Korean PPI (Private Participation in Investment) Experiences
: Its implications to developing countries

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The World Bank
PPP in the water sector:
Lessons from experience

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Korea, October 14, 2004
Rationale of the presentation

Concrete examples from world experience in water public-private partnerships

Main lessons, successes and mistakes

What can be learnt for the future?
Summary

1. France: Chaumont - affermage
2. Poland: Gdansk – lease with JV
3. Philippines: Manila - concession
4. Morocco: Tangiers - concession
5. China: Pudong – divestiture with JV
6. UK: London and Thames Valley - divestiture
7. Chile: Santiago de Chile – divestiture
8. New tracks and evolving designs
France: Chaumont affermage

The main facts:

- Water service has been delegated to the same private operator since 1967
- 30-year affermage from 1967 to 1998
- In 1998, signature of 12-year contract
- 27,000 inhabitants
The affermage scheme

The municipality:

- Remains responsible for **major investments**. The facilities and equipment necessary for providing the service have been financed by the municipality, sometimes with central government assistance.

- Retains **ownership of the assets**. The contract details the sharing of investment responsibilities depending on the nature of the works.

- **Negotiates and supervises** the contract itself (a series of model contracts drafted by the associations of municipalities in France are available).

- Has its **own research / environment department on technical investments**.
The affermage scheme

The operator:

- Is responsible for **water service provision** as well as for the **operations and maintenance** of associated facilities and equipment

- Has **output obligations**: must bring technical losses down from 30% (start of the contract), to 27% (from year 3) and at least 24% (from year 6)

- The operator’s **remuneration can be adjusted** if some restrictive conditions are met

The contract was awarded through a 1993 legally established procedure, which involves **competitive bidding followed by direct negotiation**. Competition was strong, and the former operator was selected again for financial reasons as well as for its proposed implication in local development.
Dispute Resolution

Public Sector

Private Sector

Regulator / Supervision Unit

Municipality
- Owns assets
- Responsible for capital investments
- Paid through tariffs on a specific water budget

Regional audit office

Administrative Court

Customer Committee

Suez Lyonnaise des Eaux
- Water service operations, maintenance & limited rehab.
- Self - monitoring information provided to the municipality
- Paid through tariffs

Customers
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A 30-year lease contract was signed between the city of Gdansk (49%) and SNG (51%) in 1993.

**The city** retains ownership of the relevant infrastructure and is responsible for the for capital investment, and for financing, regulation, and setting of tariffs.

**The private operator**, SAUR, is responsible for operation and maintenance of the system, maintaining quality of service standards, and billing and collection. The arrangement thus basically follows the French affermage model.
Customers

Lease Contract

SAUR Neptun Gdańsk (SNG)
- Water & sanitation operation & maintenance
  - Advice to city on investments
  - Delegated some investment implementation

City of Gdańsk
- Owns assets
- Price setting
- Controls & regulates performance both as SNG shareholder & through SNG Supervisory Board memberships

Arbitration Board in Gdansk
- 3 arbiters
- If this fails, the dispute moves to neighboring city of Gdynia

Dispute Resolution
Regulator / Supervision Unit
Public Sector
Private Sector
Customer
Regulation: there is no independent regulator, the city of Gdansk is the JV main counterpart.

The contract was amended in 1995, 1999 and 2001 to alter procedures for the timing of annual tariff negotiations, sharing and control of information, and remuneration formula for the private operator (based on a fixed return on capital).

Some facts about the contract:

- The first years of the contract were characterized by fast productivity gains, service improvement, tariff decrease in real terms compared with publicly-run water entities.
Main challenges

- Financing of **wastewater treatment expansion**
- **JV scheme** and the built-in conflict of interest:

The city of Gdansk, through its municipal council, controls and regulates the performance of the company both as a shareholder in SNG and through the contract. This model implies a conflict of interest, however, and in fact the relationship between the city and SNG has been complex and tense.

- A sharp **drop in demand** (minus 51% in 10 years) affected the activities of the company, mainly due to the introduction of metering, changes in consumption practices and the closure of many heavy industries. The company diversified its services, expanded geographically, and requested additional tariff increases. The City approved most tariff increases.
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Philippines: the Manila water concession

The main characteristics:

- Privatized in 1997
- **Goals** pursued by the government:
  1. *need to improve efficiency and service standards*,
  2. *expand coverage*,
  3. *address financial and sectoral crisis*
- **Duration**: 25 years w/o provision for extension
- **Two separate concession agreements** (East Service Area and West Service Area)
- 11,5 million people
  - 850 000 water connections
  - 90 000 sewerage connections
The concessionaires:
- are responsible for all aspects of water and sewerage services, incl. investments
- bidders informally committed to significant investment amounts but these investment obligations remain output-based in principle
- are obliged to meet annually increasing performance targets (% of water treated, coverage, metering…)

The government:
- provided substantial tax break & tax credits
- the contracts were signed with the Metropolitan Water Works and Sewerage System (MWSS)
Regulatory Office
• Independent financing & location from MWSS but must “cooperate” with MWSS board
• Determinations

Appeals Panel
• Minor disputes: 1 member appointed by Regulatory office, 1 by Concessionaire, & a Chairman by both parties
• Major dispute Chairman is appointed by the International Chamber of Commerce

International Arbitration Panel
• Resolution of disputes in the event of failure at Appeals Panel

MWSS
• Metropolitan Water Works and Sewerage System
  • Assets revert back to MWSS
  • Cooperation in infrastructure development
  • Approval for replacing third party contracts

Agreements on Bulk Water Transfers Between Zones

Maynilad Water Services Inc
• All aspects of water & sanitation services, including investments
  • Ayala & International Water

Manila Water Company Inc
• All aspects of water & sanitation services, including investments
  • Benpres & Lyonnaise des Eaux

Customers
• West Service Area

Customers
• East Service Area
A dedicated Regulatory Office has independent financing and separate location from MWSS but it must « cooperate » with the MWSS Board.

It has 2 main functions:

- monitoring activities including the operator’s service performance, legal obligations, financial performance, asset management obligations, and rate adjustment
- making a range of determinations on both a periodic and occasional basis
Dealing with the Asian financial crisis

- The Concessionaires obtained special price adjustment that involved renegotiation as a consequence of the wide exchange rate fluctuations that followed the Asian crisis.

- Negotiations between the Government and Mynilad Water were underway regarding Mynilad’s intention to terminate its contract as a result of the financial crisis.
The separation of Manila into two zones

- **Rationale**: establish independent benchmarking

- **Problem 1**: The determination of price for the transferred water was left to agreement between the two concessionaires, which generated controversy and led to an arbitration procedure.
  
  contractual complexity and difficulty to arbitrate

- **Problem 2**: one of the major political discussions concerns the disparity in rates between the two Service Areas…
  
  difficulty to establish a posteriori cross-subsidies and regulate prices (OFWAT method based on several entities – ie more than 2…)
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Morocco: Tangiers – Tetouan concessions

The main facts:

- Two concession contracts awarded in 2001 to the same consortium: *Amendis* = 
  - Veolia Environnement 51%
  - HydroQuébec 16%
  - ONA 16%
  - SOMED 15%  \(\text{local investors}\)
- Duration: 25 years
- Turnover year 1 – around EUR 100 M
- Population: 1.2 million inhabitants
Ministry of Environment

Ministry of Interior

Inter-ministerial price setting committee

Ministry of Finance

Ministry of Interior

Municipalities

Concession contract incl. price adjustment mechanism

Private Concessionnaires (AMENDIS)

Regulation of price

ONEP (100% public company)

Bulk water supply

Municipal Regies

Domestic urban and rural clients

Industrial clients
The concession model in Morocco: lessons from experience

- A *flexible approach*: ICB (Tangiers, Tetouan) or single source deals (Casablanca, Rabat)
- An emphasis on *performance incentives*
- A realistic *price setting policy* with clear adjustment rules
- A *local financing market* with long-term liquidity
- Pragmatic approach to private sector non-performance (ex. renegotiation of the Rabat concession)
- Encouraging performances of private operators, efficiency gains and investments for expansion
The limits and the way forward

- a mix of *performing and non-performing* public regies
- a *public monopoly on water treatment and bulk supply* that lacks regulation
- efficiency of intra- and extra-sectoral *cross subsidies* could be improved
- need for decentralization and for improvement of municipal finance governance
- strategies for the future are being envisaged at the national level (regionalization, further involvement of private sector...)
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China: the Pudong divestiture

An attractive country to water investors:

- High growth
- Local financing capacities
- Efficiency of bidding process
- Strong political willingness
- Large efficiency gains perspectives
- Skilled local staff

Very successful BOT (Chengdu, Beijing 10), concession (Lugouqiao, Qingdao) and divestiture schemes (Pudong, Shenzhen)
Pudong characteristics

- High-growth area of Shanghai
- 6 water treatment plants (1,27 Mm$^3$ total capacity)
- 8 pumping stations
- Network: 1740 km
- Population ≈ 2 million (550 000 clients)
- Sales volume: 70% industrial / commercial
  30% residential
- Turnover / Net income (2001) = 270 M / 12 M Rmb
The asset sales & concession structure

Shanghai municipal water assets Co.

Foreign private investor (Veolia Water)

Pudong Water Co.

Consumers

Shanghai municipality

Concession Contract 50 years

Lenders

Ownership 50-50

Owns the assets, finances capex, manages operations

Consumers
A balanced split of responsibilities

**Municipality**
- Tariff structure
- Regulatory framework through concession agreement
- Approval of capital expenditure

**Pudong water Co.**
- Financing new assets
- Renewals
- Supervision of construction work

**Operational management:**
- Control of water quality
- Customer billing
- Metering, leakage controls
- Maintenance
The main challenges

- overall water scarcity
- high goals for quality standards’ progression
- right balance of control between the public and the private parties within the joint-venture
- potential sources of conflict of interest in the JV scheme (municipality plays both the role of regulator and shareholder)
- the water price should be the same as the one implemented by the other water supply companies (Shibei Water / Shinan Water / Minhang Water) of the urban district of Shanghai
- adapt to local HR management
An exemplary bidding process

- Delivery of bidding documents: February 5, 2002
- **May 2002**: bids received from four competitors (all of them world leading companies in the water industry)
- Signing of sale’s agreement **May 22, 2002** with winning bidder, for an amount of about EUR 266 M
- **Summer 2002**: operation begins in the newly set up JV

**Reasons for success:**
- Political responsiveness
- A favorable investment climate in China
- Beyond the price proposal, a strong focus on strategic aspects: financial feasibility / realistic technological plan / management & HR
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UK: London and Thames Valley divestiture

- Thames Water serves approximately 13 million customers, primarily urban in the city of London and the Thames Valley.

- The service area includes approximately 3.37 million connections.

- The operating licenses were issued in 1989.

- For a duration of 25 years.
The main reasons to privatize the water and sanitation services

- Political and ideological motivations (the Thatcher government also carried out the privatization of British Telecom, British Gas, British Airways and British Steel)

- Removing financial constraints

- Increase efficiency

- Carry out simultaneous institutional reforms, in order to separate:
  - regulatory function and
  - supply function

- The process was conducted in 1989
Privatization main facts

- 10 regional Water Authorities were converted into public limited companies
- 25-year licenses were provided to the companies
- The government provided explicit subsidies:
  - Offsetting the companies' existing debt
  - Granting companies a «green dowry»
  - Setting the asset base for tariff evaluation at a lower level than the historical value of assets
- The economic regulator is OFWAT: regulation is primarily output-driven
- The operator is responsible for O&M, financing and constructing new investment and delivery of water & sewerage services. He also has to meet regulatory requirements.
The need for a strong regulatory regime

The full divestiture of assets to private companies is only encountered elsewhere in the world in Chile.

Such asset sale requires a sophisticated and expansive regulatory regime – as the government’s responsibilities are carried out by the independent regulators as stipulated in the legislation.

Main challenges:

- Independency of the regulator
- Autonomy of the regulator
- Capacity of the regulator
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The 1990 concession was granted in perpetuity and enacted at state level for municipal level services.

The concession was granted in perpetuity to EMOS, an autonomous corporatized public entity.

In 1999, government stakes in EMOS were sold via an international bidding process and EMOS was renamed Aguas Andinas.

The rationale for the divestiture: the government wished to raise additional finance for capital investment, particularly focused on expansion and upgrading of water and waste water treatment facilities.
Allocation of risks and responsibilities (1)

- **Risk allocation**: the company bears all the risks. However, through its share ownership, a portion of all risk is still borne by the government.

  Tariffs are set to ensure that the company is able to generate sufficient income to cover the cost of operation, maintenance and new investment.

- **The concessionaire**: The operator is responsible for O&M, rehabilitation and investment. These investment plans are prepared by the concessionaire and approved by the regulator. The concession requires Aguas Andinas to follow five-year investment plans with interim target dates.
**Allocation of risks and responsibilities (2)**

- **The government**: direct subsidies are provided to those identified as poor customers.

Although the government is still a significant minority shareholder in Aguas Andinas it does not have any business responsibilities and acts as sleeping partner → *avoidance of conflict of interest*

- **The performance is monitored by an independent regulator** operating at the national level, the Superintendencia de Servicios Sanitarios (SISS).

  → It is a decentralized body with independent staff
State of Chile

Superintendence of Sanitary Services (SISS)
- Regulator with limited independence; national budget (Treasury) funded
  - Supervised by the President through the Ministry of Public Works
  - Dispute resolution; Interpretation of the law

Panel of Independent Experts
- Mainly for tariff disputes
- Must choose either the SISS or company solution (no compromise)
- 3 independent professional experts

Courts
- If company disagrees with SISS’s interpretation of the law

Concession Contract and Divestiture

Aguas Andinas
- Concession originally with the public utility EMOS
- Shares later sold off (divestiture) to Suez Lyonnaise, Aguas de Barcelona, a Chilean state holding company
  - Pension Funds & others
  - Water & sanitation services

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New tracks and evolving designs

- New tracks and new contracts are defined through:
  - the lessons of experience: successes & failures
  - the local context’s specificities

- No « miracle » solution or ideal contractual scheme

- A difficult situation on the international markets:
  - financial markets & international sponsors are more
    and more risk-adverse, tend to be more conservative
  - than in the past

- Need for stronger government commitment and
  support to ensure sustainability and increased
  efficiency
The critical issues – from experiences, good and bad...

- **Bidding process needs**
  - transparency
  - targeted bidding criteria (amount of investments are not always as efficient as output-based goals)

- **Legal / Regulatory / Contractual scheme**

- **Unmet capital needs**
  - Contractual forms shifts towards less capital-consuming schemes (affermage, concession rather than BOT, divestiture)
  - Decentralizing: municipal financing

- **Drive for results and efficiency higher for private sector**
Main Themes

I. Establishing an appropriate market and institutional design for efficient public-private partnership

II. Capitalizing on technological advances, innovation in finance and regulatory processes

III. Evolving appropriate and transparent contractual mechanisms for procurement of assets, services, goods

IV. Managing risks involved in external financing of projects

V. Building skills necessary to structure an appropriate project financing plan
Main Challenges

◆ Transition from public to private provision and financing of infrastructure services has been difficult: yielding mixed results

◆ The infrastructure project finance market is still evolving in developing countries despite its long history and success in developed countries

◆ Large investment requirements in developing countries to upgrade and develop infrastructure services, to promote long-term growth and competitiveness
Key Questions

- The concept of PPI has been broadly accepted - the debate is now about how
- How best to ensure project viability, project selection, evaluation of bids, and the transparency of the bidding process?
- Traditional vertically integrated, regulated utilities are giving way to a separate industry of power generators
- How to design appropriate regulatory frameworks for the move toward competition and choice
- How to facilitate financial closure for the most viable projects?
- What are the implications of globalization / consolidation of infrastructure industries?
- What type of financing best fits different countries’ needs, priorities, and local financing conditions?
Infrastructure needs are substantial in developing countries

- Installed capacity (kW) per 1000 persons
- Electricity consumption per capita (kWh)
- Average telephone main lines per 1000
- Road density (km/sq. km of land)
International investment in developing country infrastructure has declined since 1997.
In particular, Africa, South Asia and the Middle East have been losing out

Regional composition of international investment in infrastructure, 1992-2003

- East Asia and Pacific (35%)
- Latin America and Caribbean (30%)
- Europe and Central Asia (19%)
- Middle East and North Africa (7%)
- South Asia (5%)
- Sub-Saharan Africa (4%)
Criteria for Organizational Choice

“...Governance as the means by which order is accomplished in a relation in which potential conflict threatens to undo or upset opportunities to realize mutual gains...”

— (Oliver Williamson, 1999)

- Economic Efficiency
  ⇒ Public sector vs. private sector

- Distributional considerations
  ⇒ Social welfare cost/benefit analysis of redistribution

- Political considerations
  ⇒ Duality of citizen’s role
  ⇒ Incentive problems between Parliament (policy rule-makers, responsibility for oversight) and administrative agencies
In Short, The Key Objective: Expanding the possibilities for efficient infrastructure provision through public-private sector partnership: Community of interest

- **Government**
- **Private Sector**
- **Partnership**

*Investments that are socially beneficial*
Infrastructure Finance

- Infrastructure Finance: to raise or provide funds for greenfield or divestiture projects (in power, water, telecom, and transport)

- Project: “a unique interrelated set of tasks with a beginning, an end and a well defined outcome”

- Options
  
  a) Government finance (traditional BD approach)  
  b) Joint-ventures – Experience of China  
  c) Private sector finance  
    ⇒ PPP (BOT, estimated at $907 billion planned and funded since 1985)  
    ⇒ PFI (£35.5 billion since inception in 1992)
Private Sector Participation: A Continuum of Options

Of particular importance

PUBLIC

Supply and civil works contracts
Technical assistance contracts
Sub-contracting
Management contracts
Leasing
BOT and concession
BOO
Divestiture

PRIVATE
Major Parties to an Infrastructure Project

⇒ Each party maximizes its own objectives subject to the constraints set by others’ willingness to participate.
Construction Procurement – Project Delivery Approaches

- **Traditional Design-Bid-Build Approach**
  - Separate design and construction teams

- **Design-Build Approach**
  - Teaming of Design and Construction under one entity (consortium), contractually responsible for both design and construction

- **Turnkey Approach**
  - Entity responsible for Design-Build will also take care of financing

- **Build-Operate-Transfer (BOT)**
  - The contractor is allowed to operate the project for a specific time, and then will transfer the project to the owner
Contract Procurement: Large Capital Intensive Projects

Size of global construction industry (1998)

- World — $3.2 trillion
- Asia — $1.12 trillion
- North America — $723.6 billion
- Latin America — $238.6 billion

- Procurement by Federal, State, and Local governments in the U.S. amounts to 10% of GDP

(Based on a survey undertaken by Engineering News Record)
Project Life Cycle:
Key Steps and Different Delivery Approaches
Institutional Choices: BOT - Structure

- Key document is “Concession Agreement”, awarded through competition bidding.
- Projects are developed by host-country government (Pre-qualification, bidding documents, etc.)
- The project company owns and operates the facilities during the concession period and collects the revenue that helps cover the costs of O & M.
- Success hinges critically on the soundness of concession agreement, fuel purchase agreement, as well as the legal framework.
- More exposure to demand an operating risk.
Institutional Choices: Joint - Venture

- Joint venture – between foreign investor and a local company (utility), as partner.
- A common vehicle for FDI flows, less so in infrastructure investment
- More attractive to certain type of investors – contractors, equipment suppliers
  - Not attractive to project promoters – IPPs -
- Negotiated contracts – more flexibility, but more protracted negotiation process
Infrastructure Finance Market Development: Key Components

- Legal Regime and Contractual Arrangements
- Local Capital Market Development
- Syndicated Bank Loan Market
- Capacity Building for Project Finance
- Financial Risk Management
- Institutional Capacity/Skill Building
Incentives/Objectives of Project Sponsors

- Sponsor holds a residual claim, after the payment of contractual claims
- Financing mixes depend on “negotiated tariff” rate for infrastructure services
- Reasonable return on investment
  \[\Rightarrow \text{ROE} = f(\text{project finance characteristics, debt characteristics, government support})\]
- Limited recourse structure
Incentives/Objectives of Creditors

- Have a claim to fixed contractual payments from the project’s cash flows independent of the borrower’s income
- Good credit risk, i.e. sufficient and secure cash flows
- Key indicators: interest rate coverage ratios, credit rating
  ⇒ Want to maximize the probability that their loans will be paid on time.
- Credit enhancement, government support, and guarantees
Incentives/Objectives of the Government/Rulemakers

- Serve Public Interest—meet certain efficiency goals
  - Tariff Rate
  - Quality of Services
- Future tax revenues
- Prevent corruption
- Transparent and fair concession award process
Contracting Governance Aspects

- Government is a key party in contractual arrangements underpinning public/private concessions

  ⇒ Unlike private contracts, governments change frequently by elections, or otherwise

  ⇒ Governments may not wish to honor commitments of previous regimes

  ⇒ Transparency of tendering process (competitive bidding, use of sealed-bid tenders, opening of bids in public, awarding to lowest credible bidders)
Infrastructure Investment: Why Long-Term Contracting?

- Up-front, specific, risky, and long-term
  - Examples: power plants, bridges, roads which can not be moved
- Lock-in equity capital for a long time
- Incentive system of contracting parties changes once the investment is sunk
Characteristics of the Infrastructure Project Finance Market

I. Significant growth in the volume of transactions until mid-1997

II. Widespread forms of long-term formal contracting

III. Dominant use of project financing techniques

IV. Local capital markets

V. Host government support, including guarantees, is important
Features of Private Infrastructure Investment

As a result:

- Investors are hesitant to make investments without adequate contractual protection, leading to special contracting and risk sharing problems.
Emergence of Project Financing:

- Appropriate techniques for projects with high capital requirements and a complex risk profile
- Payouts are based only on the projects’ own assets and cash flows stream
- Creditors rely on the ability of the project for repayment of related debt obligations, non-recourse debt
- Multi-source financing: syndicated commercial banks, bonds, ECAs, multilaterals
Project Financing: Construction and Operation Phases

⇒ Investment today for the expectation of cash flows in the future

⇒ Project cash flows depend importantly on the market structure, scope of competition, degree of monopoly, and regulatory design
Project Financing: Uses of Cash Flows

⇒ Governed by a hierarchy of claims and by the prevailing tax codes

Revenue Streams

- O & M, Insurance Expenses
- Depreciation & Interest
- Taxes
- Principal Payments
- Depreciation
- Dividend to Shareholders
Leverage Ratio of Private Infrastructure Projects

- In terms of leverage, power is relatively high
- Telecom is relatively low
- Little variation in leverage ratios

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Revenue Projection: Range (minimum, maximum)
Principles of Risk Management

- Allocate project-specific risks to parties best able to bear them
- Control performance risks through incentive contracts
- Use market-hedging instruments (derivatives) for covering market-wide risks (interest and exchange rate fluctuations)
Risk Management: Difficulties in Practice

- Derivatives markets for hedging currency and interest rate risk are either non-existent or not sufficiently developed.

- Contracting possibilities are limited due to enforceability and credibility problems.

- There are several different methodologies for risk measurement and evaluation.
Local Capital Market Development

**Virtuous circle:**

- Enhancing economic viability of projects
- Mitigating currency risks
- Providing investment opportunities for contractual saving institutions (insurance companies, pension funds)
Local Debt Markets

◆ Compared to local equity markets, local debt markets are much smaller, less liquid, and have a smaller investor base

⇒ Transactions centered on government papers

⇒ Corporate market less developed

◆ Restrictions on pension and insurance companies mean that their assets are channeled to finance the government’s fiscal deficits instead of long-term private capital investment
Credit Enhancement to Stimulate Private Investment

- Minimum revenue guarantee, as in Korea
- Government loan
- Government guarantees to project creditors
- Stand-by line of credit (U.S. Transportation Infrastructure and Innovation Act (TIFIA, 1998))
Rationale for Government Support

◆ Perception of high risk in emerging market economies leads investors to demand high ex ante rates of return.

◆ As a result, tariffs are often higher than before privatization, when the real cost of capital was not taken into account.

◆ Governments find these higher prices to be politically unfeasible:
  - Universality of demand for infrastructure services
  - Infrastructure services considered essential by consumers

◆ Government support enhances the project’s financiability and reduces the degree of risk, bringing the tariff down to more acceptable levels.
Summing Up: Criteria for Success

- With an economically sound project, the potential for innovative infrastructure project finance is considerable
- With credible government policies and commitments, private investors are willing to invest
- Must address the needs of a broad cross-section of people and communities
- Environment - complying with global standards
- Right investment climate—institutions, political stability, credibility of government commitments
- Adequacy and security of cash flows
- Balanced financing mix – capital structures
Summing up

I. Evolving appropriate contractual mechanisms for the transfer of property rights from public to private sector

II. Devising strategies for equitable sharing of risk

III. Building skills necessary to develop a project finance plan

IV. Capitalizing on innovation in finance and regulatory processes