



# Promoting Quality Infrastructure Investment

- Japan's contribution to infrastructure development -

Mitsutoshi Kajikawa

Director, Development Policy Division

Ministry of Finance, Japan

# Quality Infrastructure Investment as an international agenda

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## 2014-2015

- Since G20 Brisbane summit in 2014, importance of quality aspects of infrastructure investment has been stressed in various international forums, including G20, G7, APEC and East Asian Summit.

## 2016

- In June 2016, under Japanese presidency, G7 Leaders endorsed “G7 Ise-Shima Principles for Promoting Quality Infrastructure Investment,” which has crystallized as definition of quality infrastructure investment.
- Under Chinese presidency, the essential elements of quality infrastructure investment were also affirmed by Leaders at G20 Hangzhou summit in 2016.

***Excerpt from Leaders’ communique at G20 Hangzhou summit***

39. We stress the importance of quality infrastructure investment, which aims to ensure economic efficiency in view of life-cycle cost, safety, resilience against natural disaster, job creation, capacity building, and transfer of expertise and know-how on mutually agreed terms and conditions, while addressing social and environmental impacts and aligning with economic and development strategies.

# Ise-Shima Principles for Promoting Quality Infrastructure Investment

G7 Leaders further encourage the relevant stakeholders, namely governments, international organizations, including multilateral development banks (MDBs), and the private sector, such as in PPP projects to align their infrastructure investment and assistance with the Principles, including the introduction and promotion of a procurement process that takes full account of value for money and quality of infrastructure.

## Principle 1

Ensuring effective governance, reliable operation and economic efficiency in view of life-cycle cost as well as safety and resilience against natural disaster, terrorism and cyber-attack risks

## Principle 2

Ensuring job creation, capacity building and transfer of expertise and know-how for local communities

## Principle 3

Addressing social and environmental impacts

## Principle 4

Ensuring alignment with economic and development strategies including aspect of climate change and environment at the national and regional levels

## Principle 5

Enhancing effective resource mobilization including through PPP

# Examples of quality infrastructure investment (ODA): Delhi Mass Rapid Transport System Project (India, Japanese ODA Loan)



## Summary

### [Project summary]

The project consists of the construction of a rapid transport system (public works, electric / telecommunication / signal works, etc.) and the procurement of vehicles. Phase 1 (65 km) from October 1998 to November 2006. Phase 2 (125 km) from April 2006 to August 2011. Phase 3 (116 km) from June 2011 to April 2016.

### [Result]

On average, about 2.5 million people use the metro every day (cf. 3 million people use underground railways per day in London). The metro system has contributed to reducing the number of vehicles by 120,000 in Delhi.

## Characteristics as a “Quality Infrastructure” project

Principle1: Ensuring economic efficiency in view of life-cycle cost / safety

- ✓ The concept of “safety” is firmly established by putting fences around construction sites, obliging workers to wear helmets and safety shoes at construction sites.
- ✓ Safety measures are tightened by introducing “On Site Visualization (OSV)” developed by Kobe University (which indicates the danger of collapse by color of light when the ground or a structure gets displaced).
- ✓ “Regenerative brake system”, introduced to metro as Japanese company’s energy-efficient technology, is expected to reduce CO<sub>2</sub> emission by 22 million tons (total reduction between 2002 and 2032). The project was registered by the United Nations as the world’s first CDM project in the railway sector.

Principle3: Addressing social and environmental impacts

- ✓ People begin to wait in line for trains through such efforts as the station staff’s instruction, etc. The idea of “forming a line to wait” is introduced to the local people.
- ✓ Women-only train carriages are introduced so that women can safely use public transportation.

Principle2: Contribution to the local society and economy

- ✓ To improve the capacities regarding safe operation and vehicle maintenance, technical cooperation is provided to the Delhi Metro Rail Corporation with the cooperation of Tokyo Metro Co., Ltd.
- ✓ With Japanese companies’ cooperation, the mindset of workers to gather punctually every morning and to attach the importance to the observance of delivery deadlines was fostered.

# Examples of quality infrastructure investment (PPP): Intercity Express Program (United Kingdom, JBIC/NEXI)

## Summary

### [Project summary]

- The Department for Transport's project to renew express train cars for main existing lines that have become decrepit
- Delivery of 866 train cars for the East Coast Main Line (ECML) and the Great Western Main Line (GWML)
- Provision of maintenance for 27 and a half years
- The largest scale in the UK railway history (about 5.7 billion pounds in total (about 8.5 billion dollars))

### [Recent development]

- March 2015: arrival of train cars(Class 800) manufactured in advance at Southampton Port, UK
- Around summer of 2015: a train car plant to be completed in Newton Aycliffe, Durham County, UK
- 2016: beginning of mass production of Class 800 series



## Characteristics as a “Quality Infrastructure” project

Principle1: Reliable operation / economic efficiency in view of life-cycle cost

- ✓ Introduction of environment-friendly train cars that do not use much energy by having light aluminum bodies and a driving system using energy efficient technology.
- ✓ A diesel-engine generator is installed under the floor of a train car so that the train can run in both electrified and non-electrified sections.
- ✓ Because contracts cover not only the delivery of train cars but also maintenance, it is possible to provide safe and stable transport service continuously.

Principle2: Contribution to the local society and economy

- ✓ A train car plant and a maintenance site are established locally. About 730 staff members are expected to be employed at the train car plant, including its R&D facility.

Principle5: Effective mobilization of financial resources through PPP, etc.

- ✓ The project company raised funds necessary for the procurement of train cars and the establishment of a maintenance base by the PPP scheme under the financial support of Japan Bank for International Cooperation(JBIC) / Nippon Export Insurance(NEXI).

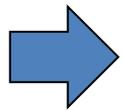
# Important aspects for mobilizing private funding into infrastructure

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In Principle 5 of *the Ise-shima Principles*, we are enhancing effective resource mobilization from private sector through PPP. These are important aspects to invite private investors to infrastructure projects.

- **Foreseeability of infrastructure projects**

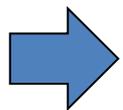
- Completing construction as planned and ensuring steady operation in the long run.
- Risk mitigation through building resilient infrastructure.



Principle 1 of *the Ise-shima Principles* (Reliable operation and resilience against natural disaster) should be addressed in PPP infrastructure projects.

- **Risk sharing between host countries and private sector**

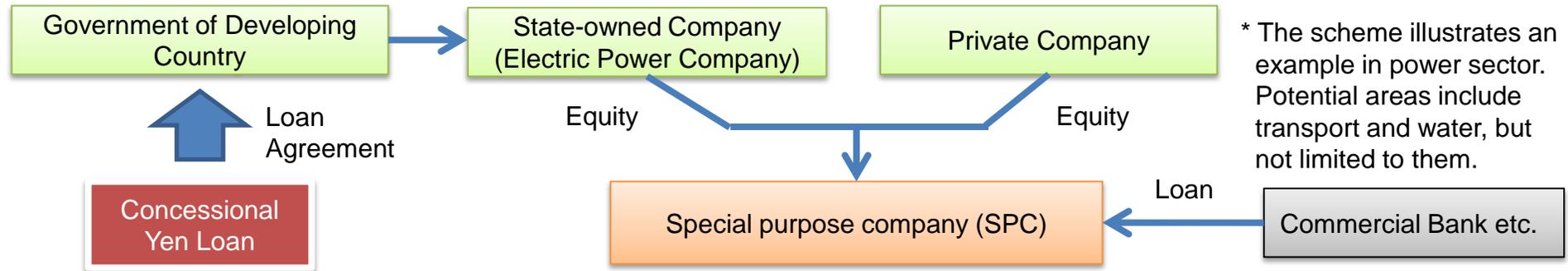
- Feed in tariff system or power purchase agreement with government guarantee.
- Host countries guarantee on liability of state owned infrastructure companies.



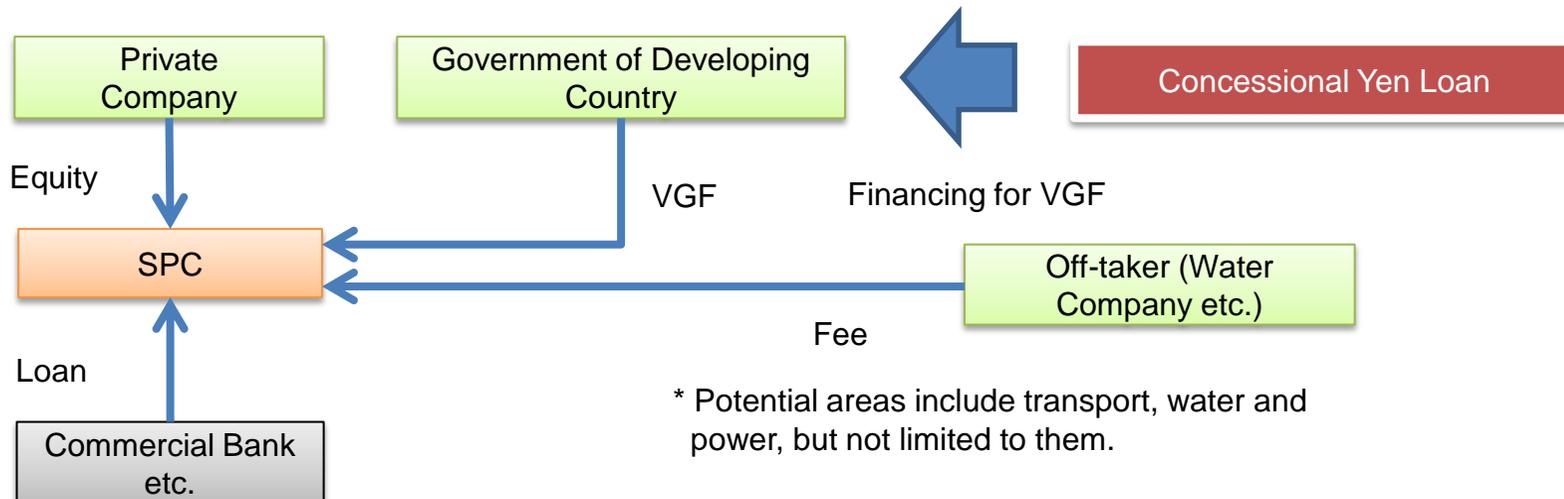
Basically, efforts on the side of host countries are important. However, Japan developed various financing schemes to enhance risk sharing by host countries in PPP infrastructure projects.

# Examples of Japan's financing schemes to promote PPP: ODA

## ● Equity Back Finance



## ● Viability Gap Funding

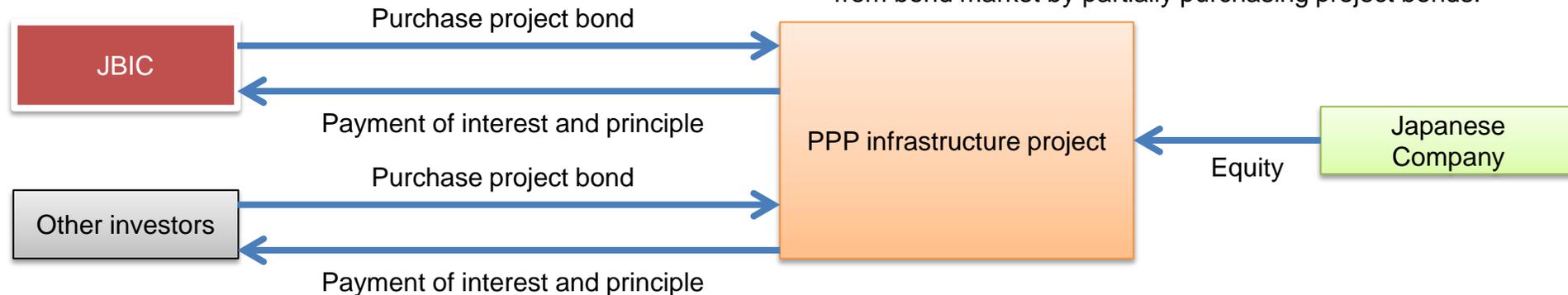


# Examples of Japan's financing schemes to promote PPP: non ODA

In May 2016, Government of Japan revised Japan Bank for International Cooperation (JBIC) Act to further strengthen its function. These are new assistance tools to support PPP infrastructure projects.

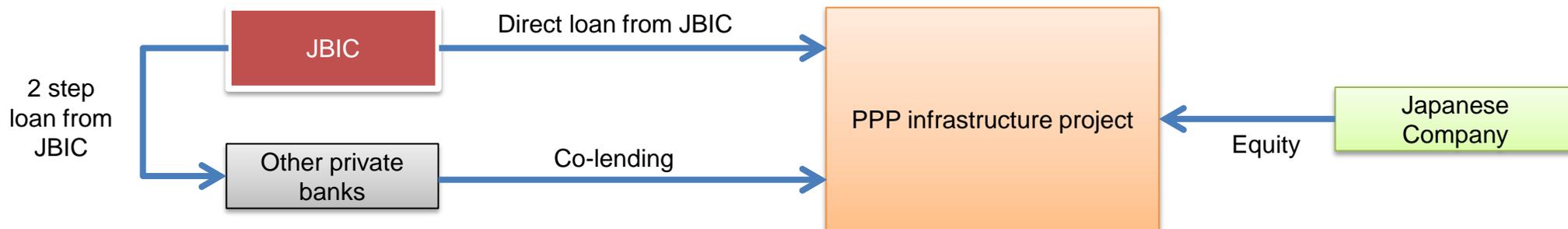
## ● Purchase of infrastructure project bond

\* JBIC's objective is to help infrastructure projects funding from bond market by partially purchasing project bonds.



## ● 2 step loan for infrastructure projects

\* JBIC provides foreign currency finance to local or Japanese private banks so as to help co-lending from private sector.



# Examples of Japan's financing schemes to promote PPP: Collaboration with MDBs

## ● Leading Asia's Private Sector Infrastructure Fund (LEAP)

A new trust fund was established in ADB through JICA's investment at the end of March 2016 and it will invest in and finance private quality infrastructure projects through measures such as PPP. The JICA Trust Fund will target to invest and finance up to USD 1.5 billion in the next 5 years.

(Note: ADB expects to mobilize USD 6 billion of funding, including the trust fund, ADB's ordinary account and private funding.)

