

# MILLENNIUM CHALLENGE ACCOUNT-MONGOLIA



**CB No: MCA-M/CF/DWA/W-01**

**Bidding Document  
for Construction Works of an Advanced Water Purification Plant (AWPP) and SCADA  
Controls (CP 2)  
ADDENDUM No 3  
January 21 2021**

1. Name of the Procurement: Construction Works of an Advanced Water Purification Plant (AWPP) and SCADA Controls (CP 2)
2. Procurement Reference Number: MCA-M/CF/DWA/W-01
3. Invitation for Bids (IFB) Date: December 15, 2020
4. Previous Addendums issued: Addendum No. 1 on December 23, 2020; Addendum No. 2 on January 15, 202

<b>IFB SECTION</b>	<b>AMENDED AS FOLLOWS</b>
<b>IV Bidding Forms Letter of Bid</b>	As this Addendum 3 removes Technical specification 01025A, the following note that appears at the end of the Lump Sum Bill of Quantities in the Letter of Bid is hereby removed:  <i>‘Technical specification 01025A shall <b>not</b> prevail. Bidders must <b>not</b> complete <b>nor</b> include it in their Submission.’</i>

<p align="center"><b>IV</b> <b>Bidding Forms</b> <b>Form TECH-1</b></p>	<p>Form TECH-1: Method Statement is amended to add item (h) Information of equipment and items that will be used to execute the Works. A table summarizing key equipment and items is provided in this form.</p> <p><b>The Amended Form TECH-1 in Annex A of this Addendum 3 shall be the Form to be Submitted by Bidders.</b></p>						
<p align="center"><b>V</b> <b>Works</b> <b>Requirements</b></p> <p align="center"><b>Item 3</b> <b>Link for Works</b> <b>Requirements</b></p>	<p><b>Link for Updated Works Requirements:</b> The complete set of Works Requirements including the amended Technical Specifications and Performance Requirements can be found here:  <a href="https://www.dropbox.com/sh/5qyh3ke6ci3rzv6/AACVy-O2zg_S521o-u0aaFhda?dl=0">https://www.dropbox.com/sh/5qyh3ke6ci3rzv6/AACVy-O2zg_S521o-u0aaFhda?dl=0</a></p> <p><b>Note:</b> The link remains unchanged and the documents contained therein are amended.</p>						
<p align="center"><b>V</b> <b>Works</b> <b>Requirements</b></p> <p align="center"><b>Item 3</b> <b>Link for Works</b> <b>Requirements</b></p>	<p>The Explanatory Note to the Technical Specifications that appeared in the original Bidding Document released on December 15, 2020 is hereby removed.</p>						
<p align="center"><b>V</b> <b>Works</b> <b>Requirements</b></p> <p align="center"><b>Item 3</b> <b>Link for Works</b> <b>Requirements</b></p>	<p><b>The following revisions are made to the Technical Specifications and Performance Requirements:</b></p> <p><i>Bidders should be aware that the following Sections of the Technical Specifications are revised and modified as follows through the issuance of this Amendment 3 to the Bidding Document.</i></p> <table border="1" data-bbox="548 1015 1906 1393"> <thead> <tr> <th align="center">Relevant sections</th> <th align="center">Revisions</th> </tr> </thead> <tbody> <tr> <td>Section 00015 TABLE OF CONTENTS</td> <td> <ul style="list-style-type: none"> <li>• Reference to Sections 01025A and 01950 removed.</li> <li>• References to Sections 01951 and 01952 added.</li> <li>• Note to Reviewers removed.</li> </ul> </td> </tr> <tr> <td>Section 01010 SUMMARY OF WORK</td> <td> <ul style="list-style-type: none"> <li>• In subsection 1.01, added bullet 5.b regarding heat supply under separate Contract.</li> <li>• In subsection 1.01, revised bullet 6.a to eliminate reference to Section 01950 and add references to Sections 01951 and 01952.</li> <li>• In subsection 1.05, revised bullet C relative to coordination with CP-3 conveyance works.</li> </ul> </td> </tr> </tbody> </table>	Relevant sections	Revisions	Section 00015 TABLE OF CONTENTS	<ul style="list-style-type: none"> <li>• Reference to Sections 01025A and 01950 removed.</li> <li>• References to Sections 01951 and 01952 added.</li> <li>• Note to Reviewers removed.</li> </ul>	Section 01010 SUMMARY OF WORK	<ul style="list-style-type: none"> <li>• In subsection 1.01, added bullet 5.b regarding heat supply under separate Contract.</li> <li>• In subsection 1.01, revised bullet 6.a to eliminate reference to Section 01950 and add references to Sections 01951 and 01952.</li> <li>• In subsection 1.05, revised bullet C relative to coordination with CP-3 conveyance works.</li> </ul>
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Section 01010 SUMMARY OF WORK	<ul style="list-style-type: none"> <li>• In subsection 1.01, added bullet 5.b regarding heat supply under separate Contract.</li> <li>• In subsection 1.01, revised bullet 6.a to eliminate reference to Section 01950 and add references to Sections 01951 and 01952.</li> <li>• In subsection 1.05, revised bullet C relative to coordination with CP-3 conveyance works.</li> </ul>						

	Section 01025 MEASUREMENT AND PAYMENT	<ul style="list-style-type: none"> <li>• The ESMP related Items 1.C to 1.L have been replaced with two ESMP related items 1.C and 1.D to match the Letter of Bid in Section IV.</li> <li>• The Operations items 1.P and 1.Q have been replaced by a single item 1.P Training and Support to USUG to match the Letter of Bid in Section IV.</li> </ul>
	Section 01025A LETTER OF BID	This section is removed. The bidders shall use only the form provided in the <b>Letter of Bid.</b>
	Section 01046 CONTROL OF WORK	In subsection 3.09, bullet C has been revised to reference Letter of Bid (not Bid Form)
	Section 01500 TEMPORARY FACILITIES	This section is revised.
	Section 01650 TESTING AND STARTUP REQUIREMENTS	1.01, 1.06, 1.07, 1.09, 1.10, and 1.15 to 1.20 have been revised to reflect changes in duration of Test on completion phases and Contractor's role in training Owner designated personnel.
	Section 01730 OPERATION AND MAINTENANCE DATA	1.04 and 1.05 revised related to the recent changes in Contractor's role in providing training and assistance to Owner's personnel.
	Section 01950 CONTRACT OPERATION AND MAINTENANCE OF THE ADVANCED WATER PURIFICATION PLANT	Section 01950 is removed and replaced with Sections 01951 and 01952. References to Section 01950 in other Sections are removed.  <b>Bidders to ignore/eliminate 01950</b>
	Section 01951 TRAINING FOR OWNER'S DESIGNATED PERSONNEL	New Section added covering Contractor's role in training designated staff prior to and during Test on completion phases.

	Section 01952 SUPPORT TO OWNER AFTER TAKING OVER CERTIFICATE	New Section added covering Contractor's role in providing assistance to Owner's designated personnel after taking over certificate (during DNP).
	Appendix D ENGINEER'S QUANTITY ESTIMATE	Revisions to sitework volumes (cut, rock cutting and fill).
	Appendix E The illustrative Construction Schedule	Revisions made to show clear guidance on time for completion, training duration and duration Test on completion phases and assistance during DNP,
	Appendix E The illustrative Construction Schedule	New line for Performance Certificate (as per FIDIC).
	Section 01110 ENVIRONMENTAL PROTECTION PROCEDURES	3.03-C, 3.04-A, 3.04-G, 3.05-A, 3.07-A have been revised.
	Section 01568 EROSION CONTROL, SEDIMENTATION AND CONTAINMENT OF CONSTRUCTION MATERIALS	1.05-B and 3.02-E have been revised.

## ANNEX 1 TO ADDENDUM No 3

### Form TECH-1: Method Statement (Amended)

The adequacy of the Bidder's Technical Offer to meet the Works Requirements and Time for Completion is important to determine if the Bid is substantially responsive as defined at **Section III, Bid Review, Evaluation Criteria and Bidder Qualification Requirements**.

The Technical Offer shall, therefore, include a Method Statement for execution of the Works, which shall demonstrate the adequacy of the Bid to meet the Works Requirements and for achieving the Employer's objective with regards to performance under the Technical Specifications and to complete the whole of the Works in accordance with the stated requirements in the Conditions of Contract. In this context, it is necessary for Bidders to demonstrate a complete understanding of the scope, nature and resource needs for execution of the Works and the necessary sequencing of the different elements and associated activities comprising the Works to be executed, all within the Time for Completion stated in the Appendix to Bid, as calculated from the Commencement Date (Sub-Clause 8.1).

The Method Statement shall, therefore, include, but shall not necessarily be limited to, the following:

- (a) Statement demonstrating Bidder's appreciation and recognition of current conditions within the limits of site and any arrangements needed and included in the Bid to minimize disruption during the execution of the Works.
- (b) Description of arrangements which the Bidder proposes and has included in the Bid to address the geotechnical and hydrological nature of the existing ground and methods for undertaking excavation, filling and any necessary dewatering requirements included in the Bid.
- (c) Description of the measures included in the Bid which will be implemented to achieve the quality of execution required under the Contract and in accordance with Quality Specification. Specifically, the Bidder shall provide an example of or a description of or a standard protocol for a Quality Assurance/Quality Control (QA/QC) program that will be developed to ensure that the execution of the Works is in full compliance with the requirements described in Section V. The Bidder shall describe the basis and operation of the proposed quality management system, including testing, management reviews, procedural audits, checking, procedures for monitoring, reporting and dealing with nonconformities, corrective actions, and feedback, and include a description of how non-conformance reports will be managed.
- (d) Description of approach to risk management included in the Bid, including identification of specific risks the bidder has identified for this project and associated mitigation measures.
- (e) Description of approach and staffing included in the bid to comply with the Testing and Startup Requirements Specification and Training Specification Requirements which will occur simultaneously. The description shall include approach to coordinate the AWPP with the wellfields, raw water pipelines and finished water pipelines.

- (f) Description of protocols the Bidders have in place for resolution of disputes and disagreements with other entities on a Project. Description at a minimum should include protocols for management of disputes and resolutions with Suppliers, Sub-contractors, the Employer and Engineer.
- (g) Description of arrangements which the Bidder proposes to adopt and has included in the Bid for handover, including completion of as-built drawings, and any additional matters.
- (h) Information of equipment and items that will be used to execute the Works. A table summarizing key equipment and items is provided in this form. The Bidder shall provide name and model number, when applicable, of manufacture for each item. Further details shall be submitted at a later date as required by the Specifications. If the Bidder plans to competitively bid the equipment at a later date it shall name vendors from which it will receive bids. Substitution may be approved by the Engineer after award.

**Table of Main Equipment and Items**

<b>Discipline</b>	<b>Project Area</b>	<b>Key Equipment</b>	<b>Proposed Supplier(s)</b>	<b>Proposed Model (if relevant)</b>
Civil	General	Geotextile fabric		
Mechanical	General	Ductile iron pipe and fittings		
Mechanical	General	PVC pipe and fittings		
Mechanical	General	Stainless steel pipe and fittings		
Mechanical	General	Stainless steel slide gates		
Mechanical	General	Resilient seat gate valves 3-inch (75 mm) and larger		
Mechanical	General	Gate valves - 3-inch (75 mm) and smaller		
Mechanical	General	Valves 2-1/2-inch (65 mm) to 3-inch (75 mm)		
Mechanical	General	Gate valves – nonmetallic		
Mechanical	General	Knife gate valves – non rising stem type		
Mechanical	General	Eccentric plug valves		
Mechanical	General	Butterfly valves – liquid service (awwa)		
Mechanical	General	Butterfly valves – aeration service		

<b>Discipline</b>	<b>Project Area</b>	<b>Key Equipment</b>	<b>Proposed Supplier(s)</b>	<b>Proposed Model (if relevant)</b>
Mechanical	General	Butterfly valves (non-metallic)		
Mechanical	General	Butterfly valves – high performance		
Mechanical	General	Ball valves – general service		
Mechanical	General	Ball valves - non-metallic		
Mechanical	General	Ball valves – awwa – metal seated		
Mechanical	General	Pinch valves:		
Mechanical	General	Diaphragm valves (non-metallic type)		
Mechanical	General	Check valves – 75 mm and larger		
Mechanical	General	Swing check valves – 75 mm and smaller		
Mechanical	General	Swing check valves – non metallic		
Mechanical	General	Ball check valves - non-metallic		
Mechanical	General	Rubber flapper check valves		
Mechanical	General	Split disc check valves – aeration service		
Mechanical	General	Wafer swing check valves – 75 mm and larger		
Mechanical	General	Duck bill check valves		
Mechanical	General	Flexible flap valves		
Mechanical	General	Needle valves		
Mechanical	General	Needle valves – non metallic		
Mechanical	General	Solenoid valves		
Mechanical	General	Solenoid valves – non metallic		
Mechanical	General	Water pressure regulators		
Mechanical	General	Air release valves – clean water service		

<b>Discipline</b>	<b>Project Area</b>	<b>Key Equipment</b>	<b>Proposed Supplier(s)</b>	<b>Proposed Model (if relevant)</b>
Mechanical	General	Air/vacuum valves – vertical wet pit pumps		
Mechanical	General	Combination air/vacuum valve-finished water pump outlet		
Mechanical	General	Combination air/vacuum valve-finished water distribution		
Mechanical	General	Corporation stops		
Mechanical	General	Chainwheel operators – stainless steel (ductile iron)		
Mechanical	General	Short body tilting disc check valves		
HVAC	General	HVAC Fans		
Plumbing	General	Fire protection system		
Mechanical	AWPP Building	Flocculator		
Mechanical	AWPP Building	UV reactor		
Mechanical	AWPP Building	Raw water reactor (pre-oxidation)		
Mechanical	General	In-Line static mixers		
Mechanical	General	Vertical shaft mixers		
Mechanical	General	Mechanical mixer		
Mechanical	General	Submersible mixers		
Mechanical	Residual Building	Polymer blending unit		
Mechanical	AWPP Building	Plate settlers		
Mechanical	AWPP Building	Residual collectors		
Mechanical	AWPP Building	Filters media		
Mechanical	AWPP Building	Filter underdrain		
Mechanical	AWPP Building	Rotary positive displacement blowers		



<b>Discipline</b>	<b>Project Area</b>	<b>Key Equipment</b>	<b>Proposed Supplier(s)</b>	<b>Proposed Model (if relevant)</b>
Mechanical	General	FRP chemical tanks		
Mechanical	General	HDPE chemical tanks		
Mechanical	General	Double suction pumps		
Mechanical	General	Vertical turbine pumps		
Mechanical	General	Dry pit solids handling pumps		
Mechanical	General	Submersible solids handling pumps		
Mechanical	General	Hose pumps		
Mechanical	General	Progressing cavity pumps		
Mechanical	General	Chemical handling pumps		
Mechanical	General	Chemical diaphragm metering Pumps		
Mechanical	General	Chemical peristaltic pumps		
Mechanical	RO Building	RO cartridge filter housing		
Mechanical	RO Building	RO cartridge filters		
Mechanical	RO Building	RO Feed pumps		
Mechanical	RO Building	RO CIP Pump		
Mechanical	RO Building	RO Flush Pump		
Mechanical	RO Building	RO Pressure Vessels		
Mechanical	RO Building	RO membrane elements		
Mechanical	RO Building	RO system Supplier (other requested by specification)		
Mechanical	Plant Water	Surge tank suppression system		
Mechanical	Plant Water	Plant water system		
Mechanical	Residual Building	Sludge EQ tanks		

<b>Discipline</b>	<b>Project Area</b>	<b>Key Equipment</b>	<b>Proposed Supplier(s)</b>	<b>Proposed Model (if relevant)</b>
Mechanical	Residual Building	Lamella thickeners		
Mechanical	Residual Building	Sludge thickener plates & drives		
Mechanical	Residual Building	Horizontal solid bowl centrifuges		
Mechanical	Residual Building	Screw conveyor		
Mechanical	General	Jib crane		
Mechanical	General	Monorail hoist		
Mechanical	Generator building	Packaged diesel fire pump		
Mechanical	AWPP Building	Packaged wastewater treatment system		
Mechanical	AWPP Building	Packaged wastewater treatment control panel		
Electrical & IC	General	Control panels supplier #1		
Electrical & IC	General	Control panels supplier #2		
Electrical & IC	General	Control panels supplier #3		
Electrical & IC	General	Control panels supplier #4		
Electrical & IC	General	Control panels supplier #5		
Electrical & IC	General	SCADA Platform & Control System Integrator		
Electrical & IC	AWPP & RO & Clean Well	MV Transformers		
Electrical & IC	AWPP & RO	LV Switchboard		
Electrical & IC	AWPP & RO & Clean Well	LV MCC		
Electrical & IC	AWPP & RO	LV VFDs		
Electrical & IC	Generator building	Generator		

<b>Discipline</b>	<b>Project Area</b>	<b>Key Equipment</b>	<b>Proposed Supplier(s)</b>	<b>Proposed Model (if relevant)</b>
Electrical & IC	Generator building	MV Switchgear		
Electrical & IC	Generator building	Transformer		
Electrical & IC	Generator building	MV Breaker		
Electrical & IC	Generator building	Fibre Optic		
Electrical & IC	Generator building	Ethernet		
Electrical & IC	Generator building	Communication protocols Requirements		
Electrical & IC	Generator building	PLC for primary control contract		
Electrical & IC	Generator building	PLC for vendor control panels	-	-
Electrical & IC	Generator building	Server		
Electrical & IC	Generator building	Thin-Client		
Electrical & IC	General	CCTV/Security Monitoring system		
Electrical & IC	General	Protection and Control relays		
Electrical & IC	General	Electromagnetic flow meter (Mag Meter)		
Electrical & IC	General	Submersible Pressure Sensing Level Transducer		
Electrical & IC	General	Pressure Transmitter		
Electrical & IC	General	Pressure Switches		
Electrical & IC	General	Pressure Gauges		
Electrical & IC	General	Ultrasonic Level Transducer		
Electrical & IC	General	Ultrasonic Level Switch		
Electrical & IC	General	Thermal Dispersion Flowmeter		
Electrical & IC	General	Float Level Switch		
Electrical & IC	General	Uninterrupted Power Supply		

<b>Discipline</b>	<b>Project Area</b>	<b>Key Equipment</b>	<b>Proposed Supplier(s)</b>	<b>Proposed Model (if relevant)</b>
Electrical & IC	General	Room Temperature		
Electrical & IC	General	pH/ORP		
Electrical & IC	General	Chlorine		
Electrical & IC	General	Conductivity		
Electrical & IC	General	Turbidity / UV Transmittance		
Electrical & IC	General	Silt Density Index		
Electrical & IC	General	Rotameter		
Electrical & IC	General	Chemical Fill Station Panel		

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