AS-SAMRA PROJECT

The key points for a success story
As-Samra BOT – History

1968  Construction of the first WWTP for Amman at Ain Ghazal

1986  Closure of Ain Ghazal plant and construction of Waste Stabilisation Ponds (WSP) at As-Samra

1997  Master Plan for Amman-Zarqa Basin: As-Samra WSP already overloaded and causing problems

1999  MWI concluded Project Feasibility Study and preliminary engineering design for a 100 MCM/Year WWTP

1999  21 different financial scenarios & implementation options were analyzed (conventional, BOT, DBO, EPC)

2000  Due to financial limitations, the BOT implementation option was selected

2000  USAID issued commitment letter to MWI for $75M commitment for the project (increased at Financial Close to $92M)

2000  Launch of BOT tender process for As-Samra WTP

2003  Financial Close for Phase 1

2008  Full Commercial Operation of Phase 1

2010  Start of Negotiations for Phase 2

2012  Financial Close for Phase 2

2015  Full Commercial Operation of Phase 2
As-Samra, Characteristics of the Project

*Plant (Phases 1+2)*
- Nominal capacity: 364,800 m³/d (3.27 million inhabitants)
- Water line: primary settling tank + aeration + clarification + chlorination
- Sludge line: anaerobic digestion + belt filter press + solar drying beds
- Energy production
  - Hydraulic turbines (4.2 MW)
  - Biogas power generators (9.5 MW)

*Others*
- 3 external sites (upstream): 1 pre-treatment (Amman), 2 pumping stations (Zarqa)
- 221 employees
As-Samra, an Environmental Success

- **70%** of the wastewater treated in Jordan
- **100%** of treated water used for irrigation
- **10%** of global water consumption thanks to high quality treated water that frees up fresh water
- **80%** self-sufficient in energy with renewable resources
- **185** tons/day valuable resource of biosolids (organic fertilizer, soil conditioner, energy recovery, etc.). Landfill for now.

UNESCWA - October 31st, 2017
As-Samra, a Social and Transfer Knowledge Success

- **Up to 2,500** jobs created during construction
- **220** long-term jobs created
- **99.5%** Jordanian employees and 70% from local areas
- **Transfer of Know-how and industry best practices**
- **O&M staff became specialists for other projects over the world**

ISO 9001 (Quality Management)
ISO 14001 (Environment)  ISO 18001 (Health & Safety)
ISO 50001 (Energy)  ISO 55001 (Asset)
As-Samra, a Contractual and Financial Success

- **Long term BOT contract** resulting in sustainability backed by the support of Government’s vision and commitment
- **Successful structuring** of deal by aligning the interest of all parties with more risk transfer to private sector
- **Affordable tariff to Gov.** viability gap funding through USAID and MCC
- **Lower cost to farmers** encouraging less use of fresh water

- WEX global award for innovation for 2013
- World finance infrastructure award for 2013
- King Abdullah Stamp for excellence
Key figures of electricity production

- Production with hydraulic turbines:
  - Total power: 4.2 MW
  - Benefits from geographical site location
  - 2 x Pelton (inlet) + 3 x Francis (outlet)

- Production with biogas generators:
  - Total power: 9.5 MW
  - Gas produced by digestion process
  - Need of H2S removal treatment
  - 10 x Caterpillar gensets

- Total Production: 75 GWH/y
Client: Government of Jordan represented by the Ministry of Water and Irrigation (MWI)

Donor: USAID for phase I and Millennium Challenge Corporation (MCC) for phase II

Grant Fund Manager: Millennium Challenge Account (MCA-Jordan).

Authorities Engineer: SWECO for phase I and Fichtner (+ local consultant Eco Consult) for phase II

Project Companies: Samra Wastewater Treatment Plant Company Ltd. (SPC) and Samra Plant Operation and Maintenance Co. Ltd. (O&M).

Sponsors: Suez/IDI and Morganti-CCC

Lenders: Lender Syndicate led by Arab Bank

Lenders Advisor: Mott MacDonald