資料６

資料６　日本の水インフラ技術に関する海外の期待

Ministry of Urban Development, Government of India

COUNTRY: INDIA

Guest Speaker: J.B. Ravinder

Deputy Adviser

Areas of concern in Water supply-sewerage sector in India

- Service coverage, reliability, continuity and quality of service
- Universal Service Provision including the Urban poor
- Sustainability of Services
- Adoption of technology for achieving best practices
- Universal Metering
- Reduction of leakages
- Adoption of information technology for Data acquisition, analysis and application of efficient service delivery practices
- Technologies for developing alternative resources and their conservation

Topics of Interest:

- Rain Water Utilization System
- Water Purifying Systems/Filtration systems
- Pipeline Maintenance Systems/Management system
- Measuring Equipments
- Sludge Treatment Equipments
- Ozoniser/ Ozone Water Generator

Topics of Interest:

- Seawater Desalination System
- MBR Units
- Sewage / effluent treatment plants
- Waste water recycling plants
- Energy Friendly water recycling Utilization technology
- Water Resource Smart Grid

Topics of Interest:

- Water Treatment Remote Monitoring Systems
- Ground Water Utilization
- Filtration System in Disasters
- Sanitation system in Disasters
- Efficient Garbage Treatment & Conversion Systems

WATER SUPPLY SITUATION AND EXPECTED TECHNOLOGIES IN WATER INFRASTRUCTURE IN INDONESIA

By Ir. Danny Sutjiono
Director of Water Supply Development

Third Meeting of " the PPP Council for Overseas Water Infrastructure"
February 16th 2012
Tokyo, Japan

MINISTRY OF PUBLIC WORKS
REPUBLIC OF INDONESIA

WATER SUPPLY CONDITION

- **Existing water service condition (2009)**
- Proportion of the population to drinking water (Safe Access) : 47,71%.
  - ❖ Safe access – in urban areas : 49,82% ;
  - ❖ Safe access – in rural areas : 45,72%.
- **MDGs Target (2015)**
- Proportion of the population to drinking water (Safe Access) : 68.87%.
  - ❖ Safe access – in urban areas : 78.19% ;
  - ❖ Safe access – in rural areas : 61.60%.

WATER SUPPLY DEVELOPMENT PROGRAM

Urban Water Supply Development

Program	Target
Expansion of Existing Water Supply System	459 location 3,916,512m3/d
New Area Secondary Cities/Small Cities	1136 location 1,114,560 m3/d

Rural Water Supply Development

Program	Target
Water Supply and Sanitation for Low Income Communities (WSSLIC)	5000 villages
Water shortages/ remote	1750 villages

ISSUES AND EXPECTED TO TECHNOLOGIES IN WATER INFRASTRUCTURES

- **Water Treatment Plant**

  - Indonesia is an archipelago comprising approximately 17, 508 islands and 70% of total areas of Indonesia are coastal areas. This condition has made the coastal areas has limited access to water supply.

  - Urbanization has created many activities which produce pollution. Thus increasing the demand of water supply and degrading the water resource . It impact for water in quality and quantity.

  - Therefore technology to cope with those issues are needed such as:
    - Water treatment to produce drinking water from sea water or brackish water for coastal regions and small island
    - water supply system for remote area
    - improving water quality
  - reclaiming water





WATER SUPPLY OPERATORS

Local water supply enterprises / Water Operators (PDAM)

Capacity	Number of PDAM	Service Coverage (%)
> 3,600 m3/h (> 1,000 l/s)	23	> 60% : 13 < 60% : 10
3,600 m3/h – 1,800 m3/h (1,000 l/s – 500 l/s)	36	> 60% : 9 < 60% : 27
< 1,800 m3/h) (< 500 l/s)	286	> 60% : 35 < 60% : 247
Total capacity (m3/h) 529.210,8	Total PDAM: 341	

ISSUES AND EXPECTED TO TECHNOLOGIES IN WATER INFRASTRUCTURES

- **WOPs (Water Operator Partnerships)**

Collaboration between mentor (well run waterworks) with recipient (local waterworks) in particular agreed subject for certain period of time → twinning

Subject of interest:

- NRW reduction
- Energy efficiency
- Asset management
- Technical management
- Financial management, etc.

- **REDUCTION OF THE NON REVENUE WATER**

The term is related to the effort on reducing the Non Revenue Water (NRW) in water supply operator

The subjects is the level of NRW to be reduced

Pre-condition:
- Water Supply Operator with NRW > 40%;
- Supply coverage > 80% population
- Full cost recovery tariff

ISSUES AND EXPECTED TO TECHNOLOGIES IN WATER INFRASTRUCTURES

- **ENERGY EFFICIENCY**

The term is related to the effort on reducing the energy consumption in particular equipment as to the efficient one

The subjects are the apparatus of the water supply system which consume energy to operate. This includes the electrical and mechanical equipment.

Pre-condition:
- Water Supply Operator with energy consumption > 30% of the operational expenses;
- Full cost recovery tariff

Performance Base Contract

The implementation of NRW reduction and energy efficiency use **Performance Base Contract which means**

" The contract agreement between a water supply operator (waterworks) with a private partner based on the performance achievement of the partner to meet the goal of NRW reduction or energy efficiency which is set up, first in the beginning "





Thank You

Arigatou Gozaimasu

Expectations from Japanese Technology for Indonesia Water and Sanitation Development

Nugroho Tri Utomo
Director for Housings and Settlements
National Development Planning Agency, Indonesia
Tokyo, February 16 2012

Overview:

- Geographical:
  - Archipelago with 13,000+ islands, 5 main islands, 235 million people, 49% urban population.
  - From metropolitan cities to rural --> Problems with land availability in big cities.
- Meteorological:
  - Climate change (?): Extreme wet & extreme dry; same rain intensity with much shorter duration
- Type of Services:
  - Water: piped and non-piped water supply
  - Sanitation: domestic waste-water, domestic solid waste, local drainage.

What Indonesia needs:

- **Water**
  - Desalination: for coastal areas/cities and remote islands
  - Flexible small water treatment packages.
  - Mobile small water treatment plants for disaster areas.
  - Reclaimed water
  - Rain water harvesting technologies: city-wide to household units.

Considerations:

- Low cost operation and maintenance (to the most extend possible)
- Application of appropriate technologies
- Availability of spare parts locally / compatible with locally-available spare parts
- Expandable system but sensitive to land availability
- Local capacity building through transfer of technology and direct cooperation with local businesses.

Thank you very much

أشغال
ASHGHAL

قطر تستحق الأفضل
Qatar Deserves The Best

"Our Drainage Challenges"

3rd Meeting of the PPP Council for Overseas Water Infrastructure

16th February, 2012

Ashghal's investment over the next 5 years…

US $ 40 BN

One of which is Wet-Utilities accounts for…

US $ 10 BN

Some supply chain challenges

Basic Raw Materials for PWA Projects 2011-2018	Bitumen ('000 ton)	Gabbro ('000 ton)	Lime Stone ('000 ton)	Structural Sand ('000 ton)	Dune Sand ('000 ton)	Cement ('000 ton)	Steel Reinf ('000 ton)	Fill Mat'l ('000m 3)	Concrete ('000m3) (Included)
2011-2012	84	2,496	1,704	479	185	303	47	25	594
2012-2013	190	6,253	5,116	990	650	705	132	89	1,551
2013-2014	280	9,658	8,107	1,603	1,294	1,076	186	190	2,460
2014-2015	365	13,308	10,834	2,230	2,073	1,453	229	318	3,453
2015-2016	344	12,683	10,246	2,257	1,887	1,421	269	279	3,484
2016-2017	260	9,580	8,489	1,595	1,426	1,081	244	216	2,562
2017-2018	135	5,115	4,451	795	965	482	67	152	1,350
Total All Projects	**1,656**	**59,000**	**49,000**	**9,950**	**8,482**	**6,522**	**1,176**	**1,272**	**15,456**

Agenda

- Major Sewage Treatment Plants
- Inner-Doha Re-sewerage Implementation Scheme
- O&M Works Framework Contracts
- Local Roads & Drainage Construction Frameworks
- Industrial Liquid Waste Treatment Plant(s)
- Stormwater Conveyance and Discharge

Major Sewage Treatment Plants

Current Situation

- Insufficient capacity
  - Doha West 175,000m^3/day
  - Doha South 186,000m^3/day
  - Doha North 325,000m^3/day
- Lack of system redundancy
- Sludge management

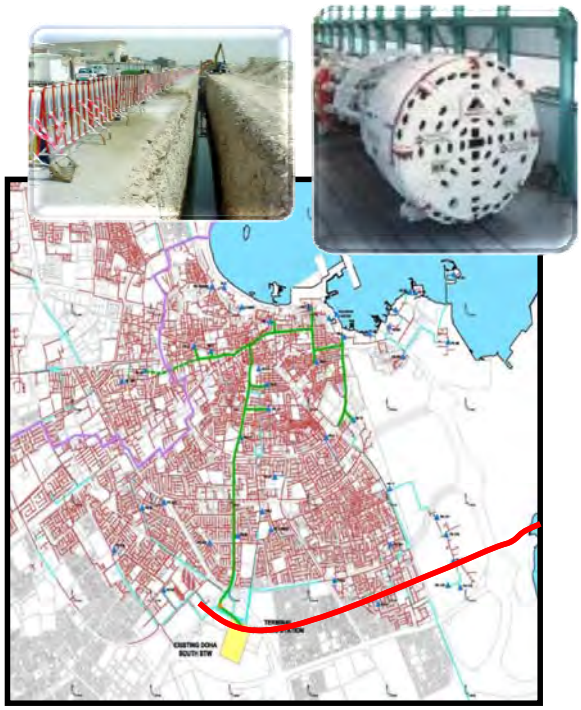
Our Requirements

- Doha West & South capacity optimization & expansions
- New Doha South (IDRIS)

Total Budget Estimate ≈ US $ 3Bn

BACK

IDRIS Programme



Current Situation

- Insufficient capacity
- Significant Pumping- high Opex

Our Requirements

- Major tunnel- length approx. 30km
- Major new STP to south of the City with ultimate capacity of 500,000m^3/day
- Major treated sewerage effluent (TSE) pumping station and mains

Budget
Total Budget Estimate ≈ US $ 2Bn (excluding STP)

BACK

O&M Works Framework Contracts

Current Situation
- Development outstripping Infrastructure
- Disparate contracts for pumps & network
- Overall poor level of service

Our Requirements
- 4 x O&M Area Works Contracts

Budget
Total Budget Estimate ≈ US $ 1Bn

BACK

Local Roads & Drainage Contracts Frameworks

Current Situation
- Development outpacing Infrastructure
- >3,000 sewerage tankers on streets

Our Requirements
- Modern drainage and road network full coverage
- Complete foul water, surface water and TSE networks

Budget
Total Budget Estimate ≈ US $3 Bn

BACK

Expectations by South Africa from Japan

Director-General

Mr M Sirenya

16 February 2012

Tokyo, Japan

water affairs
Department:
Water Affairs
REPUBLIC OF SOUTH AFRICA

1. Water Quality Management Challenges

To share best practices and experience on the following challenges faced by South Africa:

- Acid Mine Drainage
  - To turn AMD into a resource.
- Eutrophication
  - To intensify local efforts to reduce nutrient loading in terms of wastewater risk abatement and phosphate reduction.
- Drinking Water Quality
  - To further the incentive-based regulation initiatives in terms of Blue Drop Certification (incl. Addressing 'new' risks; Water Safety Planning)
- Wastewater Services and Quality
  - To align appropriate resources towards general enhancement.

water affairs
Department:
Water Affairs
REPUBLIC OF SOUTH AFRICA

2. Water Resource Challenges

- Water Scarcity
  - need to explore diversifying water resources (desalination, etc)
- Water Conservation and Demand Management
  - Require improved institutional and financial models as well as technology.
- Disaster Management
  - Response to emergency/disaster situation (Floods , Droughts & Major Pollution situations)

3. Capacity Building

- Sharing of skills on optimisation of currently employed wastewater and water treatment technology.
- To create opportunities for treatment process managers and practitioners to be exposed to advanced treatment options (incl. acid mine drainage.)
- Water resource systems operations within the paradigm of integrated water resource management

Arigatoo!

Expectation to Japanese Technologies in Water Infrasturucture

Nguyen Hong Tien

Director General, Administration of Technical Infrastructure, Ministry of Construction, Vietnam

The 3rd Meeting on the PPP Council for Overseas Water Infrastructure
February 17th, 2012

Current Status of Vietnam

- In the recent time, the urban water supply, sewerage and wastewater treatment sector in Vietnam has been given great attention and high priority in development programs of local and central governments as well as donors.
- This enabled the sector to gain initial achievements.

Our Challenges

- However, like other developing countries in the Southeast Asia, Vietnam is facing a number of following challenges within the progress of developing the sewerage and wastewater management.

- Parts of the sewerage and drainage systems were built in different periods and are therefore incomprehensive,
- The Capacity of the discharging wastewater to be limited, wastewater is discharged into the receiving water bodies and environment without being properly treated,
- The wastewater treatment technology is out of date,
- The insufficient financial is causing pressure for the local and central budget, and
- The capacity of wastewater operators is still limited.

Moreover, Vietnam is one of the top ten countries that will be affected by climate change.

- We know, in the drainage and wastewater treatment, Japan's wastewater treatment and Operation and management skills have been advance in the world.

Thank you very much
for your attention!