



مركز الإحصاء  
STATISTICS CENTRE



**Waste Statistics** 2017



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## Introduction

This report presents statistics on waste generation in the Emirate of Abu Dhabi for the year 2017, 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. Reader can 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 totalled about 9.657 million tons in 2017, non-hazardous waste formed 98.1 percent, while hazardous waste accounted for a small proportion of about 1.9 percent as shown in Table 1.

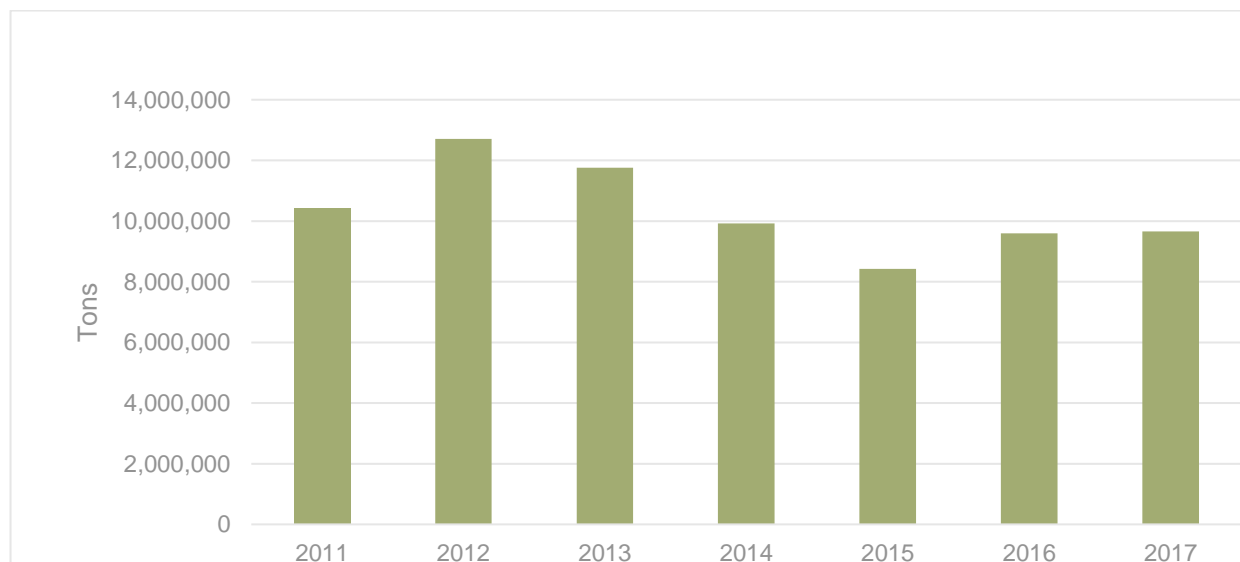
**Table 1: Total Non-hazardous and hazardous solid waste in Abu Dhabi Emirate**  
(Tons)

| Source                    | 2012              | 2013              | 2014              | 2015             | 2016             | 2017             |
|---------------------------|-------------------|-------------------|-------------------|------------------|------------------|------------------|
| <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> |
| Non-hazardous solid waste | 12,705,902        | 11,762,602        | 9,918,590         | 8,420,998        | 9,598,969        | 9,477,037        |
| Hazardous solid waste*    | 80,771            | 82,674            | 83,220            | 57,525           | 76,093           | 180,410          |

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

\* Data of hazardous wastes exports were Included in 2017.

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



Source: Statistics Centre – 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

### 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 2017. Data shows that the total amount of waste in 2017 decreased by 25.4 %, construction and demolition waste accounted for more than 41.7%. The daily per capita municipal waste was approximately 1.29 kg /day as shown in figure 2.

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

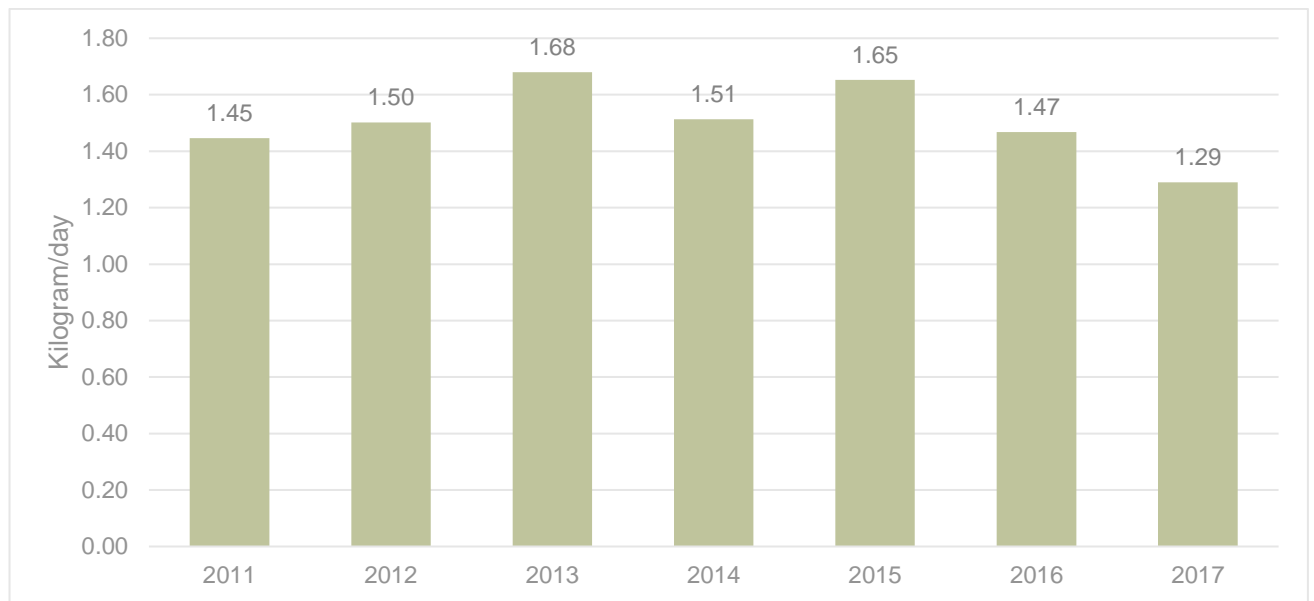
(Tons)

| Source  | 2012              | 2013              | 2014             | 2015             | 2016             | 2017             |
|---|-------------------|-------------------|------------------|------------------|------------------|------------------|
| <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>Construction and demolition waste</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> |
| C & D waste                                   | 5,721,367         | 2,767,342         | 1,723,497        | 2,042,883        | 2,580,913        | 2,589,660        |
| C & D mixed waste                             | 3,906,942         | 4,925,579         | 2,696,168        | 833,430          | 1,951,465        | 1,369,659        |
| <b>Industrial and commercial waste</b>        | <b>804,174</b>    | <b>1,305,556</b>  | <b>3,312,125</b> | <b>3,306,644</b> | <b>2,692,768</b> | <b>3,169,212</b> |
| <b>Agriculture waste</b>                      | <b>898,258</b>    | <b>999,239</b>    | <b>561,991</b>   | <b>493,106</b>   | <b>745,644</b>   | <b>933,505</b>   |
| General agriculture waste                     | 305,749           | 339,078           | 320,689          | 380,465          | 503,001          | 567,992          |
| Mixed agriculture and Animal waste            | 592,509           | 660,161           | 241,302          | 112,641          | 242,643          | 365,513          |
| <b>Municipal waste</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> |
| Households, streets, and public gardens waste | 1,059,219         | 1,234,336         | 1,298,955        | 1,420,323        | 1,397,292        | 1,194,208        |
| Bulky waste                                   | 213,449           | 293,757           | 167,635          | 258,660          | 164,387          | 177,932          |
| <b>Other*</b>                                 | <b>102,493</b>    | <b>236,793</b>    | <b>158,219</b>   | <b>65,952</b>    | <b>66,499</b>    | <b>42,861</b>    |

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

\*Include Oil and Gas sector

**Figure 2: Amount of municipal waste per capita\* per day**

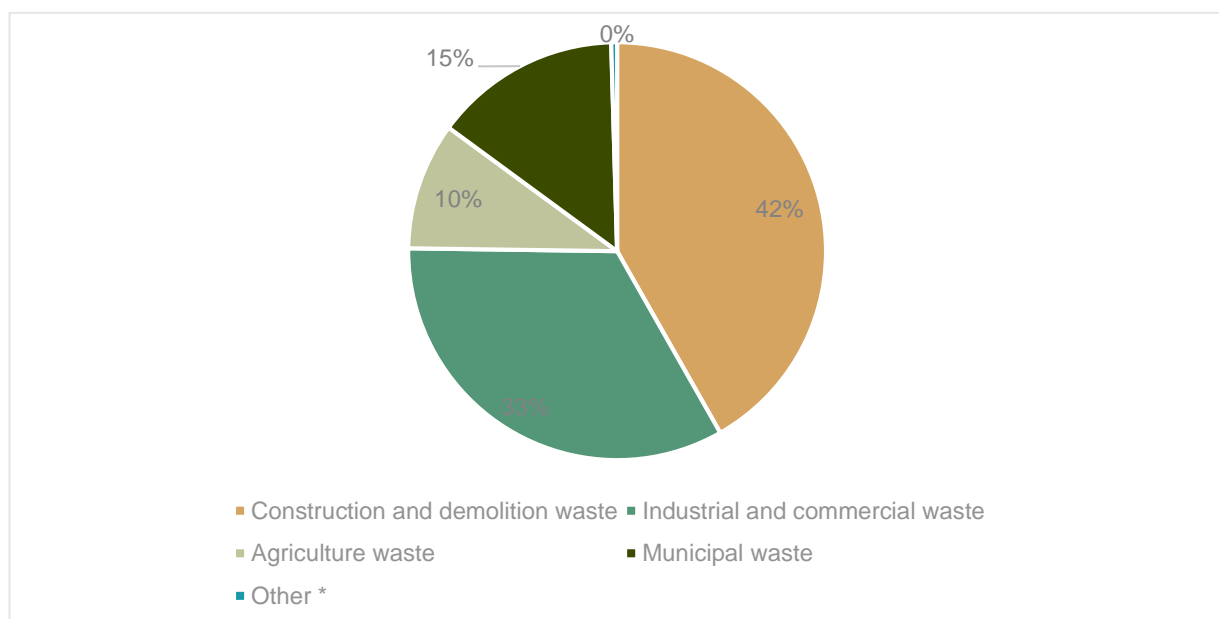


Source: The Centre of Waste Management - Abu Dhabi, ADNOC and Statistics Centre – Abu Dhabi

\* Mid-year population estimate used to calculate per capita value

**Note:** Municipal Solid Waste excluding data from labour camps and developer of residential projects

**Figure 3: Percentage distribution of Non-hazardous solid waste by source activity - 2017**



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 2017 was about 25.96 thousand tons / day, while the total amount of waste was about 9.5 million tons in 2017. Abu Dhabi region generated about 67.1 percent Figure 4 shows a comparison of waste generated between regions.

**Table 3: Non-hazardous solid waste generation by region and source activity- 2017**

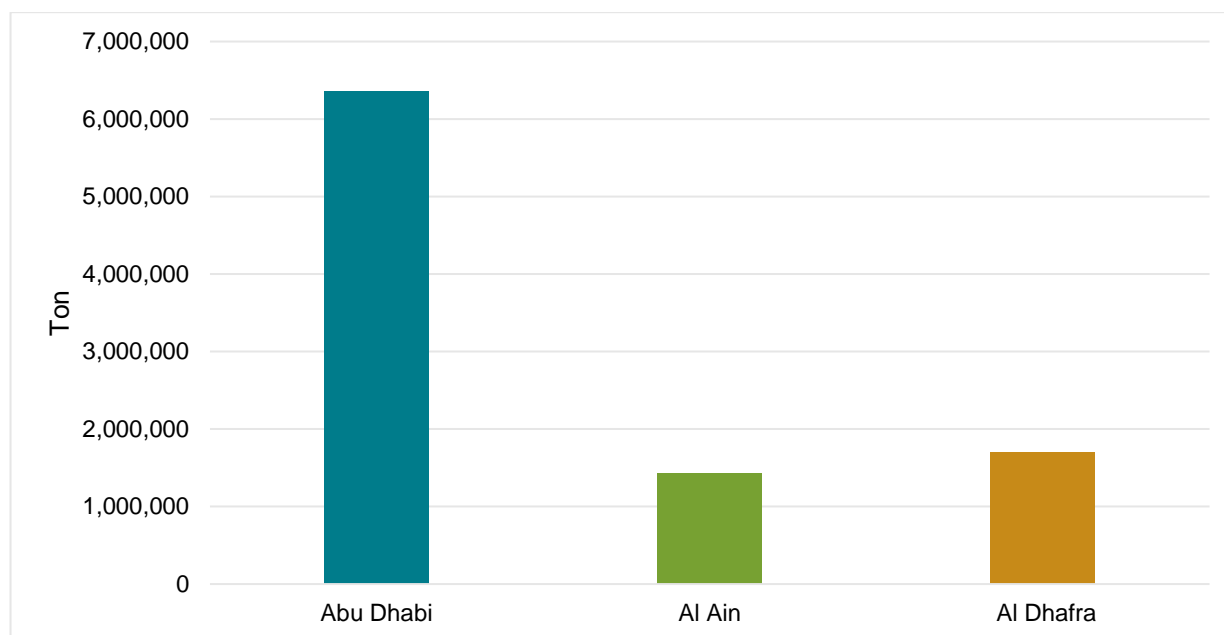
(Tons)

| Source  | Total            | Abu Dhabi        | Al Ain           | Al Dhafra        |
|---|------------------|------------------|------------------|------------------|
| <b>Total</b>                                  | <b>9,477,037</b> | <b>6,358,032</b> | <b>1,422,333</b> | <b>1,696,672</b> |
| <b>Daily average</b>                          | <b>25,964</b>    | <b>17,419</b>    | <b>3,897</b>     | <b>4,648</b>     |
| <b>Construction and demolition waste</b>      | <b>3,959,319</b> | <b>2,243,791</b> | <b>526,457</b>   | <b>1,189,071</b> |
| C & D waste                                   | 2,589,660        | 2,156,090        | 391,809          | 41,761           |
| C & D mixed waste                             | 1,369,659        | 87,701           | 134,648          | 1,147,310        |
| <b>Industrial and commercial waste</b>        | <b>3,169,212</b> | <b>3,050,335</b> | <b>50,682</b>    | <b>68,195</b>    |
| <b>Agriculture waste</b>                      | <b>933,505</b>   | <b>65,744</b>    | <b>556,456</b>   | <b>311,305</b>   |
| General agriculture waste                     | 567,992          | 58,127           | 273,679          | 236,186          |
| Mixed agriculture waste                       | 365,513          | 7,617            | 282,777          | 75,119           |
| <b>Municipal waste</b>                        | <b>1,372,140</b> | <b>955,301</b>   | <b>288,738</b>   | <b>128,101</b>   |
| Households, streets, and public gardens waste | 1,194,208        | 868,895          | 230,911          | 94,402           |
| Bulky waste                                   | 177,932          | 86,406           | 57,827           | 33,699           |
| <b>Other *</b>                                | <b>42,861</b>    | <b>42,861</b>    | -                | -                |

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

\* Waste from oil and Gas sector.

**Figure 4: Non-hazardous solid waste by region -2017**



Source: Statistic Centre - Abu Dhabi

## Solid Waste Disposal

Table 4 displays the quantity of solid waste by method of disposal, showing that waste recycling contribution in waste disposing was 28.4 percent in 2017. Solid waste composted is around 2.2 percent from the total waste.

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

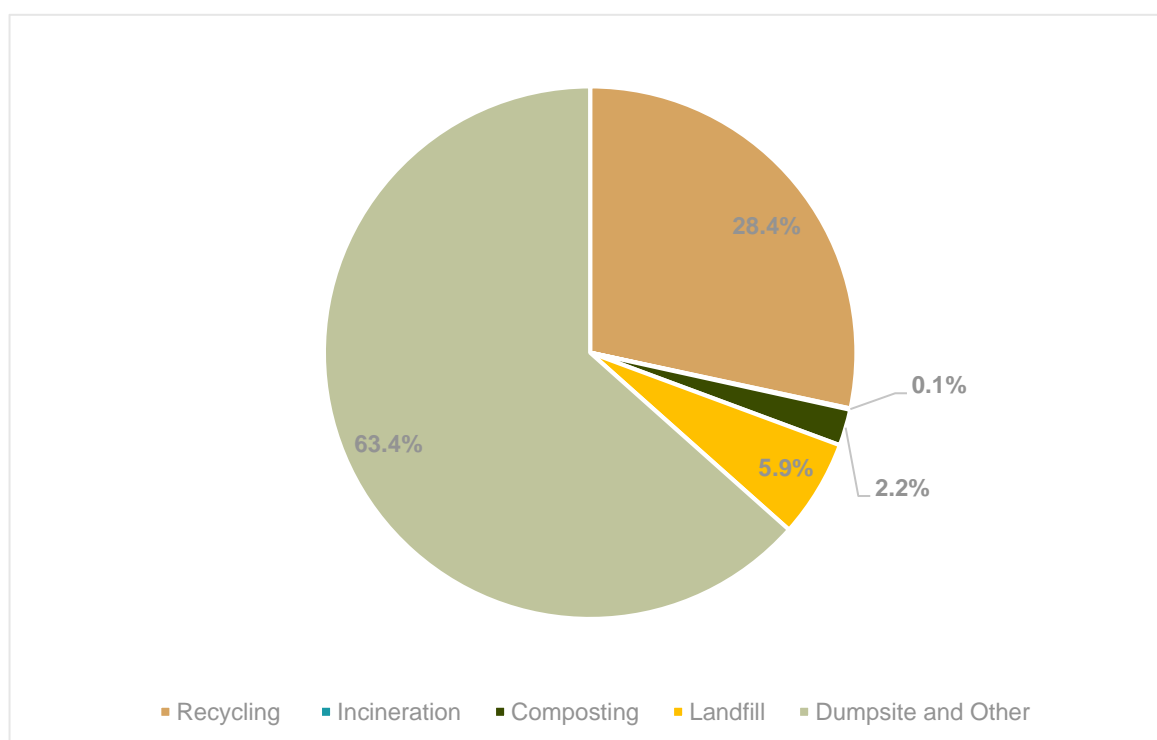
(Tons)

| Source               | 2012              | 2013              | 2014             | 2015             | 2016             | 2017             |
|----------------------|-------------------|-------------------|------------------|------------------|------------------|------------------|
| <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> |
| Recycling            | 3,805,411         | 3,198,113         | 1,812,052        | 2,189,109        | 2,854,149        | 2,687,932        |
| Incineration         | 37,830            | 40,917            | 4,774            | 21,510           | 9,824            | 7,514            |
| Composting           | 367,273           | 458,491           | 463,355          | 452,627          | 228,126          | 209,188          |
| Landfill             | 452,704           | 470,725           | 149,298          | 172,794          | 181,555          | 561,940          |
| Dumpsite and Other * | 8,042,684         | 7,594,356         | 7,489,111        | 5,584,958        | 6,325,315        | 6,010,463        |

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

\* Disposed through other specialized companies.

**Figure 5: Percentage distribution of solid waste by method of disposal – 2017**





## Municipal solid waste

Municipal solid waste in the Emirate of Abu Dhabi totalled 1.37 million tons in 2017, of which 57 percent was disposed in dumpsite as shown in Table 5. Figure 6 shows the relative distribution of municipal solid waste.

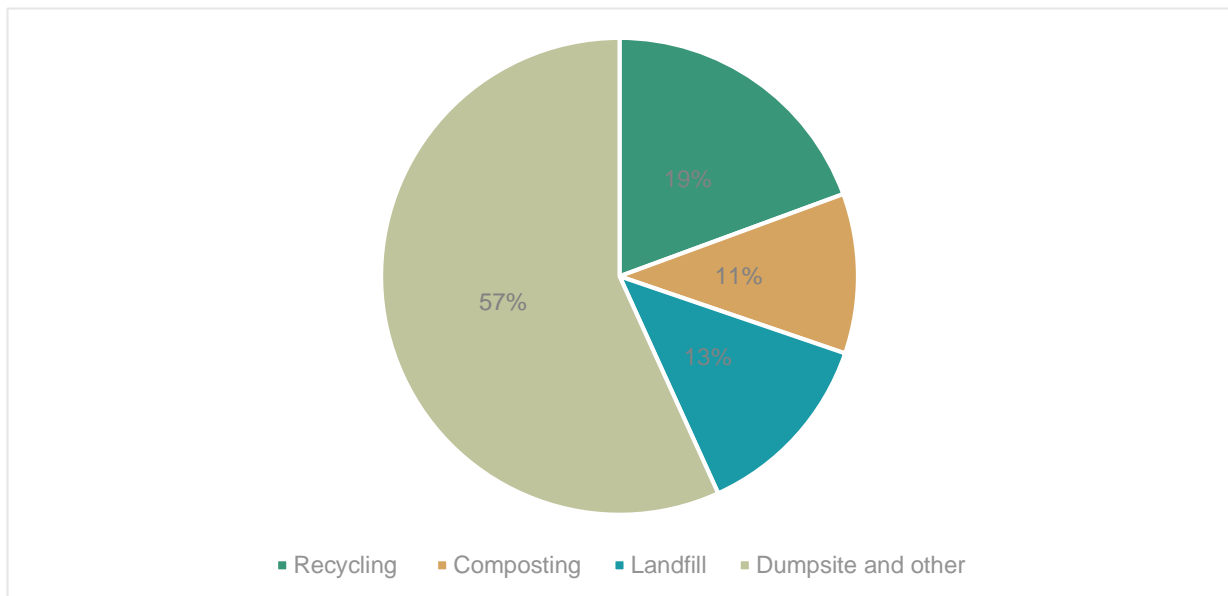
**Table (5): Municipal solid waste by method of disposal**

(Tons)

| Method of disposal | 2012             | 2013             | 2014             | 2015             | 2016             | 2017             |
|--------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| <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> |
| Recycling          | 197,590          | 244,495          | 88,555           | 329,470          | 266,109          | 268,302          |
| Composting         | 216,000          | 259,776          | 146,636          | 148,246          | 151,133          | 148,866          |
| Landfill           | 103,120          | 122,247          | 149,298          | 154,209          | 164,387          | 177,932          |
| Dumpsite and other | 755,958          | 901,575          | 1,082,101        | 1,047,058        | 980,050          | 777,040          |

Source: The Centre of Waste Management - Abu Dhabi.

**Figure 6: Percentage distribution of municipal solid waste by method of disposal - 2017**



Source: Statistic Centre - 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 totalled 180 thousand tons in 2017. Table 7 reveals that 34 percent of the hazardous solid wastes were landfilled.

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

(Tons)

| Source                   | 2012          | 2013          | 2014          | 2015          | 2016          | 2017           |
|--------------------------|---------------|---------------|---------------|---------------|---------------|----------------|
| <b>Total</b>             | <b>80,771</b> | <b>82,674</b> | <b>83,220</b> | <b>57,525</b> | <b>76,093</b> | <b>180,410</b> |
| Industrial waste         | 30,758        | -             | 10,463        | 2,209         | 391           | 173            |
| Medical waste            | 6,000         | 6,000         | 1,732         | 4,573         | 6,316         | 6,374          |
| Oil and Gas sector waste | 12,082        | 44,649        | 56,305        | 29,938        | 17,466        | 19,655         |
| Other*                   | 31,931        | 32,025        | 14,720        | 20,805        | 51,920        | 154,208        |

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

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

**Table (7): Hazardous solid waste generation by disposal method and source activity - 2017**

(Tons)

| Source           | Total          | Recycling    | Secure landfill | Incineration | Other          |
|------------------|----------------|--------------|-----------------|--------------|----------------|
| <b>Total</b>     | <b>180,410</b> | <b>4,894</b> | <b>61,517</b>   | <b>2,209</b> | <b>111,790</b> |
| Industrial waste | <b>19,828</b>  | 4,894        | 721             | 130          | 14,083         |
| Medical waste    | <b>6,374</b>   | -            | 4,295           | 2,079        | -              |
| Other waste*     | <b>154,208</b> | -            | 56,501          | -            | 97,707         |

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

\* Include oil and gas sector waste

## Waste Management Plants

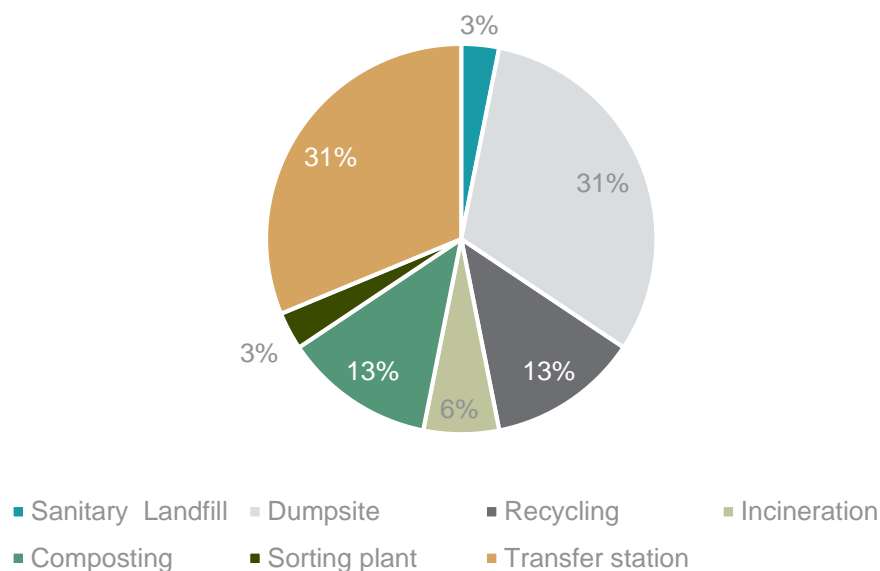
The Government of Abu Dhabi is keen to provide a healthy environment and it pays a special attention to advanced waste treatment methods. The total number of waste management projects in the Emirate of Abu Dhabi reached 32 projects in 2017.

**Table 8: Waste management plants in Emirate of Abu Dhabi - 2017**

| Item              | Abu Dhabi | Al Ain    | Al Dhafra |
|-------------------|-----------|-----------|-----------|
| <b>Total</b>      | <b>10</b> | <b>13</b> | <b>9</b>  |
| Sanitary Landfill | -         | 1         | -         |
| Dumpsite          | 1         | 1         | 8         |
| Recycling         | 1         | 3         | -         |
| Incineration      | -         | 2         | -         |
| Composting        | 2         | 1         | 1         |
| Sorting plant     | -         | 1         | -         |
| Transfer station  | 6         | 4         | -         |

Source: The Centre of Waste Management - Abu Dhabi.

**Figure 7: Percentage distribution of waste management plants by disposal method - 2017**



Source: Statistic Centre - Abu Dhabi

## Explanatory Notes

### Glossary

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

#### **Wastes**

This term indicates materials that are not prime products (i.e., products produced for the market), for which the generator has no further use for his own purpose of production, transformation or consumption, and which he discards, or intends or is required to discard. In addition, this term excludes material directly recycled or reused at the place of generation (i.e., establishment) and waste materials that are directly discharged into ambient water or air as wastewater or air pollution.

#### **Collected Non Hazardous Wastes**

It refers to non hazardous waste which is collected by or on behalf of municipalities or government, as well as municipal waste which is collected by the private sector, It also includes mixed waste, and fractions collected separately for recovery operations (through door-to-door collection and / or through voluntary deposits).

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

Collected waste by or on behalf of municipalities, public or private enterprises, which includes waste originating from: households, commerce and trade, small businesses, office buildings and institutions (schools, hospitals, government buildings). It also includes bulky waste (e.g., white goods, old furniture, mattresses) and waste from selected municipal services, e.g., waste from park and garden maintenance, waste from street cleaning services (street sweepings, the content of litter containers, market cleansing waste), if it's managed as waste, the definition excludes waste from municipal sewage network and treatment, municipal construction and demolition waste.

#### **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.

### **Secure 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.

### **Construction and Demolition Waste**

The waste results from construction and demolition activities.

### **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.

## **Technical Notes**

### **Methodology**

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

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

## **Notes on Tables**

Changes (levels and percent) in all tables 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 expected in July 2019 covering 2018 data.

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