Workshop on “Risk and Insurance in PPPs for Water Infrastructure”
As-Samra WWTP-Jordan
SWIM-SM
30-31 October 2014-Athens

M.Najjar

October 2014

As-Samra Project Development

- In April 1999, MWI concluded “Project Feasibility Study and preliminary engineering design for a 100MCM/Year WWTP.
- 21 different financial scenarios & implementation options were analyzed (conventional, BOT, DBO, EPC).
- Because of financial limitations, the BOT implementation option was selected.
- The best Case Scenario for an estimated IRR of 18% required:

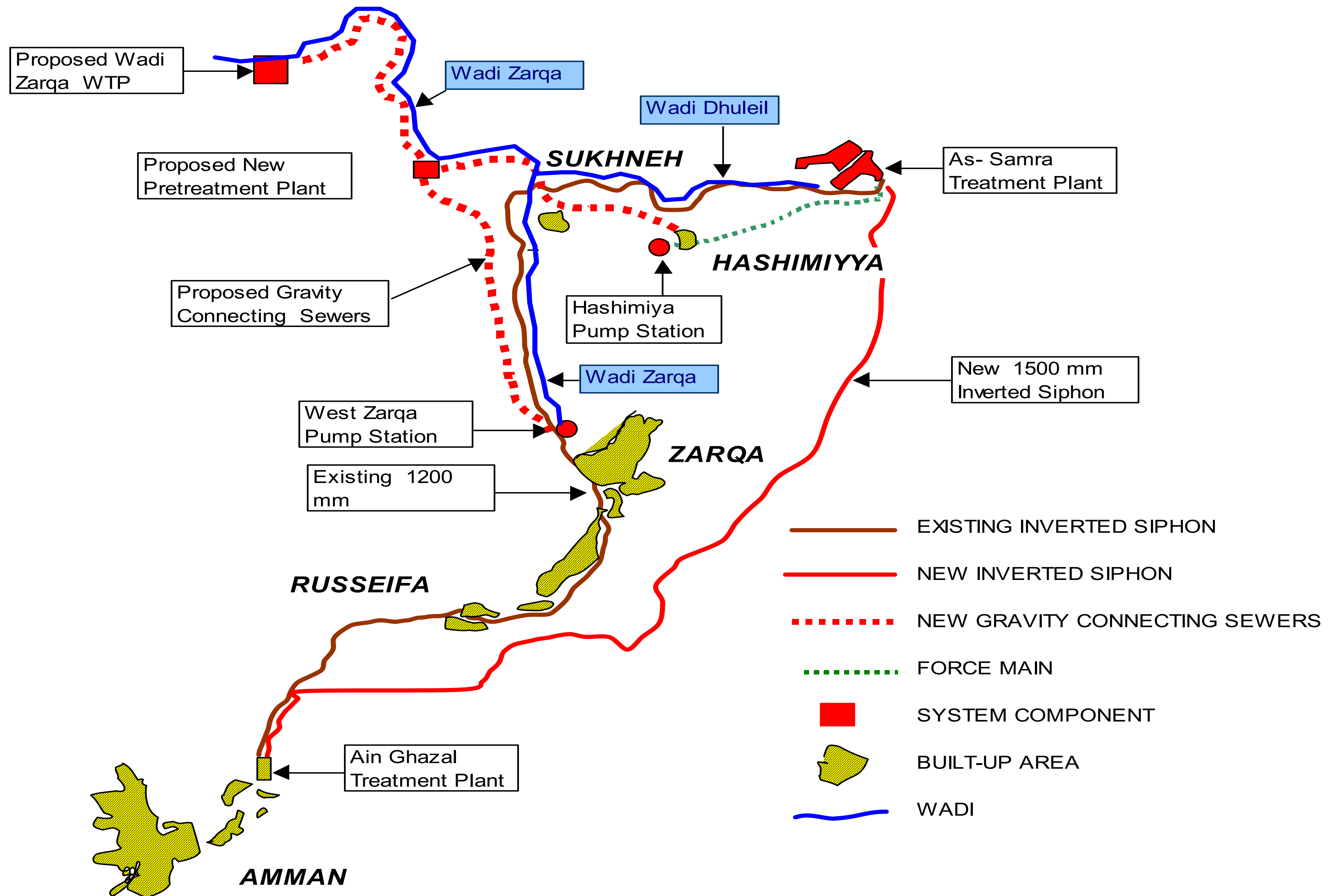
a) 12% increase in wastewater tariffs
b) 50% Grant Funds
c) 20% Private Sector Equity
d) 30% Private Sector Commercial Loans

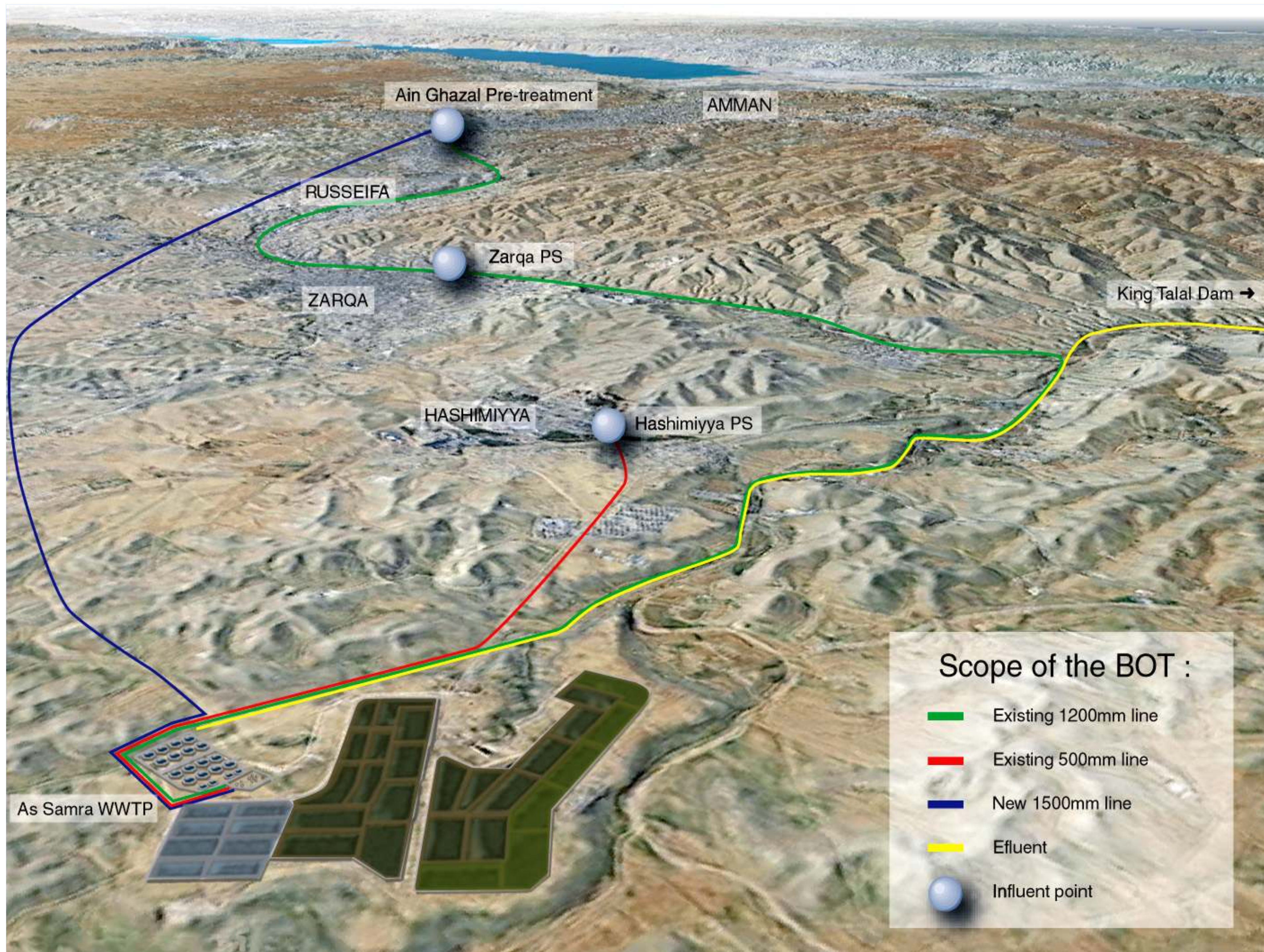
- February 8, 2000: USAID issued Implementation Letter to MWI for $75M commitment for the project. (Increased at financial clause to $ 92)

Project Development

1.	Pre-qualification	14/2/2000
2.	8 Consortiums Submitted Pre-qual. Documents	23/4/2000
3.	Five pre-qualified consortiums announced	12/6/2000
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

Project description




Ain Ghazal Pre-treatment
AMMAN
RUSSEIFA
Zarqa PS
ZARQA
King Talal Dam ➜
HASHIMIYYA
Hashimiyya PS
As Samra WWTP
Scope of the BOT :
Existing 1200mm line
Existing 500mm line
New 1500mm line
Efluent
Influent point

Financing Plan & Sponsors' Undertakings
Mixed Financing

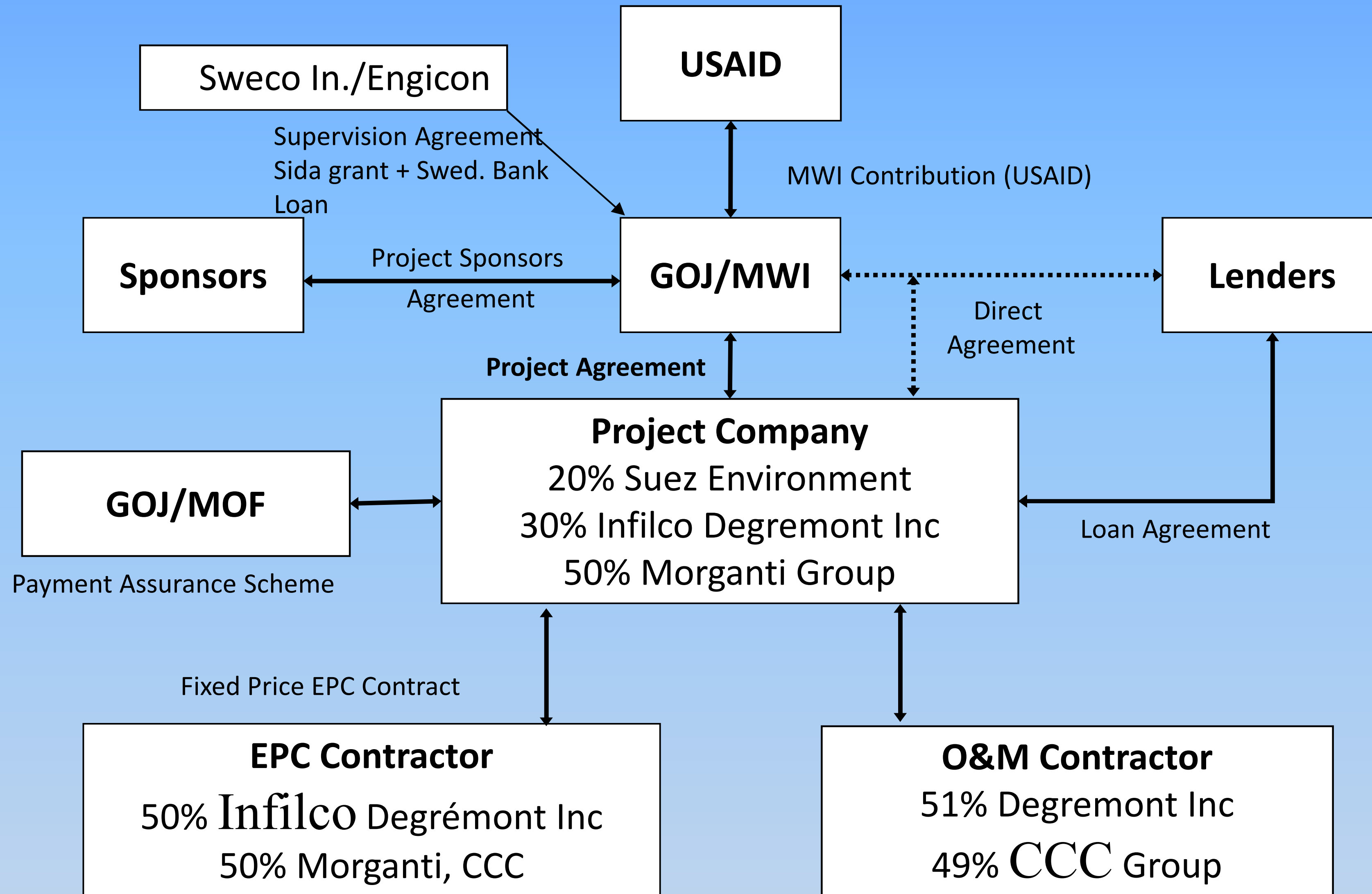
Financing Plan:

- **MWI contribution 50%**
- **SPC : Minimum 20% of project costs in equity & 30% of project costs in commercial financing.**

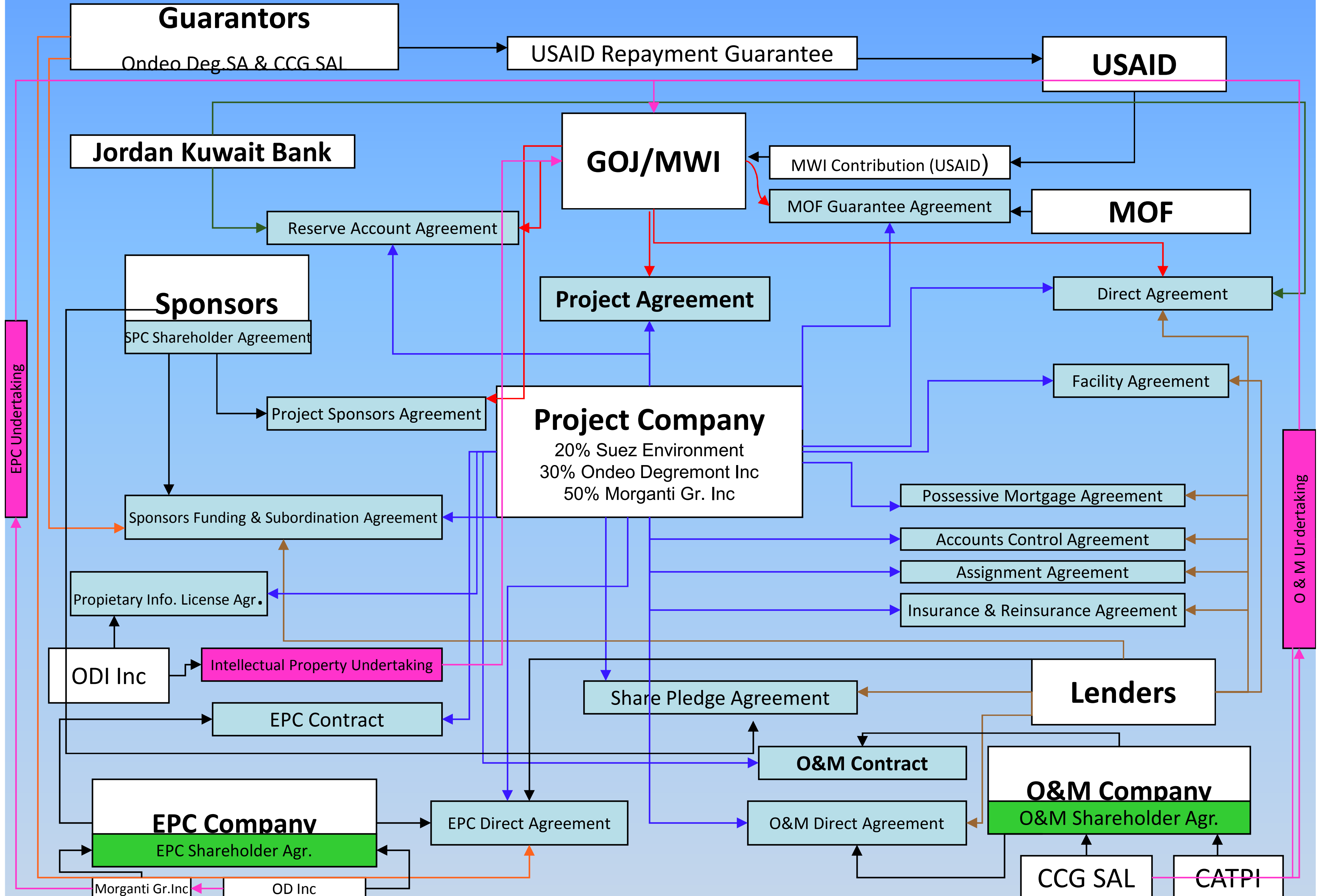
Sponsors' Undertaking

- **Equity Investment ~ 11%**
  - ✓ **Share Capital**
  - ✓ **Project Sponsor Loans**
  - ✓ **Net Revenues during Interim Op Period $ ~ 3.37 M**
- **Equity Guarantee $ 15.5 M ~ 9%**
- **Commercial Loan (11 Jordanian Banks & Financial Institutions $ 45 M**
- **Performance Guarantee $ 15 Million**
- **USAID Mother Companies Repayment Guarantee**

Simplified Contractual Framework



Contractual Framework



Project Company's Risk Sharing/1

1. **During Construction:**

- Equity Investments (20% of project cost)
- No profit for acceleration of Works
- Liquidated damages for completion delay
- Mother Companies guarantee for MWI contribution
- Performance guarantee ($ 15 million)
- Insurances ~ value of MWI Properties, losses, All risks including third party

2. **During Operation:**

- Insurance ~ value of MWI Properties, works, losses, All risks including third party
- Performance Guarantee -$ 5 million (22 years- real value maintained)
- Liquidated damages for violating standards & no payment for treatment

Project Company's Risk Sharing/2

Liquidated Damages and Penalties

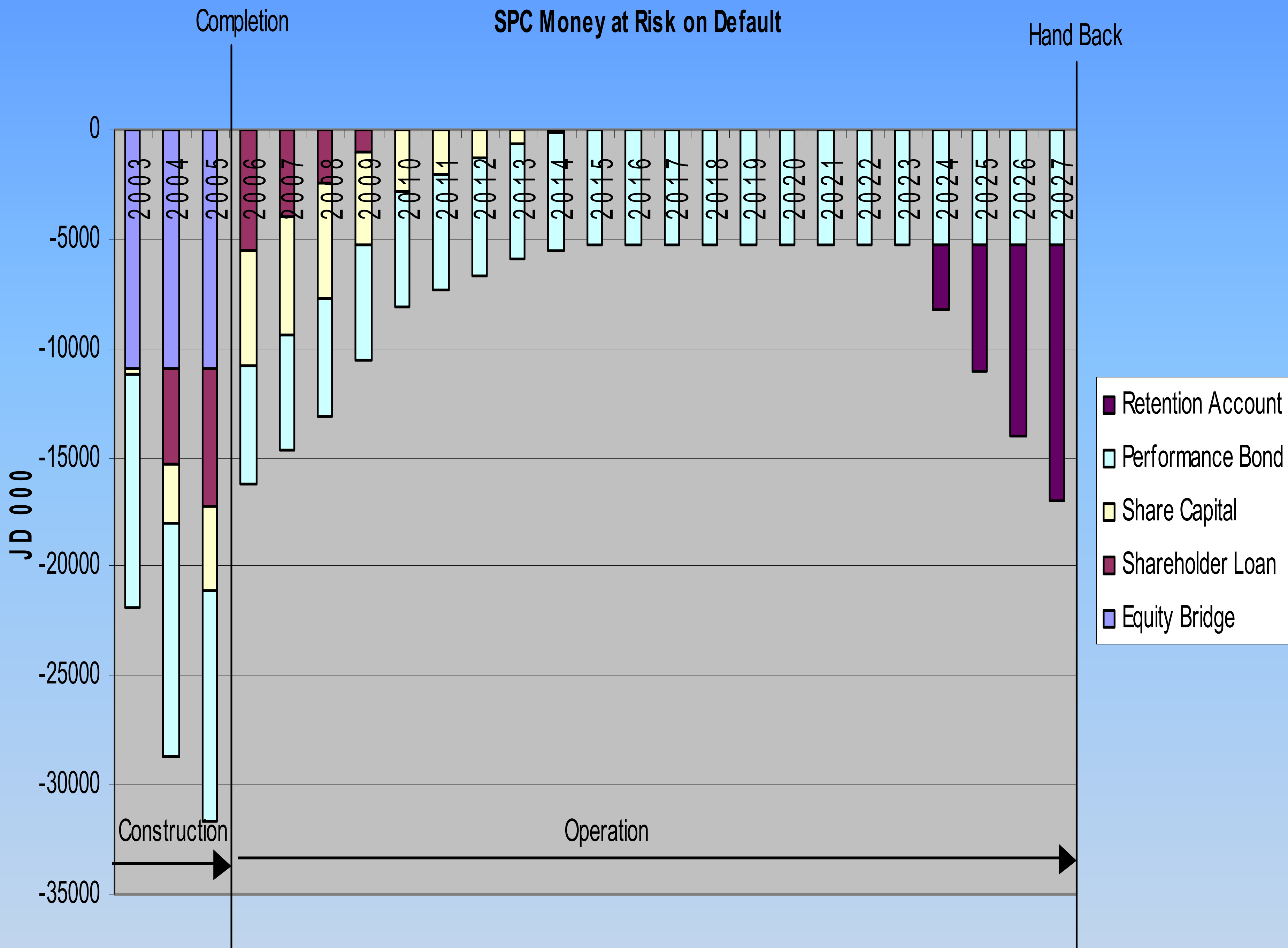
- Failure to reach the Final Completion Date, the Project Company should pay $ 15000/ day (capped to $ 8,000,000)
- The liquidated damages for insufficient odour treatment - JD 3000/day.
- The liquidated damages for excessive levels of noise - JD 3000/day.
- Violation of the treated water quality in terms of BOD, Nitrogen & Bacteria = Treatment Charges/2*(% of BOD exceedance + % of Nitrogen exceedance + 10% of difference log of bacterial Number).
- The total liquidated damages shall not exceed twice the daily T.Charge. Capped to Fixed F Cap/ month & 50% per year
- Penalties on delay in reporting = 0.05% of TC for the previous month every day capped to 2.5% of TC for the previous month

Risks During Construction	Party Assuming Risk							
	Project Company	Sponsors	Owner/ Gov	Lenders	EPC Contractor	Insurance Companies	Financial Markets	Manufacturer
Exchange rate (currency risk)	Transferred to EPCC				Financial hedging			
Interest rate increase				Fixed rate loan				
Inflation rate	Back to back with EPCC				Financial hedging			
Regulatory & statutory requirements								
Construction delay	Turnkey contract							
Construction overrun	Turnkey contract							
Physical loss or damage while in transit by sea or air	Back to back with EPCC				Insurance policies	Marine & air cargo insurance		-
Loss of revenues because of the above (delay)	Back to back with EPCC				Insurance policies	If caused by Cargo delay		
Physical loss or damage to material on site (All risks-fire, storms)	Back to back with EPCC				Insurance policies			If material and equipment are defected
Loss of revenues because of the above causing delay	Back to back with EPCC				Insurance policies			If material and equipment are defected
Losses caused by design (cost of, replacements, delay etc)	Back to back with EPCC				Insurance policies	???		
Force Majeure events	See other slides							

initial | ultimate | Not done

Risks During Operation	Party Assuming Risk							
	Project Company	Sponsors	Owner/Gov	EPCC	O&M Contractor	Insurance Companies	Financial Markets	Manufacturer
Exchange rate (currency risk)								
Interest rate increase								
Inflation rate								
Regulatory & statutory requirements								
Loss of revenue	O&M Agreement							
Quality of final product	O&M Agreement							
O&M overrun	O&M Agreement							
Physical loss or damage to material on site (All risks-fire, storms)	O&M Agreement				Insurance Policies			
Losses caused by design (cost of, replacements, reinstatement, etc)	O&M Agreement					???		
Consequential losses due to the above	O&M Agreement							
Force Majeure Events	See other slides							

initial | ultimate | Not done


SPC Money at Risk on Default
Completion
Hand Back
JD 000
0
-5000
-10000
-15000
-20000
-25000
-30000
-35000
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
Construction
Operation
Retention Account
Performance Bond
Share Capital
Shareholder Loan
Equity Bridge

Parties Risks in termination For FM Events

Force Majeure event	Outstanding Debt (OD)	Equity	Termination Cost
Non-Political FM	MWI Pays OD with the difference in the interest rate up to termination date	MWI pays the historical value of equity less dividends (less insurance coverage)	MWI Doesn't pay termination cost
Indirect Foreign Political FM	MWI Pays OD with the difference in the interest rate up to termination date	MWI pays the historical value of equity less dividends (less insurance coverage)	MWI Doesn't pay termination cost

Parties Risks in termination For FM Events

Force Majeure event	Outstanding Debt	Equity	Termination Cost
Indirect Local Political FM	MWI Pays OD with the difference in the interest rate up to termination date	MWI pays 75% of the equity investment with return (less insurance coverage)	MWI pays termination cost
Political FM	MWI Pays OD with the difference in the interest rate up to termination date	MWI pays 100% of the of the equity with return (less insurance coverage)	MWI pays termination cost

Parties Liabilities in Restoration cases

Force Majeure event	SPC Liability	MWI Liability
Non-Political FM	50% of the restoration cost (less insurance coverage)	50% of the restoration cost (less insurance coverage)
Indirect Foreign Political FM	50% of the restoration cost (less insurance coverage)	50% of the restoration cost (less insurance coverage)
Indirect Local Political FM	0%	100% of the restoration cost (less insurance coverage)
Political FM	0%	100% of the restoration cost (less insurance coverage)

If restoration is not an option, then insurance cover is used to pay the outstanding debts to the lenders, then other third party debts and the remaining to MWI

Parties Liabilities in Default Cases

Party at Default	Outstanding Debt	Equity	Termination
SPC	MWI pays the outstanding debt	No Equity nor Dividends are paid	SPC pays termination fees
MWI	MWI pays the outstanding debt	MWI Pays 100% of Equity with return (with a ceiling)	MWI pays termination fees

MIGA provided PRG political risk coverage of 90% of equities & 27% for performance bond up to 15 years to one of the sponsors

Assurances and guarantees assumed by the Ministry and the Government

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)

- ***Variable Treatment Charge***

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

- Additional Volume of Influent (above 160,000 m^3/day)
- Additional Pollution of Influent (for BOD_5 above 0.55kg/m^3)

Treatment Charges: Structure

Fixed Portion:= Fix (Cap) +I_I. Fix $_I$ (Cap)+ I_C. Fix $_F$ (Cap)+ I_L. Fix (Op) +I_R. $I_C Fix_R$(Op)

- Fix (Cap) : Repayment of Senior Debt
- I_I. Fix $_I$ (Cap) : Payment of Senior Debt Interests
- I_C. Fix $_F$ (Cap) : Remuneration of Sponsors Investment
- I_R. Fix $_R$ (Op) : Payment of Fixed Renewal Expenditures
- I_L. Fix (Op) : Payment of Fixed Operation Expenditures

Variable Portion:=I_L **.**{(A.(Vp-160))+B[(Xp.(Vp-160))+160.(Xp-0.55)]}

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

$I_{I=}$ Interest rate index

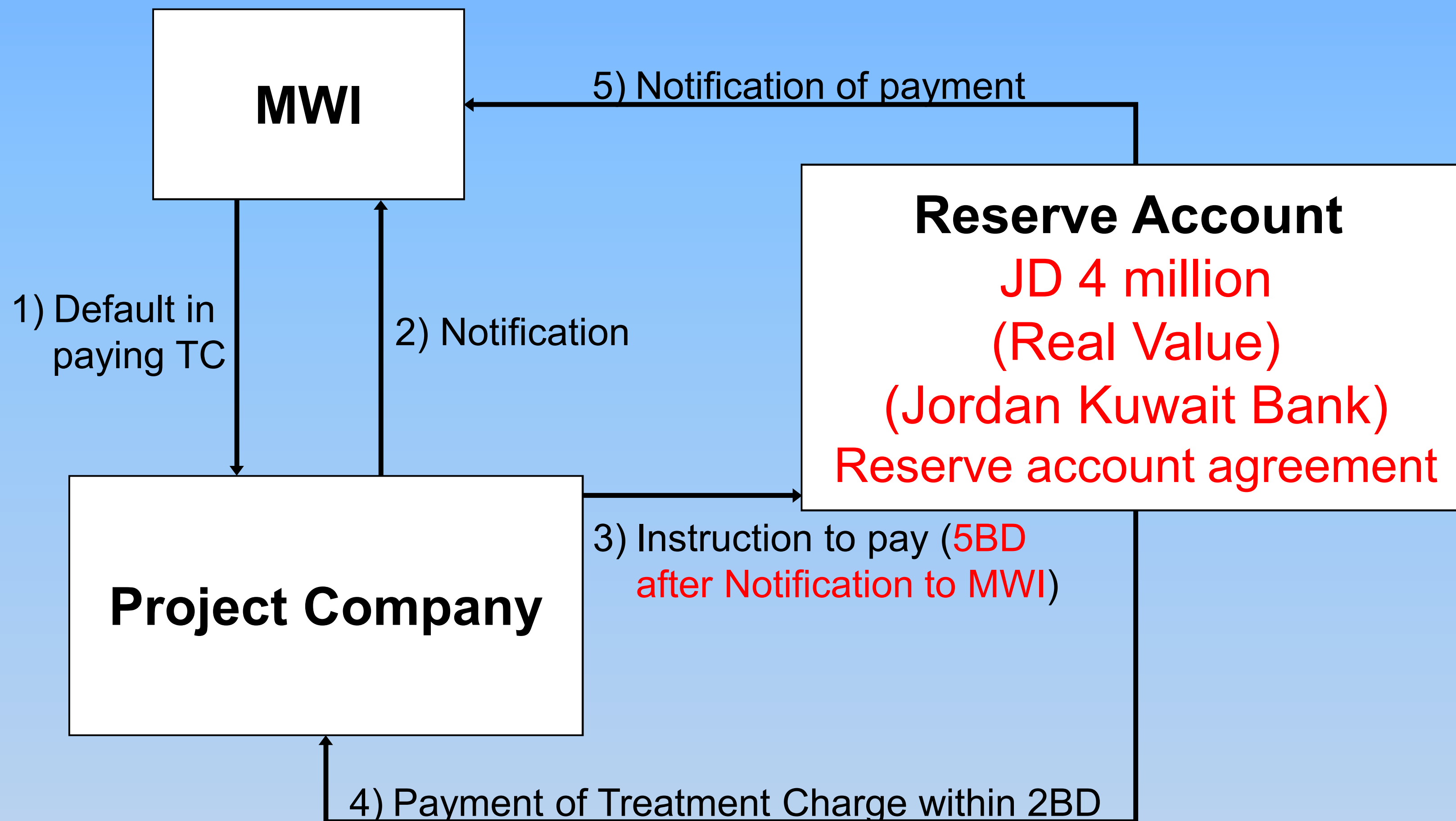
$I_{C=}$Currency Exchange rate index JD/USD

$I_{R=}$Renewal Index – Construction & Machinery index

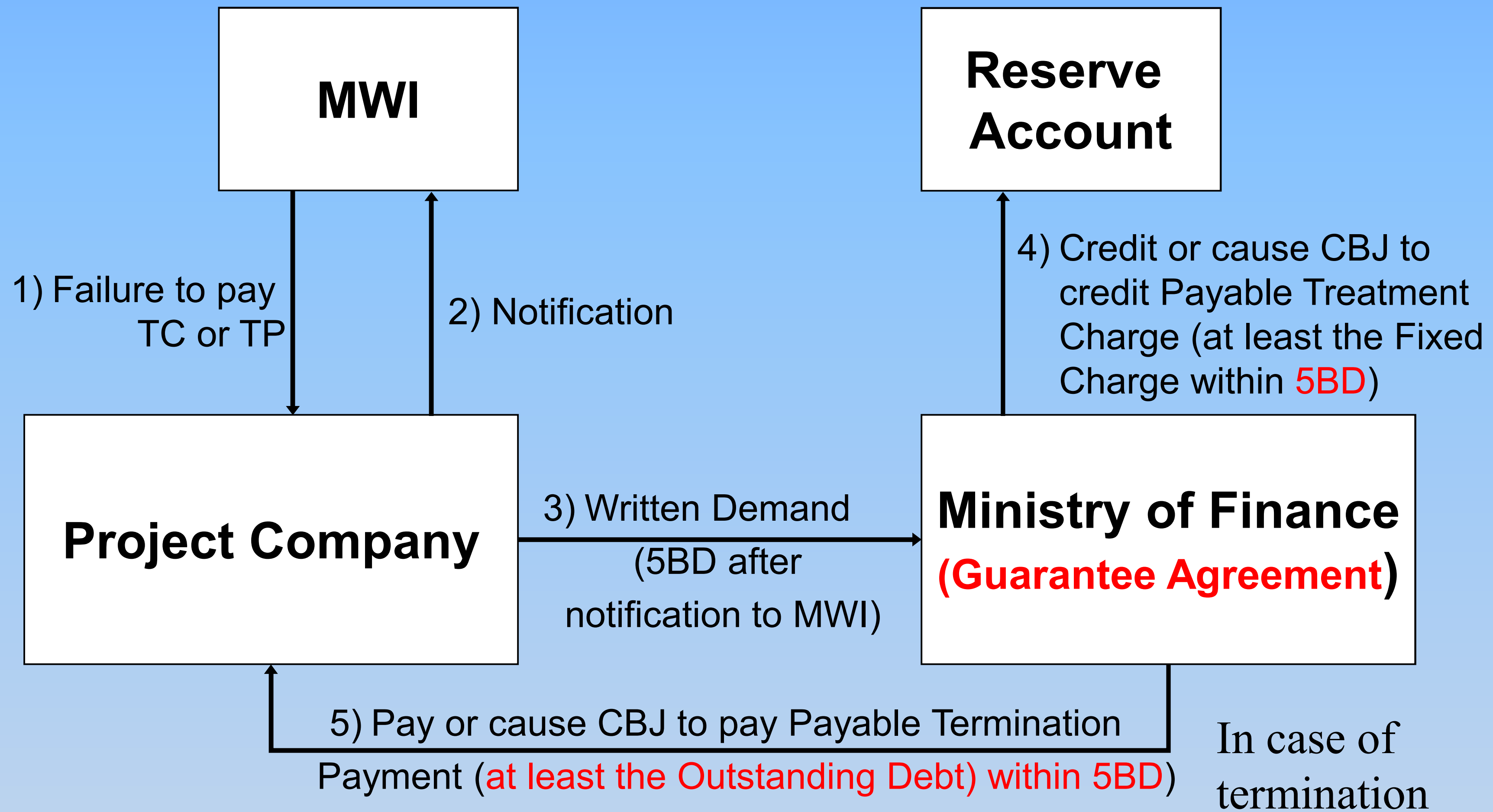
$I_{L=}$(50% X A_{Lm}/A_0) + (40% X B_{Lm}/B_0) + (10% X C_{Lm} / C_0)

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

Payment Assurance Scheme- Reserve Account Agreement

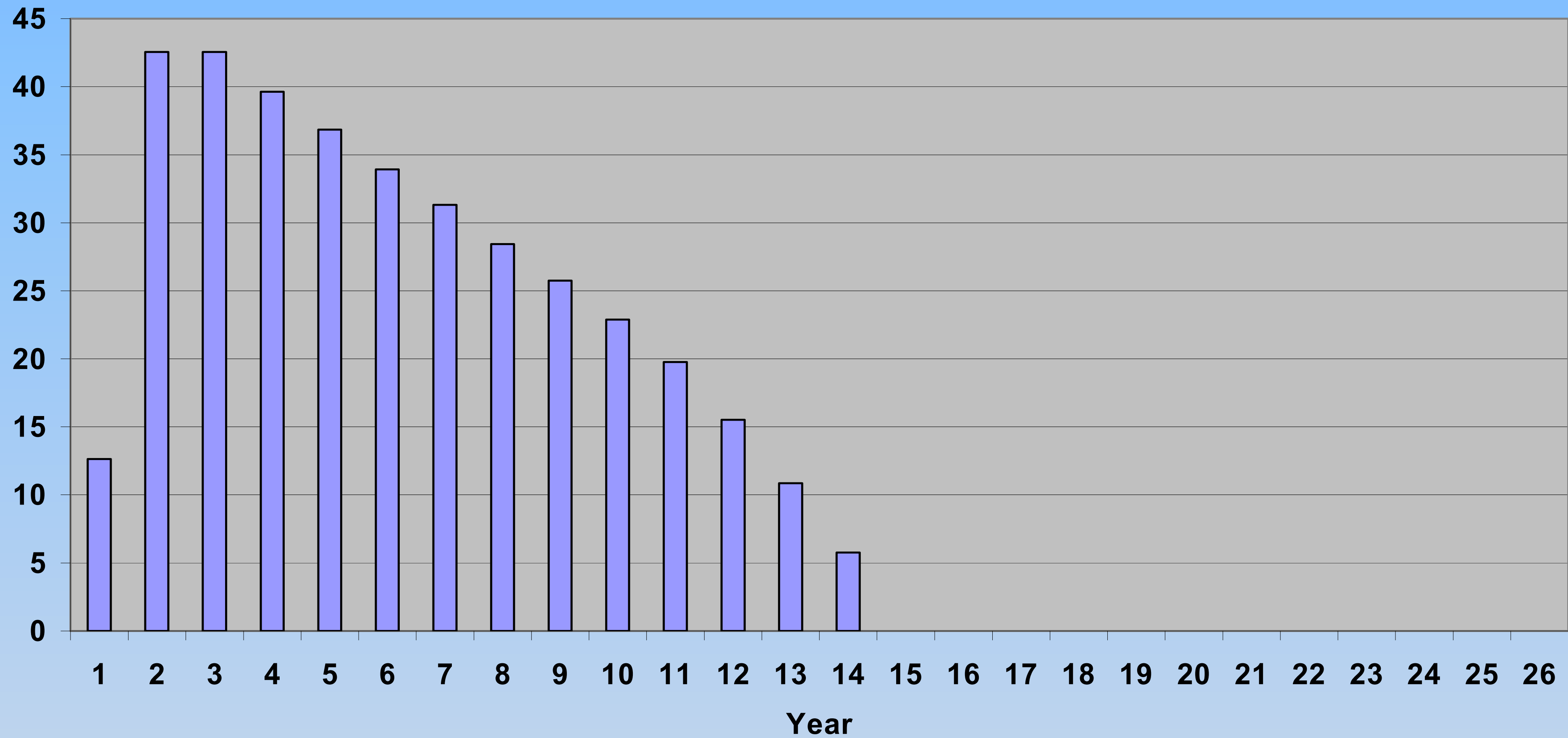


Payment Assurance Scheme- Ministry of Finance Guarantee Agreement

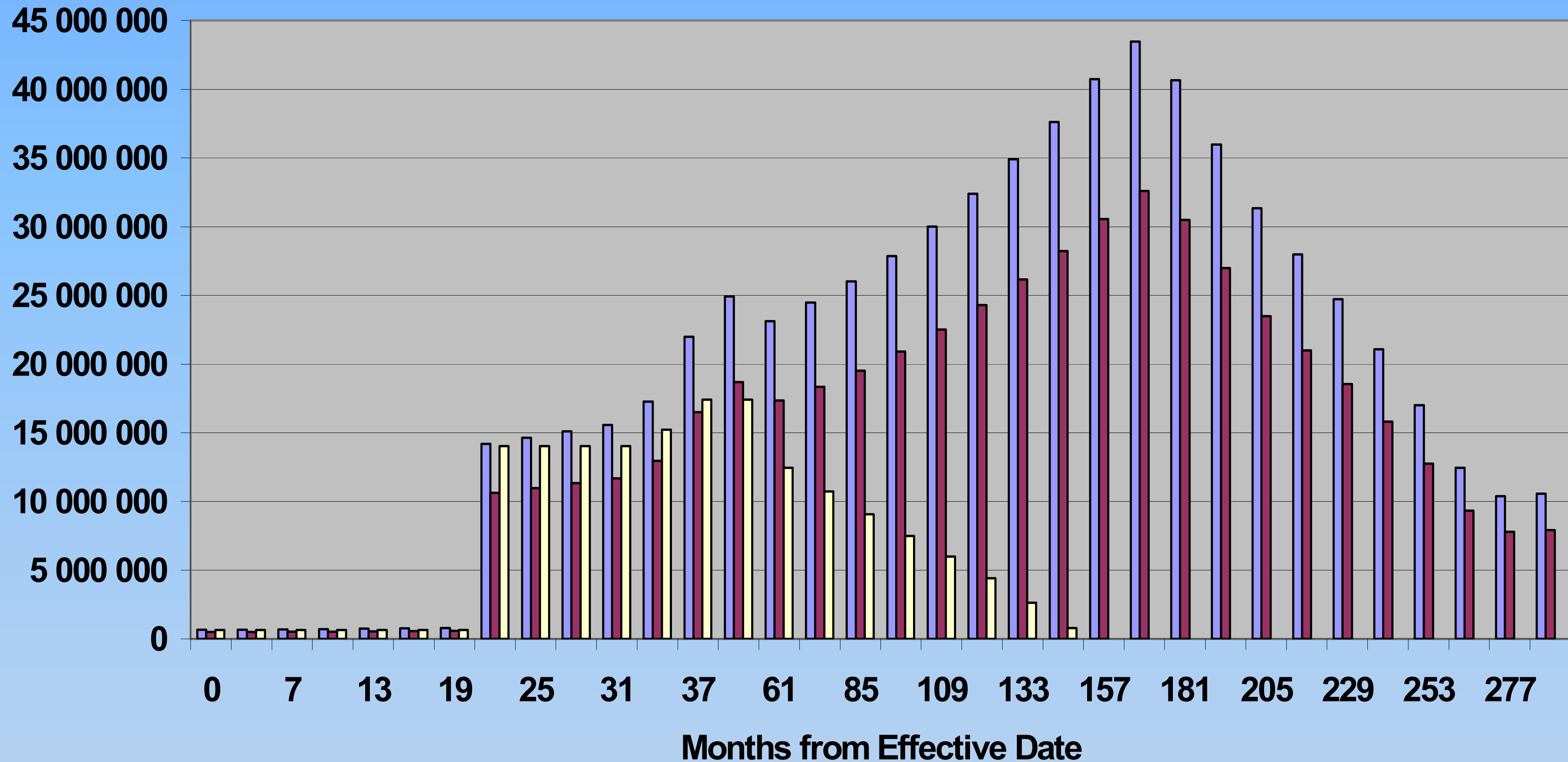


MWI Exposure to Outstanding Debt

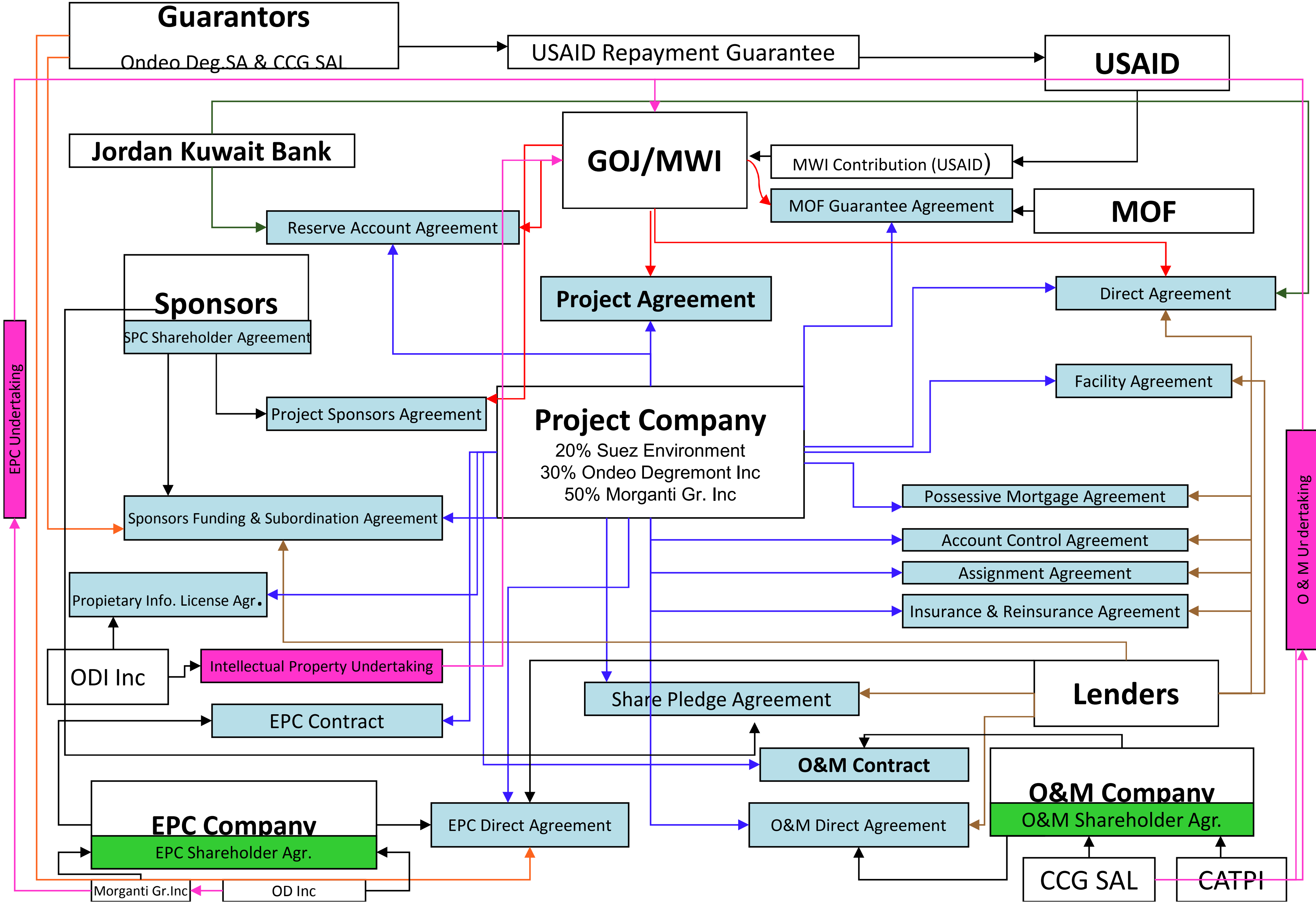
Payable in JODs but adjusted to USD following Termination, in case of step in right is not invoked by Lenders.



MWI Exposure to Equity Compensation



Contractual Framework



Principal Securities for Lenders
Project Agreement
Grantor/mother companies
EPC Agreement
Sponsors Agr., facility Agr. and Direct Agr.
Assignment
Assignment
Land/ Lease
Project Insurance
Mortgage
Assignment
Security Trustee/Agent/ Bank
Share pledge
Direct Agreement
Account control Agr.
Assignment
Government Agreement
SPC/Shares
Funding and subordination Agr.
Assignment
Sponsors
Direct Agr
O&M Agreement

General Rules

1. The essence of any project finance deal is the **identification** of risks for the project under development followed by detailed analyses **(quantification).**
2. This allows each party to the project to consider the liabilities that it has to assume and when to assume them.
3. Liable party to any risk shall be ready and prepared to take mitigation measures.
4. Risk **allocation** with an exhaustive identification shall take place at an early stage of the project preparation and be part of the instruction to bidders and request for proposal.
5. Risk shall be assumed by the party best able to **manage and control** it.
6. All risks shall be subject to negotiations during the bidding stages up to financial close.

Risk Mitigation Tools

Every party accepting any risk will try to protect itself by many means:

1. Insurance: Insurance companies offer their services during the project term. All parties shall consider this option at an early stage (cost of insurance be included in cost during the bidding process)
2. Stand by facilities between lenders and developers
3. Partial Risk Guarantees offered by some institutions such as the WB. But this is another way of diverting the risk to the owner

Risk Mitigation Tools

4. Offering step-in rights to the lenders to give comfort and leverage (Direct Agreement)
5. Involving Export Credit Agencies gives more flexibilities in overcoming some types of risks such as cost, some political FM events
6. Payment assurance schemes by the owner
7. Renewal accounts to ensure project life time operability
8. Sovereign Guarantee shall be the last resort. This depends on the importance of the project and the complexity

As-Samra encountered problems

- Project company's:

1. Delays during construction (Design, planning and supply)
2. Construction overrun mainly cost of labour
3. O&M overrun (Technology failure)
4. O&M overrun (Model risk)

- Ministry's

1. Increased biological load
2. Fuel cost increase

As-Samra Phase 2/Expansion

The Ministry and based on the right of first refusal clause in the Project Agreement entered into direct negotiation with the project Company to expand the plant.

MCC granted the expansion scheme $ 90 million (keeping the same ration as in the first stage)
All agreements were reinstated to reflect the new expansion new obligation where shortfalls were mitigated.

No fresh equities were injected, instead, revenues generated during the operation of the current plant is injected as equities

Original Senior Loan was repaid and new financing agreement was signed.

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 be prequalified (5 max.)
- Timetable is realistic and achievable deadlines
- 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) to make the project affordable and to attract sufficient number of strong bidders.