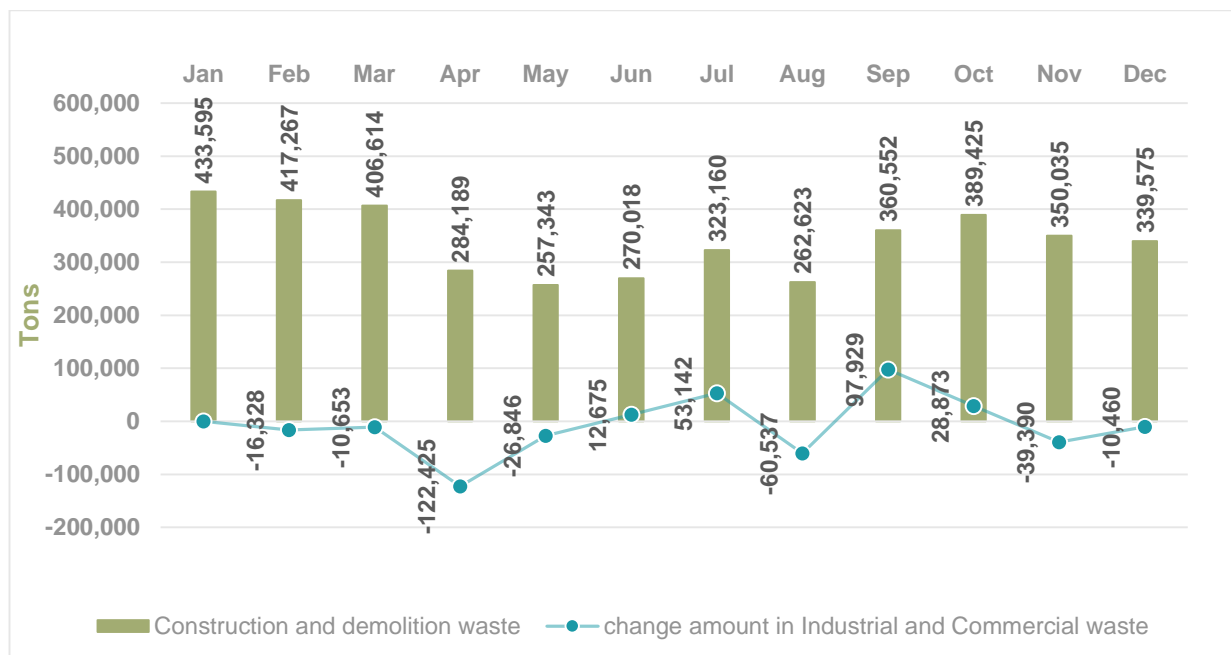
It is the solid waste resulting from warehouses, offices, restaurants, storage facilities and non-industrial activities in industrial establishments, whether hazardous or non-hazardous (determined based on the manufacturing process or laboratory tests). Figure (7) & Figure (8) shows the Non-hazardous solid waste generation by Industrial and commercial waste. It increased by 15.6% in 2019 compared to last year.

**Figure 7: The annual amount of Non-hazardous solid waste generation by Industrial and commercial waste**



Source: Statistics Center – Abu Dhabi

**Figure 8: Non-hazardous solid waste generation by Industrial and commercial waste by month in 2019**

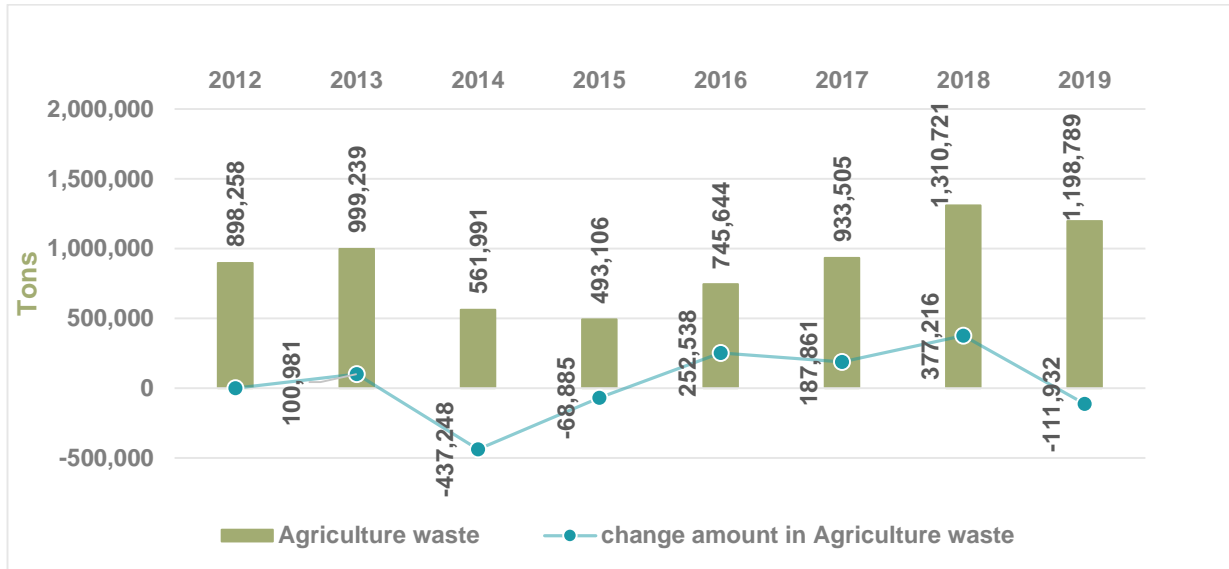


Source: Statistics Center – Abu Dhabi

## Agricultural Waste

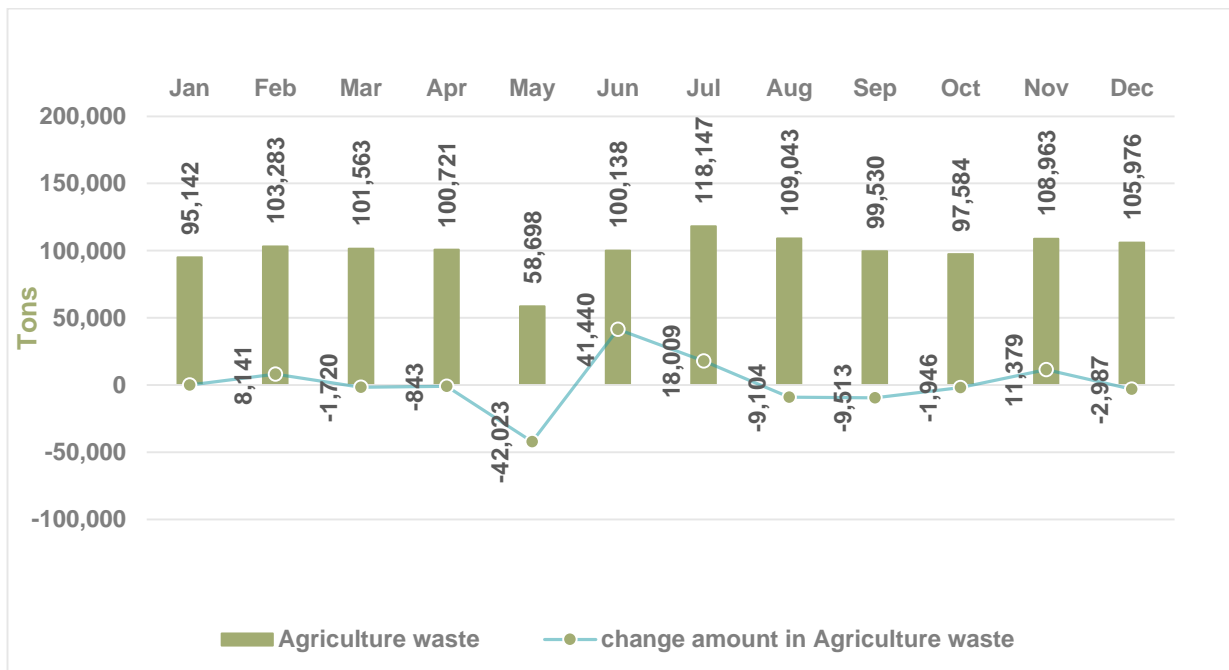
It is the waste generated from agricultural activities, including agricultural crops, gardens, plant waste and animal residues. Figure (9) shows a decrease in the change amount of the total agricultural waste from 2018 to 2019 by 9%. In Figure (10) it shows a gradual decrease in non-hazardous agricultural waste from July to December of 2019

**Figure 9: The annual amount of Non-hazardous solid waste generation by Agriculture waste**



Source: Statistics Center – Abu Dhabi

**Figure 10: Non-hazardous solid waste generation by Agriculture waste by month in 2019**

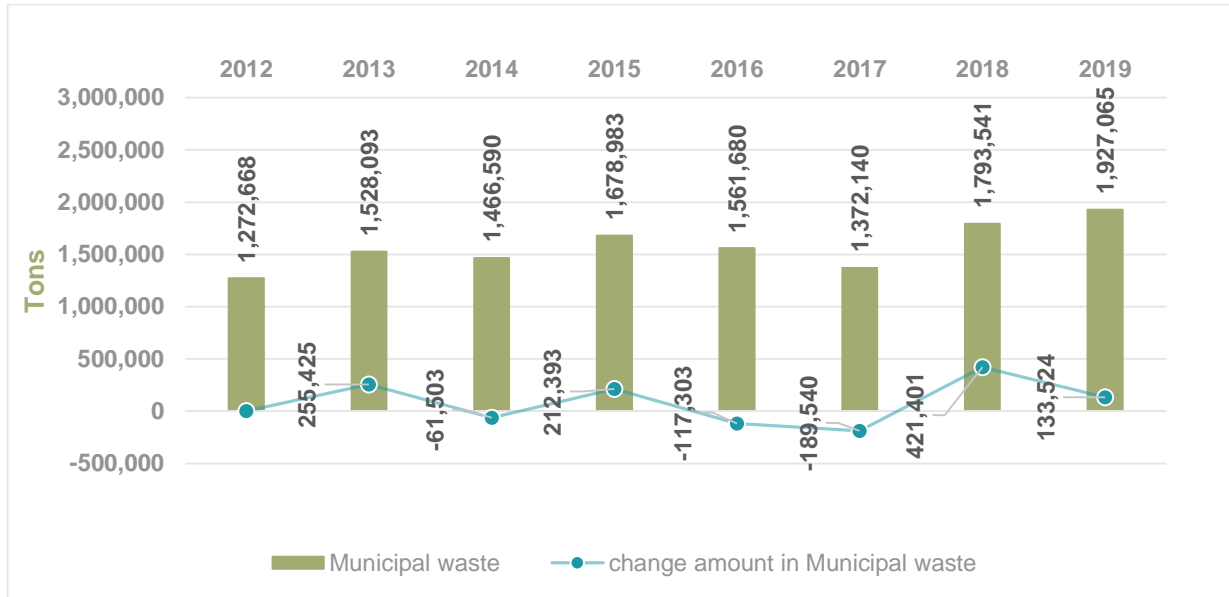


Source: Statistics Center – Abu Dhabi

## Municipal Waste

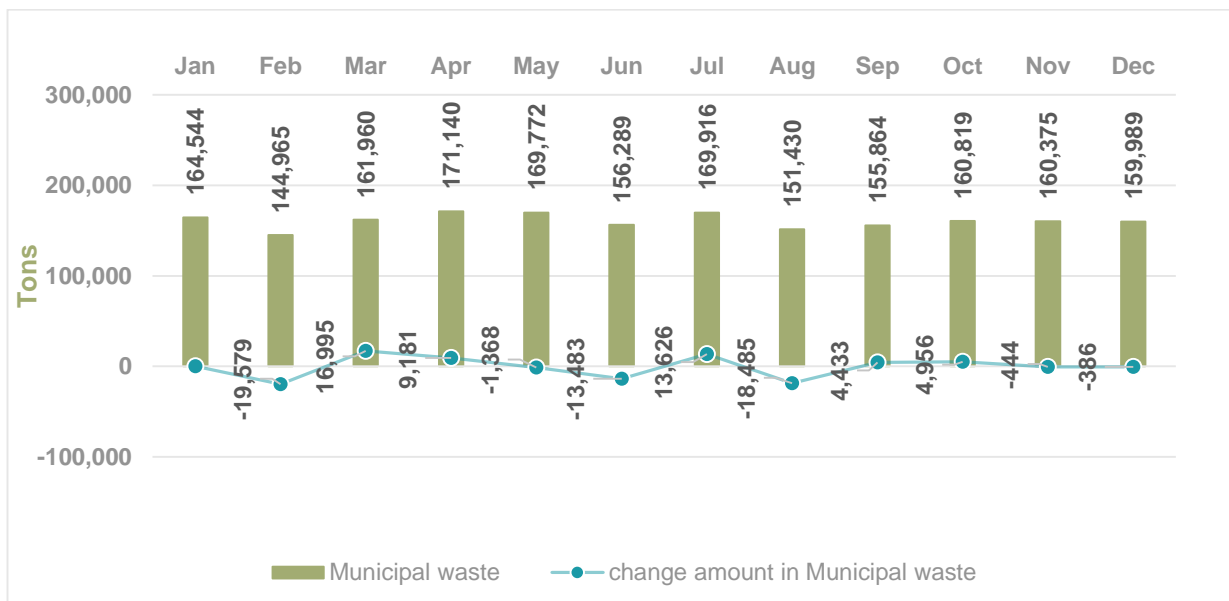
It consists the waste of individuals that start from the residential, commercial, professional, industrial and other places, in Figure (11) it shows the extent of variation in the variables during the year 2012 to 2019. In figure (12) shows the Non-hazardous solid waste generation by Municipal waste increase by 7.4% in 2019 compare to 2018, and in Figure (13) it is shown the daily per capita share of the amount of waste generated during the year 2012 to 2019.

**Figure 11: The annual of Non-hazardous solid waste generation by Municipal waste**



Source: Statistics Center – Abu Dhabi

**Figure 12: Non-hazardous solid waste generation by Municipal waste monthly in 2019**



Source: Statistics Center – Abu Dhabi

## Solid Waste Disposal

Table (5) displays the quantity of solid waste by method of disposal, showing that waste recycling contribution in waste disposing was 35.5 percent in 2019. Solid waste composted is around 0.2 percent from the total waste.

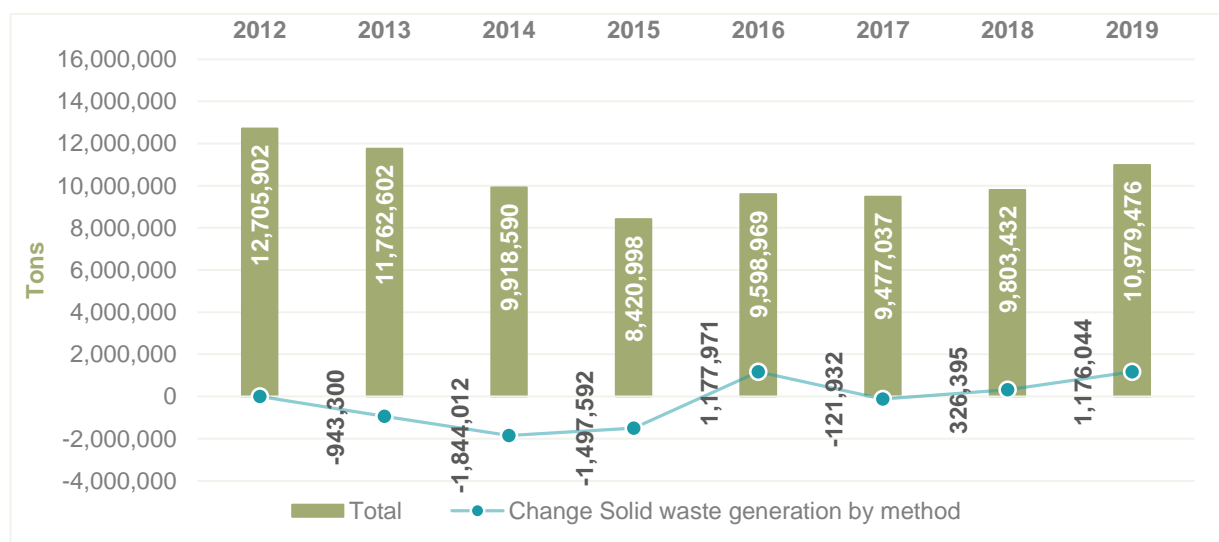
**Table 5: Solid waste generation by method of disposal**  
(Tons)

Source	2012	2013	2014	2015	2016	2017	2018	2019
<b>Total</b>	<b>12,705,902</b>	<b>11,762,602</b>	<b>9,918,590</b>	<b>8,420,998</b>	<b>9,598,969</b>	<b>9,477,037</b>	<b>9,803,432</b>	<b>10,979,476</b>
Recycling	3,805,411	3,198,113	1,812,052	2,189,109	2,854,149	2,687,932	3,329,498	3,894,334
Incineration	37,830	40,917	4,774	21,510	9,824	7,514	7,003	9,061
Composting	367,273	458,491	463,355	452,627	228,126	209,188	110,351	21,629
Landfill	452,704	470,725	149,298	172,794	181,555	561,940	906,164	866,471
Dumpsite and Other*	8,042,684	7,594,356	7,489,111	5,584,958	6,325,315	6,010,463	5,450,416	6,187,981

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

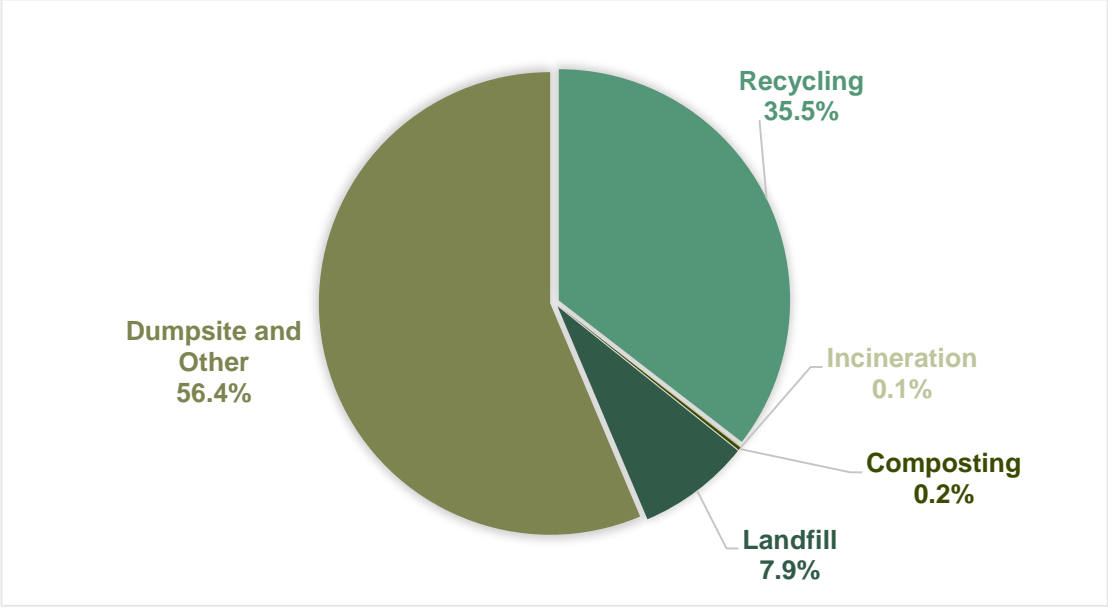
\* Disposed through other specialized companies.

**Figure 13: Solid waste generation by method of disposal**



Source: Statistic Centre - Abu Dhabi

**Figure 14: Percentage distribution of solid waste by method of disposal – 2019**



Source: Statistic Centre - Abu Dhabi

## Municipal Solid Waste

In 2019, the amount of municipal solid waste in Abu Dhabi Emirate amounted to about 1.927 million tons, 21.9 per cent of which was disposed of by recycling as shown in Figure (15). And Figure (16) represents the relative distribution of municipal solid waste according to disposal methods.

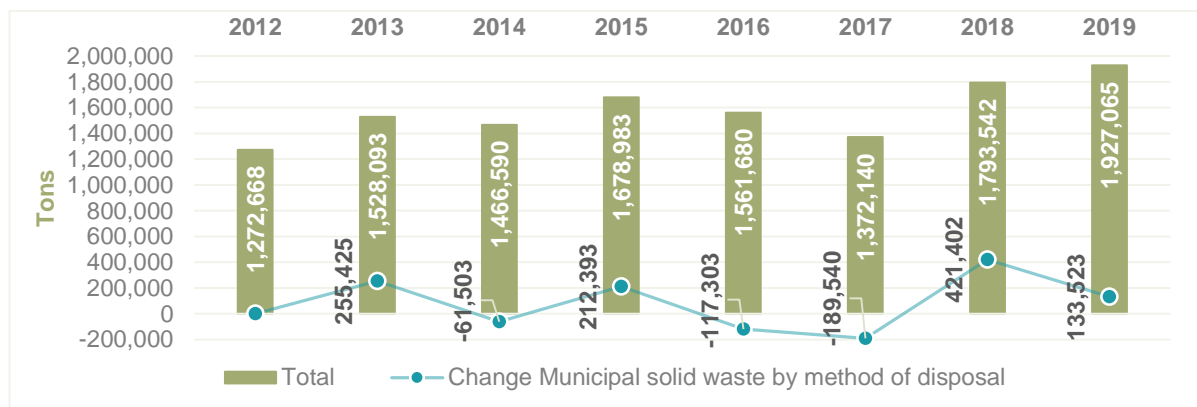
**Table (6): Municipal solid waste by method of disposal**

(Tons)

Method of disposal	2012	2013	2014	2015	2016	2017	2018	2019
<b>Total</b>	<b>1,272,668</b>	<b>1,528,093</b>	<b>1,466,590</b>	<b>1,678,983</b>	<b>1,561,680</b>	<b>1,372,140</b>	<b>1,793,542</b>	<b>1,927,065</b>
Recycling	197,590	244,495	88,555	329,470	266,109	268,302	596,476	421,557
Composting	216,000	259,776	146,636	148,246	151,133	148,866	84,068	-
Landfill	103,120	122,247	149,298	154,209	164,387	177,932	527,261	353,225
Dumpsite and other	755,958	901,575	1,082,101	1,047,058	980,050	777,040	585,737	1,152,283

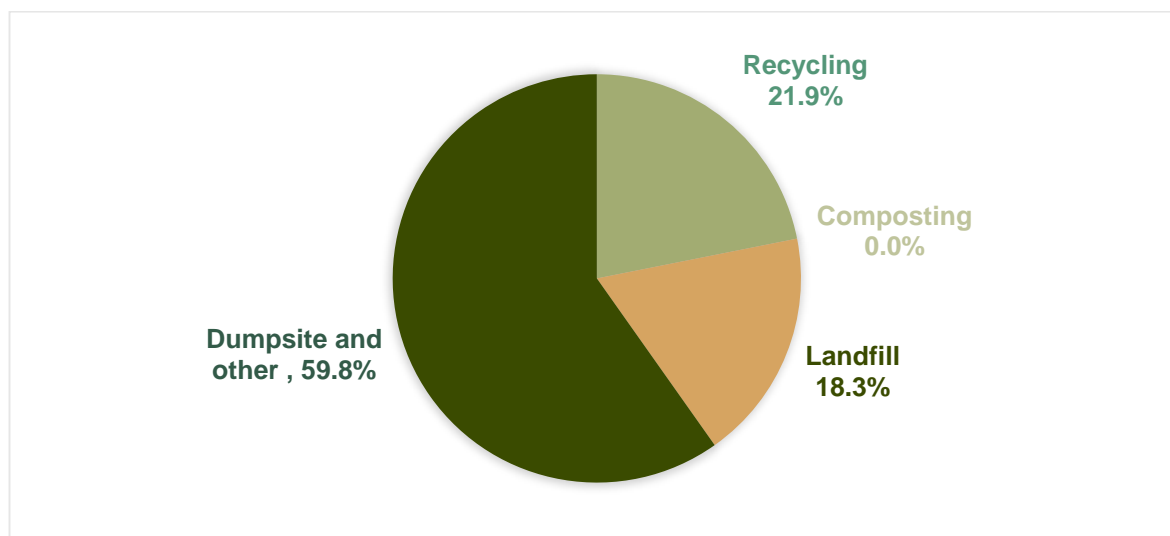
Source: The Centre of Waste Management - Abu Dhabi.

**Figure 15: Municipal solid waste by method of disposal**



Source: Statistic Centre - Abu Dhabi

**Figure 16: Percentage distribution of municipal solid waste by method of disposal – 2019**



Source: Statistic Centre - Abu Dhabi



## Hazardous Waste

It is the waste which, due to its quantity or physical or chemical composition, constitutes a danger to human health or the environment when handled, stored, or disposed of inappropriately. In table (7) shows the amount of solid waste, and that the total amount of this waste reached 248 thousand tons in 2019. Table (8) indicates that 47 per cent of the hazardous solid waste has been disposed of by landfilling.

**Table (7): Hazardous solid waste generation by source activity**

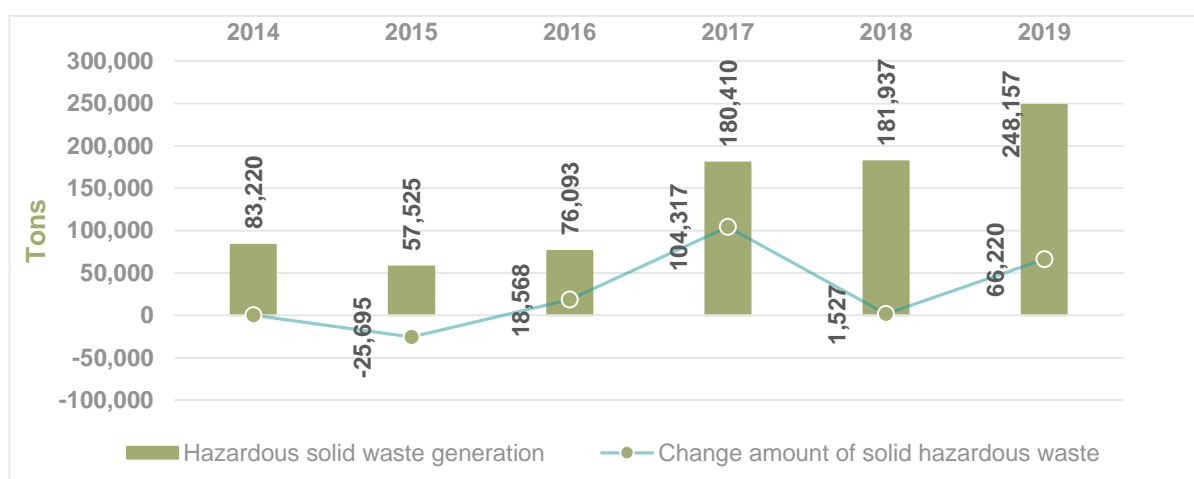
(Tons)

Source	2014	2015	2016	2017	2018	2019
<b>Total</b>	<b>83,220</b>	<b>57,525</b>	<b>76,093</b>	<b>180,410</b>	<b>181,937</b>	<b>248,157</b>
Industrial waste	66,768	32,147	17,857	19,828	26,450	24,085
Medical waste	1,732	4,573	6,316	6,374	9,275	6,019
Other*	14,720	20,805	51,920	154,208	146,212	218,053

Source: The Centre of Waste Management – Abu Dhabi, ADNOC

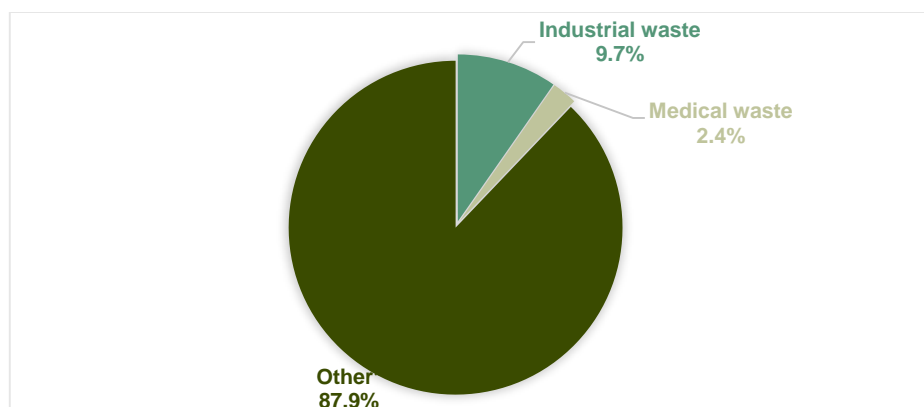
\* Include sewage sludge (heavy metal) and exported waste.

**Figure 17: Hazardous solid waste generation by source activity**



Source: Statistic Centre - Abu Dhabi

**Figure 18: Percentage distribution of Hazardous solid waste generation by source activity**



Source: Statistic Centre - Abu Dhabi

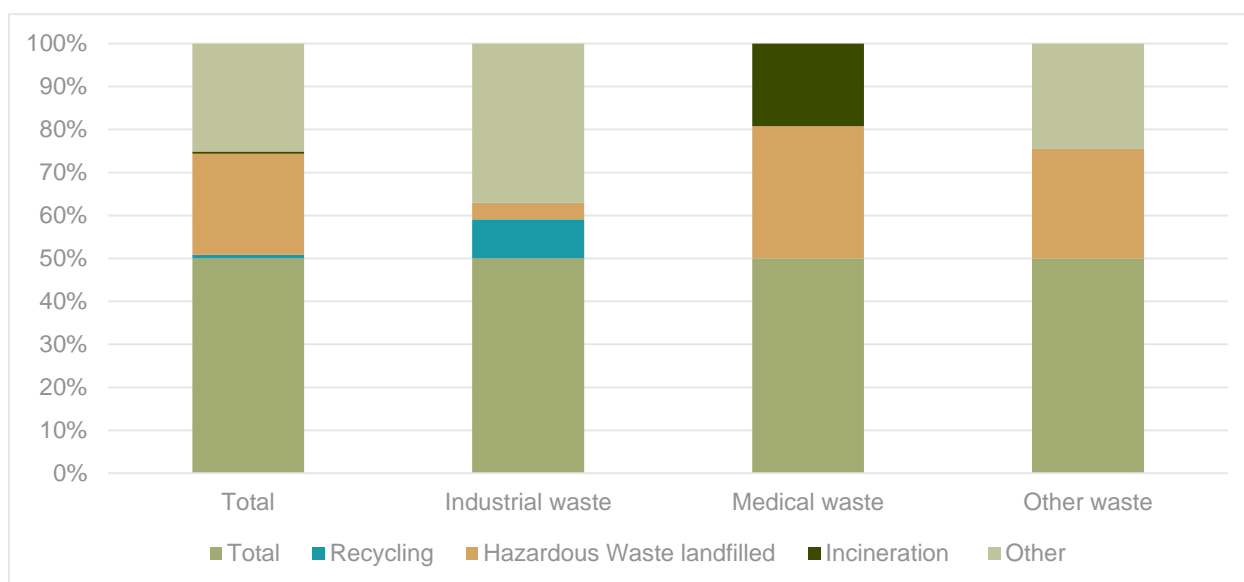
**Table (8): Hazardous solid waste generation by disposal method and source activity - 2019**

(Tons)

Source	Total	Recycling	Hazardous Waste landfilled	Incineration	Other
<b>Total</b>	<b>248,157</b>	<b>4,366</b>	<b>116,720</b>	<b>2,317</b>	<b>124,754</b>
Industrial waste	24,086	4,366	1,861	-	17,859
Medical waste	6,019	-	3,702	2,317	-
Other waste	218,052	-	111,157	-	106,895

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

**Figure (19): Hazardous solid waste generation by disposal method and source activity – 2019**

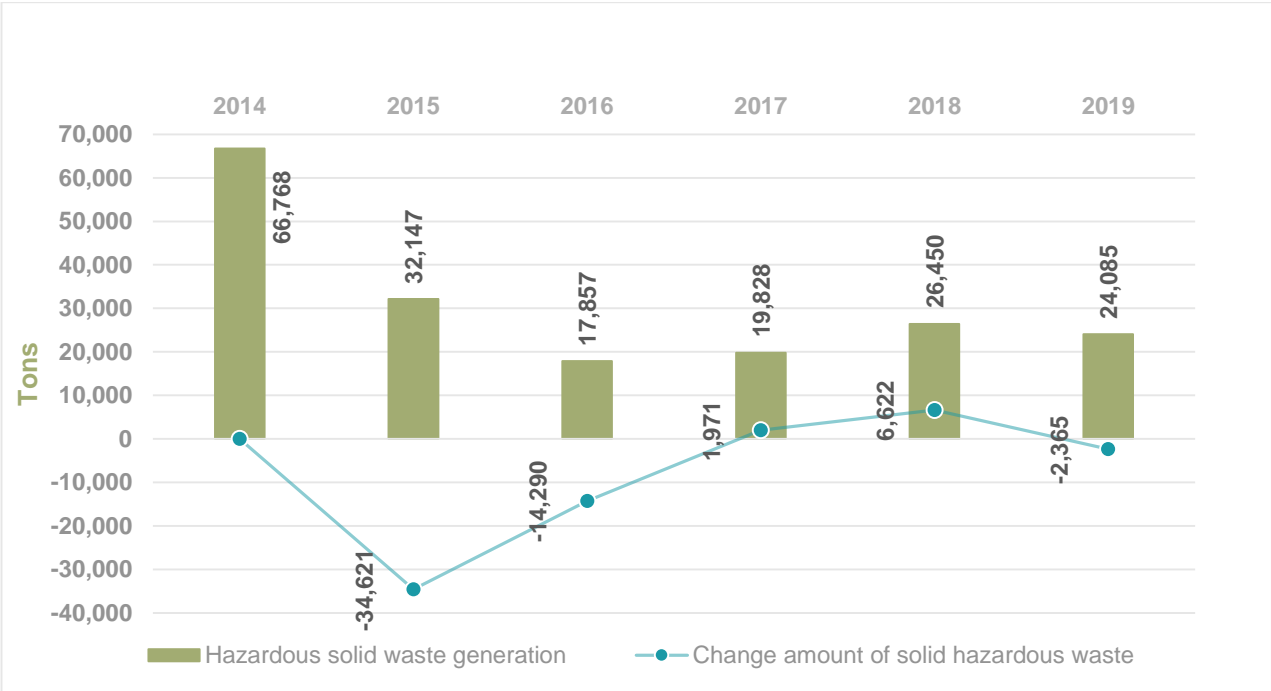


Source: Statistic Centre - Abu Dhabi

### Hazardous Industrial Waste

They are wastes that are toxic, caustic, inflammable or explosive, or that lead to corrosion. They also include wastes that contain heavy elements such as mercury and cadmium. They may be caused by the production and preparation of pharmaceuticals or films resulting from medical radiation (used or damaged) or arise from the production, installation and use of household pesticides, public health pesticides or research laboratories solid waste. In Figure (20) shows that the proportion of hazardous industrial waste decreased to 9 per cent during 2019, compared to 2018.

**Figure 20: Hazardous solid waste generation by Industrial waste**

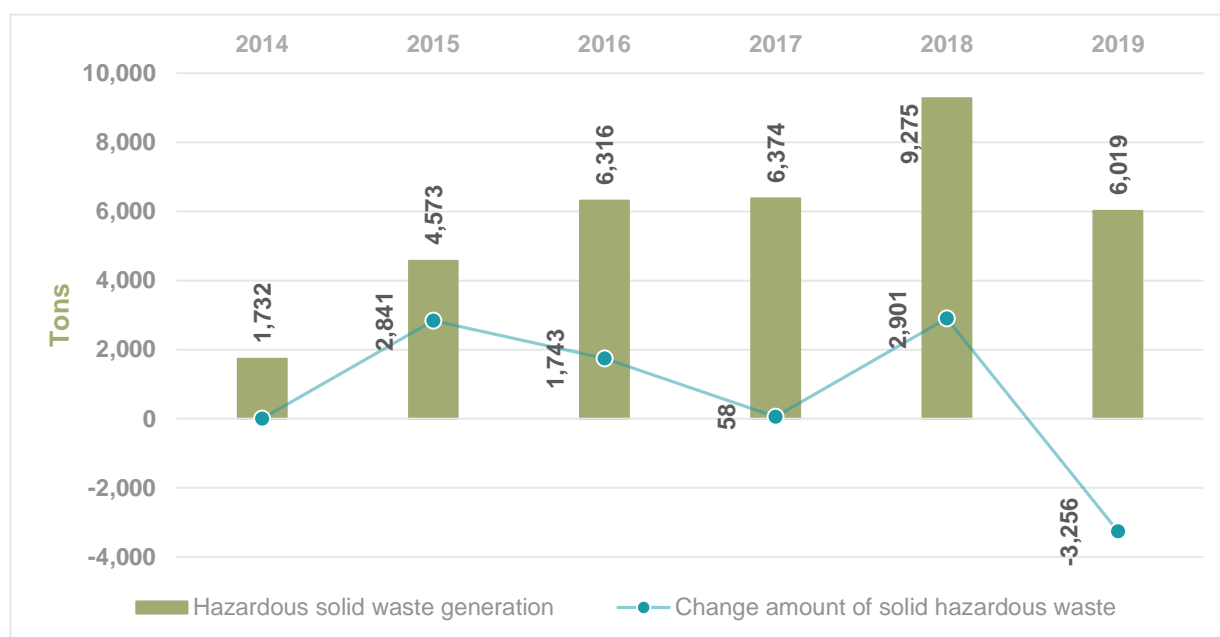


Source: Statistic Centre - Abu Dhabi

## Hazardous Medical Waste

It is waste that contains infectious germs (bacteria - viruses - parasites - fungi) or pathological waste including residues of delivery rooms, human organs and tissues and excised tumours. This is in addition to the waste of contaminated sharp objects, which are mostly from hospitals and health clinics. In Figure (21) shows a gradual increase in the amount of medical waste from 2014 to 2018 and a decrease in 2019.

**Figure 21: Hazardous solid waste generation by Medical waste**



Source: Statistic Centre - Abu Dhabi

## Waste Management Plants

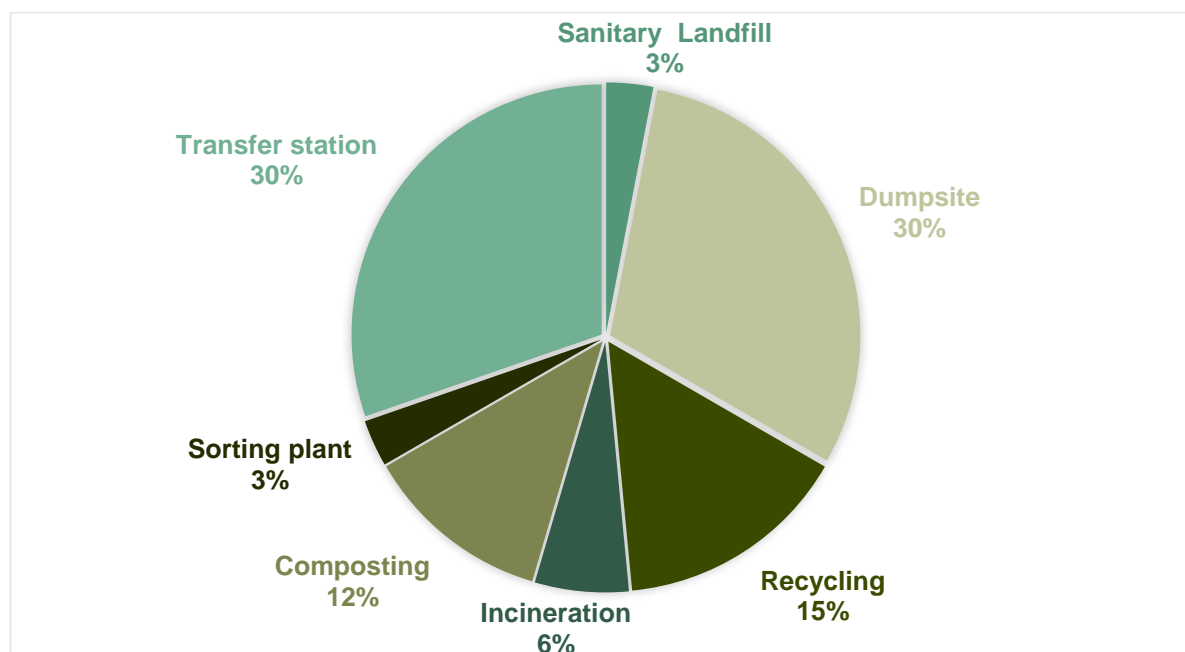
The Government of Abu Dhabi is keen to provide a healthy environment and it pays a special attention to advanced waste treatment methods. The total number of waste management projects in the Emirate of Abu Dhabi reached 33 projects in 2019.

**Table 8: Waste management plants in Emirate of Abu Dhabi - 2019**

Item	Abu Dhabi	Al Ain	Al Dhafra
<b>Total</b>	<b>11</b>	<b>13</b>	<b>9</b>
Sanitary Landfill	-	1	-
Dumpsite	1	1	8
Recycling	2	3	-
Incineration	-	2	-
Composting	2	1	1
Sorting plant	-	1	-
Transfer station	6	4	-

Source: The Centre of Waste Management - Abu Dhabi.

**Figure 22: Percentage distribution of waste management plants by disposal method - 2019**



Source: Statistic Centre - Abu Dhabi

## Explanatory Notes

### Glossary

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. Households and buildings in the residential areas generate MSW.

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

It 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 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 processed in the Statistics Centre – Abu Dhabi (SCAD) for more editing and research.

### The Methodology Used

The solid waste generation data in Abu Dhabi, Al Ain, and Al Dhafra were calculated according to the truck scale reports. In case the reports were not available, estimated calculations were performed based on the information received from contractors of waste collection and landfills.

The medical waste data in Abu Dhabi and Al Dhafra were estimated based on Al Ain data (which are actual data based on the truck scale reports in the medical waste incinerator).

### Notes on Tables

Changes (levels and percent) in all tables based on unrounded numbers.

### Additional Information and Detailed Release

The data used in this release were obtained from the administrative records received from the Centre of Waste Management - Abu Dhabi (Tadweer) and Abu Dhabi National Oil Company (ADNOC). The data are collected and processed at the Statistics Center - Abu Dhabi (SCAD). For more information and other official statistics, please visit the statistics link on the Statistics Center - Abu Dhabi website: [www.scad.gov.ae](http://www.scad.gov.ae).

### Revision Policy

Waste statistics are prepared on a monthly and annual basis, in the second quarter of the calendar year following the data reference period. The published waste statistics are final and are not subject to future reviews as a result of the new data that become available. In the event that an error is discovered, there are procedures that were previously established with the Project Management Office to remove/ amend the published error. These procedures are in line with the policy of the Statistics Center - Abu Dhabi. Thus, the new report is replaced.

### Disclaimers and Terms of Use

The Statistics Centre - Abu Dhabi (SCAD) operates this website to fulfil the needs of government agencies, individuals and various groups of society and businesses. SCAD is in no way responsible for any losses or damage caused to users as a result of misuse of the statistics provided on the website in good faith by the Centre. Accordingly, the responsibility to use Official statistics at any specific time or for any specific purposes are the responsibility of data users who acknowledge that they exempt and absolve the Centre from any liability regarding any legal obligations with relation to the errors that may occur beyond the control or knowledge of the Centre. The Users also waives their right to obtain any compensation for any loss and damage that may occur as a result of that error.

The official statistics issued by the Statistics Centre - Abu Dhabi, which are available on this website or are accessible through it, are protected by copyright, unless otherwise is mentioned. Users may copy the contents of the website, including releases, tables, etc. (in whole or in part) through various methods without obtaining special permission from the Statistics Centre, provided that they acknowledge that they have obtained such data from Centre, by mentioning the following:

Source: Statistics Centre - Abu Dhabi, year of publication, product name, index number, reference period, and page or pages number



مركز الإحصاء  
STATISTICS CENTRE

رؤيتنا: الريادة والابتكار في الإحصاء  
Our Vision: Leadership and Innovation in Statistics



[www.scad.gov.ae](http://www.scad.gov.ae)



adstatistics