

NEW EAST ALEXANDRIA WASTEWATER TREATMENT PLANT AND SLUDGE MANAGEMENT AGENCE FRANÇAISE DE DÉVELOPPEMENT

AFD INVESTMENTS ON WATER AND SANITATION IN EGYPT

- **A strategic priority for AFD in Egypt:** Investments in the sanitation sector aiming to reduce pollution in the Nile – and ultimately the Mediterranean, is one of the key objectives of the AFD strategy in Egypt.
- **A strong and lasting financial commitment:** 320 million euros of investments over the past 15 years in the field of water and sanitation, supplemented by 35 million euros in delegated funds from the European Union.
- **A significant increase in treatment capacity:** Development of more than 1.5 million m³/day of new wastewater treatment capacity in Cairo (Gabal Al Asfar, Helwan) and Alexandria, directly contributing to the improvement of the environment and public health.



Wastewater Treatment in Alexandria

- Alexandria has two major wastewater treatment plants handling over 95% of the city's wastewater:
 - **East Alexandria WWTP** with a capacity of 800,000 m³/day which is already overloaded during peak hours and flooded during intense flow events of rainfall (extension was not possible due to land constraints).
 - **West Alexandria WWTP** with a capacity of 462,000 m³/day which is currently being expanded to 600,000 m³ per day while upgrading the treatment process from primary to advanced secondary biological treatment.
- **Challenges:**
 - Overload of existing wastewater management facilities,
 - Projected population growth due to urban development with associated increase in wastewater generation,
 - Increase in rainfall intensity on the Northern Coast of Egypt due to climate change
- GoE strategy to treat sewage, collection and reuse of most treated wastewater in agriculture is an answer to existing and future stress on Egypt's water resources.
- El Hammam Project, South-West of Alexandria, the largest tertiary treatment plant (agricultural/drainage wastewater treatment plant) in the world (7.5 million m³/day) to supply new irrigation schemes (New delta project).



Sludge management in Alexandria

- Sludge transportation within the territory of Alexandria towards 9N composting site is a critical issue for ASDCO at different levels:
 - **cost of transportation and increased greenhouse gas emissions**
 - **associated nuisances for local communities (traffic, odors)**
 - **impact on maintenance and availability of trucks.**
- Between 30 – 45 trucks arrive daily to 9N from 3 main sites: East Alex WWTP (around 60 km), West Alex WWTP (around 45 km) and Al-Amereya WWTP.
- Sludge quantities ranges between 10 000 and 15 000 Tons sludge/month, at a dryness comprised between 20% and 30%.
- 9N site produces compost for landscaping purposes only, after controlling heavy metals and pathogens.
- Application in agriculture is still not possible and would need the implementation of an institutional framework.
- The reception of industrial sludge at 9N was stopped in 2011 by the Ministry of Environment, including refuse from sewer cleaning.
- A sludge drying project was proposed on the site of East Alex WWTP. The objective is to reduce the volume of sludge transported to 9N site, also considering the direction of dried sludge to a cement factory.



Upgrading of the East Alexandria Wastewater Treatment Plant

AFD Concessional Loan of 50 MEUR

Implementing Entity: Construction Authority for potable Water and Wastewater

Objectives and Impacts:

Construction of a sludge treatment unit in the plant

- Sludge valorization for biogas production to improve the energy performance of the plant (50% of energy self-sufficiency)
- Reduction of social impacts by creating commercial opportunities for treated sludge
- Received the prestigious **Emirates Energy Award** (Gold award) in the category for energy efficiency in the public sector

Current status:

- The plant is operational since 2022, with high operational performance (between 50 and 60% of energy self-sufficiency)



New East Alexandria Wastewater Treatment Plant

**68 MEUR AFD Concessional Loan, 2 MEUR AFD grant
and 2 MEUR Blue Med Partnership grant**

Implementing Entity: Construction Authority for potable Water and Wastewater (CAPW)

Objectives:

- Construction of a new wastewater treatment plant in East Alexandria (capacity of 300,000 m³/day to serve 1,5 Million people) with biodigesters and biogas production units, and allowing the reuse of treated wastewater in agriculture.
- Secondary Treatment technology, treated water for irrigation via transfer for tertiary treatment in El Hammam WWTP.
- Development of a Sustainable Sludge Management Strategy for Alexandria.

Current status:

- Financing Agreements signed in April 2025
- Preliminary design and preparation of tender documents
- 7 JVs prequalified for Works tender in 2025, contract signature and start of construction in 2027



New East Alexandria Wastewater Treatment Plant

Sustainable Sludge Management Strategy in Alexandria

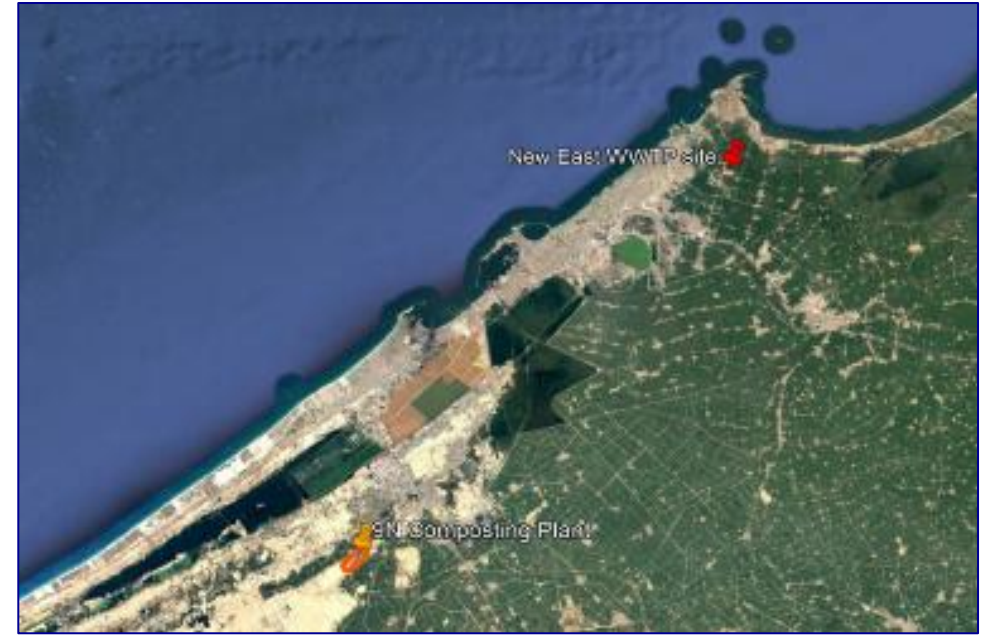
In cooperation with: MoHUUC PMU and ASDCO

Objectives:

- Study of sludge management options for the optimization of transportation costs from WWTPs to 9N and options for complementary treatment at the WWTP before transportation to 9N.
- Diagnosis of the 9N treatment processes, and options for technology/operation improvement (including industrial waste).
- Assessment of the opportunity of PPPs for sludge management in Alexandria.
- Development of a stable framework for Energy and /or agricultural use of sludge
- Capacity building directed to ASDCO, EWRA, CAPW, NUCA and MoHUUC PMU, with a focus on PPP opportunities.

Current status:

- Coordination with other DFIs (WB, EIB and EBRD)
- Consultancy expected to start beginning of 2027



THANK YOU

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