

# Collaboration with Quezon City (Philippines) and Ho Chi Minh City (Viet Nam)

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# Promotion of City to City Cooperation Projects



**Memorandum of Understanding (MOU) on Developing Low-Carbon City in Cooperation between Ho Chi Minh City and Osaka City (22 October 2013, Updated 6 September 2016)**

Both Mayors signed MOU on City to City Cooperation toward realization of low-carbon city in Ho Chi Minh.

**Memorandum of Understanding (MOU) on Developing Low-Carbon City in Cooperation between Quezon City and Osaka City (30 August 2018)**

Hirofumi Yoshimura, Mayor of Osaka City and Herbert M. Bautista, Mayor of Quezon City signed MOU on City to City Cooperation toward realization of low-carbon city in Quezon.

# City to City Cooperation with Quezon City (1)

## Efforts based on MOU

- (i) Establishing standards and systems,
  - (ii) Sharing professional skills and knowledge,
  - (iii) Promoting public-private partnership projects,
  - (iv) Proceeding with capacity development, and
- Hold a mayor-level policy dialogue once a year

## Major Field

Efforts for Creating Low Carbon City



Efforts against Air Pollution



Air Quality Monitoring

Efforts for Solid Waste Management



Waste to Energy

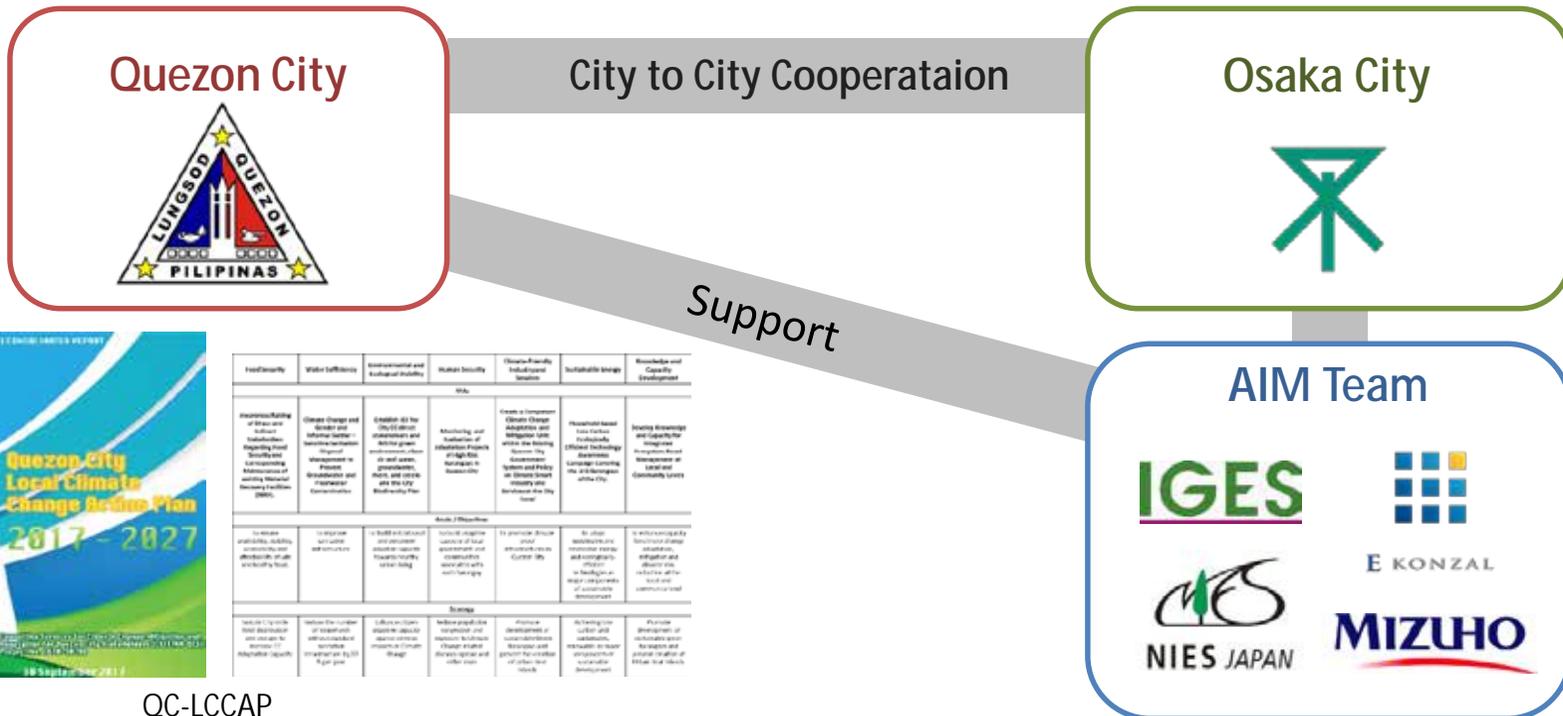


Waste collection Vehicle maintenance

# City to City Cooperation with Quezon City (2)

## Clarification of efforts toward Low Carbon Scinario (LCS) in Quezon City with Asia-Pacific Integrated Model (AIM)

Asia-Pacific Integrated Model (AIM) can help making a quantitative Low Carbon Society (LCS) scenario with concrete mitigation projects based on Quezon City Local Climate Change Action Plan (QC-LCCAP)



QC-LCCAP

Food Security	Water Sufficiency	Environmental and Ecological Resilience	Human Security	Climate-Resilient Infrastructure	Sustainable Energy	Knowledge and Capacity Development
<p><b>Resilience/Building of Resilient Infrastructure</b>                      Regulating Flood Control and Drainage                      Enhancing Resilience of existing National Highway System (NHS)</p>	<p><b>Climate Change and Water Supply</b>                      Enhancing Water Supply                      Enhancing Resilience of existing National Highway System (NHS)</p>	<p><b>Greening of the City</b>                      Enhancing Urban Greenery                      Enhancing Resilience of existing National Highway System (NHS)</p>	<p><b>Monitoring and Evaluation of Urbanization Projects</b>                      Enhancing Resilience of existing National Highway System (NHS)</p>	<p><b>Climate Change Adaptation and Mitigation</b>                      Enhancing Resilience of existing National Highway System (NHS)</p>	<p><b>Renewable Energy</b>                      Enhancing Resilience of existing National Highway System (NHS)</p>	<p><b>Energy Knowledge and Capacity Development</b>                      Enhancing Resilience of existing National Highway System (NHS)</p>
<b>Build 3 Priorities</b>						
<p><b>Resilient Infrastructure</b>                      Enhancing Resilience of existing National Highway System (NHS)</p>	<p><b>Water Supply</b>                      Enhancing Resilience of existing National Highway System (NHS)</p>	<p><b>Urban Greenery</b>                      Enhancing Resilience of existing National Highway System (NHS)</p>	<p><b>Monitoring and Evaluation of Urbanization Projects</b>                      Enhancing Resilience of existing National Highway System (NHS)</p>	<p><b>Climate Change Adaptation and Mitigation</b>                      Enhancing Resilience of existing National Highway System (NHS)</p>	<p><b>Renewable Energy</b>                      Enhancing Resilience of existing National Highway System (NHS)</p>	<p><b>Energy Knowledge and Capacity Development</b>                      Enhancing Resilience of existing National Highway System (NHS)</p>
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# Low Carbon Project in Quezon City

## Project

➤ Energy Saving in Factories



Heat Exchanger

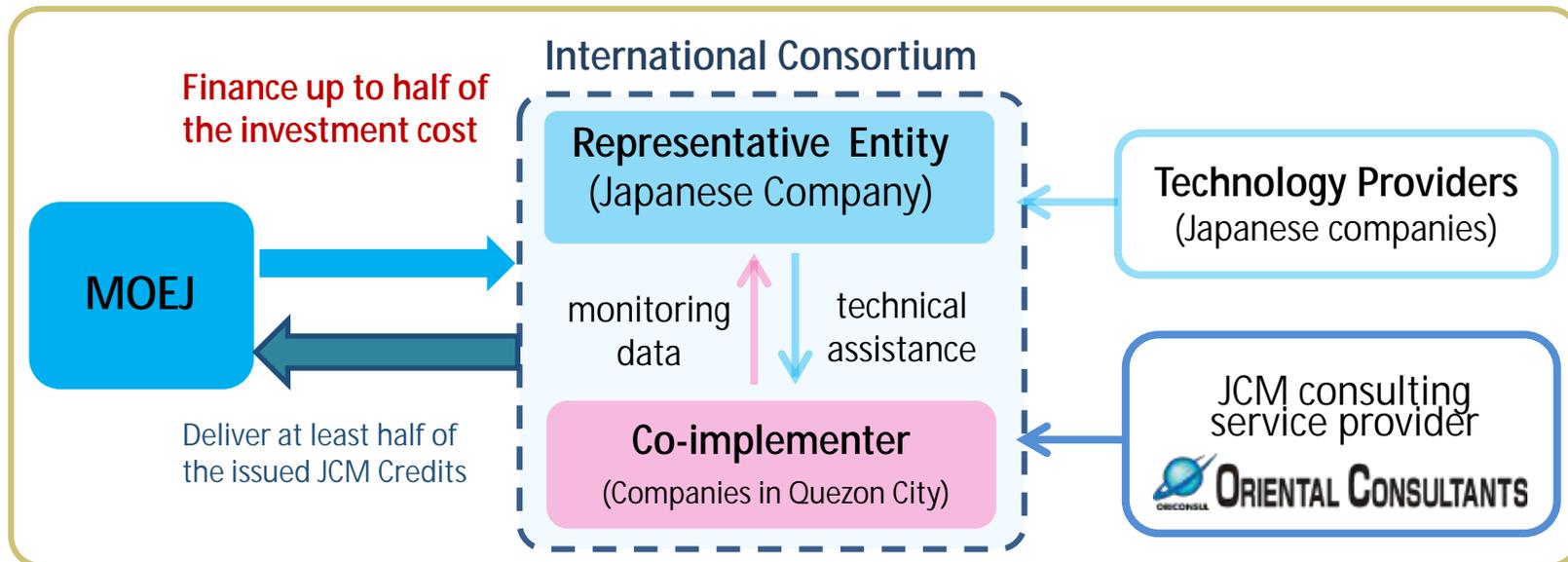
➤ Installing Solar Power Generation System in the Landfill



➤ Improving Garbage Trucks

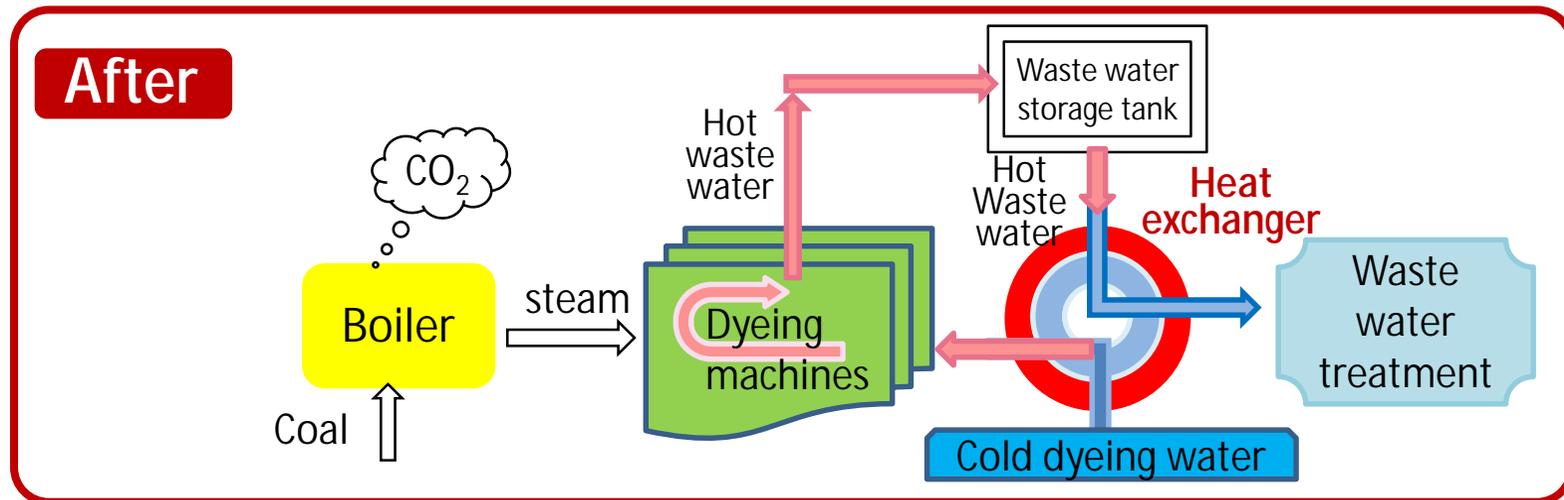
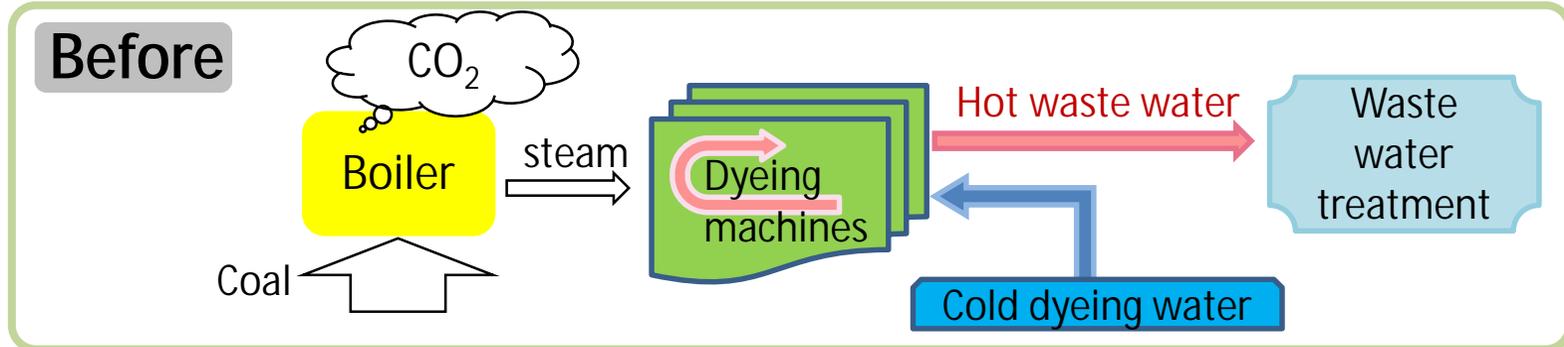


## Role

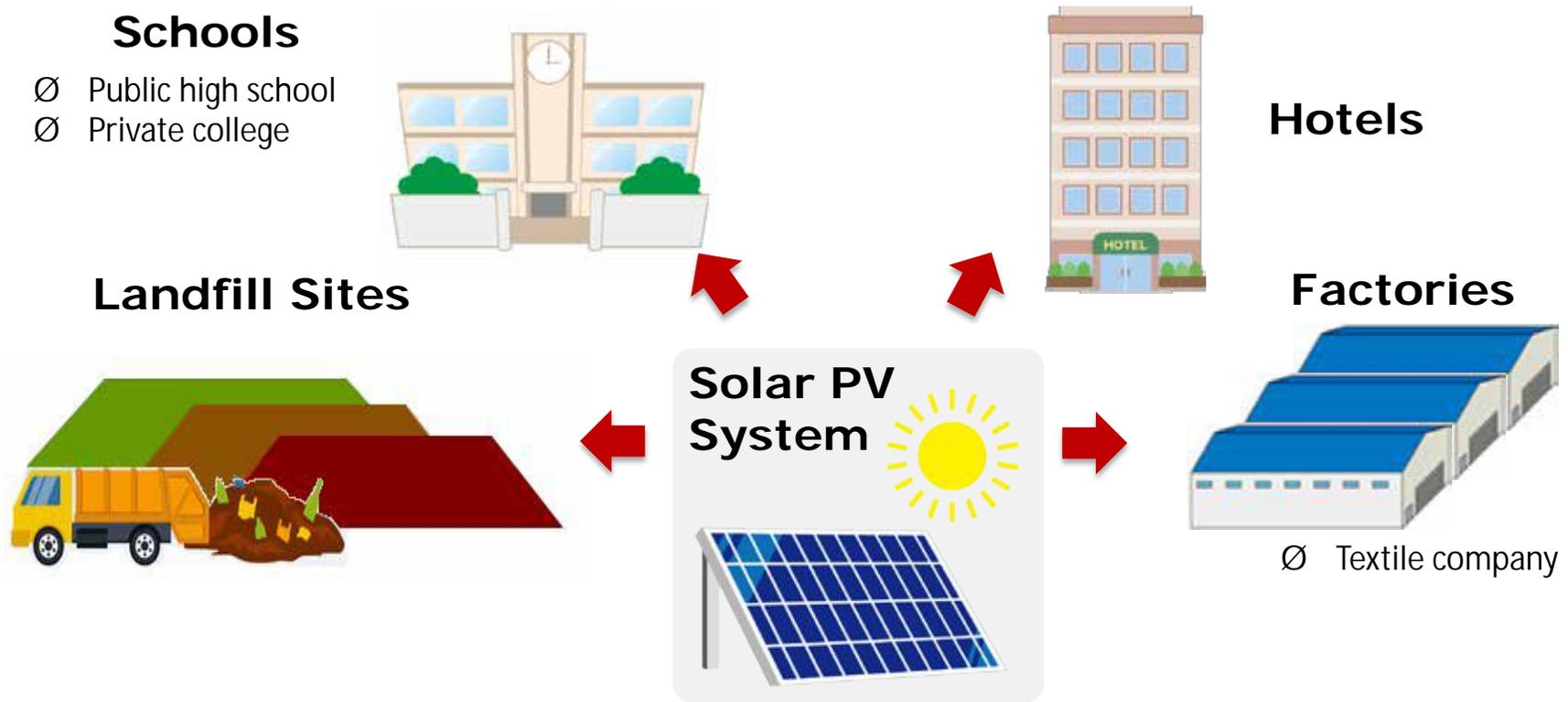


# Energy Saving at Factories

- As a large amount of hot water has been discharged into the sewer system in textile factories in Quezon City, installation of **heat recovery system** can improve the thermal efficiency and contribute to the CO<sub>2</sub> emission reduction.
- Heat exchanger** was proposed as one of the applicable and promising energy saving technologies.



# Solar Power Generation



- Through the field survey, the FS team identified that the specific landfill seems to have the highest potential.
- The progress has been made in accordance with the Quezon city's climate change policies to install solar power facility.

# Improvement of Garbage Trucks

- Based on the condition of the trucks, introduce energy saving practices in terms of technology, operation and energy management.
  - (i) Vehicle replacement
  - (ii) Engine renovation (Overhauling)
  - (iii) Diesel-Duel-Fuel System (DDF)

Source: Japan International Cooperation Agency (JICA)



Garbage Trucks (Diesel)



LPG Injection Control Unit



Liquefied Petroleum Gas (LPG) Tank

**Diesel-Duel-Fuel System (DDF) :** DDF engine can use LPG in Diesel Engine.

<Expected Effect>

- Fuel consumption can be reduced about 10 to 30% .
- DDF can help to reduce particulate matter (PM) by about 70%, Nitrogen Oxide (NOx) by about 40%, Carbon Monoxide (CO) about 90%.  
(comparing to Euro I standard)

# City to City Cooperation with Ho Chi Minh City

## Outcomes of City to City Cooperation to Date

- (i) Formulation and Implementation of Ho Chi Minh City Climate Change Action Plan
- (ii) Creating Low-Carbon Project through Public-Private Cooperation (6 Projects)

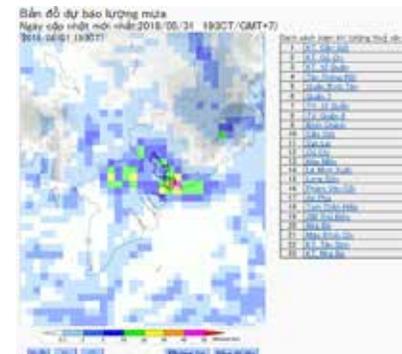


Introduction of Solar Power Generation in a Shopping Mall

## Efforts based on MOU / Ho Chi Minh City Climate Change Action Plan

10 Fields ( Urban planning, Energy, Traffic, Industry, Water management, Waste management, Construction, Health, Agriculture and food security, Tourism and raising community awareness), and

### Adaptation for Climate Change



Adaptation for Climate Change (Rainfall Prediction System)

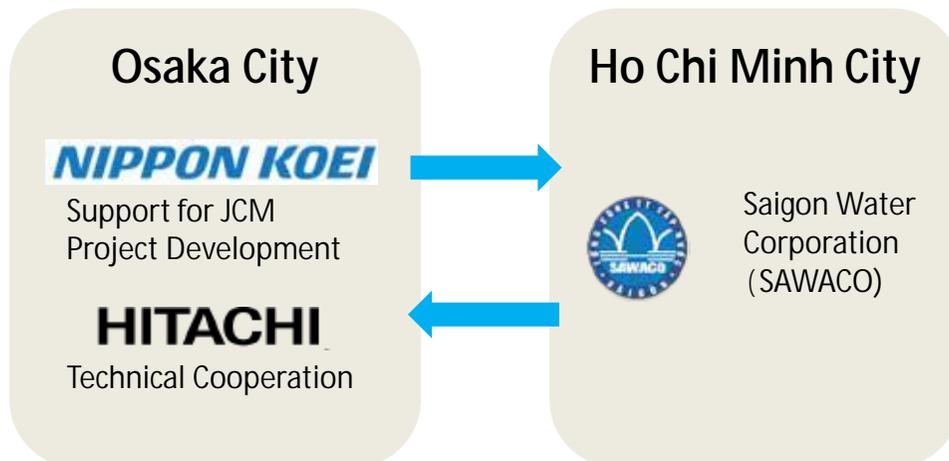
# Low Carbon Project in Ho Chi Minh City

## Project Outline

- Energy Saving on Water Treatment Facility
  - < Energy Saving Technology: Inverter >
  - Realizing less waste operation of pumps and fans by controlling rotation speed of motor, we aim energy conservation.



## Role



## Schedule

- FY2018  
Feasibility Study
- FY2019 ~ FY2022  
Equipment Installation Work
- After Installation  
Monitoring on CO<sub>2</sub> Reduction

# Inverter Project

## Inverter



## < Target Equipments >

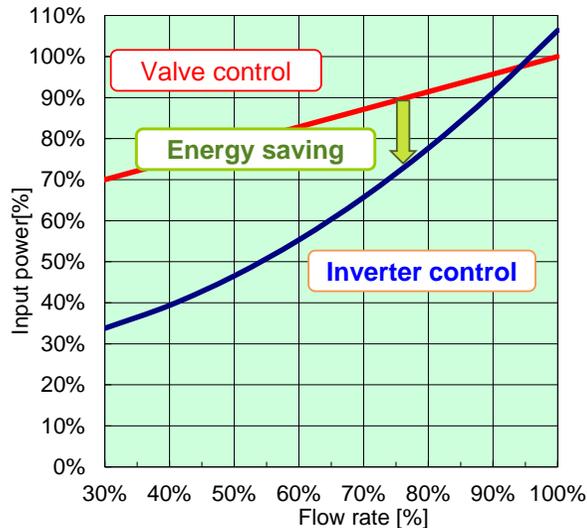


Pumps



Fans

Equipment with electric motor



## < Operation >



There must be fluctuation in the pace of equipment operation.

## < Capacity >



Larger Equipments are suitable for Inverter.  
It is effective 130 kW or more.

- Through the field survey, the FS team is considering to deploy Inverter for Wastewater Treatment Plants, Sugar Mills, Power Plants, etc.
- Energy saving is one of the major efforts listed in Ho Chi Minh City Climate Change Action Plan (HCMC-CCAP).



Salamat!



City of Osaka

ご清聴  
ありがとうございます。  
ございます。



Xin cảm ơn!

Thank You for Your Attention!