



Waste Management in Dubai

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Introduction

Dubai is one of the Emirates that comprise the United Arab Emirates. It has witnessed significant economic growth in the last twenty years primarily due to its development as a business center in the Middle East region. Government policies aimed at development of a diversified economy have transformed Dubai city into a fast growing urban region in the Middle East with a large multinational population. Also, intelligent and planned destination marketing efforts have resulted in the city supporting a

fairly large transient and tourist population. These factors have resulted in the typical waste management problems associated with growth namely rising quantities of wastes generated and also the need for an ever increasing level and quality of service. Waste management in the emirate has thus evolved to overcome these challenges through a planned approach with a focus environmental sustainability.

WASTE GENERATION IN DUBAI

Wastes in Dubai are classified under five main categories namely General Waste, Green/Horticultural Waste, Construction & Demolition (C & D) Waste, Liquid Waste & Hazardous Waste. General Waste consists of both Municipal Solid Waste (MSW) and Bulky Waste. Waste quantities generated in 2011 are presented in Table 1.

Table 1. Waste Generation – Year 2011

Waste Type	Quantity (tones)
General Waste	2,689,808
C & D Waste	6,638,471
Horticultural Waste	175,022
Liquid Waste	154,119

The MSW component of the General Waste stream has increased from 550,350 tonnes in 1997, 1,523,822 tonnes in 2003 to 2,689,808. In 2011 According to the waste composition analysis conducted in 2012, 35 % of the General Waste stream was organic waste. Waste composition studies are carried out once every year during May. The methods employed for composition analysis have been developed after taking into consideration those employed internationally. Waste composition figures for the year 2012 are shown in Table 2 below –

Table 2. Waste Characteristics – Year 2012

No	Material Type	Percentage %
1	Papers	24.2948
2	Plastics	24.2368
3	Glass / Glass Bottles	3.42877
4	Metal	2.37325
5	Organic waste	35.4291
6	Rubber	1.08565
7	Wood	0.98411
8	Textiles	3.18218
9	Leather	0.59917
10	Residual / Inert	1.92582
11	Special Wastes	0.24212
12	Miscellaneous Wastes	2.21816
	Total	100



WASTE REGULATIONS

Local Order 11 of 2003 and its subsequent amendments regulate waste related issues which have an impact on public cleanliness. They prohibit littering and improper disposal of waste and authorize uniformed municipal officers to impose penalties for a variety of offences ranging from littering to improper transport of waste. Municipal fees for waste services are specified in Local Order 7 of 2002.

In addition to these Local Orders, the municipality has issued Technical Guidelines to ensure compliance with applicable requirements. The Technical Guidelines are:

- A. Waste Collection and Transportation Services
- B. Waste Trading Activities
- C. Guidelines for Shopping Center Waste Recycling

WASTE RECYCLING

Organized collection of recyclable material by private companies commenced in the early 1990s. 175,000 tonnes of recyclable material was collected in 2011. The major material collected is waste paper and Old Corrugated Containers (OCC). Limited amounts of plastics, glass and

metals are also collected.

Dubai Municipality also started other Public- Private Partnership Projects to tackle the other types of waste these are

- C&D Recycling Facility one plant was completed in 2010 to recover steel components and produce aggregates from Construction and Demolition Wastes. The plant has a capacity of 560 tons per hour and is being operated by Emirates Recycling LLC.
- Dubai currently has one Materials Recovery Facility the facility started operation in 2006 and is currently being operated by Tadweer LLC, it has a Contractual capacity : 4000 tons/day , present capacity around 1000 tons/day .

WASTE TREATMENT AND DISPOSAL

A. Landfills

The municipality operates landfills at five different locations in the Emirate. Only General Waste is landfilled at three of these sites. There is a site exclusively for the disposal of Construction & Demolition Waste while Hazardous Waste is treated

and disposed at the Jebel Ali Hazardous Waste Treatment Facility. The landfill at Al Ghusais, is the largest in Dubai.

B. Disposal of Hazardous Waste

Jebel Ali Hazardous Waste Treatment Facility (JAHWTF) was inaugurated in 1999. The facility is equipped with evaporation ponds, stabilization plant, chemical treatment plant, covered bunded storage area and two landfills, one being single lined and the other double lined.

C. Disposal of Medical Waste

In April 2009, a new state of the art medical waste incinerator was commissioned for the treatment of medical waste at Jebel Ali Hazardous Waste Treatment Facility. The facility has a capacity of 800 kg/hr. The incinerator is fitted with the most advanced pollution control devices to ensure environmental protection and sustainability.

FUTURE ENDEAVORS

Dubai Municipality – Waste Management Department is in near completion of the Dubai Municipality Waste Management Master Plan. The plan is the holistic, integrated and sustainable initiative for waste management in Dubai in the next 20 years. The plan sets up certain targets for waste diversion and recycling through implementation of new policies, information technologies, awareness and waste management facilities. Implementation of the master plan is expected to commence January 2013.

