Proposed Draft

DRAFT UNECE STANDARD ON PPPS IN WATER SUPPLY AND SANITATION

Annexes

SOURCE: **Water Supply and Sanitation Project Team**

ACTION: **Interim draft**

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Contents

Annex I: Main PPP models in water supply and sanitation

1. Typical Features of the main PPP models

	Service contracts	Manag. Contract	Affermage-type lease	DBO	BOT	Concession	Outright Sale/ Divestiture
Asset ownership	Public	Public	Public	Public	Public	Public; under private possession during concession period	Private
CAPEX Finance	Public	Public	Public	Public	Usually private; but public funds may be involved	Private	Private
Operation & maint.	Partial Private, depends on contract scope	Usually private, depends on scope, risks and terms of reference	Private	Private	Private	Private	Private
Manag.	Public	Private	Private	Private	Private	Private	Private
Human resources	Public with private specialists	Usually public workforce with private management	Private, but public workforce may be transferred to contract	Private	Private	Private, but public workforce may be transferred to the concession	Private
Scope of partnership	Variable: a single asset (plant) or aspecific service within an entire water or wastewater system	Variable: a single asset (plant) or an entire water or wastewater system	Typically and entire water or wastewater system	A single asset to be built or upgraded or expanded	A single asset to be built or upgraded or expanded	An entire water or wastewater system	An entire water or wastewater system

2. Service contracts

Service contracts should be used for specific (and time concentrated) help in matters where a public entity does not have internal skills, either because the task is non-core or because is too specialised, complex or too delicate in terms of technology. Also useful if only a short-term "boost" is required.

Public entity/authority *Grantor*	*Private company* *Operator*
• Retains overall responsibility for the Utility but contracts out specific, limited scope services; • Bears all the commercial risk; • Pays a contractual fee for the services provided by the Operator plus bonus/malus according to performance; • Must finance fixed assets and working capital.	• Manages its own workforce and services efficiently; • Implements its own tools to provide the service and is responsible for the deliverables required in the Terms of Reference; • Little or no fixed investment is required from the private sector.
Duration of contract	
Short period of time, usually less than 5 years; may be renewable, but the current trend is towards performance-based service contracts with longer duration.	
Main benefits *For Public entity*	*Main risks* *For Public entity*
• Technical and technological risk is assumed by the Private Operator over the period of the contract; • Fast, measurable results; • Chances to follow up services (if and when needed); • Work generally has a low visibility.	• Lack of liability placed on the private sector; • Low level of compromise to address major infrastructural challenges; • Does not attract private finance; • Limited private participation in the overall scope of services delivery.
Key issues	
• Application of service contracts to very specific, targeted issues such as advisory, feasibility studies, supervision, infrastructure and equipment operation and maintenance, complex rehabilitation and repairs, water quality control, field training, energy efficiency, leakage detection and quality control; • Also applicable to highly sophisticated tool implementation, such as geographical information systems (GIS), automation and remote management and control, design of internal procedures and best practices manuals; • Adjustments have to be made for each type of project; • Terms of Reference should be detailed and should include bonus/malus for non-delivered targets; • Include extensive capacity building component in the Terms of Reference to ensure sustainability of improvements.	

3. Management contracts

Management contracts are used for: non-revenue-water (NRW) and Operation, Management and Maintenance (OMM) contracts, reform of the management of technical and commercial operations, provide quality management for the implementation of investment programs, improve network efficiency, etc. The private-sector is engaged to undertake operation, management and maintenance of infrastructure services. The private-sector provides a service for which it receives a fee. Assets are publicly financed, and this is an appropriate form of contract where there is limited scope to raise private capital directly. However, these can help to leverage capital indirectly.

Public entity/authority ***Grantor***	***Private company*** ***Operator***
• Assets are financed and owned by Public Grantor; • Transfers responsibility for management of the operation and maintenance of a system or part of a system including the management of associated workforce to a Private Operator; • Provides working capital and investment funds.	• Acts on behalf of the public authority and is therefore an agent; • Makes day-to-day management decisions without bearing any commercial risk; • Gets paid in the form of a fee, generally linked to its performance.
Duration of contract	
May vary from 3 up to 15 years depending on the country laws and project needs.	
Main benefits ***For Public entity***	***Main risks*** ***For Public entity***
• Promotes private sector innovation; • Public Entity focus on public sector responsibilities; • Delegation of specific parts of day-to-day operation; • Increased access to private expertise; • Longer term commitment (than service contracts).	• Delays on Public Entity responsibilities' may compromise PrivateOperator objectives and create conflicts (i.e. delay on delivering a certain facility needed to distribute water); • Requires constant monitoring of contract objectives and performance targets; • Does not attract private finance directly; • Setting up unrealistic objectives.
Key issues	
• Usually fitted to public utilities that already reach a fair operational control and wants to take the service to a higher level; • Terms of reference should be objective and detailed. They should include key performance indicators and penalties for non-delivered targets; • Public management should have: (i) a strong grip and leading skills; (ii) financial capacity and; (iii) provide working capital; • It is important that the Private Operator has control over the means which allow him to achieve the performance targets; • Involvement and cooperation of the staff is key (change of the organizational culture); • Include extensive capacity building component in the terms of reference to ensure sustainability of improvements. • There should be a clear mechanism for day to day dialogue between parties and for resolving issues before they become disputes; • Clear reporting requirements.	

4. Affermage-type lease contracts

In affermage-type lease contracts, the Public Entity Retains the responsibility for capital investment while contracting out the day-to-day activities of running the service to a private operator. The level of investment for operations and maintenance and system replacement dedicated to the operator is determined on a case-by-case basis.

<table>
<tr><th>Public entity/authority
Grantor</th><th>Private company
Operator</th></tr>
<tr><td>• Assets are financed and owned by Public entity;
• Is still responsible for capital expenditure, replacement of major works, debt service, tariffs and cost recovery policies;
• Transfers the public P&L to Private Operator;
• Lease is awarded to the highest bid (lease fee) and payment to Grantor is based on cost-plus;
• Affermage is awarded to most competitive bid.</td><td>• Is responsible for operation and maintenance and collects the tariff from consumers on behalf of the Public entity;
• Rents or leases the facilities;
• May be asked to invest on behalf of the Public entity;
• May be asked to bring working capital to support day-to-day operations;
• Recovers costs, directly, or indirectly, from tariff collection from consumers.</td></tr>
<tr><th colspan="2">Duration of contract</th></tr>
<tr><td colspan="2">Medium to long-term duration, usually 10 to 15 years but can be extended for as long as 20 years</td></tr>
<tr><th>Main benefits
For Public entity</th><th>Main risks
For Public entity</th></tr>
<tr><td>• Full transfer of operation/management and commercial risk to the Private Operator;
• No need for tariff to be set at “full cost recovery” (CAPEX may be subsidized);
• Skilled management and significant potential for operational improvements;
• Improves quality of service and efficiency with economies of scale, innovation and technology.
•</td><td>• Subsidization of the sector in relation to the increase in tariff;
• Delays on public investment may compromise private performance in meeting objectives;
• The separation of decision making between CAPEX and OPEX may create some problems;
• Low attraction of direct private finance;
• Setting up unrealistic population/demand growth and service objectives.</td></tr>
<tr><th colspan="2">Key issues</th></tr>
<tr><td colspan="2">• A clear contractual definition of O&M and delineation of responsibilities with regard to renewal and replacement are mandatory;
• Requires mechanisms for identifying, carrying out and financing investments;
• Terms of reference should include a disclaimer for all non-controlled variables, as well as penalties for non-delivered targets;
• Contracts should encompass a possibility to extend the contractual period (3 to 5 years) to assimilate deviations that may occur;
• Proposals should be made with conservative forecasts and projections;
• Public sector needs to monitor the contract objectives and performance;
• There should be a clear mechanism for day-to-day dialogue between parties and for resolving issues before they become disputes;
• The operator can either bear the risk on volumes produced or on volumes sold;
• Public workforce may be transferred to the Private Developer under public personnel cession laws;
• Performance based affermage-type lease contracts are a new trend to consider.</td></tr>
</table>

5. Design, Build Operate (DBO), Build Own Operate Transfer (BOOT), Build Operate Transfer (BOT), Build Own Operate (BOO), Design Build Finance Operate (DBFO) contracts

BOT contracts (each form has different grades of responsibility to each parties) are appropriate to facilities that are complex or requires some skills to operate. Also, they are suited to fast construction programs and full delegation risks of specific facilities.

Public entity/authority *Grantor*	*Private company* *Operator*
• Transfers to Private Operator operating and construction risk (BOT), plus design (DBO) and finance risk (BOO, BOOT & DBFO); • Is responsible for determining the demand for the service being contracted and the size of the facility; • In the end of the contract, facilities revert to Public entity.	• Builds, owns, operates and may finance a specific new facility, rather than operation and further developments of an existing system (Concession); • Is paid by the Grantor by a fixed monthly fee or a variable fee (per cubic meter delivered) or a mix of both. • Optimisation of infrastructure design and operating procedures
Duration of contract	
Related to the time needed to cover the financial and operational costs. Contract period may vary from 5 to 30 or more years.	
Main benefits *For Public entity*	*Main risks* *For Public entity*
• Off-balance sheet financing of large facilities; • Attracts private finance and accelerates construction; • Transfers the risks of cost overruns and delays to the private sector; • Transfers design risk to Private Oparator that seeks a whole life costing approach. •	• Wrong forecasts in demand once Public entity often guarantees the demand; • Funding guarantees may be required; • No long term risk transfer in case of technical challenges; • Cost of re-entering the business if operator proves unsatisfactory. • May need a “take or pay” provision.
Key issues	
• Used for “high tech” or cutting edge/pilot technology infrastructures, for investments in solving specific, concentrated problems (pollution, complex wastewater, unpredictable raw water) and confined project areas (such as new residential, financial or industrial cities); • Requires a strong Public entity able to collaborate with BOT Private Operator in integrating it into the overall system; • Consider phasing of system to size the facility in line with demand growth.	

6. Concession contracts

In Concession contracts, both capital expenditures (CAPEX) and operational expenditures (OPEX) are granted to the Private Oparator.

Public entity/authority *Grantor*	*Private company* *Oparator*
• Assets are owned by Public entity that entrusts them to the concessionaire; • Delegates to Private Oparator risk of finance, design, construction and operation; • The fixed assets must be returned in the same (or improved) condition at the end of the concession.	• Has overall responsibility for the services (operation, maintenance, management, collection and commercial), and capital investments for the expansion of services (including rehabilitation and replacement); • Is paid directly by the customer, based on the defined set of tariffs, generally related to consumption.
Duration of contract	
Usually 20 to 30 years (or more), depending on the level of tariffs, investment and payback period needed for the concessionaire to recover investment costs.	
Main benefits *For Public entity*	*Main risks* *For Public entity*
• Attracts private finance that may be important if public capital is a constraint; • Faster initial investment plan; • Technical, operational, collection and commercial risk are assumed by Private Oparator; • Improves quality of service with economies of scale, innovation and technology; • If tariffs level ensures "full cost recovery" and sustainability throughout the entire period of concession, the Private Oparator may pay a rent.	• Tariff risk due to "full cost recovery" concept; • Possible subsidy from the Grantor to ensure the sustainability of the project (if tariff affordability is compromised); • Rate and foreign exchange risks; • Lack of public acceptance and political confusion with "privatization"; • Public entities may be tempted to increase population and consumption forecasts in order to get lower tariffs.
Key issues	
• Requires good legal framework in the countries; • Both partners need to optimize investment and operations for the duration of the contract; • The Operator commitment must be in terms of results or means; • Concessions need to be realistic from a perspective of performance, revenue, operational costs and maintenance; • Conditions will change over such a long period and concession contract should be reviewed at least every 10 years and preferably every 5-6 years in certain variables (fixed and known to all competitors during tender process); • Setting up a proper independent tariff regulation avoid sudden rate increases; • Terms or Reference should include penalties for non-delivered targets; • Both, Terms of Reference and Proposals should be made with conservative investment plans, forecasts and projections; • Public workforce is usually transferred to the concession under public personnel cession laws. • Public sector needs to manage concessionaire and monitor performance; • New trends rely on combination of government and domestic loan financing rather than equity.	

7. Outright sale/divestiture

Outright sale/divestiture is a specific case of privatization: ownership of the water or wastewater assets by a private entity, usually regulated by a government body (after divesture it ceases to be a PPP). The public authority will receive a lump payment for the sale of the water utility and, from this time onwards, ends liabilities for the public entity. Tariffs level should ensure "full cost recovery". Here, the private owner may have an economic driven management so, a strong public regulator is advisable to assure water access to the most periphery and needed population and to guaranty affordability to everyone.

Public entity/authority ***Grantor***	***Private company*** ***OparatorOperator***
• Creates a public firm under the country's existing commercial code; • Creates a public authority (or regulator) to monitor and guide private management; • Defines minimum objectives and general policies for the services; • Promotes a public tender in order to sell all or part of the firm.	• Buys and owns all assets; • Takes full responsibility for the services (operation, maintenance, management, collection and commercial), and capital investments for the expansion of services (and for rehabilitation and replacement).
Duration of contract	
Unless a serious event happens, privatization is a deal for life.	
Main benefits ***For Public entity***	***Main risks*** ***For Public entity***
• The authority will receive a lump payment for the sale of the water utility; • No on-going liabilities for the authority; • Private entities may find it easier to obtain private long term funding on capital markets. •	• Lack of public acceptance; • Excessive benefits for the private operator may occur if public authority isn't vigilant or doesn't gather sufficient information or situation analysis; • Loss of control over the long-term interest and sustainability of the sector. •
Key issues	
• Sectorial reforms and legislation implementation prior to asset sale to enforce performance guarantees; • Transparent indicators in case of non-compliance; • Need for a strong regulator for tariff setting, performance monitoring and general oversight and clear restrictions on sale of assets required for regulated business; • Need for a Revenue CAP (capital asset price) or similar regulation model.	

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Annex II: Selection of PPP models

<table>
<tr><td colspan="8">Are the public utility's operations of existing assets in a difficult situation – e.g. non-compliance with quality of service, environmental regulations, lack of qualified staff?</td></tr>
<tr><td colspan="4">Yes</td><td colspan="4">No</td></tr>
<tr><td colspan="4">Is the public utility facing important capital program challenges – such as the need for new infrastructure, or the rehabilitation of existing infrastructure?</td><td colspan="4">Is the public utility facing important capital program challenges – such as the need for new infrastructure, or the rehabilitation of existing infrastructure?</td></tr>
<tr><td colspan="2">Yes</td><td colspan="2">No</td><td colspan="2">Yes</td><td colspan="2">No</td></tr>
<tr><td colspan="2">Is the utility facing financial constraints – e.g. difficulty setting economic tariffs or issuing debt?</td><td colspan="2">Is the utility facing financial constraints – e.g difficulty setting economic tariffs or issuing debt?</td><td colspan="2">Is the utility facing financial constraints – e.g difficulty setting economic tariffs or issuing debt?</td><td colspan="2">Is the utility facing financial constraints – e.g. difficulty setting economic tariffs or issuing debt?</td></tr>
<tr><td>Yes</td><td>No</td><td>Yes</td><td>No</td><td>Yes</td><td>No</td><td>Yes</td><td>No</td></tr>
<tr><td>The government can consider a concession, partnering with an expert at managing operations and capital investments and reducing costs.</td><td>The utility can consider an affermage-type lease, with a focus on operational and capital program management.</td><td>The utility can consider a management contract or an affermage-type lease, which will bring a partner able to address operational issues and identify and implement cost reductions and efficiency.</td><td>The government may consider a management contract to improve the operations of its assets, while continuing to fund new investments directly.</td><td>The utility may consider a BOT, which will help address its new infrastructure challenges and the need for economically efficient funding.</td><td>The utility can consider a DBO, which will procure an expert partner for the new infrastructure, while maintaining public financing.</td><td>The utility can consider a management contract or an affermage-type lease, which will bring a partner able to identify and implement cost reductions and efficiency.</td><td>The government should consider keeping its current form of governance; the PPP approach may provide more complexity than assistance.</td></tr>
</table>

Key decision factors include:

- What are the operational challenges facing the public utility?
    - Human resources: does the public utility have the required qualified staff for its existing assets?
    - Management systems: does the public utility have the tools, procedures and knowledge base to provide the best service possible?
    - Does the public utility have the staff needed to operate new assets scheduled to come on-line?
    - Is the quality of service showing improvements, or is it deteriorating?
    - Does the public utility have the capacity to reduce costs and increase revenues?
    - Is the system compliant with environmental, public health and other regulations?
- What are the capital-program challenges facing the Utility?
    - How reliable and accurate is data about the nature and condition of existing assets?
    - Are there significant investments to be made in the short term?
    - Is it a nationwide or regional priority?
    - Does the system require considerable investment to repair existing assets?
    - Does the system need new capacity (e.g. new networks or treatment plants due to growing population or changing standards)?
    - Is the leakage rate high?
    - Are there new regulatory constraints leading to new investments (e.g. obsolete materials or infrastructures, combined sewer overflows, nutrient removal)?
    - Does the public utility have the capacity to procure new technology and manage it?
- What are the financial and tariff constraints of the utility?
    - Are revenues equal, higher or lower than operational costs?
    - Can the population afford current tariffs or a tariff increase?
    - What is the mix of tariffs and taxes in the current cost recovery system?
    - Are pro-poor mechanisms in place?
    - Is the utility able to issue its own debt?

Annex III: Different needs, different contracts: which kinds of PPPs are most appropriate: THE FOUR DIMENSIONS ANALYSIS

1. Water and/or sanitation expansion: network coverage and access through household, yard connections and standposts

According to the relative importance of the coverage extension, the financial needs will drive towards long term contracts.

Service Contracts	Short term services cannot help in water and sanitation access, although they may be indirectly useful in master plans, feasibility studies, engineering design, supervision, training and advisory.
Management Contract	Useful in setting up procurement, award and supervision of public works that aim at water and sanitation expansion. Also useful in commercial relationship with customers with the goal of increasing household and yard connections.
Affermage-type lease	Useful in setting up procurement, award and supervision of public works that aim at water and sanitation expansion and in commercial relationship with customers with the goal of increasing connections. Also, part of CAPEX – replacement and renovation – may be borne by the Private Operator.
BOT /BOOT / DBO / BOO / DBFO	BOT and its variations are particularly fitted to increase service access, once they are selected as a tool to build and operate new facilities. They may be used to raise dams, WTP, WWTP and confined networks (new neighborhoods, industrial and financial cities, etc.)
Concessions contract	The Private Oparator is responsible for water and sanitation access and network, responding to pre-identified needs stipulated by the Public entity. Good model to achieve quick initial investment plans and quick growth. Goals must be identified by the Public entity in bidding terms of reference as well as in contracts.
Outright sale/ Divestiture	Water and sanitation access and network expansion are private responsibility and minimum objectives and performance levels should be agreed on beforehand.

2. Cost of service to public entities and/or tariff levels to consumers

The margin of manoeuvre to optimise the service in cost terms depends on the scope of the contract and its duration: broader contracts generally enable greater efficiency gains.

Service Contracts	Short term services impose an operational cost on Public entities and aren't the best option for implementing cost cut measures and increasing revenues, but they may be useful in advising on such matters.
Management Contract	Asset finance must be assured by the Public entity, either from its own budget, or soft loans from donor countries and IFIs, or from public subsidies. The profitability risk is borne by the Public entity and payment to the Private Oparator is generally made of a mix of a (monthly) retainer fee and a variable performance fee linked to the achievement of pre-defined goals and reward success.

Affermage-type lease	Similar to Management contracts: most of the CAPEX financing must be assured by the Public entity. Here, the profitability risk is borne by the Private Oparator and it is rewarded by its own results. The Private Oparator rents or leases the asset. Tariffs may (or may not) be subsidized - depends whether rent covers the amortization of public CAPEX or does not.
BOT /BOOT / DBO / BOO / DBFO	Depending on the decision of Public entities, financing may be private, or mixed (some public financing can also take place). Payment schemes vary from project to project. In some agreements, Private Operator receives a fee for the construction, plus a fee for the operation (both paid throughout the lifetime of the contract). In others, the Operator receives a retainer fee linked to the availability of the facility and a performance fee linked to the production/use of the facility.
Concessions contract	CAPEX execution, finance and fund guarantees are fully private. Profitability is private responsibility and is rewarded by its own results. Generally, tariffs should ensure "full cost recovery", but subsidies may occur.
Outright sale/ Divestiture	CAPEX execution, finance and fund guarantees are the private sector´s responsibility. A purchase agreement should fix the value and payment conditions between the seller (public entity) and the buyer (private). Tariffs should ensure "full cost recovery", including the acquisition price paid and a fair rate of return, but subsidies may still occur.

3. Quality of service: drinking water quality, daily availability of supply, pressure and flow, sewerage drainage, treatment and adequate disposal

Service and management contracts can be more efficient on specific scopes, such as non-revenue water reduction, as it allows to concentrate efforts. Conversely, longer contracts have a broader impact but allow horizontal progress.

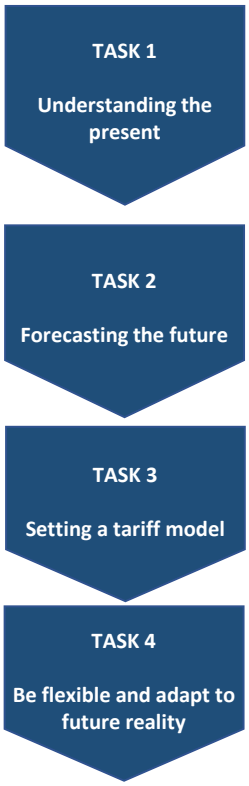
Service Contracts	In specific problem solving, facility upgrades and IT solutions, service contracts can be an option for improving quality of service. They can be hired for short periods and for defined tasks.
Management Contract	Usually good for improving quality of service, but a set of objective and key performance indicators for the lifetime of the project must be identified in the bidding terms of reference and in the contract in order to supervise the private performance and measure its success. The availability of accurate information is key to determine a baseline for the KPIs and objectives.
Affermage-type lease	Quality of service is Private Operator's responsibility and Affermage type lease contracts enforce this matter.
BOT /BOOT / DBO / BOO / DBFO	Being a responsibility of Private Operators, quality of construction and operation must be assured by them. Public entity should require and monitor quality levels of service as he buys an output (e.g. quantity and quality of product) rather than assets.
Concessions contract	Quality of service is private responsibility and Concession contracts help achieving it.
Outright sale/ Divestiture	Private operator bears the full responsibility for the quality of the whole service.

4. Operational efficiency

Service and management contracts are suitable to provide quick improvements, while concessions usually provide more sustainable results; capacity building is key for the durability over the long term.

Service Contracts	In specific problem solving, upgrades, IT solutions and advisory, service contracts can be an option for improving efficiency. They can be hired for short periods and for defined tasks.
Management Contract	Good for improving efficiency for medium and long term. A variable fee may be paid to the Private Oparator if he exceeds required performance.
Affermage-type lease	Good for improving efficiency. Full operation risk/benefit is borne by the Private Operator who, therefore, is encouraged to increase efficiency.
BOT /BOOT / DBO / BOO / DBFO	Efficiency is assured by the equilibrium of (i) best construction; (ii) best operation costs; (iii) best final price to the Public entity. In the BOO/BOOT and DBFO, the Private Operator will normally receive incentives to fully optimize life-cycle costs, considering a long term (normally 15-25 years) of operation and maintenance.
Concessions contract	Good for improving efficiency in a long term vision. Efficiency is assured by the equilibrium of (i) best construction; (ii) best operation costs; (iii) best final price to the Public Entity. Full operation risk/benefit is borne by the Private Operator who, therefore, is encouraged to increase efficiency.
Outright sale/ Divestiture	Efficiency is assured by the equilibrium of (i) best construction; (ii) best operation costs; (iii) best final price to Public entity. Private Operator bears the full responsibility for improving efficiency.

Annex IV: Tariff setting roadmap



- Understanding (for the recent past) the evolution of population, households, yard connections, stand posts, meters, consumers and consumption (by type and by cubic meter); Accountancy (daily & monthly billing and collection); Existing tariffs; Profits and Losses; Overdue debt and receivables;
- Understanding the social structure: child, student, adult, elderly, unemployment, working class, salaries;
- Setting an affordability "starting point"

- Forecasting (for the next 10 to 20 years) the growth of: population, households, yard connections, stand posts, meters, consumers and consumption (by type and by cubic meter);
- Forecasting economic growth and its effect on salaries and per capita income;
- Considering operational and commercial efficiency improvements: cost optimization and accountancy (daily & monthly billing and collection);
- Forecasting future Profits and Losses and Capital Expenditures;
- Setting affordability cap for each consumer group in terms of their capacity to pay for tariffs

- Using international benchmark, best practices and local best knowledge;
- Understanding political orientations;
- Predicting tariff income as well as subsidies (government, cross-subsidies, or a combination);
- Protecting the poor and the most needed population and respecting gender;
- Having in consideration the singularities of the region.

- Review the tariff policy every 5 years and, if necessary correct future trajectory;
- Review costumers affordability every 5 years;
- Be prepared to change subsidy policy if necessary.

Task 1 should be ready before the PPP's tender procedure for competitors´ due diligence.

Tasks 2 and 3 may be conducted by the Private Operator during the bidding process (in the Concession or Divestiture Models, otherwise they are a public responsibility).

Tasks 2 to 4 should be detailed on the PPP agreement. All Tasks are subjected to Public Entity approval.

Annex IV – Main phases and related deliverables

Phase	Typical deliverables
Project identification	✓ Definition of policy objectives ✓ Inception report ✓ Feasability study ✓ General assesment of the needs, the project scope and of the proposed project
Project preparation	✓ Definition of public priorities, project scope and objectives ✓ Selection of most appropriate contractual model ✓ Preparation of bid documents ✓ Definition of Key Performance Indicators and deliverables ✓ Pre-qualification criteria for contractors ✓ Announcement of project and public consultation ✓ Pre-Bid announcement and shortlisting of potential bidders ✓ Financial feasibility report ✓ Risk assessments ✓ Project requirements ✓ Reality check of contract performance metrics to ensure realistic targets ✓ Detailed terms of reference for the contract procurement ✓ Environmental and social impact assessment ✓ Project “road show” to main stakeholders
Procurement	✓ Management and supervision of tendering process ✓ Tender documents

	✓ Key Performance Indicators ✓ Rents, fees, penalties ✓ Tariffs ✓ Bid evaluation ✓ Clarifications and contract finalisation ✓ Contract signature
Project start-up	✓ Completion of "Conditions Precedant" ✓ Staff agreements ✓ Project announcement and publicity ✓ Transition phase
Design and construction	✓ Engineering design ✓ Operating standards ✓ Maintenance standards ✓ Specific environmental impact assessment studies ✓ Permits ✓ Construction and commissioning ✓ Acceptance procedure
Project operation	✓ Biannual or annual operational and accountancy reports ✓ Annual evaluation of performance and appropriate action plans ✓ Periodic general contract review
Project completion and contract exit	✓ Assets assessment ✓ Financial audit ✓ Transfer plan (Assets, staff, others.)
Post contract evaluation	✓ Post contract evaluation

Annex V – RISK CATEGORIES AND MITIGATION MECHANISM

1. Most common risks and their mitigation options

Risk type	Risk description	Potential consequence	Who bears the risk	Risk mitigation
Population growth	- Over (under) estimated population growth; - Wrong planning of geographical areas of urban expansion.	- Over (under) dimensioned CAPEX; - Over (under) estimated revenues; - Unwanted raise of price to final consumer.	**Public entity** should forecast population growth and fix it in the tender documents.	- Use of conservative forecasts; - Stipulate periodic contract reviews, (at least every 10 years and preferably every 5-6 years), to ensure the adaptation of the contract terms above/below certain deviations (fixed in the tender process); - Mitigation mechanism: (i) Revenue guarantees by government e.g. take or pay formula or business interruption insurance; (ii) PPP agreement to allow the private partner to pass this risk partially to consumers e.g. increase tariffs; (iii) PPP agreement to include a clause allowing the extension of the project term, permitting as such for the private operator longer time to recoup investments; (iv) PPP agreement to give private sector discretion in scheduling capital investment depending on population growth.
Demand	- Over (under) estimated number of clients - per-capita consumptions increase/decline.	- Over (under) dimensioned capex; - Over (under) estimated revenues; - Opex overruns.	Depends on type of contract. Generally, **Private Operator** is the one that has the know-how and should present forecasts in its proposal.	- If risk is private (usually in concession, affermage-type lease and divestiture), then private has overall responsibility for deviations and the use of conservative forecasts is the main mitigation mechanism. - If risk is public (services, management contracts and some BOT forms and variations), then use the same risk mitigation as “population growth” but applied to “demand”. - When demand forecasts are set by Public entity, loss of income due to a per-capita consumption decline should be off-sett.

Design, technology and construction	- Failure to meet performance specifications; - Cost and/or time overruns; - - Failure/delay of obtaining necessary permits, licenses and access to land.	- Delays in complying with service objectives; - Capex and/or Opex overruns.	When Capex is private (Concessions, BOO, DBFO): **Private Operator** bears risk for new facilities and for further developments of an existing system.	- PPP agreement to allocate the responsibility of timely land expropriation and licensing to the government entity; - PPP agreement to include a performance bond and liquidated damages; - Pass the on-time / on-budget completion risk to the construction subcontractor by: (i) including joint and several liability in the construction subcontractor agreement; (ii) including a fixed price in the construction subcontract – turnkey / fixed price; (iii) including a clause of back-to-back responsibility for penalties that may come from PPP contract due to delays and/or malfunctions; - Hire extended insurance policy to protect assets and loss of profits.
Finance	- Risk associated with the availability and cost of funds for the project. - Also includes: (i) risk of change in interest rate; (ii) Risk of change in inflation rate; (iii) Risk of change in foreign exchange rate; (iv) Residual value risk; - Finance risk could also include unforeseen investments that would be required during the lifetime of the project.	- "Draw stop" of bank loans with delays on Investment Plans if project does not comply with "events of default"; - Delays in complying with service objectives; - Overrun of financial costs.	**Public entity** when Capex is public (services, management, lease/ affermage contracts and some BOT contracts); **Private Operator** when Capex is private (concessions, divestiture and some BOT contracts).	- Financial agreements usually are complex and require professional advisory input during negotiation; - Involvement of banks since the beginning of bidding process gives comfort to banks; - Involvement of banks during contract review negotiations is crucial to avoid defaults and "draw stop"; - Foresee a "standby loan" and "standby equity" for unpredictable investments or deviations in revenues during the lifetime of the contract; Other risk mitigation mechanisms: - Specific country financial risk: incorporate specific country risk (ie local currency risk) mitigation options into contract structure - Interest rate risk*: (i) Hedged by interest rate swaps allowing the private partner to convert variable rate debt to fixed rate debt**; (ii) Take fixed rate loans. - Inflation rate risk: (i) Pass it through to the end user or the government through the indexation of capital grants and other contract payments (e.g. availability payments, fares); (ii) Tariffs to end user may be revised on a yearly basis with inflation and other key variables. - Foreign exchange risk: (i) Hedged by currency swaps taken by the private partner; (ii) Private sector to reduce reliance on imported inputs or foreign currency borrowing; (iii) Government guarantee through the inclusion of a revenue adjustment formula in the PPP agreement; (iv) PPP agreement to link

				infrastructure service price to exchange rate fluctuation; - Residual value risk: (i) PPP agreement to include incentives to encourage asset transfer to the government in suitable condition e.g. option to renew the agreement instead of transferring the asset; (ii) PPP agreement to include the creation of a sinking fund to bring asset up to desired standard. IMPORTANT: also see Section : Financing Models. * Price indices used should be from public sources to ensure transparency and minimize bias. ** However, the government should assume the risk of change in swap rates between bid submission and financial close.
Operating and Maintenance (O&M)	Operation failures or costs greater than anticipated and/or maintenance programme or costs are greater than anticipated.	- Failure to meet performance specifications, collapse or malfunctioning of infrastructure and equipment; - Opex overrun.	**Private Operator** has overall responsibility for operation and maintenance (except in service contracts).	
Commercial (billing & collection)	Delays in collection; increase collection period and overdue debt; Increase of uncollectible: challenges raised by "could pay won't pay" and "would pay but can't pay" users. The operator has often responsibility for collecting money to repay activities linked	Shortage of necessary cash-flow for day-to-day costs and/or investment.	**Private Operator** has overall responsibility for commercial risk (except in service and management contracts).	- Predict a “social tariff” to poor income families. This social tariff policy should be fine-tuned (see section Financing Model(s)) and should get public authorities' formal validation; - Use conservative forecasts regarding collection period and uncollectible; - Include short term loan in finance agreement to foresee these issues; - Predict payments by monthly instalments and with the help of local commercial banks to support clients; - Use tested utility billing software in the country/region of contract (if possible). - Collection risk for municipal clients are not transferrable to the private operator

	with the service but outside the scope (abstraction charges, taxes, regulators et cetera.).			
Early termination	- Public entity may declare "public interest" to terminate the contract. - Public entity may revoke the contract due to Private Operator failing to meet performance obligation . - Private Operator may revoke the contract due to violations of Public obligations.	Reduction of the value of the project.	**Public entity** has overall responsibility for ransom.	- If Public Entity declares "public interest" to terminate the contract including compensation description (due to Private Operator) in PPP agreement. - If Public Entity revokes the contract due to Private Operator failing to meet performance obligations Private Operator may have to compensate Public Entity: including motive and compensation terms of PPP agreement. - If Private Operator revokes the contract due to violations of Public obligations: Public Entity may have to compensate Private Operator: including motive and compensation terms of PPP agreement.

2. Exogenous risks

Risk type	Risk description	Potential consequence	Who bears the risk	Risk mitigation
Legislative	Changes in legislation, and/or taxes, and/or fees.	- Increase of costs; - Loss of viability/value of the project; - Unwanted raise of price to final consumer.	Usually **Public entity**, unless stipulated otherwise (it may be shared in some cases of concessions and BOT variants).	- Perform proper legal due diligence and study impact of potential legislation changes on financial viability; - PPP agreement to specify the applicable law and jurisdiction, as well as dispute resolution mechanisms; - PPP agreement to include compensation for discriminatory changes in law.
Social	- General public backlash or dissatisfaction with the project; - Increasing lack of public acceptance and political confusion with "privatization"; - Inappropriate stakeholder influence (vested interests).	- Social protest and boycotting; - Operational difficulties to perform the contract; - Delays; - Overrun costs.	**Public entity** has overall responsibility for social risk, unless in some commercial aspects, if duly identified in PPP agreement.	- Promote public involvement since the early decision making stage; - Promote campaigns around the advantages and value added after deciding to use a PPP;
Regulatory	Changes in the regulatory empowerment and framework.	Change impacting the project positively or negatively, including price and tariff variation; Undue interference by regulator and/or government on utility operator.	**Shared**, depending on depth of regulatory changes.	- Perform proper regulatory due diligence and study impact of potential regulatory changes on PPP agreement; - contract should clearly stipulate how to deal with changes imposed by regulators as opposed to those created by other external circumstances or the will of the contracting parties. - PPP agreement to specify the applicable law and jurisdiction, as well as dispute resolution mechanisms; - PPP agreement to include clause stipulating the mechanism for tariff adjustments.

Environmental	Harmful effects to human health or to ecological systems resulting from exposure to an environmental stressor.	- Fines and administrative penalties; - Implementation of compensatory and corrective measures; - Capex and/or Opex overruns.	**Private Operator** (except in service and management contracts but only if the risk isn't borne due to private operation).	- Due diligence to include an Environmental Impact Assessment (EIA) and proper management plan; - Construction and operations subcontracts to include environmental management and indemnification. - PPP agreement to specify the applicable law and jurisdiction, as well as dispute resolution mechanisms; - PPP agreement to include clause stipulating the mechanism for tariff adjustments.
Sovereign or Political	Government policy changes, unilateral interference on the contract, expropriates assets, implements exchange controls or enforces other non-contractual disciplines.	Reduction of the value of the project to the private investor.	**Public sector** has overall responsibility for sovereign and political risk.	- PPP agreement to relieve the operator from responsibility in case of «unforeseeable discriminatory government conduct»; - PPP agreement to include a breach clause, a termination clause and lenders' step-in rights; - Include multilateral organizations among the shareholders or lenders; - Financial involvement of sponsors or lenders from the host country; - Recourse to the export credit agencies, which act as guarantors for the political risk during the loan period. - Actual insurance to hedge certain specific risks, to be obtained from public insurers such as MIGA or private insurance companies. NOTE: Sovereign risks includes: 1. Currency Inconvertibility and Transfer Restriction 2. Expropriation 3. War, Terrorism, and Civil Disturbance 4. Breach of Contract 5. Non-Honoring of Financial Obligations

Annex VI – Suggested Key Performance Indicators

Policy goals and objectives should provide the basis for defining the appropriate key performance indicators (KPIs). Establishing well defined policy goals with subsequent use of appropriate KPIs in the PPP agreements are key criteria for successful PPP projects since they permit essential decisions concerning the rationale and feasibility of possible PPP arrangements.

There are some important principle for defining and selecting KPIs:

- The KPIs should support the achievement of policy goals/objectives, and demonstrate the extent of improvement;
- The KPIs should be defined precisely and measurable
- It should be clear how the private sector shall report on individual KPIs, how technical auditors shall verify the PIs;
- There should be a reasonable relationship between the cost of measuring and consolidating the KPIs, their relation to the policy objectives, and the possible incentives and penalties;
- The public sector should have or secure the capacity to review the KPIs of the contract in addition to the contract cost elements ,
- The progress/improvements measured by the KPIs should reflect planned capital investments and asset maintenance to be undertaken by the private sector;
- Average or weighted average figures for targets should be used with caution particularly for KPIs with a large number of data parameters (such as for instance water quality and customer relations);

Penalties and incentives (for services requirements, performance and delays) should be clearly stipulated in contracts (with a maximum cap).

Basic service performance indicator categories for water distribution include:

- Coverage of households or other potential customers;
- Quantity of water provided and consumed;
- Water quality and environmental compliance;
- Water pressure and reliability of pressure;
- Non revenue water
- In case of intermittent provision, service frequency/ supply disruption;
- Rehabilitation of pipelines
- Customer service response times;
- Customer satisfaction with different aspects of service;
- Affordability
- Economic indicators.

Basic wastewater performance indicators include:

- Coverage of households, kiosks and other potential customers;
- Adequacy of treatment capacity
- Service quality and reliability (frequency of sewage and overflows or frequency of collection of sewage from holding tanks);
- Occurrence of structural collapses in collectors
- Rehabilitation of collectors
- Customer service response times;
- Affordability;
- Level of treatment and quality of outflows of treatment plants to the environment.
- Economic indicators
- Sludge treatment Destination

Annex VII – Case study Examples Examined

	Project	Country	Region	PPP Type
1	Buenos Aires concession	Argentina	Latin America	Concession
2	Yerevan Djur lease contract	Armenia	Asia	Lease
3	Cochabamba concession	Bolivia	Latin America	Concession
4	Cartagena affermage contract	Colombia	Latin America	Affermage
5	Havana management contract	Cuba	Central America	Management contract, Concession
6	Cairo wastewater treatment plant	Egypt	Middle East	BOT
7	Samra wastewater treatment plant	Jordan	Middle East	BOT
8	Tripoli management contract	Lebanon	Middle East	Management contract
9	Casablanca concession	Morocco	Middle East	Concession
10	Manila concession	Philippines	Asia	Concession
11	Portugal concessions	Portugal	Europe	Concession
12	Senegal affermage contract	Senegal	Africa	Affermage
13	Lake Pleasant (AZ) water treatment plant	United States	North America	DBO