

**JSC "Almalyk Mining and Metallurgical Combine"
(AMMC)**

TERMS OF REFERENCE (ToR)

**for the provision of Engineering, Procurement, Construction Management
(EPCM) services**

for the construction of the copper-smelting plant (MPZ-2)

under the investment project "Development of the Yoshlik-I Deposit"

1. Introduction

This Terms of Reference (ToR) defines the scope of work and the requirements for potential contractors wishing to participate in the competitive selection/tender for the construction of the copper-smelting plant on an EPCM basis, as part of the implementation of the project for the construction of the facilities of the new metallurgical complex (MPZ-2) under the investment project "Development of the Yoshlik-I Deposit".

Client: JSC "Almalyk Mining and Metallurgical Combine" (AMMC)

EPCM Contractor – the party performing the work under this Terms of Reference

Client's Details:

Uzbekistan, 110100 Almalyk, 53 Amir Temur Street

JSC "Almalyk Mining and Metallurgical Combine"

current account in USD: 20210840200130833002

Bank: National bank for foreign economic activity of the Republic of Uzbekistan, Tashkent city main department

SWIFT CODE: NBFA UZ 2X

Correspondent bank (USD/EUR): JP MorganChase Bank, New York, USA

SWIFT: CHASUS 33. acc: No 0011017803

Correspondent bank (USD): COMMERZBANK AG FFT

SWIFT: COBADEFF. acc: No 400886648500USD.

1.1 Basis for Implementation of the Project under which the Procurement is Conducted:

Investment Project "Development of the Yoshlik-I Deposit", implemented pursuant to Resolution of the President of the Republic of Uzbekistan No. PP-2807 dated 1 March 2017 (as amended by Resolution of the President of the Republic of Uzbekistan No. PP-3211 dated 15 August 2017) and PP-4731 dated 26.05.2020

– In addition to financing from the Client's own funds, the Project (in respect of the expansion of the copper-smelting complex) is being considered for project financing by a group of international lenders led by KfW IPEX-Bank (Germany) in an amount of up to USD 2.55 billion; in this regard, the EPCM Contractor shall ensure that its activities comply with the requirements set out in the section "Function of Interaction with Financing Institutions and the Independent Technical Expert (ITE)" of this Terms of Reference.

1.2 Time Limits for Performance of Work (not exceeding) –

1. 36 months until completion of construction and installation works (SMR) for the entire complex.

2. 8 months for completion of all commissioning works (PNR).

3. 16 months for operation of the complex with ramp-up to design capacity.

All dates are counted from the effective date of the EPCM contract. The calendar start and completion dates are subject to clarification as of the date of contract execution; intermediate deadlines are fixed as milestones in the master schedule (KSG).

1.3 Terms, Definitions and Abbreviations

For the purposes of unambiguous interpretation of this Terms of Reference, the following terms and abbreviations are used herein:

– letter designations of the scope of work in Tables 1 and 2: E — design/engineering; P — supply of equipment and materials; C — construction and installation works; S — supervision of erection and commissioning (accordingly, EPC, EPS, E+PC and EP+C — combinations of the above scopes);

EPCM (Engineering, Procurement, Construction Management) — engineering, procurement management and construction management;

NTP (Notice to Proceed) — notice to commence work / the effective date of the contract from which time limits are calculated;

KSG — master schedule (calendar-network schedule);

PIR — design and survey works;

SMR — construction and installation works;

PNR — commissioning works;

MTR — material and technical resources;

IRD — initial permitting documentation;

PSD/RD — design-and-estimate/working documentation;

POS/POD — Construction Organization Project/Demolition Organization Project;

EIA/ZVOOS — Environmental Impact Assessment/Environmental Impact Statement;

APCS — Automated Process Control System;

E — design performed by the EPCM Contractor;

PC Contractor — supply of equipment and materials, construction and commissioning works based on the design work of the EPCM Contractor

FAT/SAT — Factory/Site Acceptance Tests.

Trade-off Study — a comparative feasibility study of alternative scenarios for further development of the Project (including a comparison of Greenfield and Brownfield options), performed by the EPCM Contractor to substantiate the optimal solution.

1.4 Project Goals and Objectives

The goal and objectives of the Project are for the Client to achieve the production indicators specified in Resolution of the President of the Republic of Uzbekistan No. PP-4731 dated 26.05.2020 through the reconstruction and construction of facilities of the metallurgical complex of JSC "Almalyk Mining and Metallurgical Combine" (AMMC).

1.5 Objectives of Engaging the EPCM Contractor under this Terms of Reference.

In accordance with the functions assigned to the EPCM Contractor, this Terms of Reference is divided into 5 sections:

- performance of the functions of the General Designer;
- performance of the functions of the General Contractor;
- performance of the functions of the Client's engineer;
- performance of the function of assisting the Client in interaction with financing institutions and the Independent Technical Expert (ITE);
- performance of the function of operational readiness planning.

1. Functions of the General Designer — control over the timeliness and quality of design under the Table 1 contracts, incoming review of documentation and its transmittal to the Client under a single stamp, coordination of interfaces between sub-designers; development of design-and-estimate documentation for the Table 2 facilities (including the general sections of the POR/POS/POD/ZVOOS), including the development and maintenance of a single construction organization plan (consolidated POS) for the congested site; consolidation of the local titles and conclusions of the EPC/EPSC Contractors into unified design documentation for the copper-smelting complex, maintenance of a register of titles and expert reviews (cl. 2.1); support of expert reviews and approvals of the unified design documentation with the receipt of positive conclusions from the authorized bodies (cl. 2.2); responsibility for achieving the production indicators of the copper-smelting complex as a single completed facility (cl. 2.3); design supervision (author's supervision); participation in the acceptance commission; implementation of a unified equipment tagging standard and the architecture of the upper-level automated control system; development

of a Trade-off Study comparing scenarios for the further development of the copper-smelting complex, including options for maximizing output on the equipment already procured, capacity expansion, transition from Brownfield to Greenfield, and the optimal strategy for implementation of the Project.

2. Functions of the General Contractor — control over the quality and timeliness of SMR/PNR under Table 1; coordination of subcontractors and interaction with construction/operating production; control over the quality and timeliness of PNR performance and equipment supply under Table 2 by PC Contractors engaged based on tender results; control over occupational health and safety, industrial safety, fire safety and environmental safety; participation in the acceptance commission.

3. Functions of the Client's engineer — administration of a unified project management system; maintenance of the consolidated master schedule; cost and budget control, cost forecasting; management of interfaces between procurement packages; quality control of the manufacture/supply of equipment and materials; administration of document flow and the archive; reporting to the Client; certification of acceptance certificates and payment applications under the Table 1 contracts (without the right to be a party to such contracts); synchronization of the Table 1 and Table 2 contractors.

4. Assistance to the Client in interaction with financing institutions and the Independent Technical Expert (ITE) — providing the ITE/lenders with access to the site, personnel, contracts, schedule and budget; preparation of monthly reports for quarterly/monthly reporting to lenders; agreement of the Completion Tests programme; escalation, through the Client, to the lenders of risks threatening the achievement of Completion.

5. Operational readiness planning — preparation of a facility and personnel readiness report, a commissioning works (PNR) plan, a start-up sequence for the complex's facilities, and a ramp-up-to-design-capacity plan, to be agreed with the Client, the financing institutions and the Independent Technical Expert (ITE).

In the course of implementation of the Project, JSC "Almalyk Mining and Metallurgical Combine" (AMMC) has entered into a number of contracts:

Table 1

No.	Contractor Name	Scope of Work	Area	Contract Terms	Work Status
1	HATCH	Development of PFS (Pre-Feasibility Study)	metallurgical plant in full scope	E	work completed
2	METSO	basic engineering	metallurgical plant in full scope	E	work completed
3	METSO	design documentation, working documentation, supply of principal process equipment, supervision of erection, and commissioning works within the scope of the equipment supplied.	sulfuric acid production, metallurgical shop	EPS	work in progress
4	HANGZHOU FORTUNE GAS	Design documentation, working documentation, supply of equipment, supply of materials, construction, commissioning works	MPZ oxygen station	EPC	work in progress
5	Consortium of "World Trade Solutions" and	Design documentation, working documentation, supply of equipment, supply	internal power supply	EPC	work in progress

	UZELEKTRO APPARAT	of materials, construction, commissioning works			
6	Engineering Dobersek	Design documentation, working documentation, supply of equipment, supply of materials, construction, commissioning works	copper electrolysis shop	EPC	work not started
7	Nering	Design documentation, working documentation, supply of equipment, supply of materials, construction, commissioning works	slag concentration plant	EPC	work not started
8	Winner of the tender for the "C" portion of the METSO scope	Design documentation, working documentation, construction of common infrastructure for the sulfuric acid production and the metallurgical complex (EPC), supply of materials, construction, commissioning works within the design scope of responsibility of METSO (PC)	sulfuric acid production, metallurgical shop	EPC+PC	work not started
9	Winner of the tender for Concentrate warehouse and charge (burden) preparation area	Design documentation, working documentation, supply of equipment, supply of materials, construction, commissioning works	metallurgical shop	EPC	work not started

Part of the work related to construction, design, supply of material and technical resources (MTR), and commissioning of the copper-smelting plant is not covered by the existing contracts:

Table 2*

No.	Area	Scope of Work
1	Construction of a water treatment system, steam distribution, and heat recovery with power generation.	Design documentation, working documentation, supervision of SMR and PNR
2	Neutralization station for acidic and domestic wastewater	Design documentation, working documentation, supervision of SMR and PNR
3	Recycled (circulating) water supply system	Design documentation, working documentation, supervision of SMR and PNR
4	Common infrastructure (inter-shop utilities, general site plan, warehouses, workshops, engineering systems, etc.)	Design documentation, working documentation, supervision of SMR and PNR
5	Upper-level APCS and the Automated Operational Dispatch Control System	Design documentation, working documentation, supervision of SMR and PNR

* The EPCM Contractor's work on the Table 2 facilities is limited to design (E). The supply of equipment and materials, and the construction/installation and commissioning works (PC Contractor) for the Table 2 facilities are performed by separate PC Contractors, selected based on the results of tender/competitive bidding procedures upon completion of design, in accordance with the legislation of the Republic of Uzbekistan.

The EPCM Contractor directly participates in the tender bidding for the Table 2 facilities. Its participation is limited to preparing all documentation for organizing and conducting the tender bidding, evaluating the technical and commercial proposals (TCPs), and vetting bidders during the review and/or selection of the winning bidder. The EPCM Contractor has no right to select or decide on PC Contractors during the tender bidding, as such right remains with the Client.

If the EPCM Contractor (or any other person affiliated with it) participates in the tender/competitive selection of a PC Contractor for the Table 2 facilities, then, in respect of the relevant tender, the EPCM Contractor's function of evaluating technical and commercial proposals and potential contractors shall not be performed by the EPCM Contractor: in order to avoid a conflict of interest, the evaluation of such proposals and bidders shall be carried out by the Client independently or with the involvement of an independent party.

Given the scale and complexity of the Project, and in order to reduce project management costs, ensure a unified approach to the technical solutions being developed, and consolidate management of the construction site, the Client engages a third-party organization (the EPCM Contractor) to perform part of the functions of the Client's engineer in accordance with this Terms of Reference.

1.6 Implementation Model and Authority of the EPCM Contractor

- Under the Table 1 contracts and for the Table 2 facilities, the EPCM Contractor performs the functions of a managing organization (PMC/Owner's Engineer) without the right to unilaterally amend the terms of concluded contracts; the work under Table 2 is performed by contracting organizations engaged based on the results of tender/procurement procedures, under the management and technical supervision of the EPCM Contractor.

- The EPCM Contractor acts as the Client's representative (agent) and is not a party to the Table 1 contracts; to the extent that the EPCM Contractor is delegated the authority of engineer / Client's representative / project manager under a works contract, it exercises such authority to the extent established by the relevant contract, acting as an impartial link between the Client and the contractor, exercising independent professional judgment, reasonable skill and care.

- The EPCM Contractor is responsible to the Client for the performance of the Table 1 contracts by their parties (the contractors).

- The Client determines the list of decisions requiring its prior approval (including: execution and material amendment of agreements/contracts; award of contracts/agreements under Table 2 based on the results of tender/procurement procedures; changes in scope and cost exceeding the threshold established by the contract; execution of permits and licenses; arrangement of Project insurance; technical audit and assessment of the EPCM Contractor's services; dispute resolution; final acceptance of the facility; land and property matters; suspension of work; approval of the EPCM Contractor's key personnel; arrangement of equipment handover from the technology-supplying organization; arrangement of access for financing banks to Project data) — in accordance with the Responsibility Matrix between the Client and the EPCM Contractor (Appendix No. 2). All other operational decisions within the approved budget and schedule are made by the EPCM Contractor independently, with subsequent notification to the Client.

- If an inconsistency (conflict) is identified between the EPCM Contractor's obligations under this Terms of Reference and the terms of the existing Table 1 contracts, the EPCM Contractor shall immediately notify the Client; the conflict shall be resolved by the Client by way of a corresponding instruction or by formalizing an amendment to the Terms of Reference.

- to the extent that the EPCM Contractor acts as the Engineer under contracts concluded by the Client with EPC/EPs Contractors, the logic of the FIDIC Conditions of Contract for Plant and Design-Build ("Yellow Book", 2nd ed., 2017) applies: the EPC Contractor prepares the working documentation in accordance with the Employer's Requirements prepared by the EPCM Contractor, and is responsible for the fitness for purpose of its design; the EPCM Contractor administers the contract, reviews and approves the contractor's design (without relieving the contractor of responsibility for it), issues instructions, certifies payments, evaluates variations, and considers claims;

- key principle: the EPCM Contractor is simultaneously the Client's Consultant (under the White Book) and the Engineer over the EPC Contractors (under the Yellow Book); every action of the EPCM Contractor in respect of an EPC/EPs Contractor must have a dual basis — as a

service to the Client and as an authority of the Engineer expressly established in the contract itself with that EPC Contractor (back-to-back correspondence);

1.7 Neutrality of the Engineer in Approvals and Determinations (Conflict-of-Interest Protection)

- when agreeing or issuing a determination on claims and variations (including under contracts concluded by the Client with EPC/EPs Contractors), the EPCM Contractor, acting as the Engineer, shall act neutrally between the Client and the relevant EPC/EPs Contractors and is deemed to act exclusively in the interest of the Client; this rule expressly extends to cases where the subject matter of the determination is work managed by the EPCM Contractor itself, including under Table 2;

- the Client is guaranteed the right of direct access to primary monitoring data (not only to reporting prepared by the EPCM Contractor) — including the source data of the PMIS (Project Management Information System), quality control logs, and correspondence with the EPC/EPs Contractors;

- the requirement of the Engineer's neutrality set out in this section applies exclusively to approvals and determinations (including on claims and variations) issued by the EPCM Contractor acting as the Engineer under a contract with an EPC/EPs Contractor, and does not imply neutrality of the EPCM Contractor in a dispute between the Client and such contractor: in the event a dispute with an EPC/EPs Contractor is referred to the Dispute Avoidance/Adjudication Board (DAAB), amicable settlement, or international arbitration, the EPCM Contractor acts exclusively on the Client's side and provides it with the necessary technical and expert assistance (participation in preparing the position, the evidentiary basis, and representing the Client's interests).

1.8 Applicable Norms, Standards and Regulations

- the work shall be performed in accordance with the legislation of the Republic of Uzbekistan, state standards, and other mandatory national requirements;

- to the extent not regulated by national norms, and to ensure compliance with international best practice, international standards (ISO, IEC, ASME, API, EN/Eurocodes, etc.) shall apply subject to agreement with the Client;

- where international (project) financing is in place, design, procurement and construction shall be carried out with due regard to the IFC Performance Standards and the Equator Principles;

- KMK/ShNK (Uzbekistan Construction Norms and Rules) shall apply, together with the environmental, labor and industrial safety rules/regulatory legal norms of the Republic of Uzbekistan;

- in case of conflicting requirements, the more stringent requirement — the one ensuring safety, quality and reliability — shall apply;

- capital expenditure and the degree of development of design solutions for each package shall be assessed with reference to the generally accepted cost-estimate accuracy classification of the Association for the Advancement of Cost Engineering (AACE) and/or the concept of phased project development (Front-End Loading, FEL); the applicable estimate accuracy class (AACE Class 3 at the start of the Project, progressively refined to AACE Class 1) at each stage shall be agreed with the Client. This estimate is performed by the EPCM Contractor at the request of the financing institutions (lenders) and is subject to periodic updating as the Project is implemented, up to its completion (commissioning), rather than being a one-off exercise.

1.9 Design/Supply Boundaries (Battery Limits) and Responsibility Matrix

- for each sub-facility, the physical and functional boundaries (battery limits), utility connection points, and the list of input data to be transferred between contractors shall be fixed;

- "interface" works and uncovered ("no-man's-land") works shall be closed out by a decision of the EPCM Contractor, with notification to the Client, thereby precluding gaps in the areas of responsibility between the contracts listed in Table 1.

- Upon signature of the EPCM contract, the Contractor shall commence an audit of the existing contracts listed in Table 1 for gaps, scope duplication and inconsistencies in design boundaries, and shall also verify whether they contain contractor obligations to interface with the EPCM Contractor (use of common data formats, compliance with the master schedule and the interface matrix). The audit results shall be provided in stages in accordance with the contract audit schedule. Based on the audit results, the Contractor shall prepare for the Client a list of risks together with recommendations for their mitigation.

- the scope of work for each sub-facility shall be fixed by a list (work breakdown structure, WBS) with an explicit link to a specific contract (Table 1 or Table 2) or to an integration "grey zone"; wording such as "other works" or "miscellaneous works" without a WBS reference is not permitted;

- a completeness matrix shall be maintained: each WBS element is unambiguously assigned to a specific contract or to a grey zone closed out by the EPCM Contractor; no "no-man's-land" nodes shall remain;

- the EPCM Contractor shall maintain consolidated material and heat balances for the entire metallurgical complex (matte, anode copper, slag, process gas, oxygen, steam) and shall use them as the basis for determining and verifying the supply boundaries (battery limits) between packages.

1.10 Technical Boundaries of Packages and Complex Balances

With respect to the construction of the copper-smelting complex, to be tied in with the existing production facilities of Almalyk Mining and Metallurgical Combine (AMMC), the scope of work is further structured by the following process stages (packages):

- receiving, storage and feeding of concentrate/charge; smelting unit (flash smelting furnace); converting and anode refining stage; gas cleaning and sulphuric acid production; oxygen station (ASU); power supply, steam and utilities; water treatment and effluents; slag processing stage; electrolytic refining stage; power supply and grid connection; general construction works and buildings; APCS and IT integration;

- for each package, the supply boundaries (battery limits) shall be fixed in terms of material flows, energy carriers and signals — what is present at the input/output, in what state, and who is responsible at the boundary. The boundaries shall be clarified/adjusted in accordance with the Client's EPC/EPS contracts;

1.11 Tie-in to Existing Production Facilities (Brownfield)

- the EPCM Contractor shall maintain a register of tie-in points to the existing networks and production facilities: power supply, water (fresh, recycled, fire-fighting), steam, oxygen, nitrogen, compressed air, sulphuric acid, intermediate products (matte/anode/slag), off-gases, effluents, communications and data-transmission networks;

- prior to design, a survey of the actual condition and capacity of the existing networks shall be carried out (cross-checked against as-built documentation); the risk of inaccuracy of the baseline data on the existing production facilities shall be allocated under the contract;

- tie-ins and switchovers shall be coordinated with the operating schedule of the existing production facilities in the form of shutdown/maintenance windows, specifying the permissible duration and the consequences for failure to meet an agreed window; schemes for temporary redundancy and switchovers without stopping the existing production shall be provided for wherever this is critical;

- works carried out in the vicinity of the existing production facilities shall be performed in accordance with a Simultaneous Operations (SIMOPS) plan, with a permit-to-work system, hot-work rules, and segregation of personnel and equipment flows between the construction zone and the operating zone;

- the permitting documentation and environmental limits shall be reviewed for the combined facility prior to the commencement of works in the vicinity of the existing production facilities (including aggregate SO₂ and dust emissions).

- combined (shared) facilities of the existing and new production: the concentrate warehouse and auxiliary warehouses are shared facilities; the Copper Electrolysis Shop (CES) is also a shared facility and receives anodes both from the new furnaces ("double flash" technology) and from the existing Vanyukov furnace; CES slimes are transferred to the Gold and Silver Refining Shop (GSRS);
- the EPCM Contractor shall prepare an integration/transition plan (consolidation of capacities) for the existing production facilities and the new facilities of the complex, since achievement of the design process and production indicators is not possible without taking into account the parameters and constraints of the existing production;

1.12 Process Interfaces: Oxygen, Power Engineering and Automation

- for the gas duct from the furnaces and converters to the sulphuric acid shop, responsibility shall be fixed for the gas parameters at the boundary (volume, SO₂ concentration, dust content, temperature) and their stability; guarantees for acid production capacity and quality, and for the SO₂ conversion and capture rates, shall be linked to the environmental permits; a separate regime shall govern the reconciliation of fluctuations in gas composition from the smelting process with the continuous sulphuric acid process (buffering, behaviour during shutdowns and start-ups);
- balances of oxygen, nitrogen and compressed air shall be maintained for the entire complex, taking into account peak loads and the required reliability of redundancy; balances of steam, electric power and recycled water, including heat recovery (waste-heat boilers), shall be linked to the boundaries of the existing power infrastructure;
- the architecture of the upper-level APCS shall be built to a single standard (ISA-95/Purdue levels/zones) for the entire complex, with integration of the distributed control systems (DCS) of the individual EPC packages into a single landscape and interfacing with the existing systems; the EPCM Contractor owns the integration layer and the consolidated data model — no EPC package shall be handed over as an isolated system.
- field instrumentation and control equipment, local control systems (LCS) and shop-level APCS (DCS/SCADA, ISA-95/Purdue levels 0–2) shall be performed by the EPC/EPSC Contractors listed in Tables 1 and 2 within the boundaries of their respective packages; the integration thereof into a unified control system for the complex, the connection of facilities and systems not included in the EPC packages (weighing facilities, LIMS, environmental monitoring, etc.), and the interfacing with the existing production facilities fall within the scope of the EPCM Contractor;
- in addition to the APCS, the EPCM Contractor shall implement an Automated Operational Dispatch Control System (ASODU) — a production management layer operating on shift / day / week / month horizons: historization of process data, material and energy balances, operational accounting of raw materials and products, plan-vs-actual reporting, technical and economic indicators (TEI) and KPIs, shift and periodic reports, dispatcher panels, and integration with ERP, LIMS and maintenance and repair (MRO) systems;
- the plant-wide systems shall include the ASKUE (commercial metering of electric power at the points of balance-sheet demarcation with the power-supply organization) and the ASTUE (technical metering of energy resources within the complex — electric power, steam, heat, process, recycled and potable water, compressed air, oxygen, nitrogen, fuel — by shop, process stage and major unit). Metering nodes and instruments within the boundaries of the EPC/EPSC packages shall be supplied and installed by the respective contractors to the EPCM Contractor's unified standard; the upper-level design of the ASKUE/ASTUE, of metering nodes outside the EPC packages, and their integration into the unified control system and the ASODU shall be performed by the EPCM Contractor on a Table 2 basis;
- implementation model: the EPCM Contractor's work on the upper-level APCS, the ASODU, the ASKUE and the ASTUE shall be performed on the following principle: the EPCM Contractor develops a unified automation and energy-metering standard, binding on all EPC/EPSC Contractors, and performs the engineering (E); the supply of equipment and software, installation, configuration and commissioning are carried out by a PC contractor selected through a tender. The EPCM

Contractor conducts the technical evaluation of bids and participates in the tender procedures for selecting such PC contractor, exercises technical supervision and control over its works, and accepts the results. Responsibility for the architecture, integration and achievement of the functional requirements of the unified control system, the ASODU and the energy-metering systems remains with the EPCM Contractor irrespective of the division of contracts.

2. Performance of the Functions of the General Designer

Within the framework of this Terms of Reference, the EPCM Contractor shall perform the functions of the General Designer:

- exercises control over the performance of design and survey works under the contracts entered into by Almalyk Mining and Metallurgical Combine (AMMC) (Table 1);
- exercises control over compliance with the contractual deadlines for the development of documentation under the contracts entered into by AMMC (Table 1);
- organizes interaction among the developers of design documentation "at the interfaces of the design boundaries" of sub-designers, and ensures the consistency of design solutions (interface consistency) for individual sub-facilities;
- performs incoming review of the documentation developed under the contracts entered into by AMMC (Table 1), and transfers it to the Client under a single title block (stamp);
- develops the design and cost documentation for facilities not covered by the existing contracts of AMMC (Table 2), including the sections of the design and cost documentation common to the construction of the entire metallurgical complex (Works Organization Project (POR), Construction Organization Project (POS), Demolition Organization Project (POD), Environmental Impact Statement (ZVOOS) and others), and, where necessary, performs the corresponding engineering surveys;
- develops and maintains a Unified Construction Organization Plan (consolidated POS) for the constrained construction site, including zoning for construction facilities and storage yards, delivery logistics and temporary utilities, and the sequencing of works with due regard to the uninterrupted operation of the existing production, and ensures compliance therewith by all contractors, including the contractors under Table 1 and Table 2;
- provides control over and support for the passage of the design and cost documentation through expert review (comments issued by the reviewing body shall be addressed by the party that prepared the documentation);
- exercises design supervision (author's supervision) on behalf of the General Designer, and also monitors the performance of design supervision carried out on behalf of the developers of the design documentation for the local projects;
- participates in the work of the acceptance committee for the taking-over of the completed facility, and participates in the preparation and signing of the certificate reflecting the results of the committee's work.
- a unified standard for data and for the tagging of equipment and instrumentation (e.g., KKS or an equivalent) shall be introduced, together with a unified upper-level control system architecture based on ISA-95/Purdue levels/zones, and cybersecurity and integration-bus requirements — so that no EPC package is handed over as an isolated system.
- the Contractor shall conduct a Trade-off Study to assess the potential for increasing the throughput of the copper-smelting complex and to compare options for its further development (maximum throughput on the equipment already procured; capacity expansion; transition from Brownfield to Greenfield; the EPCM Contractor's proposal for the optimal implementation strategy), and shall submit substantiated recommendations to the Client;
- within the scope of its analysis of the contracts and documentation under Table 1 and Table 2, shall assess the achievability of the stated target (design) indicators of the copper-smelting complex, both for individual facilities and for the complex as a whole as a single facility; the

EPCM Contractor shall bear responsibility for those target indicators whose achievability it has assessed and confirmed.

In performing the functions of the General Designer, the EPCM Contractor shall be responsible for the development, compilation, coordination, formalization and maintenance of the unified design documentation for the construction of the copper-smelting complex as a single completed production complex, in accordance with the legislation of the Republic of Uzbekistan, the requirements of the ShNK (Uzbekistan Construction Norms and Rules), state standards, the mandatory norms of industrial, fire, environmental, sanitary, energy and other safety, and the requirements of the authorized bodies of the Republic of Uzbekistan.

The EPCM Contractor shall ensure that the design documentation for the Project is developed not as a collection of disparate local designs of the individual EPC/EPs Contractors, but as unified, internally consistent, complete design and cost documentation for the entire copper-smelting complex, covering all the principal process stages, inter-shop links, engineering and transport infrastructure, plant-wide systems, start-up complexes, temporary and permanent solutions for the construction period, and all facilities necessary to achieve the design production, process, environmental and operational indicators.

In doing so, the design documentation shall be developed with such content and level of detail as is sufficient to pass all the expert reviews and approvals required under the legislation of the Republic of Uzbekistan.

2.1. Unified Design Documentation and Consolidation of the EPC/EPs Contractors' Titles

The content, and the procedure for development, approval and endorsement, of design and cost documentation for capital construction shall be determined in accordance with ShNK 1.03.01-16 "Content, and Procedure for Development, Approval and Endorsement, of Design and Cost Documentation for the Capital Construction of Enterprises, Buildings and Structures." With respect to the production facilities of the copper-smelting complex, the content of the design documentation (cl. 2.4.1 of ShNK 1.03.01-16) shall include:

- general explanatory note, including the baseline data for design;
- technical and economic indicators;
- general layout plan and transport;
- process solutions;
- organization and working conditions of workers and staff;
- production and enterprise management;
- architectural and construction solutions;
- construction organization;
- Environmental Impact Assessment (EIA);
- engineering and technical civil-defence measures for the prevention of emergencies;
- engineering and technical measures to ensure compliance with industrial safety requirements;
- construction resource statement;
- cost of construction.

The EPCM Contractor shall:

1. Obtain from the Client and/or the EPC/EPs Contractors for individual title facilities all design, working, cost, baseline permitting, expert-review and approval documentation, including positive expert review opinions, technical specifications, permits, approval minutes, expert review comments and the materials evidencing their resolution.

2. Perform an incoming review of the EPC/EPs Contractors' documentation for:
 - compliance with the requirements of the legislation of the Republic of Uzbekistan;
 - compliance with the ShNK, the mandatory national standards and technical regulations;
 - compliance with the approved baseline data, technical specifications and the Client's requirements;

- completeness of the content of the design and cost documentation;
- adequacy of the engineering surveys and the baseline permitting documentation;
- correctness of the design boundaries and of the connections to adjacent facilities;
- absence of inconsistencies with the solutions of other EPC/EPS Contractors;
- the feasibility of incorporating the documentation into the unified design of the copper-smelting complex.

3. Consolidate the local titles, design solutions and expert review opinions of the EPC/EPS Contractors into unified design documentation for the copper-smelting complex. The existence of a positive expert review opinion for an individual title of an EPC/EPS Contractor shall not relieve the EPCM Contractor of the obligation to verify such title for compatibility with the overall Project solutions, the end-to-end process balances, the engineering infrastructure, the POS, the cost documentation, the environmental constraints and the industrial safety requirements.

4. Develop and maintain a register of titles and expert reviews, including:

- the list of all title facilities of the Project;
- the responsible EPC/EPS Contractor or developer;
- the content of the documentation developed;
- the status of expert reviews and approvals;
- the reference details of the positive opinions;
- the list of expert review comments and the status of their resolution;
- the list of solutions requiring further development for incorporation into the unified design;
- the list of missing, incomplete or contradictory materials.

5. Develop a matrix for the incorporation of the local titles into the unified design, in which each section, facility, system, utility network, process flow, building, structure, connection node, type of work and cost item is unambiguously assigned to a specific EPC/EPS Contractor, to the EPCM Contractor, or to the Client's area of responsibility. No unassigned, duplicated or mutually conflicting areas of responsibility shall be permitted.

6. Ensure that the unified design documentation is prepared with unified:

- baseline data;
- process, material, heat, water, energy and gas balances;
- general layout plan;
- transport and logistics scheme;
- utility network solutions;
- solutions for the APCS, the ASODU, instrumentation and control equipment, and digital systems;
- environmental protection solutions;
- industrial, fire and other safety solutions;
- POS/POD;
- schedule (calendar plan);
- cost documentation;
- list of start-up complexes;
- list of permits, approvals and expert review opinions.

7. Ensure that the unified design documentation is signed by the EPCM Contractor as the General Designer and transferred to the Client in the manner established by the contract and this ToR. The transfer of the EPC/EPS Contractors' local materials without their verification, coordination, incorporation into the unified design and formalization under the responsibility of the General Designer shall not be deemed proper performance of the functions of the General Designer.

8. The EPCM Contractor shall develop, as part of the unified design documentation, comprehensive solutions for the handling, transportation, temporary storage, warehousing, placement, neutralization and/or disposal of all types of production waste generated by the copper-smelting complex, including slags, dust and sludge from gas cleaning, cakes, treatment-facility

sediments, acidic and neutralized effluents, spent materials, and other industrial waste. The design solutions shall provide for slag dumps, temporary accumulation areas, hazardous and non-hazardous waste storage facilities, anti-filtration protection systems, drainage and contaminated-effluent collection systems, dust suppression systems, environmental monitoring systems, and fire and industrial safety systems. The solutions shall ensure compliance with the legislation of the Republic of Uzbekistan, environmental standards, expert review requirements, and the safe operation of waste storage facilities throughout the entire life cycle of the Project.

The EPCM Contractor shall not re-perform the basic engineering and shall not substitute for the EPC/EPs Contractors in respect of detailed design within their areas of responsibility. At the same time, in performing the functions of the General Designer, the EPCM Contractor shall carry out the necessary scope of integration design, adaptation, refinement, coordination and formatting of design documentation sufficient to form the unified design and cost documentation for the copper-smelting complex in accordance with the requirements of the legislation of the Republic of Uzbekistan, its signing by the General Designer, and its passage through all required expert reviews. Such scope includes the verification and adaptation of basic and detailed engineering solutions, the development of missing plant-wide and inter-shop solutions, the elimination of clashes and gaps between EPC/EPs packages, the formation of end-to-end balances, interfaces, the general site plan, engineering infrastructure, the Construction Organization Project (POS), cost documentation and other mandatory documentation, without changing the approved basic technological solutions, except where their adjustment is necessary to comply with the legislation of the Republic of Uzbekistan, to pass expert reviews, to ensure safety, the operability of the complex, or the achievement of design performance indicators.

2.2. Passing/Support of Expert Reviews and Approvals

The EPCM Contractor shall ensure that the unified design documentation passes, and is supported through, all required expert reviews and approvals, with positive opinions obtained from the authorized bodies of the Republic of Uzbekistan.

The EPCM Contractor shall:

1. Ensure support of expert reviews and approvals, including:
 - submission of complete documentation;
 - liaison with expert and authorized bodies;
 - receipt and analysis of comments;
 - organization of the resolution of comments using its own resources or the resources of the relevant EPC/EPs Contractors;
 - monitoring of the deadlines for resolving comments;
 - resubmission of materials;
 - obtaining positive opinions.
2. Ensure that expert review comments relating to interfaces, plant-wide solutions, end-to-end balances, design boundaries, industrial safety, environmental constraints, engineering infrastructure, the general site plan, the Construction Organization Project (POS), cost documentation and start-up complexes are resolved under the coordination and responsibility of the EPCM Contractor acting as General Designer.
3. Not permit the transfer to the Client of design documentation that formally consists of individual titles that have passed expert review with a positive opinion but does not confirm the operability of the copper-smelting complex as a whole.
4. Submit to the Client, upon completion of the expert reviews:
 - the set of positive opinions;
 - the register of opinions and approvals;
 - the register of resolved comments;
 - confirmation that all comments have been incorporated into the current version of the design documentation;

– the General Designer's opinion on the completeness, consistency and suitability of the unified design documentation for construction, commissioning, and the achievement of design performance indicators.

2.3. EPCM Contractor's Responsibility for Unified Technological and Production Performance Indicators

The EPCM Contractor shall be responsible for ensuring that the design documentation developed, verified and integrated by it enables the copper-smelting complex, as a single completed facility, to achieve the design technological, production, environmental, energy and operational performance indicators.

Such indicators include, without limitation:

- the design capacity for the output of cathode copper and other products;
- the recovery and loss indicators for copper, gold, silver and associated components;
- the quality of finished products and semi-finished products;
- the productivity of the main technological processing stages;
- the stability of operation of the end-to-end technological chain;
- material, thermal, water, energy and gas balances;
- consumption of oxygen, natural gas, electricity, water, steam and other resources;
- indicators of sulfuric acid production, gas cleaning and SO₂ capture;
- indicators for emissions, discharges, waste and other environmental constraints;
- readiness of the plant-wide Automated Process Control System (APCS)/automated dispatch control system (ASODU), instrumentation and control (KIPiA), energy metering, laboratory control and digital integration systems;
- the possibility of safe operation, maintenance and repair;
- the possibility of phased commissioning by start-up complexes without disrupting the operability of the existing production facility and adjacent facilities.

The EPCM Contractor shall maintain and keep up to date the unified end-to-end balances of the complex: material, metallurgical, thermal, gas, water, energy, oxygen and steam balances, as well as the balances of effluents, emissions and waste. These balances shall constitute the mandatory basis for verifying the solutions of the EPC/EPs Contractors, determining design boundaries, confirming the sufficiency of infrastructure, and substantiating design performance indicators.

If the local design solutions of the EPC/EPs Contractors, even where they have received a positive opinion for an individual title, fail to ensure the achievement of the end-to-end performance indicators of the complex, contradict other sections of the Project, or create a risk of failing to achieve the production capacity, environmental standards, safety requirements, or operability of the complex, the EPCM Contractor shall notify the Client in writing and submit technically substantiated proposals for eliminating such inconsistencies.

3. Performance of the Functions of General Contractor

Within the framework of this Terms of Reference, the EPCM Contractor performs the functions of General Contractor:

The functions of General Contractor under this Terms of Reference constitute a functional role in the management and coordination of construction, installation and commissioning works. Performance of these functions by the EPCM Contractor does not mean that it assumes the contractual obligations, liability or risks of the EPC/EPs/PC Contractors and other persons directly performing construction, installation and commissioning works under the contracts of Table 1 and Table 2: the EPCM Contractor is not a party to such contracts and does not make payments under them.

– exercises control over the quality of construction, installation and commissioning works (internal general contractor's control) within the framework of performance of the contracts

concluded by AO Almalyk Mining and Metallurgical Combine (AMMC) (Tables 1 and 2) (the organization of the Client's technical control is the Client's area of responsibility);

- exercises control over compliance with the contractual deadlines for construction, installation and commissioning works within the framework of performance of the contracts concluded by AMMC (Tables 1 and 2);

- organizes the interaction of subcontracting organizations and ensures the coordinated performance of construction, installation and commissioning works;

- coordinates and ensures interaction between the parties performing construction and the existing production facility, and organizes combined works;

- organizes the selection of PC Contractors for facilities not covered by the existing contracts of AMMC (Table 2), based on the results of tender/procurement procedures, and exercises control over the quality and timing of the construction, installation and commissioning works performed by them and of the supply of equipment and materials;

- exercises control over the quality and timing of construction, installation and commissioning works and of the supply of equipment and materials by PC Contractors under the sections of the Project required for the organization of construction (POS, POD and others);

- exercises control over, and ensures compliance with, occupational health and safety, industrial safety, fire safety and road traffic safety requirements by all persons performing construction;

- exercises control over, and ensures compliance with, environmental protection and environmental safety requirements by all persons performing construction;

- participates in the work of the acceptance commission for the acceptance of the completed construction facility, and participates in the preparation and signing of the certificate based on the results of the commission's work.

4. Performance of the Functions of Client's Engineer

In accordance with this Terms of Reference, the EPCM Contractor acts as the representative of the Client's interests and performs the following functions of Client's Engineer:

- administration of the unified management system for all Project participants (formation of the system, including the selection of software, is the Client's area of responsibility).

- development and maintenance of the Project's consolidated schedule/network diagram, broken down by all procurement packages, delivery schedules, construction and installation works, commissioning works, and the critical path;

- control of the Project's cost: budget maintenance, monitoring of fund utilization, forecasting of final costs, and preparation of regular reports for the Client;

- management of interfaces between procurement packages: maintenance of the interface matrix, resolution of technical contradictions between contractors, and control of the timely transfer of input data;

- exercises quality control during the manufacture of equipment, materials and critical structures. Control of delivery, of compliance with the storage requirements for equipment, critical structures and materials, and of delivery deadlines. Control of the preparation of shipping and customs documentation, and preparation of shipping and customs documentation where required;

- administration of the unified document management system (including the organization and administration of the archive of initial permitting, organizational-technological, design, as-built and other types of documentation required for the implementation of the Project in hard-copy form, and the copying and issuing of documentation to all construction participants) and of reporting to the Client: weekly and monthly reports on construction progress, budget utilization and schedule compliance.

- the EPCM Contractor does not become a party to or holder of the concluded contracts of Table 1 and Table 2: the Client remains the party to, and the payer under, such contracts; the EPCM Contractor administers the performance of the contracts on behalf of the Client, and reviews and

confirms (certifies) work completion certificates, payment applications and other documents on the basis of which the Client makes payment.

- the EPCM Contractor ensures the coordination of the actions of the contractors under the contracts of Table 1 and Table 2 (synchronization of implementation), coordinating the timing and sequence of their works in order to avoid downtime and conflicts at the construction site.

- the EPCM Contractor ensures that its own reporting and document management system is compatible with the reporting requirements of the financing institutions and the Independent Technical Engineer (ITE), including the format and frequency of reports, in accordance with the section "Function of Assisting the Client in Interaction with Financing Institutions and the Independent Technical Engineer (ITE)".

5. Function of Assisting the Client in Interaction with Financing Institutions and the Independent Technical Engineer (ITE)

In addition to the functions of Client's Engineer, General Designer and General Contractor, the EPCM Contractor performs a fourth function — assisting the Client in interaction with the financing institutions and their Independent Technical Engineer (ITE) within the framework of the project financing arranged by the group of lenders led by KfW IPEX-Bank:

- assists the Client in providing the ITE and the lenders with access to the site, personnel, existing and planned contracts, the schedule/network diagram, the budget, and other information required for the preparation of the Independent Technical Engineer Report and subsequent monitoring;

- in doing so, the collection and preparation of data for the ITE and the lenders shall be ensured by the EPCM Contractor, while direct interaction with, and transfer of such data to, the financing institutions and the ITE shall be carried out by the Client, unless otherwise expressly agreed by the parties;

- prepares monthly/regular reports (capital expenditure versus budget, physical progress, status of procurement and permitting documentation, risks) in the Client's format;

- as instructed by the Client, participates in agreeing with the ITE and the lenders the composition and methodology of the Completion Tests (the commissioning and warranty testing program), as well as in the quarterly site visits of ITE representatives (typically 2-3 specialists) during the construction period;

- takes into account that the decision on the selection and engagement of the EPCM Contractor remains exclusively with the Client; at the same time, any proposals received by the Client from potential EPCM Contractors (including the proposal submitted pursuant to this Terms of Reference) may be forwarded to the ITE for technical evaluation as instructed by the lenders;

- shall promptly inform the Client of circumstances capable of jeopardizing the achievement of Completion (commissioning in accordance with the lenders' criteria).

6. Performance of the Functions of Operational Readiness Planning

In addition to the functions of General Designer, General Contractor, Client's Engineer, and assistance to the Client in interaction with the financing institutions and the ITE, the EPCM Contractor performs a fifth function — the development and agreement with the Client, the financing institutions and the Independent Technical Engineer (ITE) of a plan for the operational readiness of the complex for start-up and operation, comprising:

- the start-up sequence of the complex's facilities: firstly, the concentrate warehouse; then the Metallurgical Shop (MS) together with the Sulfuric Acid Shop (SAS); then the Copper Electrolysis Shop (CES); the Slag Processing Plant (SPP), the scope and allocation of work for which between the Client and the EPCM Contractor is determined in accordance with the Client/EPCM Contractor Responsibility Matrix (Appendix No. 2), is started up after slag accumulation; the start-up of auxiliary facilities and infrastructure (electricity, water, etc.) is carried out prior to the start-up of the main technological facilities;

- a facility readiness checklist for start-up (Ready for Commissioning / Ready for Operation);

- a commissioning works (PNR) plan;
- a detailed schedule for the start-up sequence of the complex's facilities;
- a readiness checklist for operating and maintenance personnel;
- a checklist (plan) for ensuring the readiness of the complex for operation;
- a plan for bringing facilities up to design capacity and a testing program (ramp-up and performance tests).

7. Other Provisions

The Contractor shall disclose to the Client information on all partners and subcontractors engaged by it to provide services under this Terms of Reference, indicating their role and scope of work performed, as well as their relevant experience. The engagement of such partners/subcontractors shall be subject to mandatory prior written approval by AMMC.

7.1 Contractual and Commercial Model, Remuneration and Payment Procedure

7.1.1. General Principles

The contract with the EPCM Contractor shall be concluded on the basis of a combined commercial model, providing for various mechanisms for the formation and payment of remuneration depending on the nature of the works and the possibility of objectively determining their outcome.

The principal principles of the commercial model are as follows:

- preferential application of a fixed price for a defined, completed outcome accepted by the Client;
- linking payment not to the working time actually spent by the EPCM Contractor or to the number of personnel, but to the achievement of established outcomes, milestones and the physical progress of Project implementation;
- establishment of a maximum aggregate price for the EPCM Contractor's services;
- prevention of any increase in the EPCM Contractor's remuneration as a result of inefficient organization of its own works, an increase in personnel numbers, or an extension of the duration of work performance for reasons within its area of responsibility;
- prior written approval by the Client of any additional works and the corresponding cost before their commencement.

Payment on the basis of actual man-hours spent shall be permitted only for individual additional works that cannot reasonably be defined and estimated prior to their commencement and that are directly instructed to the EPCM Contractor by written instruction of the Client.

7.1.2. Design and Engineering

Design and engineering works shall be performed on a fixed-price (lump sum) basis, separately for each agreed engineering or design package.

The list of packages, their boundaries, the composition of deliverables, cost, schedule, milestones and acceptance criteria shall be established in the EPCM Contractor's commercial proposal and refined upon conclusion of the contract.

The fixed price of each package shall include all works necessary to obtain the completed outcome, including:

- collection and analysis of input data;
- performance of calculations and development of design solutions;
- coordination with adjacent packages;
- elimination of intra-project clashes;
- preparation of documentation in the required formats and scope;
- the EPCM Contractor's internal reviews;
- review and resolution of the Client's comments;
- revision of documentation based on the results of expert reviews and approvals;
- preparation of the necessary bills of quantities, specifications, budget estimates and tender documentation;

- transfer of documentation, models, calculations and source files to the Client.

Payment shall be made upon completion and acceptance of the relevant package or an objectively identifiable milestone thereof, in the following proportion of the package's fixed price: 10% — advance payment; 60% — upon completion of the documentation (for packages of significant duration, interim payments at the milestones indicated below may apply); 20% — upon receipt of a positive expert review opinion; 10% — upon start-up (commissioning) of the facility.

Interim payments may be provided for solely against results-based milestones, for example:

- approval of design basis data and design criteria;
- completion of an agreed design stage;
- issuance of documentation for expert review or procurement;
- obtaining positive expert opinions and resolving comments;
- issuance of final documentation for construction;
- delivery of as-built documentation.

7.1.3. Construction Management and Performance of General Contractor Functions

The EPCM Contractor's remuneration for management of procurement, construction and installation works, and commissioning works shall be established as a fixed lump-sum cost for individual construction management packages.

Payment of the said remuneration shall be made in the following proportions: 10% — advance payment; 60% — proportionally to confirmed physical progress and closeout of work volumes by contractors under the management of the EPCM Contractor (based on personnel staffing tables in accordance with the schedule agreed with the Client, and confirmation of work performance against the schedule), subject to achievement of the milestones established by the contract; 20% — upon completion of hot commissioning works (per the guaranteed performance test certificate); 10% — upon signing of the state acceptance commission certificate.

The basis for determining the earned portion of the EPCM Contractor's remuneration shall be:

- work volumes actually performed by contractors and accepted by the Client;
- achievement of milestones of the master schedule (calendar-network schedule);
- confirmation of the completeness of as-built (execution) documentation;
- the absence of unresolved critical comments preventing acceptance of the relevant work volumes;
- performance by the EPCM Contractor of the contractually stipulated functions of quality, schedule, cost and HSE control, and interface management.

The mere presence of EPCM Contractor personnel at the site, the submission of timesheets, or an increase in the size of its team shall not, in itself, constitute grounds for payment.

The methodology for determining physical progress, the list of measurable volumes, the weighting of milestones, and the rules for confirming completed works shall be established in an appendix to the contract. The assessment of physical progress shall preclude any dependency of the EPCM Contractor's remuneration on increases in the value of contracts with contractors.

The total cost of performing the construction management functions shall not be subject to increase as a result of schedule extensions caused by reasons within the EPCM Contractor's area of responsibility, including deficiencies in planning, coordination, design, or interface management, or failure to take timely measures to prevent deviations.

7.1.4. Commissioning, Ramp-Up of the Complex to Design Performance, and Operational Support

The EPCM Contractor's works for the preparation and coordination of commissioning works, integrated testing, integrated start-up, and support of the complex's ramp-up to design performance shall be broken out into separate packages with a fixed cost.

The technical and commercial proposal shall state the total fixed cost, and the contract shall provide a breakdown of the said works into, at a minimum, the following main packages:

- development of the commissioning strategy and master commissioning programme;

- verification of readiness of individual facilities and systems;
- mechanical completion;
- cold and hot commissioning;
- integrated testing of interconnected process stages;
- conducting Completion Tests and Performance Tests;
- ramp-up of the complex to design capacity;
- confirmation of guaranteed specific consumption, process, and environmental performance indicators;
- support during the period of stable (sustained) operation;
- closeout of comments, and handover of the facility and final documentation to the Client.

At the technical and commercial proposal stage, the composition and cost of the said packages shall be determined on an aggregated basis. Prior to the commencement of the relevant stage, the EPCM Contractor shall develop a detailed work plan, resource plan, list of deliverables, schedule, and acceptance criteria, without changing the agreed fixed cost, except where the scope of work is changed in writing by the Client.

Payment shall be made based on the achievement of the established milestones. A material portion of the remuneration for this stage shall be paid only upon confirmation of the results stipulated by the contract, including:

- completion of integrated testing;
- achievement of the established capacity;
- confirmation of product quality;
- compliance with guaranteed specific consumption rates;
- achievement of environmental performance indicators;
- ensuring stable operation of the complex for the agreed period.

Remuneration for the operational support service (O&M support) separately ordered by the Client for the period of reaching design capacity shall be paid in the following proportion: 80% — based on timesheets of EPCM Contractor personnel actually engaged; 20% — upon achievement of the equipment utilization factor (EUF) and the specific production performance indicators agreed under the contract.

7.1.5. Additional Works

Works not included in the fixed packages may be paid at agreed hourly or daily rates only if the following conditions are met simultaneously:

- the works arose as a result of a written change by the Client to a previously agreed scope or the original requirements;
- the Client has issued a written instruction for the performance of such works.

Timesheets not supported by a previously agreed instruction shall not constitute grounds for payment.

Gaps, conflicts, duplications, inconsistencies in scope-of-supply boundaries, interfaces, or “grey areas” identified by the EPCM Contractor after execution of the contract shall not be recognized as additional works if their identification and resolution fall within the audit, integration, general design, interface management, or construction management functions provided for by this Terms of Reference (ToR).

7.1.6. Retentions and Final Payment

The contract shall provide for the retention of a portion of the remuneration under each main package until final confirmation of its result.

Final payment for the relevant package shall be made upon fulfilment of the applicable conditions:

- resolution of the Client's critical comments;
- obtaining the required positive expert opinions;
- delivery of editable native files, models, and calculations;

- confirmation that the documentation conforms to the facility as actually built;
- achievement of the applicable guaranteed performance indicators;
- delivery of the complete set of as-built, operational, and closeout documentation.

Payment of the retained portion is part of the original fixed cost and shall not be deemed an additional bonus to the EPCM Contractor.

7.1.7. Bidder's Commercial Proposal

As part of its technical and commercial proposal, the bidder shall submit:

- the total ceiling price for EPCM services;
- the fixed cost of the engineering and design package;
- the fixed cost of construction management;
- the fixed cost of commissioning, ramp-up to design performance, and operational support;
- the proposed breakdown of payments by results-based milestones;
- the list of deliverables and acceptance criteria for each milestone;
- the amount and procedure for retentions;
- hourly and daily personnel rates, solely for the purpose of evaluating possible additional works;
- a complete list of assumptions and exclusions.
- a list of all partners and subcontractors engaged by the bidder to provide services under this contract;
- the résumés (CVs) of all of the bidder's key personnel, including the key specialists of the partners/subcontractors engaged, indicating their relevant work experience.

Assumptions and exclusions of the bidder that contradict the functions and deliverables expressly stipulated by this Terms of Reference (ToR) shall not relieve the EPCM Contractor of the performance of the relevant obligations, unless such exclusions were expressly accepted by the Client upon execution of the contract.

The composition of packages, deliverables, milestones, and the allocation of the cost of the EPCM Contractor's services across all stages shall be detailed in the Schedule of EPCM Packages, Deliverables, Milestones and Cost Allocation (Appendix No. 3), to be prepared and agreed by the Client and the EPCM Contractor upon execution of the contract.

7.1.8. Limitation of Liability, Liquidated Damages, and Performance Guarantee

- the contract shall establish: an aggregate liability cap for the EPCM Contractor; the procedure and grounds for the application of liquidated damages for delay in the EPCM Contractor's provision of services; the exclusion of indirect losses (loss of profit, production downtime) for both parties, except in cases of gross negligence or wilful misconduct;
- the payment procedure, payment currency(ies), advance payment, bank guarantees (advance payment guarantee, performance guarantee), and the procedure for settling disputed invoices, including the Client's right to an independent audit, shall be defined by the contract and the “Remuneration and Payment Procedure” appendix;
- in addition to services rendered to the standard of reasonable skill and care, the contract shall establish a guarantee of the programme's construction outcome: the EPCM Contractor shall be responsible not only for the diligent performance of its own services, but also for achieving the final outcome — commissioning of the facility within the agreed schedule, compliance with the ceiling (guaranteed maximum) cost, and achievement of the guaranteed operational performance indicators of the complex as a whole, including interfaces and “grey areas” between packages;
- the subject matter of such guarantee (schedule, guaranteed maximum price/GMP, operational performance) and the exclusions therefrom shall be fixed by the contract; the EPCM Contractor shall act as the single point of responsibility for the aggregate result of all packages, and gaps between them may not serve as grounds for release from the guarantee;
- the EPCM Contractor's guarantee shall be backed by corresponding (back-to-back) obligations of the EPC Contractors (liquidated damages, performance guarantees, retention

money) flowed down to the EPCM Contractor, so that the risk it assumes remains manageable; professional indemnity (PI) insurance does not cover such a guarantee — additional instruments are required (completion guarantee, parent company guarantee, bank guarantees, wrap insurance where necessary), the type, amount, and term of which shall be fixed by the contract;

- the performance guarantee shall be accompanied by a risk premium and contingency; target-cost/guaranteed-maximum-price mechanisms with sharing of savings and overruns (gain-share/pain-share), together with mandatory relief provisions (force majeure, changes and delays caused by the Client), are advisable, without which the guarantee would be unenforceable and open to challenge.

7.2 EPCM Contractor's Standard of Liability (standard of care)

- with respect to the functions of the Client's engineer and General Designer (management, coordination, review of third-party documentation), the EPCM Contractor shall be liable to the standard of “reasonable skill and care” expected of a qualified and experienced professional in a similar role, and shall not be liable for the results of the work of third parties (Table 1 and Table 2 contractors), except in cases of its own negligence in management and control;

- the above limitation of liability shall not apply to the facilities and deliverables for which the EPCM Contractor is responsible as the single point of responsibility within the framework of the General Designer, General Contractor, and operational readiness planning functions, including achievement of the guaranteed technical and economic performance indicators of the complex (section “Guaranteed Technical and Economic Performance Indicators and Acceptance”): in this respect, the EPCM Contractor shall be liable for its own design, management, coordination, and documentation review, for interfaces between packages, “grey areas,” and for the timely identification and organization of the mitigation of risks of failure to achieve the complex's integral performance indicators.

- the EPCM Contractor shall be obliged to promptly identify and inform the Client of risks of failure to achieve the guaranteed performance indicators, both for Table 1 facilities and for Table 2 facilities implemented by PC Contractors under the management and technical supervision of the EPCM Contractor.

7.3 Qualification Requirements for the EPCM Contractor

The following minimum qualification requirements, to be confirmed by documentary evidence, shall apply to participants in the competitive selection/tender:

- experience in providing EPCM/EPC/implementation management services for at least 3 comparable projects in the non-ferrous metallurgy sector (production of cathode copper from copper ore concentrates) or the mining and metallurgical industry over the past 10 years, including at least one project for the construction, start-up, and ramp-up to design performance of a copper-smelting/metallurgical plant of comparable capacity, employing double flash smelting/converting technology;

- the existence of operating management systems: quality management (ISO 9001), occupational health and industrial safety management (ISO 45001), and environmental management (ISO 14001);

- confirmed references (client recommendation letters) and qualified personnel of the required profile;

- financial stability (audited financial statements for the past 3 years), the absence of bankruptcy proceedings and of entries in registers of unreliable/unscrupulous suppliers;

- compliance with compliance requirements and applicable sanctions legislation; possession of, or an undertaking to obtain, licenses/permits for design and construction works within the territory of the Republic of Uzbekistan.

7.4 Requirements for the EPCM Contractor's Key Personnel

- the EPCM Contractor shall form and maintain a dedicated project team on site; key personnel shall be agreed with the Client and shall not be replaced without its consent;
- the minimum composition of key personnel: Project Manager, chief project engineer, managers for design, procurement, construction, and commissioning (PNR), lead planner, cost control manager, QA/QC manager, and HSE manager;
- requirements for the qualifications, experience, and language proficiency of key personnel shall be set out in the personnel résumés;
- minimum qualification requirements for key personnel under international standards: Project Manager — relevant higher education, at least 10 years of experience managing EPC/EPCM projects, of which at least 5 years on projects in the metallurgical or mining industry, with international project management certification (PMP, IPMA, or equivalent) being an advantage; chief project engineer and managers for design, procurement, construction, and commissioning — relevant higher education and at least 10 years of relevant experience, of which at least 5 years on projects of comparable scale and complexity; HSE manager — relevant education, international certification (NEBOSH or equivalent), at least 5 years of experience at industrial/metallurgical facilities; QA/QC manager — at least 5 years of experience implementing quality management systems (ISO 9001) at facilities of a comparable profile;

The Contractor shall submit, as part of its proposal, the résumé (CV) of each member of the key personnel, confirming compliance with the specified qualification requirements (education, work experience, projects completed, certifications, language proficiency); the résumés shall be subject to agreement with the Client prior to the mobilization of personnel.

- the key personnel shall include a designated Engineer's Representative and assistants thereto, in the meaning given by the contracts with the EPC Contractors; requirements shall be established for the EPCM Contractor's organizational structure, span of control, mobilization plan, and personnel retention plan for the entire duration of the project, as well as for the compatibility of the EPCM Contractor's organizational structure with the Client's unified project office (roles, interfaces, integration into the programme structure);
- the EPCM Contractor shall have all necessary specialists with international experience in implementing similar projects and with a command of English for interaction with financing institutions and the Independent Technical Expert (ITE)

7.5 Quality Management — QA/QC

- the EPCM Contractor shall develop and implement the Project Quality Management Plan (ISO 9001), including inspection and test plans (ITP), and incoming, in-process, and final acceptance inspection procedures;
- a register of non-conformance reports (NCR) and corrective/preventive actions shall be maintained; quality control shall be organized/performed at manufacturers' premises (FAT) and on site (SAT);
- traceability of equipment and materials shall be ensured by certificates and as-built (execution) documentation;
- verification of the conformity of equipment/product data sheets/certificates/technical documentation with the requirements of the legislation and regulatory legal instruments of the Republic of Uzbekistan.

7.6 Occupational Health, Industrial and Environmental Safety — HSE

- the EPCM Contractor shall develop and implement a unified Project HSE Management Plan in accordance with the legislation of the Republic of Uzbekistan, ISO 45001, and the IFC Performance Standards;
- HSE target indicators (including LTIFR/TRIFR) shall be established, together with a system for contractor admission/qualification, permit-to-work, incident investigation, and regular reporting;

- management of environmental aspects (waste, emissions, water use) shall be ensured, along with engagement with the local population, including a grievance mechanism;
- compliance with the internal rules/requirements of AMMC's regulations/instructions in the field of industrial safety, occupational health, and safety engineering;
- considering the planned attraction of project financing from a group of international lenders (see the section “Function of Interaction with Financing Institutions and the Independent Technical Expert (ITE)”), the project's HSE and environmental management system shall ensure compliance with the IFC Performance Standards (IFC Performance Standards 1–8) and the Equator Principles, including assessment of cumulative impacts, management of SO₂ emissions and water balance, and stakeholder engagement.
- taking into account the integration of the new complex with the existing production facility (brownfield), the following shall additionally be ensured: revision of permitting documentation and completion of industrial safety expert review for the combined facility; accounting for the aggregate emissions and discharges of the combined production (including sulfuric acid, sulfur dioxide, heavy metal dust, and arsenic); a Simultaneous Operations Plan (SIMOPS) with a permit-to-work system for hot work and gas-hazardous work and protection of the existing production's personnel; procedures for handling slag, waste, and tailings, aligned with existing disposal arrangements.

7.7 Scheduling, Milestones and Reporting

- the period for performance of the works shall be calculated from the date of completion of the audit of the EPC/EPs Contractors' documentation under Table 1; within 60 days the EPCM Contractor shall analyze/update the Client's baseline calendar-network schedule (levels 1-4) with the critical path and milestones;
- key milestones: completion of basic/detailed design by package; completion of the working design; placement of orders for long-lead equipment; completion of construction and installation works by sub-facility; Mechanical Completion; commissioning; integrated trial run; commissioning into operation;
- reporting: weekly and monthly progress reports on the status of works, budget utilization, procurement status, risks and HSE; monthly meetings; progress measurement based on physical/actual quantities (earned value methodology).
- the frequency and format of the EPCM Contractor's reporting shall be agreed so as to ensure the timely preparation of monthly management reports and of data for quarterly reports to lenders (capital expenditure versus budget, likelihood of schedule deviations, status of permitting documentation) as part of the function of liaison with financing institutions.

7.8 Change, Claims and Risk Management

- the EPCM Contractor shall monitor the cost of changes, claims and risks, and forecast the final cost (EAC - Estimate at Completion);
- a formalized Change Management procedure shall be implemented: registration, assessment of the impact on schedule/cost, and approval by the Client prior to implementation;
- a single risk register shall be maintained, showing response measures and persons responsible, updated monthly; a procedure shall be established for the handling of claims and dispute resolution.
- design and decision-making shall be organized according to a staged project maturity model (Front-End Loading, FEL / stage-gate), with a formalized design freeze procedure for each package and subsequent change management through a unified Change Management process; the accuracy level of cost estimates at each stage shall correspond to the AACE classification.
- the EPCM Contractor, acting as the Engineer, shall evaluate Variations under the contracts with the EPC/EPs Contractors and prepare payment documents; the payment itself shall in all cases be made by the Client (see also the section “Performance of the Client's Engineer Functions”);

- the change management process shall be conducted at the level of the program as a whole: any change is assessed not only within the boundaries of a single package, but also in terms of its impact on interfaces with other packages and on the EPCM Contractor's own scope of services; the pricing procedure for work closing “grey zones,” whether through changes to existing contracts or through separate packages contracted by the Client, shall be determined by the contract;
- when evaluating and/or pricing changes relating to the scope in which the EPCM Contractor has an interest (including Table 2 facilities designed by the EPCM Contractor), rules excluding conflicts of interest shall apply (independent cost verification, engagement of an independent party — see the section “Neutrality of the Engineer in Approvals and Determinations”);
- claims shall be administered under a unified procedure with fixed time-bar periods and Engineer's determinations; disputes under the contracts with the EPC Contractors shall be resolved through the Dispute Avoidance/Adjudication Board (DAAB), amicable settlement and arbitration; the dispute resolution procedure under the Client-EPCM Contractor contract is determined separately (see the section “Applicable Law, Contract Language and Dispute Resolution”).
- the EPCM Contractor's participation in the above procedures (DAAB, amicable settlement, international arbitration) shall be carried out on the Client's side in accordance with the section “Neutrality of the Engineer in Approvals and Determinations (Protection against Conflict of Interest)”: the EPCM Contractor shall provide the Client with the necessary technical and expert assistance in disputes with the EPC/EPs Contractors.

7.9 Guaranteed Technical and Economic Performance Indicators and Acceptance

- for the Table 1 and Table 2 facilities designed by the EPCM Contractor and constructed by the PC Contractors under its management and technical supervision, and for the complex as a whole, guaranteed performance indicators shall be fixed (capacity, recovery, specific consumption of energy and reagents, environmental parameters), to be confirmed during the guarantee tests (Performance Test);
- criteria shall be defined for Mechanical Completion, commissioning, integrated trial run and acceptance tests; acceptance shall be documented by certificates in accordance with national norms;
- if the guaranteed indicators are not achieved, the measures agreed in the contract shall apply (rework, retentions/penalties).
- the EPCM Contractor shall perform the function of the single integrator of the complex: it shall ensure that the copper-smelting complex as a whole (including Table 1 and Table 2 facilities) reaches its target production indicators, shall coordinate the integrated commissioning of all process stages, and shall support the operation of the complex until stable design indicators are achieved, but for not less than until the first medium overhaul of the smelting unit (approximately 1.5 years from the date of commissioning into operation);
- the program of integrated tests (Completion Tests / Performance Test Run) shall be agreed by the EPCM Contractor with the Client and, in respect of financed facilities, with the lender group (upon recommendation of the Independent Technical Expert, ITE) prior to the commencement of the commissioning works (PNR).
- acceptance of the results of works under the contracts with the EPC/EPs Contractors, the guarantee tests and the certificate issuance procedure shall be structured according to the following logic: quality of materials and works, tests on completion, acceptance by the Client with issuance of a certificate by the Engineer (after the facility reaches its guaranteed indicators), defects after acceptance, and post-completion operational tests to confirm the guaranteed indicators; the guarantees of the EPC/EPs Contractors shall be passed through to the Client on a “back-to-back” basis;
- the guarantee (operational) tests shall cover the complex as a whole, and not only individual packages: output of copper and anodes, metal recovery, specific consumption (energy, oxygen, fluxes) and the SO₂ capture rate; for indicators dependent on several packages simultaneously, the EPCM Contractor shall coordinate the mechanism for allocating responsibility for the integrated

indicator and the procedure for assessing its non-achievement; the use of raw materials and energy resources of the existing production for commissioning and hot start-ups shall be agreed with the Client's operating division.

7.10 Warranty Obligations and Defect Rectification

- the readiness of the facility for commissioning into operation (documentation has been prepared, the facility is ready for testing, and all necessary permits and acceptance certificates have been obtained);
- the achievement of the guaranteed process performance indicators of the complex;
- the stable operation of the complex without accidents for 2 (two) years, provided the Client orders the operation support service (O&M support);

The operation/support periods specified in this Terms of Reference (ToR) do not duplicate or contradict one another, as they relate to different stages and obligations: 16 (sixteen) months (cl. 1.2) - the planned duration of the complex's operation stage during the period of ramp-up to design capacity, as part of the Project's baseline calendar-network schedule; 1.5 (one and a half) years from the date of commissioning into operation (section "Guaranteed Technical and Economic Performance Indicators and Acceptance") - the minimum period during which the EPCM Contractor supports the operation of the complex up to the first medium overhaul of the smelting unit, within the base scope of services; 2 (two) years - the period of guaranteed stable operation of the complex without accidents, provided by the EPCM Contractor solely upon a separate order by the Client for the additional operation support service (O&M support).

7.11 Document Management, Digitalization and BIM

- a unified Electronic Document Management System (EDMS) shall be maintained, with control of versions, statuses and approvals; the project language and file formats shall be agreed with the Client;
- the Contractor is obliged to maintain the Project's documentation and reporting using the Client's information system (IT platform); the granting of access, the training of the Contractor's personnel, and the integration of the Contractor's document-flow processes with the said system shall be carried out in the manner agreed with the Client;
- Building Information Modeling (BIM) technology shall be applied at an agreed level of detail (minimum LOD 400); upon completion, an "as-built" model shall be produced;
- a complete set of as-built and operational documentation shall be handed over to the Client, including in electronic form.
- the full list of documentation to be handed over by the EPCM Contractor to the Client upon completion of the project is given in Appendix 1 to this Terms of Reference (ToR).

7.12 Personnel Training, Handover and Project Close-Out

- the EPCM Contractor shall organize the training of the Client's operating personnel and the development of operating and maintenance instructions. It should be noted that the EPC/EPSC Contractors have their own contractual training obligations, which must be duly taken into account;
- an orderly handover of facilities into operation shall be ensured, together with the compilation of a punch list and the rectification of the items on it;
- the development of process instructions/regulations and of industrial safety/occupational health and safety instructions for the operation of the metallurgical complex facilities shall be ensured;
- upon completion, final documentation and a project close-out report shall be prepared;
- the composition of the final documentation and reporting for each category (as-built, operational, permitting, and contractual/financial) is detailed in Appendix 1, "List of Documentation to be Handed Over by the EPCM Contractor to the Client upon Completion of the Project";

- the data sets, as-built and operational documentation to be handed over shall be prepared in a format compatible with the systems of the existing production; training of the operating organization's personnel shall be completed before the new complex begins operation; the warranty obligations take into account liability for defects arising at the interfaces between packages and at the boundary with the existing production.

7.13 Confidentiality, Intellectual Property, Insurance and Compliance

- All parties shall observe confidentiality; the rights to the documentation developed and the procedure for its transfer to the Client are determined by the contract;
- the EPCM Contractor shall comply with anti-corruption requirements and applicable sanctions legislation;
- each EPC/EPs Contractor (Table 1) and PC Contractor (Table 2) shall arrange its own insurance under its contract (construction/erection risks, third-party liability, etc.); the Client does not require duplicate (double) insurance of the same risks by the EPCM Contractor in respect of facilities covered by the insurance of such contractors; insurance by the EPCM Contractor is required for those parts of the scope of work in which the EPCM Contractor independently carries out engineering and technical control (including Table 2 facilities, as well as the Engineer/General Designer/General Contractor functions for Table 1 facilities); the specific requirements for such insurance are determined by the contract;
- for projects for whose design the EPCM Contractor bears direct responsibility, the EPCM Contractor's insurance shall include, as a minimum: Professional Indemnity Insurance in an amount of not less than 20% of the value of the EPCM contract; Public Liability Insurance in an amount of not less than 10% of the value of the EPCM contract; in respect of construction, installation and commissioning works, the EPCM Contractor shall additionally insure its own personnel performing technical supervision and construction control on site (third-party liability, accident insurance), as well as its own property used in carrying out the construction, installation and commissioning works; Construction/Erection All Risks (CAR/EAR) insurance for Table 2 facilities shall be arranged by the Client as part of the Project insurance (see the section “Client's Obligations and Assistance”), with the PC Contractors included as insured persons; the specific amounts and terms of insurance shall be fixed in the contract and in the “Insurance” appendix;
- the EPCM Contractor's aggregate liability under the contract shall be limited to a cap of 20% of the value of the EPCM contract (to be agreed by the parties upon execution of the contract); the limitation shall not apply to cases of intent, gross negligence, or breach of confidentiality and anti-corruption obligations;
- the procedure for suspending the provision of services and for terminating the contract (including at the initiative of either party upon 30 days' notice, and in cases of material breach of obligations) is determined by the contract;
- with respect to tie-ins to the existing production (brownfield), the following shall be separately regulated: liability for possible damage to the existing production when performing tie-ins and simultaneous operations (SIMOPS), and the corresponding insurance coverage; insurance of existing assets for the period of the works; where duly justified - insurance against the risk of delayed start-up/loss of profit (ALOP/DSU - Advanced Loss of Profits/Delay in Start-Up); the delineation of liability among the EPCM Contractor, the EPC Contractors and the Client's operating division at the boundary with the existing production, so as to exclude “no-man's-land” zones of responsibility;

7.14 Client's Obligations and Assistance

- the Client shall provide the EPCM Contractor with timely access to the site, initial permitting documentation, the results of engineering surveys, the existing Table 1 contracts, and other information necessary for the provision of the services; it shall provide decisions and approvals within time frames that do not cause delays to the provision of the services;

- the Client shall appoint an authorized representative of the Client for day-to-day interaction with the EPCM Contractor, define the scope of the representative's authority, and communicate it to all Project participants;
- the Client shall ensure timely financing of the Project in accordance with the agreed budget and payment schedule, and shall inform the EPCM Contractor of any material changes in the sources and terms of financing that may affect implementation of the Project;
- personnel, equipment, premises and third-party services provided by the Client (if any) shall be specified in an appendix to the contract; the Client shall bear responsibility for their timely provision.
- in accordance with the Client/EPCM Contractor Responsibility Matrix (Appendix No. 2), the Client shall independently (without delegation to the EPCM Contractor): organize tender/procurement procedures under Table 2 contracts in accordance with the Law of the Republic of Uzbekistan “On Public Procurement” (ZRU-684 of 22.04.2021) - the EPCM Contractor shall prepare the technical documentation for the tender but shall not conduct the procurement itself; process the permitting documentation and licenses necessary for implementation of the Project; for projects for whose design the EPCM Contractor bears direct responsibility, arrange the Project insurance (CAR/EAR construction/erection risks, liability of the EPCM Contractor and other contractors, property); resolve land and property matters; recruit, certify and train the staff of the future operating personnel (in addition to the training provided by the EPCM Contractor); provide assistance to the Client in preparing reporting for the financing banks; arrange the transfer of equipment from the technology-licensor/supplier organization; and arrange access for the financing banks to the Project data;

7.15 EPCM Contractor's Liability for the Quality and Timeliness of the Services

- the audit and control of the quality/completeness of the services provided by the EPCM Contractor, as well as the assessment of the EPCM Contractor's key performance indicators, shall be carried out by the Client's relevant business units; the numerical value of the EPCM Contractor's liability cap is specified in the section “Commercial Model, Remuneration and Risk Allocation” of this Terms of Reference (ToR) and may not be set lower than 15% (fifteen percent) of the value of the EPCM contract;

The Client shall be entitled to apply penalty sanctions (liquidated damages) against the EPCM Contractor for failure to comply with the requirements as to the quality and timeliness of the services established by the contract and this Terms of Reference (ToR), including for breach of the design and procurement schedules, for exceeding the agreed cap on the cost of the EPCM Contractor's services, for the submission of unjustified additional works and breach of the established change-approval procedure, for failure to remedy critical quality comments within the agreed period, for breach of the deadlines for review of requests for information (RFI) and change requests, and for incompleteness or untimeliness of reporting to the Client, including reporting for financing institutions.

The specific grounds, amounts and procedure for applying penalty sanctions are determined by the contract in accordance with the section “Commercial Model, Remuneration and Risk Allocation.” No additional incentive remuneration (bonus) is provided for the EPCM Contractor for the high-quality and timely provision of services.

7.16 Applicable Law, Contract Language and Dispute Resolution

- the Client's preferred choice is the applicable law of the Republic of Uzbekistan;
- the applicable law, the language of the contract and the language of correspondence may be determined by the contract; where international lenders are involved, it is recommended that an English-language version of the contract be provided for, to prevail in the event of discrepancies with the translation;
- disputes shall be resolved through a multi-tier procedure: (1) good-faith negotiations between the parties; (2) mediation; (3) if agreement is not reached - final resolution of the dispute

in international arbitration (the rules and seat of arbitration to be determined by the contract); recourse to a state court as a final instance is not envisaged, unless otherwise agreed by the parties;

- for decisions requiring prompt resolution during contract performance (in particular, the determination of the cost and time impact of variations), an interim mechanism may be provided — adjudication or expert determination prior to referral to arbitration.

7.17 Requirements for the Content of a Bidder's Proposal

This Terms of Reference (ToR) serves as the basis for a request for proposals (RFP) from potential EPCM Contractors. A bidder's proposal shall contain, at a minimum, the following:

- the methodology and plan for the provision of services (Plan of Execution), describing the approach to each of the four functions of the EPCM Contractor;
- the organizational structure of the project team and curricula vitae (CVs) of key personnel, indicating experience consistent with the requirements of the section "Requirements for the EPCM Contractor's Key Personnel";
- a list of references (similar EPCM/PMC projects in non-ferrous metallurgy using double-flash technology over the past 10 years) with contact details for verification in accordance with cl. 7.3;
- a preliminary schedule/network diagram for the provision of services, indicating milestones;
- commercial proposal: a commercial proposal prepared in accordance with the contractual and commercial model established by this Terms of Reference (ToR) (see the section "Commercial Model, Remuneration, and Risk Allocation"); an alternative remuneration model may be submitted by the bidder only in addition to the main proposal and shall not replace the proposal prepared on the Client's terms, an estimate of the cost of services broken down by type of activity, hourly/daily rates of key personnel, and assumptions and exclusions from scope;
- a declaration of the absence of a conflict of interest, including in connection with any possible affiliation with equipment suppliers under Table 1 or with other Project contractors;
- confirmation of compliance with the qualification requirements of the section "Qualification Requirements for the EPCM Contractor" and of readiness to accept the insurance and liability terms set out in this Terms of Reference (ToR);
- the bidder's proposals and comments on the composition and boundaries of the scope of work (Tables 1 and 2), if the bidder considers it appropriate to clarify them.

7.18 KfW Requirements for Procurement Procedures

Where the Project is (co-)financed by the German development bank KfW, this Terms of Reference (ToR), the EPCM Contractor selection procedure, and the subsequent contract with the EPCM Contractor shall be implemented with due regard to KfW's procurement requirements, as set out in the KfW Guidelines for the Procurement of Consulting Services, Works, Plant, Goods and Non-Consulting Services in Financial Cooperation with Partner Countries (January 2019 edition, as subsequently updated; hereinafter — the "KfW Guidelines"), as well as the Memorandum of Understanding on Procurement Procedures between KfW and AMMC and the annexes thereto. Where the requirements of this section diverge from applicable legislation of the Republic of Uzbekistan, the stricter of the two requirements shall apply.

Core principles. The EPCM Contractor and all subcontractors engaged by it shall comply with the core KfW procurement principles (Art. 1.2.1 of the KfW Guidelines): competition, integrity, transparency, confidentiality, economic efficiency and sustainability, and proportionality;

Declaration of Undertaking. As part of the bid/proposal and the contract, the bidder (including all members of a consortium/joint venture and all subcontractors) shall submit a duly signed Declaration of Undertaking in the form set out in Annex 1 to the KfW Guidelines, confirming the absence of grounds for exclusion (bankruptcy; convictions for corruption, fraud, or other criminal offenses; the application of financial sanctions or embargoes by the United Nations, the European Union, and/or Germany; listing as a debarred supplier by the World Bank or other multilateral

development banks; failure to meet tax obligations, etc.), the absence of a conflict of interest, and an undertaking not to engage in Sanctionable Practice during the tender procedures and in the performance of the contract;

Eligibility criteria. Bidders, consortium members, and subcontractors must meet the Eligibility Criteria under Art. 1.3 of the KfW Guidelines, including the absence of a conflict of interest (affiliation with the Client, business or family relationships with Client personnel, involvement in the preparation of this Terms of Reference (ToR), etc.);

Sanctions and embargoes. No contract shall be awarded to a bidder, consultant, any joint venture member, or subcontractor listed on the sanctions lists of the United Nations, the European Union, and/or Germany (for purposes of countering the financing of terrorism or threats to international peace and security), nor where such a person procures or supplies goods, or carries out activities, in a sector subject to a United Nations, European Union, and/or German embargo;

Countering Sanctionable Practice and right of audit. The EPCM Contractor and its subcontractors undertake not to engage in corrupt, fraudulent, coercive, collusive, and obstructive practices (Sanctionable Practice) within the meaning of Art. 1.4 of the KfW Guidelines. At the request of the Client and/or KfW, the EPCM Contractor shall provide access to the relevant accounts, documents, and records, and shall facilitate site inspections by representatives of the Client, KfW, or persons authorized by them, and, where financing involves European Union institutions, also by representatives of the relevant European institutions; such documents and records shall be retained for not less than 6 (six) years from the date of completion or termination of the contract;

Environmental and social requirements, occupational health, and industrial safety (ESHS). The EPCM Contractor shall ensure the Project's compliance with the requirements of Art. 1.5 of the KfW Guidelines on environmental and social responsibility (ESHS), including compliance with the Project's Environmental and Social Impact Assessment (ESIA) and Environmental and Social Management Plan (ESMP/ESAP), the IFC Performance Standards (see also the section "Occupational, Industrial and Environmental Safety — HSE" of this Terms of Reference (ToR)), the fundamental ILO conventions, and the implementation of measures to prevent sexual exploitation, abuse, and gender-based violence (SEA/GBV). The contract with the EPCM Contractor and the contracts with the EPC/PC Contractors (Tables 1 and 2) shall incorporate ESHS Particular Conditions providing, in particular, for: the contractor's development and submission of a construction-phase environmental and social management plan (C-ESMP/iC-ESMP); the appointment on site of a dedicated ESHS personnel team (ESHS manager, occupational health and safety specialist, environmental specialist, medical personnel, HSE inspectors); weekly and monthly reporting on ESHS indicators; an incident notification and investigation procedure; a grievance redress mechanism (GRM) for workers and the local population, including confidential channels for SEA/GBV cases; and access for the independent environmental and social consultant (IESC) engaged by the Client to review documents and the site;

Form of contract. Contracts with EPC/EPS Contractors (Table 1) financed (co-financed) by KfW shall be based on the FIDIC Silver Book Conditions of Contract for EPC/Turnkey Projects (2nd Edition, 2017), except where the use of the EPC/turnkey model is not justified, in which case the FIDIC Red Book Conditions of Contract (MDB Harmonised Edition, Version 3, June 2010) or the FIDIC Yellow Book (2nd Edition, 2017), or a combination thereof, shall apply, subject to the ESHS Particular Conditions;

Publication of tender documentation and international access. For procurements exceeding EUR 5,000,000 (or the equivalent) in value, the Client shall ensure that all tender documentation is also published in English and on the German Trade & Invest (GTAI) website (<https://www.gtai.de/en/trade>), and shall ensure open international access to the tender for all bidders meeting the eligibility criteria;

Forms and thresholds of procurement procedures. The applicable form of procurement procedure (International Competitive Bidding — ICB, National Competitive Bidding — NCB, Limited Competitive Bidding — LCB, request for quotations, or direct contracting) shall be

determined in accordance with Section 2 of the KfW Guidelines, based on the estimated value of the contract and the nature of the services/works/goods procured; the contract with the EPCM Contractor, as a contract for consulting/non-consulting services, shall be conducted through International Competitive Bidding (ICB) where it exceeds the relevant threshold established by the KfW Guidelines (EUR 200,000 as of the date of this Terms of Reference (ToR));

Claims and complaints. In the event of claims or complaints relating to the procurement procedures and performance of the contract, the Client shall promptly inform KfW and provide it with all documents relating to the review and resolution of such claims and complaints;

Monitoring and review by KfW. Procurements subject to (co-)financing by KfW shall be conducted with due regard to the applicable type of KfW review (Full Prior Review, Pre-Contract Prior Review, or Post Review) in accordance with Art. 1.6 of the KfW Guidelines; the Client shall ensure the timely submission to KfW of the Procurement Plan and any materials requested in respect of the relevant procedures.

APPENDIX 1

List of Documentation to be Transferred by the EPCM Contractor to the Client upon Project Completion

I. Documents Mandatory under the Legislation of the Republic of Uzbekistan

I.1. For New Facilities (New Construction)

– Metallurgical Shop, Copper Electrolysis Shop, Slag Concentration Plant, Oxygen Station, internal/external power supply, recycled water supply system, treatment facilities, water treatment and steam generation system, complex infrastructure, upper-level Automated Process Control System (APCS):

1. Certificate of Acceptance of a Completed Construction Facility — ShNK 3.01.04-19 "Acceptance for Operation of Completed Construction Facilities. General Provisions."

2. Complete set of as-built documentation for the facility — Urban Planning Code of the Republic of Uzbekistan (Law No. ZRU-676 of 22.02.2021).

3. Declaration of Conformity of Completed Works with the Approved Urban Planning Documentation — issued by the contractor (Urban Planning Code; Law "On Technical Regulation," No. ZRU-819 of 27.02.2023).

4. Opinion of the person exercising design (author's) supervision on the conformity of completed works with the approved urban planning documentation.

5. Opinion of the person exercising technical supervision (the Client's construction control) on the quality of construction and installation works.

6. Operating Permit for the facility — Construction Control Inspectorate, "Transparent Construction" national information system (Administrative Regulation, Cabinet of Ministers Resolution No. 200 of 20.04.2022, as amended by Cabinet of Ministers Resolution No. 666 of 22.10.2025, effective as of 24.01.2026).

7. Industrial Safety Declaration — for new hazardous production facilities (Metallurgical Shop, sulfuric acid production, Copper Electrolysis Shop) where threshold quantities of hazardous substances are exceeded (Law "On Industrial Safety of Hazardous Production Facilities," No. ZRU-57 of 28.09.2006, Art. 14).

8. Registration of new hazardous production facilities (HPFs) in the State Register of Hazardous Production Facilities — State Committee for Industrial Safety (Goskomprombezopasnosti) (Regulation approved by Cabinet of Ministers Resolution No. 291 of 19.05.2020).

9. State Environmental Review opinion and Environmental Impact Assessment (EIA) materials, environmental operating permit — Law "On Environmental Review, Environmental Impact Assessment, and Strategic Environmental Assessment" (No. ZRU-1036 of 24.02.2025).

10. Fire Safety Compliance Opinion — Law "On Fire Safety" (No. ZRU-226 of 30.09.2009), Fire Safety Rules (Cabinet of Ministers Resolution No. 649 of 20.10.2020); the Ministry of Emergency Situations participates in the acceptance commission.

11. Sanitary-Epidemiological Opinion confirming the facility's compliance with sanitary norms.

1.2. Additionally — for Facilities Integrated into Existing Operations (Brownfield)

– The Concentrate Warehouse (shared with the existing plant) and the Gold and Silver Refining Shop (existing, receiving slimes from the new complex) are hazardous production facilities (HPFs) already registered with valid declarations and permits. Documentation for these facilities is to be updated rather than reissued:

1. Certificate of Demarcation of Operational Responsibility and Balance-Sheet Ownership — for each tie-in point of the new complex to the existing operations (concentrate warehouse, slime transfer unit to the refining shop).

2. Updated (revised) Industrial Safety Declaration for the existing hazardous production facilities (HPFs) — due to changes in facility characteristics (increased feedstock/slime throughput), rather than a new declaration (Law No. ZRU-57, Art. 14).

3. Update of the entry in the State Register of Hazardous Production Facilities (HPFs) for the existing facilities (Cabinet of Ministers Resolution No. 291 of 19.05.2020).

4. Certificate of Acceptance of the Reconstructed/Expanded Facility — under ShNK 3.01.04-19, separate from the acceptance certificate for new construction (concentrate warehouse, refining shop).

5. Updated (reissued) Operating Permit for the concentrate warehouse and the refining shop — through "Transparent Construction" (Cabinet of Ministers Resolutions No. 200/No. 666).

6. Documentation on joint works carried out under conditions of existing operations: work permits, a plan for the organization of works in the vicinity of existing facilities, and certificates for temporary disconnections and switching of utility networks.

7. Acceptance/transfer certificates for anodes (Metallurgical Shop/EPS+C zone → new Copper Electrolysis Shop) and slimes (new complex → existing refining shop), covering quantity and quality, with sampling and analysis; for slimes containing gold and silver, the Law "On Precious Metals and Precious Stones" (No. ZRU-710 of 23.08.2021) shall additionally apply.

II. As-Built Documentation

– A set of "as-built" working documentation for all new facilities, reflecting changes made during construction.

- As-built diagrams and drawings of utility networks and services, including tie-in points to the plant's existing networks.
- A 3D/BIM model of the facility in as-built condition, in an agreed format (e.g., IFC).
- A register of changes made to the design/working documentation, with justifications.
- As-built geodetic survey, plans of networks and underground utilities.
- Updated technical passports for the concentrate warehouse and the refining shop, with the new as-built drawings integrated into the enterprise's existing technical archive, rather than a separate, parallel set covering only the new facilities.

III. Equipment and Materials Documentation

- Passports and certificates of conformity/quality for equipment and materials.
- Factory Acceptance Test (FAT) and Site Acceptance Test (SAT) reports.
- Operation and maintenance manuals (O&M manuals) for equipment, from the manufacturers.
- Manufacturers' warranty obligations and certificates for equipment, transferred to the Client.
- List and specifications of recommended spare parts (spare parts list).
- Installation instructions.
- Assembly and outline (dimensional) drawings.
- Electrical diagrams (power supply and connection diagrams).
- Instrumentation and control (I&C) diagrams (connection of instruments and automation equipment).
- Bill of materials (list of materials used).
- Non-destructive testing reports (results of ultrasonic testing (UT), radiographic testing (RT), magnetic particle testing (MPT), capillary (dye penetrant) testing, etc.).
- Certificates for welding materials.

IV. Quality Documentation (QA/QC)

- Final report on the implementation of the Project Quality Management Plan (ISO 9001).
- Closed Inspection and Test Plans (ITPs) for all work packages.
- Register of Non-Conformance Reports (NCRs) and a report on corrective/preventive actions.
- Welder certificates and non-destructive testing reports for welded joints.

V. Commissioning Documentation

- Commissioning works (PNR) program and records for each system.
- Mechanical Completion records.
- Integrated (comprehensive) trial run records.
- Performance Test reports and records confirming the guaranteed technical and economic performance indicators.
- Final punch list, with notations confirming rectification.

VI. Operating Documentation

- Operating and repair instructions for the facility as a whole and for individual systems.
- Maintenance and scheduled preventive maintenance (PPM) regulations.
- Occupational health and industrial safety instructions for operating personnel.
- Client personnel training materials: programs, training completion records, and certificates.

VII. HSE and Environmental Documentation (in addition to the mandatory opinions under Section I)

- Final report on the implementation of the Project HSE Management Plan, including LTIFR/TRIFR indicators.
- Incident investigation materials.

- As-built environmental documentation for the construction period (monitoring of emissions/discharges/waste).

VIII. Contractual and Financial Documentation

- Register of all executed Works/Trade Contracts, with annexes and amendments.
- Final project financial report (budget utilization, estimate at completion (EAC), variances).
- Closed certificates of completed works for all packages.
- Register of claims and disputes, with final resolution status.
- Final project risk register.

IX. Project Closeout Reporting

- Final project closeout report: schedule, budget, quality, HSE indicators, and lessons learned.
- Final as-built schedule compared against the baseline.
- Final reporting for financing banks / the Lenders' Engineer, confirming completion and achievement of performance indicators.

X. Legal Documents and Rights

- Certificates of acceptance/transfer of documentation and the facility.
- Documents on the transfer of rights to the documentation developed — in accordance with the terms of the contract.
- Final warranty documents of the EPCM Contractor for the defects liability period (not less than 24 months from the date of commissioning).

APPENDIX 2

Client and EPCM Contractor Responsibility Matrix

No.	Name of Work	Metallurgical Shop	Sulfuric Acid Shop	Copper Electrolysis Shop	Slag Concentration Plant	Concentrate Warehouse and Charge Preparation Section	Oxygen Station	Internal Power Supply	External Power Supply	Recycled Water Supply System	Treatment facilities, including the acid effluent neutralization section	Water treatment system, steam distribution, and heat recovery system with power generation	Complex infrastructure (sewerage, roads, utility networks, landscaping)	Upper-level Automated Process Control System (APCS)
	Contract type	EPS+C	EPS+C	EPC	EPC	EPC	EPC	EPC	EPC	EPCM-PC Contractor	EPCM-PC Contractor	EPCM-PC Contractor	EPCM-PC Contractor	EPCM-PC Contractor
	Contract status	EPS - concluded; C - under contract negotiation	EPS - concluded; C - under contract negotiation	concluded	concluded	not concluded	concluded	concluded	not concluded	not concluded	not concluded	not concluded	not concluded	not concluded
1	Financing arrangement	AMMC	AMMC	AMMC	AMMC	AMMC	AMMC	AMMC	AMMC	AMMC	AMMC	AMMC	AMMC	AMMC
2	Development of working documentation for main process facilities	Metso	Metso	Dobersek	Nerin	EPC	Fortune	World trade	EPC	EPCM	EPCM	EPCM	EPCM	EPCM
3	Development of full-scope documentation for engineering systems and utilities within the facility	C Contractor	C Contractor	Dobersek	Nerin	EPC	Fortune	World trade	EPC	EPCM	EPCM	EPCM	EPCM	EPCM
4	Development of working documentation for auxiliary facilities within the shop	C Contractor	C Contractor	Dobersek	Nerin	EPC	Fortune	World trade	EPC	EPCM	EPCM	EPCM	EPCM	EPCM
5	Verification of technological operability	EPCM	EPCM	EPCM	EPCM	EPCM	EPCM	EPCM	EPCM	EPCM	EPCM	EPCM	EPCM	EPCM
6	Review of working documentation	EPCM	EPCM	EPCM	EPCM	EPCM	EPCM	EPCM	EPCM	EPCM	EPCM	EPCM	EPCM	EPCM
7	Coordination of documentation with adjacent facilities within the complex	EPCM	EPCM	EPCM	EPCM	EPCM	EPCM	EPCM	EPCM	EPCM	EPCM	EPCM	EPCM	EPCM
8	Support during the expert review of working documentation	EPCM/ Metso- C Contractor	EPCM/ Metso- C Contractor	EPCM/Dob ersek	Nerin/ EPCM	EPCM/EPC	EPCM/Fortu ne	EPCM/Worl d trade	EPCM/ EPC	EPCM/ PC Contractor	EPCM/ PC Contractor	EPCM/ PC Contractor	EPCM/ PC Contractor	EPCM/ PC Contractor

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APPENDIX No. 3
Schedule of EPCM Packages, Deliverables, Milestones, and Cost Allocation

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