



مركز الإحصاء  
STATISTICS CENTRE



# Water Statistics - 2012

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## **Foreword**

This report presents water statistics in the Emirate of Abu Dhabi for the year 2012. It contains desalinated water statistics including production and consumption of desalinated water and water transmission system, in addition to water quality. It also contains wastewater statistics that includes wastewater quality and treatment plants capacity. The key sources of data used in the report are the Environment Agency - Abu Dhabi, Abu Dhabi Water and Electricity Company – ADWEC, Abu Dhabi Distribution Company, Al Ain Distribution Company, Abu Dhabi Water & Electricity Authority - ADWEA, Abu Dhabi Sewerage Services Company (ADSSC) and Abu Dhabi Transmission & Despatch Company (TRANSCO).

The "Explanatory Notes" section at the end of this report provides an explanation of the key terms and technical concepts used in this publication. Readers are encouraged to refer to that section in conjunction with reading the statistics and information outlined in the publication.

## Key Points

### Water statistics

Water statistics are considered one of the most important branches of environmental statistics. Water statistics include water resources and types as well the amount consumed and sanitation statistics. Abu Dhabi government seeks to optimum utilization of water resources, conservation of natural resources and to meet the growing need for water in various areas. Non- conventional water resources are of great importance in Abu Dhabi. Non- conventional water resources include sea water desalination and waste water treatment and reuse.

#### 1. Desalinated water statistics

Economic development and population growth require more water supplies. Development plans aim at forecasting demand and supply of water resources. Water desalination industry enjoys great significance in the Emirate of Abu Dhabi to meet the growing demand. Data shows that the available desalinated water in the Emirate of Abu Dhabi in 2012 totaled 1,084.72 MCM, of which 1,059.2 MCM were consumed.

#### Production and consumption of desalinated water

Table (1.1) reveals that production of desalinated water in Emirate of Abu Dhabi increased in 2012 by 8.6% compared with 2011. As a result of the population growth taking place in Abu Dhabi, the annual consumption of desalinated water rose by 10.2% compared with 2011. The public consumption of desalinated water accounted for 97.6% of the total available desalinated water in 2012. Table (1.1) also shows the stability of per capita daily consumption of equals 1.2 cubic meter/ day.

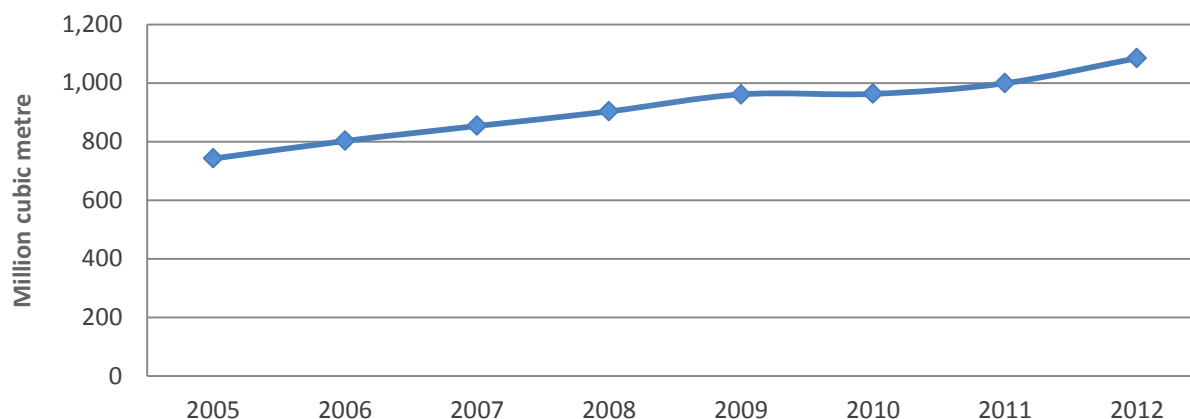
**Table (1.1): Production and consumption of desalinated water**

(Million cubic metre)

Item	2005	2009	2010	2011	2012
<b>Total of available desalinated water</b>	<b>742.1</b>	<b>961.3</b>	<b>962.8</b>	<b>999.2</b>	<b>1084.7</b>
<b>Production</b>	<b>636.9</b>	<b>845.4</b>	<b>834.5</b>	<b>854.6</b>	<b>883.4</b>
Supply from AI - Fujairah Station	105.2	115.9	128.3	144.6	201.3
<b>Consumption</b>	<b>667.0</b>	<b>790.0</b>	<b>873.0</b>	<b>961.5</b>	<b>1059.2</b>
Daily consumption	1.8	2.2	2.4	2.6	2.9
Daily average per capita ( cubic meters)	1.3	1.2	1.2	1.2	1.2

Source: Abu Dhabi Water and Electricity Company (ADWEC), Statistics Centre –Abu Dhabi

**Chart (1): Available desalinated water**



Source: Abu Dhabi Water and Electricity Company (ADWEC).

### Consumption of desalinated water by region

Table (2.1) shows that consumption of desalinated water by region increased by 10.2% in 2012 compared with 2011. Abu Dhabi region consumed the largest share at 61.7%, followed by Al Ain region at 27% and Al Gharbia region at 11.3%.

**Table (1.2): Consumption of desalinated water by region**

(Million cubic metre)

Region	2005	2006	2007	2008	2009	2010	2011	2012
<b>Total consumption</b>	<b>667.0</b>	<b>722.1</b>	<b>756.7</b>	<b>773.8</b>	<b>790.0</b>	<b>873.0</b>	<b>961.5</b>	<b>1059.2</b>
Abu Dhabi	413.9	481.1	469.5	480.1	490.2	529.0	592.6	653.1
Al Ain	161.2	153.5	182.8	186.9	190.9	232.2	259.1	286.4
Al Gharbia	92.0	87.6	104.3	106.7	108.9	111.7	109.9	119.8

Source: Abu Dhabi Water and Electricity Company (ADWEC)

### Consumption of desalinated water by sector

Table (3.1) shows that domestic sector consumed the largest share of desalinated water by 51.8% of the total consumption in all sectors in 2012, followed by government sector by 26.5%, commercial sector by 13.7%, and agriculture sector by 5.4%, whereas industrial sector consumed the lowest share at 1.7% of the total consumption.

**Table (1.3): Consumption of desalinated water by sector**

(Million cubic metre)

Sector	2005	2006	2007	2008	2009	2010	2011	2012
<b>Total</b>	<b>667.0</b>	<b>722.1</b>	<b>756.7</b>	<b>773.8</b>	<b>790.0</b>	<b>873.0</b>	<b>961.5</b>	<b>1,059.2</b>
Domestic sector	456.0	493.7	517.2	528.9	540.1	596.2	522.2	548.6
Commercial	63.7	69.0	72.3	73.9	75.5	82.3	150.5	144.6
Government	112.3	121.6	127.4	130.3	133.0	146.3	213.8	280.5
Agriculture	22.8	24.7	25.9	26.5	27.0	32.4	30.7	56.9
Industry	4.5	4.9	5.1	5.2	5.3	5.7	17.9	18.3
Other Sectors	7.7	8.4	8.8	9.0	9.1	10.1	26.4	10.3

Source: Abu Dhabi Distribution Company, Al Ain Distribution Company

### Water transmission system

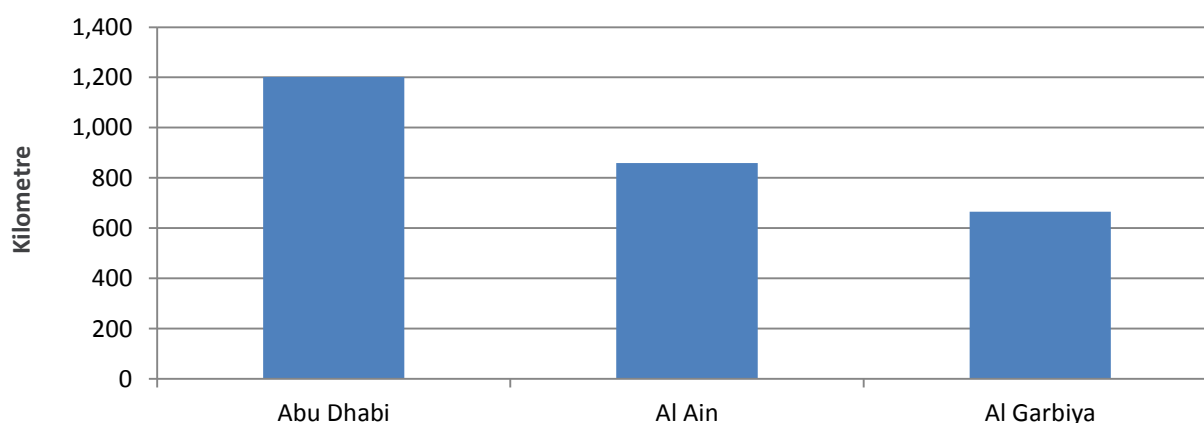
The number of water network subscribers in the Emirate of Abu Dhabi amounted to 318,768 customers in 2012. Abu Dhabi region accounted for the highest number of customers at 72.1% as shown in table (1.4). Chart (2) shows that water network length in the Emirate totaled 2726.2 km disaggregated by regions.

**Table (1.4): Number of customers in water transmission system**

Region	2012
Abu Dhabi	229,934
Al Ain	75,621
Al Gharbia	13,213
<b>Total</b>	<b>318,768</b>

Source: Abu Dhabi Water and Electricity Authority

**Chart (2): Long of Water and Electricity Transmission Networks by Region - 2012**



Source: Abu Dhabi Transmission & Despatch Company (TRANSCO).

## Water transmission system availability

Table (5.1) presents the annual and summer water transmission system availability in the Emirate of Abu Dhabi between 2005 and 2012. Table (5.1) also shows that the summer transmission system availability decreased by 0.4%, while the annual transmission system availability increased by only 0.02%. Water transmission system availability indicator is the summation of the availabilities of transmission system components, and it is expressed in percentage as shown in table (1.6).

**Table (1.5): Annual and summer water transmission system availability**

(%)

Item	2005	2006	2007	2008	2009	2010	2011	2012
Summer Availability	95.57	95.60	96.90	93.78	96.74	99.02	98.37	97.97
Annual Availability	95.72	95.68	96.29	94.55	96.02	98.64	97.85	97.87

Source: Abu Dhabi Water and Electricity Authority.

**Table (1.6): Water Transmission System Availability by Month - Abu Dhabi Emirate**

(%)

Month	2005	2006	2007	2008	2009	2010	2011	2012
January	95.80	95.80	95.75	95.84	94.88	97.28	97.21	97.71
February	94.69	95.72	95.54	95.86	94.50	97.43	97.17	97.95
March	95.91	95.62	95.55	95.31	94.52	96.98	97.37	98.07
April	95.51	95.80	95.57	94.69	95.15	99.24	97.08	97.82
May	95.83	95.97	95.69	94.60	96.24	99.58	98.18	97.88
June	96.28	95.60	96.97	94.99	96.17	99.34	98.40	98.25
July	96.02	95.74	96.88	93.32	96.51	97.74	98.45	98.04
August	95.57	95.60	96.90	93.78	96.74	97.33	98.46	97.80
September	95.82	95.69	96.59	93.82	97.01	97.55	98.36	97.88
October	95.76	95.46	96.89	93.76	96.87	96.70	98.32	97.89
November	95.60	95.47	96.49	94.10	96.88	96.86	97.69	97.82
December	95.80	95.72	96.68	94.53	96.75	96.56	97.49	97.29

Source: Abu Dhabi Water and Electricity Authority.

## Water quality

### General network water quality

The Emirate of Abu Dhabi conducts sample analysis to ensure that the specifications of water conform to national and international standards as shown in table (1.7). The average values and concentrations are within the permissible limits and conform to international standards. The table shows the number of samples measured and the number of samples within the accepted standards.

**Table (1.7): Water quality by type of measurement - 2012**

Measurement type	Unit of Measurement	Prescribed concentration or Value (Maximum unless otherwise stated)	Samples Average	Number of Samples measured	Number of Samples within the accepted standards
Color	mg/l pt/CO scale	15	1.463	10634	10572
Turbidity ( including suspended solids)	NTU	4	0.538	10633	10566
Odor (including Hydrogen Sulphide)	Dilution Number	*	0	10633	10633
Taste	Dilution Number	*	0	10615	10615
Total Dissolved Solids	mg/l	100 (minimum) 1000( Maximum)	105.702	10634	7672
Calcium hardness	mg/l as CaCO <sub>3</sub>	200 at 25 °C	44.507	10634	10634
Total hardness	mg/l as CaCO <sub>3</sub>	300 at 25 °C	49.994	10634	10634
Residual chlorine	mg/ l Cl <sub>2</sub>	0.20 (minimum) 0.50( Maximum)	0.367	10633	8850
Conductivity	µmhos/cm	160(minimum) 1600( Maximum)	179.405	10632	9918
Hydrogen ion	pH Value	7.0(minimum) 9.2( Maximum)	8.169	10627	10614

Source: Abu Dhabi Water and Electricity Authority.

\*Unobjectionable.



## Marine water quality

Table (1.8) presents readings of Abu Dhabi city marine waters quality in terms of temperature, acidity, salinity, dissolved oxygen, in addition to nutrients, such as phosphate, nitrates, and others. The readings have been taken at monitoring stations at certain depths in ten locations.

The territorial waters of the Emirate of Abu Dhabi are fairly nutrient-rich. Nutrient inputs into the sea from sand storms, dust, sewage discharges especially land runoff near-shore areas. Examples of important nutrients in the sea water essential for the life and growth of plants and phytoplankton include nitrites, nitrates, phosphates, and silicates. Generally, nutrients level rises in closed areas where it is difficult for water renewal to occur or in industrial zones which have intensive human activities.

The salinity in the Arabian Gulf is relatively high because of combined influence of restricted exchange of Gulf waters with the open ocean, the high evaporation rates caused by high temperatures, in addition to the desalination industry. The salinity in marine waters in the city of Abu Dhabi in 2012 ranges between 35.05 – 46.55 Practical Salinity Unit (psu).

Regarding dissolved oxygen, most of the readings taken are between 4.58 – 6.01 mg/litre and these are ideal levels for supporting the life of marine living species.

Table (9.1) contains the physical and chemical measurements along with nutrients concentration of the marine waters of Abu Dhabi city.

**Table (1.8): Marine water quality - 2012**

Location	Max . Depth	Secchi Depth	Acidity (pH)	Salinity S	Temperature T	Dissolved oxygen DO	Biological Oxygen Demand BOD	Location
Al Salamiyah Channel	10.00	1.26	8.26	46.55	27.50	6.01	4.75	N24 <sup>0</sup> 15'39.2" E054 <sup>0</sup> 23'25.3"
Mussafah South Channel	6.00	0.76	8.14	35.05	28.51	4.66	5.58	N24 <sup>0</sup> 18'54.4" E054 <sup>0</sup> 30'32.5"
Mussafah Industrial Area	9.00	1.50	8.18	46.09	27.61	5.00	5.33	N24 <sup>0</sup> 22'15.2" E054 <sup>0</sup> 27'47.1"
Mangrove Area - Eastern corniche	4.50	1.37	7.90	45.13	28.06	4.58	4.50	N24 <sup>0</sup> 26'53.7" E054 <sup>0</sup> 26'44.6"
Bateen Beach	3.50	1.55	8.02	44.28	27.77	4.74	4.54	N24 <sup>0</sup> 25'42.6" E054 <sup>0</sup> 22'30.2"
Emirates Palace Public Beach	8.00	2.92	7.99	43.04	27.79	5.07	4.23	N24 <sup>0</sup> 27'56.0" E054 <sup>0</sup> 18'15.9"
Corniche Beach	4.50	2.06	8.00	42.66	28.00	4.97	4.78	N24 <sup>0</sup> 28'38.4" E054 <sup>0</sup> 20'35.7"
Intercontinental Jetty	5.00	2.41	7.94	42.44	27.62	4.93	5.24	N24 <sup>0</sup> 27'18.3" E054 <sup>0</sup> 19'42.4"
Port Mina Zyed	4.50	1.88	7.96	42.55	28.14	4.71	3.86	N24 <sup>0</sup> 30'34.9" E054 <sup>0</sup> 22'23.0"
Um Al Nar	10.00	2.96	8.05	45.98	29.15	5.03	5.17	N24 <sup>0</sup> 28'15.16" E054 <sup>0</sup> 29'25.1"

Source: Environment Agency - Abu Dhabi.

**Table (1.9): Concentration of natural nutrients in marine waters - 2012**

Location	Phosphate	Silicate	Nitrate	Nitrite	Ammonium	Chlorophyll	Location
	PO <sub>4</sub> (mcg/L)	SiO <sub>3</sub> (µg/L)	NO <sub>3</sub> (µg/L)	NO <sub>2</sub> (µg/L)	NH <sub>4</sub> (µg/L)	(µg/L)	
Al Salamiyah Channel	360.00	1124.17	838.33	39.17	165.83	6.84	N24°15'39.2" E054°23'25.3"
Mussafah South Channel	3440.83	5525.83	17039.17	458.33	351.67	14.67	N24°18'54.4" E054°30'32.5"
Mussafah Industrial Area	579.17	834.17	292.50	27.50	186.67	5.66	N24°22'15.2" E054°27'47.1"
Mangrove Area - Eastern corniche	344.17	1412.50	738.33	21.67	73.33	2.13	N24°26'53.7" E054°26'44.6"
Bateen Beach	140.83	715.00	241.67	10.83	155.83	2.50	N24°25'42.6" E054°22'30.2"
Emirates Palace Public Beach	418.33	770.83	120.00	19.17	100.00	1.03	N24°27'56.0" E054°18'15.9"
Corniche Beach	222.50	750.83	126.67	10.83	103.33	1.09	N24°28'38.4" E054°20'35.7"
Intercontinental Jetty	172.50	2255.00	298.33	27.50	146.67	1.51	N24°27'18.3" E054°19'42.4"
Port Mina Zyed	314.17	1415.83	138.33	15.83	124.17	1.97	N24°30'34.9" E054°22'23.0"
Um Al Nar	224.17	708.33	210.00	13.33	60.83	1.00	N24°28'15.16" E054°29'25.1"

Source: Environment Agency - Abu Dhabi.

## 2. Wastewater statsics

Wastewater treatment aims at reducing the pollution caused by different sources such as industry, and service and domestic activities. Wastewater treatment is one way of utilizing water and diversifying its sources, especially when water resources are scarce. Chart (3) shows the wastewater inflow, treated wastewater and treated wastewater reuse from 2005 till 2012. In 2012 the quantity of wastewater inflow totaled 275.5 MCM, an increase of 6.1% than 2011 as shown in table (2.1). Tables (2.2) and (2.3) illustrate that 96.3% of the total quantity of wastewater inflow was treated. Data shows that 52% of the treated wastewater was reused to irrigate green areas as shown in chart (4).

**Table (2.1): Quantity of wastewater inflow by region**

(Million Cubic Metres)

Region	2005	2006	2007	2008	2009	2010	2011	2012
<b>Total</b>	<b>153.1</b>	<b>173.7</b>	<b>192.0</b>	<b>218.5</b>	<b>233.8</b>	<b>255.5</b>	<b>259.65</b>	<b>275.5</b>
Abu Dhabi	119.4	131.4	142.87	160.4	173.1	188.8	185.94	203.7
Al Ain	33.7	37.4	42.08	50.5	52.1	57.3	62.83	58.4
Al Gharbia	na	4.9	7.09	7.6	8.7	9.4	10.88	13.4

Source: Abu Dhabi Sewerage Services Company.

**Table (2.2): Quantity of treated wastewater by region**

(Million Cubic Metres)

Region	2005	2006	2007	2008	2009	2010	2011	2012
<b>Total</b>	<b>148.3</b>	<b>161.2</b>	<b>184.3</b>	<b>213.8</b>	<b>220.9</b>	<b>246.6</b>	<b>243.1</b>	<b>265.4</b>
Abu Dhabi	113.9	123.0	136.5	156.3	165.2	183.0	181.0	196.4
Al Ain	33.0	36.7	41.4	50.0	48.1	54.8	52.3	55.9
Al Gharbia	1.4	1.5	6.4	7.5	7.6	8.8	9.8	13.1

Source: Abu Dhabi Sewerage Services Company

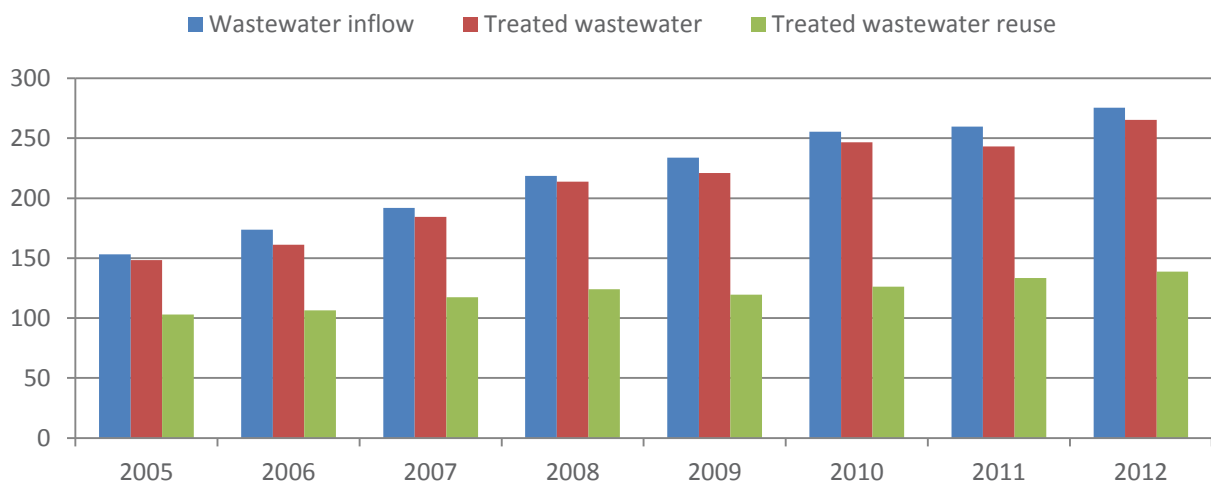
**Table (2.3): Quantity of treated wastewater reuse by region**

(Million Cubic Metres)

Region	2005	2006	2007	2008	2009	2010	2011	2012
<b>Total</b>	<b>103.0</b>	<b>106.5</b>	<b>117.3</b>	<b>124.1</b>	<b>119.6</b>	<b>126.3</b>	<b>133.5</b>	<b>138.8</b>
Abu Dhabi	69.7	70.1	74.2	73.3	71.7	65.5	73.0	75.4
Al Ain	31.9	34.8	37.8	45.3	40.6	52.0	51.5	54.8
Al Gharbia	1.4	1.6	5.3	5.5	7.3	8.8	9.0	8.6

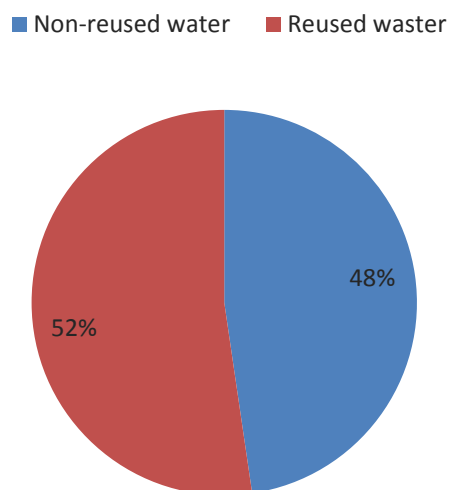
Source: Abu Dhabi Sewerage Services Company

**Chart (3): Quantity of wastewater**



Source: Abu Dhabi Sewerage Services Company.

**Chart (4): Percentage distribution of re-used and nonreused of the treated wastewater**



Source: Statistics Centre - Abu Dhabi.

### Wastewater treatment plants capacity

The total capacity of wastewater treatment plants amounted to 405.2 tones in 2012, a decrease of 7.3% compared with 2011. The conventional treatment plants accounted for the largest share of wastewater treatment plants at 99.85%, while non- conventional plants 0.15% only as shown in tables (2.4) and (2.6).

**Table (2.4): Total Wastewater Treatment Plants Capacity by Region**  
(Million cubic metre)

Region	2005	2010	2011	2012
<b>Total</b>	<b>135.8</b>	<b>437.0</b>	<b>436.9</b>	<b>405.2</b>
Abu Dhabi	95.9	360.3	360.3	328.6
Al Ain	29.4	65.4	65.3	65.3
Al Gharbia	10.5	11.3	11.3	11.3

Source: Abu Dhabi Sewerage Services Company.

**Table(2.5): Total Conventional Wastewater Treatment Plants Capacity by Region**  
(Million cubic metre)

Region	2005	2010	2011	2012
<b>Total</b>	<b>134.4</b>	<b>419.9</b>	<b>419.9</b>	<b>404.6</b>
Abu Dhabi	95.9	343.8	343.8	328.6
Al Ain	29.2	59.5	65.0	65.0
Al Gharbia	9.3	11.1	11.1	11.1

Source: Abu Dhabi Sewerage Services Company.

**Table(2.6): Total Non-Conventional Wastewater Treatment Plants Capacity by Region***(Million cubic metre)*

Region	2005	2010	2011	2012
<b>Total</b>	<b>1.4</b>	<b>22.6</b>	<b>17.0</b>	<b>0.6</b>
Abu Dhabi	-	16.4	16.4	0.0
Al Ain	0.2	5.9	0.3	0.3
Al Gharbia	1.2	0.3	0.3	0.3

Source: Abu Dhabi Sewerage Services Company.

In 2012, the percentage of operated organic load to designed load was 34%, where the hydraulic load of plant operating capacity stood at 374 thousand cubic meters. The percentage of operated hydraulic load to designed load was 41%, where the hydraulic load stood at 158.9 thousand kilogram per day, as shown in table (2.7).

**Table (2.7): Status of Sewage Treatment Plants by Design and Operating Capacity to Hydraulic and Organic Load – 2012**

Region	Plant Design Capacity		Plant Operating Capacity		Plant Status	
	Hydraulic Load (m <sup>3</sup> )	Organic Load (Kg BOD / d)	Hydraulic Load (m <sup>3</sup> )	Organic Load (Kg BOD / d)	Operated Organic Load to Designed (%)	Operated Hydraulic Load to Designed (%)
<b>Total</b>	<b>1,110,191.67</b>	<b>383,893.09</b>	<b>374,309.66</b>	<b>158,875.02</b>	<b>34%</b>	<b>41%</b>
Abu Dhabi	900,219.17	241,761.84	174,944.65	116,285.06	19%	48%
Al Ain	178,904.00	131,418.25	162,691.00	31,699.00	91%	24%
Al Gharbia	31,068.50	10,713.00	36,674.01	10,890.95	118%	102%

Source: Abu Dhabi Sewerage Services Company.

### Wastewater quality

With the increasing demand on wastewater treatment and reuse in the Emirate of Abu Dhabi, the environmental monitoring level and health standards of wastewater treatment, reuse or disposal also increased. There are several parameters that are examined in the process of wastewater treatment, such as the daily amount of dry sludge, the concentrations of biochemical oxygen demand and suspended solids. Table (2.8) shows that wastewater is basically treated to produce water that conforms to the international standards for irrigation of green spaces or disposal in the sea.

In 2012, the daily production of dry sludge increased by 10% compared with 2011 as shown in table (2.9). The chemical oxygen demand (COD) and the total dissolved solids (TDS) increased by 58.1% and 43.9% respectively as shown in tables (2.10) to (2.11).

**Table(2.8): Mean annual concentration of main pollutants in wastewater before and after treatment mean 2012**

(mg/L)

Pollutenat type	Maximum allowed limit of wastewater disposal	Before treatment	After treatment
Biological Oxygen Demand(BOD <sub>5</sub> )	50	230.2	5.15
Chemical oxygen demand (COD)	100	474.06	25.16
Total Dissolved Solids (TDS)	1500	779.17	738.24
Total phosphorus (P)	2	8.08	6.01
Total Suspend Solids (TSS)	50	215.77	7.52
Ammonia (NH <sub>3</sub> )	2	29.59	4.56

Source: Statistics Centre - Abu Dhabi.

**Table (2.9): Average daily amount of dry sludge by region**

(Tons/day)

Region	2006	2007	2008	2009	2010	2011	2012
<b>Total</b>	<b>97.73</b>	<b>112.24</b>	<b>128.66</b>	<b>164.83</b>	<b>135.63</b>	<b>149.63</b>	<b>164.67</b>
Abu Dhabi	73.23	82.22	95.88	122.09	100.49	110.05	115.57
Al Ain	24.20	28.96	28.02	40.67	29.95	33.56	42
Al Gharbia	0.30	1.05	4.75	2.08	5.18	6.02	7.1

Source: Abu Dhabi Sewerage Services Company.

**Table (2.10): Average daily concentration of BOD by region**

(kg/day)

Region	2006	2007	2008	2009	2010	2011	2012
<b>Total</b>	<b>82,071.12</b>	<b>88,757.22</b>	<b>104,495.08</b>	<b>115,726.45</b>	<b>119,011.71</b>	<b>107,694</b>	<b>170,231</b>
Abu Dhabi	54,944.22	59,758.01	73,790.92	75,900.60	87,930.76	79,673	125,640
Al Ain	23,957.90	24,193.40	25,597.46	33,104.24	26,683.20	23,885	33,700
Al Gharbia	3,169.00	4,805.81	5,106.70	6,721.62	4,397.75	4,136	10,891

Source: Abu Dhabi Sewerage Services Company.

**Table (2.11): Average daily concentration of suspended solids by region**

(Tons/day)

Region	2006	2007	2008	2009	2010	2011	2012
<b>Total</b>	<b>69.47</b>	<b>81.28</b>	<b>91.32</b>	<b>89.94</b>	<b>97.38</b>	<b>103.11</b>	<b>148.40</b>
Abu Dhabi	47.08	54.08	69.73	70.04	73.06	71.828	100.65
Al Ain	22.09	26.16	18.14	19.90	20.74	28.274	38.30
Al Gharbia	0.29	1.04	3.45	na	3.59	3.012	9.45

Source: Abu Dhabi Sewerage Services Company.

## **Explanatory Notes**

### **Glossary**

This report contains certain terms specific to environment and necessary when analyzing the environment statistics of Abu Dhabi Emirate. They include the following terms:

#### **Biochemical oxygen demands (BOD)**

Amount of dissolved oxygen required by organisms for the aerobic decomposition of organic matter present in water. This is measured at 20 degrees Celsius for a period of five days. The parameter yields information on the degree of water pollution with organic matter <sup>(1)</sup>.

#### **Biological treatment:**

It is a wastewater treatment employing aerobic and anaerobic micro-organisms that results in decanted effluents and separate sludge containing microbial mass together with pollutants. Biological treatment processes are also used in combination or in conjunction with mechanical treatment <sup>(1)</sup>.

#### **Desalinated Water:**

Total volume of water obtained from desalination of (i.e., seawater and brackish water ... etc) <sup>(1)</sup>.

#### **Mechanical treatment:**

It is the treatment of a physical and mechanical nature that results in decanted effluents and separate sludge. Mechanical processes are also used in combination and/or in conjunction with biological and advanced unit operations. Mechanical treatment includes processes as sedimentation, flotation, etc <sup>(1)</sup>.

#### **Sea water:**

Sea water is water from a sea or ocean. On average, sea water in the world's oceans has a salinity of ~3.5 per cent. This means that for every 1 litre (1000 ml) of sea water there are 35 grams of salts (mostly, but not entirely, sodium chloride) dissolved in it <sup>(3)</sup>.

#### **Sewage sludge production (dry matter)**

The accumulated settled solids, either moist or mixed, with a liquid component as a result of natural or artificial processes, that have been separated from various types of waste water during treatment <sup>(3)</sup>.

#### **Total public water supply:**

Water supplied by economic units engaged in collection, purification and distribution of water including desalting of sea water to produce water as the principal product of interest, and excluding system operation for agricultural purposes and treatment of waste water solely in order to prevent pollution.) It corresponds to ISIC division 41. Deliveries of water from one public supply undertaking to another are excluded <sup>(1)</sup>.

**Total reuse of freshwater:**

Freshwater that has undergone wastewater treatment and is deliverable to a user as reclaimed wastewater. This means the direct supply of treated wastewater to the users. Excluded is wastewater discharged into watercourse and used again downstream <sup>(1)</sup>.

**Total wastewater generated:**

Quantity of water in cubic meters, which have no purpose to use , or because of its presence or quantity or quality in the time in which it found

**Total wastewater treatment:**

Process to render waste water fit to meet applicable environmental standards or other quality norms for recycling or reuse <sup>(1)</sup>.

**Treated in other treatment plants:**

Treatment of wastewater in any non-public treatment plants, i.e. industrial wastewater plants. Excluded from 'Other wastewater treatment' is treatment in under independent treatment facilities such as septic tanks <sup>(1)</sup>.

**Treatment in independent treatment facilities:**

Individual private treatment facilities to treat domestic and other wastewater in cases where a public waste water network is not available or not justified either because it would produce no environmental benefits . Examples of such systems are treatment in wastewater tanks <sup>(1)</sup>.

**Wastewater treated in public treatment plants:**

All treatment of wastewater in municipal treatment plants by official authorities, or by private companies for local authorities, whose main purpose is wastewater treatment <sup>(1)</sup>.

**Water transmission system availability:**

Water Transmission System Availability is calculated in percentage in terms of the summation of the availabilities of transmission system components, such as pumps, water transmission lines, storage tanks, and surge vessels.



## Data sources

The key sources of data used in the report are the Environment Agency - Abu Dhabi, Abu Dhabi Water and Electricity Company – ADWEC, Abu Dhabi Distribution Company, Al Ain Distribution Company, Abu Dhabi Water & Electricity Authority - ADWEA, Abu Dhabi Sewerage Services Company (ADSSC) and Abu Dhabi Transmission & Despatch Company (TRANSCO).

The data are processed and passed to Statistic Centre – Abu Dhabi for further editing and compilation.

## Notes on tables

Unless otherwise indicated, all figures released in this publication pertain to the Emirate of Abu Dhabi. Unless details in tables refer to regions, the figures relate to the total of the Emirate. Wherever “Abu Dhabi” is used in this publication, it refers to Abu Dhabi region and not to the whole Emirate.

Due to rounding, some totals may not equal the sum of components.

## More information and next release

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

The next release is expected in October 2014 for 2013 data.

## References

- "1. United Nations Economic and Social Commission for Western Asia (ESCWA). (2007). Compendium of environment statistics in the ESCWA region. New York"
2. United Nation Statistics Division (UNSD). (1997). Glossary of environment statistics (F, No 67). New York
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