



AMERICAN
UNIVERSITY OF BEIRUT
MEDICAL CENTER

المركز الطبي في الجامعة الأميركية في بيروت

RFP. MK26-03

CONSULTANCY SERVICES: Environmental Impact Assessment (EIA) for the Proposed High-Temperature Healthcare Waste Incinerator at the American University of Beirut Medical Center (AUBMC)

Request for Proposal

1 Purpose & RFP Requirements Description

This Request for Proposal (RFP) is issued by the American University of Beirut Medical Center (hereinafter referred to as AUBMC) for the purpose of acquiring the services of an Environmental Consulting Company (hereinafter referred to as the Consultant) to support the selection of a healthcare waste incinerator in accordance with the specifications outlined in Annex 1, and to prepare the corresponding Environmental Impact Assessment (EIA) for submission to the Lebanese Ministry of Environment (MoE).

In 2019, AUBMC conducted an Environmental Impact Assessment for a healthcare waste incinerator and obtained MoE approval for its installation (all documentations are available). The currently proposed project may involve a different installation location and/or incinerator model. The Consultant shall review the previous EIA and approval documentation and build upon the existing work. During the screening and scoping phase, the Consultant shall determine, in consultation with the MoE, whether the project requires an update to the existing EIA or the preparation of a new full EIA.

The selection of the incinerator shall be performed in accordance with AUBMC's technical requirements and in alignment with Best Available Techniques / Best Environmental Practices (BAT/BEP) guidelines under the Stockholm Convention for waste incineration. Emissions from the incineration process shall comply with applicable Lebanese air emission standards, including MoE Decision No. 16/1 (and any subsequent applicable decisions). The EIA shall be prepared in full compliance with MoE requirements and Decree 8633/2012 and its annexes.

The Consultant shall be responsible for preparing and submitting the Screening Form, Scoping Report (if required), and the full EIA documentation to the MoE, and for responding to all MoE comments, technical queries, and requests for clarification. The Consultant shall attend meetings with MoE and revise the documentation as necessary in accordance with MoE feedback until a final decision is issued by the Ministry.

AUBMC will launch a separate bid for the acquisition of the incinerator in accordance with the technical specifications provided. The role of the Consultant shall include:

- Recommending suitable local and international incinerator suppliers that comply with applicable regulatory and BAT/BEP requirements;
- Assisting the Safety and Sustainability Office and AUBMC Facilities Management Department in evaluating and selecting the most appropriate incinerator technology;
- Preparing the complete EIA documentation in compliance with Decree 8633/2012;
- Submitting the EIA to the MoE and responding to all related inquiries, comments, and review requirements until the MoE issues its final determination regarding the proposed project.

2 SCOPE OF SERVICES

2.1 Incinerator Technology Evaluation and Selection Support

The Consultant shall:

- Identify suitable incinerator technologies, brands, and models compliant with AUBMC technical specifications attached in Annex 1.
- Assist the Safety and Sustainability Office, Facilities, and other relevant AUBMC units in:
 - Evaluating vendor technical submissions;
 - Assessing emissions performance and environmental compliance;
 - Verifying compliance with BAT/BEP and applicable air emission limits;
 - Providing comparative technical analysis of shortlisted options;

- Advising on lifecycle environmental performance and operational safety.
- Providing technical input to ensure the selected incinerator can comply with applicable MoE emission standards and international best practices.

2.2 Environmental Impact Assessment (EIA)

The Consultant shall prepare the Environmental Impact Assessment in accordance with:

- Decree 8633/2012 and its annexes;
- Applicable MoE decisions and guidelines;
- Relevant Lebanese environmental legislation;
- Applicable international conventions ratified by Lebanon.

The final scope of the EIA shall be determined following the scoping phase and MoE feedback.

2.2.1 Data Collection & Baseline Assessment

The Consultant shall conduct baseline data collection and environmental assessment sufficient to characterize existing conditions and support impact evaluation in accordance with Decree 8633/2012 and MoE requirements.

The assessment shall include, at minimum:

- Site characteristics, surrounding land use, and proximity to sensitive receptors (patients, residences, schools, etc.);
- Ambient air quality conditions and local meteorology relevant to dispersion;
- Existing noise environment;
- Public health considerations and potential exposure pathways;
- Traffic access and waste transport routes;
- Existing healthcare waste management practices and residue disposal pathways;
- Utilities, infrastructure, exhaust discharge location, and emergency access considerations;
- Drainage and potential contamination pathways related to residue handling, where relevant;
- Occupational health and safety context for workers;
- Applicable environmental legislation, standards, and institutional framework.

Available data from AUBMC, public sources, and prior studies may be used where appropriate. Field verification or supplementary measurements shall be conducted if required to support the assessment.

2.2.2 Scoping Phase

The Consultant shall:

- Conduct site reconnaissance visits;
- Identify key environmental and social issues and sensitive receptors;
- Identify relevant stakeholders;
- Conduct scoping consultations as required under Decree 8633/2012;
- Prepare and submit the Scoping Report to the MoE;
- Incorporate MoE comments and obtain confirmation of the approved scope prior to proceeding with the full EIA.

2.2.3 Public Participation

Public participation shall be carried out in accordance with Decree 8633/2012.

The Consultant shall:

- Prepare public disclosure materials and announcements;
- Support required public notice and posting procedures;
- Conduct stakeholder consultation meetings during the scoping phase and after completion of the draft EIA, as required;
- Provide mechanisms for receiving public comments within the prescribed consultation period;
- Document concerns raised and demonstrate how they were addressed in the EIA;
- Submit public consultation documentation as part of the EIA submission.

2.2.4 Impact Assessment & Analysis of Alternatives

The Consultant shall assess the potential environmental and social impacts of the proposed facility in accordance with Decree 8633/2012, including impacts during construction, operation, maintenance, and abnormal or emergency conditions.

The assessment shall include, at minimum:

- Air emissions and air quality impacts under normal and abnormal operating conditions;
- Public health and occupational exposure risks;
- Noise impacts;
- Impacts related to waste residues and hazardous by-products management;
- Risks associated with accidental releases, equipment failure, and emergency situations;
- Traffic, access, and logistics impacts where relevant;
- Direct, indirect, cumulative, short-term, and long-term impacts.

The Consultant shall evaluate project alternatives, including:

- The no-project alternative;
- Alternative technologies and operational options;
- Alternative siting or configuration options, where applicable.

2.2.5 Environmental Management Plan (EMP)

The Consultant shall develop an Environmental Management Plan (EMP) in accordance with Decree 8633/2012.

The EMP shall include:

- Mitigation measures to avoid, minimize, or control adverse impacts;
- Environmental monitoring requirements and indicators;
- Institutional roles and responsibilities for implementation;
- Emergency response and incident management procedures;
- Reporting and compliance monitoring requirements;
- Implementation schedule and cost estimates.

2.2.6 Air Dispersion Modeling & Health Risk Assessment (Conditional)

Where required by the MoE, identified during the scoping phase, or requested by AUBMC, the Consultant shall conduct atmospheric air dispersion modeling and, where appropriate, a human health risk assessment to evaluate potential impacts on sensitive receptors and demonstrate compliance with applicable air quality and emission standards.



Such analyses shall be carried out using recognized methodologies and appropriate meteorological data.

If not required at the time of proposal submission, these services shall be **priced as a separate optional item** and shall be undertaken only upon written authorization by AUBMC.

2.2.7 EIA Report Preparation and Submission

The Consultant shall prepare the Environmental Impact Assessment report in accordance with Decree 8633/2012 and MoE requirements.

The Consultant shall:

- Prepare Draft and Final EIA reports in the required format and language(s);
- Submit the EIA documentation to the MoE and provide supporting materials as required;
- Respond to technical queries, comments, and requests for clarification from the MoE and other relevant authorities;
- Attend meetings and presentations requested by regulatory authorities;
- Revise and resubmit documentation based on official feedback until the MoE issues its final determination.

2.3 Supporting Studies, Sampling & Laboratory Analysis

Baseline environmental data shall be compiled using available sources and field verification as required to support the EIA in accordance with Decree 8633/2012.

Where existing data are insufficient, or where required by the MoE or identified during the scoping phase, the Consultant shall propose additional surveys, sampling, or laboratory analyses. Such work shall be undertaken only upon AUBMC's written approval.

Potential additional studies may include:

- Ambient air quality measurements;
- Noise measurements;
- Residue and ash characterization;
- Laboratory analysis of environmental samples; and
- Any other environmental testing required by regulatory authorities.

2.4 Deliverables

The Consultant shall provide deliverables in accordance with Decree 8633/2012 and MoE submission requirements, including:

- Technical input supporting incinerator selection;
- Screening documentation (if required by MoE);
- Scoping Report;
- Draft EIA Report;
- Final EIA Report;
- Environmental Management Plan (EMP);
- Public participation and consultation documentation;
- Responses to MoE comments and revision notes;
- Supporting technical annexes, modeling outputs, and data tables.



All deliverables shall be submitted in electronic format. Documents required for submission to the Ministry of Environment shall also be provided in the required number of hard copies, duly signed and stamped, in accordance with MoE submission requirements.

The Final EIA Report and Executive Summary shall be provided in both Arabic and English, as required by the MoE.

2.5 Regulatory Review Process

The Consultant shall support the regulatory review process in accordance with Decree 8633/2012 by:

- Submitting required documentation to the MoE;
- Responding to comments, technical queries, and requests for clarification from the MoE and other relevant authorities;
- Attending review meetings or presentations when requested; and
- Revising submissions in accordance with official feedback until the MoE issues its final determination.

If regulatory authorities request additional studies or analyses beyond the approved scoping scope, such work shall be treated as a variation subject to AUBMC's prior written approval.

3 Proposal Submission Requirements

Bidders shall submit a technical and financial proposal containing the following information:

3.1 Firm Experience and Qualifications

- Brief history and profile of the firm;
- Description of relevant experience;
- Proposed project team including the qualifications, roles, and relevant experience of key experts, demonstrating expertise in environmental impact assessment, air quality and dispersion analysis, public health and risk assessment, hazardous and healthcare waste management, and Lebanese environmental regulatory procedures.
- List of similar projects completed, including at least two (2) client references with contact details.

3.2 Technical Approach and Methodology

- Proposed approach and methodology for performing the required services;
- Description of tasks and work plan;
- Understanding of regulatory requirements and project constraints.

3.3 Work Plan and Schedule

- Proposed timetable indicating key milestones and completion timeline for the services.

3.4 Financial Proposal

An itemized cost proposal covering all professional services, including but not limited to:

- Technical support for evaluation and selection of the incinerator;
- Preparation and submission of the Environmental Impact Assessment (EIA) in accordance with Decree 8633/2012;
- Response to MoE comments and regulatory follow-up until a final determination is issued.

- Optional services (such as air dispersion modeling, health risk assessment, sampling, or additional studies) shall be clearly identified and priced separately.

4 RFP timeline

Event	Date
RFP issuance	06-03-2026
Supplier confirmation of receipt and participation	12-03-2026
Deadline for submission of inquiries	19-03-2026
Responses to inquiries issued	26-03-2026
Proposal submission deadline	06-04-2026

AUBMC reserves the right to modify the above schedule and will notify all bidders of any changes.

5 Proposals' Administration

1. Proposals should carry supplier's reference number and proposal date
2. All proposal documents must be stamped by the official commercial seal and signed by an authorized representative of the supplier, each page must be initialed and the final page must be signed and dated.
3. **Both hard and e-copy in unprotected mode of Proposals in a one sealed envelope.**
4. **Offer shall contain one original, clearly marked "Original", and one copy, clearly marked "Copy".**

6 Submission

Proposals must be submitted by hand on or before: **06.04.2026** Monday to Friday: 8:00 a.m. till 5:00 p.m. to the following address:

American University of Beirut Medical Center
Medical Bids
Medical administration building – 7th Floor – Room 704

No bids are accepted after the above mentioned date, in the event that AUBMC offices are officially closed on the date the proposals are due, the deadline for submission shall be automatically extended until the next business day.

All Proposals shall be submitted in sealed envelopes carrying:

- a. Supplier's stamp
- b. Bid Reference
- c. Company name

7 Questions and Queries

Inquiries related to specific parts of this RFP shall be addressed to: purchasingmc@aubmc.edu.lb, and MK346@aubmc.edu.lb

8 Administrative and Legal Requirements

- 1- AUBMC reserves the right to cancel the RFP without giving the reasons, at any stage prior to the execution of the contract whether before or after the selection of the successful bidder. Unless otherwise stipulated, the RFP and proposal of the selected bidder will become part of any contract initiated by AUBMC. The contract form will be provided by AUBMC upon selection of the successful bidder. AUBMC will not incur any liability to any bidder as a result of using its right hereunder or any other right provided for by law.
- 2- Any materials submitted in response to this RFP shall become the property of AUBMC. Selection or rejection of proposal does not affect such right.

- 3- AUBMC will not be liable for any costs incurred by bidders prior to issuance of or entering into a contract. Costs associated with developing the proposal, preparing for oral presentations, and any other expenses incurred by the bidder in responding to this RFP are entirely the responsibility of the bidder, and shall not be reimbursed in any manner by AUBMC.
- 4- Bidder represents and certifies that the offer has not been knowingly disclosed directly or indirectly to any competitor or AUBMC staff or other bidder before the opening of the proposals by AUBMC. Bidder represents and certifies that the financial terms have been established independently without consultation, communication, or agreement for the purpose of restricting competition or any matter relating to such prices with any competitor or other bidder. Bidder represents or certifies that no attempt has been made to induce any other company or person to submit or not to submit a proposal in response to this RFP for the purpose of restricting competition.
- 5- The laws of Lebanon shall govern the validity, interpretation, construction, performance and implementation of this RFP. Any dispute arising out of this RFP shall be exclusively settled by the courts of Beirut, Lebanon.

9 Apology

In case you do not want to participate in this bid, you are kindly requested to respond by submitting a written apology indicating the reason and the bid reference number or you can send an apology by e-mail.

10 Insufficient Data

It is the responsibility of the person submitting the proposal to ensure the completeness and correctness of information submitted. Failure to do so may result in disqualification and rejection of proposal.

11 Proposal Award Policy

AUBMC reserves the right to reject any or all proposals and to award this tender in whole or in part to the supplier or suppliers that, in its opinion, offers the most advantageous combination of cost, quality, service and other factors which in its sole discretion are deemed important to AUBMC.

12 Validity

Proposals submitted shall be valid for at least 2 months from the date of submission. Proposals will be treated as final and binding offers and may not be amended or withdrawn. Any offer submitted with a price variation clause will be treated as failing to meet bidding conditions, and may be rejected at the discretion of AUBMC.

13 Dissolution

AUBMC reserves the right to cancel the RFP without giving the reasons, at any stage prior to the execution of the contract whether before or after the selection of the successful bidder.





Annex 1

AUBMC High-Temperature Healthcare Waste Incinerator Requirements

(February 2026)

General Scope & Regulatory Compliance

The supplier shall design, deliver, install, commission, and train AUBMC staff on one (1) high-temperature healthcare waste incinerator for:

- Pathological waste
- Pharmaceutical waste
- Cytotoxic/antineoplastic waste

The system shall comply with:

Lebanese Legislation

- **MoE Decision 28/1 (2024)** on Thermal Disintegration Systems (Design, siting, combustion conditions, stack requirements, APC systems, monitoring, shutdown rules, ash management).
- **MoE Decision 16/1 (2022)** on Air Emission Limit Values (National ELVs for industrial emissions; sampling requirements; monitoring obligations)
- **Law 80/2018 – Integrated Solid Waste Management Law** (Waste hierarchy; prevention; environmental safeguards; classification of residues; prohibition of uncontrolled burning; polluter-pays principle)
- **Decree 5606 (2019) – Hazardous Waste Management** (Classification, storage, transport, documentation, disposal routes for bottom ash, fly ash, and APC residues)

Where Lebanese requirements differ from EU Industrial Emission Directive or Stockholm Convention BAT/BEP, the more stringent requirement shall apply.

International Standards

- EU Industrial Emissions Directive (IED) 2010/75/EU, Annex VI
- EU BAT Conclusions for Waste Incineration (2019)
- Stockholm Convention BAT/BEP (2023 update)
- WHO Blue Book (2014) – Healthcare Waste Management
- Basel Convention Technical Guidelines (2019 amendments)

Waste Types

The incinerator must be capable of safely treating:

- Pathological waste
- Pharmaceutical waste
- Cytotoxic/antineoplastic waste and contaminated materials

Capacity

- Minimum nominal capacity: **50 kg/hour**
- Must specify:
 - Design thermal load
 - Waste calorific value range
 - Reduced throughput conditions for high-moisture or high-ash fractions

Technical Specifications

Chamber Configuration

- **Dual-chamber incinerator** (primary + secondary)
- Primary chamber $\geq 850^{\circ}\text{C}$
- Secondary chamber $\geq 1,100\text{--}1,200^{\circ}\text{C}$ (mandatory for cytotoxic/chlorinated wastes)
- ≥ 2 seconds residence time at $\geq 6\%$ oxygen

Structural Requirements

- Modular design for maintenance
- Fully enclosed automatic waste feeding
- Automatic bottom ash discharge
- Fail-safe interlocks preventing feed under unsafe conditions

Fuel Requirements

- Only clean fuels permitted under MoE Decision 28/1.
- AUBMC requirement: operate using propane gas.

Siting & Building Requirements

The proposed incinerator system, including all auxiliary equipment and Air Pollution Control (APC) units, **shall be designed to fit within the designated installation area on the roof of Phase 1 of AUBMC**, as shown on the attached site drawings.

The designated area consists of:

- A **covered section with a height of 4 m**, and
- An **adjacent open terrace area**, which may be partially utilized for equipment placement and/or load distribution, subject to structural constraints.

The Supplier shall provide:

- **Overall dimensions (L × W × H)** of the incinerator, APC system, and major auxiliary equipment,
- **Operating and maximum static weights** of each component,
- **Point loads and distributed loads** imposed on the building structure,
- **Foundation and anchoring requirements**, including load transfer assumptions.

The Supplier shall clearly indicate, on layout drawings:

- Which equipment is proposed for installation in the covered area and which (if any) in the terrace area,
- Required access for operation and maintenance,
- Minimum clearance distances around equipment.

The proposed design shall allow for:

- Safe access for operation and maintenance personnel,
- Installation, removal, and replacement of major components,
- Compliance with applicable fire, structural, and occupational safety requirements.

AUBMC reserves the right to subject the proposed layout and loads to **independent structural review**. Any design modifications required to meet structural limitations shall be the responsibility of the Supplier.

Stack Requirements (MoE 28/1 + MoE 16/1)

(In accordance with Ministry of Environment Decisions No. 28/1 and No. 16/1)

- The Supplier shall provide a **complete stack design package** compliant with the applicable Ministry of Environment (MoE) requirements, including but not limited to Decisions No. 28/1 and No. 16/1.
- The technical offer shall include:
 - Proposed **stack height**, internal diameter, and construction materials,
 - Design basis and applicable standards,
 - Location and configuration of **sampling ports**, access platforms, and ladders,
 - Interface details between the incinerator/APC system and the stack.
- The Supplier shall clearly identify the **point of connection** between the APC system and the stack, including flange details, elevation, and load assumptions.
- The Supplier shall indicate whether:
 - The stack is included in the scope of supply, **or**
 - The stack will be erected by a local contractor, in which case the Supplier shall provide all necessary **design drawings, specifications, and load data** to enable construction.
- The stack design shall be compatible with:
 - Continuous Emission Monitoring System (CEMS) installation,
 - Safe access for inspection, calibration, and maintenance,
 - Structural and wind load requirements applicable to rooftop installations.

Automatic Bottom Ash Discharge

The system shall include an automatic bottom ash removal system discharging into fully enclosed, leak-proof, sealed steel containers. The conveying system shall be dust-tight and designed to prevent operator exposure. Ash cooling shall be indirect to avoid wastewater generation.

Automatic Fly Ash / Air Pollution Control (APC) Residue Discharge

The supplier shall provide an automated fly ash removal system from the APC section (baghouse hopper), discharging directly into sealed, double-lined containers or big-bags without manual handling. The system shall operate under negative pressure to prevent fugitive dust emissions and exposure.

Baghouse Filter Requirements

The baghouse shall be equipped with Poly Tetra Fluoro Ethylene PTFE-coated felt filter bags rated for $\geq 250^{\circ}\text{C}$, with a filtration efficiency $\geq 99.9\%$, and designed to meet emission limits of $\leq 10 \text{ mg/Nm}^3$ total particulate matter. A pulse-jet cleaning system with automated differential pressure control and rupture detection shall be provided.

APC Residue Handling

All APC residues, including fly ash and spent activated carbon, shall be transferred through an enclosed system into labelled hazardous-waste containers per Decree 5606 (2019). Manual handling or open discharge is strictly prohibited.

Combustion Control and Automation

The system must include:

- Automated control of temperatures, oxygen, residence time
- Independent primary and secondary air systems
- Preheated combustion air
- Automatic auxiliary burners
- Automatic waste-feed cut-off under unsafe or non-compliant conditions
- Continuous feed to minimize start-up/shutdown POPs

Air Pollution Control (APC) System

A multi-stage BAT-compliant APC system is required:

- Dry/semi-dry acid gas neutralization
- Baghouse/fabric filters
- Activated carbon injection for dioxins/furans, PCBs, Hg
- Optional NO_x reduction (SNCR/SCR)

Emission Limit Values

The stricter of:

- MoE Decision 16/1 (2022) – National ELVs and
- EU IED Annex VI
 - Dust $\leq 10 \text{ mg/Nm}^3$
 - CO $\leq 50 \text{ mg/Nm}^3$
 - TOC $\leq 10 \text{ mg/Nm}^3$
 - HCl $\leq 10 \text{ mg/Nm}^3$
 - HF $\leq 1 \text{ mg/Nm}^3$



- $\text{SO}_2 \leq 50 \text{ mg/Nm}^3$
- $\text{NO}_x \leq 200 \text{ mg/Nm}^3$
- Dioxins/Furans $\leq 0.1 \text{ ng I-TEQ/Nm}^3$

Monitoring and Continuous Emission Monitoring System (CEMS) Requirements

Continuous Monitoring

Required under both IED and MoE Decision 28/1:

- O_2 , CO, CO_2
- NO_x , SO_2
- HCl, HF
- Dust
- TOC/VOCs
- Combustion temperatures
- Stack gas velocity, flow, pressure

CEMS Safety Requirements

- Automatic shutdown on exceedance
- Automatic shutdown on CEMS failure
- 5-year data archive
- Emission reporting to MoE per Decision 28/1

Energy Recovery

- Heat recovery (steam/hot water) encouraged.
- Must not compromise emission performance.

Safety & Emergency Requirements

- No waste feeding during start-up or shutdown
- Forced shutdown when:
 - APC fails
 - CEMS fails
 - Environmental Limit Values (ELVs) exceeded beyond regulatory duration
- Explosion protection mechanisms
- Fuel safety systems
- Integrated fire detection and suppression
- Emergency stop
- SOPs for all abnormal and emergency conditions

Training & Documentation Requirements

Training must cover:

- Waste acceptance procedures
- System operation

- CEMS interpretation
- Safety & emergency response
- Environmental reporting

Documentation:

As part of the Technical Offer, the Supplier shall submit complete, detailed, and verifiable documentation sufficient to allow technical, environmental, safety, and constructability evaluation of the proposed incineration system.

1. **Complete Piping and Instrumentation Diagrams (P&IDs)** covering the entire system, including but not limited to:
 - Waste feed system and charging mechanisms
 - Primary and secondary combustion chambers
 - Burners and fuel systems
 - Combustion air supply and draft systems
 - Air Pollution Control (APC) systems
 - Continuous Emission Monitoring System (CEMS) sampling points
 - Residue and ash handling systems
 - All valves, instruments, alarms, safety interlocks, and control loops
2. **Process Flow Diagram (PFD)** showing all major process steps, mass and energy flows, and interconnections between subsystems.
3. **Detailed Technical Datasheets** for the incinerator and all major auxiliary systems, including:
 - Primary and secondary combustion chambers
 - APC components (e.g. quench, scrubbers, baghouse, filters, ID fans, reagent systems)
 - Stack and flue gas ducting
 - Ash handling and storage systems

Each datasheet shall clearly indicate:

- Overall dimensions (L × W × H)
 - Operating weight and maximum static weight
 - Shipping weight and number of transport units
 - Foundation loads and anchoring requirements
4. **Summary Table of Dimensions and Weights**, consolidating:
 - Incinerator system
 - APC system
 - Stack
 - Major auxiliary equipment
 5. **General Arrangement (GA) Drawings**, at appropriate scale, showing:
 - Proposed layout of the incinerator, APC system, and auxiliaries

- Equipment footprint and minimum space requirements
 - Maintenance and access clearances
 - Interfaces with utilities (power, fuel, water, compressed air)
 - Relationship between incinerator, APC system, and stack
6. **Proposed Installation Layout at AUB**, including:
- Plan and elevation drawings
 - Identification of indoor/outdoor components
 - Proposed stack location, routing, and height
 - Access requirements for installation, operation, and maintenance
7. **Stack Design Documentation**, including:
- Stack height, diameter, and material specifications
 - Design standards applied
 - Location of sampling ports and access platforms
 - Dispersion considerations and interface with CEMS
8. **Electrical and Control Schematics**, including:
- Power distribution and load requirements
 - PLC architecture and redundancy
 - HMI layout and operator interface
 - Emergency shutdown logic and fail-safe systems
 - Integration with safety interlocks and alarms
9. **Emission Performance Guarantees**, including guaranteed emission limits for:
- Particulate matter
 - NO_x, SO₂, CO
 - Acid gases (HCl, HF)
 - Dioxins/furans
 - Heavy metals
10. **CEMS Documentation**, including:
- CEMS configuration and monitored parameters
 - Calibration certificates
 - Compliance declarations with applicable international standards
11. **Installation Method Statement**, including:
- Site preparation requirements
 - Lifting and installation sequence



- Interfaces with civil, mechanical, and electrical works

12. Commissioning and Acceptance Testing Protocol, including:

- Cold and hot commissioning steps
- Performance testing methodology
- Emission testing procedures
- Acceptance criteria

13. Shipping and Logistics Plan, including:

- Manufacturing lead time
- Shipping method(s) and route(s)
- Packaging and protection during transport
- Estimated delivery time to AUB

14. Implementation Schedule, clearly indicating:

- Manufacturing duration
- Shipping duration
- On-site installation period
- Commissioning and handover timeline

15. List of at least three (3) similar installed high-temperature incinerators, including:

- Facility name
- City and country
- Year of commissioning
- Waste type treated (including cytotoxic/medical waste)
- Nominal capacity
- Contact person (name, email, telephone)

16. Performance Certificates or equivalent documentation for reference installations, where available.

17. Manufacturer Certifications, including but not limited to:

- ISO 9001 (Quality Management)
- ISO 14001 (Environmental Management)
- ISO 45001 or equivalent (Occupational Health & Safety), if available

18. Operation and Maintenance (O&M) Manuals, including:



- Operating procedures
- Preventive maintenance schedules
- Spare parts list and recommended critical spares
- Staffing and training requirements

After-Sales & Maintenance

- The supplier shall provide a comprehensive after-sales services and maintenance plan ensuring continuous and uninterrupted operation of the incinerator beyond the warranty period.
- The supplier shall submit detailed preventive and corrective maintenance schedules including daily, weekly, monthly, and annual tasks.
- The supplier shall submit annual performance and emission reports that assess combustion efficiency, APC performance, compliance with emission limits, and recommend upgrades when necessary.
- The supplier shall provide advance written notice to AUBMC when any critical spare parts are expected to be discontinued, including guidance on sourcing appropriate replacement parts.
- The incinerator and emissions control systems shall fully comply with Lebanese Ministry of Environment air emission standards and any subsequent updates.
- The offer shall include a priced spare parts list valid for at least one (1) year after the warranty expires. This list shall include all manufacturer-recommended spare parts.
- The offer shall also include a complete priced consumables list (filters, reagents, activated carbon, lime, chemicals, etc.) required for routine operation.
- The supplier must guarantee availability of spare parts for at least 10 years.
- Response times for emergency maintenance, remote support, and onsite support must be clearly specified in the proposal.

Mandatory Technical Compliance (Pass/Fail)

The following requirements are **mandatory**. Failure to comply with any of these shall result in disqualification, regardless of score:

- Secondary combustion chamber temperature $\geq 1,100^{\circ}\text{C}$
- Minimum flue gas residence time ≥ 2 seconds
- Guaranteed dioxin/furan emission ≤ 0.1 ng I-TEQ/Nm³
- Provision of a complete APC system and CEMS

ANNEX 1(Attached)

Layout plan of the AUBMC – Phase 1 – 8th floor where the incinerator will be installed

Procurement Direct AUBMC

