



PPP contracts in water sector

Joubrane Ouechec, Suez Environnement



□ SUMMARY

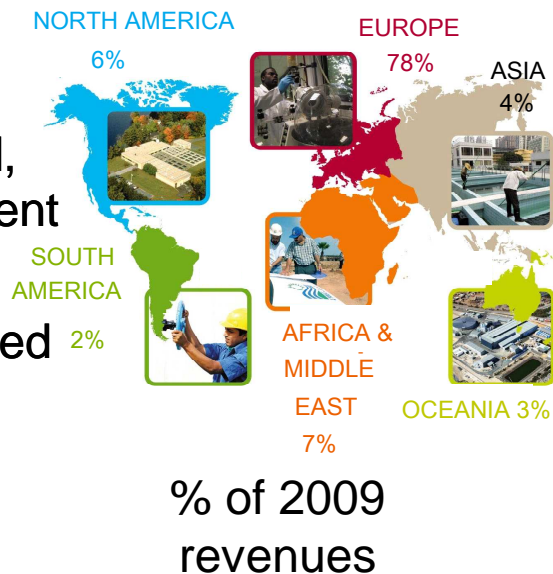
- Chapter 1 Introduction to Suez Environnement, 3'
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- Q/A

■ A GLOBAL LEADER IN WATER & WASTE



WATER | WASTE

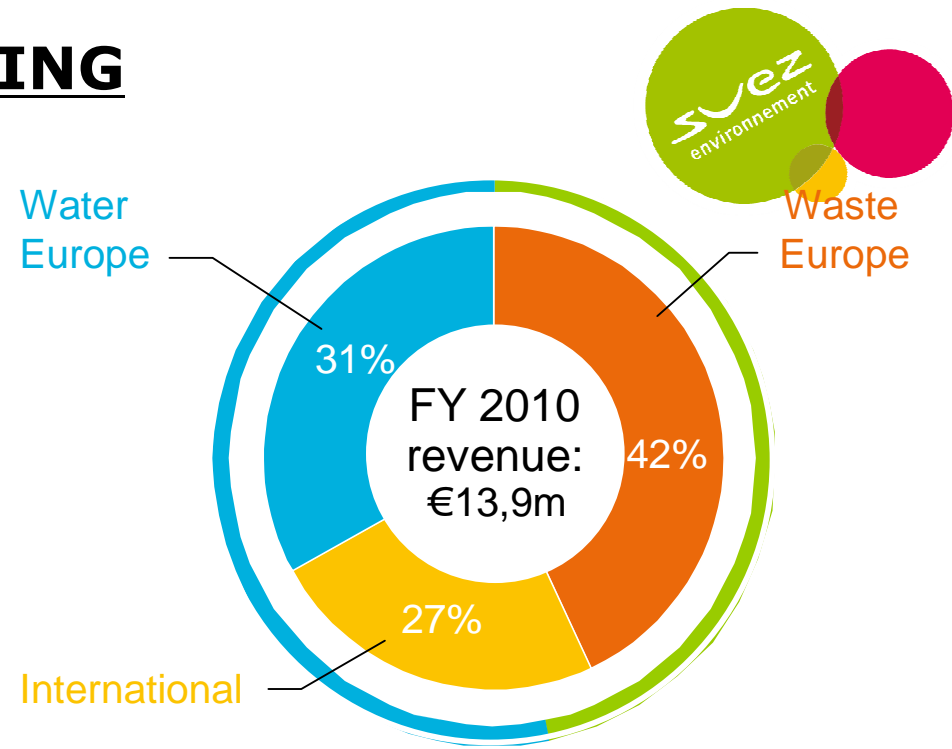
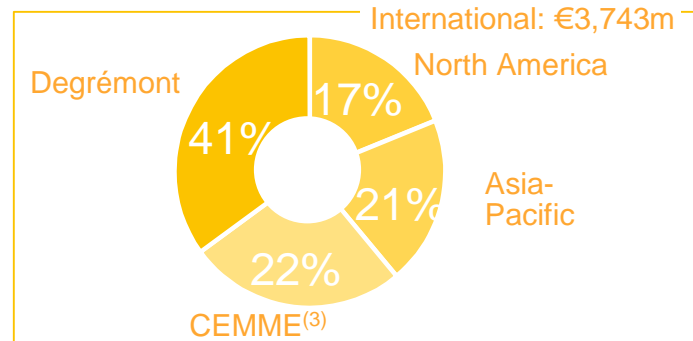
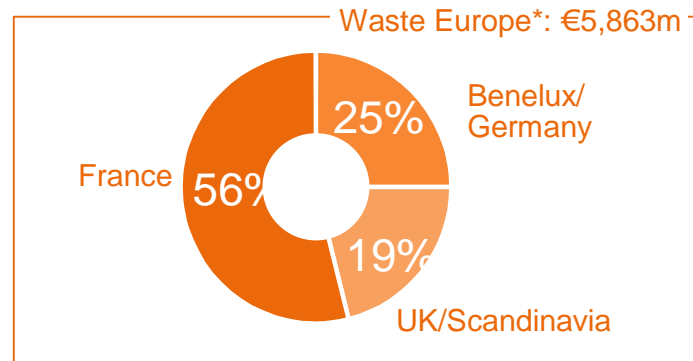
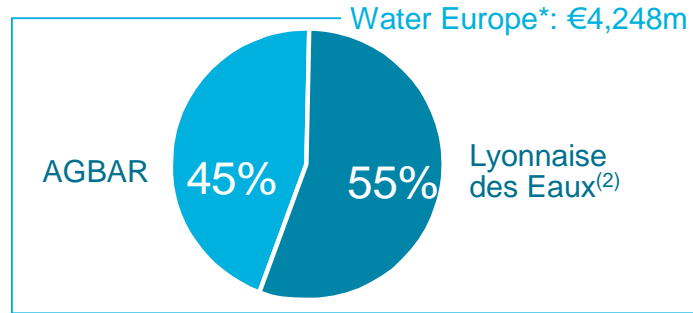
- **91 million** people supplied, **1,888** drinking water production facilities
- **61 million** people served, **1,643** wastewater treatment sites
- **1 billion** inhabitants served by **10,000** Degrémont facilities



- **51 million** people benefiting from waste collection
- Over **464,985** industrial and commercial clients
- **41 million** tonnes of waste treated
- **49 incinerators** worldwide (46 of which provide energy recovery)

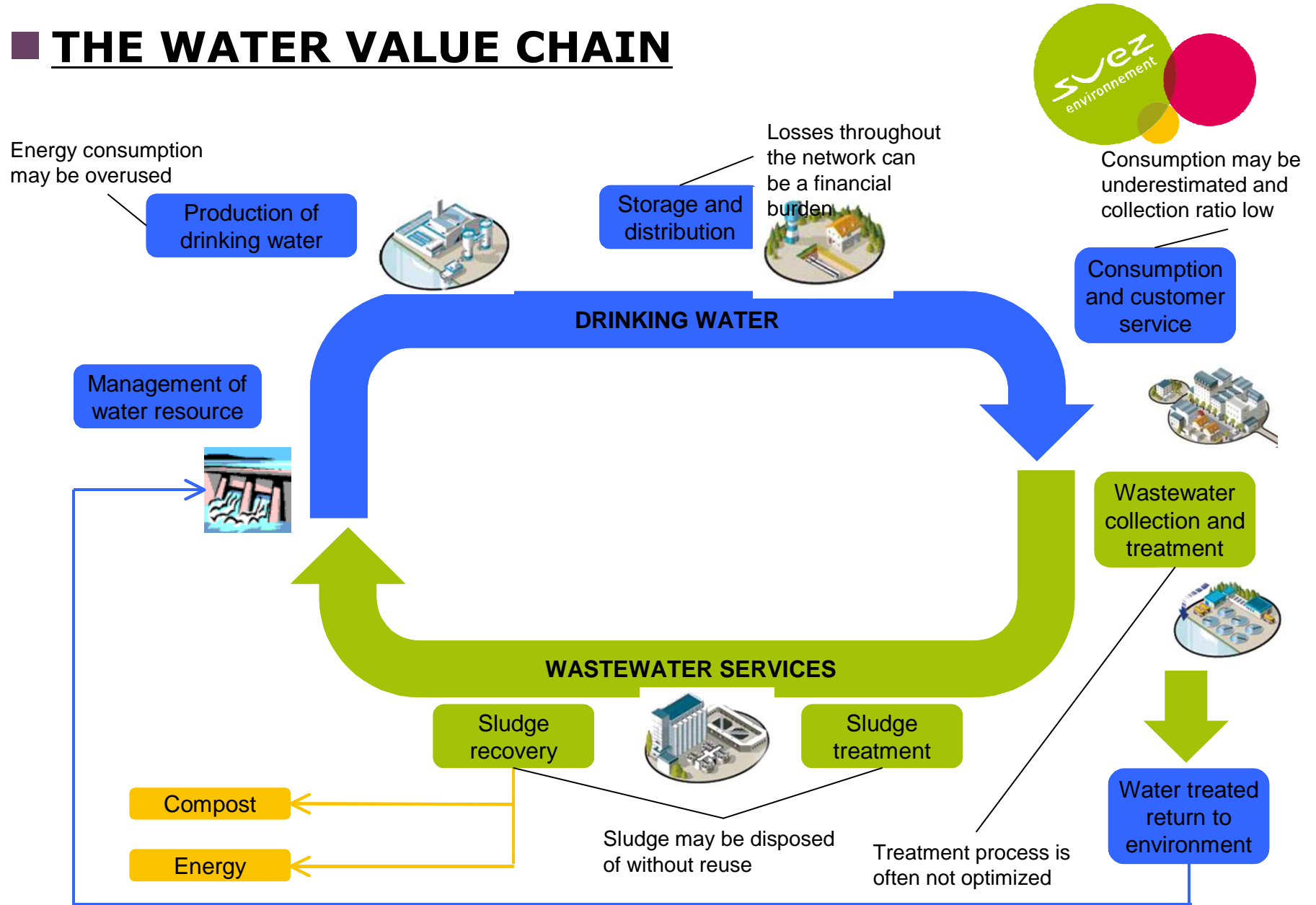
POSITIONED ON THE FULL VALUE CHAINS OF WATER AND WASTE

BALANCED POSITIONING (2010)



* Western part of Europe
 (1) Rest of the World
 (2) Including activities in France, Italy, Germany, Safège, OIS
 (3) Central Europe, Mediterranean and Middle East

THE WATER VALUE CHAIN





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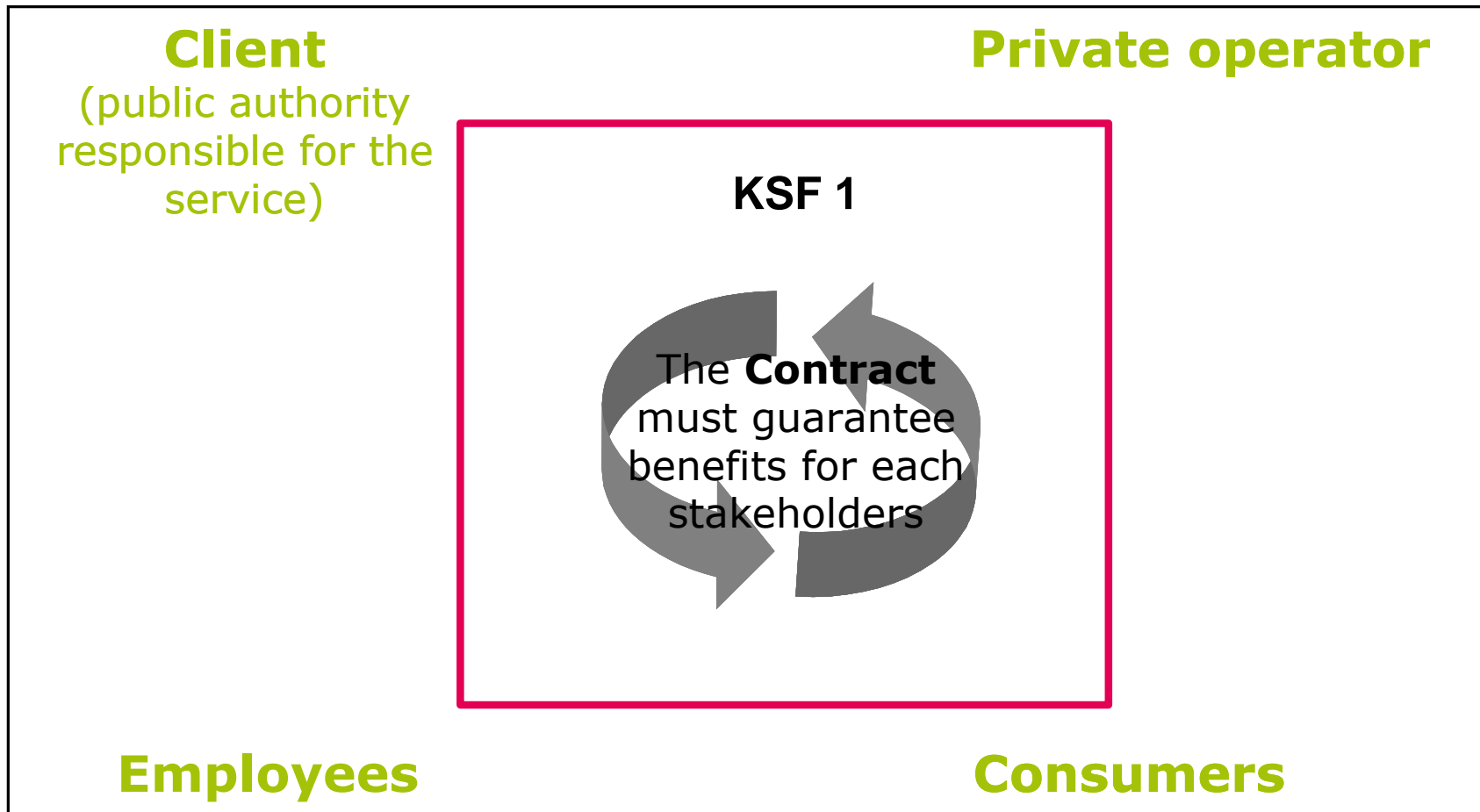
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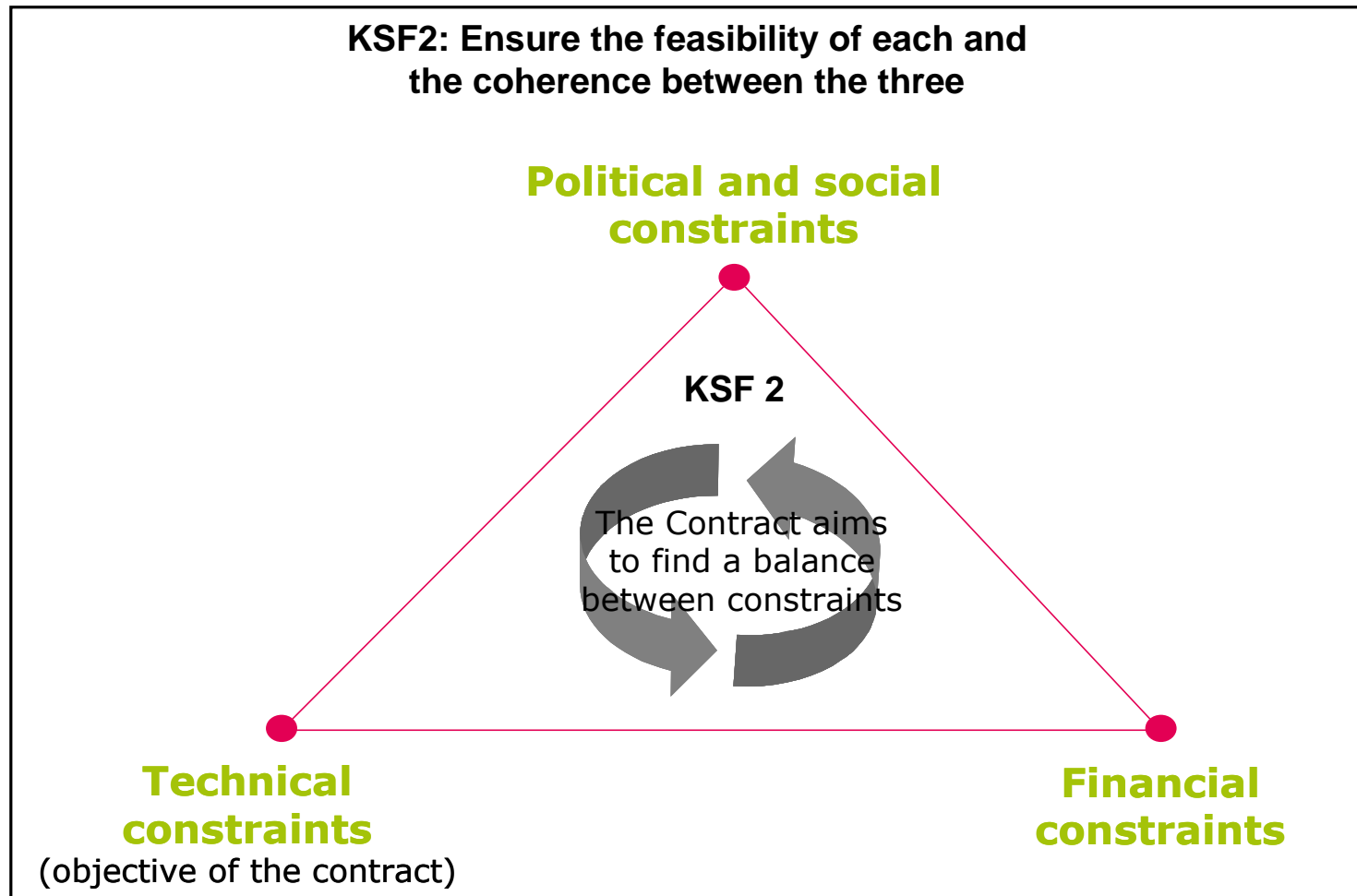
■ PUBLIC PRIVATE PARTNERSHIPS

- **A public-private partnership is an alliance** that combines the business efficiency of a private operator and the government's mission of public service.
- **Tailor-made partnership:** the scope of work is defined by the public authority with the support of the private operator.
- **The partnership builds up through mutual trust** between the public authority and a private operator to jointly offer solutions.

■ **Key success factors for PPPs:**
Win-win situations



■ **Key success factors for PPPs:**
Balance the constraints in order to set the contract's objectives



■ **Key success factors for PPPs:**
Clearly allocate roles



Separates the roles of Public Authority from Private Operator



Public authority who:
Generally owns the assets
Fix the rules
Set the tariffs
Controls the Operator performance



Private Operator who:
Focuses on economic efficiency and performance of service
Owns state-of-the-art technologies
Manages Human Resources and skills
Optimises OPEX & CAPEX
Contributes to know-how



■ Key success factors for PPPs: **Comply with duties**



- **The public authority must have:**
 - A strategy
 - A willingness for permanent dialogue
 - An interest in involving a specialised third party (transparency and arbitration)
- **The private operator must accept to be:**
 - Measured objectively
 - Controlled contractually
 - Regulated transparently



Stakeholders dialogue



■ The contract is a tool that sustains the process

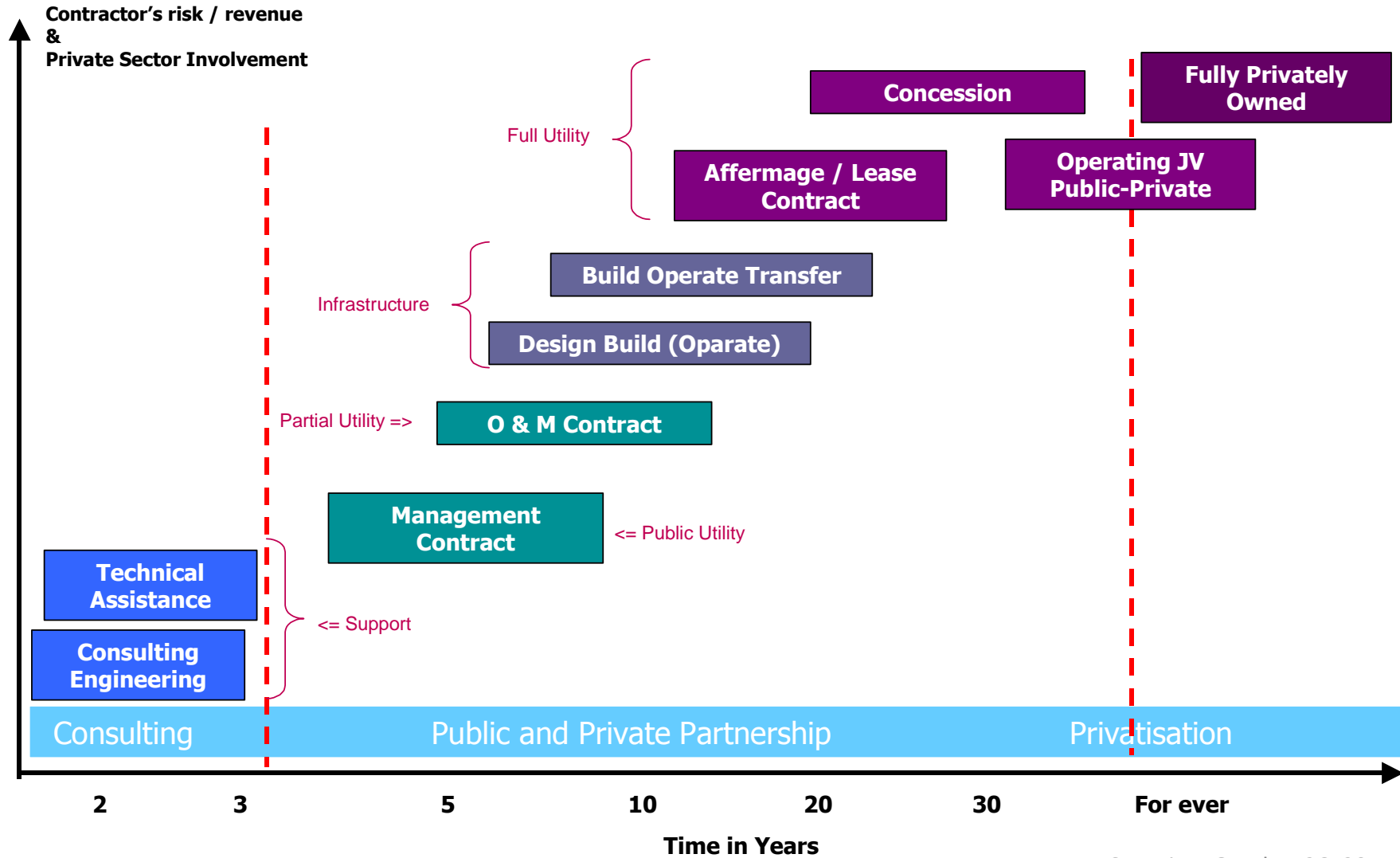
● The choice of contract depends on:

- The performance of the utility and the objectives to be achieved
- The client's expectations in terms of delegating part of the public service
- The social and political constraints: regulation, institutional framework, etc.

● The contract embeds:

- Role allocation
- Targets
- Control mechanisms
- Remuneration schemes

PPP schemes





■ Key Considerations

- **Technical Assistance contracts** are a cost-effective approach to meet specific technical needs, however their benefits are limited
- **Management contracts** are a first step of PPP where the main objective is to rapidly enhance a utility's technical capacity and its efficiency in performing specific tasks. A prepare for greater private involvement.
- **Operation and Maintenance** contracts are applicable for larger private involvement in utility services and when the revenues from the Bills are not covering the operating expenses.
- **Affermage/Leases** are recommended when a Utility is generating enough revenues thru the Bills of W and WW to pay for the Operations and the Operating CAPEX. Not for the Investments.
- **Concessions** are recommended when a Utility is generating enough revenues thru the Bills of W and WW to pay for the Operations and the Investments. They pass full responsibility for operations and investment to the private sector
- **Build-operate-transfer (BOT)** or variations resemble concessions for providing bulk services but are normally used for greenfield projects, such as a water or wastewater treatment plant



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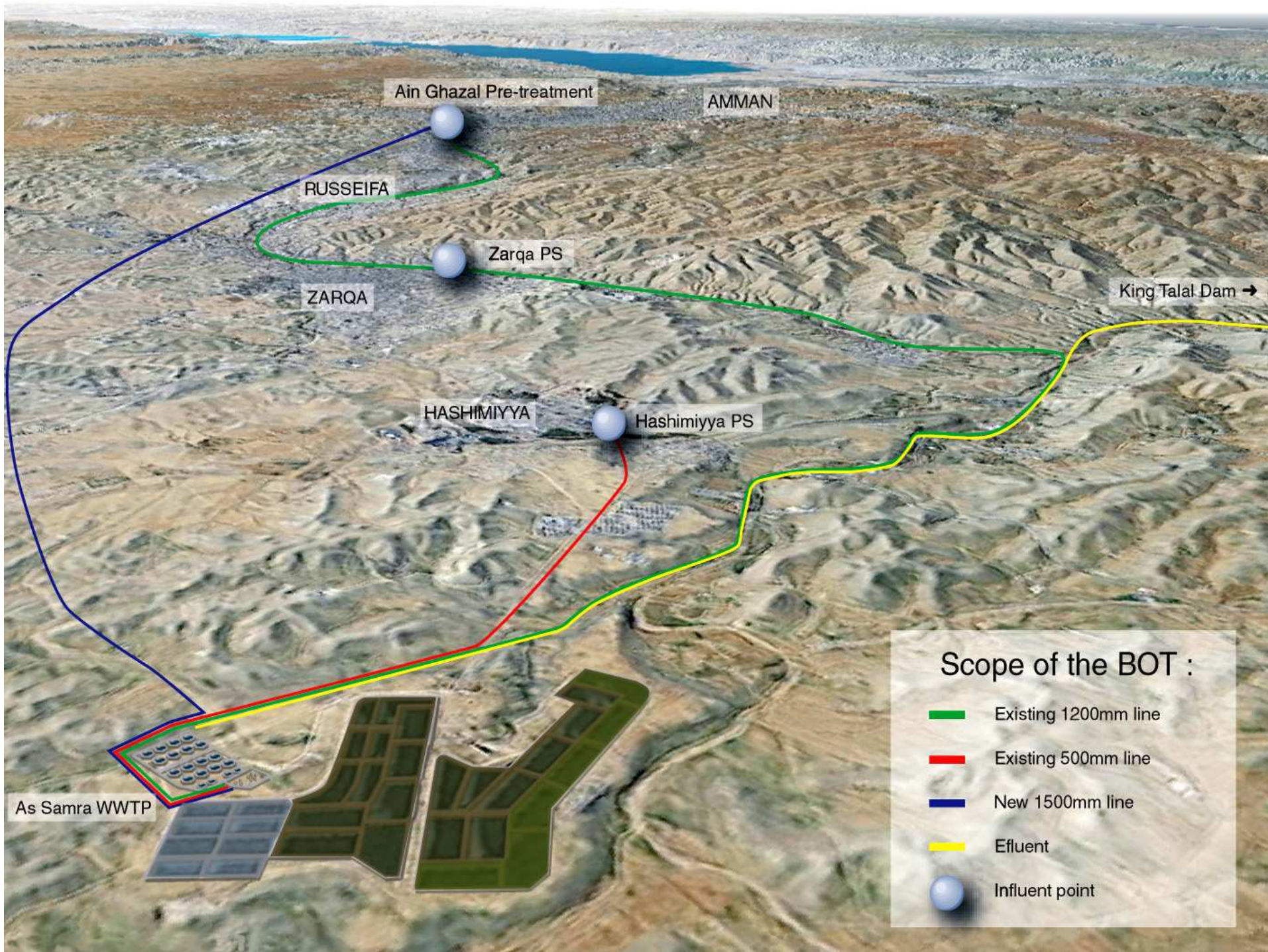
Jordan's First BOT Experience in Constructing the Biggest Wastewater Treatment Plant





Project Description

- **25 year Build, Operate and Transfer (BOT) contract for a Wastewater Treatment Plant to be built at As Samra**
- **Operate, Maintain and Transfer the Siphons from Ain Ghazal Pre-treatment Plant to the Samra 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**





Key Terms of the Project Agreement

- **Executed with the Government of Jordan represented by the Ministry of Water & Irrigation**
- **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

Financing Plan:

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

Sponsors' Undertaking

- Equity Investment ~**11%**
- Equity Guarantee ~ **9%**
- Commercial Loan (11 Jordanian Banks & Financial Institutions)
- Performance Guarantee \$ 15 Million
- Post completion the Commercial loan guaranteed by the Gov.
- Mother Companies Repayment Guarantee to USAID

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 m³/day)**
- **Additional Pollution of Influent (for BOD₅ above 0.55kg/m³)**

Treatment Charges: Structure



Fixed Portion:= $\text{Fix (Cap)} + I_I \cdot \text{Fix}_I (\text{Cap}) + I_C \cdot \text{Fix}_F (\text{Cap}) + I_L \cdot \text{Fix (Op)} + I_R \cdot I_C \text{Fix}_R (\text{Op})$

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

Variable Portion:= $I_L \cdot \{ (A \cdot (V_p - 160)) + B [(X_p \cdot (V_p - 160)) + 160 \cdot (X_p - 0.55)] \}$

- $I_L \cdot A \cdot (V_p - 160)$: Payment of Variable OPEX (Flow)
- $I_L \cdot B \cdot (X_p \cdot (V_p - 160) + 160 \cdot (X_p - 0.55))$: Payment of Variable OPEX (Load)

I_I = Interest rate index

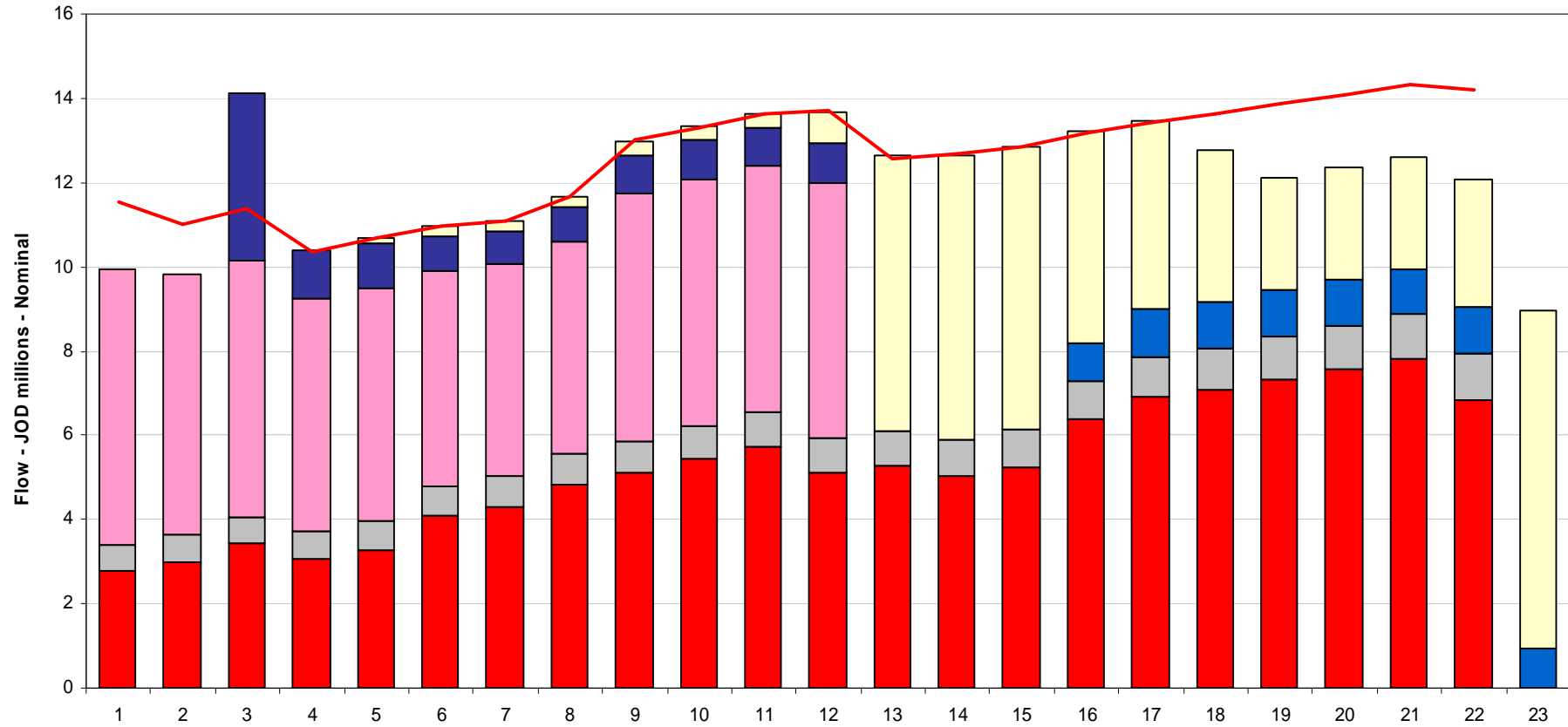
I_C = Currency Exchange rate index JD/USD

I_R = Renewal Index – Construction & Machinery index

$I_L = (50\% \times A_{Lm} / A_0) + (40\% \times B_{Lm} / B_0) + (10\% \times C_{Lm} / C_0)$

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

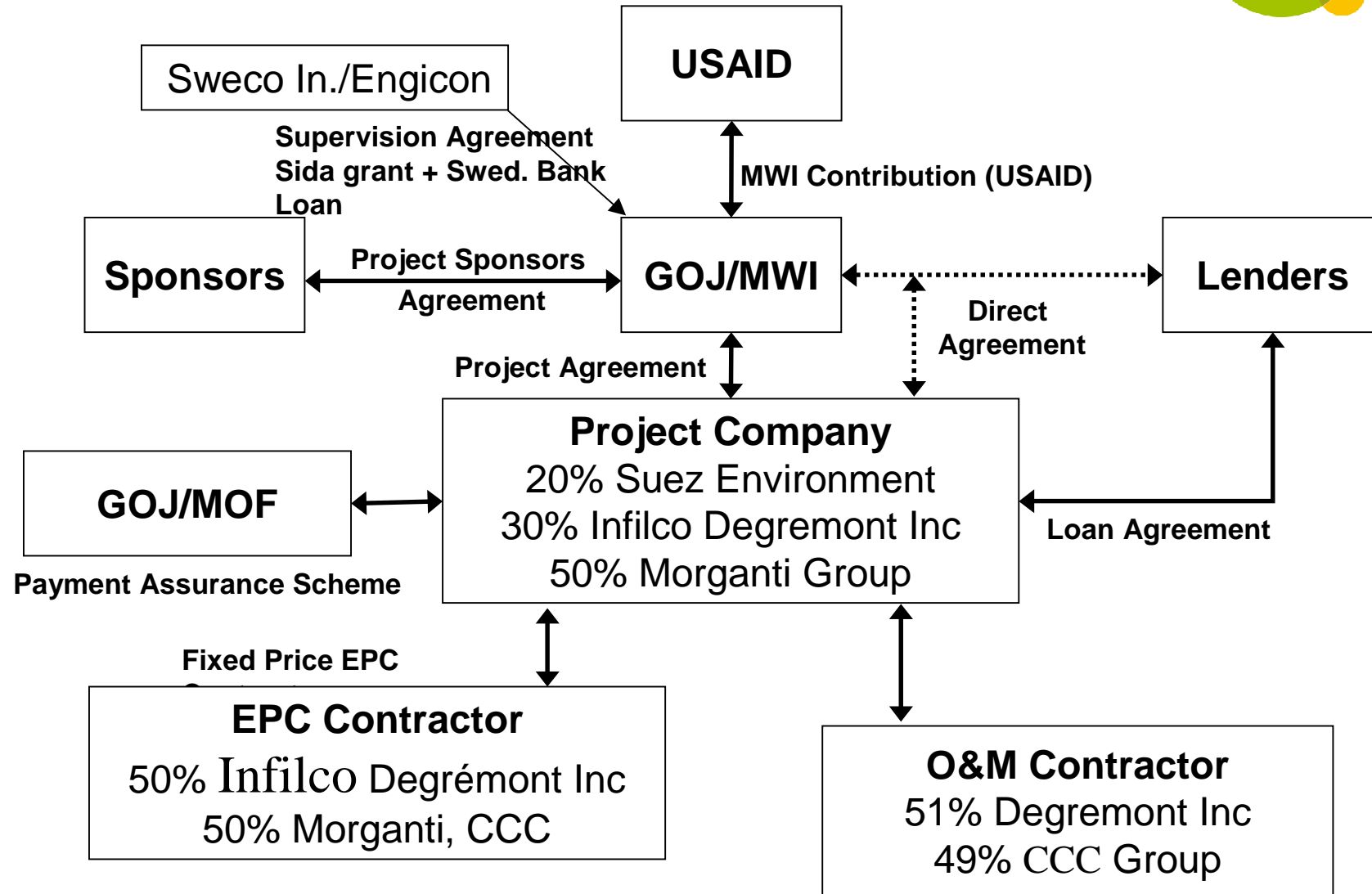
Base Case Operating Cash-flow



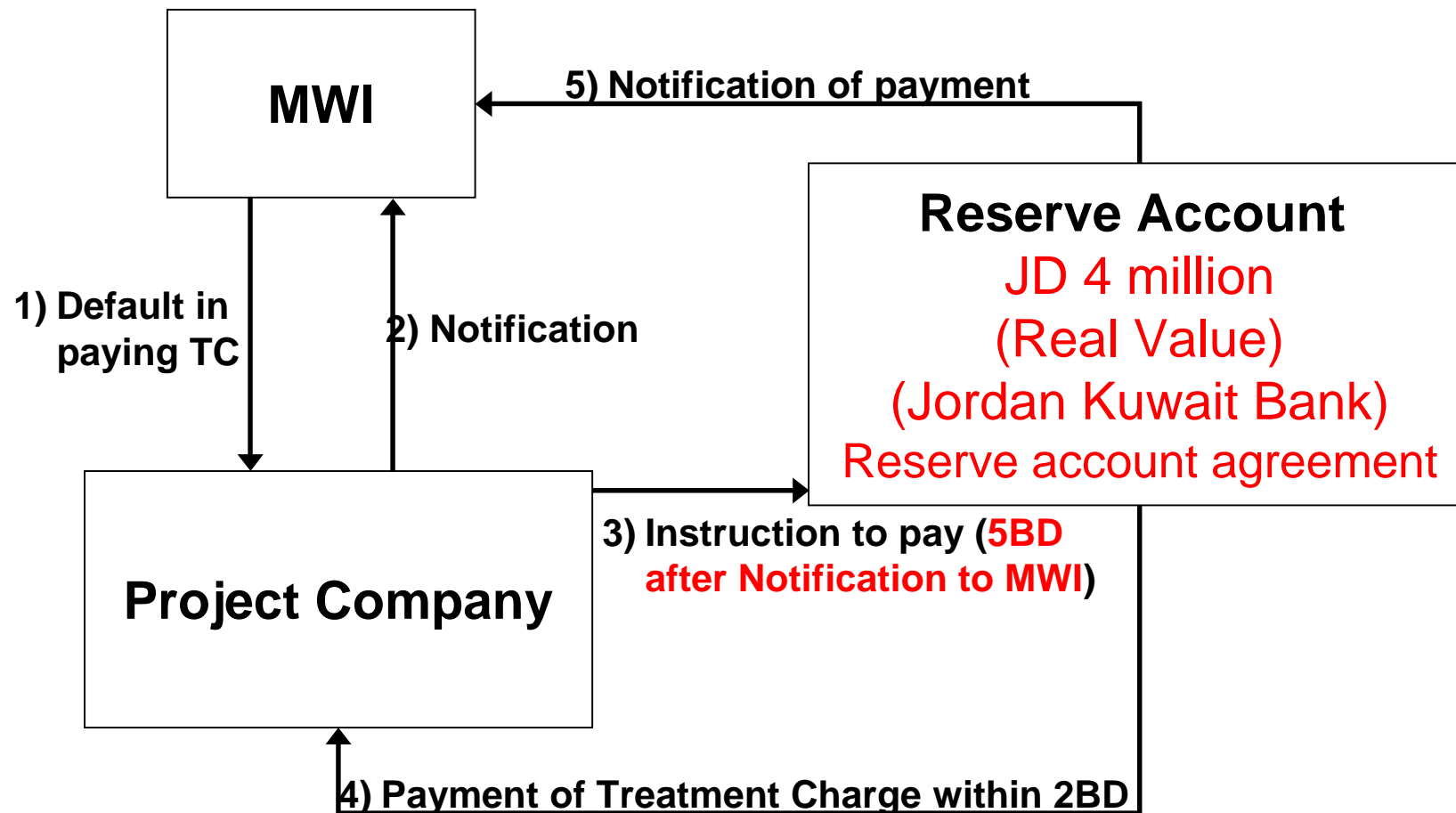
Periods: Annual from January 2006



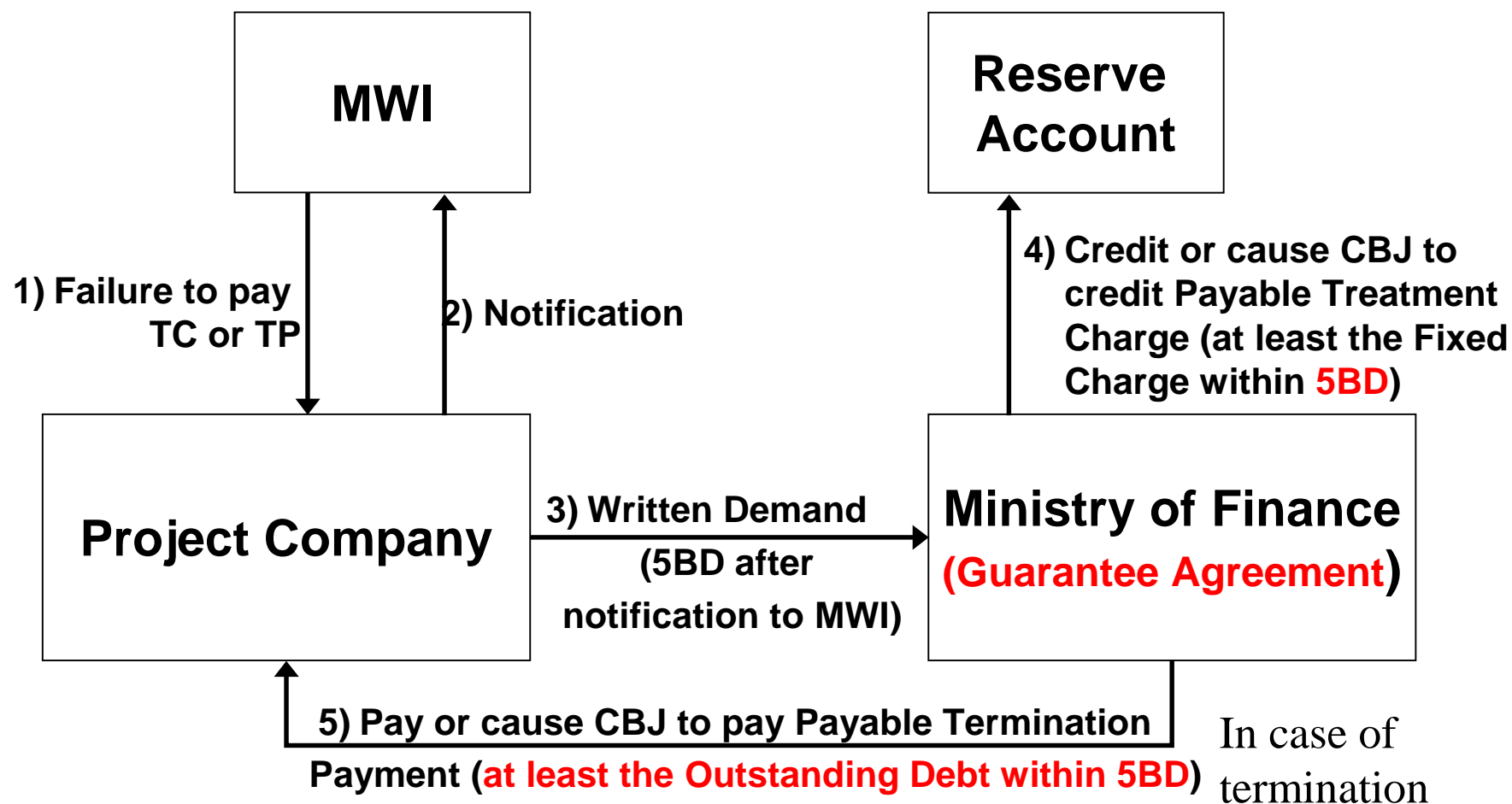
Simplified Contractual Framework



Payment Assurance Scheme- Reserve Account Agreement



Payment Assurance Scheme- MoF Guarantee Agreement



Risk Sharing/SPC'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.
- Enabling Legislation is in place (WAJ Law, Investment Promotion Law)
- Well prepared documentation : Feasibility Study and EIA, Pre-qualification, Invitation to Tender, Draft Agreements
- Transparent and comprehensible evaluation procedure
- Limited number of strong consortia be pre-qualified (5 max.)
- Timetable is realistic and deadlines are achieved
- 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 30-50% of total Project Costs
- To make the project affordable to both Government and other stakeholders
- To set enough reasonable tariffs to attract bidders,

Project that Makes Many Firsts



- The first BOT Project in Jordan
- The first electricity Self-sufficient WWTP
- The first mix financed project (Government, Donors “USAID”, Sponsors and Lenders)
- First Project financed by Jordanian Banks (under PPP)
- First Comprehensive environmental project (full cycle) conveyance, treatment and reuse of by-products (water, sludge, hydropower and gas)

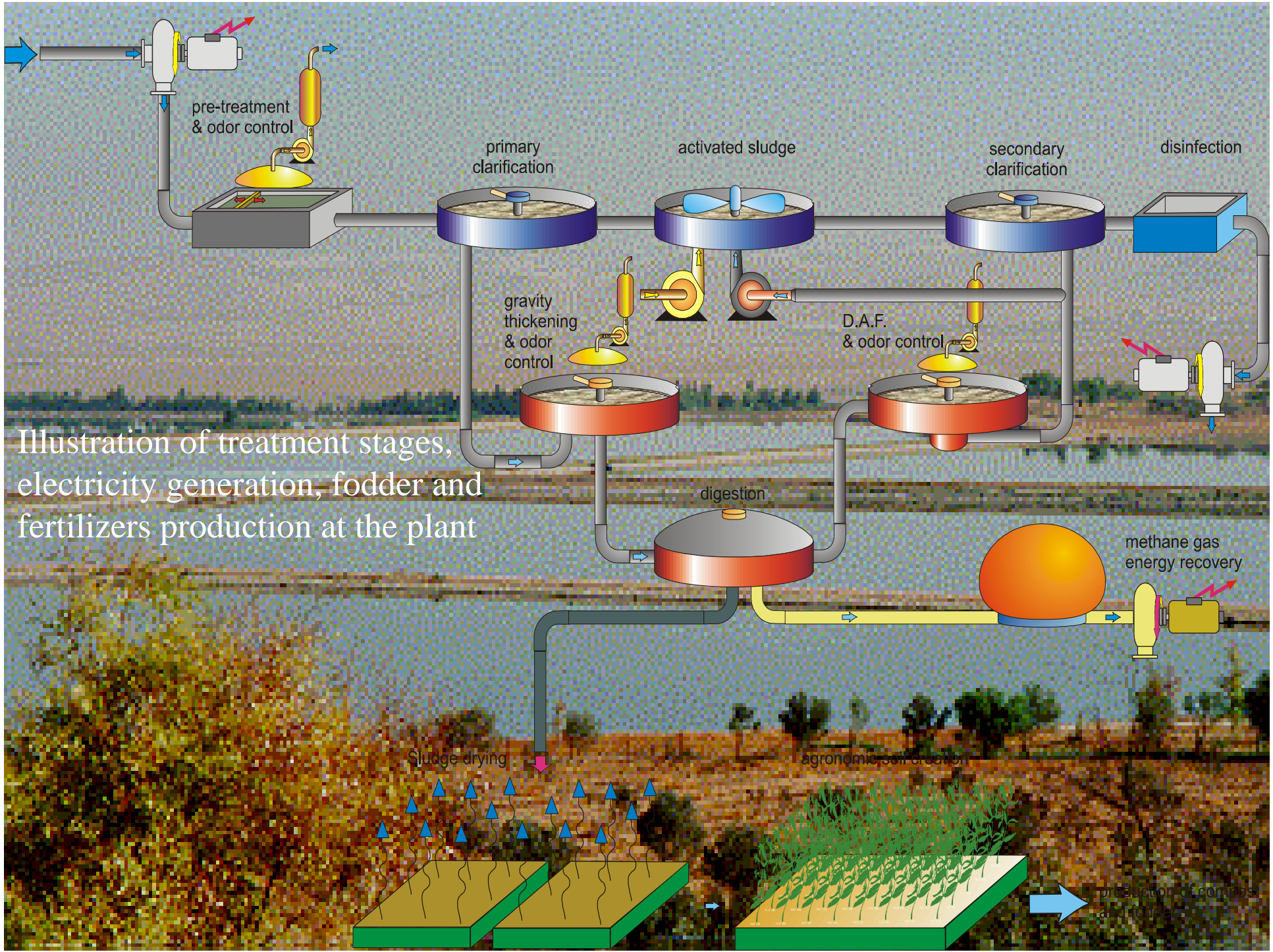


Illustration of treatment stages, electricity generation, fodder and fertilizers production at the plant

Effluent quality

Parameter	Quality
BOD5	6mg/l
Total Suspended Solids	10mg/l
Total Nitrogen	15mg/l
Nematode Eggs	<1 egg/l
Faecal Coliforms	< 40 MPN/100ml
DO	> 1 mg/l
pH	7-9
Fat, Oil, Grease	<8mg/l
Odours: (H₂S, NH₃, Mercaptans e.tc) -	< standard



Plant Expansion



New sludge line

40 % increase of water line
80% increase of sludge line

New water line

Additional Francis turbin on effluent discharge

Tertiary treatment



October 26, 2011



Main Specifications



- Treatment Capacity increase by 100 000 m³/d (+40%)
(from 267 to 367.000 m³/d)
- Sludge treatment of Phase 1 increased by 80%
- A negotiated Contract (clause 10 « New Investment »)
→ on the basis of existing BOT Agreements
- Duration : 25 years from 2012 onwards → 2035
- MWI Budget :
 - EPC: 50% subsidised by MCC
 - Acceptable Tariff (80% subsidised by MWI)



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