

# **Energy Saving by Introduction of Inverters for Raw Water Intake Pumps in Ho Chi Minh City**

**10th October 2019**



**Yokohama Water**

**Yoshinobu Ono**

# Today's Contents

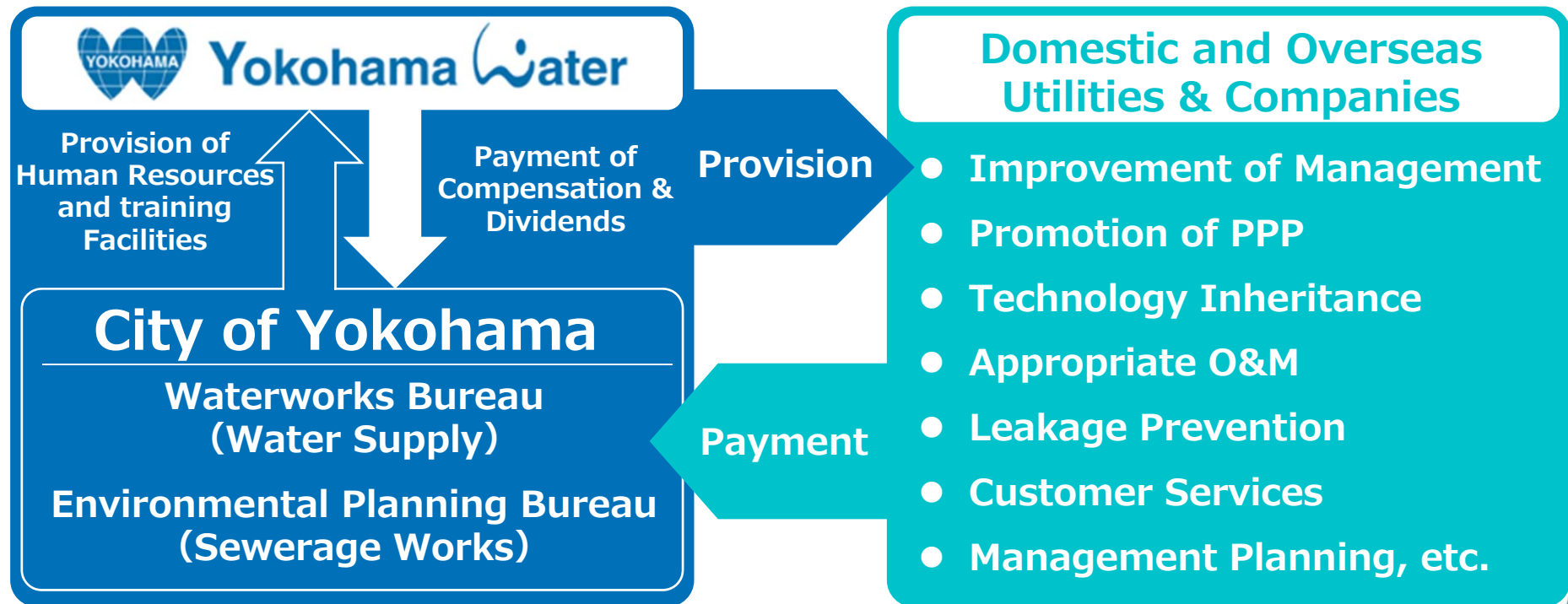
- **What's Yokohama Water?**
- **Vietnam - Yokohama Relationship**
- **JCM Expansion from Da Nang to the other cities in Vietnam.**
- **JCM Project in Ho Chi Minh City**
- **Benefit, Points to Success**



# What's Yokohama Water?

# Yokohama Water's Business Scheme

- Established as a wholly owned subsidiary of **Yokohama Waterworks Bureau, City of Yokohama** in 2010
- Partnership agreement with **Environmental Planning Bureau, City of Yokohama** in 2013
- Transacting businesses on **both water supply and sewerage works** to local government and private corporations



# Our Businesses

Varied water supply and sewerage works service- **only be achieved by a perfect subsidiary of City of Yokohama**

## Consulting and Advisory

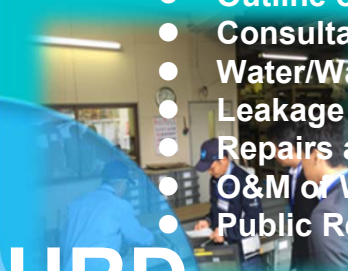
- Support for deciding on master plan
- Support for business management
- Support for asset management
- Support for technical assistance
- NRW survey and leakage investigation
- Support for sewerage sludge reutilization



C&A

## Human Resources Development

- Outline of Waterworks and Sewerage
- Consultant Training
- Water/Wastewater Treatment
- Leakage Survey
- Repairs and Pipe Engineering
- O&M of Water Supply and Sewerage
- Public Relations



HRD

PPP

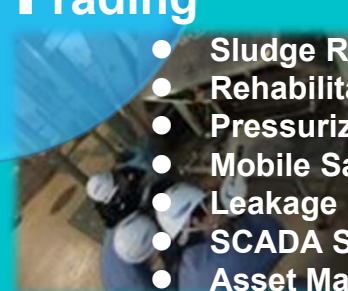
- Investment
- EPC, Equipment Supply
- O&M Management Support
- Human Resource Development
- Support for Business Management
- Asset Management



Public Private Partnership

Trading

- Sludge Recycle System
- Rehabilitation System for Sand Filter
- Pressurized Fluidized Bed Incineration
- Mobile Sand Filtration Tank
- Leakage Detection Equipment
- SCADA System, ICT
- Asset Management System



Equipment Supply



# Providing Yokohama's know-how

## Preserving water resource forest



## Hydropower/solar power generation



## Water distribution management



## Tariff collection/ Customer service



## Water Supply and Sewerage System in Yokohama

Water resource management and water purification Delivery of safe and tasty water to 3.7 million people Resource from wastewater treatment



## Business management



# Integrated Water Resources Management

## PFI (ceramic membrane purification)



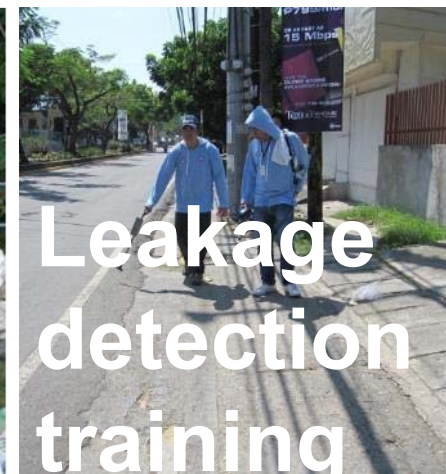
## 100% recycling of sewerage sludge





# Engineering project

- Aiming “Safe”, “Secure” and “Stable” 24/7 water supply in tandem with Yokohama Waterworks Bureau (YWWB)
- Only be achieved by the perfect subsidiary of YWWB





# Training in Yokohama

Provide flexible curriculum to meet the participants' needs in tandem with YWWB





# Cooperation with other municipalities (Yamamoto Town)





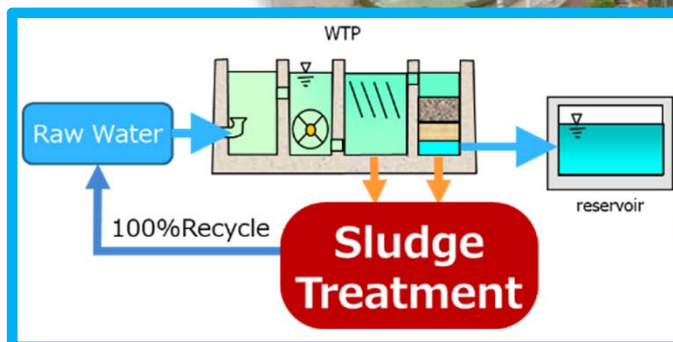
# Environmental Activity's at WTP in Yokohama



**High Efficiency Pump**



**PV on the roof of Reservoir**



**Sludge treatment and Water Recycle System**



**Hydro Power Generation**



# Vietnam - Yokohama Relationship



# City to City Collaboration and Projects in Vietnam

## Hue City

- ◆ JICA Project, 2003-2005, 2006-2007, 2010-2013
- ◆ MoU between YWWB and HueWACO, 2017 ~



## Central and South Vietnam

JICA Partnership  
Project of Safe Water,  
2013-2016



## HaNoi City

Capacity building of  
Sewerage O&M,  
2013-2017, 2018-

## DaNang City

City to City  
Collaboration, 2013-



## Ho Chi Minh City

Agreement on the  
Technical Cooperation  
for water supply  
SAWACO, DAWACO  
etc., 2009-

# JCM in Da Nang City

## Introducing High efficiency pumps, 2017-



Site Inspection



Signing



International consortium contracted



After Replacement (EVPC)

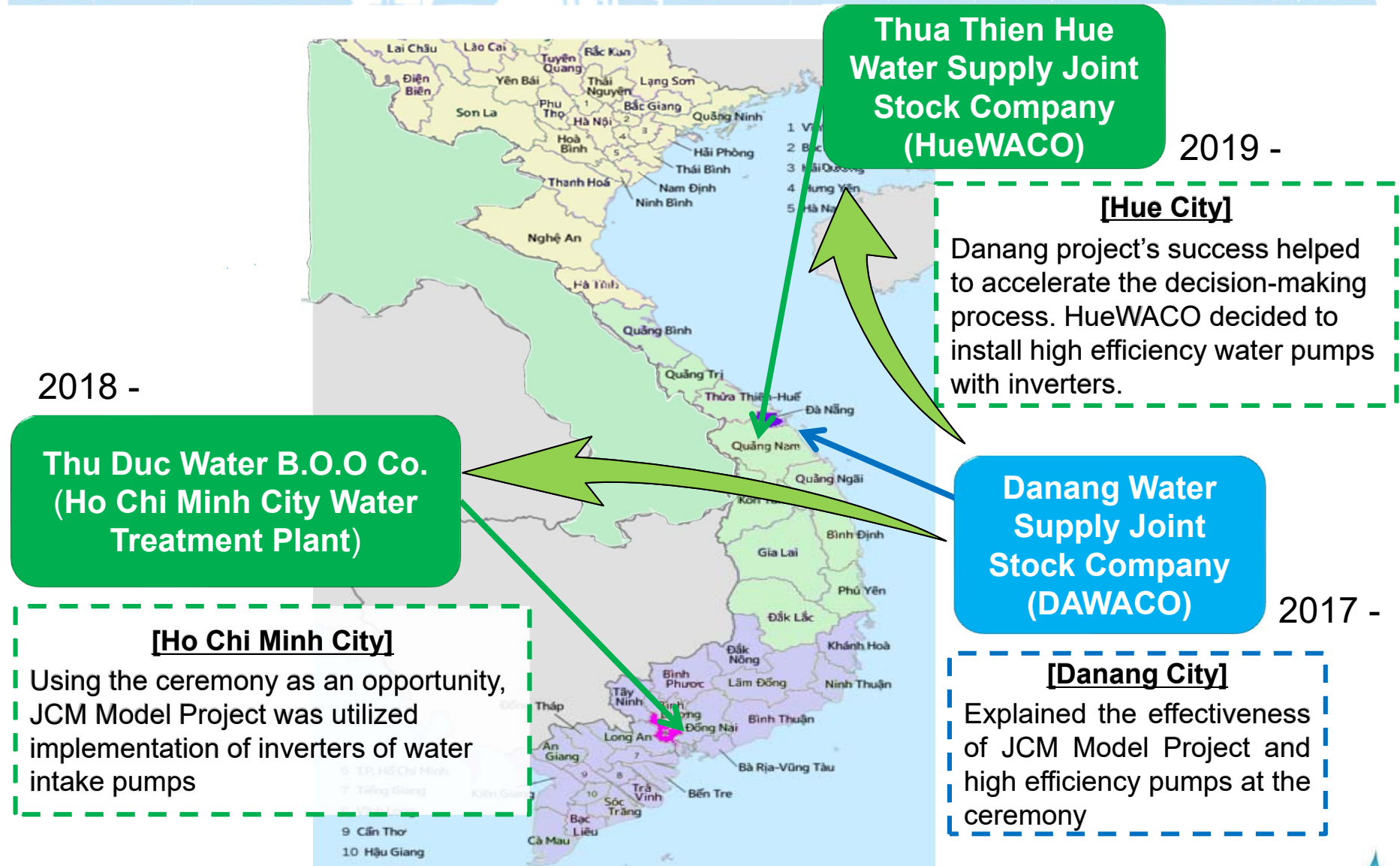


# Opening Ceremony of Da Nang Project





# Expansion to Ho Chi Minh City and Hue City

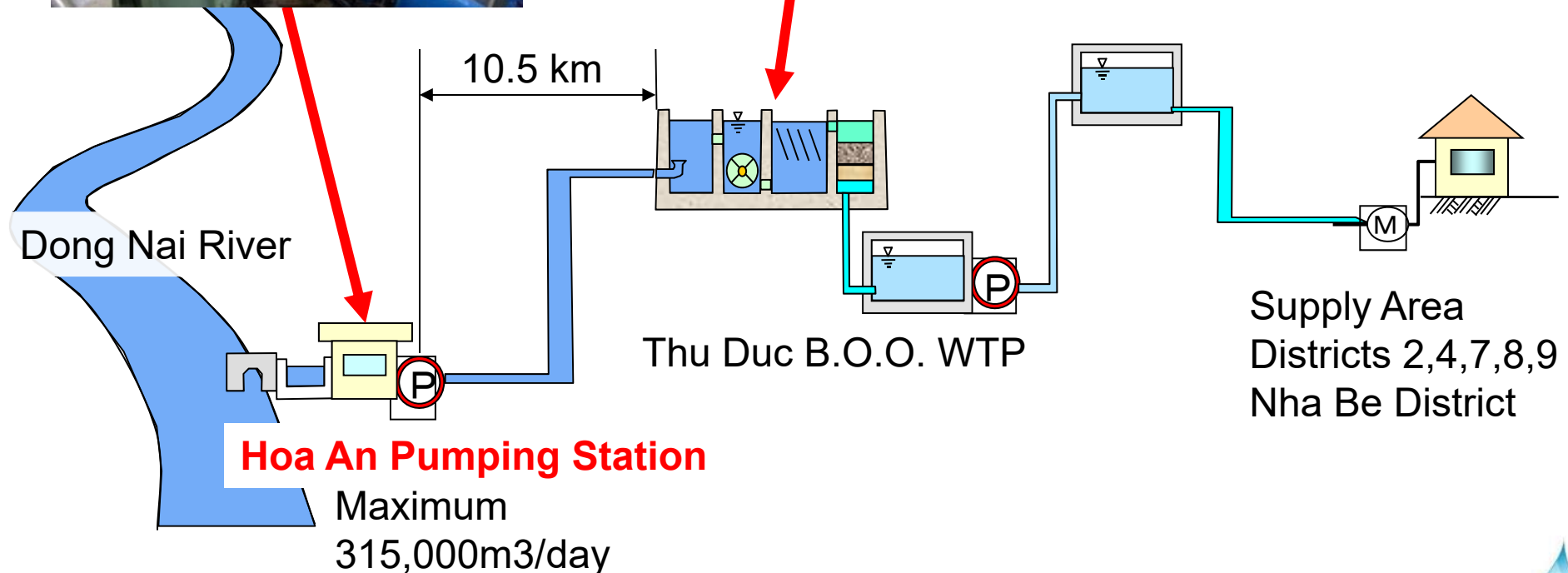




# **JCM Project in Ho Chi Minh City**

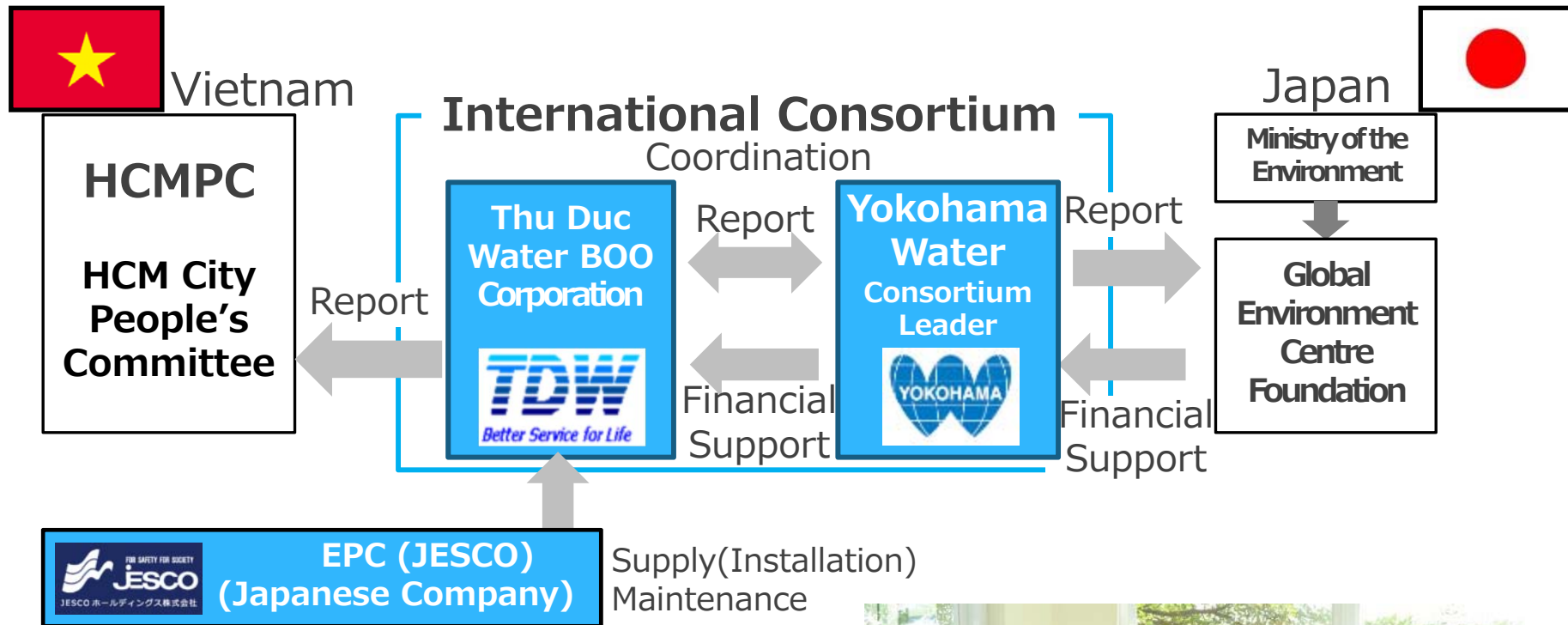
## **Introduction of Inverter for Raw Water Intake Pumps of Thu Duc Water B.O.O. Corporation**

# Outline of Thu Duc B.O.O. Water Treatment Plant





# Scheme of JCM Project in Ho Chi Minh City



# Effect of JCM Project in Ho Chi Minh City

Annual	Intake Amount 13,000m <sup>3</sup> /h	
Power Consumption of Pumps (MWh/Year)	Before	After
	20,265	18,985
Reduction of Power Consumption	1,280 MWh/Year	
Reduction of CO <sub>2</sub> emissions	1,043 ton-CO <sub>2</sub> /Year	
Monitoring Period	18 Years	

\* 0.8154 ton-CO<sub>2</sub>/MWh, Combined Margin (CM) in 2015, IGES list of grid emission factors

# Schedule of JCM Project

Item	2017	2018	2019	2020-
Feasibility Study				
JCM Model Project				
Submitting of Proposal				
Selection of JCM Model Projects				
Construction Work				
Contract of Installation Work				
Extension of Electricity Room				
Product of Inverter-Transportation				
Installation				
Start of Business Operation				
Monitoring				



# Pictures

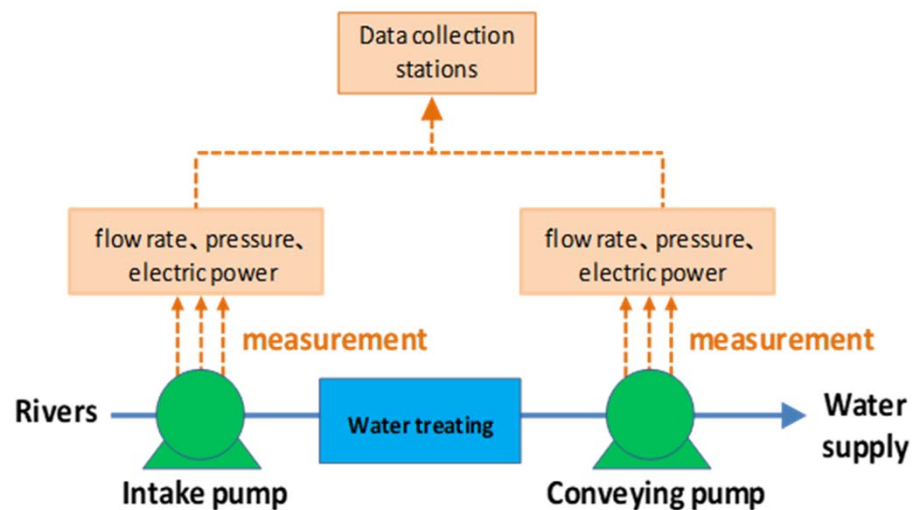


# Benefit of JCM Project

- High efficiency energy saving equipment can be introduced to the host country
- Reduction of greenhouse gases and energy costs
- Utilization subsidy
- Support to implement Environmental business.
- Cooperative and long-term relationship through the activities of International Consortium

# Points to Success

- Partner company selection in the host country
- Demarcation within the international consortium
- Considering proper long-term monitoring on both technical and cost aspects







**Thank you**  
**Xin cảm ơn.**

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