Management Contract and NWC Achievements in Jeddah Kingdom of Saudi Arabia
NWC PPP Roadmap
Reforming the Saudi Water Sector Strategic Transformation Plan

Identify Opportunities for Improvement
- Operational Audits
- Diagnostics
- Benchmarking
- Action plan

Management Contracts (6-7 years transition)
- Establish NWC
- Sign 6-7 years Performance Based management Contracts
- Boost sector performance
- Make water sector attractive

LT partnerships PPP
- Early PPP success paving the way for complex contract
- Move to LT PPP

Historical Situation & Key Challenges:
- Low Efficiency and Weak Performance
- Growing population & rapid economic development
- Substantial increase in demand for water and wastewater services
- Lack of natural resources and high water production cost
- Lack of HR capabilities and know-how
NWC Strategic Initiatives

“A world-class utility company”

A. World-class operator
B. Financially sustainable water business
C. Shaper of market

D. Streamlined organization structure with strong performance culture
E. Developing distinctive capabilities that will provide competitive advantage
Overview of Management Contracts in KSA

ACWA Holding

Jeddah City Business Unit

Veolia
(直到2014年8月)

Riyadh City Business Unit

SAUR
(直到2015年12月)

Makkah & Taif Cities Business Unit

~ 4.5 M Inhab.

~ 6 M Inhab.

~ 1.5 M Inhab.
# Performance Based Contract for Jeddah

<table>
<thead>
<tr>
<th>KPI</th>
<th>Name</th>
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<tbody>
<tr>
<td>1.1</td>
<td>Revenue metering Coverage</td>
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<td>1.2</td>
<td>Collection Ratio</td>
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<td>1.3</td>
<td>Collection Period</td>
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<td>Metered Water Usage</td>
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<td>Volume of Metered Water Sold</td>
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<td>2.1</td>
<td>Service Continuity</td>
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<tr>
<td>2.2</td>
<td>Water Quality (sampling)</td>
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<td>2.3</td>
<td>Water Quality (testing)</td>
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<td>2.4</td>
<td>Leak Run Time</td>
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<td>2.5</td>
<td>Sewer Flooding Incidents</td>
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<td>2.7</td>
<td>Customer Service (complaints)</td>
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<td>2.8</td>
<td>New connection time (water)</td>
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<tr>
<td>2.9</td>
<td>New connection time (wastewater)</td>
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<tr>
<td>2.11 A</td>
<td>Tankered Water Service (Walk-in)</td>
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<tr>
<td>2.11 B</td>
<td>Tankered Water Service (post-paid)</td>
</tr>
<tr>
<td>2.16</td>
<td>Customer Service (Tel. response)</td>
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<tr>
<td>3.1</td>
<td>Self sufficiency</td>
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<tr>
<td>4.1</td>
<td>Power Consumption</td>
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<td>8.1</td>
<td>Wastewater treatment efficiency</td>
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<td>8.2</td>
<td>SW Network Preventive Cleaning</td>
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<tr>
<td>8.3</td>
<td>Availability of Wastewater Pumps</td>
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7 years Management Contract signed in May 2008
Overall value: 73 MUSD

Initial focus of the Management Contract was on operational performance.

Operator’s performance evaluation:

- A well balance performance regime with KPIs achievement with penalty/incentive mechanism.
  - Enabling projects (Principal Plan Outputs)
  - Deliverables (SCADA, laboratory, training center, customer services center, etc...)
Operational Achievements in a nutshell
General indicators on the performance of the company during the period (2008 - 2012)

The customer satisfaction Index

- 45% in 2008
- 85% in 2009
- 84% in 2010
- 83% in 2011
- 83% in 2012

The amount of savings as a result of the water leak detection (million m$^3$)

- 7.2 in 2008
- 23 in 2009
- 53.9 in 2010
- 67 in 2011
- 115.4 in 2012

Agreements TSE through the contracts (1000 m$^3$/day)

- 27 in 2009
- 276 in 2010
- 405 in 2011
- 436 in 2012

The increases:
- +17% in the customer satisfaction Index
- +100% in the amount of savings
- +153% in agreements TSE through contracts
General indicators on the performance of the company during the period (2008 - 2012)

- **Avg. time to install WW house connection (day)**
  - 2008: 180 days
  - 2009: 60 days
  - 2010: 47 days
  - 2011: 23 days
  - 2012: 20 days
  - Decrease: 42%

- **Avg. time to install water house connection (Day)**
  - 2008: 70 days
  - 2009: 30 days
  - 2010: 30 days
  - 2011: 24 days
  - 2012: 19 days
  - Decrease: 28%

- **Decrease in the number of severely delayed projects(#)**
  - 2008: 104
  - 2009: 61
  - 2010: 27
  - 2011: 18
  - 2012: 3
  - Decrease: 56%

- **No. of the New WW house connection**
  - 2008: 27,600
  - 2009: 40,000
  - 2010: 20,700
  - 2011: 28,426
  - 2012: 50,873
  - Increase: 17%
NWC effort in the City of Jeddah

Contents

Environmental Services Projects

Improved water supply and the implementation of strategic storage

The company's efforts in the reduction of the high level water table
Environmental Services Projects
Launching the first phase of the sewage projects and start the implementation of the house connections

- Accelerate the implementation of projects from 5 to 3 years.
- More than (2.5) million linear meters of networks were completed.
- Construction of new treatment plants and the development of the existing stations to reach a capacity of more than a million m$^3$/day.
- Execution of the fourth-largest pumping station in the world with a pumping capacity of one million m$^3$/day.
- The completion of more than 25 thousand household connections to sanitation.
South Treatment plants

AlKhumra industrial station with a capacity of processing (50,000) m³/day

Phasing out AlKhomarah 1, 2, 3 treatment plants

AL Khomarah STP 4 with a capacity of processing 250,000 m³/day

Diverting the treatments on the stations 1, 2, 3 to station 4 with biological treatment
Wastewater House Connections

40,000 connections – by 2015

Around 16 districts will be covered

Old Makkah Road K14

2014
35,000 Connections

2013
35,000 connection

2012
25,000 connection

Abhur

Safa, Rabwa, Nuzha

Marwa, Bawadi, Salama

Faisaleyn, Azzizeya

Rawda

Khaldeya

Around 16 districts will be covered

40,000 connections – by 2015
Until mid-2010, Musk was a sewage lake of 9 Mm3 with 2.5 Mm² area used by trucks to discharge septic tanks wastewater.

Major issues were affecting the Jeddawis: flooding and dam rupture risk, environmental contamination, etc..

A Royal Decree issued by Custodian of the Two Holy Mosques King Abdullah in May 2010 urged the emptying of the Musk Lake within one year.

The process of transferring responsibility for Jeddah’s Musk sewage lake from the Mayor’s Office to the Ministry of Water and Electricity (MOWE) was completed within three weeks.

MOWE delegated the project execution to NWC.
The Musk Lake in Briman
THE MUSK LAKE ENVIRONMENTAL PROJECT SUCCESS STORY

After

Before
Tasks undertaken by NWC with the support of the operator:

1. Drying up the lake
2. Sludge disposal and site recovery
3. Transfer of the septic tankers wastewater to new WWTP (60,000 m3/d)
4. Transfer pipeline to North-Jeddah
5. Dam and catchment management (ex: structural, level monitoring, ...)
6. Re-use issues and future developments linked to Municipality plans related to Al Adha recreational valley located downstream the WWTP
7. Storm management
THE MUSK LAKE ENVIRONMENTAL PROJECT SUCCESS STORY

NWC with its operator have set out the technical and practical solutions in a completely integrated manner.

The sewage lake was dried up and the lake bottom sludge were treated within 3 months mid year 2010 which was 9 months shorter that the initial deadline.

Project overall cost was 25 MUSD and operator appointed dedicated experts for developing the project.

In 2011, the Jeddah Musk Lake Project was attributed the Best Global Wastewater Reuse Project Award given to NWC by the Former Secretary General of the United Nation, Mr Kofi Annan in Berlin, Germany.
Improved water supply in Jeddah city and the implementation of strategic reservoir
Robust water network management have yielded operational improvements and increase in continuous supply.

2008

2011
Robust water network management have yielded operational improvements and increase in continuous supply.

Increasing the rate of continuous supply from (4%) in 2008 to (40%) in 2014
IMPROVING WATER DISTRIBUTION THROUGH BEST IN CLASS WATER MANAGEMENT PRACTICES (JEDDAH)

Filling Stations Improvements in Jeddah

Before

After
Leak Detection & Repair Activity

> **Leak Detection achievements**

> Implementation of SE Helium technology for invisible leaks detection
> 4 vans fully equipped
> Detection and repair of more than 8,800 invisible leaks with 7,800 km surveyed since 2009 till Dec. 2013.
> Water losses reduced by 30% (NRW <20%)

> **Leak repair achievements**

> 44 teams to repair all leaks in Jeddah working 24hrs/7 days
> 1,455 leaks repaired monthly in 2013/2104
> Coordination with Jeddah municipality to secure the permits
> Leak run time (average time to repair the leaks): from 59 hours in 2008 to 24 hours maximum in 2014
Leak Detection Achievements

<table>
<thead>
<tr>
<th>Year</th>
<th>Leak (km)</th>
<th>Km (leak)</th>
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<tbody>
<tr>
<td>2009</td>
<td>477</td>
<td>327</td>
</tr>
<tr>
<td>2010</td>
<td>1105</td>
<td>760</td>
</tr>
<tr>
<td>2011</td>
<td>2431</td>
<td>890</td>
</tr>
<tr>
<td>2012</td>
<td>2928</td>
<td>2773</td>
</tr>
<tr>
<td>2013</td>
<td>2986</td>
<td>1953</td>
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</tbody>
</table>
No. of leaks repaired over the last 5 years

- 2009: 11625
- 2010: 15000
- 2011: 16607
- 2012: 17964
- 2013: 17458
Water savings related to leak detection & repair

About 60 Mm³ water saved from 2009 to 2013

- 2009: 3606690 m³
- 2010: 6160000 m³
- 2011: 16361456 m³
- 2012: 16029331 m³
- 2013: 16775901 m³
ENHANCEMENT OF WATER SUPPLY SECURITY

The target storage (6) million cubic meters of water through the year (2019) in 4 stages:

3 reservoirs with total capacity 545,000 m³ has delivered mid-year 2014 and have been utilized to supply the districts during Ramadan to cover a few emergency or shortage from source.

1. SOP integrated existing operation reservoirs old and strategic reservoirs have been prepared.
2. JCBU Stations operators under contractors on site 24/7 for follow up and training.
3. Supply the network from Service Reservoirs has been tested.
The company's efforts to reduce the water table
The work of the implementation of the project districts affected by the rising water surface (Quiza District)
The work of the implementation of the project districts affected by the rising water surface (K14 District)
The work of the implementation of the project districts affected by the rising water surface (Matbuly District)
The work of the implementation of the project districts affected by the rising water surface (Buriman District)
Challenges to come
Challenges to come

Keep improving the economic performance of NWC while improving cost recovery for OPEX
- Revenue enhancement
- Cost reduction
- Improve efficiency

Continue infrastructure expansion program
- Sewerage system in Jeddah (40% coverage today)
- Strategic reservoirs
- Distribution network development

Finalise LT partnership framework and launch concession JVs for the major cities with international operators by 2016
نسأل الله التوفيق والسداد