1. BACKGROUND

The wastewater sector in Lebanon suffers from chronic under-investment, combined with a weak institutional and governance structure and an insufficient tariff framework. Recent studies estimate that wastewater treatment is almost non-existent in Lebanon with only 8% of the population actually served, while 60% of the population is connected to a sewage collection network.

As of 2018, eight medium to large wastewater treatment plants (WWTP) exist on the Lebanese coast, three in Tripoli, Chekka, and Batroun localities within North Lebanon Governorate, three in Jbeil, Ghadir and Jiyyeh localities within Mount Lebanon Governorate, and two others in Saida and Sour localities within South Lebanon Governorate. Out of these, only two are not operational yet (Jbeil and Sour).

On the Inland side, seventeen WWTP are constructed. One small scale plant in Ehden locality within North Lebanon Governorate, six small to medium size in Safa, Barouk, and upper Chouf localities within Mount Lebanon Governorate, five small to medium scale in Nabatiyeh, Tibnine, Kfarsir, Zawtar and Yohmor localities within South Lebanon and Nabatiyeh Governorates, and 5 medium to large size in Baalbeck, Zahleh, Jib Jannine, Saghbine and Yammouneh. Only five plants are not operational yet (Safa, Barouk, Kfarsir, Zawtar and Yohmor).

Foreign investments have supported municipalities in the construction of another sixty unitary WWTP but these are often not functional due to lack of maintenance exacerbated by insufficient financing.

Any untreated wastewater is discharged either into rivers that lead to the Mediterranean sea or directly into the sea, which can cause environmental harm and health hazards; it precludes Lebanon from complying with the Barcelona Convention for the protection of the Marine Environment and Coastal Region of the Mediterranean.

Since 1992, the Government of Lebanon (“GoL”) – through the Council for Development and Reconstruction (the “CDR”) – has invested in several wastewater projects involving urgent repairs, renovations and expansion of wastewater infrastructure, completion of unfinished projects, and protection of the Lebanese coasts and water resources from pollution. By 2017 approximately USD 850 million was invested in the wastewater sector, yet the results of this investment remain insufficient. The Syrian crisis and the unexpected uplift of population by 50% have aggravated the need for wastewater services.

In line with the GoL’s efforts to address the critical need for wastewater infrastructure, a considerable extension and upgrade of the pre-treatment WWTP (currently in the process of being tendered) is proposed in Daoura/Bourj Hammoud, located in a north-east suburb of Beirut (the ‘Project’). The Project may also include the rehabilitation of existing pumping stations and coastal sewage network if deemed required for the successful operation of the WWTP.
The construction of the preliminary treatment WWTP at Daoura/Bourj Hammoud was first considered in 2005. EIB provided a EUR 60 million loan back then to finance this WWTP as well as the associated sewage network. However, opposition from local communities prevented the project from proceeding and consultations with the different stakeholders during over 10 years recently led to a general consensus on the location and standard of treatment of the WWTP. Following the consultations, it was decided that CDR could proceed with the construction of the original preliminary treatment WWTP but that this would need to be extended and upgraded to include primary and secondary treatment. The preliminary WWTP will consist of the inlet lift pumping station and its connection to the existing main sewer, the pre-treatment (screening and grit and grease removal) facilities as well as all required associated facilities. The funds remaining under the EIB loan signed in 2005 will be available until December 2019.

The Project is expected to provide treatment capacity of around 276,250 m³ per day and to serve circa 1.8 million population eq. in the Greater Beirut area (i.e. around 25% of the population in Lebanon). The Daoura/Bourj Hammoud WWTP will complement the Al Ghadir WWTP (designed to serve 800,000 population eq. with a design flow of 138,000 m³ per day), located in South Beirut and whose upgrade is ongoing (co-financed by EIB and the Islamic Development Bank). The total project cost is estimated to be between USD 200 to 300 million.

Given the confined nature of the available site the CDR is exploring use of a high-rate, efficient but energy intensive, small-footprint wastewater treatment process. Four variants of activated sludge process have been examined by consultants ACE (Oct 2018) in a preliminary design study with the Moving Bed Biofilm Reactor solution indicated as the most viable conceptual option.

The Project is part of the country’s USD 16 billion Capital Investment Plan (“CIP”) where it is identified as the largest investment project in the wastewater sector thereby confirming its high priority status by addressing the severe wastewater collection and treatment deficit in the country.

The Project will be implemented by the CDR (“Implementing Entity”), established in 1977 as a public establishment in charge of Lebanon’s reconstruction planning, execution and monitoring. After completion, the Project’s assets will be transferred to the Beirut and Mount Lebanon Water Establishment (“BMLWE” or the “Beneficiary”).

In light of the above, the GoL and the CDR have approached the European Bank for Reconstruction and Development (the “Bank” or the “EBRD”) as well as the European Investment Bank (“EIB”) with a request to assess the possibility of financing the Project through sovereign financing.

The Bank now wishes to commission a qualified consultant (the “Consultant”) to prepare a comprehensive feasibility study (“FS”) that could evaluate all four options identified in the preliminary design study, validate the robustness of the recommended solution identified and evaluate its benefits based on an assessment of the institutional, technical, environmental, social and economic risks and benefits of the Project as well as the technical requirements for the interface and the successful integration with the preliminary WWTP which is currently under
implementation\(^1\). The FS will notably include an environmental and social impact assessment (ESIA), and public disclosure thereof, as the Project has been categorised as A in terms of EBRD’s Environmental and Social Policy (ESP, 2014).

2. OBJECTIVES

The overall objective of the assignment is to complete a technical, environmental and social FS which can be used to appraise the Project and take a decision on the prospective financing. Gender considerations should be taken into account during the FS. It is expected that different approaches will be required to assess the strategic infrastructure of the Project.

Specific tasks of the assignment will include, *inter alia*:

- Assessment of the scope and costs of the required investments to collect and treat the wastewater of the population of Metn, Baabda, and North Beirut – including assessment of the validity of the input data, calculations and assessments already made;

- Validate the technical and assess the financial feasibility of the proposed investments - including a review of the already implemented technical options (paying particular attention to the interface and integration with the preliminary treatment WWTP financed by EIB), the soundness of the recommended investment option, confirmation of their fit with a long-term investment strategy and identification of the most effective, sustainable, least lifetime cost investment programme;

- Financial analysis of the Beneficiary and preparation of the Project’s financial projections - the projections will be fully consistent with the proposed investment, strategic development plan and be based on prudent assumptions on the Beneficiary’s revenues and expenditures and calculation of the Project’s FIRR and EIRR; the Consultant will prepare the financial forecasts and the Project financial model that will cover a period of at least 25 years (including the construction period);

- Confirm and present the legal and institutional set up of the water and wastewater management in Lebanon including the role and responsibilities of the different bodies involved at different levels (line Ministries, the Water Establishments, the affiliated companies, etc.) and the tariff structure of the waste water and water sector;

- SWOT analysis of the Beneficiary;

- Proposals to improve the operational efficiency and service standards of the Beneficiary (capacity building component);

- Confirm the project timeline and identify priority measures in line with the Project – this should be on technical, economic, environmental and social viability, preparedness for implementation;

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\(^1\) Based on currently available information, the preliminary Daoura/Bourj Hammoud WWTP is expected to begin construction in late 2019 and be completed within 28 months from the start of construction.
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- An assessment of the Project’s impact and performance against the Bank’s GET Approach and the Technical Guidance Document on Implementing the EBRD GET (Appendix 5);

- An assessment of the Project’s alignment with relevant water and climate strategies, such as the National Strategy for the Water Sector and the Barcelona Convention for the Protection of the Mediterranean Sea Against Pollution as well as the Protocol for the Protection of the Mediterranean Sea Against Pollution from Land-Based Sources and its amendments. To the extent possible, the FS should include a Climate Risk and Vulnerability Analysis (“CRVA”) identifying the potential impacts of climate change on the project in order to build in resilience to climate change related risks and review the resource efficiency opportunities (including energy and water efficiency and waste minimisation potential and the impact on GHG emissions) from the Project;

- Calculation of the Bank’s standard measuring indicators, Green Economy Transition (“GET”) impact indicators and other key indicators required for reporting purposes (Appendix 3);

- An Environmental and Social Impact Assessment (“ESIA”) of the proposed Project to identify and assess any potentially significant future adverse environmental and social impacts associated with the Project, determine the measures needed to prevent, minimise, mitigate and compensate adverse impacts and identify potential environmental and social opportunities, as the Project has been categorised. A under the Bank’s 2014 Environmental and Social Policy (“ESP”). The ESIA will need to comply with EBRD’s Environmental and Social Policy, EIB Environmental and Social Requirements as well as national legislation;

- A Gender Impact Assessment (“GIA”) of the proposed Project to identify and assess the potential differentiated impact of this investment on women and men in the nearby communities, both as users of the water and wastewater services and beneficiaries of economic opportunities created by the Project. The GIA will look at how the proposed Project can foster productive economic opportunities for local communities by, for instance, facilitating access to income-earning activities and reducing the burden of unpaid work. This should include a description of the technical support required to increase women’s economic opportunities by enabling their participation in key economic activities in the project area. In addition, the GIA will look at gender-sensitive recommendations to help improve the suitability, sustainability and reach of water and wastewater services through involving women in the facilities’ design, implementation and management. GIA will therefore positively benefit the service provider and its users by providing demand-responsive services. The Assessment will be in line with EBRD specific standards and the EBRD’s Strategy for the Promotion of Gender Equality (SPGE).

The FS will provide an overview of the Beneficiary’s procedures and technical, operational, environmental, social, and financial performance and will form the basis for agreeing on the Beneficiary’s performance objectives in the loan document (e.g. reduction in water losses, improvements in tariff collections, cost structure optimisation, standards of treatment, necessary capacity building, necessary changes in the regulatory framework, the need to implement a Public Service Contract (“PSC”) or an O&M agreement, etc.). The FS should
also aim to confirm the Project’s ownership by, at least, the BMLWE, the Municipality of Bourj Hammoud and all other affected municipalities and the Ministry of Energy and Water. To ensure this, it will be essential that all stakeholders of the Project are involved from the initial stages of the FS and throughout the duration of the assignment.

3. SCOPE OF WORK

In order to meet the objectives above, the Consultant will undertake the following tasks:

**3.1 Baseline study**
- 3.1.1 Socio-economic data
- 3.1.2 Institutional review
- 3.1.3 Tariff Setting and Subsidy payment policy
- 3.1.4 Affordability
- 3.1.5 GET assessment and resilience to climate change

**3.2 Assessment of the proposed EBRD Investment**
- 3.2.1 Technical assessment
- 3.2.2 Detailed description and cost estimates
- 3.2.3 GET assessment
- 3.2.4 Project compliance with EBRD mandate – incl. ESIA and procurement strategy

**3.3 Assessment of a Potential Client**
- 3.3.1 Project management
- 3.3.2 Wastewater Sector Strategy and Risks
- 3.3.3 Condition Precedents and Indicators
- 3.3.4 Organisational review

**3.1 Baseline Study**
This task involves an assessment of the present management practices of the Implementing Entity and the Beneficiary and the status of the water and wastewater services in the Project area so as to identify and assess any critical risks. This review shall allow the Bank to better understand the present situation in institutional, legal and financial, as well as technical and environmental and social terms. It shall, in particular, also identify respective needs and concerns of different disadvantaged groups and/or those with less voice, such as women, to be addressed in the design, implementation, and monitoring and evaluation of the Project. The outcomes of the baseline study will also contribute to the ESIA.

The following will, *inter alia*, be addressed:

a) **Socio-Economic Data**
Based on 3-5 years of historical data and information readily available (data generated by the Implementing Entity, the GoL, the BMLWE, and other relevant sources) the Consultant will compile and present socio-economic data relevant to water and wastewater operations, *inter alia*:
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- Present analysis on population, including historical development (the number of people, general spatial distribution, in and out migration, minority and vulnerable groups, etc.), trends, growth rates, and review of proposed municipal development plans to obtain a basis for population projections as well as recent aerial maps, complementary investigations and site visits;

- To the extent possible, compile and present sex disaggregated data on household incomes and expenditures, including income and expenditures per decile, household sizes, number of breadwinners, average expenditures for essential goods, profile and geographic distribution of poverty, percentage of single-headed households, people living with disabilities, war veterans, and any other circumstances, etc;

- Assess the expected consumption behaviour of the Municipalities that will be served by the Daoura/Bourj Hammoud WWTP, particularly water demand and the consequential volume of wastewater collected and treated. Additionally present an overview of level of awareness of efficient water use and the impact of untreated wastewater on the status of the Mediterranean Sea;

- Establish a methodology for affordability analysis with the EBRD’s Office of Chief Economist prior to commencing this analysis. The affordability analysis will be based on desk top research and available data;

- Analyse and assess the impact of treated, partially treated and untreated wastewater disposal and storm water overflows on receiving waters with special emphasis on industrial hazardous and toxic waste products and analyse compliance with applicable ambient water quality standards, effluent standards and applicable regulations based on available data;

- Analyse and present health information with regard to any adverse health and economic effects related to the lack of or insufficient quality of water and wastewater services disaggregated by sex and other relevant socio-economic and demographic variables.

b) Institutional review

Taking into account available information, the Consultant will describe the organisation and management systems of the line Ministry, the Implementing entity, the Beneficiary and the Municipality, and in general terms the regional and national legal and institutional framework in which it is operating. The following will, inter alia, be carried out/addressed:

- Describe the regional and national legal and institutional framework for the water and wastewater sector;

- Describe the regional and national legal and institutional framework for the implementation of the Barcelona Convention for the Protection of the Mediterranean Sea Against Pollution (and its amendments) and the National Action Plan (NAP) as well as the Protocol for the Protection of the Mediterranean Sea against Pollution from Land-Based Sources and its amendments;

- Describe applicable laws and regulations for wastewater treatment and sludge disposal: institutional responsibilities and interdependencies (local and regional governments);
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- Describe the legal and institutional framework governing the status and operations of the line Ministry, Implementing Entity and of the Beneficiary (legislation, statutes, service agreement etc.) and define, if any changes needed;

- Describe the influence from applicable legislation on the Beneficiary’s operations, particularly any price regulation mechanisms (e.g. tariff regulation), and identify legal requirements influencing the implementation of the investment programme.

c) Tariff Setting and Subsidy Payment Policy

The tariff setting and subsidy payment policy for water and wastewater services during the financing period is a fundamental issue. The long term financial health of the Project and Beneficiary depends on: (i) a tariff setting formula/ methodology that allows for the recovery of all recurrent costs and, if feasible, capital investment costs; (ii) adequate billing and collection practices; and (iii) receipt of adequate subsidy payments when consumer tariffs are below full cost recovery levels. The Consultant will, inter alia:

- Assess other capital investment projects under implementation that will eventually fall under the responsibility of the BMLWE (e.g. Al Ghadir and Kesrwan projects) and evaluate their impact on BMLWE’s operations.

- Examine the current billing and collection methodologies (theoretical and practical) by consumer groups and from a gender perspective, provide an opinion to the Bank in accordance with industry best practices and assess whether the current tariff setting and collection methodology allow the Beneficiary to meet cost recovery;

- Evaluate the degree of receivables by consumer groups and suggest the solutions to reduce them if necessary;

- Evaluate the current tariffs, also considering the changes which have already been applied since 2000 (including the Water Law issued in 2000, National Strategy of the Water Sector ("NSWS") issued in 2012 and the Water Code ratified in May 2018), with a planned gradual increase until 2020, by consumer groups and business lines, including fees and fines levied on wastewater discharges, to determine to what extent all recurrent costs are included;

- Identify any cross subsidies and provide potential alternatives for the orderly phasing-out of cross-subsidies, ensuring that consumer tariffs remain affordable;

- If relevant, describe the mechanism for calculation and payment of subsidies, and assess the fiscal capacity of the entity that would be required to pay the subsidies;

- Identify what the Bank should require for the Bank financed project (with specific timing);

- Identify any protection mechanisms available to the most vulnerable decile of the population regarding payment of utility bills, if this would be necessary to make water and wastewater services affordable to this group.

- Recommend reasonable loan covenants and implementation timing in this area.

d) Affordability
The Consultant will establish at which levels tariffs would be affordable to users of water and wastewater services without causing socially unacceptable financial strain to the households. It is recognised that the tariff adjustments required for the realisation of the Project can only be determined in detail at a later stage of project preparation, but the Consultant should gain a clear understanding of the limits of affordability as early as possible. The Consultant will also take into consideration the recently government approved tariff increase schedule until 2020.

If the data is available, the Consultant will examine differences in the affordability of the services for different socio-demographic groups at both individual and household level (i.e. females and males; single-headed households, elderly; people living with disabilities, ethnic minorities and vulnerable groups in the community) and reflect them in the affordability analysis and the assessment.

The Consultant will follow EBRD’s methodology on affordability analysis and assess and comment on the current social safety nets covering minimum water consumption of vulnerable households and households with specific needs.

e) GET finance criteria assessment for sustainable water supplies and wastewater discharges and resilience to climate change

The baseline study will take account of the presentation of the necessary information to assess the projects performance against the EBRD’s Green Economy Transition approach and the assessment of the GET impact (Task 3.2.3) of the Project in terms of potential climate change mitigation, climate change adaptation and other environmental benefits following the EBRD GET methodology (Appendix 4).

The baseline study will also take account of the current climatic conditions and projected climate change in so far as they have the potential to affect water supply and wastewater discharges.

The Consultant will:

- Compile readily available data on existing climate conditions using reliable sources such as the IPCC Data Distribution Centre, the Royal Netherlands Meteorological Institute (“KNMI”) and other sources as appropriate;

- Collate and analyse future climate projections from Global Climate Models (“GCM”) using readily available information from reliable sources, e.g. Climate Wizard (www.climatewizard.org) and from Lebanon Third National Communication to the UNFCC;

- Analyse the collated data, determine the risks associated with climate change and advise on the level of confidence associated with climate change projects and the implications for the project.

The Consultant will assess the implications of climate change arising from the analysis of this data including:

- Impact of rising temperatures on the water level (e.g. tidal/sea flooding risk);

- Adequacy of and changes in water supply (both surface water and groundwater);

- Power supply, energy availability and energy costs;

- Asset resilience and maintenance;
• Water and wastewater demand and changes in demand, e.g. increased demand due to more extreme heat days.

Please refer to Appendix 1 for additional information on sourcing data on climate change projections. Please also note that the time period for assessing risk is the lifetime of the assets financed by the Project and not just the lifetime of the loan.

The Consultant will work closely with the EBRD and adopt the EBRD methodology in the analysis.

3.2 Assessment of EBRD Investment

3.2.1 Technical assessment – Wastewater Collection and Treatment

In order to assess the feasibility and viability of the proposed investments under the Project, the Consultant will describe and assess the key attributes of the current service and the service development in wastewater services, which may have a direct impact in the development and operation of the proposed wastewater investments, over the last 3 years for the Greater Beirut Area, including the information listed below.

The Consultant will base the development of this Task mainly on existing and already studied information. Whenever information is considered outdated to be incorporated in this study or not existent, the consultant will have to develop/obtain it (or the information) to a level required to be able to complete all tasks related to assessment, evaluation and validation of the proposed investment. The assessment should provide sufficient information on whether large capital investments will be required in the near future on other than the proposed wastewater investment measures to ensure the functioning of the existing wastewater systems. The assessment will also provide sufficient information on whether the O&M costs of the wastewater systems can be reduced substantially by additional investments other than the requested wastewater investments.

A proportionate and rational approach is required by the Consultant to ensure that the technical assessment is sufficiently comprehensive giving appropriate attention to those areas most relevant to the proposed investments.

This assessment will determine the scope of the investments in the wastewater systems and be the basis for a credible cost estimate. A topographic survey to accurately determine the necessary land acquisition should be included.

Wastewater services:

Taking into consideration studies carried out earlier (by the Implementing Entity, the Government, the Beneficiary and others) and other information available, the Consultant will compile, present and interpret data and information, covering the past three years, on service characteristics, including:

• Validate the Project Service area: physical and administrative delineation as well as type of sewage collection system (separated, combined, septic tanks, etc.);

• Establish the consumers and the connections: number of wastewater connections by user category, i.e. domestic (number of people served by the wastewater network,
disaggregated by sex, if possible), domestic (number of people served by septic tanks),
industrial, commercial, tourists, official, public, etc;

- Estimate wastewater flows and characteristics, including seasonal and daily variations:
total and per capita flows, solids and organic loadings or other important characteristics
of strength of wastewater, distinguish between industrial and other wastewater sources,
determination of relationships between dry weather and wet weather flows for combined
systems, frequency and magnitude of storm water overflows and water bodies to which
they flow, and infiltration of wastewater flows into the water supply network;

- Present industrial wastewater discharges to both the sewer network and the drains:
description of wastewater flows and characteristics from the main industrial sources in
terms of location of the industry and location of the discharge, flow volumes and
chemical/physical characteristics and loads with special emphasis on toxic/hazardous
materials discharged into the regional wastewater collection system or drains if such
information is available;

- Present the pre-treatment of industrial wastewater: describe and assess the necessity,
capacity, effectiveness and adequacy of industrial pre-treatment facilities and the impact
of industrial wastewater on regional wastewater treatment plant operation.

- Description of monitoring of wastewater flows and quality: Confirm what arrangements
exist (if any), for monitoring of wastewater flows and treatment performance: the
standards and practices used, laboratory capacity, etc. with reference to existing national
and EU regulations (EU Urban Wastewater Treatment Directive and EU Water
Framework Directive);

- Discuss possible implications for ground-water in areas not connected to wastewater
collection;

- Take into consideration the effects of implementation of any water demand management
programme and the potential for technological upgrade of wastewater treatment plants (if
any) provide justifiable technical opinions on whether capacity expansion of wastewater
treatment facilities is needed in the medium term;

- Assess the Climate change vulnerability of wastewater services (e.g. disruption due to
climatic event). Assess the need for any integrated water resources management plan.

Wastewater Collection Systems:
Taking into consideration the information available, the Consultant will describe and assess the
present wastewater collection system, including:

- Present an overview of existing systems and facilities, including area served, length,
diameter and type of main sewers, whether separate or combined, gravity system,
pressurized system etc., pump stations, force mains, discharge points and storm water
overflows, location of major wastewater contributors (industry) and discharges of not
pre-treated industrial wastewater;

- Present a schematic map showing which areas discharge to which main sewer and the
connections and locations of the main sewers, pumping stations and force mains leading
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to the WWTP. Also provide a hydraulic flow diagram showing the areas and the wastewater collection systems until the WWTP, including topographic levels and for force mains also the pressure levels at start and end of the force main;

- Assess the main system components: capacity, performance (including total and unitary energy consumption kWh/m$^3$), state of repair, reliability, adequacy, maintenance practices, age and quality of materials and equipment (pipes, valves, pumps, etc.), and infiltration/inflow;

- The Consultant will provide an opinion on the operation of the wastewater collection network. The Consultant’s opinion will be based on site visits and interviews with operating personnel.

Wastewater Treatment, Sludge Management and Disposal

The Consultant will describe and assess the present wastewater treatment facilities, including:

- Preparation of a map showing all WWTPs within the catchment area of Greater Beirut with their names and construction date;

- Preparation of an overview of existing wastewater treatment facilities, including sludge handling and disposal, and the adequacy of wastewater quality monitoring: Catchment area, type of process, capacity, flow, technological appropriateness, influent and effluent quality, treatment effectiveness, emergency routines, instrumentation and age of the different facilities;

- Assessment of the condition, reliability and state of repair, maintenance practices, suitability, bottlenecks and quality of materials and equipment.

- Assessment of the monitoring of influent and effluent quality; standards and practices, process control;

- Benchmark the current effluent discharges against national normative requirements and EU standards for effluent discharges (EU Urban Wastewater Treatment Directive and EU Water Framework Directive);

- Assess whether the existing wastewater treatment plants are capable of meeting the applicable national and EU wastewater discharge limits (EU Urban Wastewater Treatment Directive);

- Establish the extent of technical options considered for the upgrade of the WWTP at the proposed site in Bourj Hammoud and assess the efficacy of the recommended treatment process solution, making alternative proposals as appropriate and assess its compliance with the applicable national and EU wastewater discharge limits (EU Urban Wastewater Treatment Directive);

- Assess and present in detail the required actions (including technical, administrative, etc.) for ensuring a smooth and seamless handover / transition from the completion of the preliminary WWTP currently under implementation and the upgrade of said WWTP. Where any potential interface issues are identified, propose measures to address these to ensure the successful and timely handover / transition between the different project stages.
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- Assess whether the wastewater treatment sludge management arrangements are environmentally sound and safe without risk to workers and the public and capable of meeting the applicable national and EU environmental standards (such as EU Urban Wastewater Treatment Directive and EU Water Framework Directive);

- Analyse and assess the impact (environmental impact) of treated and untreated wastewater disposal, combined emergency and storm water overflows on downstream water quality with special emphasis on industrial hazardous and toxic waste products and analyse compliance with applicable ambient water quality standards, effluent standards and applicable regulations;

- Assess alternative solutions for management and disposal of effluent and sludge if appropriate;

- Assess conditions of the treated effluent receiving water body (particularly, but not exclusively, the marine environment) with regards to efficiency of the currently operated wastewater treatment plants, including determining the efficacy of dispersion and dilution of the sea;

- Analyse the utilisation of reclaimed wastewater for irrigation and other likely purposes in terms of technical, operational and economic aspects and associated environmental and social risks with it. Present regulatory status for the utilisation of reclaimed wastewater;

- Assess the efficacy of the recommended treatment proposal for anaerobic stabilization of sludge and utilisation of waste methane for the generation of heat or electricity and utilisation of digestate as fertilizer with regards to technical, operational and economic viability;

- Determine the personnel needed for the O&M of plant networks and determine the cost;

- Identify any key operational and management ancillary equipment required to support and sustain water and wastewater services (e.g. sewer jetting equipment etc);

- Provide a climate risk and vulnerability analysis (CRVA) of wastewater treatment facilities (e.g. disruption due to climatic related event e.g. flooding).

The Consultant will identify further opportunities for improvements in technical efficiency through the use of alternative technologies (including energy and water efficiency solutions) and/or infrastructure solutions.

The Consultant's technical assessment of water and wastewater services will take into consideration the National Strategy of the Water Sector issued in 2012 and recent reforms on the water and wastewater sector.

**Determine the Future investments needs in the Wastewater Collection and Treatment System**

Taking into consideration the collected information and the phasing of investments as discussed further below, the Consultant will describe and assess the requirements and possibilities for an extension of the present wastewater collection and treatment facilities, including:

- Technical assessment on whether and under which assumption capacity expansion of the wastewater treatment facilities is needed in the short to medium term (10-15 years) and long term (25-30 year) and in which WWTP determine the capacity of any required new
wastewater treatment facility, taking into consideration the extension of the wastewater collection network (if any) and the changes and variations in wastewater production;

- Take into account the works undertaken under the original project financed by EIB and ensure integration and seamless handover with the Project.
- Determine which land is necessary for the extension and upgrade of the wastewater treatment facilities, the ownership of this land and whether land acquisition is necessary for the extension of the wastewater treatment plant by providing a layout with sizing of the proposed facilities. This should also include geotechnical investigations to determine the suitability of the land for the construction of the Project.
- Technical assessment of relevant alternative for reuse schemes of treated wastewater and sludge in different purposes;

3.2.2 Investment phasing, detailed description and cost estimates

Based on the investments that were defined under section 3.2, the Consultant will establish cost estimates for the Project, and phase these investments into packages (if appropriate) that are properly sized for the Implementing Entity to be able to manage the implementation and design process.

The Consultant will also identify capacity building needs at the Implementing Entity and propose measures to best meet these needs. These capacity building measures should be included in the phasing of the investment. Also the outline scope of work for a project implementation team will be defined.

i. Present and justify the phasing of the investment (if appropriate)

The proposed phasing of the investment should be oriented towards revenue generating investments and maximisation of operational cost savings and improved operational efficiency of the Beneficiary, improving and sustaining an improved service standard. It should also take into account the handover between the completion of the preliminary WWTP and the start of the new project for the upgrade of the WWTP.

The selection of all project components should be clearly explained and justified within the context of the outlined strategic long-term investment programme and the budget proposed, as well as priority resource efficiency measures and environmental and social considerations.

The Consultant will also develop a phasing approach to deal with the issue of possible further constraints due to decreased affordability. Project components should be shown to be part of least cost solutions (in terms of capital as well as operation and maintenance costs) in conjunction with acceptable technical standards (in terms of quality and reliability). Given limited capital grant availability and possible affordability constraints, the Consultant may present a few possible scenarios for discussion.

The development and validation of the proposed technical solutions will also take into account the projected impacts of climate change if appropriate and justified. This may include investments for adaptation measures to address the risks of climate change, e.g. deeper drilling of boreholes or diversification of water supply to ensure long-term security of water supply, or the installation of back-up generating capacity to improve the security of the energy supply. The
Consultant will explain whether and how each of the proposed investment activities could contribute towards the climate resilience of the water and wastewater system in the area covered by the project. The Consultant will also identify those investment activities that have an identifiable and positive impact on the climate resilience of the water and wastewater systems. The Consultant will also identify specific investment components that are most worthy of co-financing from climate change financing mechanisms such as the SCCF (in consultation with Bank staff).

ii. Detailed programme description and cost estimates

For each of the investment sub-components selected, reasonable estimates of quantities and costs based on applicable previous bidding experience in the country should be prepared. Potential cost savings upon implementation of the Project will be identified and estimated. An operational costs review should be prepared and costs specified as either fixed or variable for each sub-component (sub-components should be designed in a way to minimise foreign currency requirements in operation and maintenance costs - however, this should not happen at the expense of quality and reliability of services).

It is important that due care is taken in the preparation of these cost estimates. Taxes, duties, technical and financial contingencies are to be considered and specified. Financial contingencies are to be calculated based on an investment schedule.

On the basis of its cost model the Consultant will develop and outline the tariff structure(s) which would better fit into the frame of the project investment.

The Consultant will consider the land requirements associated with the investment. This will include potential sites pump stations, land available for the expansion or extension of existing facilities (if required) and pipeline routes. Key considerations should include the land acquisition process and land availability, options for purchase, health and safety buffer zones around WWTPs, resettlement risks, nature of land ownership, etc.

The Consultant is expected to provide other technical inputs into the financial projections of the Beneficiary’s operations. To this end, the Consultant will have to carry out the following specific tasks:

- Recommend the most economic financial structure for the Project, considering the technical and contractual structure proposed;
- In consultation with the CDR and the Beneficiary, review and if necessary revise the projections of the influent wastewater volume for the period of 20 years, based on the available customer base growth forecast (covering residential and industrial sectors);
- Estimate a 20-year outlook of the potential water, energy and – separately – maintenance cost reduction as well as additional revenue streams that can be generated by the Project;
- Prepare an updated Cost Table, giving best estimates of the costs of project preparation including preparation of detailed design documentation, construction/implementation, works supervision costs, based on currently available information. Cost estimates should be presented separately for each segment, based on local or other relevant construction markets.

3.2.3 GET assessment of the Project
The EBRD launched its Green Economy Transition (“GET”) approach in 2015 to put investments that bring environmental benefits and reduce climate-related risks at the heart of its mandate by improving environmental conditions, reducing greenhouse gas emissions and enhancing climate change resilience.

In consistency with the EBRD’s GET methodology (Appendix 4) and the relevant baseline information as established under Task 3.1e), the Consultant will provide:

- A review of GET investment components – a review of the energy, resource and water balance of proposed investment components of the Project and proposition of GET eligible investment components according to the EBRD GET approach and the Technical Guidance Document on Implementing the EBRD Green Economy Transition;

- The GET Indicators identification - assessment of the components and definition of the technical, environmental and resource efficiency performance indicators and physical impacts of the different investment components for future monitoring of GET benefits, in particular but not limited to:
  - The portion of treatment of wastewater that reduces methane emissions (only if net GHG emission reductions can be demonstrated);
  - Energy efficiency improvements through the installation of more efficient equipment;
  - Improvement of wastewater quality and reduction in discharge of untreated wastewater to the Mediterranean Sea (direct or indirect);
  - Physical climate resilience outcomes that the Project delivers in response to the identified climate risks (e.g. additional water made available as a result of the Project, either through savings or through the provision of additional usable water; please refer to Annex 4.2 of the GET Methodology: Climate Resilience Results Reporting);

- Project impact analysis – identification of the amount of investments that can qualify as GET finance.

3.2.4 Project compliance with EBRD’s mandate

i. Environmental and Social Impact Assessment (ESIA)

As required by the EBRD’s Environmental and Social Policy (ESP) of 2014 each project seeking EBRD financing is categorised either A, B or C. Wastewater treatment plants with a capacity above 150,000 population equivalent are categorised as A. The Project significantly exceeds this threshold and will be a significant development with a significant footprint. The EBRD has, therefore, categorised the Project as A requiring a comprehensive Environmental and Social Impact Assessment (“ESIA”) and the disclosure thereof for a period of 120 calendar days prior to EBRD presenting the Project for decision making by its Board of Directors. Disclosure involves publication of the ESIA documentation in English and Arabic on the EBRD’s website and that of CDR together with making the documentation available locally in the project area in hard copy and to key stakeholders. This is complemented with various public meetings to present the findings of the ESIA and garner public and key stakeholder opinion. Only after this disclosure is complete can the EBRD seek approval from its board for financing the Project.
Further the EBRD requires the undertaking of an Environmental and Social ("E&S") audit of the implementing entity and the operator to determine their capacity and existing provisions to manage E&S impacts and risks associated with the Project in line with the EBRD’s Performance Requirements of 2014, which fall under the ESP and EIB Environmental and Social Requirements. This scope of work is expanded upon in detail in separate terms of reference which is attached to this document as Appendix 5.

The team of specialists responsible for the ESIA will work closely with the wider Feasibility Study team to ensure that E&S Applicable Requirements are fully integrated into the Project, including EU substantive environmental and occupational health and safety standards. The ESIA will be used for environmental permitting although it is noted that an update to reflect the detailed design may be necessary at a later stage in Project development (post feasibility study and through a separate terms of reference).

The Consultant will, therefore, be required to engage the Ministry of Environment as a key stakeholder so as to inform the content of the ESIA, ensure Lebanese requirements are met and that the ESIA can be used for environmental permitting. It is envisaged that permitting (whether preliminary or full) will take place prior to a decision being made on the Project by the EBRD’s Board of Directors. The ESIA will be for the benefit of the Government of Lebanon.

ii. Procurement and Implementation Strategy

A Procurement and Implementation Strategy will be prepared taking into consideration the EBRD’s Procurement Policies and Rules, ("PP&R") and in accordance with the principles of the EIB Guide to Procurement which will be made available to the Consultant. The Consultant will:

- Present and assess which procurement and implementation strategy would best fit the scenario, outlining pros and cons for each alternative;
- Prepare a preliminary procurement plan, in the Bank’s format, including detailed descriptions of all project components grouped into categories by sub-sector and expected contracting packages, as part of the procurement and implementation strategy;
- Develop for each project component, an implementation schedule, describing the manner in which the construction or implementation activities will proceed providing assumptions about procurement, delivery and execution times.

In the preliminary procurement plan the project components included in the investment will be broken down into actual contracts with the aim of keeping the number to a minimum. The Consultant, in consultation with the Bank, must take into account the services (tender documents and project management), supplies and works needed to implement the required contracts. The Consultant will consider which procurement approach (e.g. based on different supply and works contracts or a turn-key contract) would be the best way of implementing each investment component.

The Consultant will also cover the following aspects with regard to the Project implementation:

- Project risk matrix - a risk matrix outlining the key challenges and risks associated with the Project and the measures proposed to deal with them;
- Project institutional plan – a proposal on how to address the key shortcomings identified in the institutional framework. This will include appropriate incentive structures, and any
contractual agreements required. Consideration will be given to effective regulation and monitoring of the sector.

iii. Gender equality assessment

The Consultant will conduct a gender assessment of the Project and identify opportunities to enhance gender equality which will include *inter alia*:

- Compilation and presentation of sex disaggregated data on billing and collection methodology and presentation of an opinion to the Bank in accordance with industry best practice;
- Presentation data to identify needs and concerns of women, to be addressed in the design, implementation and monitoring and evaluation of the Project, with the data disaggregated by sex where possible;
- Identify which stakeholders (non-governmental organisations, academic community, donors, local experts, the media, users’ groups, etc.) are working on issues related to water and more specifically, on sustainable water supply/sanitation, gender equality goals and access-related questions;
- Identify the needs and challenges women face in the sector, as well as the level of knowledge in this regard. Identify current levels of access to existing training and capacity building activities.

iv. Resource Efficiency Assessment

The Consultant will identify and analyse raw materials, energy and water efficiency measures and production optimisation opportunities as follows:

**Raw material efficiency**

- *Raw Materials Use Efficiency Increase*: identification of measures aimed to increase the efficiency of raw materials use, including issues related to reduction of residues and water and wastewater treatment sludge;
- *Process selection*: Analysis of applicable technologies related to water and wastewater treatment to reduce raw material usage considering international best practices.

**Water Efficiency**

- *Investments promoting water use efficiency*, at the process / consumer level;
- *Investments reducing the discharge of wastewater* to sewer, surface waters or groundwater, including water recycling;
- *Investments for utilisation of reclaimed wastewater* for irrigation and other likely purposes.

**Energy Efficiency**

- Removal and reduction of high energy components through, for example, network reconfiguration (swapping pumped systems for gravity systems, network balancing, etc.) to utilisation of less energy intensive treatment processes;
Terms of Reference

- Improved Energy Management whereby energy audits, sub-metering, pump-tappings etc. lead to change in energy use such as peak-load lopping using standby generators;
- Energy Optimisation such as process/systems automation such as Dissolved Oxygen control of air blowers in aeration lanes
- On and off-site renewable energy: solar options can be investigated either as PV (photovoltaic) or solar thermal systems, utilisation of biogas from anaerobic operations can be investigated:
  - Waste Heat Recovery: analyse opportunities for on-site power generation through utilisation of the waste heat gases as per standard design parameters;
  - Sludge bio-digesters and the utilization of biogas for bio-energy generation
  - Hydraulic energy generation (on inlet lines for example).

Waste minimisation

- Analyse the potential for reduction of residues and sludge amounts compared to current performance on waste discharge, including internal recycling / re-use;
- Assess whether the recovery of nutrients in wastewater sludge is technologically and economically viable and applicable in the Country;
- Assess whether the reuse or recycling water of treatment sludge is technologically and economically viable and applicable in the Country.

Resource Measurement and Monitoring Management System (“RMMS”)

Specify quantities and costs of the main components aggregated in the following categories: (i) controllers, meters, sensors, actuators, electronics; (ii) control panels, electrical power connection and cabling; (iii) data loggers, data connection systems; (iv) computing and software; (v) installation and commissioning; and (vi) management system development.

i. Other risks and opportunities

The Consultant will identify other potential risks (e.g. cross-border risks, identification of protected sector related to the Project, refugee strain etc.) that are associated or can have an impact on the Project, and will recommend mitigation s of those risks.

3.3 Assessment of the counterparties involved

[3.3.1 Project Management]

During this assignment, coordination with the Implementing Entity, the Beneficiary and (the Ministry of Finance (“MoF”), the Ministry of Energy and Water (“MEW”), through the Implementing Entity, if relevant) is of utmost importance to ensure a favourable outcome of the assignment.

The Consultant will liaise with the Implementing Entity, the EIB (through EBRD), and potentially other parties (through Implementing Entity) involved in the Daoura/Bourj Hammoud
Terms of Reference

WWTP project to stay informed on the progress of the investments in the WWTP and include this information in their reports.

The Consultant will be responsible for:

- Identification of key stakeholders.
- Arranging and holding regular consultation and coordination meetings with relevant key stakeholders.

3.3.2 Wastewater Sector Strategy and Risks

One of the primary objectives of this FS is to ensure that the proposed immediate investments does not steer system improvements and expansions in a direction contrary to the long-term development needs of the system. The objective of this task is, therefore, to outline a long-term investment strategy, which would lead to least cost improvement of water and wastewater services within existing financial constraints, taking into account the anticipated impacts of climate change. This will include:

i. Long-term Investment Strategy

Different potential investment strategies or options should be broadly outlined (and tentative cost estimates prepared) including at least: (i) a minimum cost facilities rehabilitation strategy (to maintain the increased level of service/repair established by the Project); and (ii) outline of strategic development plans including improvement, rehabilitation and expansion over the next 20 years.

The Consultant will highlight available options on the basis of both financial and technical criteria and indicate the preferred one which could be further developed into the long-term investment programme. For this programme, the Consultant will summarise in appropriate maps the location, capacity, and staging of major infrastructure components and explain and justify the proposed course of action.

Particular attention will be given to:

- Existing facilities and studies and projects already prepared or under development, especially the original project financed by EIB;
- Examining alternative solutions within the context of existing system configuration and capacities;
- The rehabilitation, repair and upgrading of existing facilities and operational improvements;
- Least cost staging/phasing of system expansions;
- Maintenance and operation implications, specifically the effect of expected increases in the cost of electricity;
- Effects of conservation (demand management) and loss reductions on future system capacity requirements;
- The Consultant will present the resulting annual cost savings (by cost category: power, water, CO\textsubscript{2} emissions savings, etc.).
Terms of Reference

- Anticipated climate change impacts on water supplies.

ii. Long-term institutional development options

Building up from existing studies about the Waste Water Sector in Lebanon, the Consultant will provide a plan for institutional development, with the aim of the Beneficiary moving towards becoming a fully commercially viable entity. This plan should include intermediate options and should take into account the abilities of the Beneficiary and the Implementing Entity.

3.3.3 Financial analysis

i. Financial analysis of the Beneficiary

The purpose of this task is to assess the current financial capacity of the Beneficiary to fully support operations of the WWTP and to finance the investment. This analysis should notably include assessment of the financial viability and debt profile of the Beneficiary via an analysis of its financial statements for the period of [2016-2018] and financial projections for the period of 2019-2039.

The financial viability of the Beneficiary and the Project will be demonstrated by means of financial analysis for the [2016-2018] period and financial projections for the 2019-2039 period for the Beneficiary. The projections will be fully consistent with the NWSS and be based on prudent assumptions on the Beneficiary’s revenues and expenditures. Financial projections will include annual balance sheets, income and cash flow statements. The model will account for fixed and variable costs.

The Consultant will conduct its own financial analysis to obtain new data or verify the existing data, whenever necessary.

ii. Financial model and economic analysis for the Project

The Consultant will prepare a financial and economic model (using Microsoft Excel) that will be in line with the proposed investment (see Sec. Error! Reference source not found.), covering a period of 20 years. The Consultant will, taking into account the EBRD’s and EIB’s environmental, technical and procurement policies and procedures, identify those investments that best fit within the scope of the Project and within the estimated project budget. The Consultant will prepare a report with justified recommendations for consideration by the Bank.

The financial and economic model will be prepared in nominal EUR and LBP, considering the impact of the macro-economic scenarios provided by EBRD, together with a financial summary, and including key ratios, translated into the currency of the financing to be provided. The Consultant is requested to prepare the model in line with the Bank’s financial modelling standards (see Appendix 2).

The Consultant will have to carry out the following specific tasks:

- Set out the financial and economic rationale and justifications for the proposed Project components and proposed investment;

- Recommend the most economic financial structure for the Project, considering the technical and contractual structure proposed;
Terms of Reference

- Study and confirm the financial and economic viability of new and innovative technology, specifically in economic savings, to be achieved in the Project;
- Calculate and discuss sensitivity to changes in key income and expenditure variables, including FX and interest rates, and assess the risks for the Project;
- Estimate a 20-year outlook of the potential water, energy and – separately – maintenance cost reduction that can be achieved through the Project;
- Prepare a Cost Table, giving best estimates of the costs of project preparation including preparation of detailed design documentation, construction/implementation, works supervision costs, based on currently available information. Cost estimates should be presented separately for each segment, based on local or other relevant construction markets;
- Identify potential financial incentives, rebates, and tax credits that may apply and assess their viability in close collaboration with the GoL;
- Assess the financial impact of the Project by comparing the incremental costs (capital and recurrent) of the Project with the incremental revenues or savings it will generate and estimating the financial internal rate of return (“FIRR”) and the economic rate of return on the investment (“EIRR”);
- On the basis of the cost model and affordability of end users, assess and develop the tariff setting required to allow cost recovery of the Beneficiary;
- Identify whether any subsidies from the GoL to the Beneficiary are required to ensure the Beneficiary’s long term sustainability;
- Assess the needs for investment grants from other institutions to ensure Project’s ratio required by the Bank are met, and the sustainability of the Project and Beneficiary;
- Assess potential private sector participation (“PSP”) and whether design-build-operate contracts would be suitable for the Project.

3.3.4 Conditions precedents and result indicators of the Project

Taking into account information and technical, environmental, social and financial assessments, the Consultant will recommend several conditions precedents to disbursement and covenants, as well as implementation timing (e.g. tariff increase, regulatory changes, etc.).

The Project seeks to improve access to wastewater collection and treatment services in Lebanon. Where relevant, the Consultant will:

- Calculate EBRD’s standard measuring indicators and GET impact indicators (Appendix 3 and Task 3.2.3);
- In light with the analysis performed in the above sections, identify and include any other appropriate resource efficiency benchmark for measuring improvements resulting from the Project in line with the Bank’s GET approach, assess the components and define the technical, environmental and resource efficiency performance indicators of the different investment components for future monitoring of GET benefits (See section 3.2.3)
3.3.5 Organisational review - Implementation capacity assessment and proposed arrangement

Taking into account available information, the Consultant will describe the organisation and management systems of the Implementing entity and its relationship with the GoL, and in general terms the regional and national legal and institutional framework in which it is operating. The following will, *inter alia*, be carried out/addressed:

- Describe the organization of the Implementing entity, number of personnel, number and percentage of women and men in total staff count as well as across all levels/categories, etc.;
- Identify any potential employment opportunities for women as part of the new services to be offered, if applicable;
- Describe the relationship between the CDR and the GoL, and in particular how the GoL governs the CDR, including the role of the General Director, if applicable, and to what extent the relationship between the CDR and GoL will affect implementation of the Project.
- Describe any interactions between the management of the CDR and of the Beneficiaries on one hand, and representatives of consumer groups and other stakeholders on the other hand;
- Describe the efficiency of the existing organisational structure and identify what changes are needed;
- Identify any legal requirements for the implementation of the Project;
- Identify shortcomings of the current organisational/institutional framework and make recommendations how to enhance them – in particular, assess the procurement capacity of the Implementing entity as well as its environmental capacity, and provide recommendations on how to support and improve them;
- Identify any shortcomings of the current governance structure, and propose feasible improvements in the medium term;
- Recommend reasonable loan covenants and implementation timing in this area, if relevant;
- Identify which stakeholders (non-governmental organisations, academic community, donors, local experts, the media, users’ groups, etc.) are working on issues related to water and more specifically, on sustainable water supply/sanitation, gender equality goals and access-related questions;
- Discuss the need for the implementation of a Public Service Contract or a O&M agreement between the Implementing Entity, the Beneficiary and relevant municipality to define each party roles and proposed if applicable relevant KPIs to the Beneficiary.
- Identify potential linkages that could be developed with stakeholders, such as with women’s groups, in order to incorporate their concerns into the Project, so as to improve communication, information and services and to better reach out to women or other user groups;
Terms of Reference

- Provide recommendations on the scope of post-signing TC assignments to (i) support institutional reform in relation to the wastewater sector in Lebanon, (ii) implement a Corporate Development and Stakeholder Participation Programme; and (iii) support the procurement capacity and the environmental capacity of the Beneficiary.

iii. IMPLEMENTATION ARRANGEMENTS AND DELIVERABLES

The duration of the assignment will be 40 weeks. The Consultant will report to the EBRD whilst liaising with representatives of the GoL and the Implementing Entity as well as with other stakeholders (in particular the EIB through EBRD). The Consultant will report to the Bank’s Operation Leader (“OL”) Gonçalo Correia (correiag@ebrd.com) on all aspects of the assignment. Frequency and format of communications will be agreed by the parties in advance. The Consultant will liaise with the Bank’s ESD, E2C2 and Chief Economist Office representatives, as confirmed by the OL at a later stage.

The Implementing Entity is expected to provide the Consultant with working space, necessary furniture and telephone connections.

The Implementing Entity is expected to designate senior officials to be the primary contact persons with specific responsibility for assisting the Consultant and co-ordinating activities.

The Implementing Entity is expected to make available all of their records, plans, reports, designs and other documents as appropriate, but it will be the responsibility of the Consultant to translate these documents, if necessary.

The Implementing Entity is expected to provide access to all of their facilities and employees for interviews or assistance relative to an understanding of the functioning of system facilities.

The Consultant will be responsible for paying for all international telephone calls, office supplies and external printing. The Consultant will pay for all local transportation required by the Consultant’s staff throughout the duration of the assignment.

The Consultant will be responsible for providing suitably qualified interpreters and translators to work with their staff.

Unless otherwise agreed with the Bank, the Consultant will produce during the course of the assignment the following reports:

Inception Report: Within 10 weeks of the start of the assignment and following the site visit, initial data review and initial opinion as to a project proposal, the Consultant will present to the Bank an Inception Report with the initial findings, with an emphasis on findings having an impact on the time schedule and factors affecting these Terms of Reference. The Bank will provide comments on the inception report to the Consultant.

Environmental and Social Deliverables: The Consultant will define the timeline in their proposal for the environmental and social deliverables as per Appendix 5:

- Scoping Report and Stakeholder Engagement Plan (SEP)
- Compliance Summary table (short report)
- Environmental and Social Impact Assessment (ESIA) report including Environmental and Social Management Plan
**Terms of Reference**

- **Standalone Non-Technical Summary (NTS)**
- **Updated SEP for the ESIA**
- **Environmental and Social Action Plan (ESAP)**
- **Disclosure Report**

**Draft Financial Analysis and Model:** Within 30 weeks of the start of the assignment, the Consultant will submit to the Bank a draft financial analysis report and draft financial model, which should generate preliminary financial projections for the Beneficiary’s operations.

**Draft Final Report:** Within 34 weeks of the start of the assignment, the Consultant will submit a draft Final Report. This will include: (i) an assessment of the existing situation and facilities; (ii) the long term investment strategy; (iii) the finalised investment with cost estimates; (iv) the cost savings to be achieved after implementation of the Project, by component; (v) financial model of the Project; (vi) a procurement strategy and procurement plan; (vii) the scope of work for the project implementation team; (viii) a resource efficiency assessment report and a preliminary investment in table format for resource efficiency measures. The preliminary investment shall provide a very short description and the preliminary order of magnitude of the capital expenditure of each proposed resource efficiency measure.

The Consultant will submit the draft Final Report in Arabic and English to the Bank, and upon EBRD’s instruction to the GoL, the Implementing Entity and the Beneficiary for comments and will organise a joint meeting to present the Final Report (“Presentation”) to relevant stakeholders (list to be agreed with the Bank and the GoL) within two weeks after distribution of the Report.

**Final Report:** To be submitted to the Bank within two weeks after the Presentation date by the Consultant, elaborating and reflecting all comments addressed during the Presentation, and including summary information on the Project. The final versions of the ESAP, SEP and NTS will be translated into the local language.

Draft reports should be submitted electronically in both PDF and Word format.

The Consultant shall also be reasonably available to respond to any comments/questions that might be received from the EBRD Board during their review of the project.

All documents should be prepared in English and Arabic with the exception of the following documents which will only be required in English:

- Inception Report
- Draft Financial Analysis and Model

Supporting data in Arabic in the appendices need not be translated for English versions of the documents.

**Knowledge Platforms**

Subject to approval by the Client and in order to ensure links into emerging international online project information platforms for the infrastructure sector, the Consultant will facilitate the upload and updating of non-confidential Project information on-line via:
Terms of Reference

- **Source** ([https://public.sif-source.org/](https://public.sif-source.org/)) - an online cloud based project preparation and management tool, which provides templates for infrastructure projects, with the aim of improving the quality, consistency and transparency of project preparation and designed to speed up the delivery of infrastructure in the public sector across the developing world.

- **Global ViP** ([https://www.gvip.io/mygvip](https://www.gvip.io/mygvip)) – an online public utility tool which uses social networking technology to tap into a large pool of sector experts who can be consulted to improve project design, hence providing infrastructure project decision-makers, public and private sector users just-in-time access to expertise worldwide. GViP is aimed to address the issue of project development and project preparation by allowing project developers (public and private) rapid, accurate, access to global expertise.

The overall aim is to disseminate EBRD project information on-line and ultimately to increase project quality, reduce project development costs, and reduce project preparation time. On this task, the Consultant will report to IPPF representative, as instructed by the Bank. Further information on Source and GViP can be provided to the Consultant at the start of the assignment, including User Guides on these Platforms.

### iv. CONSULTANT’S PROFILE

The Consultant should ensure that appropriately qualified experts are available, as required, for each of the tasks outlined above. It is expected that the assignment will be led by a qualified Team Leader, accompanied by both key and supporting experts. It is proposed that the team will consist at least of the following key international and local experts:

- **Team Leader** preferably with 15 years’ experience in the field of water supply and wastewater management and with comprehensive experience of similar assignments, preferably in Lebanon and the region. Experience from working with international financing agencies (especially EBRD) is also desirable;
- **Financial specialist** with knowledge of public financing and modelling;
- **Technical specialist(s)** water and wastewater network and process engineer(s);
- **Environmental and Social specialist(s)** – Please see Appendix 5 for more details
- **Climate change**, water resources management and energy and resource efficiency specialist;
- **Legal and institutional expert** with relevant experience in the areas of natural monopolies regulation and knowledge of Lebanon tariff regulation and water sector policies;
- **Local experts** with good communication skills and demonstrated technical knowledge of water supply and wastewater.

All experts must be independent and free from conflicts of interest in the responsibilities accorded to them.
Terms of Reference

The Consultant is encouraged to include local Young Professionals ("YP") in the team when appropriate. A YP should be a recently graduated Lebanese national, with at least a Master’s degree in a field relevant to the Project. The objective is for practical knowledge transfer to occur between experienced professional consultants and the YP. This will be an opportunity for the YP to gain real-world sector experience, acting as a junior member of an international consulting team.
APPENDIX 1: Supplementary information on assessment of impacts of climate change

1. Obtaining data on observed and future climatic conditions

Data on observed trends in climatic conditions is available from www.ipcc-data.org/maps/ (gridded data) and http://climexp.knmi.nl (station data). Broad-scale information on projected climate change should be drawn from the Intergovernmental Panel on Climate Change Fourth Assessment Report of Working Group I (IPCC AR4 WGI report), Chapter 11 (http://www.ipcc.ch/publications_and_data/ar4/wg1/en/ch11.html). Projections of future climate change (temperature and precipitation) for the Governorate for the 2050s should be drawn from a wide range of climate change models, to understand the implications of uncertainties in climate modelling. However, a broader set of models is available from http://www.climatewizard.org/. At a minimum, the mean, minimum and maximum climate model projections from this set should be included, for the A2, A1B and B1 greenhouse gas emissions scenarios (to capture the effects of emissions uncertainty). It should be noted that GCMs provide information on changes in climate at a coarse spatial scale (typically about 250km x 250km) so they may under-represent the changes that will be experienced at the sites.

2. Assessing the implications of changes in climate as part of the FS

The projected changes in climate will affect a wide range of aspects of relevance to the FS, including for instance:

- Rising temperatures leading to melting of glaciers and consequent impact of river systems and flows.
- Adequacy of and changes in water supply (both surface water and groundwater).
- Drinking water quality.
- Power supply, energy availability and energy costs.
- Asset protection and maintenance.
- Water demand and changes in demand, e.g. increased demand due to more extreme heat days.

Further information on climate change impacts for the region is provided in the SNC and this information can be utilised in the FS. However, as noted above, the SNC is based on a small number of climate model projections, and so it does not fully capture the uncertainties in climate modelling which need to be understood as part of the FS. The SNC also does not provide information on the full set of impacts and mitigation measures that will be relevant to the FS. Therefore, the risk assessments and development of adaptation measures for the FS will need to incorporate future climate change projections. The IPCC Task Group on Climate Impact Assessment (IPCC-TGCA) has produced guidance\(^2\), published by the UNFCCC explaining the use of climate scenario data in impacts assessments, which will help in undertaking this study. In

\(^2\) http://unfccc.int/adaptation/nairobi_work_programme/knowledge_resources_and_publications/items/5402.php
addition, the UNFCCC has published a compendium on methods and tools to evaluate impacts of, and vulnerability and adaptation to, climate change.\(^3\)

\[^3\] http://unfccc.int/adaptation/nairobi_workprogramme/knowledge_resources_and_publications/items/5457.php
The Consultant must ensure that the financial model and analysis is accurate, structured, flexible and transparent, and in line with the specific requirements laid out in the Terms of Reference. The use of the FAST financial modelling standard (http://www.fast-standard.org) is preferred, however not obligatory.

The Consultant is expected to present a financial model for the Project that fulfils the following non-exhaustive conditions:

<table>
<thead>
<tr>
<th>Accuracy</th>
<th>Description</th>
</tr>
</thead>
</table>
| Terms    | The model accurately matches all financial and operational assumptions presented in the available DD information. The model accurately matches all terms proposed to date in the Term Sheet, including, but not limited to:  
- Facility size, tenor, grace, interest, tranching, currency;  
- Financial covenants as contractually defined. |
| Historical | The model includes the last 3 years of (audited) historical financial statements (not applicable if a green field). |
| Projections | Projections for the running year are in accordance with latest available estimates / interim results. |
| Currency | Summary table is in the loan currency or as agreed. Impact of forex variations over time on Financial Statements has been modelled correctly. |
| Balance Sheet | The model Balance Sheet is balanced under any variation of inputs. |
| Accounting Standards | Financial Statements is modelled correctly as per IFRS (or local GAAP if agreed). |
| Summary Sheet | The first output sheet of the model is the Summary Sheet set up in line with the below instructions. |
| Check sheet | The model includes a separate check sheet, where all model calculation checks are summarised and presented on an aggregate basis. |

<table>
<thead>
<tr>
<th>Structure and Flexibility</th>
<th>Description</th>
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<tbody>
<tr>
<td>Columns/time ruler</td>
<td>All sheets maintain a consistent column structure and time ruler throughout the model.</td>
</tr>
<tr>
<td>Sheet order</td>
<td>Sheets are arranged so that calculation order flows from left to right.</td>
</tr>
<tr>
<td>Inputs</td>
<td>All inputs are separated in a specifically denominated sheet, with no inputs (hard coded) outside them. The input sheet links through the model, enabling a fully integrated, flexible model. The source of each particular input should be clearly stated in a comment (e.g. Feasibility Study, EBRD information, etc.).</td>
</tr>
</tbody>
</table>
### Terms of Reference

<table>
<thead>
<tr>
<th>Outputs</th>
<th>Outputs are presented in specifically denominated sheets, with no calculations in them.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formatting</td>
<td>Use consistent format styles to improve readability of the model. Colour coding for inputs, link imports/exports across sheets, etc. are consistently applied.</td>
</tr>
<tr>
<td>Simplicity</td>
<td>Complex calculations are avoided by breaking them down into more basic steps. No use of excel names.</td>
</tr>
</tbody>
</table>

#### Transparency

<table>
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<tr>
<th>Circularity</th>
<th>The model does not have any circularity.</th>
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</thead>
<tbody>
<tr>
<td>Macros</td>
<td>The use of macros has to be kept to a minimum. Macros are short, concise and easily traceable.</td>
</tr>
<tr>
<td>External links</td>
<td>No links to external worksheets outside the model.</td>
</tr>
<tr>
<td>Hiding</td>
<td>The model has no hidden worksheets, rows or columns that include data, whether material or immaterial. Grouping is allowed.</td>
</tr>
<tr>
<td>Offset accounts</td>
<td>The model does not have any unexplained &quot;offset&quot; account or entry to offset mismatches.</td>
</tr>
</tbody>
</table>

#### Summary Sheet:

The model includes a clear, consistent one page summary to facilitate the understanding of the financial aspects and drivers of a loan or investment as well as the degree of vulnerability to identified risks.

The Summary Sheet is to be included as the first sheet in the model in the format shown below. The Summary Sheet should include:

- 3 years of historic information (none if a green field);
- At least the first five years of projected performance (or until beginning of principal repayment, or the life of the loan if it fits on one page);
- Key assumptions / drivers;
- Related to a particular input can be precisely written;
- Ratios (covenanted and others with standard definitions);
- Breakeven Sensitivities (e.g. DSCR=1 or as agreed);
- Income statement;
- Balance sheet;
- Cash Flow;
- Any additional assumptions, sensitivities, and ratios if considered essential should be included and fitted on the page.
Summary Sheet for Corporates:

### Key Drivers / Assumptions

<table>
<thead>
<tr>
<th>(IFRS unless marked)</th>
<th>Historic</th>
<th>Projected</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2012</td>
<td>2014</td>
</tr>
<tr>
<td></td>
<td>(A)</td>
<td>(A)</td>
</tr>
</tbody>
</table>

#### Revenues
- Volumes (units)
- Prices per unit (€)
- Other Revenues

#### Operating Expenses
- Fxd Costs (MM€ or % Rev.)
- Var. Costs (MM€ or % Rev.)
- Labour
- Electricity (MM€ or % Rev.)
- Other key raw material
- Other relevant costs …
- Tl costs (MM€ or % of Rev.)
- Total Cost/unit (€)

#### Macroeconomic
- Exchange Rate
- Inflation
- Growth rate
- Other …

### Ratio Analysis

<table>
<thead>
<tr>
<th>Ratios/Covenants levels</th>
<th>Historic</th>
<th>Projected</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2012</td>
<td>2014</td>
</tr>
<tr>
<td></td>
<td>(A)</td>
<td>(A)</td>
</tr>
</tbody>
</table>

#### Other Ratios
- IRR (Project )
- Return on Equity (Project)
- Return on Sales
- Return on Assets
- Net Margin
- EBITDA Margin

### Income Statement

<table>
<thead>
<tr>
<th>Unit MM€ / IFRS Audited</th>
<th>Historic</th>
<th>Projected</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2012</td>
<td>2014</td>
</tr>
<tr>
<td></td>
<td>(A)</td>
<td>(A)</td>
</tr>
</tbody>
</table>

#### Revenue
- Cost of Sales
- SGA
- EBITDA
- Depreciation

#### EBIT
- Interest Expense
- Other Costs/Income
- Profit before tax
- Tax incurred
- Profit after tax
- Dividends
- Other Items
- Profit for the year
- Change in Net Worth

### Balance Sheet

<table>
<thead>
<tr>
<th>Unit MM€ / IFRS Audited</th>
<th>Historic</th>
<th>Projected</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2012</td>
<td>2014</td>
</tr>
<tr>
<td></td>
<td>(A)</td>
<td>(A)</td>
</tr>
</tbody>
</table>

#### Cash
- Receivables
- Inventories

#### Total Current Assets
- Fixed Assets
- Other Assets

#### Total Assets
- ST Debt plus CPLT Debt
- Payables
- Accrued Expenses
- Other ST Liabilities
- Total Current Liab
- Long Term Debt
- Other LT Liabilities
- Total Liabilities
- Equity
- Total Liab & Equity

#### Contingent Liab

### Cash-Flow Statement

<table>
<thead>
<tr>
<th>Unit MM€ / IFRS Audited</th>
<th>Historic</th>
<th>Projected</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2012</td>
<td>2014</td>
</tr>
<tr>
<td></td>
<td>(A)</td>
<td>(A)</td>
</tr>
</tbody>
</table>

#### Operating Profit (EBIT)
- Depreciation & Amortisation (+)
- Gross Operating CF (EBITDA)
- Changes in Working Capital (+/-)
- Tax Paid

#### Net Operating CF
- Interest Paid
- Current Debt Repaid
- Dividends Paid

#### Pre Investment CF
- Capital Expenditure

#### Pre Financing CF
- EBRD new Debt
- Other new Debt
- Change in Net Worth

#### Post Financing CF
- Cash End

### Equity Analysis (if required)

<table>
<thead>
<tr>
<th>Debt sensitivity</th>
<th>DSCR = 1.0</th>
<th>Equity Analysis (if required)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decrease in Volume</td>
<td>xx%</td>
<td>Entry Valuation (Company) M€</td>
</tr>
<tr>
<td>Decrease in Price</td>
<td>xx%</td>
<td>EBITDA Multiple</td>
</tr>
<tr>
<td>Increase in Fixed Costs</td>
<td>xx%</td>
<td>PE or Other</td>
</tr>
<tr>
<td>Increase in Variable Costs</td>
<td>xx%</td>
<td>Exit Valuation (Company) M€</td>
</tr>
<tr>
<td>Increase in Capex</td>
<td>xx%</td>
<td>Year of Exit</td>
</tr>
<tr>
<td>Implementation Delay</td>
<td>month</td>
<td>EBITDA Multiple</td>
</tr>
<tr>
<td>Local Devaluation</td>
<td>xx%</td>
<td>IRR % - Base Case</td>
</tr>
<tr>
<td>Mix (% price +%costs )</td>
<td>xx%</td>
<td>Cash on Cash - Base Case</td>
</tr>
</tbody>
</table>
### APPENDIX 3: Standard measuring indicators, GET impact indicators and other indicators

#### Standard measuring indicators:

<table>
<thead>
<tr>
<th>Sector</th>
<th>Indicator</th>
<th>Data point to be collected</th>
<th>Projected after implementation completion*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Water Supply</strong></td>
<td>Total population benefitting from access to tap water.</td>
<td>Number of persons connected to improved access to tap water.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Annual reduction in tonnes of CO₂ equivalent derived from the lowering of water losses system-wide.</td>
<td>Average (for sector) kwh used to produce 1 m³ of water <em>multiplied with</em>, amount of m³ of water losses eliminated <em>multiplied with</em>, average tons of CO₂ generated by energy generation in the country.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Annual m³ potable water produced.</td>
<td>Number of persons connected to improved access to tap water multiplied by average consumption of water in m³/year.</td>
<td></td>
</tr>
<tr>
<td><strong>Wastewater</strong></td>
<td>Total population benefitting from access to wastewater services.</td>
<td>Number of persons with improved access to wastewater services.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Annual m³ of wastewater treated.</td>
<td>Total m³/year of wastewater treated through improved wastewater treatment plant and/or total m³/year of wastewater supplied to existing wastewater treatment plant through improved network.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Annual CO₂e reduction in tonnes per year.</td>
<td>Portion of treatment of wastewater that reduces methane emissions (only if net GHG emission reductions can be demonstrated).</td>
<td></td>
</tr>
</tbody>
</table>

* measured two years after projected full loan disbursement

#### SRI impact indicators (as applicable):

<table>
<thead>
<tr>
<th>SRI impact indicator</th>
<th>Unit</th>
<th>Data point to be collected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary energy saved</td>
<td>GJ/yr</td>
<td>Project energy use compared to baseline* energy use.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Primary energy includes:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1. Direct use of fossil fuels</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Direct use of biomass.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Use of electricity, multiplied by a loss factor to take into account country average generation efficiencies and electricity grid losses*</td>
</tr>
</tbody>
</table>

* measured two years after projected full loan disbursement

---

*The baseline is defined as the expected conditions without the project two years after full loan disbursement. The baseline is compared to the conditions projected with implemented project two years after full loan disbursement.*
CO2 emissions reduced | ton CO2e/yr | Project CO2 emissions compared to baseline CO2 emissions. CO2 emissions include:
1. Emissions as a result of direct use of fossil fuels
2. Indirect emissions as a result of the use of electricity \(^6\)
3. Emissions of other Greenhouse gases (in particular methane \(^7\)) expressed in CO2 equivalents (Portion of treatment of wastewater that reduces methane emissions; only if net GHG emission reductions can be demonstrated).

Water saved | m3/yr | Project water use compared to baseline water use. Water savings must be determined for the following project activities:
1. Water recycling projects that recover wastewater streams for reuse or alternative use.
2. Application of technology or management actions that lead to effluent water quality improvements in regions with water scarcity \(^8\)
3. Water loss prevention and water demand management
4. Additional water made available as a result of the project

Material savings | ton/yr | Material use compared to baseline material use. Material savings must be determined for project activities aimed at waste minimisation:
1. Minimisation of waste streams by integrated measures (i.e. improvement of existing installations, processes or procedures/management)
2. Waste recycling projects that reuse waste as inputs into new products or as a resource

### Indicators required by the EU NIF

The values for standard outputs and outcome indicators due to be measured, should be provided whenever possible, for all projects in a given sector. Relevant indicators corresponding to the sector should be applied. Standard indicators can be found below:

#### Environment Indicators

<table>
<thead>
<tr>
<th>OUTPUT INDICATORS</th>
<th>UNIT</th>
<th>DEFINITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.2 Length of new or rehabilitated sewer pipes installed</td>
<td>Km</td>
<td>Length of collectors and sewers installed or upgraded. All sizes of sewer pipes expressed in their aggregate length in the network, irrespective of pipe diameter, comprising mains as well as reticulation pipes.</td>
</tr>
<tr>
<td>3.5 Wastewater treatment capacity</td>
<td>M3/day</td>
<td>Maximum amount of waste water that the new or improved treatment plant can process. This indicator reflects the total new or additional capacity of treatment plant independently of its production during operation.</td>
</tr>
</tbody>
</table>

#### OUTCOME INDICATORS

\(^5\) For example, with an average electricity generation efficiency of 40% and grid losses of 7%, the primary energy use (MWh) is 2.7 x the direct electricity use (MWh).

\(^6\) The CO2 emissions as a result of the use of electricity are determined by multiplying the use of electricity (MWh) with the country specific grid emission factor (ton CO2/ MWh) in line with the joint MDB list of grid emission factors.

\(^7\) Tons of methane emissions (ton CH4) can be converted to tons of CO2 equivalents (ton CO2e) by applying the a factor of 25 (ton CO2e/ton CH4).

\(^8\) Qualifying for ‘water saved’: treated wastewater with an effluent quality at or exceeding internationally accepted effluent water quality standards.
### Cross Sectors indicators

<table>
<thead>
<tr>
<th>INDICATORS a)</th>
<th>UNIT</th>
<th>DEFINITION b)</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.1 Total number of beneficiaries</td>
<td>#</td>
<td>Estimated number of people with improved access to services (financial services, social and economic infrastructure, etc.).</td>
</tr>
<tr>
<td>7.2 Number of beneficiaries living below the poverty line</td>
<td># (and/or %)</td>
<td>Sub-group of total beneficiaries above (if applicable). Reference point used, e.g. national or international definitions of poverty, should be made transparent).</td>
</tr>
<tr>
<td>7.3 Relative (net) Greenhouse gas emissions impact$^9$</td>
<td>CO2 ktons eq / year</td>
<td>Average amount of GHG emissions induced, avoided, reduced or sequestered per year by the project during its lifetime or for a typical year of operation: net balance between gross emissions and emissions that would occur in a baseline scenario.</td>
</tr>
<tr>
<td>7.4 Direct employment: Construction phase</td>
<td># (FTE)</td>
<td>Number of full-time equivalent construction workers employed for the construction of the project's hard assets during the reporting period.</td>
</tr>
<tr>
<td>7.5 Direct employment: Operations and maintenance</td>
<td># (FTE)</td>
<td>Number of full-time equivalent employees as per local definition working for the project at the end of the reporting period.</td>
</tr>
</tbody>
</table>

---

$^9$ Enter baseline according to point (2), expected value with the project according to gross emissions calculation in point (3) and expected result according to net emissions impact calculation in point (4). Indicate in the comments box the project impact category as outlined in point (1). The indicator should be assessed for a ‘typical year of operation’; there is no need to ‘indicate the year’.
APPENDIX 4: GET HANDBOOK

The GET Handbook will be sent separately as a pdf document.
## TERMS OF REFERENCE:
To undertake an Environmental and Social Impact Assessment (ESIA)
for the extension and upgrade of the Daoura/Bourj Hammoud Wastewater Treatment
Plant (WWTP), Lebanon

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<td>3.3</td>
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<td>Analysis of Applicable Requirements</td>
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<td>Baseline Conditions</td>
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<td>3.7</td>
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<tr>
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<td>3.9</td>
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<tr>
<td>4</td>
<td>Implementation Arrangements</td>
<td>48</td>
</tr>
</tbody>
</table>
BACKGROUND

The European Bank for Reconstruction and Development (EBRD) is considering providing finance via sovereign loan to the Government of Lebanon (the “Client”) for the development of a primary and secondary treatment wastewater treatment plant (WWTP) (to complement the preliminary WWTP on the same site) in Daoura/Bourj Hammoud, a suburb north east of Beirut (the “Project”). The WWTP (expected capacity - 325,000 m3 per day) will serve a population of 1.4 million inhabitants from Beirut, Metn and Baabda districts. The WWTP will be the largest in Lebanon and may also include the rehabilitation of the existing pumping stations and coastal sewage network.

It is expected that the Project will be implemented by the Council for Development and Reconstruction ("CDR" or “Implementing Entity”). After construction completion, the Project’s assets will be transferred to the Beirut and Mount Lebanon Water Establishment ("BMLWE" or "Beneficiary"), which will be in charge of operating and maintaining the WWTP. CDR is a public establishment in charge of Lebanon’s reconstruction planning, execution and monitoring.

The WWTP in Daoura//Bourj Hammoud has been under discussion for many years to address a pressing need for wastewater treatment in the wider Beirut area. Currently, a preliminary WWTP project is under implementation (financed by EIB) and the new project would concern the upgrade and possible extension of said WWTP upon completion of the preliminary treatment facilities. It has been estimated that Beirut and surrounding regions generate 50 percent of Lebanon’s wastewater and while WWTPs exist, most operate below design capacity and while wastewater is collected in urban areas much of this wastewater is discharged untreated to the Mediterranean. The wastewater sector in general suffers from chronic under-investment which is combined with a weak institutional and governance structure and insufficient tariff framework.

In order to inform the feasibility of the Project, including its design, the EBRD is commissioning a feasibility study. Part of the study will need to consider the environmental and social aspects of the Project include its associated impacts and necessary mitigation and management measures. This is particular importance noting the proposed location of the WWTP: on the coast in and urban area with high population density. Stakeholders have in past challenged the Project proposals due to the technologies and treatment to be applied.

As required by the EBRD’s Environmental and Social Policy (ESP) of 2014 each project seeking EBRD financing is categorised either A, B or C. Wastewater treatment plants with a capacity above 150,000 population equivalent are categorised as A. The Project significantly exceeds this threshold and will have a development with a significant footprint. The EBRD has, therefore, categorised the Project as A requiring a comprehensive Environmental and Social Impact Assessment (ESIA) and the disclosure thereof for a period of 120 days prior to EBRD presenting the Project for decision making by its Board of Directors. The project will also need to meet EIB.
Environmental and Social Requirements and a similar timeframe for disclosure is applicable. Further the EBRD requires the undertaking of an Environmental and Social (E&S) audit of the implementing entity and the operator to determine their capacity and existing provisions to manage E&S impacts and risks associated with the Project in line with the EBRD’s Performance Requirements of 2014, which fall under the ESP.

The EBRD is, therefore, seeking a appoint a Consultant to conduct an ESIA and E&S Audit for the Project and to assist in the public disclosure of the ESIA (the Assignment). It is expected that the Consultant will form part of the feasibility study team or work closely with such team. The Consultant will also be expected to work with other stakeholders. The EBRD recognises that an ESIA should ideally be conducted on an advanced and detailed project design. The Feasibility Study will not present such a design and therefore the ESIA should be developed to the extent possible noting the proposed site and the design concept envisaged. The Consultant’s team responsible for the ESIA should work closely with the wider Feasibility Study team to ensure that E&S is fully integrated into the Project and that the Applicable Requirements are met. The Assignment will require substantial time in Lebanon and various specialist studies including public consultation sessions.

The ESIA will be used for environmental permitting although it is noted that an update to reflect the detailed design may be necessary at a later stage in Project development (post feasibility study and through a separate terms of reference). The Consultant will, therefore, be required to engage the Ministry of Environment as a key stakeholder so as to inform the content of the ESIA, ensure Lebanese requirements are met and that the ESIA can be used for environmental permitting. It is envisaged that permitting (whether preliminary or full) will take place prior to a decision being made on the Project by the EBRD’s Board of Directors.

This Terms of Reference sets out the requirement for a comprehensive ESIA and for an E&S audit and are to inform the presentation of a proposal by potential consultants. The Assignment will be for the benefit of the Government of Lebanon although it will be contracted by the EBRD. The Government will play a key role in the ESIA process and the Assignment.

1.1 | Applicable Requirements

The ESIA and E&S Audit will be conducted in line with the following requirements:

- The EBRD’s Environmental and Social Policy (ESP) and Performance Requirements (PRs) 201410 with a particular emphasis on compliance with PR1.
- EIB’s Environmental and Social Standards (as per the EIB environmental and social handbook)
- EU substantive environmental standards, including (but not limited to) the pertinent requirements of the EIA Directive (2014), Birds and Habitat Directives (if applicable to the Project area), the Urban Wastewater Treatment Directive (91/271/EEC), including treatment standards, the Water Framework Directive if relevant and Sewage Sludge Directive (86/278/EEC). When host country regulations differ from

EU substantive environmental standards, the Project will be expected to meet whichever is the more stringent;

- The IFC’s 2012 Performance Standards and associated EHS guidelines;
- National legislation; and
- Relevant international conventions and protocols relating to environmental and social issues, as transposed into national legislation.

**OBJECTIVES OF THE ASSIGNMENT**

The objective of the Assignment is to ensure that E&S is fully integrated into the Project, to identify and assess any potentially significant future adverse environmental and social impacts associated with the Project, determine the measures needed to prevent, minimise, mitigate and compensate adverse impacts, and identify potential environmental and social opportunities, including those that would improve the environmental and social sustainability of the Project. As part of this, the Consultant will work with the Feasibility Study team in order to inform Project concept and design taking into consideration environmental and social issues. The Consultant will also identify and conduct any specialist studies (these need to be included in the proposal) that may be required given the Project’s context and environmental and social risks.

The assessment process will be commensurate with, and proportional to, the potential risks, aspects and impacts of the Project, and will cover, in an integrated manner, all relevant direct, indirect & cumulative environmental and social aspects and impacts of the Project, and the relevant stages of the Project cycle (e.g. pre-construction, construction, operation, and decommissioning or closure and reinstatement).

Stakeholder engagement is a key aspect of the impact assessment process. Meaningful consultation with, and disclosure of information to, the public and other stakeholders is a key objective.

The ESIA report will be used for environmental permitting of the Project.

In addition, the E&S audit will seek to determine CDRs and BMLWE’s current E&S performance, capacities and management provisions in terms of the Applicable Requirements.

**SCOPE OF WORK**

The Consultant will undertake the following work in accordance with the Applicable Requirements.

**1.2 | Liaison with EBRD and other Stakeholders**

The Consultant will be expected to liaise with the EBRD, other potential lenders (in particular EIB through EBRD), the Client and Client representatives. This is expected to include remote communications (telephone and email) and also in a meeting setting. The Consultant should make provision for the following:

- Kick off conference call with the EBRD, lenders and the Client
- Monthly update conference calls with the EBRD, lenders and the Client
- Monthly email updates to the EBRD, lenders and the Client – prior to update calls
- Two Assignment face-to-face feedback meetings (one in London, one in Beirut)

Face-to-face meetings will be hosted by the EBRD and the Client. Should additional face-to-face meetings be required these will be subject to an Assignment contract variation. The E&S advisor may be expected to present the findings of the Assignment in the face-to-face meetings. This would include a presentation.

1.3 | PERMITTING

The Scoping Report and ESIA described below will be used for environmental permitting of the Project. Therefore, the Consultant will:

- engage the Ministry of Environment as a key stakeholder at an early stage and during the ESIA process so as to inform the content of the ESIA, ensure Lebanese requirements are met and that the ESIA can be used for environmental permitting.
- consider the need for Ministry of Environment review of Scoping and ESIA documentation in the ESIA timeline.
- consider the need for ESIA disclosure for financing purposes and the public consultation for environmental permitting and seek to identify and implement efficiencies in these two processes.
- submit the ESIA and associated documentation to the Ministry of Environment for permitting purposes noting the need for translation of the documentation into Arabic and the need to pay a permitting application fee (these fees should be captured in the Consultant’s proposal).

It is envisaged that permitting (whether preliminary or full) will take place prior to a decision being made on the Project by the EBRD’s Board of Directors.

EBRD may attend meetings with the Ministry of Environment and the Consultant, will undertake site visits with the Consultant and will participate stakeholder engagement activities like ESIA disclosure meetings.

1.4 | ESIA SCOPING

By means of a scoping process, the Consultant shall identify key issues related to the Project which will be considered in the ESIA process and inform the Project concept, location and design. The Consultant will work closely with the wider Feasibility Study team to ensure that E&S is fully integrated into the Project. This scoping process will also involve contact and consultation with representatives of the affected public, government agencies (including the Ministry of Environment), local authorities and other organisations. It may involve scoping workshops.

The Consultant will work with the Feasibility Study team, the EBRD and other Government stakeholders to compile a description of the Project and associated facilities and/or activities. The Consultant will also gather information on alternatives considered.
The Consultant will identify and assess relevant regional and strategic environmental and social assessments or studies that might be of relevance to the Project or the Project area and include a summary of these as an annex to the Scoping Report.

The Consultant will review the Applicable Requirements and determine the standards, legislation, regulations, etc., applicable to the Project. EBRD requires the application of EU substantive environmental standards and where there are differences between local, EBRD and EU standards, the most stringent would apply.

The Consultant will identify potentially affected stakeholders and interested parties and consult with them in order to identify key issues to be addressed as part of the ESIA. Particular attention will be focused on identifying vulnerable people or groups who could be disproportionately affected by the project. A Stakeholder Engagement Plan (SEP) for the ESIA study will be developed which can serve as the basis upon which the Project SEP can be developed following the completion of the ESIA study (see Section 3.5). Stakeholders should have an opportunity to provide comments and recommendations on the draft SEP and Scoping Report.

The Consultant will review available environmental and social baseline data (e.g. that already gathered by local governmental and possibly non-governmental organisations). Gaps will be identified between available baseline data and the need for recent and relevant data necessary to conduct an ESIA commensurate and proportional to the potential impacts and issues of the Project. The Consultant will identify actions to fill these baseline data gaps including any further environmental or social studies that would be required (e.g. intrusive investigations for soil contamination, biodiversity, air quality and noise studies, visual impacts, water quality (marine) baseline and discharge impact studies, social/socioeconomic surveys/studies, livelihoods, traffic and cultural heritage or archaeological studies, etc.).

The Consultant will identify the potential environmental and social impacts associated with the Project and through means of a screening/scoping process determine which are the main impacts to be assessed as part of the ESIA process. This will include the potential need for land acquisition and whether Performance Requirement 5 applies.

The Consultant will prepare a brief Scoping Report summarising the following:

- A brief description of the Project, its scope, alternatives considered and justification; and associated facilities;
- Recommendations related to Project design (if relevant);
- Applicable national legislation and international standards;
- An overview of the environmental and social baseline include studies to be undertaken to inform the ESIA;
- Main potential environmental and social impacts to be studied as well as a justification for those impacts screened out during the scoping process;
- Red flags and potential show stoppers (if any);
- The results of scoping stage stakeholder engagement;
- A summary of key stakeholders and a description of the envisaged stakeholder engagement process for the ESIA accompanied by a standalone Stakeholder
Engagement Plan (SEP) specific to the ESIA process which can be included in an annex;

- The ESIA work programme including: environmental and social baseline studies, impact assessment and environmental and social mitigation and management measures; and
- A timeline for completion of the ESIA.

The scoping process and Scoping Report will be subject to consultation (including public consultation) in line with the EU EIA Directive and EBRD PR1 and PR10. It is recognised that this will need to take place in parallel to other work streams as required by this Terms of Reference.

**For the purpose of costing this Terms of Reference the Consultant will need to define what specialist E&S baseline studies are required at the proposal stage.**

The Consultant shall engage with the Ministry of Environment as to the content of the Scoping Report and the ESIA so as to ensure that the ESIA is fit for the purposes of environmental permitting.

The Consultant will work closely with the feasibility study team.

An EIA was conducted for the Project in 2003 and this will be made available to the Project. It includes some baseline information but the Consultant should recognise that much of this information is out of date.

### 1.5 E&S AUDIT

The Consultant will conduct a corporate audit of CDR and BMLWE to determine existing management provisions, capacities and E&S performance against the Applicable Requirements. The E&S audit may also include a visit to existing facilities operated by CDR and BMLWE. The E&S Audit will be documented in a Performance Requirement Compliance Summary table (attached in Annex 4) with actions necessary to address shortcomings and areas of non-compliance against the Applicable Requirements presented in an E&S Action Plan (see Section 3.8). The Compliance Summary is an internal document to the EBRD, the Consultant and the Government of Lebanon and should take the form of a short standalone internal report. **The Compliance Summary should also describe how the ESIA for the Project has sought to meet the Applicable Requirements.**

Key issues to be covered under the E&S Audit may include, but not be limited to:

- Existing environmental and social management systems, policies and practices;
- Organisational capacity and resources, including description of the number of personnel; number and percentage of women and men in total staff count as well as across all levels/categories;
- Human Resources and employment policies and provisions;
- Occupational health and safety performance and provisions;
- Pollution prevention measures;
• Use and management of hazardous substances;
• Community health, safety and security;
• Management of potentially hazardous works;
• Traffic management;
• Contractor management and oversight;
• Supply chain E&S risk management;
• Waste (including sludge) management and waste minimisation;
• Current policy and procedures regarding land acquisition (compensation policy, consultation activities related to land acquisition including grievance management, if applicable);
• Past environmental liabilities;
• Public interaction, including historical responsiveness to public comments, complaints and questions; and
• Monitoring practices and results.

1.6 | ESIA STUDY

The Consultant will carry out the ESIA study, and document it in an ESIA report, including all of the elements identified in this section and drawing on the Scoping Report and informed by the Feasibility Study and vice versa. The key objectives of an ESIA include (but are not limited to) the following:

• to identify relevant national environmental, health and safety laws and regulations, and European Union environmental and social standards, taking into consideration any international conventions applicable to the Project;
• to describe the Project and its associated facilities and activities and identify and assess alternative options to the proposed Project;
• to assess and describe the current environmental and social status (baseline) of the planned Project area and its surroundings, including environmental and social issues associated with any previous use of the areas planned to be occupied by the Project – this is expected to include specialist baseline studies;
• to identify, assess, qualify/quantify and determine the significance of the potential environmental and social impacts (both positive and negative, direct, indirect, cumulative, etc.) associated with the Project and associated facilities and activities – this is expected to require specialist studies;
• to structure the Project so that Applicable Requirements will be met;
• to develop an Environmental and Social Management Plan (ESMP) aimed at preventing and/or mitigating potential adverse environmental & social impacts during the life of the Project, at providing environmental and social benefits as well as establishing an environmental monitoring and management requirements including emergency response provisions; and
• to advise and assist the Client and EBRD in conducting a public consultation process in accordance with national requirements and the EBRD disclosure requirements.
These objectives are expanded upon below. **Annex 1** provides an indicative structure for the ESIA.

### 1.6.1 | Project Description

Based on the scoping and the Feasibility Study the Consultant will prepare a description of the Project in the ESIA. The Project description will include information on: the Project area of influence and specific location(s) at which Project activities will take place; Project design, size, lifespan; and other relevant features of the Project as well as associated facilities and activities (outfall, new sewage lines, pump stations and conveyors, construction camp, for example). Maps and figures will be included as relevant in order to illustrate the geographic location of the project and its key components.

### 1.6.2 | Analysis of Reasonable Alternatives

The ESIA will include an analysis of technically and financially feasible alternatives, including non-Project alternatives. The ESIA will also provide a justification for the option chosen taking into account this option’s environmental and social effects.

### 1.6.3 | Analysis of Applicable Requirements

The Consultant will identify applicable local, regional and national environmental and social laws and regulatory requirements of the jurisdictions in which the Project operates, including those laws implementing host country obligations under international law. The Consultant will analyse local/national assessment and permitting requirements as well as applicable environmental and social requirements and compare them within a gap analysis in tabular format. Based on this analysis, the Consultant will define the project standards noting that the EBRD requires that the Project meet the most stringent standard. The EBRD’s Performance Requirements also require that EU substantive environmental standards apply to the project (e.g. the Urban Wastewater Directive – see the Applicable Requirements). This selection should include quantitative limits. The consultant will include a description of the status of permitting requirements for the project. The Consultant will identify, review and take into consideration any relevant strategic level assessment documentation.

### 1.6.4 | Baseline Conditions

The ESIA will include a comprehensive description of the current state and likely evolution (in the absence of the Project) of the physical, biological, social and socio-economic environments present in the Project impact area. The environmental and social baseline for the ESIA will be based on recent data and will consist of a combination of already gathered and available studies through local governmental and possibly non-governmental organisations as well as additional field studies as required. Where available data is insufficient the Consultant will be required to carry out field studies. These should be defined during the ESIA Scoping stage (Section 3.3) and defined in the proposal responding to this Terms of Reference. If additional studies are identified at the scoping stage that were not expected during the proposal stage, these will be discussed and agreed with the EBRD.
Consistent with requirements of the EU Habitats Directive\textsuperscript{11} and Birds Directive\textsuperscript{12}, the assessment will also identify any nature protection areas that could be affected by the Project.

The baseline assessment will include consideration of the inter-relationship between the relevant factors, as well as the exposure, vulnerability and resilience of these factors to natural disaster risks and climate change.

1.6.5 | Assessment of Impacts

In accordance with the Bank’s ESP (2014), the Consultant will assess the potential environmental and social impacts and risks of the Project across its lifecycle (preconstruction, construction, operations, decommissioning/closure, reinstatement), as well as opportunities that the Project may provide, including but not limited to: infrastructure development as well as direct, indirect and induced economic benefits. Included in the impact assessment scope will be any associated facilities and activities as well as cumulative impacts and impacts from unplanned events. The assessment will also include an identification of impacts that could be experienced disproportionately by vulnerable groups. Maps shall be prepared wherever needed to properly characterise impacts, especially those with a significant spatial dimension.

Impacts on the different components of the physical, biological and socioeconomic environments will be assessed using good practice ESIA techniques (e.g. modelling, risk assessment, professional judgement, etc.) and through consistent and transparent application of a Consultant-defined impact assessment methodology which would consider, amongst others if applicable:

- Nature of impact (positive or negative);
- Type of impact (direct or indirect);
- Magnitude of impact;
- Impact likelihood;
- Duration and extent of the impact;
- Reversibility of the impact;
- Sensitivity, importance and vulnerability of the resource or receptor; and
- Defined quantitative limits (e.g. emission limits and air quality standards), etc.

The Consultant should present in the ESIA report a significance rating for each residual impact.

The impact study will also identify potential improvement opportunities and define technically and financially feasible measures to avoid, or where avoidance is not possible, minimise, mitigate or compensate adverse impacts (as per the Mitigation Hierarchy). Measures to enhance Project benefits will also be identified.

Where affected individuals or groups are identified as disadvantaged or vulnerable during the appraisal process, the study will include differentiated measures so that adverse impacts do not fall disproportionately on them and they are able to take advantage of opportunities to benefit from the Project.


\textsuperscript{12} Council Directive 2009/147/EC on the conservation of wild birds
The Consultant will assess the extent of land acquisition associated with the Project in line with PR5, including the nature of impacts to housing, structures, community infrastructure and any/all livelihood activities. If a Resettlement Action Plan and/or Livelihood Restoration Plan must be prepared, the Consultant will inform the EBRD.

The assessment will also consider potential GHG emissions or emissions savings associated with the Project.

Finally, the impact assessment will present the residual impacts subsequent to the application of mitigation and enhancement measures.

1.6.6 | Environmental and Social Management Plan

The Consultant will describe the avoidance, minimisation, mitigation, compensation, management and monitoring measures aimed at improving the Project and mitigating its E&S impacts in an Environmental and Social Management Plan (ESMP). The ESMP will ensure that all relevant stages of the Project are structured to meet the Applicable Requirements and should include:

- A high-level description of the envisaged Environmental and Social Management System including operational policies, management plans, management systems, programmes, procedures, practices and capital investments to be developed and deployed as part of the overall impact mitigation strategy;
- Key mitigation and management measures;
- The resources necessary to ensure its effective implementation and define the roles and responsibilities for the actions/mitigation measures contained therein as well as for regular update of the ESMP;
- Management of supply chains and responsibilities of third parties including Contractor Environmental and Social Management Plans (or site-specific plans) to be developed by contractor and approved by CDR or other entity;
- Training or capacity-building required to ensure that personnel tasked with implementing the ESMP have the necessary awareness and skills to execute these functions effectively;
- Performance indicators linked to significant environmental and social impacts as well as relevant elements of the EBRD PRs;
- A monitoring plan aimed at tracking actions specified in the ESMP as well as any regulatory monitoring and reporting requirements;
- Emergency procedures and management plans to address fire and explosion safety as well as pollution control and containment for potential incidents (e.g. emergency response plans, fire extinguishing measures, and alarm and communication systems);
- A procedure for the management of change.

The level of detail and complexity of the ESMP will be commensurate with the Project’s impacts and issues addressing risks, impacts and opportunities specific to the Project. The ESMP will define desired outcomes as measurable events to the extent possible with elements such as targets and performance indicators that can be tracked over defined time periods.
1.7 | PROJECT STAKEHOLDER ENGAGEMENT

The EBRD attaches particular importance to public consultation in its pre-investment activities. The ESIA process will include information disclosure and meaningful engagement with affected groups and interested parties throughout the ESIA process starting with the scoping phase (Section 3.3) in conformance with the EBRD’s PR1, PR10, EIB relevant standards and national law. The Consultant will take specific measures to ensure the participation of women and potentially vulnerable stakeholder groups in the consultation regarding the Project. Depending on the Project context, this could include specific consultation activities to allow direct engagement with these groups.

The Scoping Report and the ESIA will require an stakeholder engagement plan (SEP). The Consultant will therefore prepare such a plan including a grievance mechanism in compliance with PR10 and the specific requirements for Category A Projects (clauses 21-25 and 28). The scope and level of detail of the SEP will be scaled to fit the needs of the Project and the objectives of EBRD PR10 and EIB relevant standards. The Consultant will propose a format best suited for the specific Project needs. Guidance for the contents of an SEP is provided in Annex 2. The SEP will define how the ESIA package of documents will be disclosed.

1.8 | NON-TECHNICAL SUMMARY (NTS)

The Consultant will prepare, in consultation with the Client, a concise, over-arching, standalone NTS that summarises the ESIA documents. The NTS will be in clear language comprehensible to the general public.

An indicative list of issues to be included in the NTS is provided in Annex 3.

1.9 | E&S ACTION PLAN

The Consultant shall develop a comprehensive ESAP to address issues identified during the E&S Audit and to define high level actions to ensure alignment of the Project with the Performance Requirements. Actions identified must be numbered, clearly defined, indicate a time frame for completion (with specific reference to those actions that must be completed before financial close if appropriate) and a responsible party specified. Further, each item must contain a description of the factors that will be used to determine when the identified action is closed/completed. The required format the ESAP is given in Annex 5.

1.10 | PUBLIC DISCLOSURE

Category A Projects require disclosure of the ESIA and other relevant E&S documentation for a minimum of 120 days. The Consultant will prepare an ESIA disclosure package including the ESIA, NTS, SEP, ESMP and ESAP (as described in the preceding sections) in English for review by the EBRD, the EIB and the Client. Once approved the ESIA package of documents will be translated into Arabic. Technical annexes can remain in original language.

The Consultant will support the ESIA disclosure process including notification of stakeholders and will present at the public meetings together with the Client. EBRD will attend such meetings. Following the ESIA disclosure period, the Consultant will summarise disclosure
activities as well as feedback received from the public and other stakeholders in the form of a Disclosure Report.

For the Consultants information, ESIA disclosure for the EBRD includes:

- ESIA package in English and Arabic on the EBRD’s website and the Client website
- Notification of stakeholders of the availability of the ESIA and review/comment period.
  Numerous hardcopies of the ESIA package will be necessary.
- Hold a public event to present the ESIA

As noted in Section 3.3 the Consultant will need to consider public disclosure requirements for the EBRD (ie for financing) and for permitting purposes and seek to identify and implement efficiencies in these two processes include submission of the ESIA to the Ministry of Environment for permitting purposes.

**IMPLEMENTATION ARRANGEMENTS**

The Consultant will report on all aspects of the Assignment to the Bank’s Operation Leader (the OL), and the Bank’s Environmental and Sustainability Department representative, based at EBRD headquarters in London; and liaise with the Client.

Goncalo Correia – CorreiaG@ebrd.com

James Lea-Cox – lea-coxj@ebrd.com

The Client, CDR, BMLWE and the Feasibility Study team will provide the Consultant with access to, or copies of all, relevant information.

The Consultant will be expected to work with a variety of stakeholders during the ESIA process including the Feasibility Study team CDR, BMLWE and the Ministry of Environment as well as EIB.

It is expected that the Consultant team will need to spend substantial time in Beirut. The Consultant will need to include in the proposal the necessary international and local travel and per diem cost provisions.

Noting that certain parts of Lebanon are seen to be of high security risk, the Consultant will make the necessary provisions to ensure the safety and security of the Consultant’s team. The Project area is currently classified as a green area with no specific security provisions. Despite this, the Consultant will need to comply with the United Nations security requirements (these apply to EBRD and its consultants) which in this instance involves attendance of a briefing meeting (1hour) in Beirut for all visiting consultants. Further the Consultant will need to register all travel to Lebanon in the UN Trip system.

**DELIVERABLES**

The Consultant will submit the following deliverables to the EBRD and the Client:

1. Scoping Report and Stakeholder Engagement Plan (SEP)
2. Compliance Summary table (short report)

3. **Environmental and Social Impact Assessment (ESIA) report including Environmental and Social Management Plan**

4. Standalone Non-Technical Summary (NTS)

5. Updated SEP for the ESIA

6. Environmental and Social Action Plan (ESAP)

7. Disclosure Report

The Consultant shall present a timeline for these deliverables in their proposal.

Draft versions of these deliverables will be submitted in word format and in English to the EBRD and the Client for review. The Consultant will submit final versions of these deliverables in word and pdf format and in English following EBRD and Client review and comment. Final accepted versions of Deliverables 1,3,4,5 and 6 (ie the ESIA disclosure package) will be translated into Arabic and submitted to the EBRD and the Client in word and pdf format. Technical annexes can remain in original language. The Consultant will advise the EBRD on the timing of submission of the ESIA for permitting purposes.

At this stage it is not expected that major modifications to the ESIA package will be necessary post disclosure although the consultant should make provisions for minor modifications.

**PROPOSAL AND KEY EXPERTS**

The Consultant’s proposal shall include:

- Experience in ESIs for similar Projects and experience with IFI E&S standards.
- The proposed team, with CVs (2 pages maximum per individual) and respective levels of efforts of all relevant experts presented in tabular form in man-days (both in the field and elsewhere) for each phase of the services;
- The Consultant’s methodology and approach to the Assignment (20 pages maximum);
- Indication that the Consultant is an approved or licenced consultant in Lebanon for the undertaking of ESIs for permitting, or partners with a local consultancy who has such expertise; and
- A timeframe presenting the Assignment milestones in graphical form.

The proposal will also describe the specialist studies necessary and the costs for such studies.

**Consultant’s Team:**

A suggested composition of the Consultant’s team is as follows (key team members, to be complemented as appropriate):
• Project manager: a consultant with experience in managing ESIAs in the EBRD’s countries of operations and in compliance with EBRD PRs, experience in the Project sector, and with excellent communication skills;
• Environmental specialist with experience in ESIAs in the sector and the country/region;
• Social specialist(s) with experience in the country, including public consultation in the local context, social impact assessment, land acquisition, labour issues, gender expertise, as required; and
• Other E&S specialists as required.

The EBRD expects consulting teams to include local specialists with local knowledge, experience and language skills.
ANNEX 1
SAMPLE ESIA FORMAT

Note: The following is an indicative format and potential content of an ESIA study. The Consultant is expected to use its professional judgement to determine what issues (either listed below or additional) are relevant to the Project. Issues which are not relevant to this Project should be covered by a short statement that they have been considered but do not apply in this case.

Executive Summary
A concise summary description of the Project, its rationale, the existing operations and overall setting, significant environmental and social impacts. The Executive Summary will also include all mitigation and enhancement measures, monitoring proposals, and document the Implementing Entity’s commitment to implementing these.

1 | Project Description
Precise description of the Project within its geographical, environmental and socio-economic context. This should include information on whether and how the Project is part of a wider development plan/programme. A systematic comparison of feasible alternatives to the Project in terms of location, Project technology or design in terms of potential environmental and social impacts. This should include the ‘do-nothing’ option. The Project description should include but is not limited to information on:

- The Project footprint and land acquisition needs for the Project;
- Layout of the different facilities, with a particular focus on waste and fuel storage, and any components that may generate emissions, noise, vibrations or spill risks;
- Process flow chart;
- Detailed description of technologies involved in the successive steps of the process;
- Vehicular traffic associated with the plant during construction and operations;
- Workforce requirements during construction and operations phase;
- Identification of all process liquid and gaseous effluents and emissions, with flows and bio-chemical characteristics in normal operating conditions; and
- Identification of potential emergency situations, with related characteristics of effluents and emissions.

2 | Legal Requirements
Outline of the policy, legal and administrative context of the ESIA summarising relevant national legislation as well as the environmental and social and requirements of the EBRD, co-financiers and applicable regional/global conventions or agreements. The timeframe for public consultation, Project appraisal and implementation should be outlined.

3 | Baseline Conditions
A description of relevant aspects of the physical and natural environment and socio-economic conditions in areas affected by the existing operations and the Project to include, inter alia:

- Air emissions and noise;
• Biological and ecological resources (fauna, flora, biodiversity, protected species, critical habitats, ecosystems);
• Biological environmental trends including loss of habitat; invasive alien species; overexploitation; nutrient loading and pollution; and topics relevant to climate change adaptation.
• Climatic factors and climate change (e.g. greenhouse gas emissions, including from land use, land use change & forestry, sectors of population more affected by climate change);
• Cultural heritage, including tangible and intangible cultural heritage as well as archaeological heritage;
• Geomorphology and geology;
• Health & safety (public and worker) & healthcare infrastructure;
• Land (past and current use, legacy land acquisition issues);
• Landscape and visual aspects;
• Material assets;
• Socio-economic status and livelihoods of the population (disaggregated by gender, age, ethnicity, and other social characteristics);
• Soil (organic matter, erosion, compaction, sealing);
• Stakeholder engagement practices
• Vulnerable groups;
• Water (infrastructure & accessibility, quantity and quality, surface and groundwater) and waste water management;
• Traffic and transportation infrastructure (public and site); and
• Worker and public health and safety.

4 | Stakeholder Consultation
Details of the stakeholder engagement programme as part of the ESIA and results of engagement including:
• Analysis of key stakeholder groups potentially affected by the Project and other interested parties;
• Detail on the specific stakeholder engagement activities carried out with these stakeholder groups throughout the study including figures on participation in these activities;
• Details and analysis of the specific concerns, questions and opportunities for improvement of the Project raised by stakeholders throughout the process of engagement; and
• Details on retroaction to consulted stakeholders in relation to Project impacts and mitigation measures.

5 | Potential Impacts
Identification of the potential environmental and social impacts that could be associated with the existing operations and the Project, including those of an indirect and cumulative nature. Impacts which are unlikely to arise or be insignificant should be recorded, together with the rationale for
why they are considered to be unlikely or insignificant. Potential impacts must be considered at the following levels: Local, National and Regional/Global impacts.

6 | Characterisation of Impacts and Opportunities
Identification and characterisation of positive and negative environmental and social impacts (direct, indirect & cumulative) in terms of the magnitude, likelihood, duration, extent, reversibility of the impact and the sensitivity of the resource or receptor.

Quantitative data must be employed to the greatest extent possible. The chapter should also identify opportunities for environmental and social enhancement and identify key uncertainties and data gaps. Both the existing operations and the following Project stages must be considered in this evaluation where appropriate:

- Pre-construction and construction phase
- Operation and maintenance
- Closure and decommissioning
- Residual environmental and social impacts

7 | Management of Impacts and Issues
An outline of the feasible cost-effective measures to avoid, minimise, mitigate or compensate for environmental and social impacts to acceptable levels and address other environmental and social issues. Additionally, an outline of any measures that would enhance environmental and social aspects within the area affected by the Project and the existing operations and characterisation of the nature of any residual environmental and social impacts or issues that have not been addressed. A description of the financial provisions for potential risks (for example escrow accounts and insurance cover to provide for \textit{inter alia} abandonment and decommissioning, site remediation and oil spills and other emergencies). The following Project stages must be considered where appropriate:

- Pre-construction and construction phase
- Operation and maintenance
- Closure and decommissioning
- Residual environmental and social impacts

8 | Monitoring and Supervision
A description of how environmental and social impacts and issues will be monitored and managed in practice; including an indication of how the Project will be supervised by lenders and governmental agencies. Estimates should be provided for capital expenditure and operation and maintenance costs where possible. The following stages must be considered where appropriate:

- Pre-construction and construction phase
- Operation and maintenance
- Closure and decommissioning
- Residual environmental and social impacts

9 | Environmental and Social Management Plan
A record of all measures required to address environmental and social impacts and issues as well as monitoring and supervisory activities associated with these should be consolidated in tabular form. This should also indicate institutional responsibilities, timeframes and associated costs.

**Appendices**

- Names of those responsible for preparing the E&S Assessment
- References and sources of information
- Records of public meetings and consultations held
- Supporting technical data
ANNEX 2
GUIDANCE FOR A STAKEHOLDER ENGAGEMENT PLAN

The following is an indicative list of issues for possible inclusion in a Stakeholder Engagement Plan. The Consultant is expected to use its professional judgement to determine what issues (either listed below or additional) are relevant to the Project.

A Stakeholder Engagement Plan will need to:

- Briefly identify the Project location and areas subject to impact (e.g., list of communities).
- Record what the Project is legally required to do regarding disclosure and consultation (to meet the requirements of National Law, EBRD and other financier E&S requirements as well any other standards or corporate frameworks to which the Project must comply).
- Identify affected stakeholders and assess the types and degree of Project impacts they will likely experience as well as other interested parties and summarise this analysis in a stakeholder map (if relevant).
- Identify any specific groups who might be considered vulnerable or need more support in the consultation process (e.g. because of their level of literacy, gender, socio-economic status, ethnicity/language, or location). This should include an analysis of pre-existing vulnerability (i.e. independent of the Project) and Project-induced vulnerability (groups acutely susceptible to Project impacts). For each identified group, specify how meaningful consultation will be undertaken.
- Report on any previous consultation and disclosure activities.
- Define which documents will be publically disclosed, including a schedule, and in what language(s).
- Define where documents will be available (physical and online addresses), e.g. provide names of specific newspapers, bulletin board locations, etc.
- Define how people will be notified of the document availability.
- Outline future consultation activities with affected stakeholders, vulnerable groups and interested parties including the consultation format and topics to be address.
- If locations/dates are not yet known, state how people will be informed of the dates.
- State who/where should comments be sent to, what will happen to them and how people will be advised of the outcomes.
- Define how grievances will be handled (including a specific public grievance process).
- Define the monitoring and reporting activities for the stakeholder engagement process.
- Define the responsibilities for implementing the SEP and the process for and frequency of SEP updates.

Please also see guidance note:
ANNEX 3
LIST OF INDICATIVE ISSUES FOR A NON-TECHNICAL SUMMARY

The following is a list of indicative issues for possible inclusion in a Non-Technical Summary. The Consultant is expected to use its professional judgement to determine what issues (either listed below or additional) are relevant to the Project.

Non-Technical Executive Summary

1 | Project Description
- A concise and comprehensive description of the Project
- Proposed construction works and subsequent maintenance/operation
- Scheme map, where available

2 | Background
- Rationale of the Project
- Legal aspects and compliance with relevant environmental and social laws
- Current environmental and social situation and considerations
- History of the Project development and planning; including an outline of the main alternatives that were studied, their environmental and social impacts, and the reasons for making the final selection

3 | Process
- ESIA process carried out and integration with design
- A statement of the Project’s current state of compliance with national regulatory requirements and relevant EU requirements
- Public consultations and disclosure and dealing with objections

4 | Summary of Environmental Benefits, Potential Adverse Impacts, Mitigation and Management Measures
- Air quality
- Associated infrastructure
- Biodiversity and nature conservation
- Consistency with policy, law and other plans
- Cumulative impacts
- Induced (indirectly consequential) impacts
- Landscape and visual impacts
- Raw material sourcing and transportation, including borrow pits
- Road safety
- Traffic, noise and vibration
- Waste management
- Water resources

5 | Summary of Social Benefits Potential Adverse Impacts, Mitigation and Management Measures
- Community investments to be made by the Project
- Contractor management, including the siting and management of worker camps
• Cultural heritage
• Disruption and public health and safety during construction
• Employment and contracting
• Impacts to existing infrastructure and public services
• Labour issues and standards
• Land acquisition and resettlement (cross reference any resettlement report that is being developed)
• Livelihoods impacts
• Local traffic and access impacts
• Occupational and public health and safety issues
• Project induced population influx
• Socio-economic impacts; including vulnerable groups (taking into account gender specificities and needs)

7 Communications
• Contact details
• Process for addressing any issues arising
• Link to Stakeholder Engagement Plan (or similar)
ANNEX 4
COMPLIANCE SUMMARY

Introduction

The Compliance Summary provides a systematic review of project compliance with the EBRD Environmental and Social Policy, as defined through the applicable Performance Requirements (PRs). Scope of compliance is all PRs applicable to non-FI projects. The review is intended to provide a baseline against which to judge future performance of projects through the annual environmental and social reporting process.

Between 2 and 10 indicators are identified for each of the applicable PRs: 1, 2, 3, 4, 5, 6, 7, 8 and 10.

Guidance

For all PRs (Indicators with whole number references) provide a summary of overall compliance with the PR. Justification for any derogation from a PR should be summarised and supporting documents referenced.

For each indicator within a PR, please complete the 3 steps below:

1. **Decide whether the indicator is applicable.** For Category A and B projects the starting point is that all indicators are applicable unless the project has no significant aspects relevant to the indicator (i.e. no risks), in which case the indicator should be scored "NA" and a brief summary of the reason given. For Category C projects the starting point is all indicators are NA unless the project has a significant aspect relevant to the indicator (i.e. there is a material risk).

2. **Decide whether an opinion is possible.** If not (for example if the indicator will apply, but it is too early in the project) score as "NOP" and provide a brief summary of why. Where lack of opinion represents a material omission to the review refer to where this is addressed in the report and summarise any recommendations.
3. **Score the indicator as follows and provide brief justification.**

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EC</strong></td>
<td><em>Exceeding Compliance</em>: The project has gone beyond the expectations of EBRD’s PR requirements. EBRD should be able to use projects rated EC as a role model for positive Environmental and Social effects.</td>
</tr>
<tr>
<td><strong>FC</strong></td>
<td><em>Fully Compliant</em>: The project is fully in compliance with EBRD’s requirements, and EU and local environmental, health and safety policies and guidelines.</td>
</tr>
<tr>
<td><strong>PC</strong></td>
<td><em>Partial Compliance</em>: The project is not in full compliance with EBRD’s requirements, but has systems, processes or mitigation measure in place which are working towards addressing the deficiencies.</td>
</tr>
<tr>
<td><strong>MN</strong></td>
<td><em>Material Non-compliance</em>: The project is not in material compliance with EBRD’s requirements, and the systems, processes and mitigation measures in place are not working towards addressing the deficiencies.</td>
</tr>
</tbody>
</table>

4. **Comments/Issues**: Provide a brief commentary on the relevance of this requirement for the project and an explanation of the chosen score.

5. **Actions Required**: Where applicable, briefly describe any actions required by the client to achieve full compliance with each requirement. Where a relevant action is included in the ESAP for this project, please provide a reference to the ESAP.

6. **PR Summary**: Provide an overall summary against the PR, using the above compliance definitions with supporting commentary. In some cases it may be sufficient to address a PR at summary level only, depending on Stage 1 above.

**Note**: The Material Non-compliance score (at both Indicator and PR level) has significant implications for Project approval and requires particular care. In judging whether the measures sufficiently address deficiencies the consultant should consider in a structured way both the level of residual (post-approval) risk and the level of confidence that the Project can successfully bring the issue into compliance with the Policy through the ESAP. The table below illustrates the approach to be taken.

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**Risk**

High

Medium

Low

**Confidence**

High

Medium

Low
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<sup>13</sup> Where the project represents a substantial extension to the client activities, confirm that Policy and supporting management systems and plans are appropriate for the new activities.

<sup>14</sup> At appraisal stage there will be limited information. Compliance assessment should address specific plans for monitoring and reporting (against for example ESAP requirements) and also consider whether there is evidence of weak monitoring/reporting by client on other relevant projects - which may reduce confidence in future performance.
## KPI Performance Requirement

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### Resource Efficiency and Pollution Prevention and Control

*NB. Appraisal should carefully consider (and state) what regulations or standards have been applied to compliance assessment (eg EU, National, Sector Best Practice). Assessments should address consideration of the performance of alternative techniques.*

#### Summary:

| 3.1     | Resource Efficiency                                         |       |                  |                  |           |
| 3.2     | Pollution Prevention and Control - Air emissions            |       |                  |                  |           |
| 3.3     | Pollution Prevention and Control - Waste waters             |       |                  |                  |           |
| 3.4     | Greenhouse Gases<sup>16</sup>                               |       |                  |                  |           |
| 3.5     | Water                                                       |       |                  |                  |           |
| 3.6     | Wastes                                                      |       |                  |                  |           |
| 3.7     | Hazardous Substances and Materials                          |       |                  |                  |           |

<sup>15</sup> Will not be applicable to many projects at appraisal stage. However evidence, within the last 3 years of client approach to retrenchment which is not compatible with the Policy should be taken into consideration.<br>

<sup>16</sup> Particular attention should be given to client demonstration of consideration of alternatives. Projects expected annually to produce more than 25,000 tonnes of Co2 equivalent should provide an emission inventory and plans for annual reporting.
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# Annex 5
## Environmental and Social Action Plan Template

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<td>Develop and implement an EMS</td>
<td>Optimisation of environmental management through a formalised system. Provide resources for training and monitoring of emissions</td>
<td>EBRD PR1 Voluntary and best practice</td>
<td>Own resources, external consultants</td>
<td>20xx</td>
<td>Develop and implement an EMS Attain ISO 14001 or equivalent certification Annual EHS Report to the Bank</td>
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