Republic of Serbia

MINISTRY OF FINANCE

Department for Contracting and Financing of EU Funded Programmes (CFCU)

Belgrade, 20 March 2017

CONTRACTING AUTHORITY'S CLARIFICATIONS No. 2

"Construction of the Waste Water Treatment Plant for the City of Raška"

Publication ref: EuropeAid/138712/ID/WKS/RS

1.	**In Vol.3 Section 1 Employers requirements, table 15n is written:** *Type of equipment in the AT tank necessary foe mixing: Submersible (propulsors/mixers) ... Installation of the diffusers and mixers/propulsors in the tank should be done in such way to provide max. treatment efficiency and optimising of energy consumption per tank..* Please explain this requirement of installation of mixers in **aeration zones** if usually the proper mixing is fully ensured by continues small air bubbles membrane aeration system. Installation of mixers will only lead to excess electric energy waste. **Mixing in nonaerated zones:** In our technology, mixing process in non aerated zones is ensured by patented Vertical Flow Labyrinth system (VFL): arrangment of the baffles in the tank (chamber) creates an upward and downward flow in the compartments, which ensure an effective mixing of the content in the tank (chamber), see picture 1 and 2. Picture 1 (scheme of VFL mixing and liquid moving). We ask to let to use different types of mixing systems, according to offered technology, which will ensure proper mixing, according European standard requirement as follows: mixing systems shall ensure equal (homogenised) SS concentration in the whole tank (chamber). Equality is inspected by measuring SS concentration in 10 different tank points, and the concentration should not vary from the average concentration more, than 7.5 %. Suspension Restoration Resolution: in case of mixing system stops at least for 2 hours, mixing	*The Contracting Authority refrains from commenting a particular pattented technology.* *Therefore, pictures/schemes mentioned by the tenderer in this question will not be attached to these Clarifications No.2 as it may be seen as breach of proprietor's rights.* *The Employer's Requirements remain unchanged. Use of submersible mixers/propulsors is obligatory.*

	system must ensure proper suspension recovery (as described above). Maximum suspension recovery time should not exceed 10 minutes from mixing system start. Also we would like to pay attention, that this type of mixing does not have any electric energy consumption, and according Employers requirements is optimal for energy consumption per tank.	
2.	**In Vol3 Section 1 Employers requirements, table 17 is written:** *The Final Sedimentation Tanks (FST) shall be designed and constructed as parallel operated circular concrete basins with horizontal flow, which shall be provided with rotating scarper half bridges with system for bottom sludge removal and scum removal subsystems. Number of units, total-2.* In our technology, sedimentation processes takes place into Vertical type sedimentation tanks, installed into biological reactor that are aloud, according ATV-DVWK-A 131E Dimensioning of Single-Stage Activated Sludge Plants, mentioned in Employers Requirements. Comparing to circular sedimentation tank, vertical tank does not require any rotating bridge because of walls inclination of 75˚, which ensure sludge removal by gravity, what is more energy efficient. We ask to let to use different types and number of final sedimentation tank, according to Tenderer's proposed technology, with respect to provided Surface load and according other ATV-DVWK-A 131E requirements.	*The Employer's Requirements remain unchanged.* *The final sedimentation process must take place in parallel operated circular concrete basins with horizontal flow, which shall be provided with rotating scarper half bridges with system for bottom sludge removal and scum removal subsystems. Number of units - minimum 2.*
3.	**In Vol3 Section 1 Employers requirements it is written, that** *recirculation of the active sludge should be ensured by with two submersible wastewater pumps. Pumps shall be provided with VFD (variable frequency drive).* In our technology sludge recirculation and excess sludge removal is provided by airlift pumps. The required pumping capacity of the airlift is regulated by changing of air quantity (with electric regulating valve), fed into airlift sludge pump. This system ensure stable and robust system work with minimizing amount of electric equipment (only blowers are used for whole biological reactor), what cause significant savings of operation costs in electric power consumption and equipment repair costs. We ask to let tenderer use different sludge pumping systems, according their technology, which will ensure required active sludge recirculation ratio (min 110%) and required	*The Employer's Requirements remain unchanged in order to ensure required measurement (flow of sludge) and related control of the system.*

	flow regulations from minimum hourly flow in dry period to maximum hourly peak flow.	
4.	**In Vol3 Section 1 Employers requirements it is written, that** *A gravity Primary Thickener shall be applied for thickening of WAS produced in Final Sedimentation Tanks (FSTs). The Stabilization Sludge Tank (SST) shall be designed, constructed and equipped for final design.* This requirements limits the usage of different typical WWTP technologies and also require for additional electrical equipment which cause electrical consumption operational costs and costs for maintenance of this equipment. In our technology, according ATV-DVWK-A 131E stabilization of the biological sludge is processing inside aeration tank due to sludge age of minimum 25 days. This saves electric energy consumption and also enable to avoid of any primary thickener. In order to achieve the best treatment results and get advantages of the latest technologies, we ask to let to use different technologies and types of sludge thickening and stabilization, with respect to provided DM content <2% and sludge retention time >20d, and according other ATV-DVWK-A 131E requirements.	*Bidders are allowed to propose different sludge thickening systems/processes, ensuring that obligatory requirement "Final dry solids content of dewatered sludge" - <u>min 18%</u> is met.*
5.	**In Vol3 Section 1 Employers requirements it is written, that** *The Secondary Thickener shall be designed and constructed as circular concrete tank and shall be provided with a picket fence stirrer and scraper mechanism for bottom sludge removal into a central sludge hopper and scum removal system.* In our technology, we use rectangular tank, installed in the biological reactor with aeration system instead of circular mixer. In order to achieve the best treatment results and get advantages of the latest technologies, we ask to let to use different technologies and types of secondary sludge thickening, with respect to provided DM content <3%. For better understanding we attach technological chart of proposed WWTP technology.	*Please refer to answer no.4.*
6.	We wanna know if is possible to do a site visit on the area of waste water treatment for city of Raska.	*Only one mandatory site visit is foreseen, as per Article 13 of the Contract Notice. Additional site visits will not be organized.* *In the case of a consortium it is sufficient that at least one member of the consortium has*

		participated in the site visit and the corresponding attendance certificate is included in the offer.
7.	For application of wastewater are most commonly used the knife gate valves for on/off operation, which are not described on Volume 3 – Section 2 General technical Specifications. Is it possible of use such kind of shut-off valves?	*Yes, use of knife gate valves is allowed.*
8.	During the inspection of the site on 13.2.2017 it was declared that the Pumping Station on one bank of the river Ibar is a LOT 2 and WWTP across the river is LOT 1. Drawing includes a Pumping Station and WWTP to the LOT 1. In the tender dossier 4.6.9.2 b is defined by Intel Pumping Station (PS "RVATI") and Schedule Price 2.3 Schedule 2 point 2.2.1 is required the price by the Inlet Pumping Station. Question: Together with the price of the WWTP shall be submitted the price of a Pumping Station on the other side of the river? To The LOT 1 belongs to the WWTP and Pumping station?	*Yes, inlet pumping station is part of this contract.*
9.	Vol.3 Section 1 Employers Requirements – Other Requirements – Requirements for Noise and Odor Emission For the protection against odor are specified the strongest odor sources: 1) Inlet works 2) Screens 3) Primary sludge thickener 4) Mechanical sludge dewatering Can you exactly specify all object that fall under "Inlet works"? Object of coarse screens and inlet pumping station is situated on the opposite site of river than other objects of WWTP. Preference is given to the use two filters (one for coarse screens and inlet pumping station, one for object in WWTP) or one filter for all objects?	*The filters for odor control have to be provided for inlet pumping station, entire mechanical treatment building, primary sludge thickeners and mechanical sludge dewatering building.*