

# Infrastructure PPP Project Preparation & Financing Considerations for Municipal Governments

A Presentation by the Asia Pacific Project Preparation Facility (AP3F)  
Office of Public–Private Partnership

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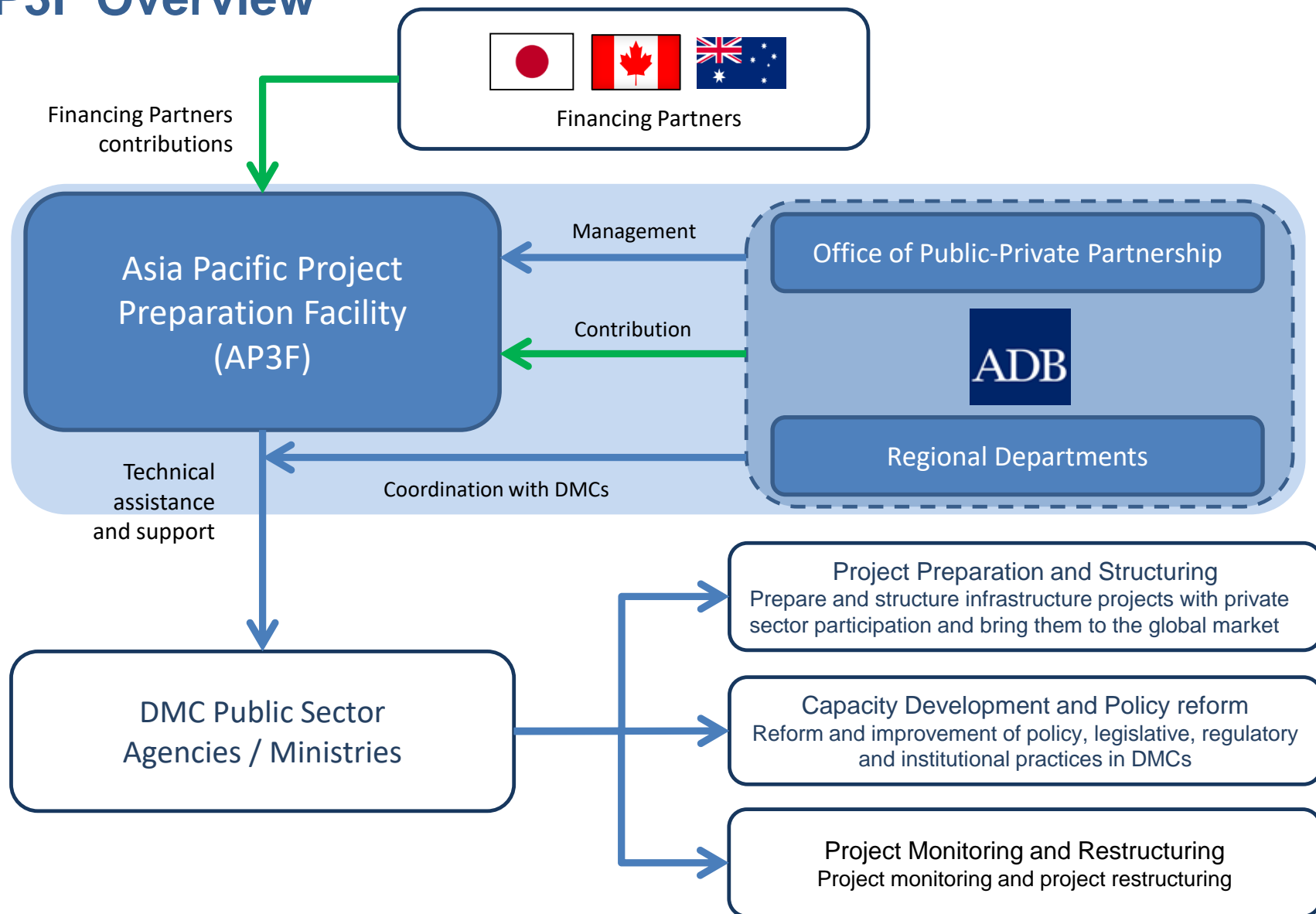
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# Introduction to AP3F



# AP3F Overview



# Activities Supported by AP3F

*For the government, AP3F assistance can be tailored to the stage of the project and the needs of the developing agency*

**Capacity Building** – integrated into every aspect of support process

**Upstream Reform**

- Create the enabling environment for the project

**Due Diligence, Early Stage Preparation**

- Conduct feasibility studies and assess commercial viability for the project

**Marketing, Tendering, Award**

- Assist on tender process to bring private sector participation to the project

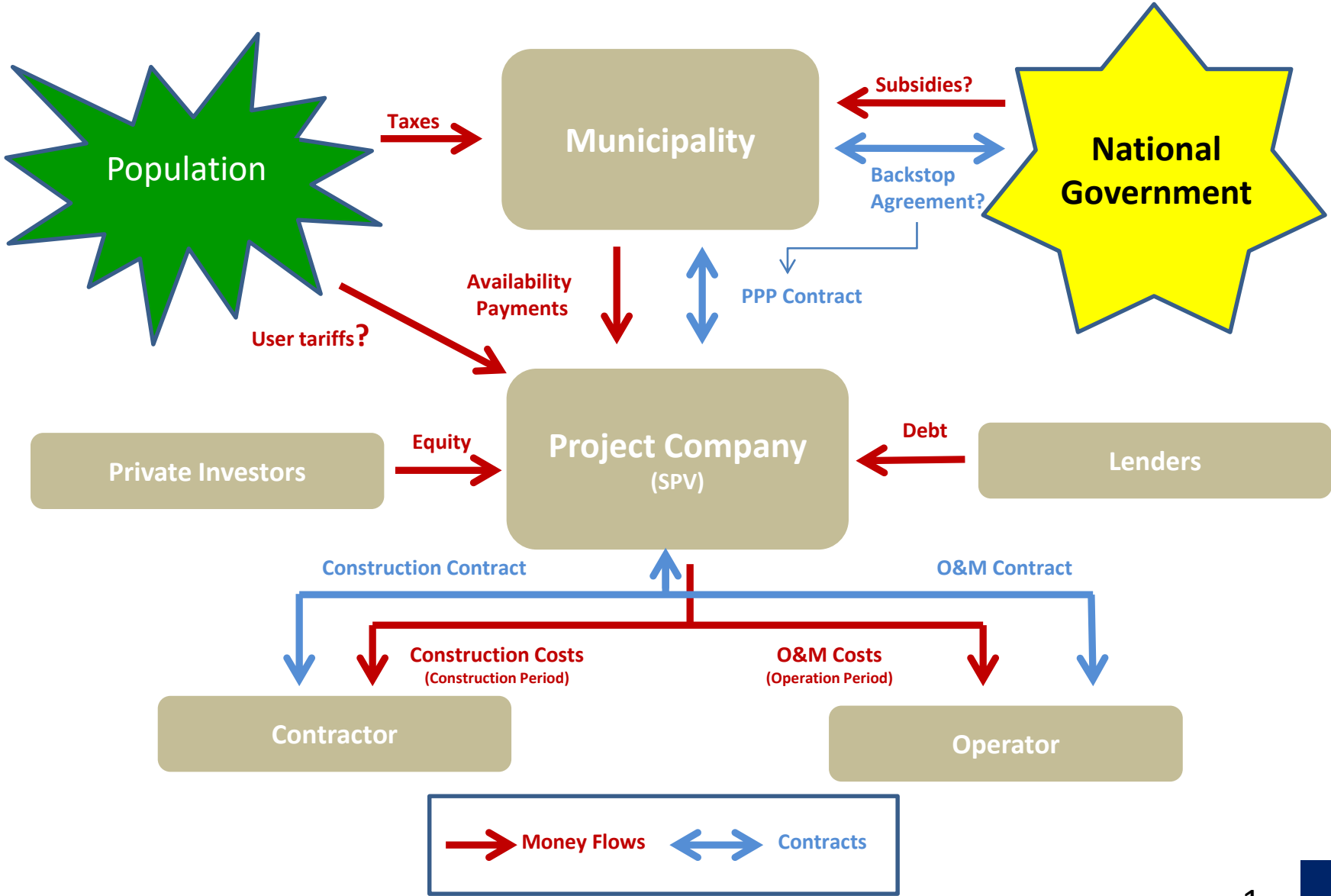
**Ongoing Assistance**

- Monitoring and evaluation of projects post implementation
- Project restructurings

# Key Considerations for Municipal Infrastructure PPPs



# Municipal PPP: Stakeholders, Structure & Money Flows



# PPP or no PPP for Municipalities?

## PPP MIGHT NOT ALWAYS BE CONSIDERED AS THE BEST OPTION

- Too complicated
- Too time consuming
- Why move away from traditional municipal procurement?
  - Why not use municipal budget?
- Why give private sector a way to make money off a Public Service?

## WHY PPP?

## PPP CAN PROVIDE KEY BENEFITS TO MUNICIPALITIES

- Reduce pressure on municipal budget by spreading investment cost over a very long period
  - Optimize / decrease cost of infrastructure development
    - Reduce infrastructure construction period
    - Reduce operating costs
    - Reduce life cycle costs → Extend asset life
  - Improve quality of service to the population while controlling costs
    - Stay directly involved in project through the PPP contract
- Possibility for municipality to be a (minority) project company shareholder

# Municipal PPP: Key Principles (1)

Key Principles	Comments	Examples relevant to Municipalities
<b>Partnership</b>	<ul style="list-style-type: none"> <li>▪ Public and private sectors agree to work together for the development of infrastructure projects</li> </ul>	<ul style="list-style-type: none"> <li>▪ Public buildings (e.g. City Hall)</li> <li>▪ District cooling/heating</li> <li>▪ Urban transport (BRT, LRT, metro)</li> <li>▪ Bulk water supply/distribution</li> <li>▪ Solid waste management (SWM) and wastewater treatment</li> <li>▪ Other urban services: street lighting, signalling, CCTV, etc.</li> </ul>
<b>Long Term</b>	<ul style="list-style-type: none"> <li>▪ Long-term partnership to reflect the long-term life of the infrastructure assets</li> </ul>	<ul style="list-style-type: none"> <li>▪ Usually a minimum of 15 years and up to 30+ years of PPP contract life</li> </ul>
<b>Value for Money</b>	<ul style="list-style-type: none"> <li>• PPP usually an alternative option to budget funding</li> <li>• Financial benefit of PPP to be proven through “Value For Money” (VFM) and “Public Sector Comparator” (PSC) analyses</li> </ul>	<ul style="list-style-type: none"> <li>▪ Detailed project preparation process (technical, commercial, financial, legal, environmental, social) needs to be carried out to assess the costs and benefits of each option available (various PPP options vs. public procurement)</li> </ul>



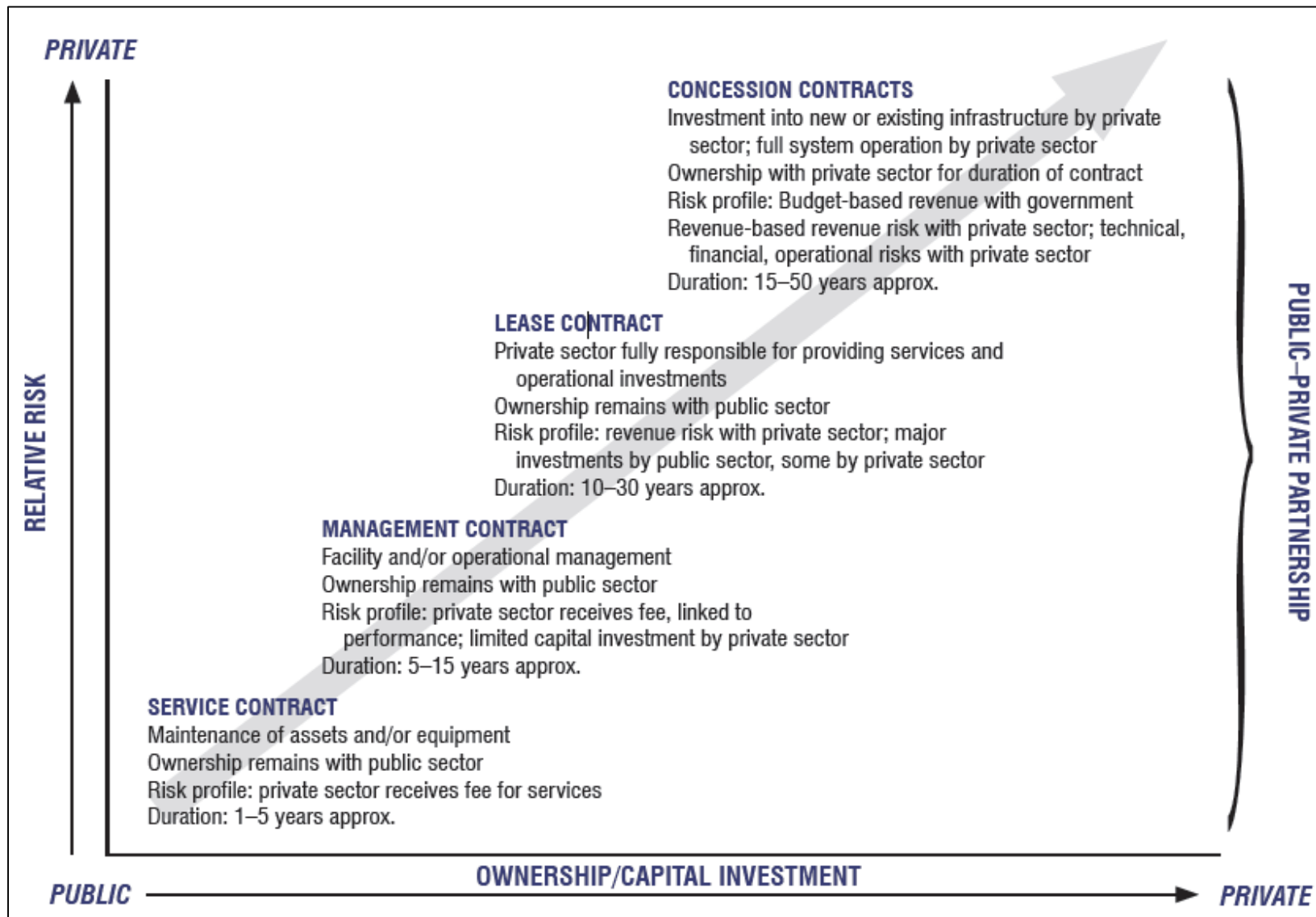
# Municipal PPP: Key Principles (2)

Key Principles	Comments	Examples relevant to Municipalities
<b>Balanced allocation of risks</b>	<ul style="list-style-type: none"> <li>• PPP contracts designed so that specific project risks are identified and allocated to/shared with the parties best placed to bear them</li> </ul>	<ul style="list-style-type: none"> <li>▪ Construction and operating risks taken by private sector</li> <li>▪ Regulatory, political and force majeure risks taken by public authority</li> <li>▪ Demand risk may be taken/shared by both parties but are often retained by public sector for bankability reasons (especially for “non commercial” infrastructure)</li> </ul>
<b>Performance-based contracts</b>	<ul style="list-style-type: none"> <li>▪ Strict performance obligations applicable to private sector regarding asset quality and operational performance, as set out in detail in the PPP contract</li> <li>▪ Deductions/penalties imposed on private sector partner if contractual PPP targets are not met</li> </ul>	<ul style="list-style-type: none"> <li>▪ Availability of service (e.g. for SWM: incineration /power capacity and availability).</li> <li>▪ Performance (e.g. for SWM: compliance with environmental regulations, etc.)</li> </ul>

# Municipal PPP: Key Principles (3)

Key Principles	Comments	Examples relevant to Municipalities
<b>Project company revenues</b>	<ul style="list-style-type: none"> <li>General preference from the private sector for “availability-type” PPP arrangements</li> </ul>	<ul style="list-style-type: none"> <li>Availability payments, especially for “non commercial” infrastructure projects have to be budgeted over the duration of the PPP contract</li> </ul>
<b>Bankability</b>	<ul style="list-style-type: none"> <li>PPPs need to attract private investors and lenders and therefore require mutually acceptable technical, contractual/ legal and commercial characteristics</li> </ul>	<ul style="list-style-type: none"> <li>Adequate legal and regulatory frameworks</li> <li>Creditworthy public counterparty/guarantor</li> <li>Private sponsors and contractors with adequate financial standing and proven technical skills (construction, O&amp;M, life-cycle capital expenditure)</li> <li>PPP contracts meeting international standards and capitalizing on sector/country precedents (not to “reinvent the wheel”)</li> </ul>

# PPP Structures Spectrum



# Municipal PPP: Key Steps

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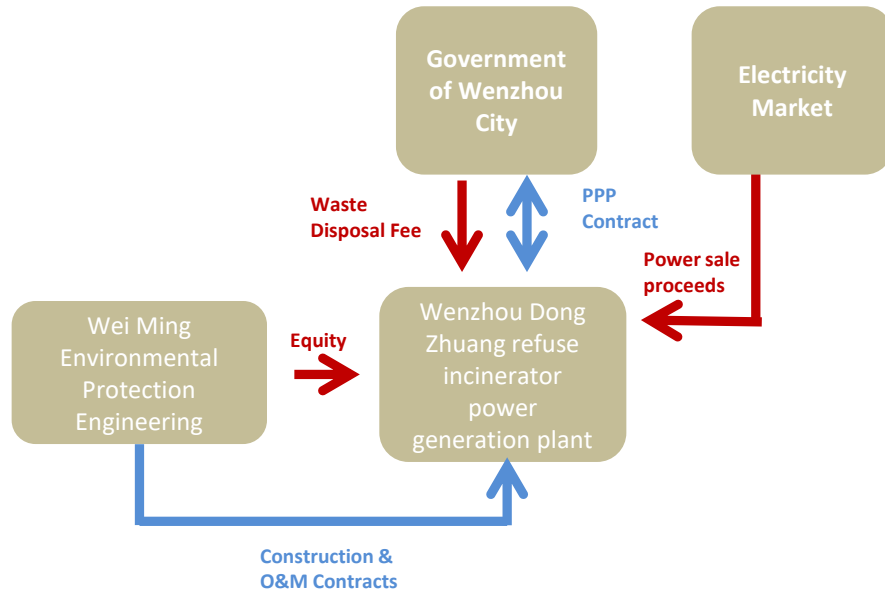


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Phases	Overview
Pre-Project Preparation Project Background Data	Gathering and organization of basic project background information required for subsequent project phases.
Phase 1 Screening	Preliminary assessment to confirm sector compliance, technical feasibility, legal and governance framework, and financial viability of project.
Phase 2 Project Appraisal & Preparation	Determination of whether procuring the project, as a PPP is feasible and provides added value in comparison to traditional procurement.
Phase 3 Project Structuring & Drafting Tender Documents	Define and develop PPP structure and preparation of tender documents.
Phase 4 Tender & Award (Achieving Commercial Close)	Manage tender process and execute contract with selected proponent.

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# An ADB Municipal PPP Case Study (2010): Wenzhou Solid Waste Treatment, PRC



- City of Wenzhou in Zhejiang Province (3m population) used to dispose household waste into two landfills that were nearing capacity while no other suitable sites had been identified for additional landfills,
- The city therefore decided to form a BOT partnership with a local private contractor to build and operate a new MSW-to-energy, 320T/day incinerator plant.
- The company would invest a total of CNY90 million to build the plant and would operate, manage, and maintain it for a period of 25 years
- At the end of the period, the plant would revert to government ownership without any additional compensation to the company.
- The BOT project's revenues combine the proceeds of sale of 7 million kWh of electricity annually and a service fee from the Wenzhou city for the disposal of MSW at a rate of CNY73.8 per ton.

# Key Risks

Key Risk	City	Private Sector	Comments
<b>Construction</b>		x	<ul style="list-style-type: none"> <li>Private sector is responsible for design and construction of the infrastructure</li> <li>Responsibility typically sub-contracted to construction contractor with liability caps</li> </ul>
<b>Operation</b>		x	<ul style="list-style-type: none"> <li>Private sector is responsible for operation &amp; maintenance of the infrastructure</li> <li>Responsibility typically sub-contracted to O&amp;M operator with liability caps</li> <li>Limited compensation in case of breach</li> </ul>
<b>Termination by Municipality without Cause</b>	x		<ul style="list-style-type: none"> <li>Termination provision typically compensates private sector fully (debt + equity + costs + some return)</li> </ul>
<b>Force Majeure</b>	x		<ul style="list-style-type: none"> <li>Termination provision typically compensates private sector partially (debt + equity)</li> </ul>
<b>Demand</b>	x		<ul style="list-style-type: none"> <li>For municipal PPPs, private sector typically does not take demand/usage risk</li> <li>The infrastructure is made “available” to the municipality which pays for it on a cost-recovery + return basis (subject to performance-related deductions) regardless of usage</li> </ul>
<b>Political Risk (incl. Change of Law)</b>	x		<ul style="list-style-type: none"> <li>PPP Contract will typically adjust payment obligation from municipality to reflect impact of change of law or any other political decision affecting the PPP negatively</li> </ul>
<b>Payment Risk by Municipality</b>		x	<ul style="list-style-type: none"> <li>Private sector is fully exposed to the Municipality’s payment risk under availability-type PPPs, subject to national backstop mechanisms (see below)</li> </ul>
<b>Inflation</b>	x	x	<ul style="list-style-type: none"> <li>Availability payments/tariffs adjusted for inflation based on indices</li> </ul>
<b>Interest Rates</b>		x	<ul style="list-style-type: none"> <li>Private sector typically hedges interest rate variation risks through swaps</li> <li>If no hedging solutions are available, municipality might have to bear the risk</li> </ul>

# Municipal PPP: Expectations from Investors & Lenders

Key Expectation	What it means	How can it be met
<b>Creditworthiness of Municipality</b>	<ul style="list-style-type: none"> <li>Ability of the Municipality to fulfil its payment and other financial obligations under the PPP contract</li> </ul>	<ul style="list-style-type: none"> <li>Support from central Government</li> <li>Credit enhancement from DFIs/MDBs</li> </ul>
<b>Appropriate Regulatory Framework</b>	<ul style="list-style-type: none"> <li>Set of laws and regulations allowing the Municipality to enter into PPP contract</li> <li>Legal &amp; regulatory rules setting out rights and obligations of public and private sectors</li> </ul>	<ul style="list-style-type: none"> <li>Regulatory and legal framework reforms to create conditions for PPP execution</li> <li>Other regulations (like land acquisition), as appropriate</li> </ul>
<b>No or Limited Demand Risk (in general)</b>	<ul style="list-style-type: none"> <li>Private sector responsible for designing, financing, building and operating the infrastructure but not for the level of usage of the infrastructure</li> </ul>	<ul style="list-style-type: none"> <li>Municipality pays for the availability of infrastructure regardless of demand, usage/traffic, user tariffs, etc.</li> </ul>
<b>PPP Contract with Standard International Terms</b>	<ul style="list-style-type: none"> <li>Standard terms for termination provisions (discretionary, with cause, force majeure), availability payment formula, performance criteria, etc.</li> </ul>	<ul style="list-style-type: none"> <li>Not to reinvent the wheel: use experienced law firms and tested PPP contract templates</li> </ul>
<b>Appropriate Returns on Investors' Equity Investment</b>	<ul style="list-style-type: none"> <li>Remuneration of investors' equity must reflect the risks they undertake</li> </ul>	<ul style="list-style-type: none"> <li>Appropriate benchmarking from public sector's transaction advisor</li> </ul>
<b>Transparent and Efficient Procurement Process</b>	<ul style="list-style-type: none"> <li>Tender process and documents must meet international standards</li> </ul>	<ul style="list-style-type: none"> <li>Support from qualified transaction advisors</li> </ul>
<b>Land</b>	<ul style="list-style-type: none"> <li>Projects need land available and suitable for construction and operation</li> </ul>	<ul style="list-style-type: none"> <li>Municipality makes land available to the project ahead of time</li> </ul>

**PPP Preparation Process is Critical**

# Municipal PPP: Expectations from the Public Sector

Key Expectation	What it means	How can it be met
<b>Technical Skills of Private Investor</b>	<ul style="list-style-type: none"> <li>Private investor required to bring about relevant technical expertise relevant to the PPP scope (caution about “state-of-the-art”)</li> </ul>	<ul style="list-style-type: none"> <li>Define strict technical skill requirements in tender process</li> </ul>
<b>Financial Strength of Private Investor</b>	<ul style="list-style-type: none"> <li>Private investor must be in a position to fulfil its long-term financial commitments, during construction and operation</li> </ul>	<ul style="list-style-type: none"> <li>Carry out financial due diligence on private investors</li> </ul>
<b>Long-Term Commitment</b>	<ul style="list-style-type: none"> <li>PPP Contract have typically 20-30 years maturity and investors need to be committed as long-term sponsors of the PPP</li> </ul>	<ul style="list-style-type: none"> <li>Set change of control / transfer restrictions in PPP contract: usually prevents main sponsors from selling their shares before project completion and subject to Municipality’s approval beyond that point</li> </ul>
<b>Equity Commitment</b>	<ul style="list-style-type: none"> <li>Investors need to show “skin-in-the-game” and invest equity in the projects</li> </ul>	<ul style="list-style-type: none"> <li>Set minimum equity level in project capitalization</li> </ul>
<b>Mobilisation of Lenders’ Funds</b>	<ul style="list-style-type: none"> <li>PPP must be structured in a way conducive to the provision of commercial debt to the project company</li> </ul>	<ul style="list-style-type: none"> <li>Meet international standards for PPP contractual terms, allocation of risks, commercial targets (if any), etc.</li> </ul>
<b>Transfer of Knowledge</b>	<ul style="list-style-type: none"> <li>Municipality should be able to gain technical capacity (in case the project reverts to the Municipality or other similar projects are developed under other modalities)</li> </ul>	<ul style="list-style-type: none"> <li>Involve municipal employees in the PPP Contract execution/monitoring process</li> </ul>



# Municipal PPP: Key Challenges

Key Challenges	Comments
<b>Municipality's Financial Capacity</b>	<ul style="list-style-type: none"> <li>▪ Municipality do not always have the financial strength required to attract investors and lenders</li> <li>▪ Support from central /regional government or credit enhancement/backstop mechanisms may be required to make PPP projects happen</li> </ul>
<b>Availability of Municipality Credit Rating</b>	<ul style="list-style-type: none"> <li>▪ Rating is a very efficient way of assessing municipalities' financial strength but very few municipalities are rated</li> <li>▪ Investors and lenders need to use other means to make that assessment, which can often be challenging</li> </ul>
<b>Magnitude of Projects</b>	<ul style="list-style-type: none"> <li>▪ Municipal PPPs often are relatively small in size and sometime too small to attract investors and amortize project preparation and bidding/transaction costs</li> </ul>
<b>Access to Finance</b>	<ul style="list-style-type: none"> <li>▪ Due to their local context compared to "national" PPPs (counterparty credit, project magnitude, lack of track record, etc.), municipal PPPs face more challenges to mobilize debt financing, especially from commercial banks, and equity from investors, especially international investors</li> <li>▪ Also, ability to deploy PPP solutions is limited by availability of derivatives such as long term interest rates swaps</li> </ul>
<b>Transaction Costs</b>	<ul style="list-style-type: none"> <li>▪ Transaction costs are usually only partially linked to the size of underlying PPPs, i.e. small municipal PPPs will generate significant legal, advisory and other costs (including municipal resources) even before the PPP tender process is launched, which can be heavy on its budget → need for project definition/preparation grants</li> </ul>
<b>Lead Time</b>	<ul style="list-style-type: none"> <li>▪ PPP process takes at least a year, and sometimes much longer, to materialize due in particular to the complexity of procurement</li> </ul>

# Municipal PPP: Affordable/Financeable?

- Competing calls on **municipal budgets** on a multi-year basis?
- **Several municipalities** involved for the project to achieve critical mass?
- SWM: «**Put-or-Pay**»: long-term commitment from the municipality to deliver minimum quantities of waste at the plant gate, and to pay a pre-set **tariff** («tipping fee» or «gate fee» indexed to inflation and exchange rate fluctuations (if long-term local currency debt not available to the project company) and subject to «on-spec», calorific value and change-in-law provisions
- **WTE Revenues:**
  - Need for municipality to (indirectly) increase **waste bills** already charged to households for budget balancing reasons?
  - **Electricity/heat** sales may represent up to 1/3 of the project company's total revenues and need to be underpinned by a long-term Power Purchase Agreement (PPA) with the local utility, provided WTE power is competitively priced
  - **Other revenues** (scrap metal, compost, ash) are marginal and only have resale values if inert/non toxic... but discounted or disregarded by debt providers
  - **Renewable energy certificates**???
- **Three key financial constraints for a PPP project company:**
  - **Revenues** charged to public sector/project users under PPP contract must be **affordable**
  - **Target Debt Cover Ratios** must be in line with lenders' requirements
  - **Target Equity Returns** must feature appropriate country/sector risk premiums for investors

# Municipal PPP: SWM Initiatives in Asia (2005-2016)

Municipal PPPs	Comments
<b>Keppel Seghers Tuas WTE, Singapore</b>	<ul style="list-style-type: none"> <li>▪ NEA invited the private sector to apply for pre-qualification for the country 's fifth, 800T/day incineration plant in November 2004</li> <li>▪ Four bidders submitted final offer in September 2005</li> <li>▪ NEA appointed Keppel Seghers of Singapore as project developer in November 2005</li> <li>▪ Project company signed SGD102m loan agreement with commercial banks in August 2006</li> </ul>
<b>SWM, India</b>	<ul style="list-style-type: none"> <li>▪ The Department of Economic Affairs of the Ministry of Finance issued its "Position Paper on the SWM Sector" in November 2009</li> </ul>
<b>WTE, China</b>	<ul style="list-style-type: none"> <li>▪ PRC and Hong Kong scholars publish in 2013 a paper entitled "Risk Identification for PPP WTE incineration projects in China"</li> </ul>
<b>Tuas One WTE, Singapore</b>	<ul style="list-style-type: none"> <li>▪ Hyflux of Singapore and Mitsubishi Heavy Industries of Japan achieved financial close in June 2016 for the country's sixth incineration plant</li> <li>▪ Loan facility of \$473m from commercial banks</li> <li>▪ Project capacity of 3,600 T/day, 120MW, \$65m project cost</li> <li>▪ 25-year concession agreement with National Environment Agency (NEA)</li> </ul>
<b>Kepong WTE, Malaysia</b>	<ul style="list-style-type: none"> <li>▪ UKAS (Malaysia's PPP Unit) shortlisted in June 2016 three local companies: MRCB, Khazanah, and Malakoff (first tender was unsuccessful)</li> <li>▪ Project capacity of 1,000T/day of garbage to be supplied by Kuala Lumpur's SWM collection provider under government guarantee</li> <li>▪ Concession expected to be for 28 years, project cost estimated at \$187m</li> </ul>
<b>WTE, Indonesia</b>	<ul style="list-style-type: none"> <li>▪ PLN, the Indonesian power utility, signed in December 2016 an MOU to purchase power from WTE plants for a total capacity of 100MW in 7 cities at IDR2,496/kWh over a 20-year period</li> <li>▪ Jakarta: 40MW, other 6 cities: 10MW each</li> </ul>

# Municipal PPP: SWM Initiatives in Asia (2017)

Municipal PPPs	Comments
<b>SWM/WTE, China</b>	<ul style="list-style-type: none"> <li>▪ China Everbright International won in 2016-2017 the following 30-year concessions:               <ul style="list-style-type: none"> <li>▪ Mianzhou, Sichuan Province: 20,000T/year (industrial hazardous waste), CNY260m</li> <li>▪ Ruzhou, Henan Province: 1,300T/day, \$65m</li> <li>▪ Tiakang, Henan Province: 1,050T/day, CNY400m</li> </ul> </li> </ul>
<b>Badarpur WTE, India</b>	<ul style="list-style-type: none"> <li>▪ NTPC of India started work in January 2017 on new facility to process 400T/day of garbage from South Delhi Municipal Corporation</li> </ul>
<b>Can Tho WTE, Vietnam</b>	<ul style="list-style-type: none"> <li>▪ China Everbright International of China awarded in February 2017 contract for construction, operation and maintenance of a 400T/day, 7.5MW facility for a period of 22 years</li> <li>▪ Project cost estimated at \$47m</li> </ul>
<b>Quezon City WTE, Philippines</b>	<ul style="list-style-type: none"> <li>▪ Consortium of Metro Pacific (Philippines), Macquarie (Australia) and Covanta Energy (US) granted “original proponent” status by Quezon City in April 2017 for the design, construction and operation of a WTE facility with a capacity of 3,000T/day, 42MW</li> <li>▪ Swiss challenge (with right to match for original proponent) after negotiation</li> </ul>
<b>NTPC, India</b>	<ul style="list-style-type: none"> <li>▪ NTPC issued in September 2017 invitations for expressions of interest from national and international with operations&gt;300T/day over 2 years+, for up to 100 WTE plants across the country</li> <li>▪ NTPC to provide land and to secure waste supplies from local bodies</li> <li>▪ WTE market potential estimated at 500MW</li> </ul>
<b>SWM, India</b>	<ul style="list-style-type: none"> <li>▪ The Central Pollution Control Board, the Ministry of Environment, the Ministry of Housing &amp; Urban Affairs and the National Productivity Council issued in November 2017 their “Toolkit for Implementation of SWM Rules, 2016”.</li> </ul>
<b>Chonburi WTE, Thailand</b>	<ul style="list-style-type: none"> <li>▪ Consortium of Suez Environment (France), WHA Utilities &amp; Power (Thailand) and Glow Energy (Thailand) formed JV in November 2017</li> <li>▪ Project capacity of 100,000T/year, 9MW, project cost estimated at \$59m</li> <li>▪ Funded by shareholders, no bank borrowing</li> </ul>

# Municipal PPP: SWM Initiatives in Asia (2018)

Municipal PPPs	Comments
<b>Shek Kwu Chau WTE, Hong Kong</b>	<ul style="list-style-type: none"> <li>▪ Keppel Seghers of Singapore and Zhen Hua Engineering (member of CHEC Group) awarded in January 2018 a HK\$31bn contract to build and operate the first integrated SWM facility in Hong Kong</li> <li>▪ Project capacity of 3,200 T/day</li> <li>▪ Financing to be provided by Hong Kong government (no bank financing)</li> </ul>
<b>Mekong Delta WTE, Vietnam</b>	<ul style="list-style-type: none"> <li>▪ In February 2018 ADB provided China Everbright International of China a US\$100 million loan to develop a series of WTE municipal projects in the Mekong Delta</li> </ul>
<b>Kotte WTE, Sri Lanka</b>	<ul style="list-style-type: none"> <li>▪ Colombo city: 438,000T/year of waste</li> <li>▪ Project capacity: 580T/day, 10MW, project cost of \$48m</li> <li>▪ Developer: Renew GEN Enviro Ventures, India</li> <li>▪ Equity provider: Infra Co Asia (financial close in 2019)</li> </ul>
<b>Danang SWM, Vietnam</b>	<ul style="list-style-type: none"> <li>▪ 750T/day of municipal solid waste produced in Danang currently put in a landfill</li> <li>▪ Project capacity: 360,000T/year</li> <li>▪ City expected to launch bidding process in 2018 under a PPP scheme</li> <li>▪ ADB/OPPP advising Danang city</li> </ul>

# Thank you!

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