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.

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
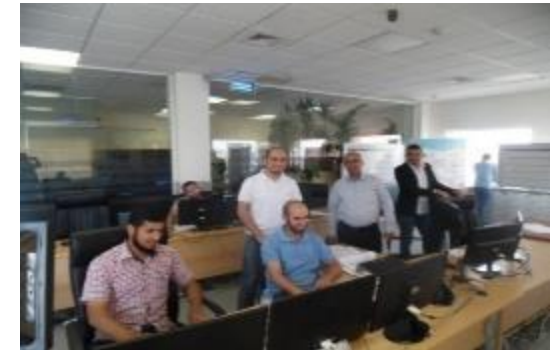
ISO 9001 (Quality Management)

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

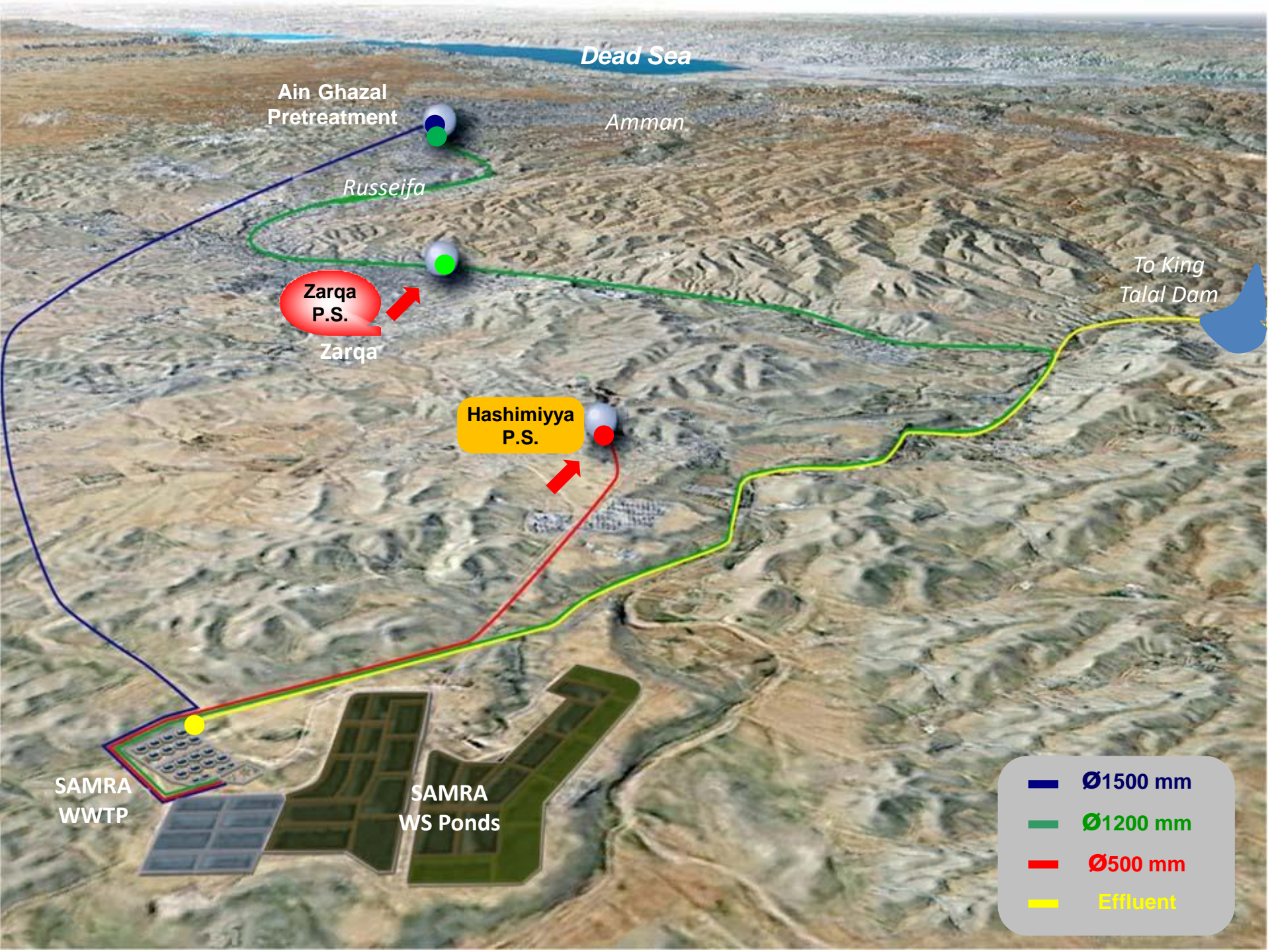- **Lower cost to farmers** encouraging less use of fresh water

- WEX global award for innovation for 2013
- World finance infrastructure award for 2013
- King Abdullah Stamp for excellence

EXTRA SLIDES

Key figures of electricity production

- Production with hydraulic turbines:

  - Total power: 4.2 MW

  - Benefits from geographical site location
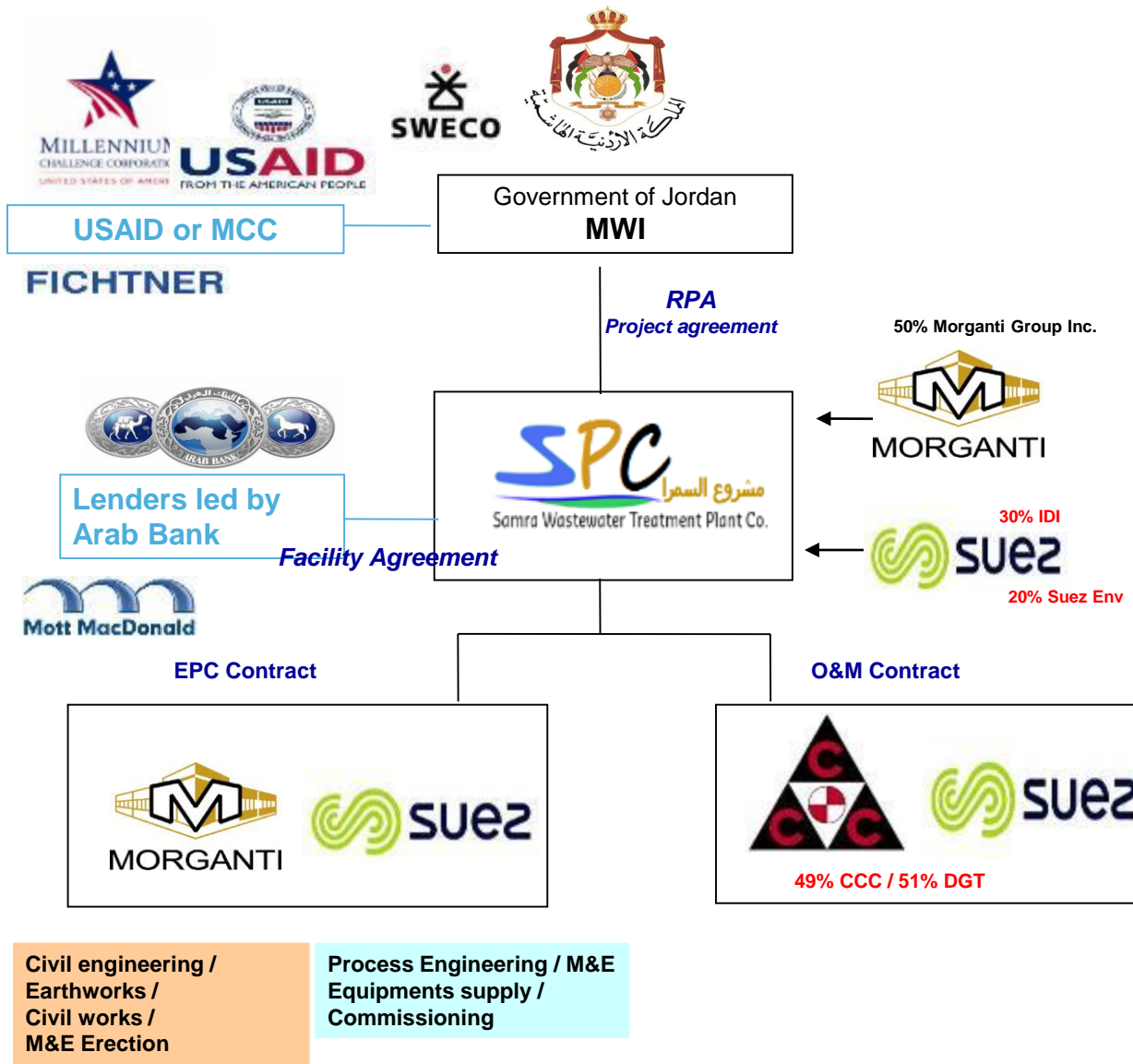
  - 2 x Pelton (inlet) + 3 x Francis (outlet)

- Production with biogas generators:

  - Total power: 9.5 MW

  - Gas produced by digestion process

  - Need of H_2S removal treatment

  - 10 x Caterpillar gensets

- Total Production:75 GWH/y

Samra BOT – Contractual Structure & Stakeholders

USAID or MCC

Lenders led by Arab Bank

Government of Jordan
MWI

RPA
Project agreement

50% Morganti Group Inc.

MORGANTI

SPC — Samra Wastewater Treatment Plant Co.

30% IDI

20% Suez Env

Facility Agreement

EPC Contract

O&M Contract

MORGANTI **SUEZ**

49% CCC / 51% DGT

Civil engineering / Earthworks / Civil works / M&E Erection

Process Engineering / M&E Equipments supply / Commissioning

- **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 Mac Donald