

Sustainable Water Integrated Management (SWIM) Regional Training Event

**Funded by the EU European Neighbourhood and Partnership
Instrument (ENPI) South/Environment.**

**TRAINING ON EVALUATING AND STRUCTURING PPPs
IN THE WATER SECTOR**

Day 3

**Public-Private Interaction, Pre-tendering, Tendering, Award,
Negotiations, Construction and Performance Monitoring**

As-Samra Walk Through

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8 -10 June 2015, Dead Sea (Jordan)

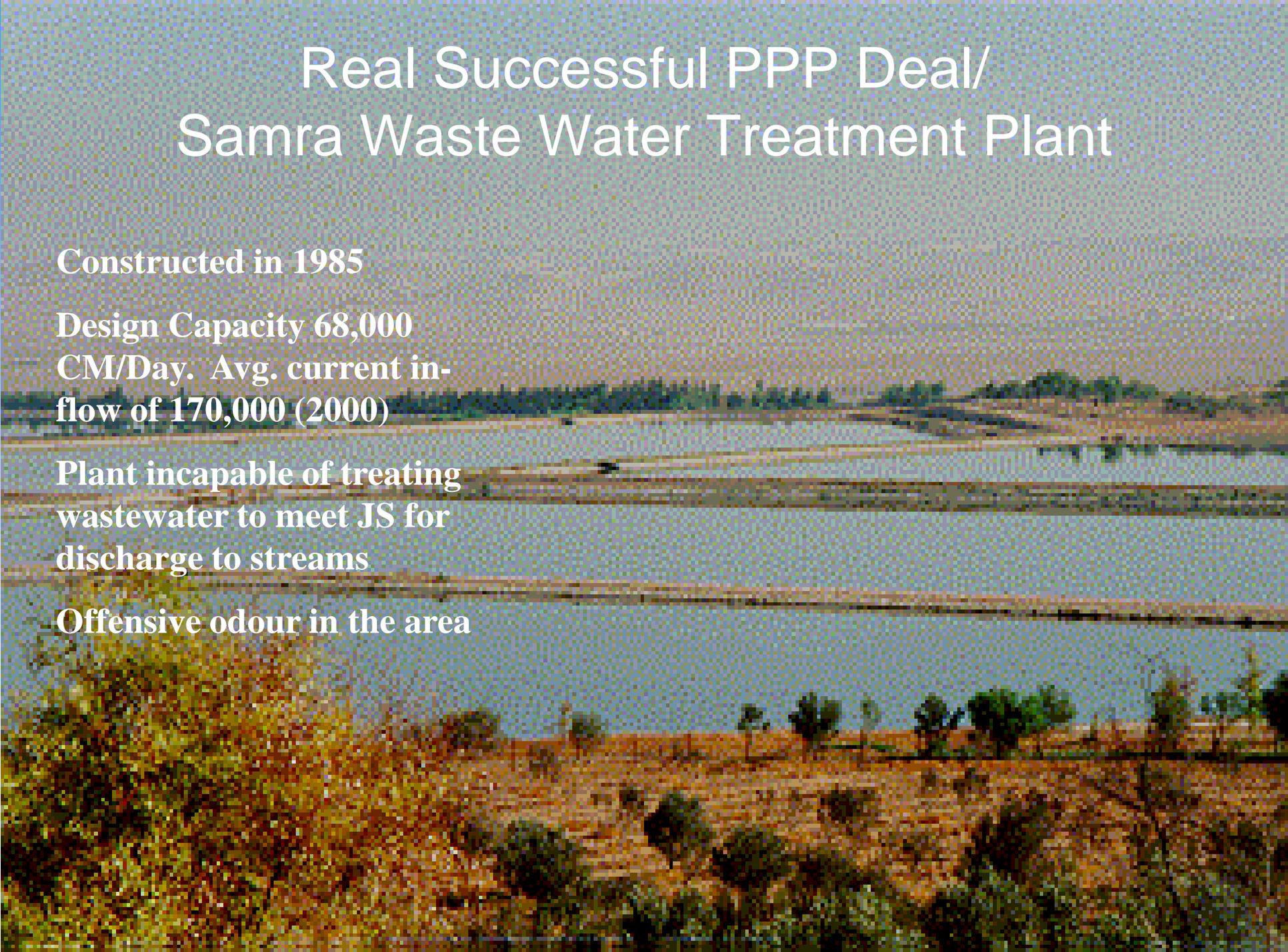
Real Successful PPP Deal/ Samra Waste Water Treatment Plant

Constructed in 1985

**Design Capacity 68,000
CM/Day. Avg. current in-
flow of 170,000 (2000)**

**Plant incapable of treating
wastewater to meet JS for
discharge to streams**

Offensive odour in the area



Project Selection

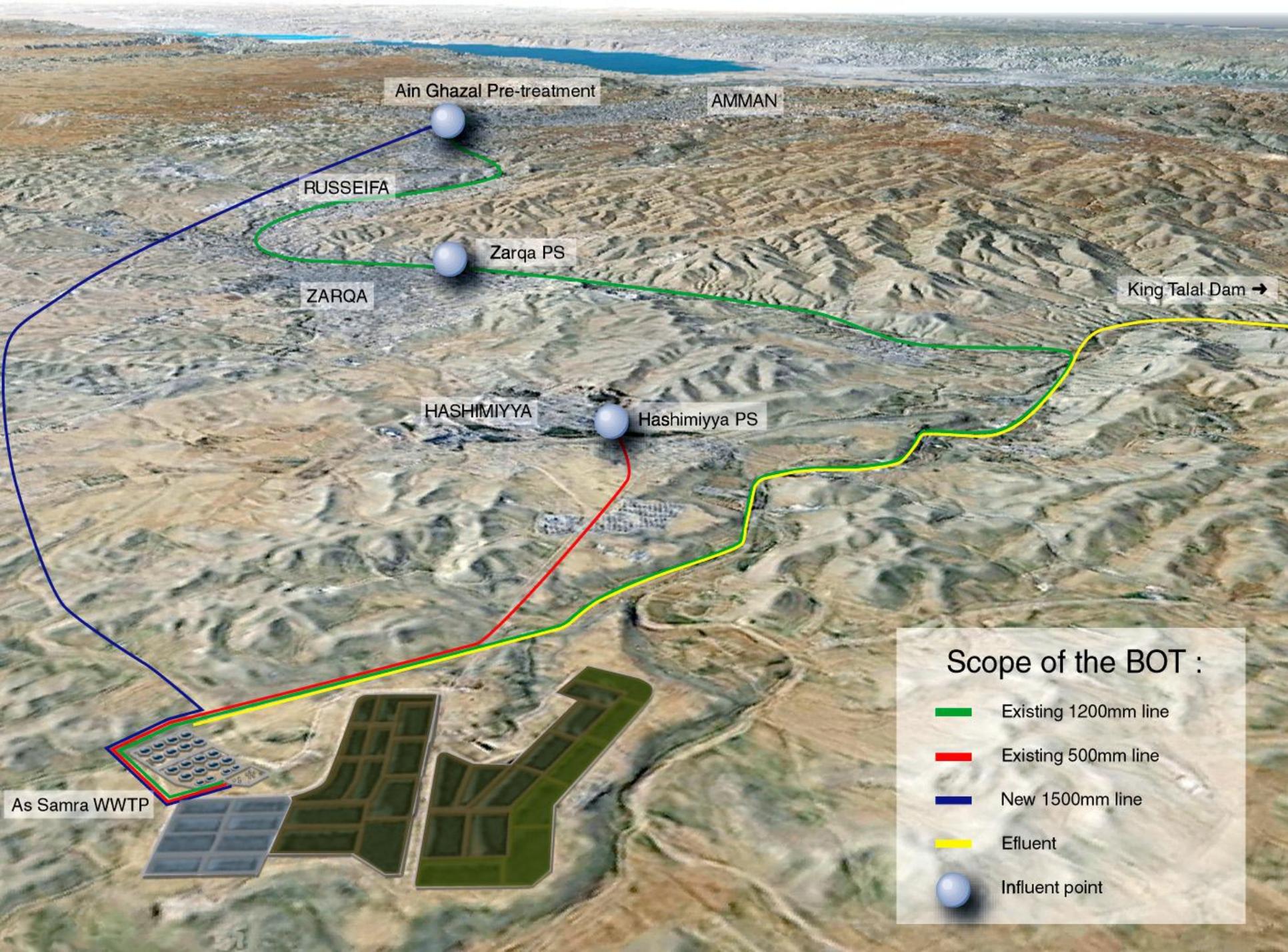
- Samra ponds was constructed in 1985 with design capacity of 68,000 m³/day
- Average influent reached 170,000 m³/day.
- Wastewater strength is 2-3 times the average European wastewater strength.
- Plant incapable of treating the wastewater to Jordanian Standards for discharges into streams/wadis. Plant effluent discharged into Wadi Duhliel, then 35 kms along Zarqa River into King Talal Reservoir (70 MCM maximum capacity).
- Wadi Duhliel & Zarqa River used for crop irrigation & King Talal Reservoir water used for irrigation in Jordan Valley.
- Effluent quality adversely affecting the whole area and polluting KTR causing limitation to water use

Setting Project Objectives

- Improve the Wastewater services in Amman Area
- Establish environmentally friendly treatment plant with elimination of offensive odors in the area, safe use of treated wastewater and bio-solids treatment and disposal.
- Achieve the desired improvements with reasonable costs to optimize the use of public funds
- Improve water quality in Wadi Dhleil , Zaqa river and King Talal reservoir
- Technology and knowhow transfer
- Cost efficiency based on competition between treatment technologies

Project Description

- 25 year Build, Operate and Transfer (BOT) contract for a Wastewater Treatment Plant to be built at As Samra
- Expand Ain-Ghazal Pre-treatment Plant/ *added during negotiations*
- Operation & Maintenance of Ain Ghazal Pre-treatment Plant, Siphons from Ain Ghazal Pre-treatment Plant to the Plant, and pumping stations at Hashimiyya and West Zarqa.
- Treat effluent of Greater Amman area including Russeifa, Zarqa and Hashimiyya: current population served 2.2 million



Ain Ghazal Pre-treatment

AMMAN

RUSSEIFA

Zarqa PS

ZARQA

King Talal Dam →

HASHIMIYYA

Hashimiyya PS

Scope of the BOT :

Existing 1200mm line

Existing 500mm line

New 1500mm line

Effluent

Influent point

As Samra WWTP

Project Development

- In 1997: The “Greater Amman Wastewater Master plan” Feasibility study identified among other service improvements, the treatment needs, implementation time frame;
- Clear objectives were identified: A plant with capacity of 270k m³/day to be constructed by the year 2003. Effluent quality was identified –overlooking the Standards based on environmental considerations and reuse requirements.
- Due to high estimated cost, in 1999 another work “Study of Different Treatment Options and financing Scenarios with Review of Project Feasibility and cost” were completed:
 1. “ New estimated construction cost - \$ 150 million” reduced from \$ 190 millions
 2. 21 different financial scenarios were analyzed (corporate finance, private finance and mixed financing with and without grants at different levels)

Project Development

3. Best Case feasible and attractive PPP Scenario was selected with the following assumptions:
 - a. an estimated required 18% ERR.
 - b. 50% Grant Funds
 - c. 20% Private Sector Equity
 - d. 30% Private Sector Commercial Loans
 - e. Fixed currency exchange rate (JOD vs USD)
 - f. Inflation rate 3%

- On February 2000: USAID issued Implementation Letter to MWI for \$75M commitment for the project. (Increased later to \$ 92million due to increased scope)

Project Development

- Project financial feasibility required the increase of treatment tariff by 12% in the service area- Cabinet approved the increase prior to Pre-qualification start.
- Securing attractiveness and successful transaction, MWI committed it self to secure consultancy services (Technical, legal and financial) to:
 1. Prepare the following documents:
 - a. Prequalification documents,
 - b. Draft Project Agreement,
 - c. Draft Sponsors Agreement,
 - d. Minimum Technical Requirements
 - e. Up dated EIA

Project Development

2. Assist MWI in the prequalification process, tenders evaluations, selection of preferred bidder, negotiating the contract until financial closure and oversight during the construction and 18 months during the commercial operation.
- Prior to prequalification, MWI established project management team to provide day-to-day management of the pre-qualification, contracting process, construction contract management, and contract O&M implementation.

Other Project Requirements

In some projects or transactions, grant component may be used for two reasons:

1. reduce the unit cost/make the project or services bankable (leverage)
2. reflects seriousness of the owner and the importance of the transaction which attracts the investors

But usually, the party (other than the owner) providing grant puts some conditions.

In As-Samra case the following conditions were requested by USAID:

1. project company members limited to Code 935 nationality, with the majority of Project Company shares to be held by U.S. nationality firms.

Other Project Requirements

2. the construction company required to be U.S. firm.
3. 50% of commodities for project construction must have U.S. or Jordan source/origin.
4. USAID approval required for the solicitation announcement, pre-qualification documents, Request for Proposals (RFP), evaluation of proposals, award and contract.
5. USAID disbursements to the Project Company for construction to be based on FAR system (modular unit construction is required for FAR System).

Project Development/Time Table

1. CBD Notice Published for Pre-qualification 14/2/2000
 2. 8 Consortiums Submitted Pre-qual. Documents 23/4/2000
 3. Five pre-qualified consortiums announced: 12/6/2000
 - Infilco Degremont (40%), Morganti (20%), & Lyonnaise de Eaux (40%)
 - ABB SUSA (40%), U.S. Filter (20%), General de Eaux (20%) & Jordan Social Security Administration (20%)
 - Parsons (51%) & Biwater (49%)
 - Morrison Knudsen (20%) & Ogden Water Systems (80%)
 - CH2MHill (51%) & Thames Water International (49%)
- (Total of 21 firms out of 35 purchased the prequalification documents)

Project Development/Time Table

4. Draft RFP issued to Pre-Qualified firms for comments. 7/9/2000
5. Formal Issuance of RFP to Pre-qual. Firms 1/3/ 2001
6. Deadline for Submittal of Proposals 23/7/2001
7. Announcement of Preferred Bidder 10/11/2001
8. Contract Negotiations & Project Agreement Signing 28/7/2002
9. Financial Closing /effective date. 10/12/ 2003
10. Construction 36 months
- 11. Interim Commercial Operation** 10/8/2006
12. Commercial Operation 10/12 /2006

Bidders & Bids Evaluation

- Three consortia were interested until the date of submission
 1. “Samra Plant Consortium(SPC)” Infilco Degremont (40%), Morganti (20%), & Lyonnaise de Eaux (40%)
 2. ABB SUSA (40%), U.S. Filter (20%), General de Eaux (20%) & Jordan Social Security Administration (20%)
 3. CH2MHill (51%) & Thames Water International (49%) General
- Two Bidders submitted definite proposals in two envelopes (Technical & Financial)
- The financial proposal ONLY of the consortium consisting of Suez, Ondeo Degremont & Morganti (SPC) was opened and evaluated.
- The SPC offer was close to the expected comparable bid price set by the Ministry.
- Later SPC changed the shares (Infilco Degremont (30%), Morganti (50%), & Lyonnaise de Eaux (20%))

Success Factors

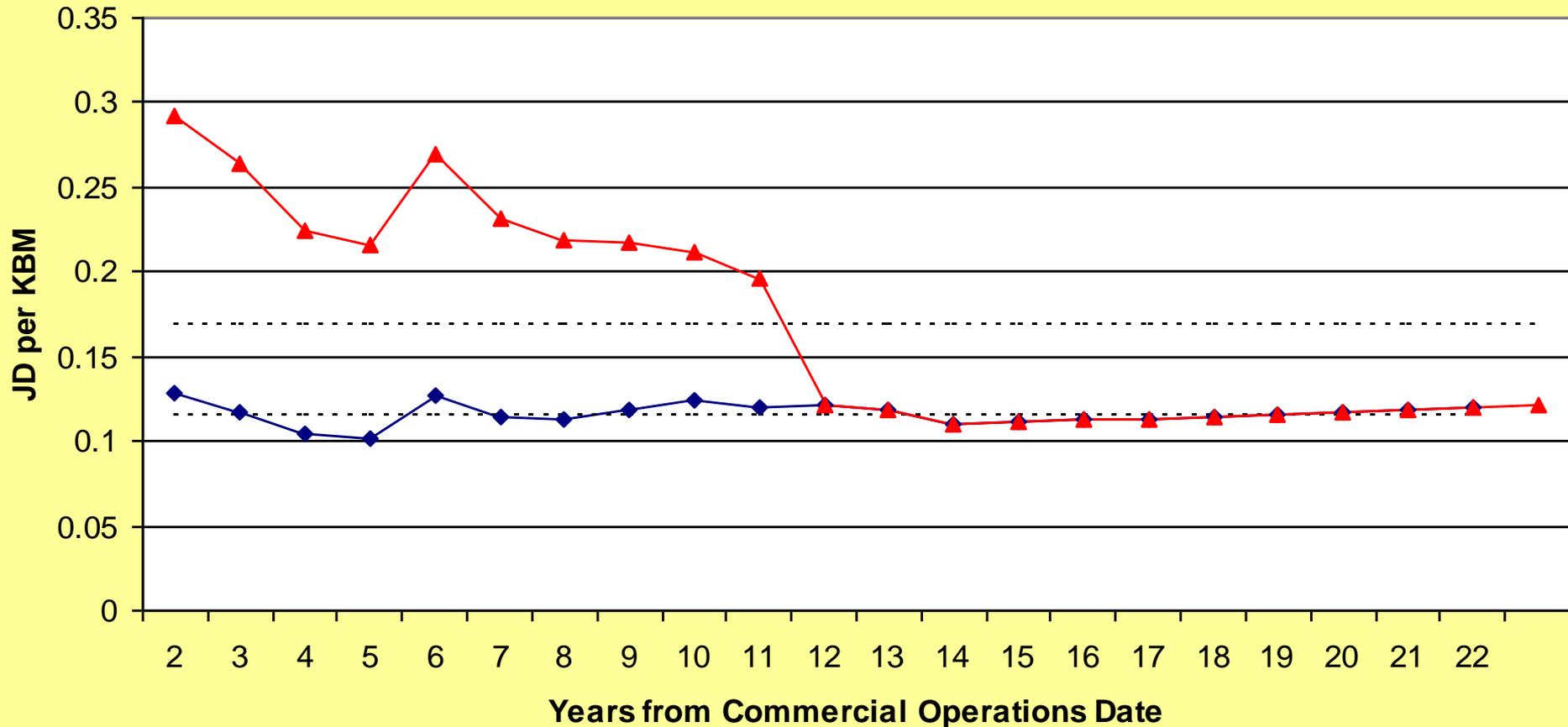
- Maximum leverage obtained through USAID involvement (\$ 92 Million contribution).
- Strong & Competent Management (High level support, Legal, Technical & Financial advisors, and USAID involvement)
- Bankability (12% tariff increase, USAID financial contribution & Securities)
- Risk Sharing
- Clear & transparent procurement procedures
- Time limitation
- Negotiation skills
- experienced advisers to the Government

Success Factors-General-

- Feasibility Study and EIA have been completed
- Government is fully committed to project – Top level involvement
- Enabling Legislation is in place (WAJ law + Investment promotion law)
- Well prepared documentation
 - Invitation to Tender
 - draft Agreements with sensible risk allocation
- Transparent evaluation criteria and procedure
- Timetable is realistic and deadlines are achieved
- Momentum is maintained, and logjams quickly resolved
- Government is perceived to be able to meet its long term commitments (reserve and restoration accounts)

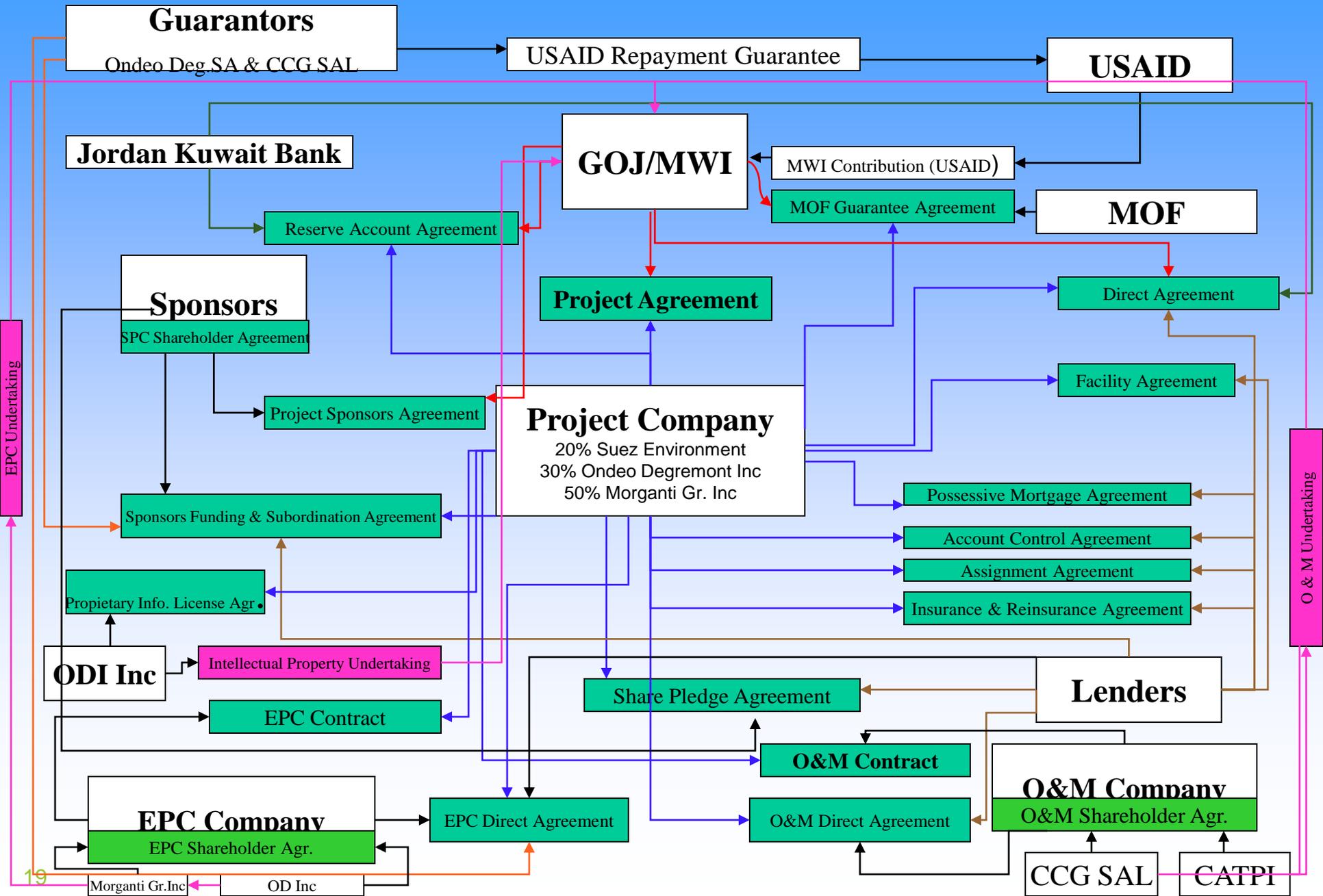
Effect of Grant Component or Upfront Financial Contribution

Treatment Charge per kbm, with and without Grant



—◆— TC per KBM with Grant - - - - - Average —▲— TC per KBM no Grant - - - - - Average

Contractual Framework



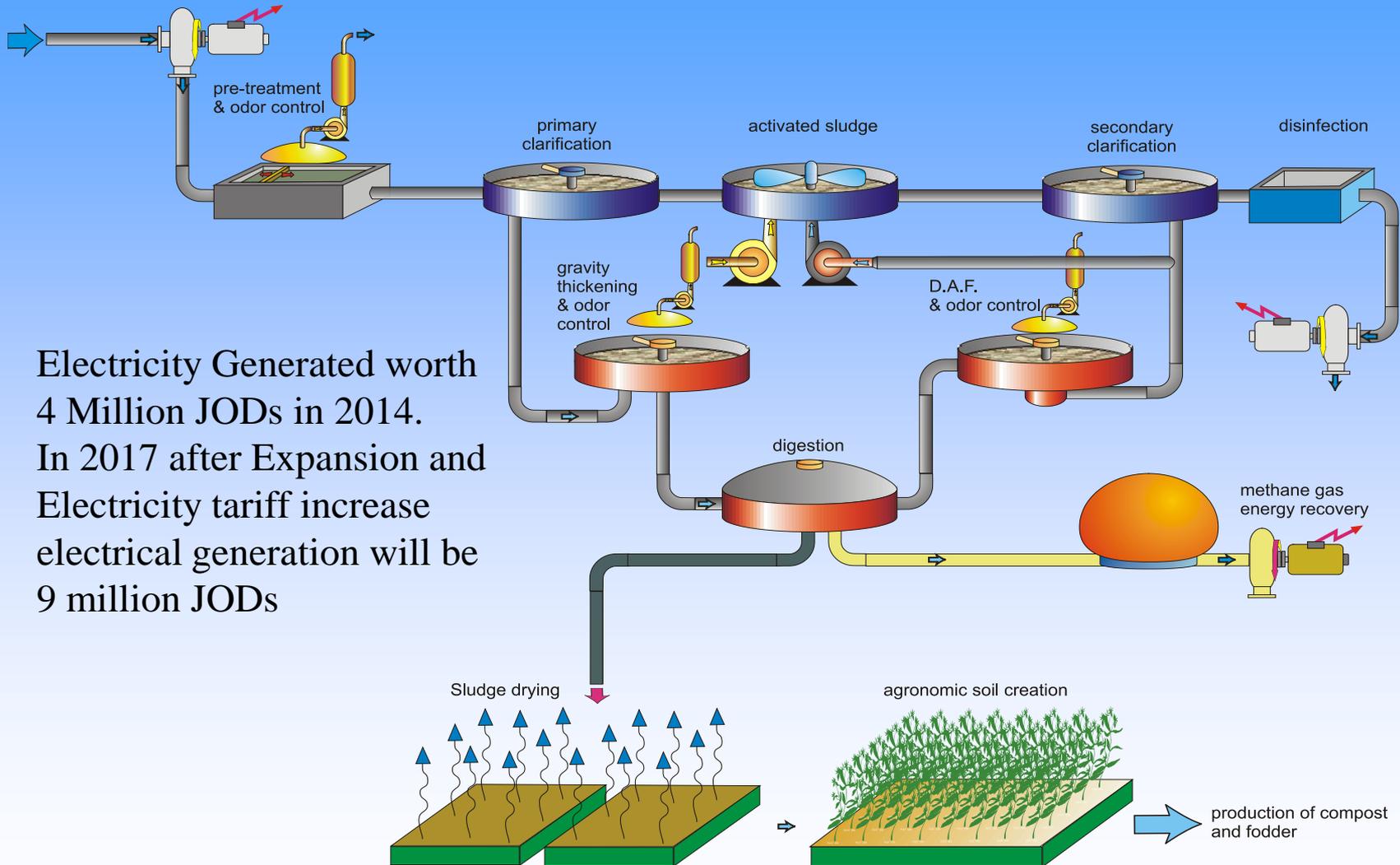
AS-SAMRA BOT PROJECT BENEFITS

- Major Environmental Health Improvement in the plant area, Wadi Dhliel, Zarqa River and King Talal Dam, (Provision of additional irrigation water source that meets Jordanian and international standards, elimination of odors, protection of ground and surface waters from pollution)
- Innovative Public/Private Financing to Accommodate Jordan's Growth Needs - Maximizing Availability of Financial Resources –First successful BOT project in Jordan
- Cost recovery: recovery of around 50% of the capital cost. First step Towards the Aim of Full Cost Recovery
- Reduction in GOJ Borrowing for Infrastructure

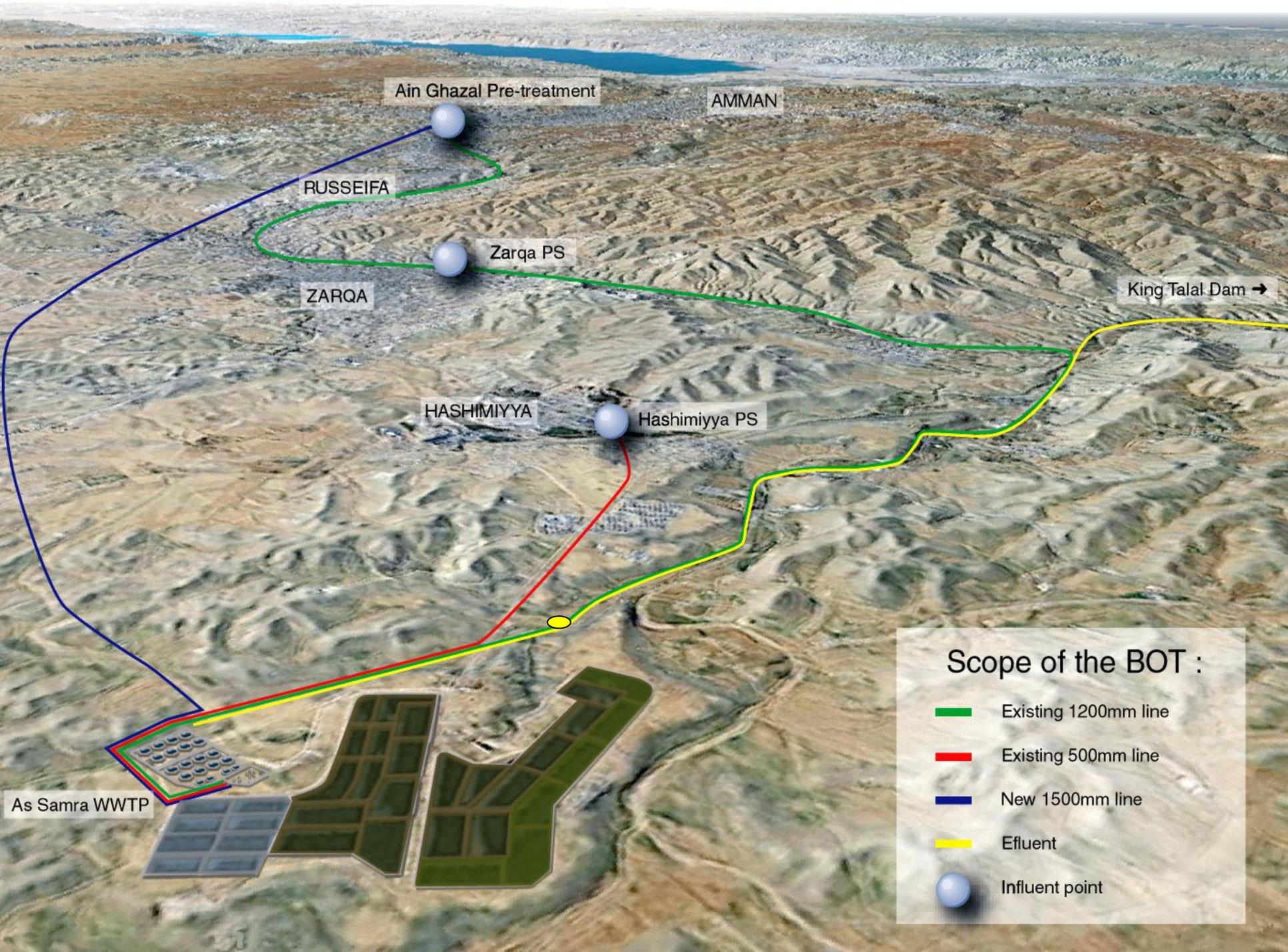
AS-SAMRA BOT PROJECT BENEFITS

- Reduction in GOJ Borrowing for Infrastructure
- Shared Public/Private Sector Risk & Attraction of Private Sector for Capital investment and assurance of proper O&M
- Technology Transfer
- Cost Efficiency with Private Sector Competition Between Available Technologies

Cost Effective Process



Electricity Generated worth
4 Million JODs in 2014.
In 2017 after Expansion and
Electricity tariff increase
electrical generation will be
9 million JODs



Performance Monitoring

List Of Required Reports, Records, Notices And Approvals

PPP transactions are not black Box! Governments/ Owners shall have full control over the project activities from the beginning. This insures the success, taking quick decisions and avoiding problems.

The project or assets are going to rest with the owner who shall continue or assign other private party to take over.

Thus the following actions shall be considered during the lifetime of the transaction.

Lenders also shall be concerned about the money paid and how the Private party/the borrower is using them and whether the would be able to repay its debts

List Of Required Reports, Records, Notices And Approvals

Sponsors (whether contractors or just investors) shall also be concerned about their investment and would like to follow every step of the project/transaction in order to secure the success of the project and guarantee the repayment of their investment with the return expected.

Because all of the above, several reports, notices and approvals shall be required from the borrower/operator/contractor during the transaction lifetime

Project agreements shall specify what reports, notices and approvals are needed according to special articles and sometimes specific appendixes delineating these requirements.

Reports Required for PPP Projects

Report	By whom	To whom	Frequency
Progress during construction	EPC Contractor	P. Company and Owner	End of each month/quality assurance
Report on results of test or inspection	EPC Contractor	P. Company and Owner	After each activity/quality assurance
Operation and Maintenance Reports	O&M Contractor	P. Company and Owner	End of each month/tech & financial status/compliance
Report on condition of the Project Assets	O&M Contractor	P. Company and Owner	Quarterly/need for renewal or change
Investment Report	Project Company	Owner and Lenders	Quarterly/chick on commitment
Report on invoices payable by the Owner	Project Company	Owner and Lenders	Monthly/Chick of financial status
Records and Specifications	EPC and O&M Contractor	P. Company and Owner	Monthly/verification of assets
Financial Reports	Project Company	Owner and Lenders	Semiannually/financial status, changes

Reports Required for PPP Projects

Report	By whom	To whom	Frequency
Construction documents	EPC Contractor	P. Company and Owner	When considered ready for use/quality assurance
As-built drawings	EPC Contractor	P. Company and Owner	After Completion/for O&M and renewal needs
Work Programme	EPC Contractor	P. Company and Owner	Before start of construction/avoid delays and follow up
Preventive maintenance programme	O&M Company	P. Company and Owner	At the beginning of each year/O&M, QA and emergency
Records of maintenance	O&M Company	P. Company and Owner	When completed/assets status, QA and need for renewals or change
Results of tests and inspections	O&M Company	P. Company and Owner	Monthly/QA, renewals purposes and changes or expansion needs
Emergency plan	O&M Company	P. Company, Owner and Lenders	At the beginning of each year/QA

Reports Required for PPP Projects

Report	By whom	To whom	Frequency
Quality assurance	EPC and O&M Contractors	P. Company, lenders and Owner	Before start of & during construction, and during operation
Copies of Insurance Coverage	p. company	Owner and lenders	Before construction & during operations at the beginning of each year
Replacement or changes to performance guarantee	P. Company	Owner	Immediately after replacement or change
Equity Investment	P. Company	Owner and Lenders	When paid in
Operating Budget	O&M Company	P. Company, Owner and lenders	At the beginning of each fiscal year
Operation and Maintenance Manuals	EPC Contractor indorsed by the O&M Contractor	P. Company and Owner	Immediately after commissioning

Approvals Required for PPP Projects

Approvals	By whom	To whom	Frequency
Construction documents	EPC Contractor and P. Company	Owner	When considered ready for use
Approval for materials and equipment	EPC Contractor and P. Company	Owner	Before procurement
Operation and Maintenance Manuals	O&M Contractor and P. Company	Owner	Immediately after commissioning
Approvals for any changes during construction and O&M	P. Company	Owner and copy to Lenders	Before any material change takes place or upon termination
Approvals for modifications during construction	EPC Contractor and P. Company	Owner and copy to Lenders	Before any action
Approval for change in maintenance	O&M Company and P. Company	Owner	Before any action

Approvals Required for PPP Projects

Approvals	By whom	To whom	Frequency
Approval of any settlement of insurance claim	P. Company	Owner and lenders	If owner is insured or co-insured
Approval of press material	P. Company	Owner	Before issuing any material or information related to the project
Approval for less frequent maintenance or change to measuring equipment	O&M Contractor and P. Company	Owner	Before any measure could be taken
Approval for replacement of key personnel	EPC & O&M Companies and P. Company	Owner	Before any change

Notification Required for PPP Projects

Notifications	By whom	To whom	Frequency
Notification of test inspection	EPC Contractor and P. Company	Owner	When considered ready for testing
Notification of delay	EPC Contractor and P. Company or Owner	Owner or to P. Company copy to lenders	After being aware of within two weeks
Notification of archaeological or pollution	O&M Contractor and P. Company	Owner copy to lenders	Immediately after being aware of.
Notification of Emergency	P. Company	Owner and copy to Lenders	Within few hours of occurrence
Notification of completion	EPC Contractor and P. Company	Owner and copy to Lenders	Immediately after competing the works
Notice of breach or Confidentiality	P. Company or owner	Owner or P. Company	Immediately upon discovery of breach

Notification Required for PPP Projects

Notifications	By whom	To whom	Frequency
Notification of an Event of Force Majeure	EPC Contractor or O&M Contractor and P. Company	Owner and copy to lenders	Within agreed upon duration after the occurrence
Notification of change of Statutory Requirements	P. Company or the Owner	Owner or the P. Company	When it occurs but within 2 weeks of becoming aware of
Notice of referral to arbitration or dispute settlement	P. Company or the Owner	Owner or the P. Company copy to lenders	If decided by any party
Notification of its intent to terminate	P. Company or the Owner	Owner or the P. Company and copy to lenders	Immediately when decided
Notification of claim	P. Company or owner	Owner or P. Company with copy to lenders	After reasonable time of being aware of the event

As-Samra
Rights, Duties and Responsibilities

The Project Company's Main Responsibilities

- Design, engineer, procure, construct & complete As-Samra plant and Ain Ghazal Pre-Treatment according to the Company's accepted design and the Minimum Technical requirements.
- Take delivery of wastewater at the influent points, pre treat at Ain Ghazal & pumping Station transport WW in the siphons & other pipes to the plant, treat it and deliver the treated water at the effluent point.
- Treat, store, market and sell and /or otherwise dispose of the sludge according to Jordanian standard safe environmental requirements.
- Arrange and manage all power, water, telephone & all other services required for the execution/completion of the works.
- Operate the Plant and Ain Ghazal for 22 years and Zarqa & Hashimmya PS until the year 2010 upon MWI takeover.

The Project Company's Main Responsibilities

- Operate, maintain, repair, renovate & renew the Plant, the pumping stations, the siphons & Ain Ghazal pretreatment to meet the requirements.
- Provide financing for the project
- Procure all necessary proprietary rights, licenses, agreements, etc.
- Transfer the Plant and all MWI property and Tangible Properties to MWI upon termination of the project agreement.

MWI'S Main Responsibilities

- Grant the right to use the site & MWI Property to the Project Company.
- Provide installations for the supply of power, water, telephone & all services required for the works.
- Deliver the Wastewater at the inlet points & **enforce Jordanian Laws & Regulations governing Industrial Discharges to Public sewers.**
- Pay it's contribution to the Project Cost.(\$92Million) “Tied” to Verifiable Construction Completion Milestones
- Pay the Treatment Charges.(according to formula)- (**changed during negotiations**)

MWI'S Main Responsibilities

- Establish & maintain the Payment Assurance Scheme (**Reserve Account Agreement & MOF Guarantee Agreement**).
- Exempt the project company, the sponsors and foreign financiers and contractors from all taxes duties, levies etc.. according to the Investment Promotion Law and the government agreement with USAID.
- **Insure site security**
- Compensations and other securities under different circumstances.

Sponsors' Undertakings/Financial Responsibility

Financing Plan:

- MWI contribution \$ 92 Million
- SPC : Minimum 20% of project costs in equity & 30% of project costs in commercial financing.

Sponsors' Undertaking

- Equity Investment ~11%
 - a. Share Capital \$ 4.66 M
 - b. Project Sponsor Loans \$9.47 M
 - c. Net Revenues during Interim Op Period \$3.37 M

Sponsors' Undertakings/Financial Responsibility

Sponsors' Undertaking

- Equity Guarantee \$ 15.5 M ~ 9%
- Commercial Loan (11 Jordanian Banks & Financial Institutions \$ 45 M

Upon completion, the equity guarantee becomes part of the commercial loan. This reduces the treatment charge because of the reduced interest rate

- Performance Guarantee \$ 15 Million
- USAID Mother Companies Repayment Guarantee during construction

Other Revenues

- Additional payment for increased H₂S Concentration
- Difference in Insurance Cost during construction and during O&M
- Total Treatment Charges were increased by 0.200 Million JOD/year to cover AGTP real OPEX

By-products:

- Revenues expected from Fodder sales: 2.200 m \$
- Revenues from Compost (50k \$/year): 1.286 m \$

Project Company decided to drop the by-product revenues due to possible change in statutory requirements

Base Case Main Assumptions

Wastewater loads identified, projected and presented in special appendix

Inflation rate 3% per year

Stable exchange rate (\$ vs JOD)

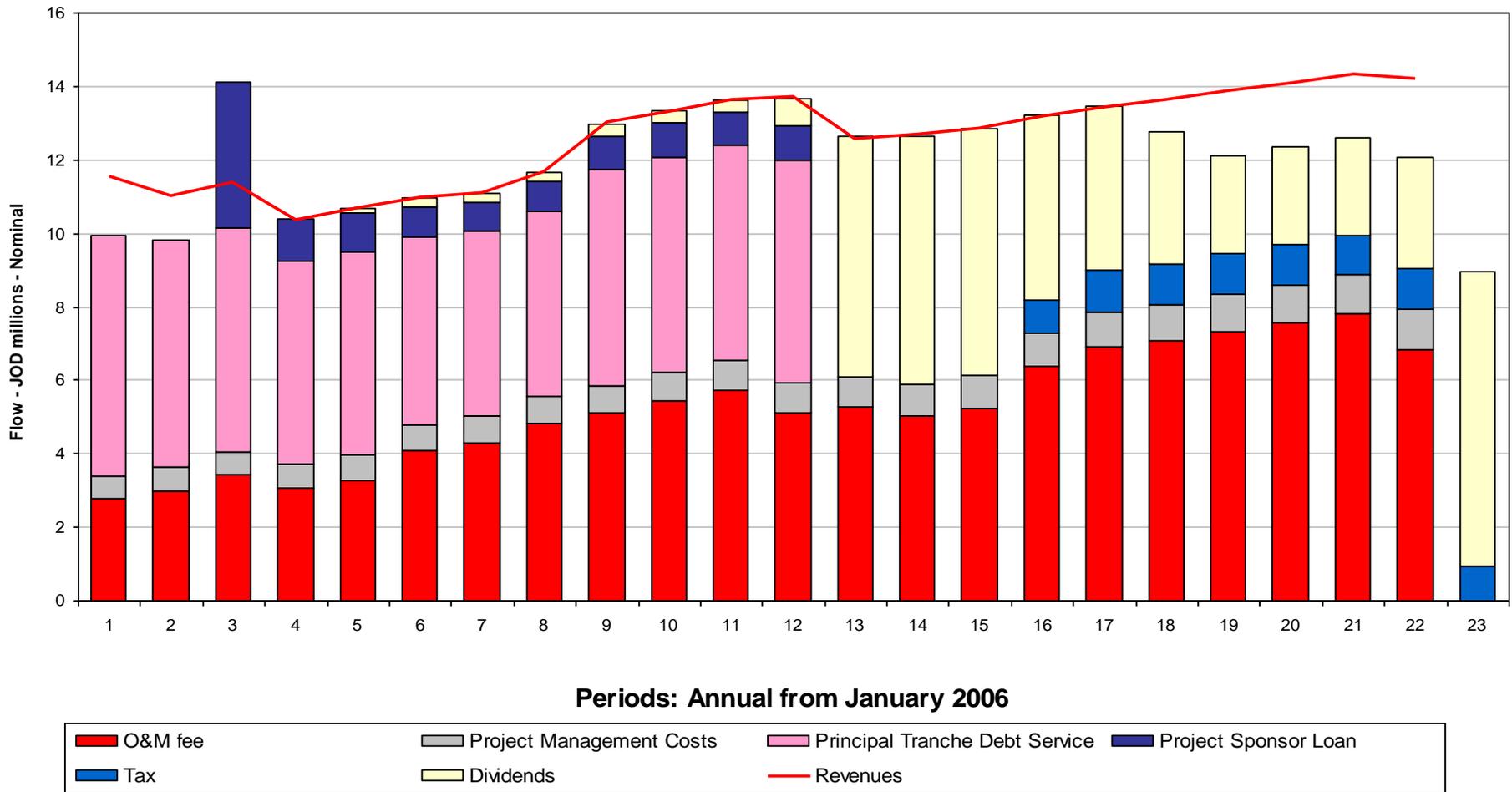
Treatment Charge according to the formula, indexation are proposed.

\$ 75 million Contribution from USAID through MWI, but ONLY for construction.

Minimum Technical Requirements for design, material, construction etc is set in stand alone document

Instruction to Bidders and Draft Project Agreement and Sponsors Agreement is presented and delivered to qualified bidders

Cash Flow According to Agreement



Major Negotiation Items

1. Site leasing – yearly payments (land law in Jordan indicates that owner of assets on a land is the land owner)
2. Arbitration – Venue & Law (UNICITRAL, Geneva, Arbitrators' nationalities).
3. Currency Exchange rates, Inflation local and foreign, Electricity index, labour index and increased volume of Chemicals (innovation)
4. Variation orders during construction and variation changes during O&M period procedures and cost (Capping the values)
5. Payment Security Schemes and Government Guarantee
6. Change of legislations: Use of treated wastewater for fodder production, Sludge treatment, disposal & reuse
7. Increase in Insurance cost (After September 11) 1/3SPC v 2/3 MWI of the difference)

Major Negotiation Items

8. Force Majeure Events
9. Termination Payments and Equity Compensation
10. Restoration – renovation amount and account
11. Hedging and compensation upon termination
12. Intellectual Property, O&M & EPC undertakings
13. Technical Issues (H₂S, quality, quantity, industrial and hazardous waste etc.)
14. Wastewater characteristics (exceedance of values)
15. Liquidated damages and penalties