

Project Finance 1

H2020 CBP Course
Regional Training

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Introduction

- Great demand for solutions to wastewater treatment
- Increasing role wastewater treatment plays or will play in making treated wastewater reusable for specific needs
- This poses financial burden to the budgets of individual governments

It is essential to look for innovative ways to finance the infrastructure for such projects

Extent of Wastewater Needs

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- In developing countries approximately six children per minute still die from diseases caused by unsafe water and inadequate sanitation.
 - Deterioration of the aquatic environment is visible around the globe.
 - In most of the UNEP Regional Seas the discharge of untreated domestic wastewater has been identified as a major source of environmental pollution.

Coral reefs, precious habitats, biodiversity, fishing, and income from tourism are adversely affected

Extent of Wastewater Needs

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- According to MDG goals, it is estimated that 2025 projected wastewater treatment needs are in the order of USD 72 billion annually as additional for wastewater treatment, household sanitation and hygiene. Of the USD 72 billion, USD 56 billion is required for wastewater treatment alone (Vision 21).

Compared to the current spending of USD 14 billion annually, an increase in investment of 4 to 5 folds is required to reach the sanitation target within the wastewater sector.

Conventional Public Finance

- Conventional contracts are EPC: Engineer & Procure
- Governments fund their projects by:
 - using existing funds
 - issuing debt (government bonds)
 - borrowing funds totally or partially
- In order to borrow, a government gives a sovereign guarantee to lenders to repay these loans

This shows as a liability on Government's list of financial obligations, →affecting its credit rating

Conventional Public Finance

- Lenders analyze Government's total ability to raise funds for repayment of the loan through taxation and/or general public enterprise revenues, including new tariff revenue from the project, i.e. through taxpayers or users, or both
- Donors may impose certain covenants pertaining to the utility and may dictate certain terms that go beyond the project itself

This funding taxes already strained government own balance sheets limiting its ability to undertake other projects

Alternate Methods of Finance

	<u><i>Funding Source</i></u>	<u><i>Contract Type</i></u>
➤ Public Funds	Budget Grants Loans	EPC Mgt Contract Lease
➤ Private Funds	Private banks M L A	BOO/Private BOT Concession

Drivers for Private Finance

- Capital investment required to build modern wastewater treatment plants remains high
Most governments cannot afford such investment, and prefer to use funds for more socially desirable projects
- Introduction of more commercial methods and approaches in the way public utilities are financed and operated,
Hence improved efficiencies in operations and cost recovery
- Private sector finance can reduce the cost of treatment through competition, efficiency, and introducing more integrated solutions, eg
Biosolids to fuel plants, utilization of grey water, or accessing new revenue schemes such as capitalization on the revenue potential of dry sludge

Basic Criteria for PPP

- **Enabling framework** (legislative, regulatory, political... throughout life of project)
- **Well dimensioned, economically relevant project** (social economic need, correct investment size, proven technology)
- **Responsible reliable public party** (decision maker, undertakings, e.g. off-taker, involvement of stakeholders)(country/utility ratings)
- **Motivated, experienced private party** (ability to sustain project-related undertakings, track-record & finances, interest – risk/reward and short term vs long term)
- **Clear and flexible contract** (clear rules, adjustments in the course, benchmark e.g. termination, arbitration, etc.)
- **Smart financing structure** (efficient management and allocation of risks, FOREX, Packaging security, O&M and EPC)

The Project is Bankable once these are met

Understanding PPP

- Responsibility for arranging project financing lies with the private sector participant(s)
- All stakeholders must understand the process when evaluating the value for money conditions *in PPP projects*
- Understanding the process will assist public managers in both, managing transaction advisors and in negotiating with private sector parties
- The processes and structures used in the financing of projects are dynamic and continue to evolve, so

All stakeholders need to be flexible

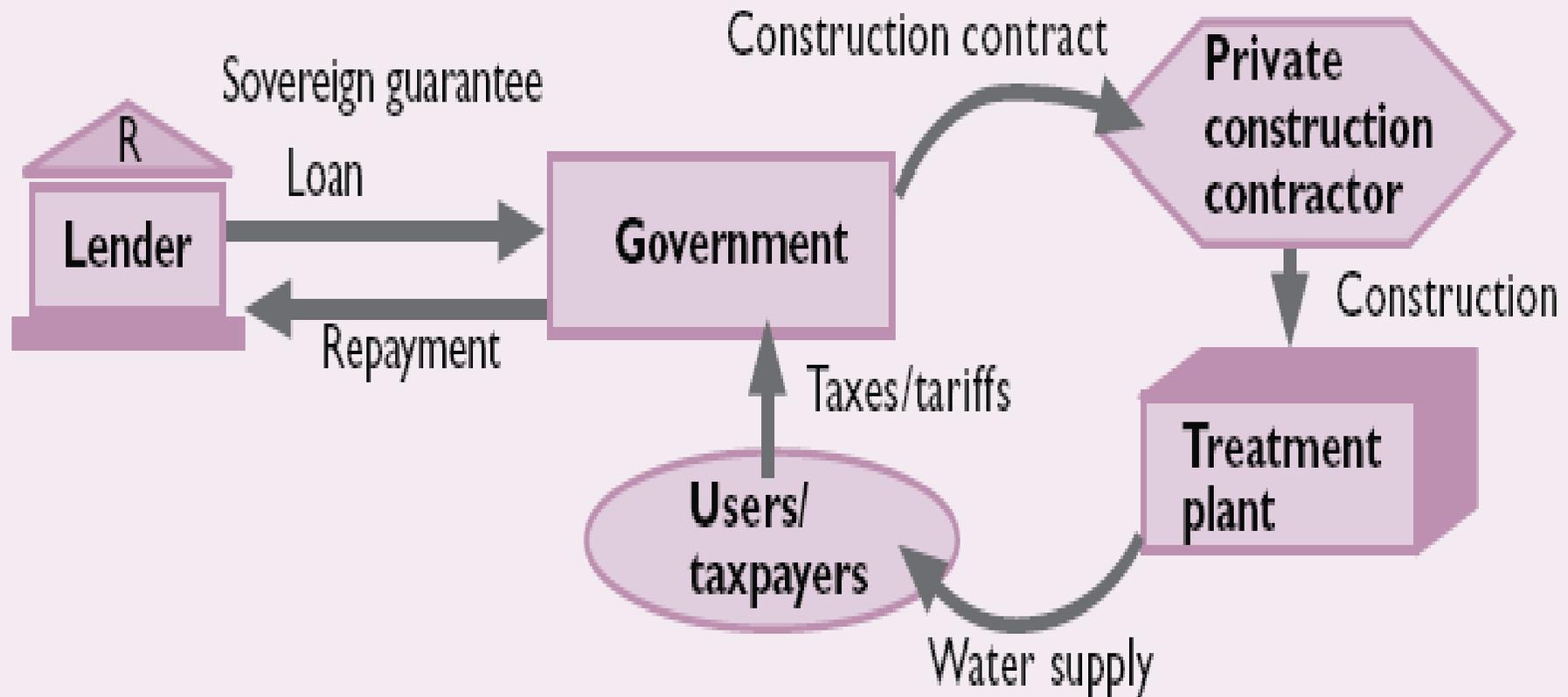
Structuring Finance

The three primary finance options and their structures include:

- Public Finance
- Corporate Finance
- Project Finance

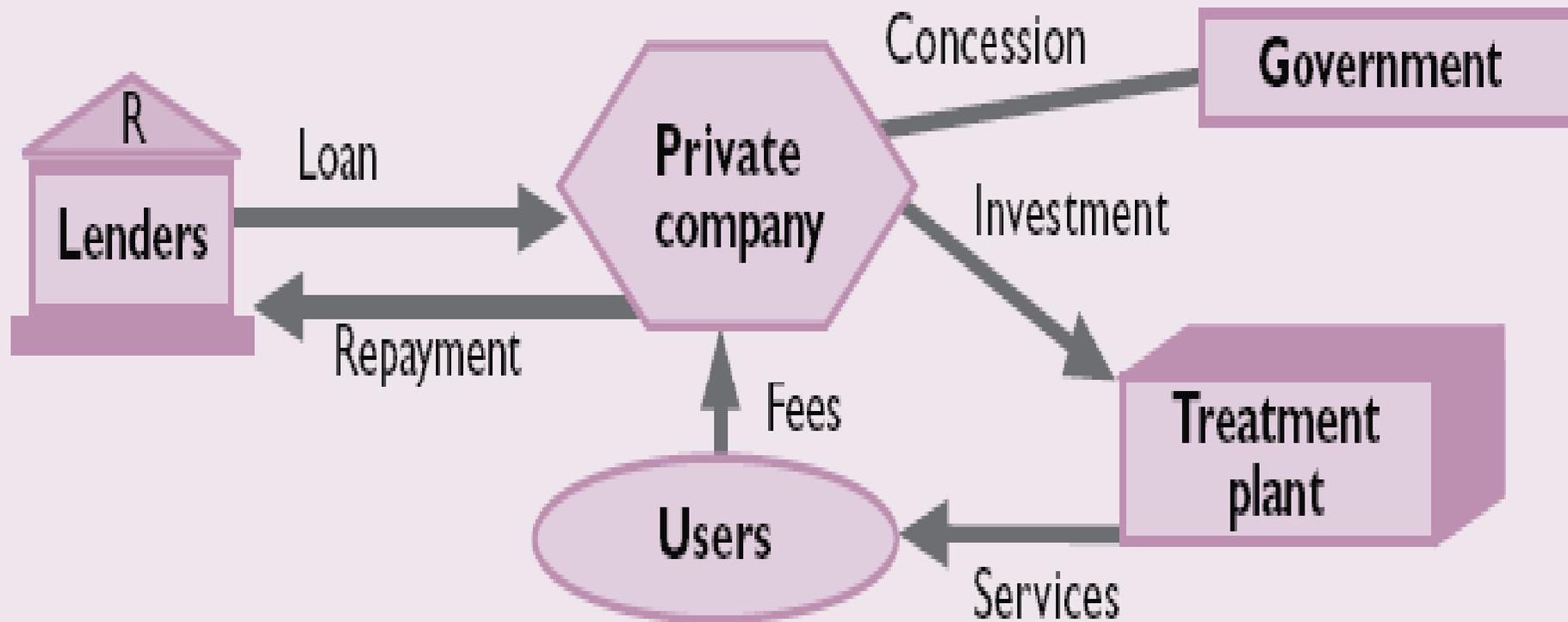
Public Finance Structure

(Source: Project Finance Manual, National Treasury South Africa 2001)



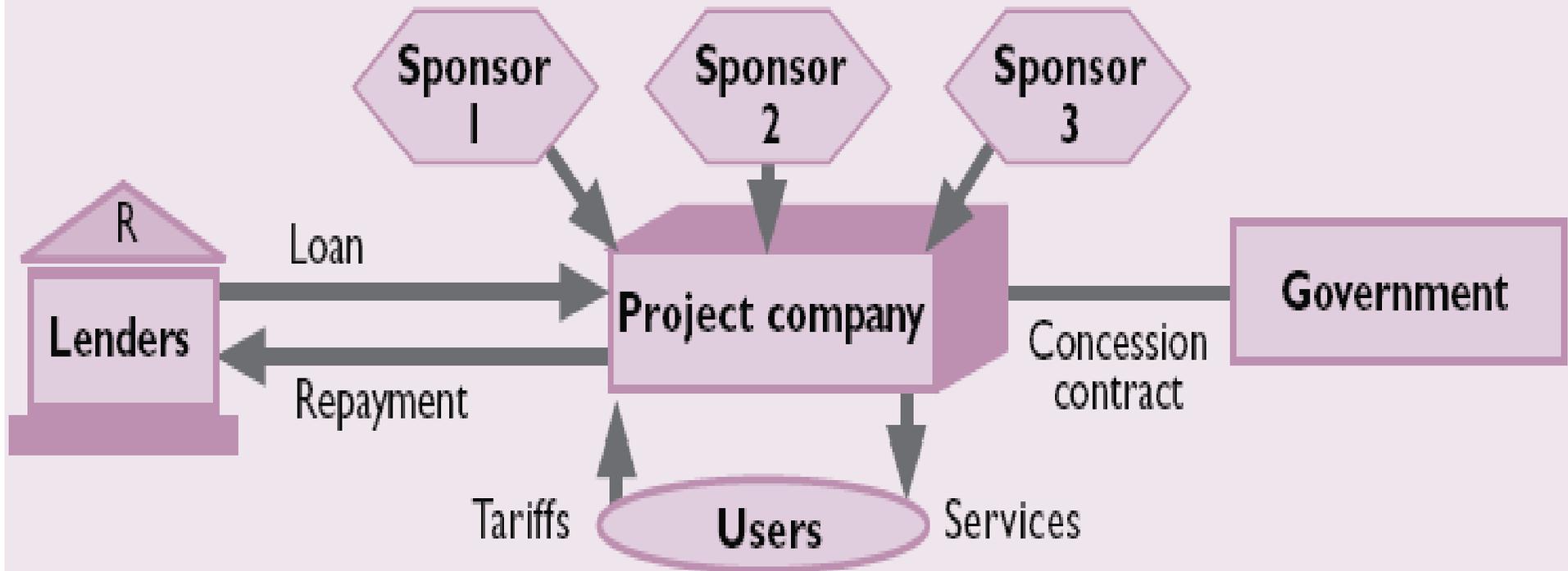
Corporate Finance Structure

(Source: Project Finance Manual, National Treasury South Africa 2001)



Project Finance Structure

(Source: Project Finance Manual, National Treasury South Africa 2001)



Investor profiles

Investor profiles vary widely from project to project

- **Promoter**, usually government departments in need
- **Sponsors**, construction, supply, management companies
- **Equity funds**, may include local unit trusts or foreign equity funds with social objectives
- **Banks, at least as short term lenders**, frequently as long term lenders and financial arrangers. Though they raise debt but may also raise equity
- **Non-bank financial institutions**, like pension funds and insurers
- **Suppliers**, in the form of short to medium term, and may also be sponsors with equity
- **End-user**, prepayment for future delivery of service but more often take or pay contracts
- **Government**, not necessarily direct but could be indirect like guarantees, take or pay
- **Management and employees**, may promote or sponsor ► given priority to service
- **Public participation**, usually at operating stage

The party (or parties) responsible for funding must contact as many potential investors as possible early in the process. This reduces the cost of financing by increasing the potential investor base.

Financing Strategies

- Sponsors are responsible for developing the financing strategy.
- Sponsors usually hire a financial adviser (e.g. investment or merchant bank) to design the strategy.
- Advisers must have the technical expertise, contacts, track record and innovative thinking necessary for planning and implementing complex strategies.
- In conjunction with the sponsors, advisers explore and contact potential sources of finance, and analyse the opportunities and methods for diverting risk from sponsors while maximising the project's ability to leverage or maximise its gearing ratio.
- Financing strategy is based on the cash flow requirements of the project and includes multiple sources of funds.
- The long- and short-term options for funding are used extensively from the inception phase through the termination of a project.

Department managers should be fully aware of various potential investor strategies, allowing them to focus when negotiating

Risks

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- **Availability risk**, services may be less than required. Private sector is penalized.
 - **Completion (technical and timing) risk**, construction and design risk. Bond.
 - **Counterparty credit risk**, most obvious and common associated with other parties to the agreement unable to deliver. Due diligence is done and obtaining performance bond.
 - **Country (political) risk**, investors review history and watch carefully to stop funds or take steps to repatriate funds. Insurance.
 - **Currency risk**, part of construction and operating risk when revenue and expenses are in different currencies. Laws mitigate this but best managed by hedging, agreeing with suppliers on fixed rates but also can be mitigated by arranging a portion to be paid in relevant foreign currency or borrow as much as possible in local currency.
 - **Force majeure risk**, natural or manmade . It's accounted for when valuing the project and deciding on the required rate of return. Insurance.
 - **Inflation risk**, when actual inflation exceeds projected risk. Mitigated by indexing.
 - **Input and throughput risk**, when viability depends on supply of sufficient natural resources. Proper due diligence.

Risks

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- **Market (demand) risk**, may be affected by increases in cost of raw materials, development of substitute service, overall economic conditions, government policy (taxes), political developments, and environmental concerns. Mitigated by requesting certain conditions in agreement such as automatic rate increases, take or pay, etc..
 - **Operating risk**, applies to certain resources. May be directly controlled by management (labor issues) or external (exchange rates on imported supplies). Mitigated by good labor relations, long term fixed supply contracts, insurance, and adherence to environmental and other laws and regulations.
 - **Regulatory risk**, applies to regulated projects with risk ranging from complete disallowance to recover costs to regulatory lag. Controlled by stipulating in agreement that volatile cost factors are automatically passed on to customers.
 - **Residual value risk**, applies only to projects when value is fixed to assets upon handing over to public sector at end of project. Mitigate by assigning a residual value up front.
 - **Resource risk**, when natural resources required in the project are not of the expected quality or quantity. Mitigate by due diligence.
 - **Technology risk**, possible changes in technology resulting in providing service being provided with suboptimal technologies. Contracts may address this and corrective measures are set up.

References

Mainly: Project Finance Manual, Version 1,
National Treasury, South Africa, 2001

Also: UNEP Publications on MDG Goals

Others: As shown

THANK YOU

Project Finance 2

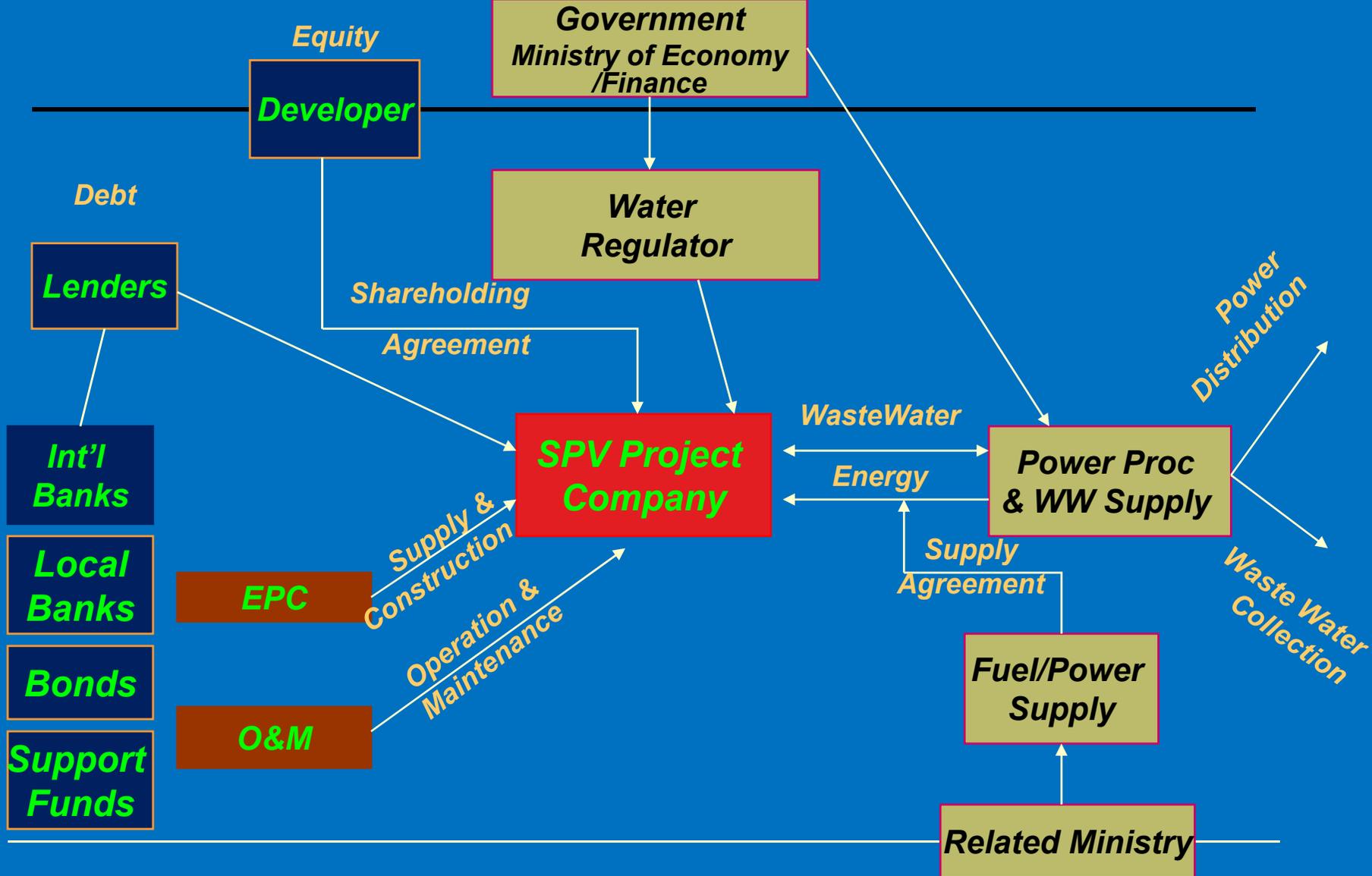
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PPP BASIC BOT MODEL



Mitigation of Risks in WWT Projects

Supply, Construction & Operation

- Secure & maintain supplies: Due diligence
- Changes in feed quality: Due diligence
- Overrun in plant completion: Delivery ↓
- Overrun in Operating costs: Training
- Performance failures: Due diligence
- Environmental failures: Due diligence

Mitigation of Risks in WWT Projects

Off-taker and Financial

- Failure to supply: Sensitivity analysis of demand
- Failure to pay: Default, provisions through credit enhancement like multilateral risk guarantee
- Failure to increase rates: Default, provisions through political risk insurance
- Failure of customers to pay: Cut off other services, financially covered through escrow of receivables
- Interest and exchange rates: Sensitivity analysis of interest and FX rates. **Use of local finance sources**

Mitigation of Risks in WWT Projects

Force Majeure

- Natural causes: Cover by commercial insurance
- Government actions, such as expropriation, law changes and FX inconvertibility: Cover by government's political risk insurance
- Action against government: Cover by political risk insurance but requires negotiations to allocate payments and performance obligations

Positive Impacts on PSP Models

- Government participation in co-financing
- Local finance
- Long term/short term finance hybridization
- Subsidy as a short term measure
- Tradable bonds
- Setting a fixed ROI in tendering
- Governance and independent regulator

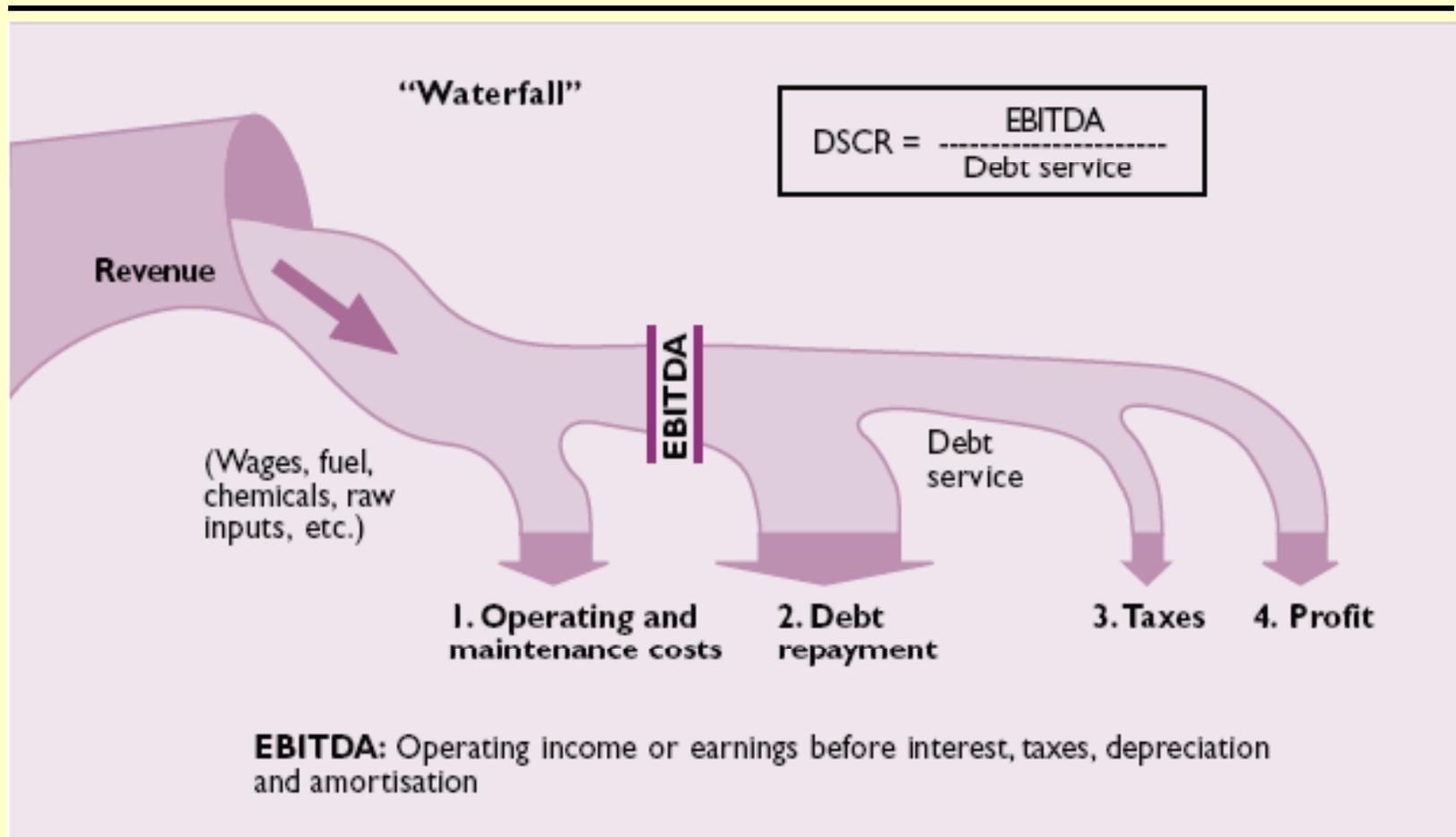
Negative Impacts on PSP Models

- Tariff levels
- Affordability
- Subsidy as a long term measure
- Disagreement on what a realistic ROI is
- Absence of governance and independent regulation

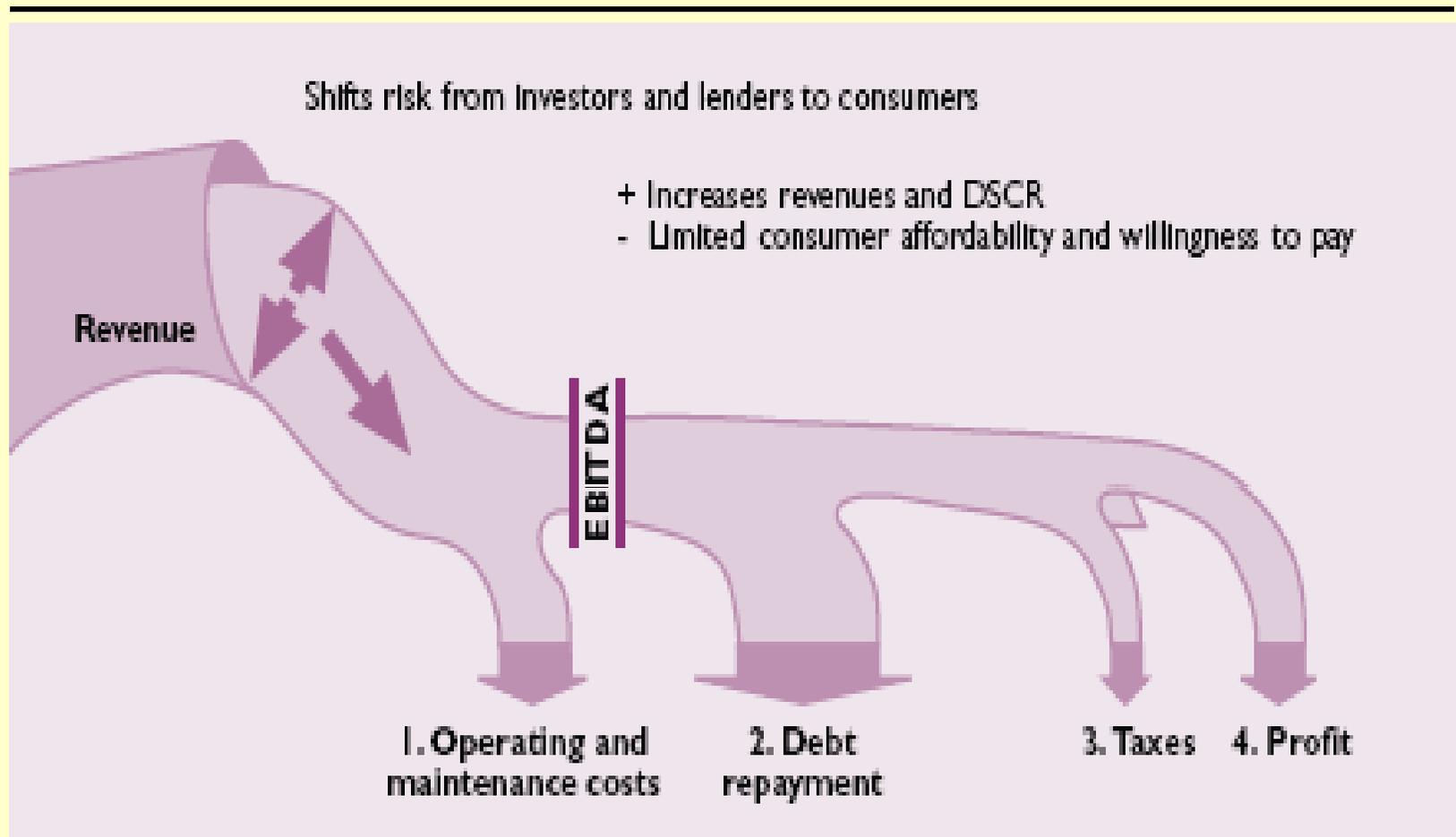
Lesson learned by the Private Sector: NO ULTIMATE GUARANTEE

- Although risk allocation and coverage may lead to risk mitigation, in reality they are risk reduction measures
- Although risk allocation and coverage do indeed lead to risk mitigation, there is no real guarantee against government default

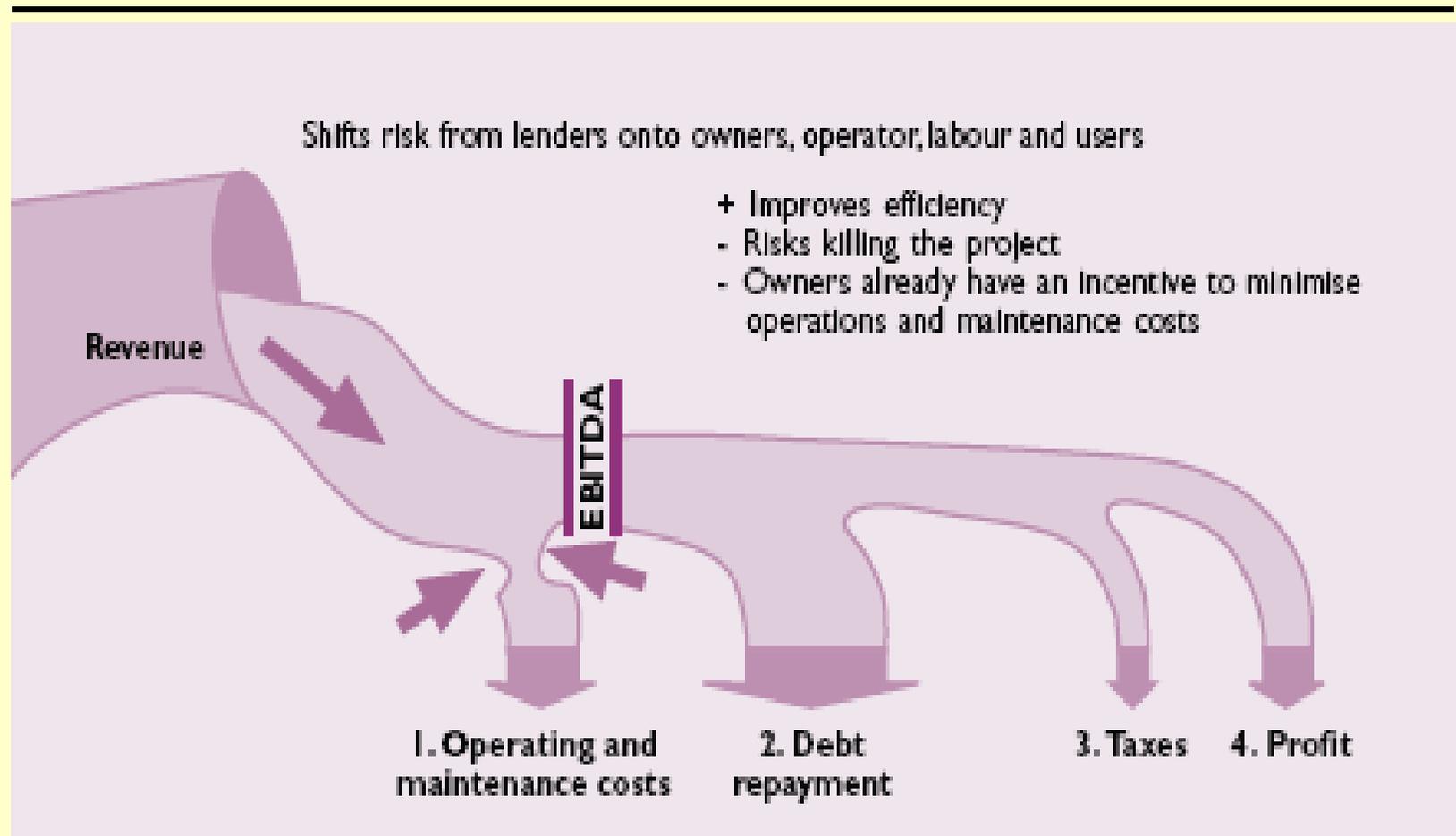
Debt Service Coverage Chart



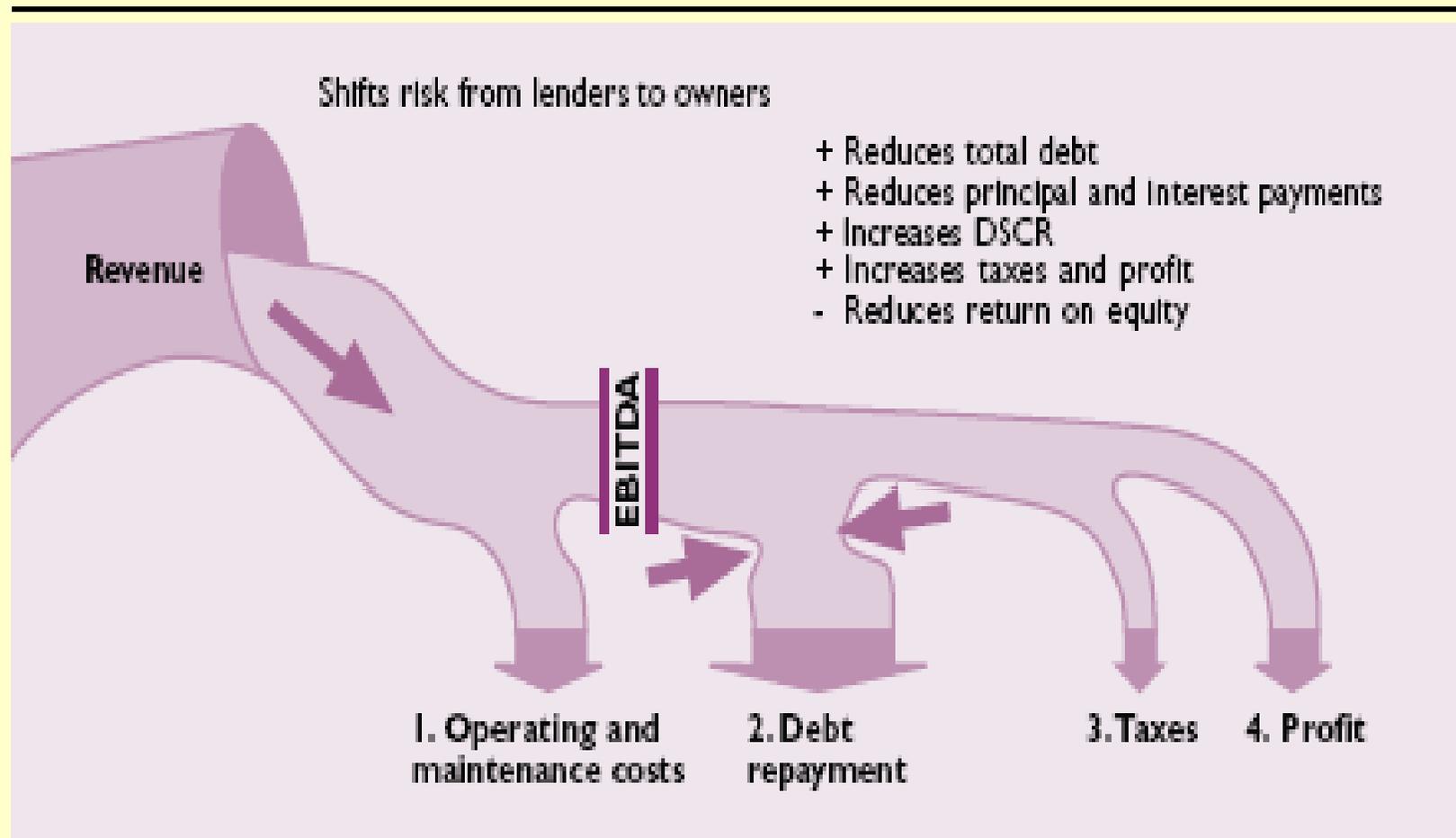
Tariff Increase



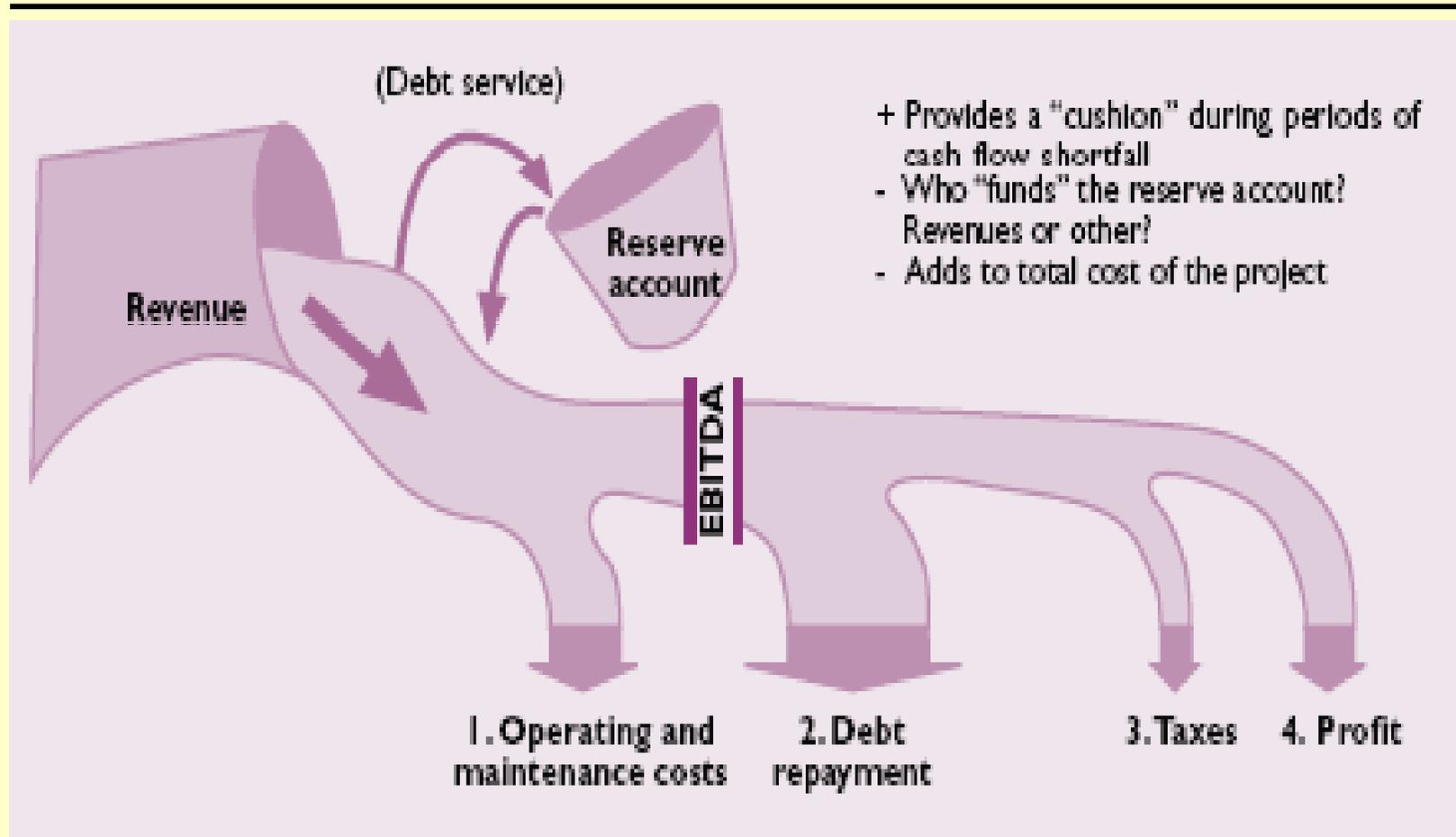
Reducing O&M Costs



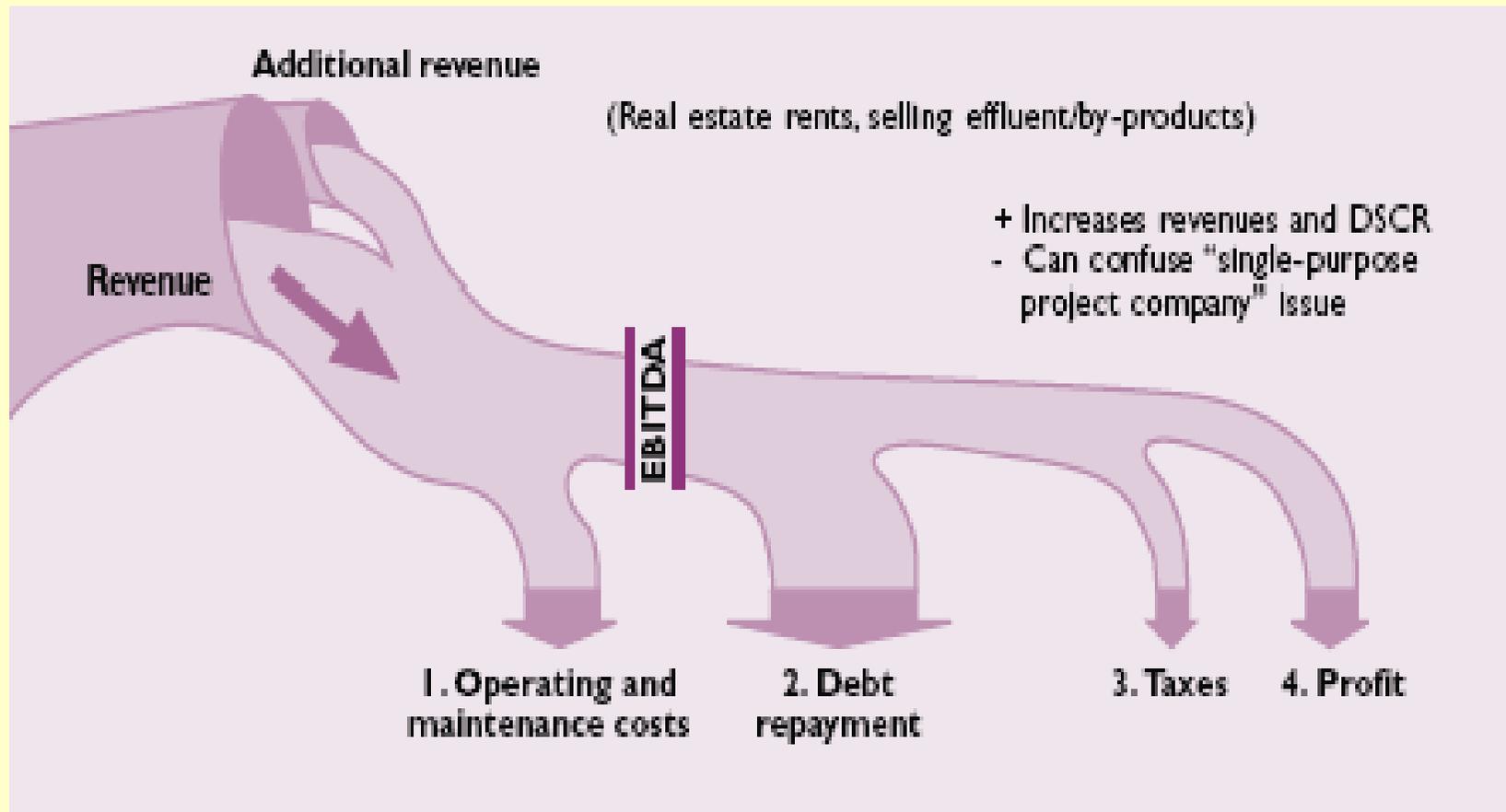
Increasing Equity Participation



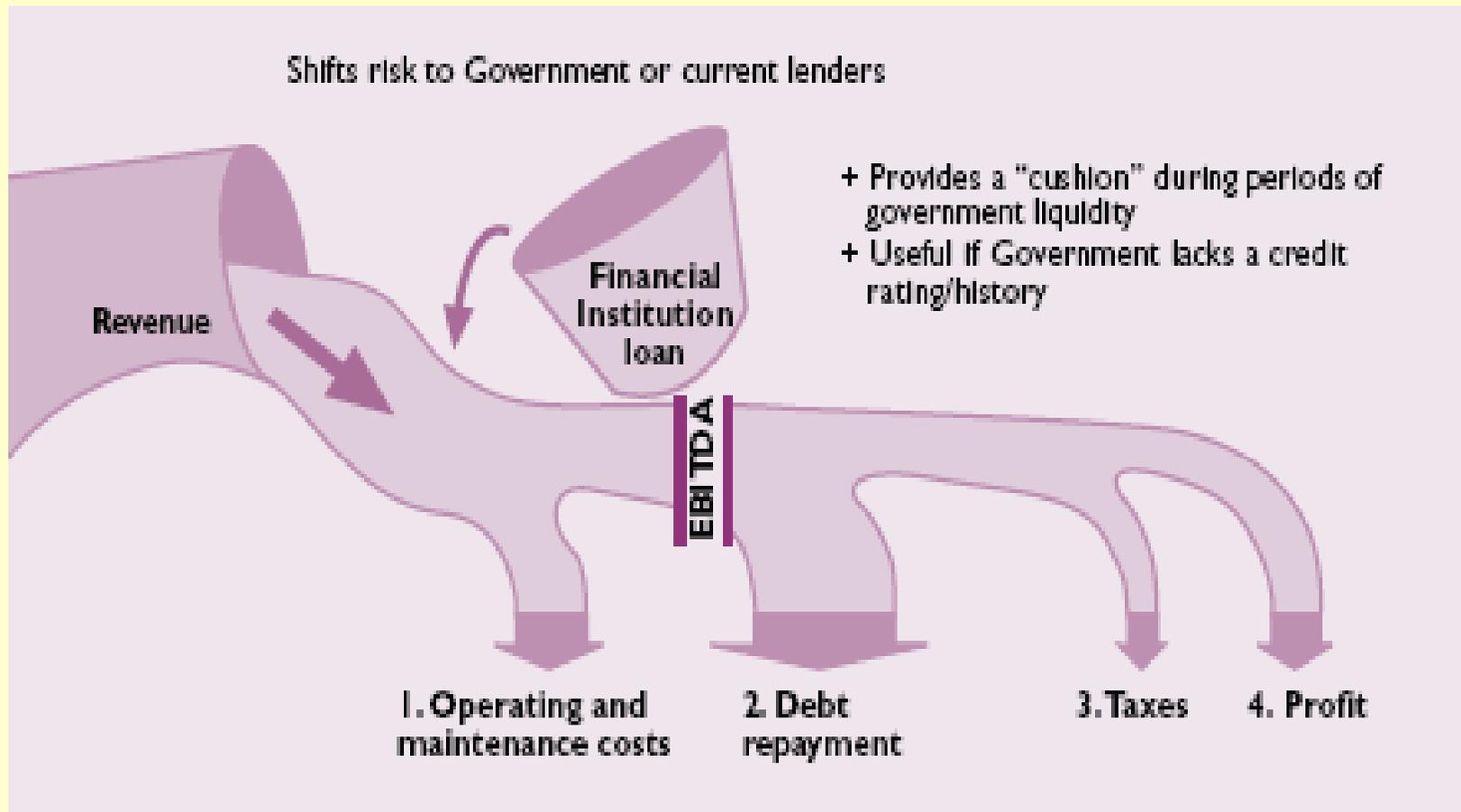
Establishing Reserve Account



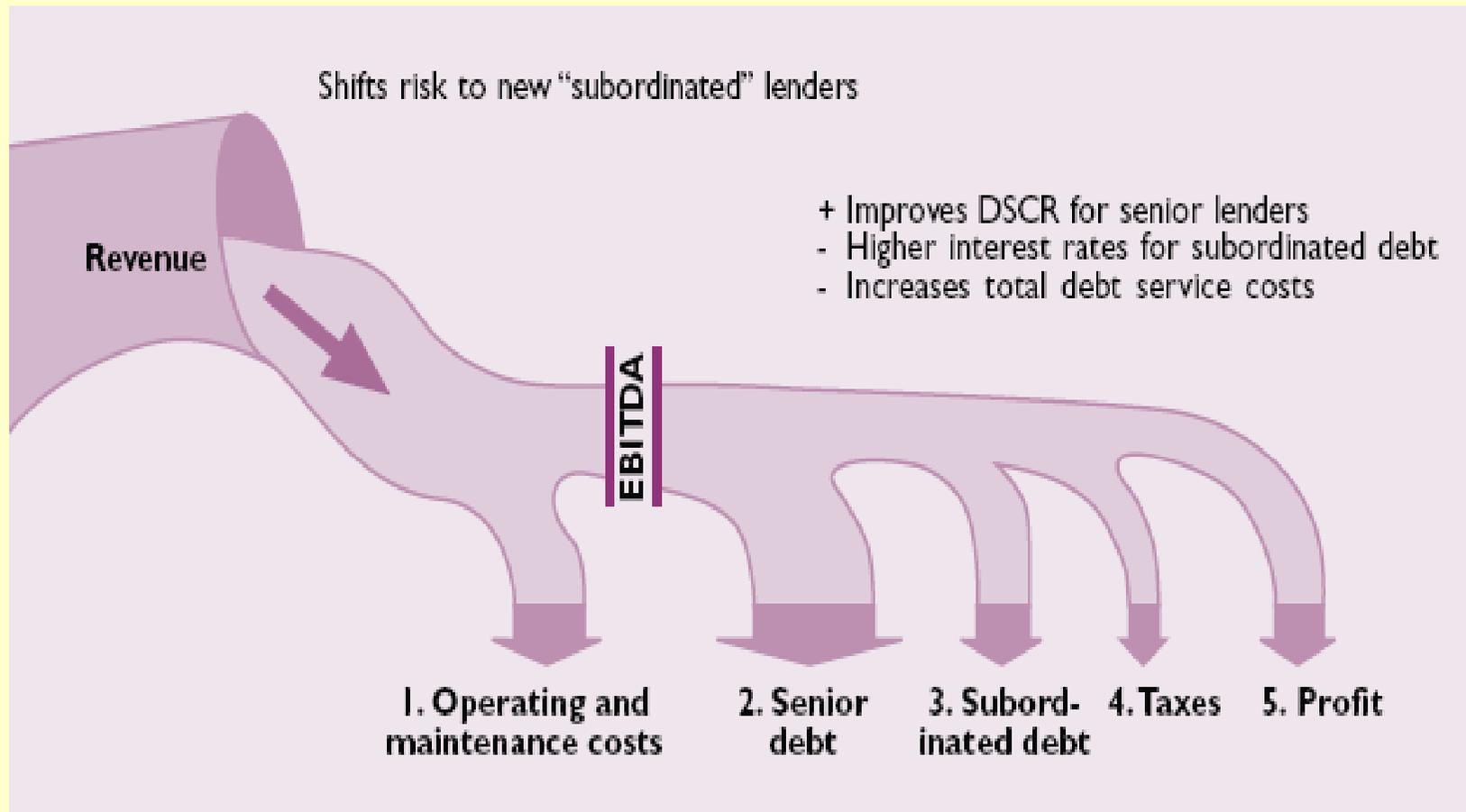
Additional Revenue Sources



Adding a Performance Guarantee by a Financial Institution



Creating a Mezzanine Level of Subordinated Debt



Jordan's First BOT Experience in Constructing the Biggest Wastewater Treatment Plant

Project Description

- 25 year Build, Operate and Transfer (BOT) contract for a Wastewater Treatment Plant to be built at As Samra***
- Expand, Operate, Maintain and Transfer Pre-treatment Plant (Ain-Ghazal)***
- Operate, Maintain and Transfer the Siphons from Ain Ghazal Pre-treatment Plant to the Plant, and pumping stations at Hashimiyya and West Zarqa.***
- Treat Wastewater generated in Greater Amman area including Russeifa, Zarqa and Hashimiyya: population 2.3 million***

Executed with the Government of Jordan (“GOJ”) represented by the Ministry of Water & Irrigation (“MWI”)

Key Terms of the Project Agreement

- *MWI Contribution (USAID grant) payable on Completion of Sections*
- *Treatment Charges payable when first (of four) Treatment Lines brought into Operation after 30 months*
- *Treatment Charges (Fixed and Variable) structured to match Project Company’s Liabilities*
- *Payment Assurance Scheme to address any revenue shortfall*

Financing Plan & Sponsors' Undertakings

Mixed Financing

Financing Plan:

- *MWI contribution 50% \$92 M (GOJ \$14 M + AID \$78 M)*
- *SPC : Minimum 20% of project costs in equity & 30% of project costs in commercial financing.*

Sponsors' Undertaking:

- *Equity Investment ~11%*
- *Equity Guarantee \$ 15.5 M ~ 9%*
- *Commercial Loan (11 Jor Banks & Fin Institutions \$ (45M+15.5M)*
- *Performance Guarantee \$ 15 Million*
- *Post completion, Commercial loan guaranteed by the Gov.*
- *USAID Mother Companies Repayment Guarantee*

Project Company Revenues

Fixed Treatment Charge

Payable monthly, made up of five parts to reflect:

- *Repayment of Principal of Project Loan*
- *Interest on Project Term Loan*
- *Principal and Interest on Shareholder Loans, Dividends (linked to USD/JD exchange rate)*
- *Fixed Renewal cost (indexed)*
- *Fixed Operating Costs (indexed on local inflation)*

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Variable Treatment Charge

Payable monthly, and made up of two parts to reflect:

- *Additional Volume of Influent (above 160,000 m³/day)*
- *Additional Pollution of Influent (BOD₅ above 0.55kg/m³)*

Treatment Charges: Structure

Fixed Part

Fix (Cap) +II. Fix I (Cap)+ IC. Fix F (Cap)+ IL. Fix (Op) +IR.ICFixR(Op)

Fix (Cap) : Repayment of Senior Debt

Fix I (Cap) : Payment of Senior Debt Interests

Fix F (Cap) : Remuneration of Sponsors Investment

IR. Fix R (Op) : Payment of Fixed Renewal Expenditures

IL. Fix (Op) : Payment of Fixed Operation Expenditures

Variable Part

IL.{(A.(Vp-160))+B[(Xp.(Vp-160))+160.(Xp-0.55)]}

IL.A.(Vp-160) : Payment of Variable OPEX (Flow)

IL.B.(Xp.(Vp-160))+160.(Xp-0.55) : Payment of Variable OPEX (Load)

Indices

II= Interest rate index

IC=Currency Exchange rate index JD/USD

IR=Renewal Index – Construction & Machinery index

IL=(50% X ALm/A0) + (40% X BLm/B0) + (10% X CLm / C0)

A-Labour Index B-Producer price index C-Electricity Index

Risk Sharing/Project Company's Exposure

1. During Construction

- *Equity Investments up to JD 22 Millions*
- *No profit for acceleration of Works*
- *Liquidated damages for completion delay*
- *Mother Companies guarantee for MWI contribution*
- *Performance guarantee*
- *Insurance ~ value of MWI Properties*

2. During Operation

- *Insurance ~ value of MWI Properties*
- *Performance Guarantee*
- *Liquidated damages for violating standards & no payment for treatment*

Valuable Rules/Lessons Learnt

Make sure that:

- *Government/Owner is fully committed to project. No changes in policy or personnel involved in the project*
- *Enabling Legislation is in place (WAJ Law, Investment Promotion Law)*
- *Well prepared documentation*
 - Feasibility Study and EIA*
 - Pre-qualification*
 - Invitation to Tender*
 - Draft Agreements with sensible risk allocation*
- *Transparent and comprehensible evaluation procedure*
- *Limited number of strong consortia prequalified, 5max.*
- *Timetable is realistic and deadlines are achieved*

Valuable Rules/Lessons Learnt

Make sure that:

- *Momentum is maintained, support at high levels, quick decision making and flexibility*
- *Government is perceived to be able to meet its long term commitments by providing securities*
- *For maximum leverage Government should contribute as little as necessary say 20-50% of total Project Costs (subject to a minimum of say \$20 million)*
 1. *to make the project affordable to both Government and other stakeholders*
 2. *enough to attract bidders*

Project that Makes Many Firsts

The FIRST:

- *BOT Project in Jordan*
- *The electricity Self-sufficient Wastewater treatment plant*
- *Mix financed project (Government, Donors “USAID”, Sponsors and Lenders)*
- *Project under private involvement financed by Jordanian Banks*
- *Comprehensive environmental project (full cycle) conveyance, treatment and reuse of by products (water, sludge, hydropower and gas)*