

資料 1 1 ベトナム水インフラセミナー配付資料



# Pilot PPP in Viet Nam

Decision No.71/QD-TTg

1



## The Need for a New Approach for PPP in Vietnam (1)

Funding needs  
US\$ 15 billion per year

**GAP**

Funding available  
US\$ 7-8 billion per year



Impact on the development of society and economy  
Obstacle to FDI business environment and growth

2



## Objectives of PPP

- Support socio-economic development goals
  - Reduce poverty and increase sustainable growth
  - Increase access to basic services of clean water, electricity, health care, etc.
- Strengthen Vietnam's competitiveness
  - Lower transaction costs for business
  - Increase market access and investment
- Increase public investment efficiency
  - Reduce public debt
  - Leverage capital markets for additional investment in infrastructure

3



## Objectives of PPP for Decision 71

1. Demonstrate better value-for-money through pilots
  - Lowest cost to government (subsidies)
  - Best quality services at affordable prices
2. Increase efficiency of project implementation to attract foreign and domestic investment
  - Timely competitive bidding of creditworthy projects
  - Transparent government commitments to honor contractual obligations
  - Optimal risk allocation at lowest cost
3. Identify and resolve regulatory and institutional barriers to infrastructure finance

4

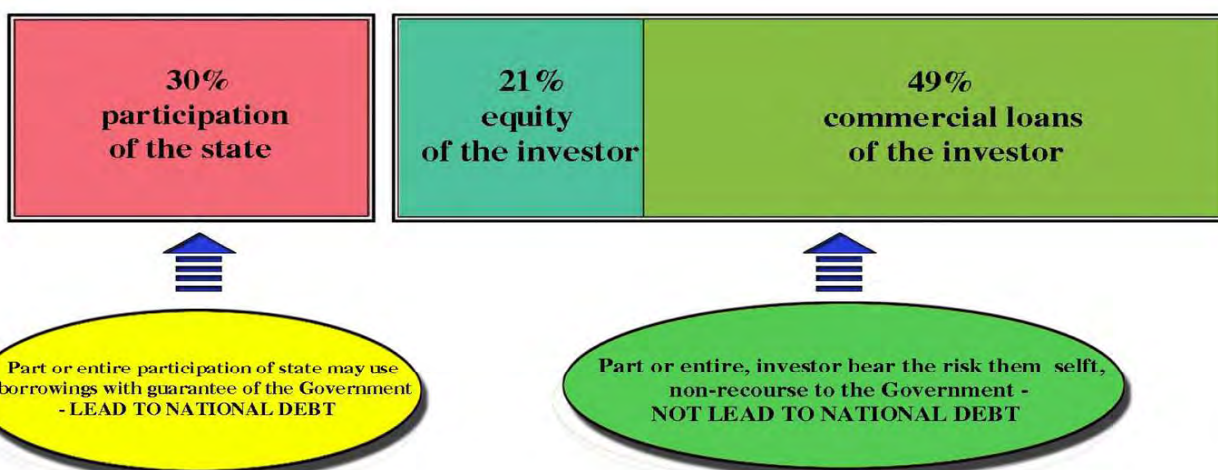
## Main Points of the

### Decision 71: Regulations on Pilot PPP Investment (1)

#### Principles:

1. To attract investment capital from domestic and foreign private sector for infrastructure and public services.
2. Real investment by the private sector must not inflate public debt.
3. Private equity must be at least 30% of total private investment. Private loan (w/o Gov. guarantee) may be up to 70% of total private capital investment.
4. Competitive, non-discriminative, transparent and cost efficient selection of investors, and in compliance with Vietnam law and international practices.

#### PPP project - proposed financial scheme







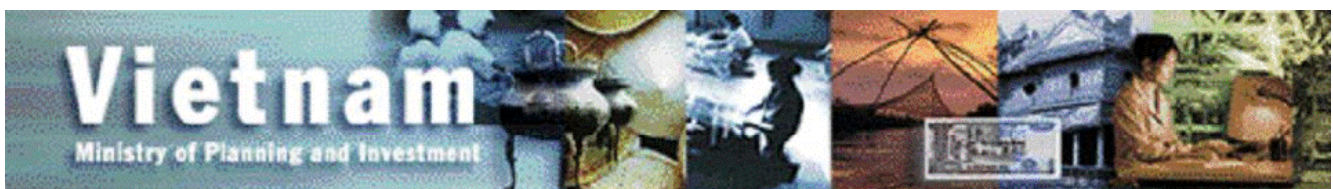
(c) by M

## **Main Points of the Decision 71: Regulations on Pilot PPP Investment (2)**

### **Areas and sectors for Investment:**

1. Roads, bridges, tunnels, ferries.
2. Railways, bridges for railway, tunnels for railway.
3. City traffic.
4. Airports, seaports, river ports.
5. Clean water supply system.
6. Power plants.
7. Health care (hospitals).
8. Environment (waster treatment plants).
9. Other infrastructure projects and public services in accordance with PM decisions.

7



(c) by M

## **Risks**

- One failed pilot will kill the market!
- The process becomes slower with more levels of bureaucracy and decision-making
- Learning curve is too steep for complex project finance and PPP
- Devil is in the details: inadequate preparation leads to amateurish mistakes.

8



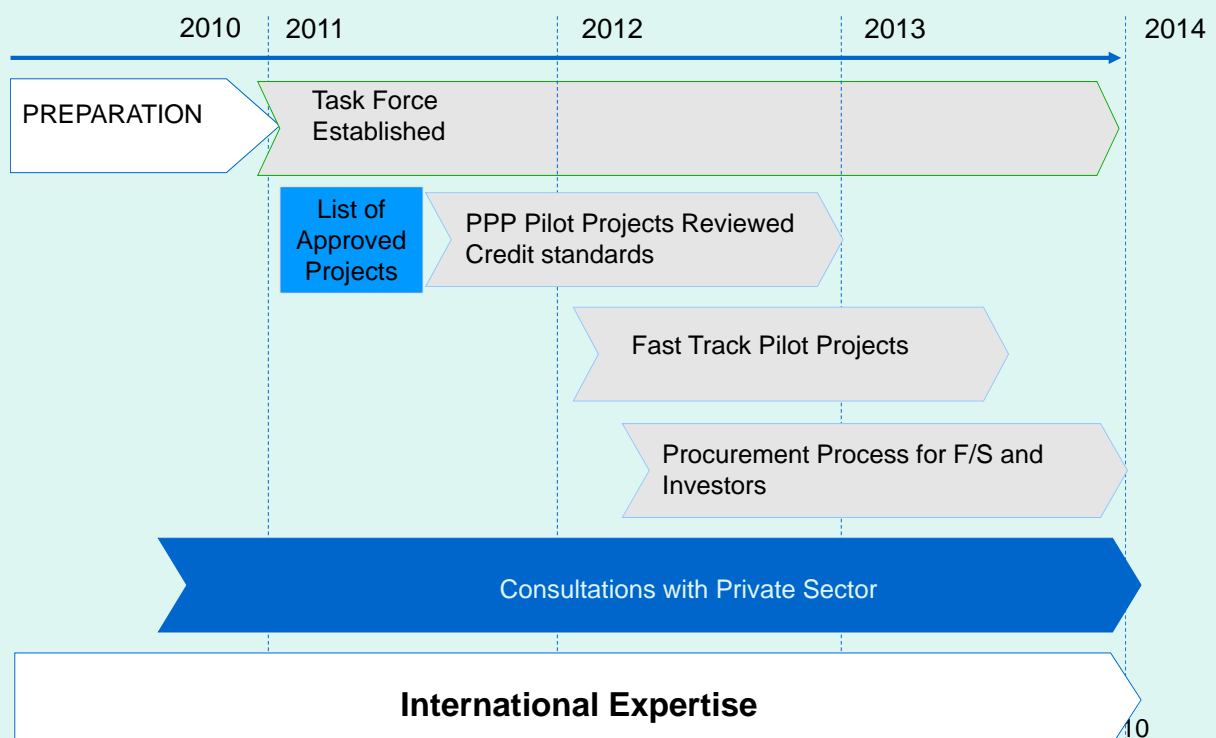
(c) by M

## Success Factors

- High level of political support to Task Force to respond to investor requirements rather than bureaucratic requirements.
- Need considerable preparation and resources for implementing strategies for success!
- International expertise is essential to deliver creditworthy projects and build capacity while delivering successful pilots.

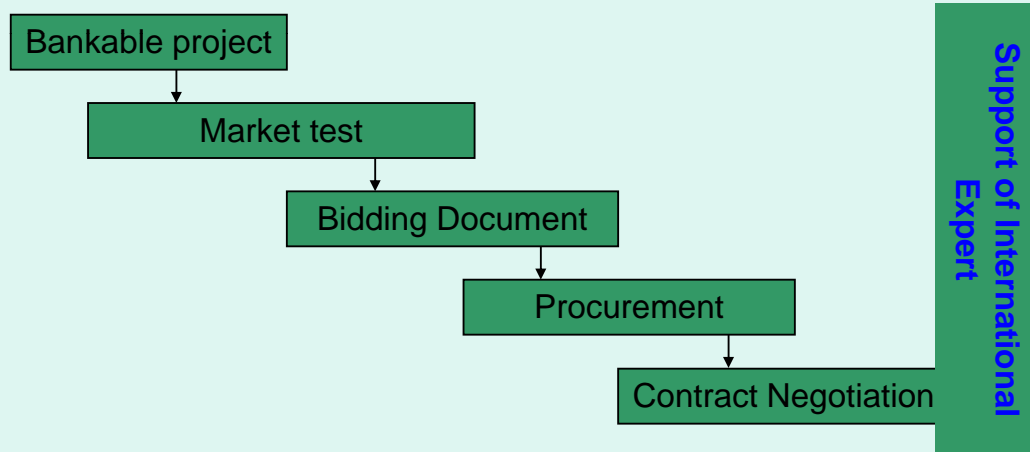
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## Decision 71 Proposed Timeline



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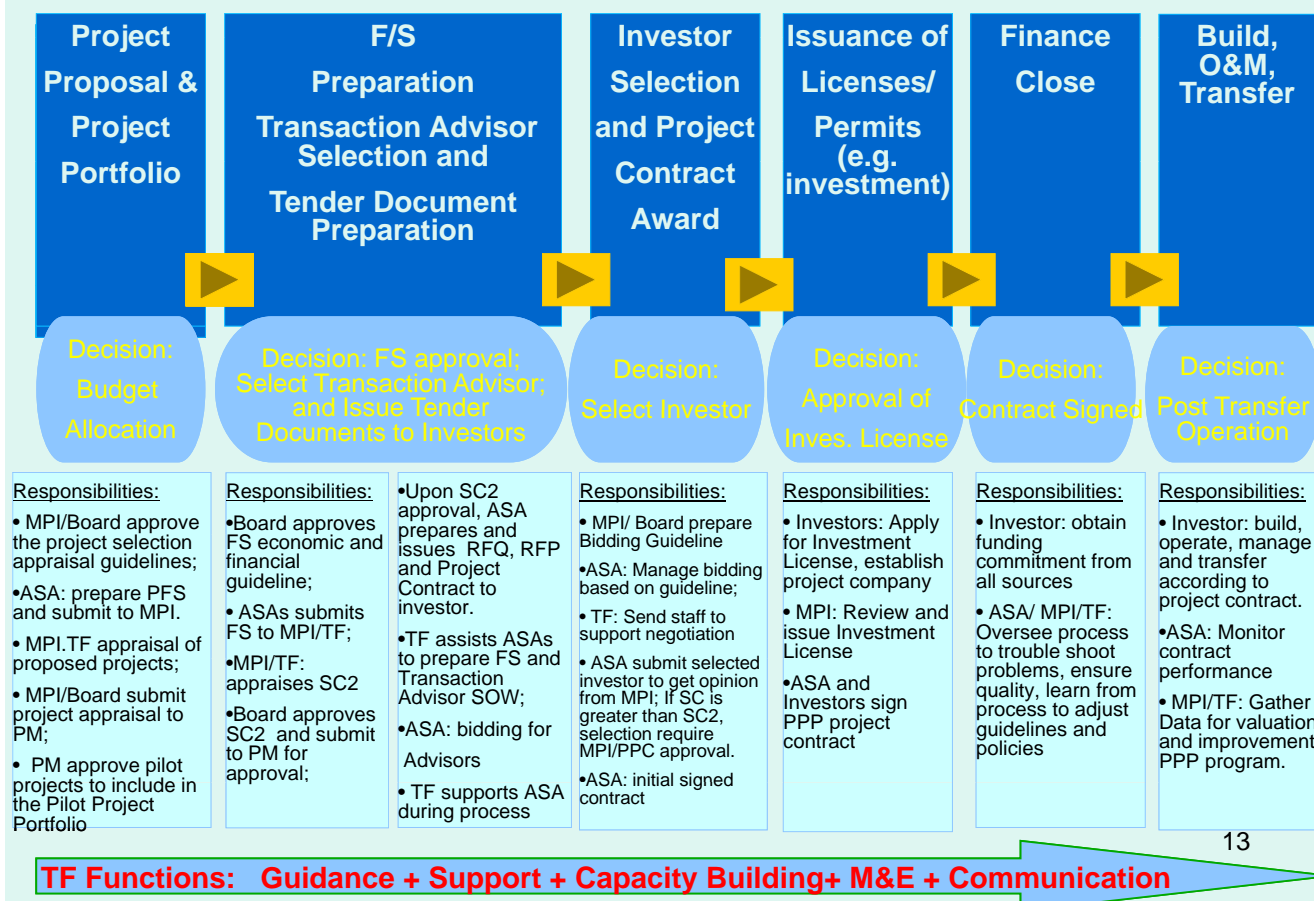
## Things to be done in a project



## Main Tasks of PPP Task Force

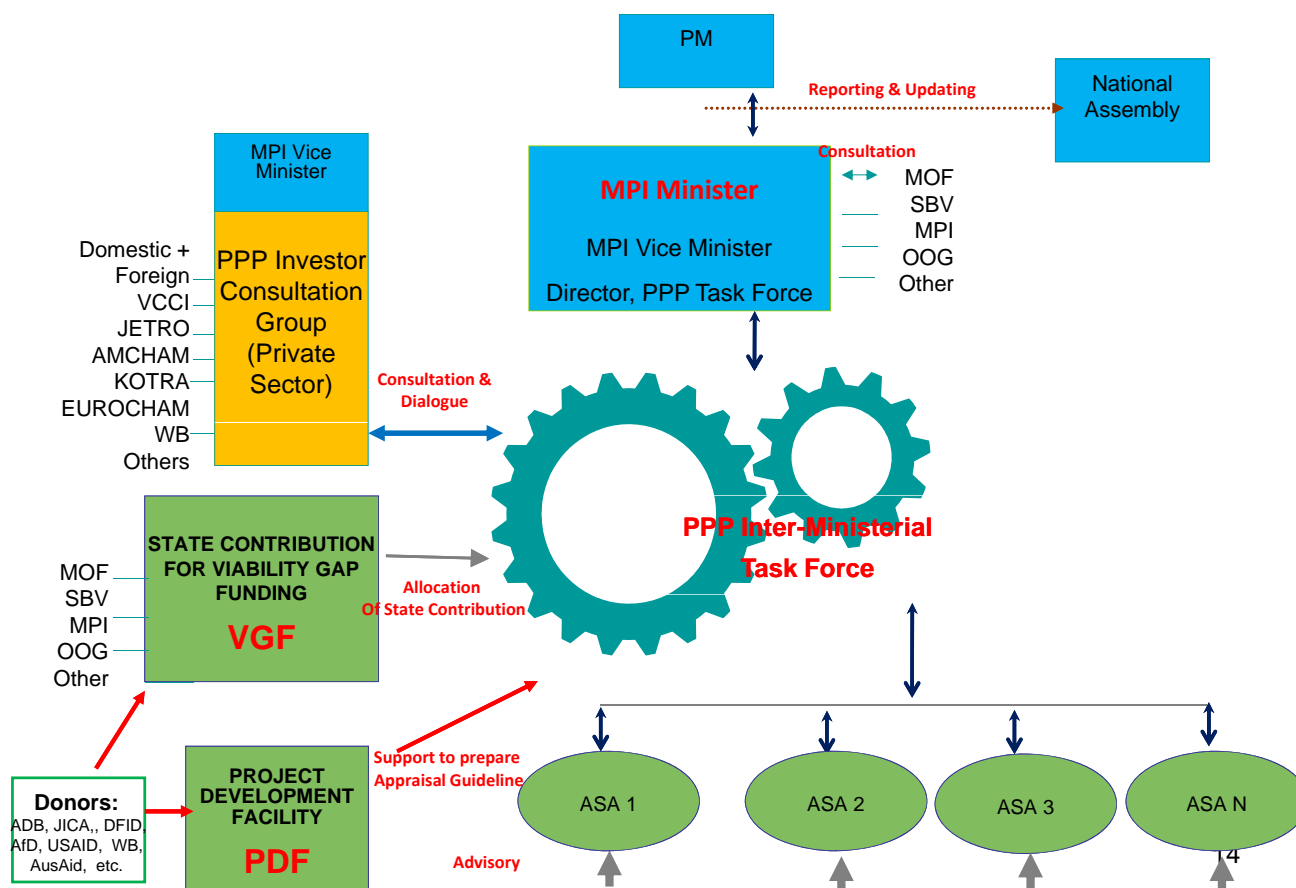
- **Supervise, coordinate, monitor** progress and facilitate implementation of PPP pilot projects
- **Ensure quality of pilot project life cycle implementation** to achieve successful pilot projects and optimal public investment efficiency.
- **Provide hands-on support for ASAs** in capacity building, training, technical tools and methods, materials and guidelines
- **Engage private sector in consultation on the PPP initiative.**
- **Coordinate all Donor assistance** to support PPP initiative.
- **Build consensus and win trust** from policy makers.
- **Raise awareness with the public** (e.g. media, tax payers) about PPP new approach and public investment efficiency
- **Report progress** to the MPI and the Prime Minister

## TF and Other Stakeholders: Responsibilities through Project Cycle



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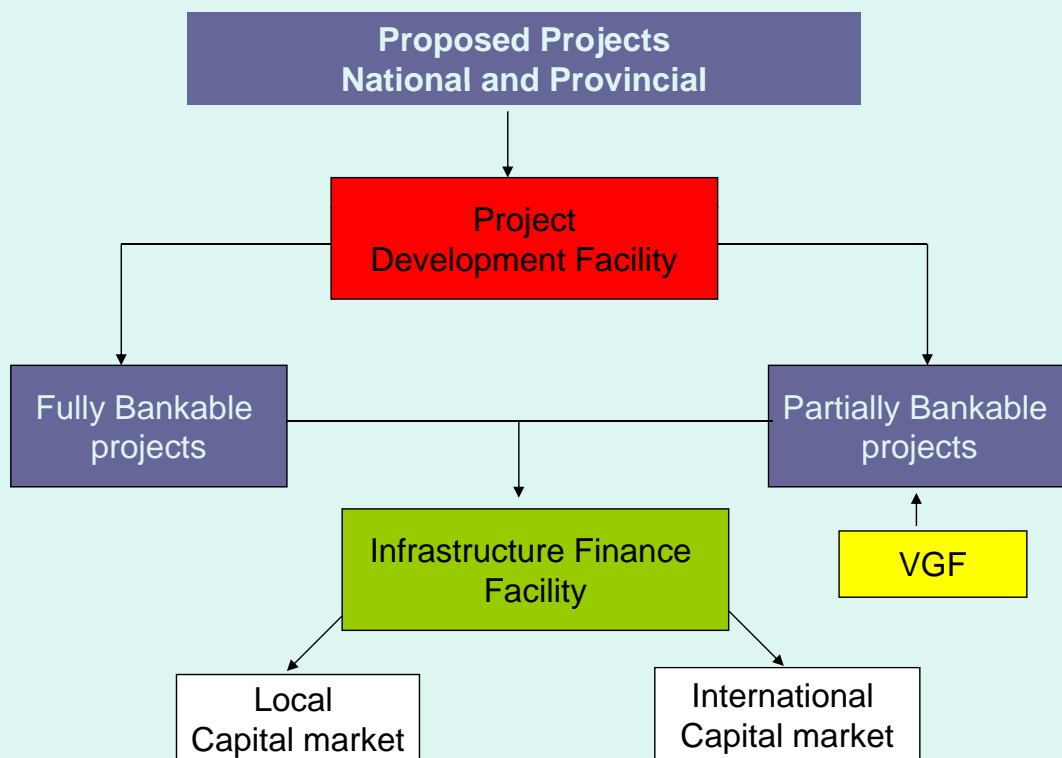
## Organization and Decision Making Process of PPP



14



## Proposing: PPP Supporting Funds (1)



15



## Proposing: PPP Supporting Funds (2)

### Project Development Facility (PDF)

#### Functions:

- Facilitate project preparation
- Viability and risk analysis
- Project pipeline

#### Sources of fund:

- Government budget
- ODA

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(c) by M

## Proposing: PPP Supporting Funds (3)

### Viability Gap Funding (VGF)

#### Functions:

- Provide subsidy to partially bankable projects

#### Sources of fund:

- Government budget
- ODA grants, ODA loans

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(c) by M

## Proposing: PPP Supporting Funds (4)

### “Infrastructure Finance Facility”

#### Functions:

- Channel bankable, approved projects into capital markets.
- Credit enhancement.

#### Sources of fund:

- Commercially available funds
- Others

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## Proposed projects (1)

### I. More prioritized

1. [Highway Bien Hoa – Vung Tau](#)
2. [Highway Ninh Binh – Thanh Hoa](#)
3. [Elevated highway No.1, HCMC](#)
4. [Song Hau River Water Plant No. 1](#)
5. [Waste plant supplying clean water from Red River surface water](#)
6. [Highway Nghi Son \(Thanh Hoa\) – Bai Vot \(Ha Tinh\)](#)
7. [Highway Dau Giay – Lien Khuong](#)
8. [Highway Ha Long – Mong Cai](#)
9. [Phu Xuyen General Hospital \(1000 beds\)](#)
10. [Gia Lam General Hospital \(1000 beds\)](#)
11. [International Airport Long Thanh](#)



## Proposed projects (2)

### II. Pipeline projects (1)

12. [Extension ofding National road No.22 \(trans-Asia road\)](#)
13. [Investment in train terminals connecting to urban railways](#)
14. [Ngoc Hoi bridge and approach ramps on both ends on 3.5 road](#)
15. [Ho Chi Minh Highway, Cam Lo –La Son Section](#)
16. [Highway Ben Luc – Hop Phuoc](#)
17. [Song Hau River Water Plant No. 2](#)
18. [Song Hau River Water Plant No. 3](#)
19. [Hau Giang River Thermal Power Plan No.1, Hau Giang Province](#)
20. [Quang Tri Thermoelectricity Project, Quang Tri Province](#)





## Proposed projects (3)

### II. Pipeline projects (2)

- [21.](#) Quynh Lap Thermoelectricity Project, Nghe An Province 2
- [22.](#) Southern Logistics Center
- [23.](#) Eastern Logistics Center
- [24.](#) Son Tay Port
- [25.](#) Hong Van Port
- [26.](#) Khuyen Luong Port



# Thank you !





# Our Challenges in Vietnam



16 February, 2012

 **KOBELCO ECO-SOLUTIONS CO.,LTD.**

## KOBE STEEL Group Business Domain

FY 2010  
Group Total Sales :  
US\$ 22,351 million  
(83.15Yen/US\$)

**Iron  
& Steel**

US\$ 10,105 million

**Others**

US\$ 1,722 million

**Construction  
Machinery**

US\$ 4,257 million

**Aluminum  
& Copper**

US\$ 3,656 million

**Machinery  
& Engineering**

US\$ 2,630 million

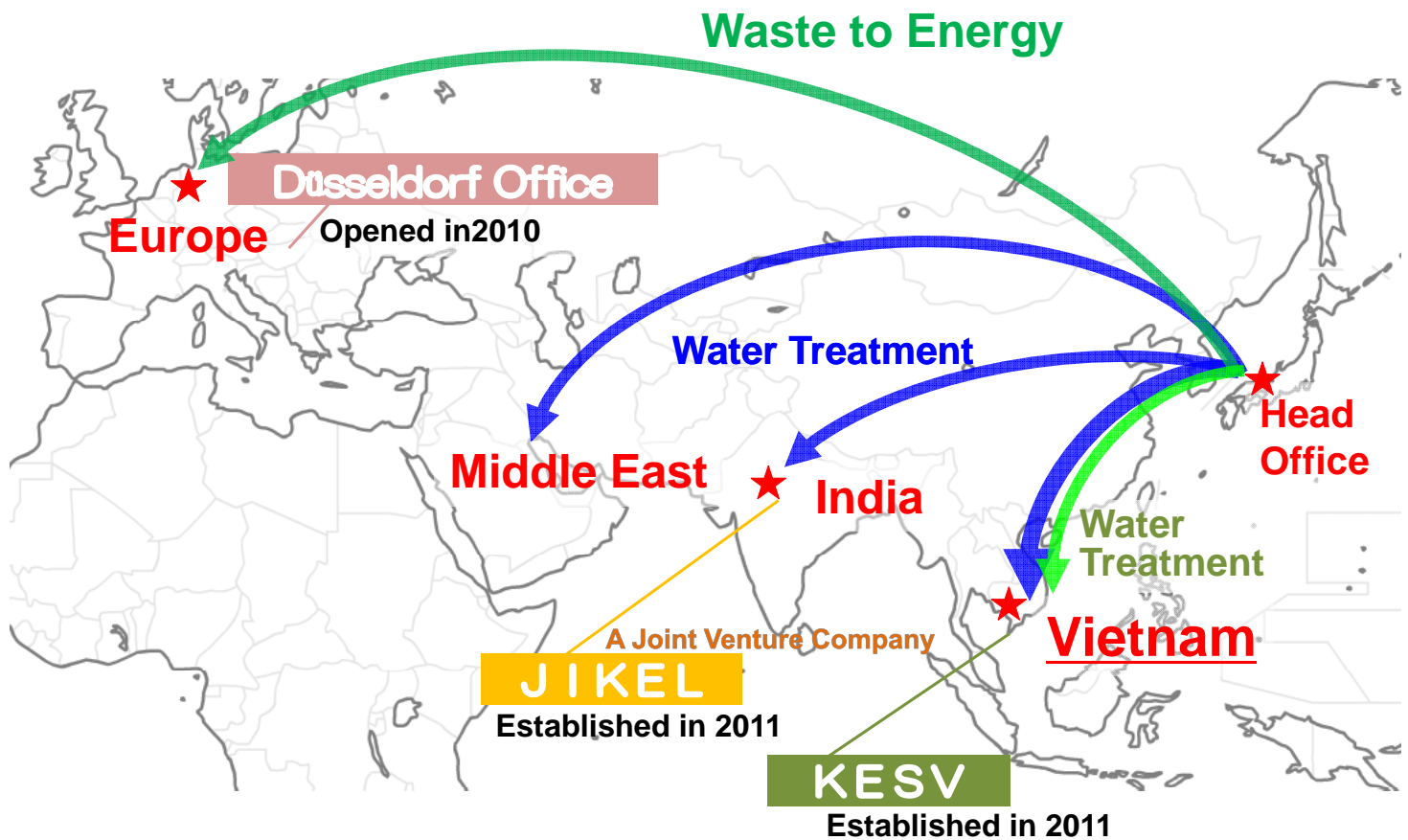
**Environmental**

**Kobelco Eco- Solutions**

US\$ 837 million



# ◆ Expansion of The Overseas Market • Overviews



3

## ◆ Business Expansion in Vietnam

### ● KOBELCO ECO-SOLUTIONS VIETNAM CO., LTD.

Company : KOBELCO ECO-SOLUTIONS VIETNAM CO., LTD.  
 Chairman : Hiroshi Okabe  
 (Director and Senior Officer – KOBELCO ECO-SOLUTIONS CO., LTD.)  
 Office : 9<sup>th</sup> Floor, Minh Long Tower, 17 Ba Huyen Quan St.,  
 District 3, Ho Chi Minh City, Vietnam  
 Founded : 15 November, 2010  
 Capital : VND 20,000,000,000  
 Stockholder : KOBELCO ECO-SOLUTIONS CO., LTD. (100%)  
 Business Fields : Water Treatment, Waste Treatment ...etc



4

## ◆ Business Expansion in Vietnam

### LOTECO Industrial Park – Waste Water Treatment System (The Third)



## ◆ Business Expansion in Vietnam

### Water Treatment for Steel Plants





# ◆ Business Expansion in Vietnam

## - LONG DUC Industrial Park

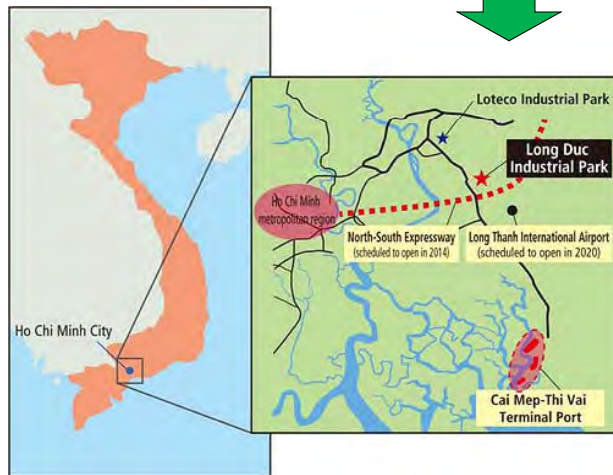
Serious environmental pollution due to wastewater treatment below the quality standard

Japanese company initiative creates ecological industrial parks

- Industrial Water/Wastewater treat system will be fully equipped
- System operation and maintenance

LONG DUC **Industrial** Park

- Best Location for the transportation/Distribution
  - No fear for the flood (48m above sea level)
- Hard, strong ground



Investor : Sojitz 57.3%  
 Daiwa House Industry 22.0%  
 Kobelco Eco 8.7%  
 Donafoods 12.0%

270 ha (sale area: 202.5 ha)

7

# ◆ Business Expansion in Vietnam

## Promoting Water Infrastructure Project (PPP Scheme)

Water Supply



Sewage System



- Sustainable Safe & Quality Water
- Leakage Prevention

- Treated Water Recycling
- Biogas Energy Generation
- Sludge Reduction



8



Thank you for  
your attention!

**KOBELCO**  
KOBELCO STEEL GROUP



**KOBELCO ECO-SOLUTIONS CO.,LTD.**

# **The natural energy that the soil is splendid**



**do-jyoka system specialist consultants  
Mokan-Joka System Co.,Ltd.  
E-mail: [mjs@mokan.co.jp](mailto:mjs@mokan.co.jp)**

**1**

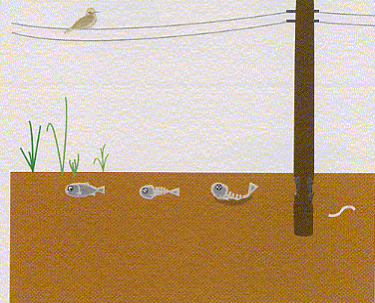
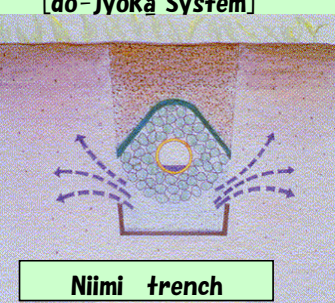
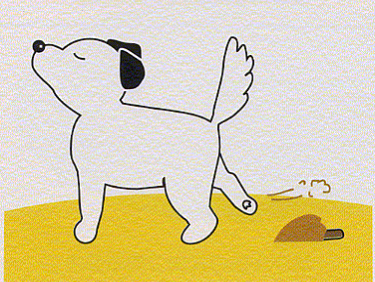
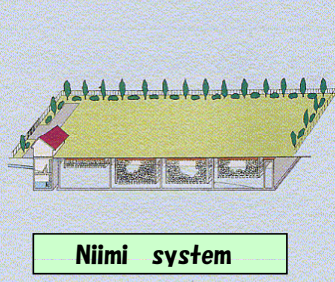
## **Sewage disposal plant by [do-jyoka system]**



**2**



## The birth of the [do-joyka system]

<p><b>natural phenomenon</b></p> 	<p><b>flash of Tadashi Niimi</b></p> <ul style="list-style-type: none"> <li>• I will use soil creature</li> <li>• I will use a capillary siphon phenomenon</li> <li>• The soil can resolve organic matter</li> </ul>	<p><b>The birth of the [do-joyka System]</b></p>  <p><b>Niimi trench</b></p>
	<ul style="list-style-type: none"> <li>• In the sewage disposal plant a bad smell occurs</li> <li>• The soil removes a bad smell</li> </ul>	 <p><b>Niimi system</b></p>

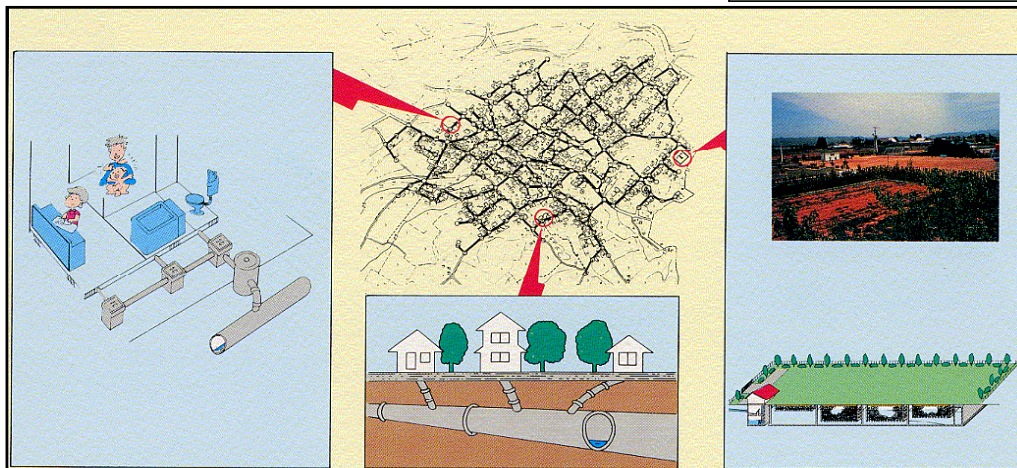
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## The structure of the sewer

**The messy water which flows from a family**

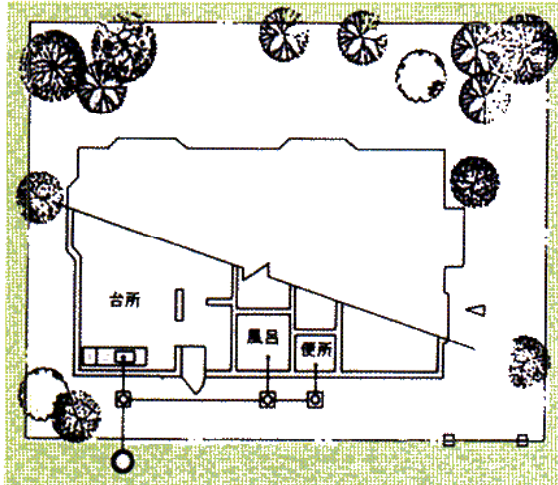
**The construction**

**clean it at a sewage disposal plant**

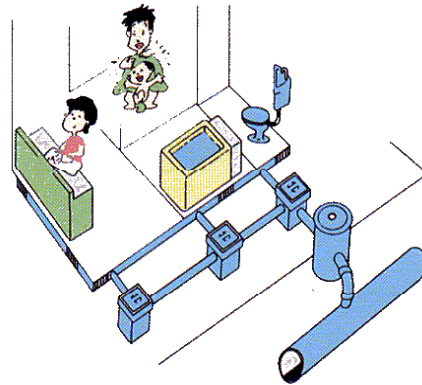


4

## The messy water



connected to the  
pipe of the sewer



5

## The construction of the sewage pipe

A low construction amount of money

Pipe diameter

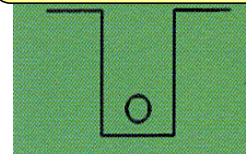


Small Pipe

covered with soil

shallow

A method of  
construction



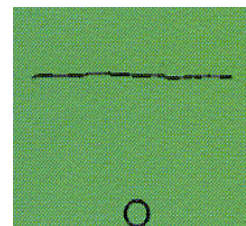
The construction  
method of the pipe

A high construction amount of money



big Pipe

deep

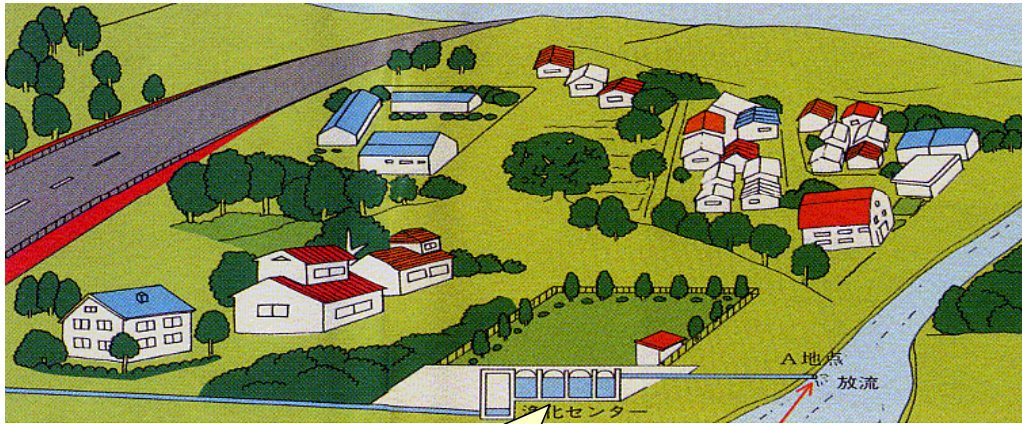


Shield tunneling

6



***purify filthy water at a sewage disposal plant***



***sewage disposal plant***

**7**

***Sewage disposal plant such as the park***



**8**

## Comparing of conventional sewage disposal plant and [do-jyoka system]

[do-jyoka system] is the sewage treatment technology that can easily prevent second pollution by the coating soil of these. The pollution control system is unnecessary.

Therefore, the construction cost is lower than a usual sewage disposal plant.

### Conventional sewage disposal plant

### [Do-jyoka system] plant

The second pollutioncontrol device  
Facilities to delete a bubble



Deodorization device

Big building to manage it



Covered equipment



It solves it by this

It solves it by do-jyoka.



Plant that is adjacent to house



9

## [do-jyoka system] is easy to procuring of site

The construction cost of  
[do-jyoka system] is low.

The coating soil provides the function of the deodorization equipment.  
The coating soil provides the function of the Bubble cancellation device.  
The coating soil provides the function of the Bacillus dispersion prevention device.

The sewage disposal plant as the park.

The machine is few in an easy technology.

The machine is few and the building is small.

The detention period is long and the treat water is excellent.

The operation and maintenance is easy in the unattended operation.

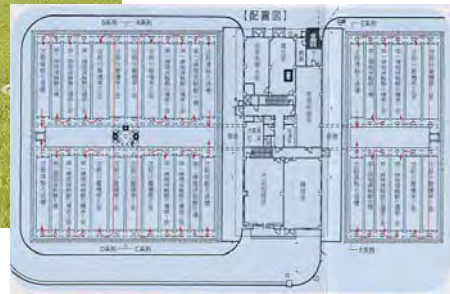


It is eating on the  
sewage disposal plant.

10



## Chiran sewage disposal plant 2,400m<sup>3</sup> /day



11

## Process of the construction

①



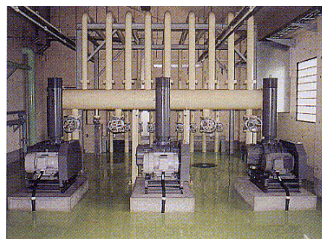
②



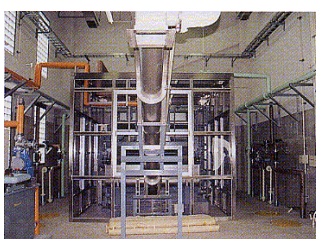
③



④



⑤



⑥



12

## The Niimi system of a small village

**Minobu sewage disposal plant**  
**48m<sup>3</sup> /day**

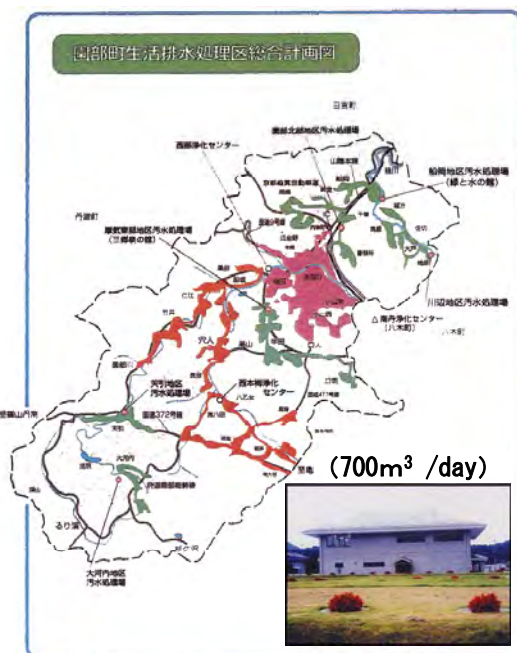


**Kitagawa sewage disposal plant**  
**19m<sup>3</sup> /day**



13

## The Niimi system of Nantan-city, Kyoto



(680m<sup>3</sup>/day)



(75.6m<sup>3</sup>/day)



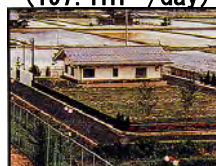
(89.1m<sup>3</sup>/day)



(145.8m<sup>3</sup> /day)



(197.1m<sup>3</sup> /day)



(202.5m<sup>3</sup> /day)

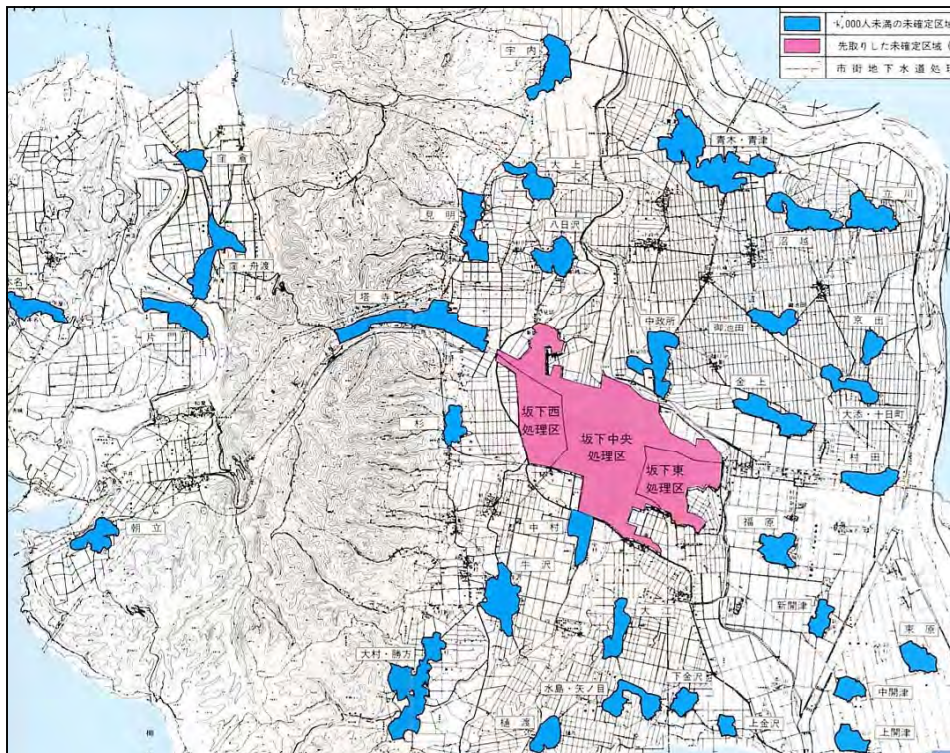


14

**There are seven Niimi system in Nantan-city, Kyoto**



## Sewer construction of 100%



15

## We can construct sewer by [do-jyoka system]



10,000 persons live in the center of the town.

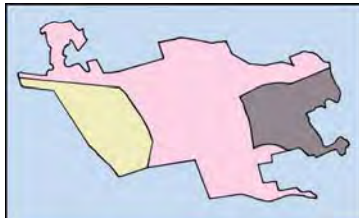
Center of AizuBangemachi was divided into three and built the sewer.

It adopted the second idea. The second ideas are three breakup plans.

One-place concentration



It divides into three places



It divides into 12 places

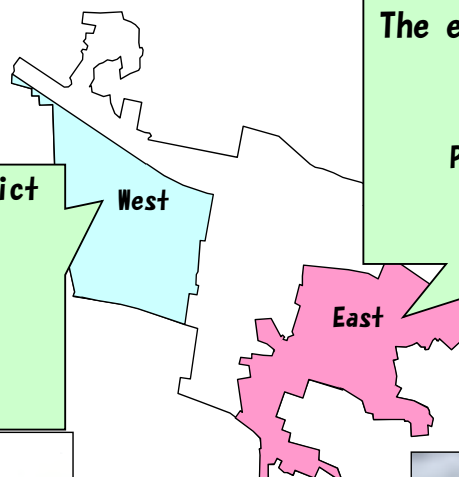


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## Outline of Bange west purification center and Bange east purification center

### The west processing district

Planned population :  
2,700 people  
Plan volume of water :  
1,400m<sup>3</sup>/day  
Use beginning : 1993



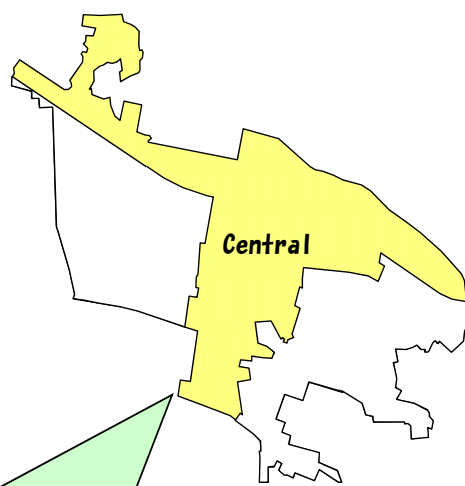
### The east processing district

Planned population :  
3,200 people  
Plan volume of water :  
1,400m<sup>3</sup>/day  
Use beginning : 2004



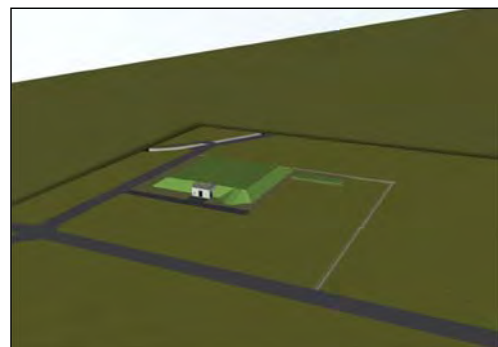
17

## Outline and construction situation at central purification center

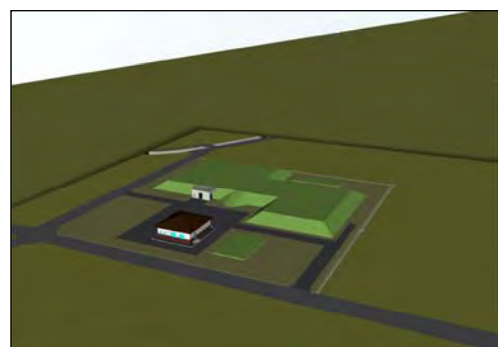


### The central processing district

Planned population :  
3,700 people  
Plan volume of water :  
1,600m<sup>3</sup>/day  
Use beginning : 2013



central purification center(The first Construction)

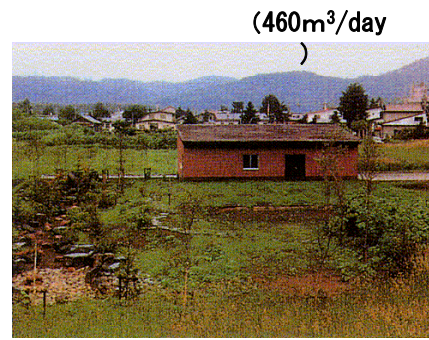
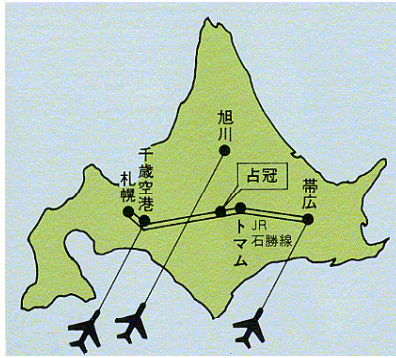


central purification center (Second stage Construction)

18



## [do-jyoka system] of Shimukappu, Hokkaido



19

Shimukappu becomes  $-30$  degrees in winter. This facilities are used from 1990.

## [do-jyoka system] of Okinawa

(1,630m³/day)



(850m³/day)



(1,700m³/day)



(180m³/day)



20

The operation and maintenance of do-jyoka system is easy. Because the machine is few.



**Niimi systems of koria**



**21**

**Niimi systems of Jiangsu, Chaina**

## Model facilities 1 in Taizhou



**140m<sup>3</sup>/day**

## Model facilities 2 in Taizhou



**40m<sup>3</sup>/day**

**The sewage festival is held on the sewage disposal plant**



**23**

**If it is such a way, we can build the sewer**

**I want such  
sewer early**



**24**



# **Water Distribution Management and NRW Reduction by Joint Business**

**February 16, 2012**

 **TOYO ENGINEERING CORPORATION**

## ***Contents***

- 1. Toyo Engineering Corporation**
- 2. World Wide Operation by Toyo Engineering Group**
- 3. Major Business Domains**
- 4. Business Domains in Water Infrastructure**
- 5. Comprehensive Solution with Japanese Public Water Companies**
- 6. Physical improvement needs “Enabling Activities”**
- 7. Joint Business approach enables “Share the Goal”**





# Toyo Engineering Corporation

- Client Value Enhancement -

As of October 2011

<<http://www.toyo-eng.co.jp/>>

TOYO ENGINEERING CORPORATION

- Established : May 1, 1961
- Listed : The first section of Tokyo Stock Exchange
- Location/Address
  - <Head Office> : 2-8-1 Akanehama Narashino-shi, Chiba 275-0024, Japan
  - [ TEL ] : +81-47-451-1111
  - [ FAX ] : +81-47-454-1800
  - <Tokyo Head Office> : Shin-Marunouchi Building 11<sup>th</sup> Floor, 5-1 Marunouchi 1-chome, Chiyoda-ku, Tokyo 100-6511, Japan
  - [ TEL ] : +81-3-6268-6611
  - [ FAX ] : +81-3-3214-6011
- Net Sales (Y2010) : US\$1.87 Billion
- Backlog of Contracts (Y2010) : US\$2.70 Billion
- Number of Employees : 2,450 (including 1,010 Domestic Groups)  
Global 6,800



President and CEO  
Yutaka Yamada



Head Office:  
Chiba, Japan



Tokyo Head Office:  
Tokyo, Japan

## Worldwide Operation by Toyo Engineering Group

As of October 2011

**Total 6,800**

(except Mexico)



<Remarks>

\*1 Toyo-Japan is the center of global operation and major shareholder of its group companies.

\*2 Share(%) owned by Toyo-Japan

# Major Business Domains



## Process Plants

- Oil & Gas Exploration & Production
- Oil & Gas Treatment
- Gas Processing
- Gas-to-Liquid
- Refinery
- Aromatics
- Petrochemicals
- Polymers
- Fertilizers & Chemicals

## Non-Process Plants

- Power
  - Gas Firing
  - Coal Firing
  - IGCC
- Transportation System
  - Rail Systems
  - Monorail
  - Automatic People Mover (APM)
- Infrastructure
  - Airport System
- FPSO/Offshore Platform
- Pipeline
- Water
  - Raw Water Treatment/Distribution
  - Desalination
  - Waste Water Treatment
- Utility Facilities
- Industrial Systems
  - Pharmaceuticals & Fine Chemicals
  - Food Processing
  - Supply Chain & Logistics Solution
  - Microelectronics & Semiconductor
  - Mechatronics
  - Business Consulting and Solution
- Information Technology
  - ERP Solution Systems (SAP, MC Frame)
  - Manufacturing & Logistics Execution Systems
  - Network & Multimedia Systems
- Environment
  - Water and Off Gas Treatment
  - Waste Disposal
  - CDM Projects

# Business Domains in Water Infrastructure

## EPC of Water Treatment Facilities



Municipal Wastewater Treatment Facility (Mexico)



Water Treatment Facility of Petrochemical plant (Korea)

## Master Planning & Feasibility Study of Water Supply System

Jointly with Osaka Municipal Waterworks Bureau, Kansai Economic Federation (KANKEIREN) and other organizations backed by the Japanese government, TOYO diagnosed energy and water conservation on the total water supply system from water sources to faucets in Ho Chi Minh City in Vietnam.

Selecting an idea regarding water distribution system, which can be expected a maximum and realistic effect, we will design, build, and operate distribution plants, and meet the increasing needs of water.



(The figure was made by Osaka Municipal Waterworks Bureau)

## Role of TOYO



## O&M of Water Treatment Facilities

Atlatec is a leading water/wastewater treatment engineering and construction company located in Mexico, which is owned by Mitsui & Co., Ltd. and TOYO. Atlatec operates 18 water treatment plants mainly in Mexico. Atlatec, as a part of the project company members, provides twenty-five years of wastewater treatment service to the National Water Commission of Mexico by the construction and operation of one of the world biggest wastewater treatment facilities, with a capacity of 3,600,000 tons/day.





# Comprehensive Solution with Japanese Public Water Companies



## Issues in Water Supply Services

- High rate NRW (UFW)
- Low pressure of supply water
- Rapid increase of the population
- Water demand increase by modernization
- Raw water quality Declining

## Issues in Water Business Operation

- Improvement of income
  - Improvement of work efficiency
  - Effective investment / Asset Management
- Organization enhancement
  - Long term human resource development
- Finance Arrangement

**Toyo provides the comprehensive solutions  
with Japanese Public Water Companies**

- Not only WTP but also Distribution Network planning and improvement
- Not only NRW Reduction but also Distribution optimization and control
- Not only technical but also commercial enhancement through Joint Business establishment
- Not the limited duration project but the long term business relationship

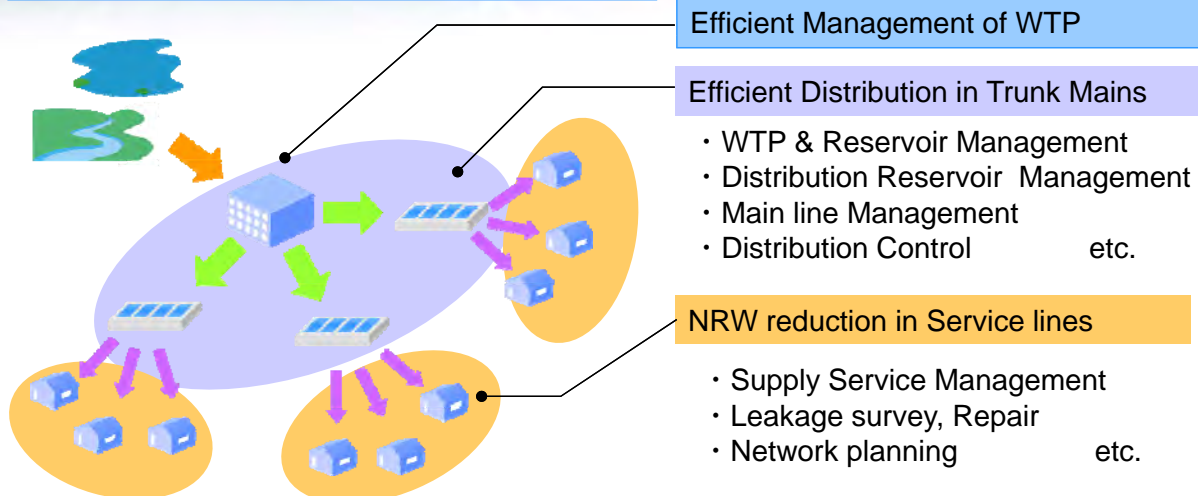
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# Physical improvement needs “Enabling Activities”



## Physical Improvement / Management Work



## Enabling Activities (Program Management)

Network Planning & Modeling, Data Acquisition and Analysis, Asset Management, Financial enhancement, Long term HR development program, etc.

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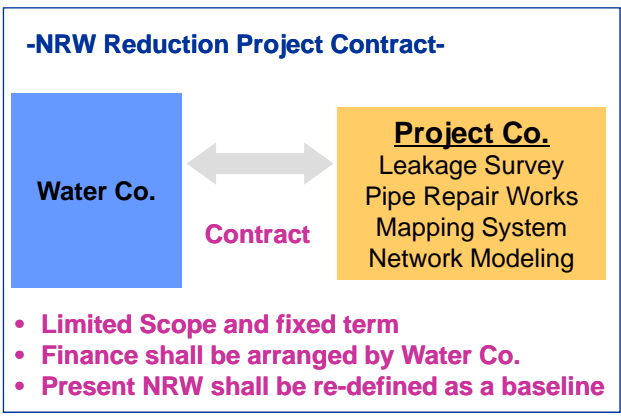
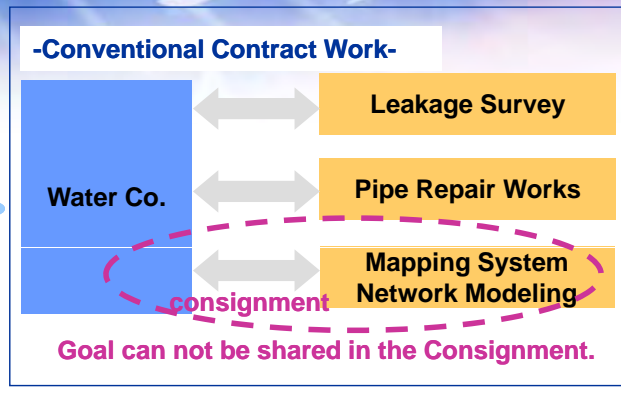
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# Joint Business approach enables “Share the Goal”

NRW Reduction  
Work Efficiency  
Cost Effectiveness

Early Completion  
Welcome high price  
Defined Scope



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## Thank you for your attention.

### Toyo Engineering Corporation

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