Ranhill Utilities Berhad

MANAGEMENT OF WATER UTILITIES IN DEVELOPING COUNTRY - MALAYSIA
1,500 Projects over 30 years in 18 countries

Central America
- Jamaica

Middle East
- Saudi Arabia
- Qatar
- Iraq
- Iran
- Turkey

Africa
- Nigeria
- Sudan
- Libya
- Algeria

South Asia
- India
- Pakistan

East Asia
- Malaysia
- Singapore
- China
- Thailand
- Vietnam
- Philippines
- Myanmar
- Brunei
- Indonesia

Facilities in Infrastructure, Utilities, Power and Oil & Gas Industries
Ranhill Utilities Berhad

Group Structure

Ranhill Utilities Berhad

70%

Ranhill Water Technologies (RWT)

- Provision of technology driven solutions for water and wastewater treatment
- 4 BOT (15 - 29 years) wastewater and recycle water projects in Thailand and 2 water projects in China

100%

SAJ Holdings (SAJH)

- 30 years potable water supply concession for the entire Johor State
- Successful turnaround of SAJ Sdn Bhd from loss making to profitable business and improving service levels

100%

Ranhill Water Services (RWS)

- NRW management, networking modeling and geographical information system (GIS) service
- Provide operational services to water companies and agencies

* investments and undertakings through other SPV - special purpose investment vehicles
PPP Projects world wide

**Saudi Arabia:**
On-going

**Malaysia:**
On-going
1. SAJ Holdings: 30 years water supply concession (2000-2029) for the state of Johor. Annual turnover: USD 235 mill (18 months) for 2006

Finalising Terms
1. Melaka Water Supply Management Contract, 5 years Potential annual turnover: USD 1.4 mill
2. JB City Sewerage Management Contract, 22 years (2008-2029) Potential annual turnover: USD 25 m

**China:**
On-going
1. Yichun 100mld WTP, BOT-29years, (2003-2031) Annual Turnover: USD 6.6 mill
2. Xiao Lan, 30mld WWTP, BOT-29years Annual Turnover: USD 1.2 mill
3. He Fei, 30mld WWTP, BOT-25years Annual Turnover: USD 2 mill

**Thailand:**
On-going
1. Amata City WTP & WWTP, BOT-15years, (2005-2019) Annual Turnover: USD 0.4 mill
2. Amata Nakorn WTP, WWTP & Reclaimed plant, BOT-20years (2005-2024) Annual Turnover: USD 0.2 mill
3. Safeskin, WWTP (O&M), 2 years renewable contract, Annual turnover: USD 2.2 mill

**Precursor to PPP Projects:**
On-going
1. NRW reduction contract for State of Johor: 5 years contract with annual turnover of USD 4 mill
   - NRW reduction contract for the State of Melaka: 1 year pilot contract with turnover of USD 0.3 mill
   - 5 years contract with annual turnover of USD 1 mill
EXPERIENCE IN TOTAL WATER SUPPLY SYSTEM MANAGEMENT

30-year water supply concession in Malaysia

State Government

Concession: Source to Tap Capabilities (1,737 employees)

Abstraction
- From river and dams
- 43 treatment plants
- Production 1,315 mld
- Capacity 1,624 mld

Production
- 487 reservoirs
- >12,000 km pipeline

Distribution
- 3.1 mil population
- 830,000 accounts
- > 99% coverage

Customer
- Drilling Water Quality >98%
- Compliance (Ministry of Health Standards), through establishment of Central Lab - accredited with ISO/IEC 17025 certification (Dept of Standard Malaysia)
- Country highest reduction of NRW from above 45% to 29.9% (Sept 2006)
- Malaysian Water Association award for Best Management 2002

State of Johor

- Successful turnaround from loss to profitable business and improving service levels.
- Average tariff: MYR 1.54/m3
- Guaranteed IRR band: IRR of 14-18%
- To design, construct, operate and maintain assets, including increasing capacity by 1,337mld
## Summary of selected projects outside of Malaysia

<table>
<thead>
<tr>
<th>Location</th>
<th>Concession</th>
<th>Concession period</th>
<th>Client</th>
<th>Capacity</th>
<th>Counterparty</th>
<th>Minimum offtake</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yichun, China</td>
<td>Water supply treatment</td>
<td>29 years</td>
<td>Municipal customers</td>
<td>Phase 1 – 50 mld, Phase 2 – 50 mld</td>
<td>Yichun Municipal Government</td>
<td>50-100mld escalating with concession years</td>
<td>100mld water treatment plant in Yichun China on a 29 year build, operate and transfer (BOT) basis. The plant has been commissioned on 15th October 2005 and is currently in operation. Tariff adjustments are allowed every five years as set out in the concession agreement</td>
</tr>
<tr>
<td>He Fei, China</td>
<td>Wastewater treatment</td>
<td>29 years</td>
<td>Industrial customers</td>
<td>Phase 1 – 30 Mld</td>
<td>AnHi Municipal Government</td>
<td>90% of contracted capacity</td>
<td>30mld wastewater treatment plant in Anhi Province China on a 29 year build, operate and transfer (BOT) basis.</td>
</tr>
</tbody>
</table>

**Wastewater treatment in He Fei, China**

**Location**

- Amata Industrial Parks, Thailand
- Yichun, China
- He Fei, China

**Concession**

- Water supply and wastewater treatment
- Water supply in Yichun, China
- Wastewater treatment

**Concession period**

- 20 years
- 29 years
- 29 years

**Client**

- Industrial customers
- Municipal customers
- Industrial customers

**Capacity**

- Water supply – 20.5 mld, Wastewater – 16 mld, Reclaim water – 10.4 mld
- Phase 1 – 50 mld, Phase 2 – 50 mld
- Phase 1 – 30 Mld

**Counterparty**

- Amata Quality Water Company Limited
- Yichun Municipal Government
- AnHi Municipal Government

**Minimum offtake**

- Water supply – 15.5 mld, Wastewater – 13.0 mld, Reclaim water – 10.4 mld
- 50-100mld escalating with concession years
- 90% of contracted capacity

**Description**

- Six build, operate and transfer potable water, wastewater and recycled water projects in Amata City Industrial Park and Amata Nakom Industrial Park, Thailand.
- 100mld water treatment plant in Yichun China on a 29 year build, operate and transfer (BOT) basis. The plant has been commissioned on 15th October 2005 and is currently in operation. Tariff adjustments are allowed every five years as set out in the concession agreement
- 30mld wastewater treatment plant in Anhi Province China on a 29 year build, operate and transfer (BOT) basis.
MALAYSIAN WATER INDUSTRY – KEY REFORMS
Water industry in Malaysia

Recent developments

- **Establishment of Ministry of Energy, Water and Communications**
  - Oversee the provision of utility services.
  - Merger of water and wastewater agencies under one ministry.

- **Change in Federal Government’s role in Water Services**
  - Passing of two new water related bills:
    - Water Industry Services Act (WSIA) – water services on concurrent list
    - Suruhanjaya Perkhidmatan Air Negara (SPAN) - setting up of a National level regulator

- The National Water Master Plan, covering the planning horizon up to year 2050, sets out strategies and guiding principles for the future development and conservation of national water resources.

- Under the masterplan, a projected MYR 52.9 bn (USD 15bn) is required to ensure efficient and reliable water supply system up to 2050
  - demand increase by 5.4% per annum

- Competitive pressures in the water industry are quite limited by virtue of what is generally a natural monopoly

- Stabilisation of revenues for water utilities is driven mainly by increase in scheduled tariff gazetted and capacity expansion arising from demand growth.
THE MALAYSIA WATER RESTRUCTURING PLAN

THE ROLE OF NATIONAL WATER SERVICES COMMISSION (SPAN)
WATER ASSET MANAGEMENT COMPANY (WAM Co)

SPAN – National Regulator
Regulates overall industry, including WAM Co and Water Operators

Water Companies / Operators

Water Asset Management Company (WAM Co):

- Owner of all water/waste water assets
- Provide asset leasing services to operators
- Finance and implement major capital works

Water Companies / Operator responsible for water & waste-water management works involving:

- Water and Sewerage services
- Water and Sewerage treatment, distribution / collection
- Customer services
- Finance and implement operational improvements

Lease Assets

Rent Assets

Functions and Powers of SPAN include:

- Advisory to Parliament.
- Review and recommend tariffs
- Formulate National Water and Sewerage Procedures, Standards, Guidelines, Policies
- Control of the National Water and Sewerage Development Plan
- Decide on Implementation of priority Water and Sewerage Projects
- Communication, Public Education and R&D Program
The Ministry of Energy, Water and Communications has expressed its view that states are encouraged to adopt a corporatisation model.

It is anticipated that private sector participation will be in the following ways:
- Strategic partnerships
- Equity participation (minority)
- O&M contractors – operators
- Specialist technical input
- Private funding initiatives

This exercise seeks to increase the commercial viability of the water utility sector in Malaysia through increased private sector participation in the market.

It also presents an opportunity for the growth of service providers in the sector.
Malaysian Water Industry - Key Challenges
Addressing Funding Challenges Through WAMCo

**Government**
- Funds
  - Water Dam
    - Lease Payments
      - Lease
        - Water Companies
          - Lease Payments
            - (Based on affordability and outstanding loans)

**Bond / Capital Market Investors**
- Funding
  - Water Asset Management Company (WAMCo)
    - Ownership
    - Build water asset e.g. WTP, distribution network, etc.
RANHILL UTILITIES
- EXPERIENCE IN RESTRUCTURING OF UTILITIES SERVICES
TRANSFORMATION OF JOHOR WATER SUPPLY

Before 1989
- Johor Water Supply Dept
- Public Agency
- Public Works Dept

Jan 1989
- Water Supply Section

Feb 1994
- Corporatised Company
  - Syarikat Air Johor Sdn. Bhd.

March 2000
- Private Company
  - SNJ Holdings Sdn Bhd

TURNAROUND ACHIEVEMENTS

- Financial
  - Funds Injection
  - Profitability
- Operational Re-engineering
  - Organisation structure
  - Business focus
  - Productivity & Cost control

- Performance Benchmarking
  - Concession targets
  - Quality Objectives & Customer Charter
- Operations
  - Customer Services
  - NRW Reduction & Water Quality
  - Programme of Works
RANHILL UTILITIES BERHAD
Operating Regulatory Structure in Malaysia

Water Treatment Operators
• SAJ Holdings Sdn Bhd
• Bulk Water suppliers

Water Distributor
SAJ Holdings Sdn Bhd
Supply treated water
Distribute treated water
Pay bill

CUSTOMERS

Government / Regulator
State Water Regulatory Body
State Government / Syarikat Air Johor Sdn Bhd
Lease immovable assets
Pay Concession Charges
Regulate

RANHILL UTILITIES BERHAD
In the corporatisation framework, existing concessionaires will have an option to retain their existing concessions or to take part in the privatisation program.

- There is a two year window in which they can make a decision.
- Successful private sector participation through Concession models allowed to continue.
- However, the new corporatisation model will also present new opportunities, such as, participation in sewerage and other supporting services.
- Under both scenarios, operators shall be regulated by SPAN
- Flexible approach to capitalise on successful models
### Key Parameters Comparison Before and After Privatisation

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue (USD per annum)</td>
<td>56.7</td>
<td>130</td>
</tr>
<tr>
<td>Profit Before Tax (USD per annum)</td>
<td>- 48.9</td>
<td>42</td>
</tr>
<tr>
<td>Coverage (%)</td>
<td>99</td>
<td>100</td>
</tr>
<tr>
<td>Staff (per 1000 connections)</td>
<td>2.8</td>
<td>2.1</td>
</tr>
<tr>
<td>Non Revenue Water (Gross %)</td>
<td>45</td>
<td>30</td>
</tr>
<tr>
<td>(12 mths average)</td>
<td></td>
<td>(12 mths average)</td>
</tr>
<tr>
<td>Billing Cycle (days)</td>
<td>40</td>
<td>31</td>
</tr>
<tr>
<td>Collection Period (days)</td>
<td>75</td>
<td>34.3</td>
</tr>
<tr>
<td>Active Debts/Revenue (%)</td>
<td>28.4</td>
<td>10.4</td>
</tr>
<tr>
<td>Production Cost (USD/m³) (ex plant)</td>
<td>0.06</td>
<td>0.05</td>
</tr>
</tbody>
</table>
### SUMMARY OF ACHIEVEMENTS

#### Competitive & Functional Benchmarking:
- Against UK Companies

<table>
<thead>
<tr>
<th>Benchmark (OFTWAT report)</th>
<th>UK (average)</th>
<th>SAJH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water quality</td>
<td>99.9%</td>
<td>98.6%</td>
</tr>
<tr>
<td>Bills for metered customers (At least one bill per year)</td>
<td>99.5%</td>
<td>99.9%</td>
</tr>
<tr>
<td>• Majority of UK accounts are not metered but pay for water in relation to property size. At SAJH, bills are issued on a monthly basis.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Level of metered billing total customers</td>
<td>39.4%</td>
<td>100%</td>
</tr>
<tr>
<td>Level of metered billing domestic customers</td>
<td>21%</td>
<td>100%</td>
</tr>
<tr>
<td>NRW (NRW figures for UK are only approximate)</td>
<td>22%</td>
<td>30%</td>
</tr>
<tr>
<td>Response to written billing enquiries (less than 10 days)</td>
<td>99.8%</td>
<td>97.6%</td>
</tr>
<tr>
<td>Water mains pressure (measurements are recorded differently)</td>
<td>99.9%</td>
<td>93%</td>
</tr>
<tr>
<td>• In the UK the pressure measurement is 10 meters head at a flow of 9 liters per minute at the property or 15 meters head at the main near to the property.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• SAJH measures pressure of 10 meters at any reticulation point</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Estimated consumption l/person/day</td>
<td>145</td>
<td>203</td>
</tr>
</tbody>
</table>
**ORGANISATION STRUCTURE**
- Restructuring from multi function responsibility at local level to a central management based on business and operational functions
- Staff empowerment and ownership of actions
- Reduce hierarchical overlaps to ensure more focused management
- Management Information System for informed and timely decision making

**CUSTOMER FOCUS**
- Transformation from Public Entity into Private Company
- Staff Appreciation as a Service Company
- Implement new work culture based on customer satisfaction

**LEVEL OF SERVICE**
- Meeting the Rising Expectations of Consumers
- Setting Benchmarks for Service Levels at all aspects of the operation
- Implement new work culture based on customer satisfaction
**PRODUCTIVITY**

- Employee’s productivity is improved by 25%
- Overtime payment is reduced by 50%

<table>
<thead>
<tr>
<th>Year</th>
<th>Employees per 1000 connections</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999</td>
<td>2.8</td>
</tr>
<tr>
<td>2003</td>
<td>2.1</td>
</tr>
</tbody>
</table>

**BILLING & COLLECTION**

- Introduction of Spot Billing, allowing current period billing
- Reduce Billing Cycle to 30.9 days
- Reduce Collection Period to 39.4 days, from 75 days
- Collection Efficiency improved to more than 98%
- Spot Billing provides for detection of anomalies in the bills.

**PRODUCTION COST**

- Production Cost is the major cost driver of the Company
- Concerted effort to reduce Production Cost

<table>
<thead>
<tr>
<th>Year</th>
<th>Prior to Privatisation</th>
<th>After Privatisation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1997</td>
<td>RM 0.22</td>
<td>RM 0.19</td>
</tr>
<tr>
<td>1998</td>
<td>RM 0.21</td>
<td>RM 0.19</td>
</tr>
<tr>
<td>1999</td>
<td>RM 0.19</td>
<td>RM 0.19</td>
</tr>
<tr>
<td>2000</td>
<td>RM 0.19</td>
<td>RM 0.19</td>
</tr>
<tr>
<td>2001</td>
<td>RM 0.19</td>
<td>RM 0.19</td>
</tr>
<tr>
<td>2002</td>
<td>RM 0.19</td>
<td>RM 0.19</td>
</tr>
</tbody>
</table>

RM 0.19 = USD 0.05
NRW REDUCTION PROGRAMME

AT RANHILL WE RECOGNISE THAT:

- NRW program requires company-wide commitment as NRW occurs at every level of operation.
- NRW reflects upon Ranhill efficiency as a water company.
- NRW has a direct effect on Company financial position.
- As a concession holder, NRW is one of our commitments to be fulfilled.
- It demonstrates our corporate value, as water is a precious commodity entrusted upon Ranhill to manage.
Non Revenue Water Reduction activities in Johor, Malaysia

- DMA Establishment
- Leak detection
- Flow balancing
- Reservoir Monitoring
- GIS
- Network modelling

- Over 700 DMA established with 80% coverage
- 12,052 found and repaired in 2005
- Currently with 90 leakage detection staff
- 20 nos of flow balancing analysis carried to date with significant results
- 127 reservoirs on RMS and a further 360 monitored manual on a six month basis.
- 95% of water assets transferred into GIS (over 12,000km mains)
- Integration with WAQIS, BIS, JMS, etc.
- Strategic model constructed
- All main models under construction
<table>
<thead>
<tr>
<th>CUSTOMER QUALITY REQUIREMENT</th>
<th>QUALITY TARGET 2006</th>
<th>Achievement 2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Quality (MOH Standard)</td>
<td>99 % Compliance</td>
<td>99.7% Compliance</td>
</tr>
<tr>
<td>Continuous Supply</td>
<td>Scheduled disruption not more than one 24 hrs per customer/ 90 days</td>
<td>100%</td>
</tr>
<tr>
<td>Adequate Pressure</td>
<td>At any point in reticulation ≥ 10 meters residual pressure.</td>
<td>93%</td>
</tr>
<tr>
<td>Water Quantity</td>
<td>Min. 120% supplies capacity against demand. Min. 12 hrs storage capacity at reservoirs.</td>
<td>119%</td>
</tr>
<tr>
<td>Safe Working Environment.</td>
<td>Zero penalty, Zero hospitalization, 100% PPEs compliance and 0/1000 personal/year injury time</td>
<td>0/3</td>
</tr>
<tr>
<td>Environmental Compliance.</td>
<td>Provide sludge treatment for all plants &gt; 5 mgd capacity</td>
<td>Development work in progress (Design stage)</td>
</tr>
<tr>
<td>New connections</td>
<td>Individual connection within 3 days Developer application within 7 days Plan approval within 3 months Response within 30 days.</td>
<td>99.1%</td>
</tr>
<tr>
<td>Water Supply Approval CF Support</td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>Billing cycle</td>
<td>Average 30 days.</td>
<td>31.1 days</td>
</tr>
<tr>
<td>NRW</td>
<td>Concession target 20% by 2010</td>
<td>30% in 2006</td>
</tr>
</tbody>
</table>
## CUSTOMER CHARTER

<table>
<thead>
<tr>
<th>CRITERIA</th>
<th>Target (%)</th>
<th>Achievement</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2006</td>
<td>2006</td>
</tr>
<tr>
<td>1) Water supplied in compliance with MOH requirement</td>
<td>98%</td>
<td>98.6%</td>
</tr>
<tr>
<td>2) Customers informed of all planned interruptions more than 24 hours in advance</td>
<td>100%</td>
<td>98.3%</td>
</tr>
<tr>
<td>3) Pipe bursts repaired within 24 hours upon receiving of complaint</td>
<td>100%</td>
<td>89%</td>
</tr>
<tr>
<td>4) Pipe leaks repaired within 3 working days upon receiving of complaint</td>
<td>100%</td>
<td>98%</td>
</tr>
<tr>
<td>5) Bill queries at the counter shall be attended to within one hour</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>
| 6) Queries and complaints requiring a visit to the premise shall be attended as follows:-  
  i) Visit to the premise within 3 days from date of complaint received.  
  ii) Complaint resolved within 10 days from date of complaint received | 100% | 95% | 98% |
| 7) New water meters shall be installed at the premise as follows:  
  i) 2 working days for individual household after deposit paid  
  ii) 7 working days for housing developer after deposit paid | 100% | 99.4% | 99.5% |
| 8) Disconnected water supply shall be reconnected within 3 working days after the related payment is received. | 100% | 99.5% |
| 9) Deposit money will be returned within 3 weeks upon the application to terminate supply along with related document have been received. | 100% | 96% |
| 10) Application for the approval of reticulation plans and internal plumbing shall be responded to within 3 weeks from the date the application is received. | 100% | 97.2% |
OPERATIONS CENTRE
Open 24 hours / 7 days a week
Toll free line 1-800-88-7474

• Serve as a nerve centre to receive feedback and complaints from consumers

• Database on customers’ calls provides information for evaluation, planning, decision making, and management’s actions.

• The centre currently receives more than 300 calls per day and through the job management system (JMS), creates jobs and report its status.

CUSTOMER OUTREACH PROGRAM

• Promote better rapport with consumers and improve customers’ service and getting feedback

• SAJ Holdings has established a web site in year 2000 at www.saj.com.my to disseminate information electronically

• As part of SAJH’s effort in developing Consumers’ awareness in water conservation

• Visited JKK, Ketua Kampung, Community Leaders covering all parliamentary constituency
INTERNATIONAL RECOGNITION

• Our operation in Johor has been recognised by the World Bank as a Training Centre for water supply operation, maintenance and management.

• 3 batches of delegates from Laos, have attended trainings at SAJH.

• Educational visits have been made by delegates from Thailand, Indonesia & Bangladesh.

• Preparation is being made for the next batch of delegates from Indonesia to attend water treatment plant operation training at SAJH.

NATIONAL RECOGNITION

Malaysia Outstanding Water Award For Management

In recognition of SAJH’s excellence in

• Total Water Management and Operations Efficiency

• Sound Financial Performance

• High Quality and Standards that meets Customers’ satisfaction
Thank You

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