Memorandum of Understanding

July 2013

Introduction

The project "Feasibility Study Water Supply and Sewerage Disposal in Ulcinj" (Project) is supported by the German Government through Financial Cooperation with KfW. The aim of the project is to improve the environmental situation in Ulcinj through investments in water supply, sewage collection and treatment. This project is part of the "Water Supply and Sanitation Program Adriatic Coast, Phase V".The objective of the Consultancy Services for the Water Supply and Sanitation Project is to identify investment measures to improve the water supply schemes and sewerage and stormwater disposal systems in Ulcinj in order to increase the operational efficiency and financial sustainability of the local water supply and sewerage systems.

Project stakeholders are the Ministry of Sustainable Development and Tourism of Montenegro, KfW as the financing institute, Vodacom as the Project Execution Agency (PEA), Municipality of Ulcinj and ViK Ulcinj (Beneficiaries) and the Consultant entrusted with the elaboration of the Feasibility Study (Consultant).

During the course of the project, various meetings had been held between the project stakeholders in order to identify, agree on and prepare measures for the investment program. On April 16th, 2013 a workshop was held with all project stakeholders in which the project measures and elements were presented and discussed. Furthermore, on June 6th, 2013 a joint meeting was held at the KfW office between KfW, Vodacom, ViKUlcinj, Ulcinj Municipality and the Consultant to discuss the scope of the proposed implementation measures, priorities, and the financial sustainability of the investment program.

The proposed physical implementation measures can only be considered for investment in case the revenues of ViK Ulcinj exceed certainly the expenditures on long-term and at least O+M cost coverage for the water supply and sewerage system in Ulcinj is achieved.

The signees of the MoU declare that they are ready to implement the efficiency improvement program for ViK business activities in a way and within time frame proposed by KfW as a condition for the implementation of Project with close cooperation with Vodacom and future Consultant for institutional support.

Water Supply System

The water supply system in Ulcinj receives its water from the springs Brajsa, Kaliman, Mide and Salc, the wells Gac, Klezna and LinsaBori and the Regional Water Supply System. In order to reduce the high water losses and improve the overall performance of the system a non-revenue water campaign has to be conducted.

The main goal of the Project is defining investment measures which will create conditions for optimisation of water supply system in the municipality of Ulcinj. In the FCER the realisation of investment measures and costs are divided into 3 implementation phases:

Stage I (2014 - 2017):

- Non-Revenue-Water reduction campaign (aiming at the detection of water losses in transmission mains, distribution networks, house connections, condition and accuracy of water meters)
- Rehabilitation of Spring Captures, incl. Hydrogeological Investigations

- Extension of WWTP extension (to PE 65,000)

Stage III (2023 - 2027):

- Extension / Rehabilitation of Sewer Network and Drainage Networkin Ulcinj
- Extension of WWTP (to PE 97,500)

Summary / Terms of Agreement

This present MoU was prepared to elucidate the general pre-requisites, conditions and arrangements for the implementation of the water supply and sewerage disposal in Ulcinj.

The signees declare their intention to implement these project measures and to carry out the respective investments.

A detailed overview of proposed measures and costs broken down to implementation phases is shown in Annex 1 which is an integral part of the MoU.It is understood, that operation and cost coverage has to be targeted by the beneficiary, as it is a likely pre-condition to a possible financing and project agreement.

Phase I Investment measure "NRW Campaign" (the aim of which is to detect water losses in main transmission pipelines, distribution network, household connections as well as accuracy of water meters) will be considered during the KfW appraisal mission and the decision concerning its implementation will then be harmonized.

By signing this document we express our approval to the measures proposed in the Final Conceptual Engineering Report, the stated agreements as well as to the proposed time schedule presented in the Annex 2 which is an integral part of the MoU.

Signature:_____

For and on behalf of the Municipality of Ulcinj

Signature:_____

For and on behalf of the Ministry of Sustainable Development and Turism

Signature:_____

For and on behalf of Vodacom

Signature:_____

For and on behalf of the Consultant

Enclosures:

Annex 1

Annex 2

1 Overview of proposed Measures and Investment

In the Conceptual Engineering Report the conceptual engineering design for the water supply network, the sewerage and stormwater drainage system as well as the waste water treatment plant was presented along with a comprehensive overview of the proposed measures and the necessary investment.

For the proposed measures in the **water supply system**of all phases a summary is provided in the following table.

Table 1.1: Implementation Program Water Supply System

First Implementation Stage 2014 - 2017	Second Implementation Stage 2018 - 2022	Third Implementation Stage 2023 - 2027
Non-Revenue- Water Campaign	Rehabilitation of PS (Phase II)	Replacement of Mains (Phase III)
Rehabilitation of Spring Captures incl. hydrogeological investigations	Replacement of Mains (Phase II)	Extension Reservoir Bijela Gora 1
Rehabilitation of BPC (Phase I)	New Reservoir in Bijela Gora 1	Water Treatment Plant (Phase II)
Rehabilitation of PS (Phase II)	Extension existing Reservoir Đerane	NRW campaign identified Measures
Rehabilitation of Reservoir BG 2	Water Treatment Plant (Phase I)	
Replacement of Mains (Phase I)	NRW campaign identified Measures	
SCADA System & Measuring Points		
New Reservoir Đerane		
New Reservoir Brajša		
New Distribution Mains Stoj Area		

The proposed measures for the water supply system in the **first stage** of the project were selected based on technical aspects, per capita costs of individual measures and the available funds for short-term implementation. For the short-term measures the rehabilitation and construction of core facilities along with the extension of the water supply to Stoj area are proposed.

As priority measures it is planned to rehabilitate the spring captures and conduct a hydrogeological investigation at the springs. Rehabilitation of the existing pumping stations and the break pressure chambers is proposed. At the break pressure chamber Fraskanjel the construction of a reservoir with the volume of 100 m³ is foreseen. The construction of two new reservoirs, Đerane for the low pressure zone in Ulcinj urban water supply network and the reservoir Brajša for the rural water supply system are proposed.

Some water mains of the existing system are proposed to be replaced, based on hydraulic calculation and current condition. Several shorter new mains are proposed to improve the hydraulic situation in the urban area. In the Stoj area the introduction of a new water main network is proposed.

Besides the rehabilitation and construction works the installation of flow measuring points and a SCADA system is proposed to monitor and improve the management of the water sources. Important is the proposed Non-Revenue Water campaign in order to locate and quantify the losses in the network, so that appropriate measures can be implemented leading to a considerable reduction of the current high water losses in the water supply network of Ulcinj. Final decision about NRW Campaign will be considered during the KfW appraisal mission and the decision concerning its implementation will then be harmonized.

The proposed measures for the **sanitation system** are summarized in the following table.

Table 1.3: Implementation Program Sanitation System

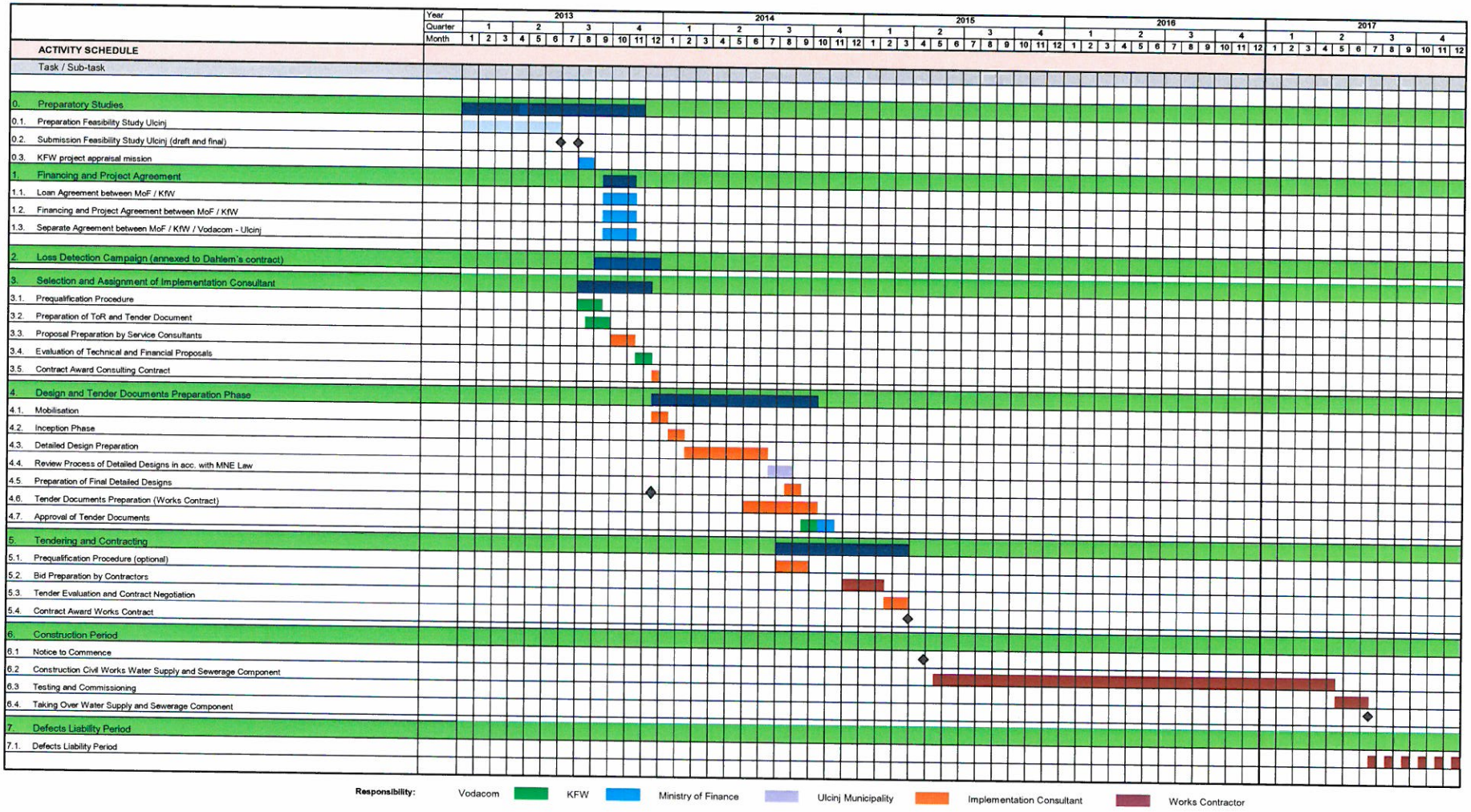
First Implementation Stage 2014 - 2017	Second Implementation Stage 2018 - 2022	Third Implementation Stage 2023 - 2027
Trunk main from Ulcinj Center and PS Derane to the Inlet PS of WWTP	Network rehabilitation and introduction of Sewer Network Stoj	Rehabilitation of existing Sewerage and Drainage Network
Construction of Inlet PS to WWTP	WWTP (extension to PE 65,000)	Extension existing Sewerage and Drainage Network
Pressure pipe inlet PS WWTP to WWTP		WWTP (extension to PE 97,500)
New Construction of PS Pristan		
Pressure pipe Pristan PS to trunk main		
Rehabiliation of main wastewater and main stormwater sewer to Pristan PS		
Effluent PS for discharge treated effluent to Đerane outfall		
Pressure pipe Effluent PS to Đerane outfall		
Construction of new sea outfall Đerane		
Rehabilitaton of existing sea outfall Đerane		
New WWTP (Phase I: PE 32,500)		

For the **first stage** of the sanitation system it is proposed to rehabilitate the main wastewater and main stormwater sewer to the pumping station in Pristan. Anew constructed pumping station in Pristan will pump the water up to the roundabout in the town. The existing main collector from this roundabout to Derane is proposed to be replaced by a new main trunk and a new pumping station is planned to be constructed at the roundabout close to the new bridge crossing Port Milena to pump the waste water via a pressure pipes towards the location of the waste water treatment plant. To discharge the effluents from the WWTP a pressure pipe is proposed leading to the existing outfall in Derane, which has to be rehabilitated. The additional construction of a new sea outfall in Derane is necessary to facilitate the discharge from the new WWTP.

For the implementation of the waste water treatment plant a treatment plant with trickling filter and anaerobic ponds combined with mechanical dewatering is considered as the best practical option for the situation in Ulcinj and is therefore proposed.

Table 1.4: First Stage Measures Sanitation System

#	ProposedMeasure	Description	Total Costs [EUR]
1	Trunk main from Ulcinj Center and PS Derane to the Inlet PS of WWTP	L= 4,150 m	1,900,905
2	Construction of Inlet Pumping Station to WWTP	Q_{max} = 542 l/s	1,592,069
3	Pressure pipe from inlet pumping station WWTP to WWTP	L=1,115 m	554,796
4	New Construction of Pumping Station Pristan	Q_{max}= 213 l/s	976,549
5	Pressure pipe from Pristan Pumping Station to trunk main	L=1,185m	326,127
6	Rehabiliation of main wastewater sewer to Pristan Pumping Station	L=915m	256,810
7	Rehabiliation of main stormwater sewer at Pristan Area	L=645m	718,868
8	Effluent pumping station for discharge of treated effluent to Đerane outfall	Q_{max} = 1,095 l/s	1,131,764
9	Pressure pipe from Effluent Pumping Station to Đerane outfall	L=2,860m	2,089,797
10	Construction of new sea outfall Đerane	L= 500m	875,829
11	Rehabilitaton of existing sea outfall Đerane	L=1,100m	120,000
12	WWTP	PE 32,500	4,732,000
Total Stage 1 WDS			**15,275,514**


Year
2013
2014
2015
2016
2017
Quarter
Month
ACTIVITY SCHEDULE
Task / Sub-task
0. Preparatory Studies
0.1. Preparation Feasibility Study Ulcinj
0.2. Submission Feasibility Study Ulcinj (draft and final)
0.3. KFW project appraisal mission
1. Financing and Project Agreement
1.1. Loan Agreement between MoF / KfW
1.2. Financing and Project Agreement between MoF / KfW
1.3. Separate Agreement between MoF / KfW / Vodacom - Ulcinj
2. Loss Detection Campaign (annexed to Dahlem's contract)
3. Selection and Assignment of Implementation Consultant
3.1. Prequalification Procedure
3.2. Preparation of ToR and Tender Document
3.3. Proposal Preparation by Service Consultants
3.4. Evaluation of Technical and Financial Proposals
3.5. Contract Award Consulting Contract
4. Design and Tender Documents Preparation Phase
4.1. Mobilisation
4.2. Inception Phase
4.3. Detailed Design Preparation
4.4. Review Process of Detailed Designs in acc. with MNE Law
4.5. Preparation of Final Detailed Designs
4.6. Tender Documents Preparation (Works Contract)
4.7. Approval of Tender Documents
5. Tendering and Contracting
5.1. Prequalification Procedure (optional)
5.2. Bid Preparation by Contractors
5.3. Tender Evaluation and Contract Negotiation
5.4. Contract Award Works Contract
6. Construction Period
6.1 Notice to Commence
6.2 Construction Civil Works Water Supply and Sewerage Component
6.3 Testing and Commissioning
6.4. Taking Over Water Supply and Sewerage Component
7. Defects Liability Period
7.1. Defects Liability Period
Responsibility:
Vodacom
KFW
Ministry of Finance
Ulcinj Municipality
Implementation Consultant
Works Contractor