Government Support for PPP Projects in Korea

Hyeon PARK
Executive Director
Public & Private Infrastructure Investment Management Center (PIMAC)
Korea Development Institute
hpark@kdi.re.kr
1. Overview of Korea PPP System
2. Government Supports
3. Example: Yongin-Seoul Expressway
4. Concluding Remarks
Introduction of PIMAC

- PIMA (Public Investment Management Center) was founded in Jan 2000 as an affiliated body of KDI.
  - The MOSF, then the Ministry of Planning and Budget, decided to establish it to conduct Pre-Feasibility Studies (PFSs).

- PIMAC (Public and Private Infrastructure Management Center) was established as a merger of PIMA and PICKO by the second amendment of ‘The PPP Act’ in January 2005.
  - The PICKO (Private Infrastructure Investment Center of Korea) of KRIHS (Korea Research Institute for Human Settlements) was founded in April 1999, to manage PPP projects as stipulated by the amendment of PPP Act.

- PIMAC is a statutory organization based on the PPP Act, while the KDI itself is based on the ‘Government Funded Research Institute Act.’
Enables comprehensive and systematic management of both traditional public investment and PPPs

86 staffs in 3 divisions

Executive Director

Public Investment Evaluation Division
- Conduct and manage PFS
- Policy research on PIM
- Program Evaluation and Performance Management of Public Investment Projects

Public-Private Partnerships Division
- Formulate PPP Annual Plan and develop PPP guidelines
- Conduct Evaluation of PPP Projects
- Research on PPP
- Financing and refinancing of PPP
- Capacity building and training
- Infrastructure DB management

Policy and Research Division
- Research on Methodology of Project Evaluation
- Appraisal for SOE Projects
- Conduct and manage RSF

Policy Research Unit
Public Entity Project Evaluation Unit
RSF Unit
The Role of PIMAC in PPP System

1) Researcher
   ✓ Support for formulation of the Basic Plan for PPP
   ✓ Theoretical and policy studies on PPP programs
   ✓ Development of implementation guidelines

2) Advisor & facilitator for PPP Procurement
   ✓ Development of PPP projects
   ✓ Execution and Review of VFM test
   ✓ Support for formulation of RFPs
   ✓ Review of RFP and concession agreement
   ✓ Assistance in tendering and negotiation

3) PPP Market Promoter
   ✓ Training programs and seminars on PPP for public officials
   ✓ International cooperation
   ✓ PPP Database management
Part-01  Overview of Korea PPP System
Aug. 1994, PPP Act legislated. ‘Act on Promotion of Private Investment into Social Overhead Capital’
- As the ‘infrastructure gap’ was regarded as a bottleneck of economic growth, PPP system along with transport tax was introduced.

Jan. 1999, PPP Act amended to promote PPP market
- No strong financial sector to introduce project financing
- Losing momentum in the wake of the Asian financial crisis in 1997-98
- Encouraging private parties to develop projects by awarding bonus points in bidding to initial proposers (Unsolicited PPP Projects).
- Risk Sharing (Minimum Revenue Guarantee)

- Introduction of BTL scheme and expansion of facility types to include social infrastructure
- Strengthened fiscal discipline
<table>
<thead>
<tr>
<th></th>
<th>’95-00</th>
<th>’01</th>
<th>’02</th>
<th>’03</th>
<th>’04</th>
<th>’05</th>
<th>’06</th>
<th>’07</th>
<th>’08</th>
<th>’09</th>
<th>’10</th>
<th>’11*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PPP Investment</strong> (A)</td>
<td>2.7</td>
<td>0.6</td>
<td>1.2</td>
<td>1.0</td>
<td>1.7</td>
<td>2.9</td>
<td>2.9</td>
<td>3.1</td>
<td>3.8</td>
<td>3.9</td>
<td>2.7</td>
<td>2.2</td>
</tr>
<tr>
<td><strong>Gov’t Investment</strong> (B)</td>
<td>69.7</td>
<td>16.0</td>
<td>16.0</td>
<td>18.4</td>
<td>17.4</td>
<td>18.3</td>
<td>18.4</td>
<td>18.4</td>
<td>20.5</td>
<td>24.7</td>
<td>24.5</td>
<td>24.4</td>
</tr>
<tr>
<td><strong>A / B (%)</strong></td>
<td>3.9</td>
<td>3.8</td>
<td>7.5</td>
<td>5.4</td>
<td>9.8</td>
<td>15.8</td>
<td>15.8</td>
<td>16.8</td>
<td>18.5</td>
<td>15.8</td>
<td>11.0</td>
<td>9.0</td>
</tr>
</tbody>
</table>

* : Based on 2011 government budget forecast.
** : Private investment on PPP projects covering central government BTO projects, local government BTO projects more than 200B KRW or with 30B more national fund and BTL rail projects

- PPP investment in the SOC sector has reached over 15% of government investment on government infrastructure projects since 2005 even though the figure has dropped to around 10% recently.
## Signed PPP Projects in Korea (As of Dec. 2011)

<table>
<thead>
<tr>
<th>Competent Authority</th>
<th>TOTAL (# of projects)</th>
<th>Under Operation</th>
<th>Under construction</th>
<th>Under preparation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Project Cost (USD)</td>
<td>%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Central Government</td>
<td>(600) 79.6 bn</td>
<td>(100%) 100%</td>
<td>(417) 46.1 bn</td>
<td>(143) 22.1 bn</td>
</tr>
<tr>
<td>Local Government</td>
<td>(449) 33 bn</td>
<td>(25.2%) 58.4%</td>
<td>(79) 26.2 bn</td>
<td>(52) 10.9 bn</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Project Type</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BTO</td>
<td>(200) 57.9 bn</td>
<td>(33.3%) 72.9%</td>
<td>(144) 34.9 bn</td>
<td>(34) 12.7 bn</td>
</tr>
<tr>
<td>BTL</td>
<td>(400) 21.7 bn</td>
<td>(66.6%) 27.3%</td>
<td>(273) 11.1 bn</td>
<td>(109) 9.4 bn</td>
</tr>
</tbody>
</table>

BTO: Build-Transfer-Operate; BTL: Build-Transfer-Lease
Procurement Schemes

**BTO**

- **Private Sector (SPC)**
  - Provides Services
  - Pays User Fee
  - Transfers Operational Rights
  - Grants Operational Rights

- **End-user**

- **Government**

**BTL**

- **Private Sector (SPC)**
  - Provides Services
  - Transfers Ownership

- **End-user**
  - Pays User Fee (If necessary)

- **Government**
  - Grants Operational Rights/Pays Government Payment
## Procurement Schemes

<table>
<thead>
<tr>
<th></th>
<th>BTO</th>
<th>BTL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Investment Recovery</strong></td>
<td>User fees</td>
<td>Lease payment</td>
</tr>
<tr>
<td></td>
<td>Construction subsidy (MRG)</td>
<td>(Fixed Revenue)</td>
</tr>
<tr>
<td><strong>Project risk</strong></td>
<td>Demand risk on concessionaire</td>
<td>Little demand risk on concessionaire</td>
</tr>
<tr>
<td><strong>Investment Return</strong></td>
<td>High risk, high return</td>
<td>Low risk, low return</td>
</tr>
<tr>
<td><strong>Project Initiation</strong></td>
<td>Both solicited and unsolicited projects</td>
<td>Solicited projects only</td>
</tr>
</tbody>
</table>
Examples: BTO (Economic Infrastructure)

- **Incheon International Airport Expressway**
  - Total Project Cost: KRW 1,334 billion
  - Funding: Equity/Debt/Subsidies = 25%/59%/16%
  - Length: 40.2 km, 8 lanes
  - Competent Authority: Ministry of Land, Transport, and Maritime Affairs
  - Operation Period: 30 years

- **Seoul Beltway Northern Section**
  - Total Project Cost: KRW 1,471 billion
  - Funding: Equity/Debt/Subsidies = 23%/51%/25%
  - Length: 36.3 km, 8 lanes (Total Length: 128 km)
  - Competent Authority: Ministry of Land, Transport, and Maritime Affairs
  - Construction Period: June 2001-June 2008 (currently in operation)
  - Operation Period: 30 years

- **Busan New Port Phase 1**
  - Total Project Cost: KRW 1,648 billion
  - Funding: Equity/Debt/Subsidies = 20%/55%/25%
  - Work Scope: 9 berths (50,000 t), 3.2 km
  - Competent Authority: Ministry of Land, Transport and Maritime Affairs
  - Construction Period: 2001-2009
  - Operation Period: 50 years
Examples: BTL (Social Infrastructure)

- **Chungju Military Apartment Housing**
  - Total Project Cost: KRW 18.6 billion
  - Work Scope: 200 households and convenience facilities
  - Competent Authority: Ministry of Defense
  - Operation Period: 20 years

- **Ulsan National Institute of Science and Technology**
  - Total Project Cost: Approximately KRW 250 billion
  - Work Scope: Site 1,028,200 m², Total Floor Area 153,691 m²
  - Competent Authority: Ministry of Education, Science and Technology
  - Operation Period: 20 years

- **Anhwa High School**
  - Total Project Cost: Approximately KRW 962 million
  - Work Scope: Site 13,264.03 m², 5 stories above ground
  - Competent Authority: Gyeonggi Province Office of Education
  - Operation Period: 20 years
Part-02  Government Supports
Governmental Supports

- Tax Benefits
- Construction Subsidy
- Land Acquisition
- Infrastructure Credit Guarantee Fund
- Early Termination Payment

Financial Support

Risk Sharing Measures, etc.
Justifying Government Subsidy to PPP Projects

By implementing A and D via PPP, government can allocate saved resources to E and F projects.
### Construction Subsidies by Sector

- The government may grant construction subsidy to the concessionaire, if it is necessary to keep the user fee at an appropriate level.
- Subsidy shall be determined in the individual concession agreement.

Rule of thumb subsidy rate: Roads & Port: 30% max; Rail: 50% max

<table>
<thead>
<tr>
<th>Type</th>
<th>Number of Projects</th>
<th>Total Project Cost (amount)</th>
<th>Total Private Investment Project Cost (amount)</th>
<th>Financial Subsidy for construction (amount)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Central Government Projects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Road</td>
<td>34</td>
<td>24,718</td>
<td>19,761</td>
<td>4,957</td>
</tr>
<tr>
<td>Railways</td>
<td>11</td>
<td>10,134</td>
<td>6,146</td>
<td>3,988</td>
</tr>
<tr>
<td>Port</td>
<td>17</td>
<td>4,810</td>
<td>3,720</td>
<td>1,090</td>
</tr>
<tr>
<td>Logistics</td>
<td>5</td>
<td>860</td>
<td>849</td>
<td>11</td>
</tr>
<tr>
<td>Airport</td>
<td>7</td>
<td>602</td>
<td>602</td>
<td>0</td>
</tr>
<tr>
<td>Environment</td>
<td>9</td>
<td>1,369</td>
<td>374</td>
<td>995</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td>83</td>
<td>42,492</td>
<td>31,452</td>
<td>11,040</td>
</tr>
<tr>
<td><strong>Local Government Projects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Roads</td>
<td>19</td>
<td>2,172</td>
<td>1,783</td>
<td>389</td>
</tr>
<tr>
<td>Parking lot</td>
<td>24</td>
<td>205</td>
<td>203</td>
<td>2</td>
</tr>
<tr>
<td>Environment</td>
<td>50</td>
<td>1,771</td>
<td>743</td>
<td>1,028</td>
</tr>
<tr>
<td>Others</td>
<td>9</td>
<td>804</td>
<td>752</td>
<td>53</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td>102</td>
<td>4,953</td>
<td>3,480</td>
<td>1,472</td>
</tr>
</tbody>
</table>

(Source: PIMAC, End of June. 2008)
Exemption from acquisition and registration taxes on real estate for BOT projects

0% VAT on construction services

Separate taxation and application of lower tax rate (15%) on interest income from long-term (15 years or longer) infrastructure bonds issued by concessionaire

Separate taxation on the dividend income from infrastructure funds
MRG (Abolished in 2009)

- Minimum Revenue Guarantee (MRG): A certain fraction of projected annual revenues may be guaranteed when the actual operating revenue falls considerably short of the projected revenue prescribed in the contract.

### Profile of Minimum Revenue Guarantee

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Solicited</td>
<td>Unsolicited</td>
<td>Solicited*</td>
<td>Unsolicited</td>
</tr>
<tr>
<td>Period</td>
<td>Whole operating period</td>
<td>15 Years</td>
<td>10 Years</td>
<td>Abolished</td>
</tr>
<tr>
<td>Guarantee Level (Max)</td>
<td>90%</td>
<td>80%</td>
<td>First 5 Years 90%</td>
<td>Abolished</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Next 5 Years 80%</td>
<td>Abolished</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Last 5 Years 70%</td>
<td>Abolished</td>
</tr>
<tr>
<td>Condition</td>
<td>None</td>
<td>No MRG applied if Actual Revenue &lt; 50% of Forecasted Revenue</td>
<td>Same as Left</td>
<td>Abolished</td>
</tr>
</tbody>
</table>

- 36 out of 145 signed contracts include MRG clauses at the end of 2008.
- Criticisms against MRG
  - Government took most of the risks, but still provided high returns to SPC.
  - MRG scheme provided SPC with incentives to overestimate future demand.
New Risk-Sharing Scheme

- When the actual operation revenue is less than the designated risk-sharing revenue, government makes up the shortfall for SPC.
  - Risk-Sharing Revenue: The amount of operation revenue that guarantees the IRR comparable to the government bond’s rate of return.

- When the actual operation revenue exceeds the risk-sharing revenue, government subsidies given so far are subject to redemption.

- Subsidies are given only when the actual operation revenue is higher than 50% of the risk-sharing revenue.
## New Risk-Sharing Scheme vs MRG

<table>
<thead>
<tr>
<th></th>
<th>New Risk-Sharing Scheme</th>
<th>MRG</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Government</strong></td>
<td>Supports the private sector’s investment recovery by setting the PSC (Public Sector Comparator) as a ceiling</td>
<td>Guarantees certain level of revenue</td>
</tr>
<tr>
<td><strong>Private Sector</strong></td>
<td>Low-Risk, Low-Return</td>
<td>Low-Risk, High-Return</td>
</tr>
<tr>
<td></td>
<td>- Project IRR is comparable to government bond yield (interest payment not included)</td>
<td>- 65~90% of the projected revenue guaranteed</td>
</tr>
<tr>
<td></td>
<td>- Government subsidies withdrawn</td>
<td>- Government subsidies not withdrawn</td>
</tr>
<tr>
<td><strong>Coverage Period</strong></td>
<td>The overall period of operation</td>
<td>A portion of the total operation period (e.g. 10 years)</td>
</tr>
<tr>
<td></td>
<td>* long-term support at low IRR</td>
<td>* short-term support at high IRR</td>
</tr>
<tr>
<td><strong>Impact</strong></td>
<td>Investment risk borne by the private sector is mitigated with greater motivation for profit</td>
<td>Pro: Encourages private sector participation in PPPs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Con: May result in the private sector’s moral hazard</td>
</tr>
</tbody>
</table>
SOC credit guarantee fund provides credit guarantee for PPI project finance to enhance the timely payment of debt.

Its guarantee products include the following:

- Guarantee for facility loans (during construction)
- Guarantee for working capital loans (during operation)
- Guarantee for bridge loans
- Guarantee for refinancing
- Guarantee for infrastructure bond
Concessionaire is granted the rights to expropriate land and/or may use (or purchase) public property for free or at lower price.

In practice, land acquisition costs are born by the government in many cases.

Government usually purchases land from individual property owners, while most of administrative works are shared by private partners.
Government pays early termination fees

- Concessionaire is eligible for some early termination fee in case of force majeure.
- Early termination fee is given not only when the contract is terminated either by government’s fault or by SPC’s fault.
- The formula of early termination fee is defined by concession agreements.

Buyout Option

- In case of force majeure, the SPC can request the government to buy back the operation rights of the asset.
Foreign Exchange Risk Mitigation (Abolished)

- Applicable to foreign exchange losses or gains to the foreign currency borrowed for revertible facilities.
- Applicable to foreign exchange fluctuation of ±20% or more.

Mitigation measures:
- Adjustment of user-fee
- Provision of direct operating subsidies
- Re-negotiation of agreements
Example:
Yongin-Seoul Expressway
Yongin-Seoul Expressway (22.9km)
Yongin-Seoul Expressway aims to relieve traffic congestion along the Seoul-Busan Expressway, the corridor occupied with heaviest traffic in Korea.

This project is regarded as an environment friendly and residents friendly facility by constructing 60% of the line with tunnel and bridge to preserve eco-system and installing sound barrier tunnels, artificial waterfalls, underground sports facility to improve the residents quality of life.
<table>
<thead>
<tr>
<th>Milestones</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sep. 16, 2002</td>
<td>Project Proposal submitted (Unsolicited)</td>
</tr>
<tr>
<td>~ Mar. 2003</td>
<td>Project Review by PICKO</td>
</tr>
<tr>
<td></td>
<td>Suitable for PPP Project</td>
</tr>
<tr>
<td>Sep. 18 ~ Dec. 17, 2003</td>
<td>Request for Proposals</td>
</tr>
<tr>
<td>Dec. 18, 2003</td>
<td>Tender Evaluation and Selection of the Preferred Bidder</td>
</tr>
<tr>
<td>~ Jan. 10, 2005</td>
<td>Negotiation and Contract Award (Managed by PIMAC)</td>
</tr>
<tr>
<td>May 21, 2005 (1st Stage)</td>
<td>Approval of Detailed Implementation Plan</td>
</tr>
<tr>
<td>Aug 22, 2006 (2nd Stage)</td>
<td></td>
</tr>
<tr>
<td>Jul. 1, 2009 ~</td>
<td>Operation</td>
</tr>
</tbody>
</table>
### Concession Agreements

<table>
<thead>
<tr>
<th>Procurement Type</th>
<th>Build-Transfer-Operate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competent Authority</td>
<td>Ministry of Land, Transport and Maritime Affairs</td>
</tr>
<tr>
<td>Total Length (km)</td>
<td>22.9 (4~6lanes)</td>
</tr>
<tr>
<td></td>
<td>Tunnels: 10, Bridges: 21</td>
</tr>
<tr>
<td>Construction Period</td>
<td>3.5 years</td>
</tr>
<tr>
<td>Operation Period</td>
<td>30 years</td>
</tr>
<tr>
<td>Project Costs (KRW)</td>
<td>814.4 bn KRW</td>
</tr>
<tr>
<td>Time Saving</td>
<td>45 min—23 min</td>
</tr>
<tr>
<td></td>
<td>economic benefit : 88.6 billion/year</td>
</tr>
<tr>
<td>Toll collection</td>
<td>Toll: 1,800 KRW</td>
</tr>
<tr>
<td></td>
<td>Two toll gates collects 1,000 KRW, and 800 KRW respectively</td>
</tr>
<tr>
<td></td>
<td>The toll is about 1.2 times higher than that of the Korea Expressway Corporation, the corresponding SOE.</td>
</tr>
<tr>
<td>Rate of Return on Investment (IRR)</td>
<td>7.01% (real)</td>
</tr>
</tbody>
</table>
Government Supports for the Yongin-Seoul

- Land acquisition costs born by the competent authority (MLTM)
  - According to the PPP Act, the SPC may be allowed to use national or public property without charge or at lower price
  - National or public property in designated areas may be sold to the SPC.

- Construction subsidy
  - The government granted 365.2 bn KRW, or 44.8% of total project cost of 814.4 bn as construction subsidy

- Minimum Revenue Guarantee (MRG)
  - First 5 years: 75% of forecast revenue
    - For the next 5 years 65% and for the last 5 years 55%
  - Government have not paid the MRG from the second year of the operation, because the actual traffic volume is around 90% of the forecasted traffic volume.
Part-04  Concluding Remarks
It is criticized that the government allowed SPCs to enjoy higher rate of return than government’s bond rate, even though most of the project income risks were born by the government.

The government have provided too much incentive to induce private investment into PPP projects.

- An empirical study shows that expressway PPP projects enjoyed about 4% of excess return.

The PPP is justified when it expands fiscal space AND increase the value of tax payer’s money.

Keep the balance between PPP market promotion and fiscal discipline in the practice of the PPP policy.
THANK YOU!
pimac.kdi.re.kr