NRW situation of the urban Water Utilities in Egypt

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Most of the population is concentrated in only 5% of the total area of Egypt in the Delta and Nile Valley.

**Water Resources (57.0 BCM/yr)**

- River Nile (55.5 BCM/yr)
- Groundwater (0.5 BCM/yr)
- Rainfalls (1.0 BCM/yr)
Stakeholders for Water and Wastewater Sector

**HCWW**
Own, manage and operate through existing 24 companies

**EWRA**
Regulatory Agency

**NOPWASD**
Executive Agency of Water & Wastewater projects in the Governorates

**CAPWO**
Executive Agency of Water & Wastewater projects in Cairo & Alexandria

Ministry of Water and Wastewater Utilities
### HCWW at a glance

<table>
<thead>
<tr>
<th>Year</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Service region</strong></td>
<td>24 governorates</td>
</tr>
<tr>
<td><strong>Number of subsidiary companies</strong></td>
<td>24 companies</td>
</tr>
<tr>
<td><strong>Water service coverage (millions)</strong></td>
<td>97 %</td>
</tr>
<tr>
<td><strong>Wastewater service coverage</strong></td>
<td>50% (90% Urban 10% Rural)</td>
</tr>
<tr>
<td><strong>Subscriptions</strong></td>
<td>13 million</td>
</tr>
</tbody>
</table>
## HCWW at a glance

<table>
<thead>
<tr>
<th></th>
<th>2013</th>
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</thead>
<tbody>
<tr>
<td><strong>Year</strong></td>
<td>2013</td>
</tr>
<tr>
<td><strong>Water production (annual average)</strong></td>
<td>22.8 million m$^3$/day</td>
</tr>
<tr>
<td><strong>Treated Wastewater (annual average)</strong></td>
<td>10.1 million m$^3$/day</td>
</tr>
<tr>
<td><strong># of water treatment plants</strong></td>
<td>2588 Plants</td>
</tr>
<tr>
<td><strong># of wastewater treatment plants</strong></td>
<td>372 plants</td>
</tr>
<tr>
<td><strong>Water distribution networks</strong></td>
<td>144,000 km</td>
</tr>
<tr>
<td><strong>Wastewater collection networks</strong></td>
<td>38,000 km</td>
</tr>
</tbody>
</table>
NRW in Egypt

NRW
7.4 million m³/day (32%)

Commercial
2.6 million m³/day (11%)
- Meter Reading errors
- Illegal connections

Physical
4.8 million m³/day (21%)
- Network leakage
HCWW takes mix of actions for leakage management.
NRW Strategy in Egypt – Commercial

Subscribers Status

12,5 Million Subscribers

Fixed

900,000

Old Meters

700,000 Not working meters

7.9 Million Working Meters

New Meters

3 Million
NRW Strategy in Egypt – Commercial

- Metering
  - 2.4 million domestic meters procured and installed
  - Four companies qualified to produce water meters locally according to HCWW specifications
  - Establishment of system for meter calibration
NRW Strategy in Egypt – Physical

Tunnels made by the leaked water
NRW Strategy in Egypt – Physical
NRW Strategy in Egypt – Physical

High Tech.
Leak detection equipments
Noise Recorders to detect water leakage
NRW Strategy in Egypt – Physical

Ground penetrating radar which is used to trace pipelines
NRW Strategy in Egypt – Physical

Correlators to locate broken parts in pipelines.
NRW Strategy in Egypt – Physical

Establish teams from:
• GIS
• Meter readers.
• O & M
to collect the geographic data in every town/district or area.
Subdivide areas into DMAs in every town/district or area.
NRW Strategy in Egypt – Physical

Training AC’s Staff
NRW Strategy in Egypt – Physical

- Discover illegal connections.
- Change meters.
- Replace faulty ones after calibration in every town/district.
Establishing a **Specialized Department** in all affiliated companies (Loss Control Department) for planning, follow-up and execution of all activities of this strategy.
HCWW implemented many pilot projects in ACS for leak detection with cooperation of international donors, for example:

- IBISS in Cairo and Alexandria.
- Aquanight in Alexandria.
- JICA in Sharkia.
- Danida in Aswan.
NRW % in HCWW Subsidiaries (2012)

NRW % average of HCWW subsidiaries (32%)

NRW % in Developing countries (35%)
## Water Balance Results

### NRW 2008
- Alx: 39.3
- Minya: 41.4
- Fayoum: 35.9
- Behera: 35
- Cairo: 36
- Biniswef: 41
- Matrouh: 45
- Damietta: 43
- Giza: 47
- Aswan: 38
- Hurga: 35
- Kaf Elshik: 49
- Sayna: 40
- Luxor: 39
- Sharkia: 35
- Daqah: 40
- Assuot: 43.9
- Qena: 39.9
- Sohag: 40

### NRW 2010
- Alx: 35
- Minya: 36
- Fayoum: 31
- Behera: 33
- Cairo: 32
- Biniswef: 35
- Matrouh: 40
- Damietta: 39
- Giza: 37
- Aswan: 33
- Hurga: 34
- Kaf Elshik: 39
- Sayna: 35
- Luxor: 33
- Sharkia: 31
- Daqah: 33
- Assuot: 38
- Qena: 33
- Sohag: 35

### NRW 2012
- Alx: 33
- Minya: 32
- Fayoum: 29
- Behera: 30
- Cairo: 29
- Biniswef: 33
- Matrouh: 35
- Damietta: 34
- Giza: 35
- Aswan: 30
- Hurga: 30
- Kaf Elshik: 33
- Sayna: 32
- Luxor: 31
- Sharkia: 30
- Daqah: 35
- Assuot: 30
- Qena: 30
- Sohag: 31
Challenges facing HCWW in reducing NRW

- Qualified technical staff.
- High technology equipments for detecting water leakage.
- Approvals and permits for excavation.
Thank you