

Future Vision and Policy Response toward Water Business Industry

Current conditions and issues in the industry

Current conditions of global water issues

- Absolute water shortage ^{(*)1} and severe water pollution ^{(*)2}

^{(*)1} Water demand in 2025 will increase by roughly 30% compared to 2000 due to population growth and growing urbanization and industrialization (*volume* issues).

^{(*)2} Water resources in China and sewage lakes in the Middle East (*quality* issues)

- Asia's water demand is drastically growing. ^{(*)3}

^{(*)3} Asia's water demand accounts for 60% of the world total.

- Domestic and industrial use is growing.

Water business market

- Expected to grow to about 87 trillion yen in 2025 (36 trillion yen in 2007).

○ The traditional water supply and sewage system sector accounts for the majority of the market (85% in 2025), and the market where Japanese companies can utilize their advanced technologies such as water resource recycling is limited (15% in 2025)

Trends of overseas companies

- Water majors (French Veolia and Suez) have their strength in uniform management capacity for projects and long-term risk management capacity
- On the other hand, the market share of water majors decreased to just over 30% in 2009 from 70% in 2001, the peak year.
- Recently emerging companies in Singapore, South Korea etc. and local companies are rapidly rising.

Trends of Japanese companies

- Different companies in different project sectors. ^(*)

^(*) Equipment manufacturers for parts, engineering companies for engineering, procurement, and construction (EPC), and trading companies for operation and management.

- In many projects, Japanese companies participate as investors or deliver equipment and EPC as sub-contractors.

Future orientation and vision of the industry

Expansion to the volume zone (water supply and sewage system sector)

- The key to take hold of the market is to securely win projects in the water supply and sewage system sector, which accounts for the major part of the market ^(*).

^(*) 32 trillion yen in 2007 (90% of the market total)
74 trillion yen in 2025 (85% of the market total)

- Japan needs first to securely establish itself as a prime contractor in such projects and create companies which undertake uniform management project *operation and management*.

○ Japan therefore will need to pass pre-tender qualification assessment by forming either of the following three types of groups and strengthen its cost competitiveness.

<Three types for securing project interests>

- Joint ventures
A Japanese company and an overseas company qualified in the pre-tender assessment jointly establish a project company in the local country.
 - M&A
A Japanese company takes over an overseas company which conducts operation and management of water projects.
 - Collaboration with local governments (the civic sector)
A Japanese company directly participates in a project based on operation and management experience acquired through a packaged water supply and sewage system project under an contract with local government (civic sector) or investment or human resources by the civic sector.
- Japan will seek to win other infrastructure development projects and package projects with LNG projects in the Middle East.

Expansion to growth zones (water desalination, industrial water and reclaimed water)

- Share in the total market is small but water resource recycling technology in which Japan is advancing into is needed.

^(*) 4 trillion yen in 2007 (10% of the market total)
12 trillion yen in 2025 (15% of the market total)

- Japan takes hold of core technologies which meet future needs for water treatment.

Priority regions and countries

- Japan should focus on China, ASEAN, India, the Middle East and North Africa, taking into account market size and growth rates, resource strategy, and past economic relationships.

Policy response

Policy dialogue

- **Establish Water Policy Dialogues**, a framework of inter-governmental dialogue with strategic target countries, to strengthen the partnerships.

Technology development and demonstration

- Strengthen the government support for **innovative element technology development** which Japanese companies are advanced in and **development and demonstration of new water resource recycling models**, which utilize these technologies.

Support for consortium formulation

- Support **the establishment of a consortium (implementation system)** which integrates water treatment technology and know-how into a package to provide comprehensive solutions toward larger issues regions and countries are concerned regarding water resource recycling systems
- **Collaborate with other infrastructure projects, etc. across the sectors and integrate as a package.**

Public-private partnerships, etc.

- **Clarify the application of public entities (civic sector involvement, etc.)**
- Promote **the utilization of the PPP and PFI systems** in the domestic market, etc.

Human resource development

- Consider **the establishment of human resource development tools under public-private partnership** for the METI system (bringing in trainees, overseas training programs and expert dispatch).
- Make use of overseas trainees (government officials) who have been received through JICA programs, etc.

Focus on policy finance support

- **Expand and strengthen policy finance tools** of policy agencies
 - Expand currency types of loans in local currencies of developing countries (JBIC)
 - Consider implementing long-term loans for developed countries
 - Decrease project risks by focusing on policy finance (JBIC, NEXI, Innovation Network Corporation of Japan)
 - Early renewal of investment and loans (JICA), etc.

Standardization

- **Global standardization** of advanced technologies which are owned by private companies and should be diffused to the world (system development under public-private partnerships)

Specific Image of Policy Response according to Project Stages

Support for project making and formulation

Implementation of policy dialogue

○Implementation of the Japan-Arab Policy Dialogue

Japan agreed with the Arab League countries in December last year to start a Water Policy Dialogue.

○Implementation of the Japan-Saudi Arabia Policy Dialogue

Based on the above agreement, Japan agreed with the Saudi Arabian Ministry of Water and Electricity in February this year on a concrete plan to start a high level (Director-General level) water policy dialogue.

Technology development and demonstration

○Strengthening of the Water-saving and Eco-friendly Water Resource Recycling Project by NEDO

Expansion of support for technology development and demonstration which are needed for taking hold of the key technology in the future water resource recycling system. (Budget for FY 2010: 700 million yen) * continued since FY 2009.

Major projects approved	Project overview
New Water Desalination System Project (Kitakyushu and Shunan)	Develop and demonstrate a new low cost and low energy consuming water desalination system by integration of sea water desalination and sewage water recycling.
Distributed Water Resource Supply System Project (Australia)	Develop and demonstrate a distributed and energy saving water resource recycling system which utilizes concentrated rainfall and domestic wastewater.
Small Scale Distributed Water Resource Recycling Project (UAE)	Develop and demonstrate a small scale distributed water resource recycling system which operates wastewater treatment and recycled water supply by installing container-type plants which can be easily constructed and moved.
Survey of Advanced Water Use and Continuous Operation Management in the Water System (Vietnam)	Develop and demonstrate a establishment method of an optimal and sustainable water supply system by conducting remediation diagnosis regarding efficient water operation and water leakage prevention.

A total of 10 projects are being/ have been implemented (three in China, one each in Vietnam, the Middle East, and Latin America).

Support for establishing implementation systems

Support for consortium formulation

○Implementation of the Support Program for Consortium Formulation in Low Carbon and Environmentally Responsible Infrastructure/System, etc. (Water Business Sector)

Examine solutions which a consortium formulated mainly by Japanese companies could provide and support feasibility study surveys for developing a basic design plan which is aimed to comprehensively show the counterpart countries how Japan can provide the solution. (Supplementary budget FY 2009: portion of 800 million yen)

○Promotion of Establishment of Cross-sectoral Consortium with other Infrastructure Projects, etc.

Examine and implement sector-based and cross-sectoral programs in response to infrastructural development in developing countries other than water infrastructure (railways, nuclear power, electricity etc.).

Public-private partnerships, etc.

○Clarification of Application of the Dispatch System of Public Entities (civic sector etc.)

Clarify the dispatch conditions (project coverage to which experts can be sent) of local government officials to the civic sector

○Promotion of the Utilization of the PPP-PFI Systems

Promote the utilization of PPP (public-private partnerships) and PFI (private finance initiative) toward introduction of wider region collaboration and comprehensive private contracts in the domestic market.

Support for project implementation

Human resource development

○Establishment of Human Resource Development Tools under Public-Private Partnerships

Examine regarding METI's domestic and overseas training programs and METI's expert dispatch programs how not only experts from the private sector but local government agency officials can be dispatched as instructors and how to develop mechanisms to utilize facilities owned by local government agencies.

Focus on policy finance support

○Expansion and strengthening of Policy Finance Tools

- Expand currency types of loans in local currencies of developing countries (JBIC)
- Consider to implement long-term loans for developed countries (JBIC)
- Decrease project risks by focusing on policy finance (JBIC, NEXI, Innovation Network Corporation of Japan)
- Early renewal of investment and loans (JICA), etc.

Standardization

○Global Standardization

Develop the implementation systems under the strong public-private partnership and start examinations on how to include advanced technologies which are owned by private Japanese companies and should be diffused to the world in the water supply and sewage water sector in the ISO General Assembly after the next to be held in 2016.