COUNCIL FOR DEVELOPMENT AND RECONSTRUCTION

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 add-ons 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

(a) Design, construction and construction supervision of bulk water supply infrastructure, as applicable, consisting of:

(i) the Joun regulator structure;

(ii) water tunnel conveyors, including related lining;

(iii) inverted siphon with ventilation shafts in the Damour river; and

(iv) the surge shaft with surface venting at Khalde.

(b) Design, construction and construction supervision, as applicable, of water supply transmission pipelines across Project Areas.

(c) Design, construction and construction supervision, as applicable, of the Hadath 125, Hadath 90 and Hazmieh 90 supply reservoirs and associated interconnecting pipeline and pumping stations.

(d) Carrying out of rehabilitation works for key Project-related infrastructure in Selected Sites under Component 1.

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 adaptative 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

Implementation of the Resettlement Action Plan, including, inter alia, providing Resettlement Assistance to Project-affected Persons.

Component 5: Project Management and Capacity Building

(a) Establishment and operation of the CDR-PMU, including the financing of Operating Costs.

(b) (i) Establishment and operation of the BMLWE-PMU, including the financing of Operating Costs; capacity building, technical assistance; (ii) carrying out as well as monitoring and evaluation of an apprenticeship program; and (iii) strengthening BMLWE's capacity on utility-related technical skills and on-the-job experience, financing of consultants' services for the BMLWE entity audits.

Component 6: Contingent Emergency Response

Provision of immediate response to an Eligible Crisis or Emergency, as needed.

Qualifications and Experience:

The Project Engineer qualifications and experience should include the following: at minimum a Diploma (Bachelor) degree in Civil Engineering with a minimum of 10 years' relevant professional experience in

implementation of large scale civil / water infrastructure projects. Previous experience in the implementation of water projects is an advantage. Knowledge of CDR administrative regulations is beneficial. The Project Engineer Knowledge with the World Bank Procurement and/or other funding agencies and Consultant guidelines and safeguard policies is a plus. The Project Engineer (PE) should have technical and practical experience in reviewing / analyzing project technical reports, namely those by the supervision engineer and others, as well as ability to report and work in teams. Fluency in English and Arabic is required.

Scope of Work and Responsibilities

PE within the PMU at the CDR 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;
- Advice the Coordinator /PMU on project risks and relevant mitigation measures;
- Notify the Coordinator on all instances of negative findings;
- 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.;
- Follow up on expropriation matters, ESIA/ESMP and RAP implementations;
- 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;

REPORTING LINE

The PE will report directly to the Project Manager and collaborate closely with technical teams, field staff, and relevant stakeholders. The PE shall submit monthly activity report and attendance time sheet to the CDR PMU.

Duration of Assignment

The initial contract duration is 11 months, renewable based on performance and project requirements.

Location

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