

## **BEIRUT AND MOUNT LEBANON WATER ESTABLISHMENT**

### **SECOND GREATER BEIRUT WATER SUPPLY PROJECT - SGBWSP**

#### **TERMS OF REFERENCE**

#### **PROJECT ENGINEER**

#### **Project Background**

The proposed Project is a follow-on operation to the Greater Beirut Water Supply Project (GBWSP, P103063). In December 2010, the World Bank approved this US\$200 million investment project (Loan No. 7967) to finance the GBWSP. The financing plan included US\$140 million to be financed by the BMLWE and US\$30 million by the GoL. The GBWSP, scheduled to close on April 30, 2025, aimed to provide an additional 250,000 cubic meters of water per day in the GBML area. Its design marked the first time water would be sourced from surface water sources, specifically the Awali River, springs, and the Lake Qaraoun fed by the Litani River. The GBWSP infrastructure includes an inter-basin bulk water conveyance tunnel that feeds into a gravity-based "source to tap" water supply system to deliver a reliable, year-round supply to the Project area. The LRA operates all infrastructure along the Litani, including a series of hydropower plants and dams that the bulk water supply system relies on.

As of March 2025, most activities under the GBWSP have been completed. Key investments funded by the GBWSP have been finalized, including the excavation of a 24-kilometer bulk water conveyance tunnel, the rehabilitation of over 400 kilometers of the water supply distribution network in Greater Beirut, and the construction of 23 water reservoirs with storage capacities ranging from 500 to 1,000 cubic meters. Additional works include network rehabilitation and the installation of a Supervisory Control and Data Acquisition (SCADA) system. Due to the ongoing conflict, the construction of the water treatment plant at Wardanieh under a Design-Build-Operate contract will be well advanced (89 percent by end April), but not completed by the GBWSP's closure.

The Second Greater Beirut Water Supply Project builds on the progress already achieved under the GBWSP and on the ongoing water reform agenda while addressing emerging challenges. The SGBWSP will finance the completion of the water supply infrastructure, ensuring the achievement of the objective of bringing additional water supply to extended areas of GBML. In addition, the Project will support the necessary additions to the Wardanieh WTP to manage increased levels of pollution expected at different times of the year. A The SGBWSP will also support institutional strengthening to improve the operational and commercial performance of the BMLWE in line with the MoEW vision for the recovery of the sector outlined in the NWSS 2024-2035 and the conclusions of analytics funded by the Bank and other donors.

The SGBWSP will be executed by the Ministry of Energy and Water (MOEW) who has delegated the implementation of components 1, 4 and 5(a) to CDR. Components 2, 3 and 5(b) and (c) will be also implemented through the PMU at BMLWE.

## **Project Components**

The Second Greater Beirut Water Supply Project consists of the following six components. The total project investment cost is estimated at US\$257.8 million financed in its totality by the Bank.

The Project consists of the following parts:

### **Component 1. Completing remaining Bulk Water Supply Infrastructure**

### **Component 2. Strengthening Treatment Processes for Improved Water Quality**

Provision of additional features to the Wardanieh water treatment plant, through:

- (a) Establishment of a daily raw water quality monitoring and an early warning system;
- (b) Supply of a Powder Activated Carbon (PAC) system including powder storage, feeder, and dosing system;
- (c) Support to the completion of works and operation of the Wardanieh WTP on an adaptive management mode;
- (d) design and installation of an optimal add-ons configuration based on results under (a) and (c);
- (e) Support to the improvement of water quality management and the BMWLE, including the rehabilitation and upgrade of BMLWE's laboratory at the Dbayeh through the expansion of existing facilities and the purchase of related equipment, and the reinforcement of chlorination practices to ensure residual chlorine in BMWLE's distribution network; and
- (f) Carrying out of rehabilitation works for key Project-related infrastructure in Selected Sites under Component 2.

### **Component 3. Reforms for improved utility operations**

- (a) Support to the Non-Revenue Water reduction in the Project Areas
- (b) Support to the modernization of BMLWE's operational and commercial management systems, through:
  - (i) Reinforcement of Information and Communication Technology (ICT) infrastructure, including inter alia, carrying out of audit of IT facilities, implementation of cyber security improvements, changes to the current operational technology network;
  - (ii) reactivation of the Supervisory Control and Data Acquisition (SCADA), including inter alia, integration of existing DMAs to the system, installation of solar panels in the Project Areas;
  - (iii) carrying out of a fixed asset inventory, including classification and reclassification, to be integrated in the BMLWE's existing enterprise resource planning (ERP) software;
  - (iv) Support to the carrying out of a census to update BMLWE's customer cadaster and to identify commercial losses;

- (v) improvement of customer management and internal processes, including, inter alia, migration of billing and collection system to the BMLWE's ERP software, integration of ERP data with geographical information system, digitalization of paper processes, supporting the digitalization of the call center;
- (vi) support to the implementation of the BMLWE's Entity Audit; and
- (c) Support to the development and implementation of the BMLWE's communications strategy; and implementation of semi-annual public awareness campaigns to raise public and stakeholder awareness of BMLWE operations and of critical water-related issues, including inter alia on, water quality, water conservation and NRW reduction.

#### **Component 4: Land Acquisition and Resettlement Compensation**

#### **Component 5: Project Management and Capacity Building**

#### **Component 6: Contingent Emergency Response**

##### **Scope of Work and Responsibilities**

The Project Engineer (PE) within the PMU at the BMLWE will be responsible to assist the PMU Project Manager / Coordinator on the day-to-day operation of the project, including overall coordination, planning, management, implementation, monitoring & evaluation, and reporting of all project activities as well as for the overall technical quality and guidance of the project's work. His/Her overall responsibilities include:

- Provide the Project Coordinator (PC) with accurate, timely and reliable information to evaluate performance, and assist in solving project complexities;
- Advise the Coordinator /PMU on project risks and relevant mitigation measures;
- Notify the Coordinator on all instances of negative findings on sites during implementation
- Provide assistance on project procurement activities;
- Prepare and consolidate progress reports for submission to the World Bank;
- Ensure project implementation with reference to agreed implementation plans, funding arrangement, contracts' requirements, etc.;
- Ensure regular presence on site to oversee that the overall project construction activities are in line with the set technical requirements;
- Coordinate with the supervision engineer on construction Quality Assurance activities;
- Review and advice on overall project technical aspects;
- Assist and advice other PMU members as necessary, namely on technical matters;

##### **Duration of Assignment**

The initial contract duration is 12 months, renewable based on performance and project requirements.

**Deliverables**

Monthly time sheet.

Monthly work reports highlighting planned versus actual performance; reasons for major variances and actions planned or taken to address these variances, and thus for all on-going activities.

Both documents shall be submitted to the Project Manager/Coordinator at the PMU-BMLWE with the relevant invoice within 7 days from the end of the month.

**Location**

The position will be based at the BMLWE Offices, with occasional field visits as required.