EUROPEAN UNION
DELEGATION TO THE REPUBLIC OF SERBIA

Belgrade, 15.10.2013

CONTRACTING AUTHORITY'S CLARIFICATIONS No. 5

Improvement of air quality through reduction in dust emissions from thermal power plants Nikola Tesla, Unit A3 and Morava

Republic of Serbia

Publication reference EuropeAid/134187/C/WKS/RS

No	Question	Answer
1	On page 14 of Volume 3 Employer's requirements is written: The Employer arranged that the engineering company Energoprojekt Entel prepare a Feasibility Study for upgrading the ESPs of the TPP „Nikola Tesla" Block A3 and TPP „Morava" (September 2011). This study was prepared in accordance with Serbian Legislation on Planning and Construction, which means that Preliminary Designs for both ESPs are completed. The Feasibility Study has been reviewed and approved by the Beneficiary. It Is the Contractor's choice if shall he use or modify this Preliminary Design or develop his own Preliminary Design. Contractor decision to use the existing preliminary design does not cause any obligations of Beneficiary or Employer to bear the costs resulting as a possible discrepancy between the offered solution and the existing preliminary design. On page 27 of Volume 3 Employer's requirements is written: IMPORTANT NOTE: The specific conceptual solution which has been developed in the Feasibility Study serves solely in the context of the Tenderers an illustrative example only. The Contractor In his tender shall specify his relevant solution in a similar format to the preliminary design to be found in the Feasibility Study. On page 37 of Volume 3 Employer's requirements is written: Spacing between collecting electrodes, unless	Please see the FORM 4.6.9 *TECHNICAL SOLUTION,* which reads: *"The technical proposal shall be prepared in accordance with the requirements given under Employer's Requirements in Volume 3.* *DESCRIPTIONS OF AND SPECIFICATIONS FOR THE TECHNICAL SOLUTION* *The Tenderer shall prepare a technical solution which shall incorporate all the Employer's Requirements as described in Volume 3.* *Tenderers must give detail information and timing related to their design proposals based on the Contracting Authority's Requirements contained in the Volume 3 of the Tender Dossier, with drawings and calculations where applicable, for the design of the Works."* Therefore, Tenderers may prepare the offers based on their best knowledge, know-how and their own solutions, as long as Employer's Requirements as described in Volume 3 are strictly followed. Spacing between collecting electrodes cannot be less than 400 mm for both TENT A and TPP Morava.

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No	Question	Answer
	otherwise agreed with the Engineer, shall be: 400 mm for ESP of TENT A3 unit (Component 1) 400 mm for Zone 1&2 and 500 mm for Zone 3&4 for ESP of TPP Morava (Component *2).*	
	On page 41 of Volume 3 Employer's requirements is written: 2.9.16 ESP Controlere ESP controllers with intermittent energisation mode (IE) or high frequency power supply (HFPS) mode, improving the ESPs collection capability for high resistivity ashes shall be considered.	It is up to contractor to propose its best solution.
	On page 87 of Volume 3 Employer's requirements is written: 5.16.6 H VHF units HV HF units shall be mounted on the roof of ESPs. Type of proposed HV HF units is NWL DSP with following characteristics: • nominal voltage, nominal current: 3x460V, 131 A • load: 134 kVA • secondary voltage, secondary current: 63 kV, 1450 mA • number of units; 16 • Mechanical protection: IP64	HV units shall be mounted on the roof. The proposed type and characteristics of HV units on page 87 are not mandatory. Therefore, the Tenderers may prepare the offers based on their best knowledge, know-how and their own solutions.
	On pages 96 and 97 of Volume 3 Employer's requirements is written: HV HF units shall be used in first and second zone of the ESPF- HV HF units shall be mounted on the roof of ESPs. Mechanical protections are ÍP56 for supply and IP54 few control part Control module of HV HF unit is equipped to operate in a computer network. M od bus RTU protocol shall be used for communication with control system of TPP, Type of proposed HV HF units is NWL DSP with following characteristics: • nominal voltage, nominal current: 3x480 V. 142 A • bad: 119 kVA	HV units shall be used in first and second zone of the ESPF- HV units shall be mounted on the roof of ESPs. Mechanical protection is ÍP56 for supply and IP54 for control part. Control module of HV HF unit is equipped to operate in a computer network. Modbus RTU protocol shall be used for communication with control system of TPP. The proposed type and characteristics of HV units on page 96 and 97 are not mandatory. Therefore, the Tenderers may prepare the offers based on their best knowledge, know-how and their own solutions.

No	Question	Answer
	• secondary voltage, secondary current: 83 kV, 1250 mA • number of units: 4 • Mechanical protection; IP64 Could you explain us please whether do we have to apply exactly the same technical solutions described in Volume 3 Employer's Requirements or we can prepare the offer based on our best knowledge, best know-how and our own solutions?	
2	On page 4 of Volume 1 Instructions to Tenderers is written: Participation in tendering is open to all legal persons participating either individually or in a grouping (consortium) or tenderers established in one of the Member States of the European Union or in a country or territory of the regions covered and/or authorised by the specific instruments applicable to the IPA programme under which the contract is financed. Participation is also open to international organisations. Participation of natural persons is directly governed by the specific instruments applicable to the programme under which the contract is financed. On Volume 3 Technical requirements you recommend use to NWL HV units. The NWL's are manufactured in USA do you admit to use such equipment regarding to your requirements as above?	Origin of the HV units and of all the other works, supplies and services has to be in accordance with article 8 of the Contract Notice ("All works, supplies and services under this contract must originate in one or more of these countries", i.e. in "a Member State of the European Union or in a country or territory of the regions covered and/or authorised by the specific instruments applicable to the programme under which the contract is financed") and article 12.1.11 of the Instructions to Tenderers ("*Unless otherwise provided in the contract, all goods purchased under the contract must originate in a Member State of the European Union or in a country or territory of the regions covered and/or authorised by the specific instruments applicable to the programme specified in clause 3.1 above.*") Therefore goods have to be offered in compliance with the above and related requirements as specified in the Instructions to Tenderers.
3	On page 15 of Volume 1 Instructions to Tenderers is written; - One (1) **Project Manager,** who will coordinate the entire contract. He/she shall be a qualified civil, mechanical, electrical or chemical Engineer with at least **10 years** of relevant post-graduate professional experience and project management experience in at least two projects with a similar nature, size and complexity. Out of those 2 projects, at least one should be a construction contract according to F1DIC Plant Design-Build Conditions. Is it acceptable, that Project Manager has not	As defined in the Instructions to Tenderers, all key personnel from the list of the key staff must possess the qualifications as requested.

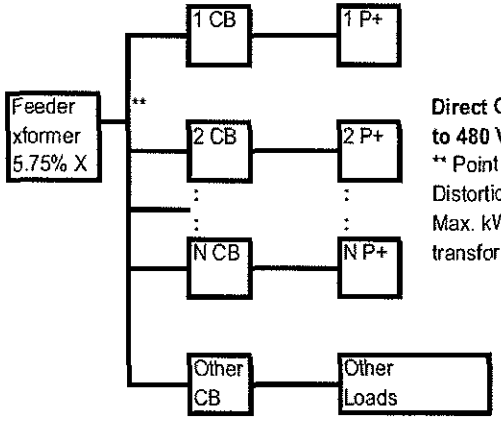
No	Question	Answer
	qualified civil, mechanical, electrical or chemical Engineer, but he/she has got long-term experience in similar projects?	
4	**Morava:**	
	• Is it possible to use the existing building of ESP electrical room if it is possible to new construction ESP d when there will be enough space? ,	• No, it is not possible to use existing building of ESP.
	• Will the Power Plant modernize the two fields of 6 kV for ESP as it was said during site visit? Contractor scope of supply and assembling in this fields (6 kV) will be only current transformers,	• Yes TPP Morava will modernize two 6 kV fields (circuit barkers and protection)
	• Are the data of HVHF units with are mentioned in employer requirements possible to change (power and type of HVHF)?	• Please see the answers to questions no. 1 and no. 5.
	• Is it possible to install a new independent visualization and control station (PC) in the control room of block or is it required to modify the existing superior system (DCS) in the control room to visualize and control the ESP?	• No, visualization and control must be achieved through connection with DCS.
	• What is the scope of delivery the fire protection system: is it a design, delivery of equipment and assembling, please clarify this scope.	• The scope of delivery is the design and delivery of equipment and assembly.
	• What kind of certificates must have dust opacity sensors which will be foreseen by Contractor? What will be a purpose of this equipment: to optimize the filter or settlement of dust emissions?	• See chapter 2.9.17 Measurements on page 41. It must be in accordance with EN 14181 (QAL1 and QAL2)
	• Is lightning protection in scope of supply?	• Yes see chapter 5.16.13.
	• Is emergency lighting in scope of supply?	• Yes see chapter 5.16.10.
5	**Obrenovac A3:**	
	• Is it final selection of types and power of HV power supplies for new ESP? Are the data of HVHF units with are mentioned in employer requirements possible to change (power and type of HVHF)? Is it possible to change selection and foreseen 3 phase or single phase power supplies instead of some number of HVHF units?	• No it is not final selection. Proposed type and characteristics of HV units are not mandatory. Therefore, you can prepare the offer based on your best knowledge, know-how and your own solutions.
	• Is it possible to install a new independent visualization and control station (PC) in the control room of block or is it required to	• No, visualization and control must be achieved through connection with DCS.

No	Question	Answer
	modify the existing superior system (DCS) in the control room to visualize and control the ESP?	
	• is it require to repleace existing 6kV cable between 3BB3 switchgear and new TR 6/0.4kV? There is an inaccuracy in tender documentation. If it will be possible does TENT have latest measurements of this cable? Who will be responsible for this cable when during operation of new ESP cable will be damaged?	• Yes it is mandatory to replace the existing 6kV cable between 3BB3 switchgear and new TR 6/0.4kV. Hence, bidder has to check, design, supply and install a new cable.
	• is it necessary to deliver 2 additional HV units?	• Yes is it necessary to deliver 2 additional HV units.
	• What is the scope of delivery the fire protection system: is it a design, delivery of equipment and assembling, please clarify this scope.	• The scope of delivery is design, delivery of equipment and assembling.
	• What kind of certificates must have dust opacity sensors which will be foreseen by Contractor? What will be a purpose of this equipment: to optimize the filter or settlement of dust emissions?	• See chapter 2.9.17 Measurements on page 41. It must be in accordance with EN 14181 (QAL1 and QAL2)
	• Is lightning protection in scope of supply?	• Yes see chapter 5.16.13.
	• Is emergency lighting in scope of supply?	• Yes see chapter 5.16.10.
6	In tender , Volume 3; 2.9 Mandatory Design Features for Electrostatic Precipitator; 2.9.12 Dust hoppers, are the following requirements: "..., each having a storage capacity of minimum of eight (8) hours corresponding to the maximum ash collection rate of the field under which the hopper is being provided when two preceding fields are de-energized.... shall be at least 10% higher..." and "... The lower 1.5 meters of each hopper shall be lined with stainless steel. ..." and " All bracings and stiffening shall be on the external side of the hoppers." The size of the hoppers which are shown in the Feasibility Study does not comply with the requirement (storage capacity of minimum of eight (8) hours), i.e. the hoppers are to small! Our calculations indicate that the hoppers should be twice as large as shown in the drawings. These will have also a big impact on the civil works as well for the foundations. In the previous tenders there wasn't such requirements and to our experience it's not needed to have such high requests. All of these above	Hopper size is defined by the Tenderers' design and the elevation of hopper flange +3.5m referring to the floor. All bracings and stiffenings shall be on the external side of the hoppers. Lining with stainless steel is not mandatory.

No	Question	Answer
	mentioned requirements are uneconomical and acc. our experience not necessary. The main requirements is to get the ash out of the hopper and for that is the valley angle important which you have specified in the tender. We assume that is also your interest to get an economical and technical state the art (good) solution and from experience we propose to abstain from these requirements. **Please confirm a.s.a.p., because it has a mandatory influence of the preparation of the offer.**	
7	In tender , Volume 3; 2.9 Mandatory Design Features for Electrostatic Precipitator; 2.9.12 Dust hoppers, are the following requested: "All hopper internal sloping corner shall have 100mm radius." In our design we always provide in the hopper corner a flat sheet to avoid caking of the ash in the corners. Both designs have the same functionality. Please confirm that we can use our design.	Radiae of hopper internal sloping corner are not mandatory. However, the Tenderer is obliged to provide a design solution to avoid caking.
8	In tender , Volume 3; 2.9 Mandatory Design Features for Electrostatic Precipitator; 2.9.13 Casing, are the following requested: "....carbon steel confirming to ASTM / IS-2062 ..." We assume that American and Indian Material is not requested! Please confirm that EN material, i.e. material from Europe, is requested.	Please see the answer to question no. 2 above.
9	How can we make issue an invoice in case of Consortium? • Each member of Consortium will make issue an invoice for his scope of work • Leader of Consortium will make issue an invoice on behalf of Consortium	In case the contract is signed with a consortium, the leader issues the invoices to the Contracting Authority, on behalf of the consortium.
10	Volume 2, Section 2, Part 3, page 4&5 Eligibility and Qualification / Drawings Reference is made to the Clarification No.3 - Item No.4 (our question for clarification and your answer/clarification). Having in mind that we, XXX ZZZ a.d. where not as firm or expert involved in preparing the Project in any way (e.g. drafting the Terms of Reference or otherwise);	As already mentioned in the answer to question no. 4 in the Contracting Authority's Clarifications no. 3, the Contracting Authority is not in a position to provide a prior opinion, such detailed analysis being the responsibility of the Evaluation Committee. PRAG's provision ***2.3.6. Other essential points,*** *Conflicts of interest* reads: *"..any firm or expert involved in preparing a project (e.g. drafting the Terms of Reference)*

No	Question	Answer
	There was no initial involment on the side of XXX ZZZ a.d. in preparation of the Project; In our opinion the principles of competition, non-discrimination against or equality of treatment of tenderers is not compromised in any way by any involvement of XXX ZZZ a.d.; We believe that, according to the Tender Documents, we are eligible tender for the subject Project; According to the provisions of the Tender documents and ruling off the The European Court of Justice that the grounds for exclusion of tenderers must be considered case by case, that any exclusion must be based on an actual risk of conflict based on the specific circumstances of the case in question and that any automatic exclusion deprives the tenderer of the right to present supporting evidence which might remove all suspicion of a conflict of interest; We kindly ask you to advise/answer us how we, XXX ZZZ a.d., as potential tenderer, may prove that it was no our involved in the preparation of the project and there is nothing, no any specific circumstance, on our side that may constitute unfair competition and our exclusion from tendering procedure. What is procedure, what are the proofs, what are supporting evidence, which documents are expected from us, which kind of explanation you expect/wont to hear from us in that sense which might remove all suspicion of a conflict of interest on our side? Always having in mind that we have to prove negative facts "Unfair Burden of Proof". Otherwise contrary, the burden of proof, that we are non-eligible, shall pass to the Contracting Authority together with provision of appropriate proofs/explanation therefore. It is very important to have this explanation/answer before deadline for Tenders submit ions all in order to avoid any subsequent explanations, disputes and procedures for disputes settlements.	*must, as a rule, be excluded from tendering for services that are based on those preparations, unless they can prove to the Contracting Authority that their initial involvement does not constitute unfair competition".* Moreover, please note that in accordance with the applicable Practical guide to contract procedures for European Union external actions, section 5.3.4, when providing answers to Tenderers questions during the tender preparation period, "*the Contracting Authority cannot give a prior opinion on the assessment of the tender*".

No	Question	Answer
11	There are some discrepancies in the lay-out of the power distribution. **1. <u>TENT A3:</u>** Acc. to tender Vol. 3, 5.16.2 distribution transformers 2000 kVA have to be foreseen (1 x main, 1 x standby) In 5.16.6 HVHF units are mentioned with 16 x 134 kVA, this means in total 2144 kVA + 160 kW suggested power for heaters and 10 kVA for rappers. Also main switch is defined with 3200 A, but max current of a 2000 kVA transformer will be approx. 2870 A. Required current is about 3100 A for T/R + approx. 245 A for auxiliaries. Is this calculated with simultaneity factor? **2. <u>Morava</u>:** Acc. to tender Vol. 3, 5.17.2 distribution transformers 1000 kVA have to be foreseen (1 x main, 1 x standby) In 5.17.5 + 6 HVHF units and T/I units are mentioned with 4 x 128 kVA and 4 x 119 kVA, this means in total 988 kVA + 96 kW suggested power for heaters and 10 kVA for rappers. Also main switch is defined with 2000 A, but max current of a 1000 kVA transformer will be approx. 1440 A. Required current is about 1426 A for T/R + approx. 150 A for auxiliaries. Is this calculated with simultaneity factor? **3. <u>General point:</u>** Recommended HVHF units type power plus cause high voltage distortions back into the feeding line.	**1.** The proposed characteristics of TR/HV units are not mandatory. Therefore, the Tenderers may prepare the offers based on their best knowledge, know-how and their own solutions. **2.** The proposed characteristics of TR/HV units are not mandatory. Therefore, the Tenderers may prepare the offers based on their best knowledge, know-how and their own solutions. **3.** In accordance with EN 50160, maximum permitted voltage distortion at the feeding point is 8%, which also means that the maximum value of each higher order of harmonics up to 40 must be in accordance with EN 50160.

No	Question	Answer
	Cut out from the manufacturers manual: For starters, assume that the PowerPlus units connect right to the 480 VAC bus with negligible cable reactance and no external line reactors. Going through some mathematical manipulation, Paice has estimated that the kW load of the power converters (PowerPlus units in this case) has to be less than or equal to 40% of the transformer rating for the THD_V to be within the 5% limit of IEEE 519-1992. This analysis is based on the impedance of the bus feeder transformer typically being 5.75%.  **Direct Connection of PowerPlus Units (P+) to 480 Vac Bus feeding circuit breakers (CB)** ** Point of Common Coupling at which Voltage Distortion is Measured. Max. kW load for THDv = 5% is 40% of feeder transformer (xformer) rating Following this, transformers should be oversized to handle distortions or special provisions have to be foreseen. How to handle this? Which max. voltage distortion at feeding point is permitted?	