



Oman: Al Batina Treated Effluent Line and Mangroves Cultivation

Contact:

1. Al Batina Treated Effluent Line project:
 - Mr. Hilal Al Dakhry, General Manager of Business Development & Marketing, Oman Water and Wastewater Company - hilal.dhakhry@owwsc.nama.om
 - Mr. Sultan Saif Said Al Salami, Investment and Partnership Manager, Oman Water & Wastewater Services Company - sultan.salami@owwsc.nama.om
2. Mangroves project: Mr. Zahir Marhoon Al-Abri, Ministry of Finance - zmalabri@mof.gov.om

Al Batina Treated Effluent Line

Oman



Deal opportunity overview

Constructing tertiary treated effluent (TE) line with a capacity of 40,000 cubic metres per day from A' Rumais area (Barka) to Al Maghsar area (Al Musana), a length of 35 km. Omani Water and Wastewater Company (OWWSC) is working strategically to enhance utilization of tertiary treated effluent (TE) due to its environmental and economic value in various projects such as food security projects and other industrial and commercial uses (considering Oman under water poverty line)



Oman Water and Wastewater Company



Investor Category: DFIs, Fis, Grants



Funding Required: USD 41.5m



Use of Proceeds: Construction of 35 km Tertiary Treated Effluent for agricultural, industrial and commercial use



Project/enterprise details

- Oman Water and Wastewater Company / Nama Water Services (NWS)
- **Key stakeholders:** NWS, Ministry of Agriculture, Oman Food Investment Company, and Ministry of Economy
- **Track record:**
 - Solar PV Project at Quriyat STP with capacity of 100KWh
 - Sludge To Energy (in feasibility stage)
 - PPP Solar Project (tendering phase)
- **Partnerships:** Oman Food Investment Company, Ministry of Agriculture, Oman Palm Tree Company, Ministry of Economy

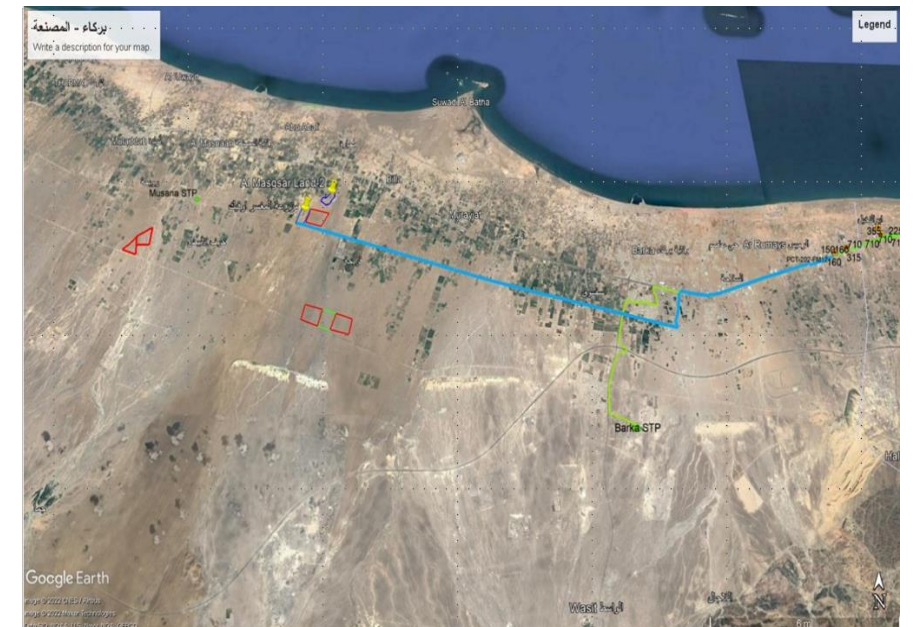
This project is considered as strategic infrastructure, with appropriate model still under discussion. Estimated subsidised TE tariff (USD 0.14/M3), revenue estimated is USD 6k/day where the asset life cycle is 50 years. The government will save the cost of desalinated water and reduce carbon emissions of 40,000 m3/day and saving the ground water as a strategic reserved. This is a unique recycle economy case



Background



Business Model



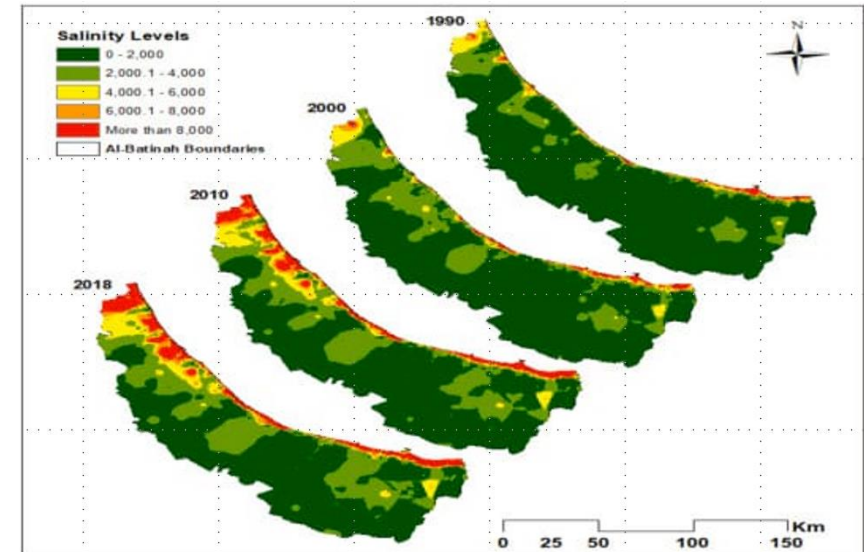


Risks and mitigation

Risks

Mitigation Strategies

<p>1 Environmental risks</p>	<ul style="list-style-type: none"> • Pipeline leakage causing soil/water contamination • Over-exploitation of treated effluent impacting ecosystems 	<ul style="list-style-type: none"> • Proper pipeline construction/testing, monitoring systems. • Regulating usage, monitoring environmental impact
<p>2 Commercial risks</p>	<p>Insufficient end user demand</p>	<p>Mitigate by securing anchor customers and flexible pipeline access agreements</p>
<p>3 Regulatory risk</p>	<p>Customers resist to utilise TE</p>	<p>Government is working to apply tariff for ground water where it will increase TE utilisation as economic alternative</p>
<p>4 Technological risks</p>	<p>Inadequate tertiary treatment capabilities</p>	<p>Mitigate by tying up with technology partners, building treatment plants along with pipeline</p>





Impact

- **Project Beneficiaries**
 - 1100 farmers (with 40,000 M3/ day sufficient for 5600 acres of wheat, 5 acres / farmer)
- **Employment Creation**
 - In addition to above number of beneficiaries, several jobs will be created in value chain stream
 - 30% reduction in groundwater extraction and desalination water usage for non-potable needs in the region compared to baseline, that will allow to redirect the financial sources for job creation in other sectors
 - 10 agricultural/food production facilities; 3 municipalities for landscaping usage; 5 industrial facilities
- **Sustainability**
 - Mitigation: 2.3 million ton / year reduction of CO2
 - 2240 hectares of barren land put into productive use/prevented from degradation
 - 73 million/ 5 year water saved
 - 26% increase in green spaces/agricultural production irrigated by treated effluent
 - 10% GHG emission reduction for the region compared to baseline
- **Growth projections**
 - N.A at this stage
- **Return**
 - Payback period of the capex is 20 years where is the asset life cycle is 50 years
 - Estimated daily revenue of USD 6k

Social Impact Targets

Return expectations



Cultivation of One Million Mangrove Seedlings



Deal opportunity overview

A type of mangrove known as 'avicennia marina' is considered as one of the most important environmental features of the marine environment in the Sultanate of Oman. This species is distributed in several coastal areas, extending from the Al Batinah governorate in the north, through the Governorate of Muscat, the Eastern governorate, Mahout Island, and the Dhofar Governorate in the south, and the total area covered by mangroves in the Sultanate is about 800 hectares. The Environment Authority sought to implement a long-term plan to rehabilitate and preserve mangroves in the various governorates of the Sultanate through cultivating mangroves and rehabilitating lagoon. In that view, new groves were cultivated, and the surface area covered was increased. 754 thousand seedlings were cultured by the end of July 2022, represented in 32 sites along the coast of the Sultanate



Project/enterprise details



Background

- **Key stakeholders:** Environment Authority, Ministry of Housing & Urban Planning, Ministry of Agriculture, Fisheries and Water Resource, Petroleum Development Oman, Oman Women's society
- Funding Required: USD 0.5m



Impact

- Capture GHGs and restore mangrove estuaries and their ecosystems
- Support the increase and diversity of fish stocks by providing a safe environment for growth, breeding and protecting marine organisms

