REPUBLIC OF TURKIYE

MINISTRY OF ENVIRONMENT, URBANIZATION AND CLIMATE CHANGE (MOEUCC)

GENERAL DIRECTORATE OF CONSTRUCTION AFFAIRS (GDCA)

"Türkiye Second Energy Efficiency in Public Buildings Project"

Loan No: 9688-TR | Project ID: P500777

CONSULTANCY SERVICES FOR

DESIGN AND CONSTRUCTION SUPERVISION SERVICES FOR ENERGY EFFICIENCY RENOVATIONS IN SCHOOL BUILDINGS IN KONYA

Reference No:

EEPB2/WB/MoEUCC/LCS-DES&SUP-01

TERMS OF REFERENCE

"For Detailed Designs and Technical Specifications"

Issued on: *October, 2026*

TERMS OF REFERENCE
(TOR)
FOR LUMP SUM CONTRACT

CONSULTING SERVICES FOR DETAILED DESIGNS AND TECHNICAL SPECIFICATIONS FOR ENERGY EFFICIENCY BUILDING RENOVATIONS

(Ref: EEPB2/WB/MoEUCC/LCS-DES&SUP-01)

I. Introduction

The Ministry of Environment Urbanization and Climate Change (MoEUCC) has received financing from the World Bank to support the Türkiye Second Energy Efficiency in Public Buildings Project (EEPBP2, hereinafter called the "Project") and intends to use part of the proceeds for consulting services.

The Project will support the renovation of central government and central-government affiliated buildings (i.e., public buildings under central line ministries) to improve their energy efficiency (EE) and increase on-site renewable energy (RE) use. The Project would be implemented through two components: (i) EE investments in central government buildings; and (ii) technical assistance (TA) and project implementation support. The General Directorate of Construction Affairs (GDCA) under the MoEUCC has been delegated to assume overall responsibility for the Project. This will include completion of the necessary activities to support Project preparation as well as implementation for the six-year Project period.

The GDCA established a Project Implementation Unit (hereinafter called the "Client") to administer all aspects of the Project, including selection of the buildings, procurement of the consultancy services, works tenders (e.g., energy audits, technical designs, renovation works, construction supervision, savings verifications, technical assistance, or consultancies, etc.), and monitoring. Through the Project, approximately 400 public buildings will be renovated for EE. Investment measures would include upgrades of building envelope (insulation, windows, doors), space and water heating, cooling, ventilation, air conditioning, pumps/fans, lighting, and installation of on-site RE systems that primarily aim to offset the facility's energy consumption, e.g., rooftop or ground-mounted solar photovoltaic (PV) systems). A limited amount of funds could be allocated to ancillary measures (e.g., rewiring, minor structural repairs, painting, seismic safety, fire safety, improving access) provided that the simple payback period of the overall subproject does not exceed the maximum payback period of 20 years. In order to ensure further decarbonization and deeper renovations, the Project aims to maximize replacement of fossil fuel-based boilers by electric heat pumps or RE-based heating to the extent that is technically and financially feasible, and seeks to reach nearly-zero energy building (NZEB) standard for at least 20% of the renovated buildings.

Within the framework of the Project, a consulting firm (hereinafter called the "Consultant") will be employed to prepare the technical designs, specifications and bidding documents of EE renovations for selected public buildings.

II. Scope of Services

The energy audit reports of the buildings listed in Table 1 (13 campuses, 21 Building blocks with a total area of 99.201,42 m^2) have been prepared by another Consultant company. The determined energy efficiency measures to be implemented in each building are given in the Annex 1.

For EE renovations of the public buildings listed below in Table 1 and in Annex 1 (13 campuses, 21 Building blocks with a total area of 99.201,42 m^2), the Consultant will be required to (i) prepare detailed renovation designs (including architectural, mechanical, and electrical designs), technical specifications, and bills of quantities (BoQs), including commissioning and measurement and verification (M&V) plans; (ii) prepare the energy performance class (EPC) before and after the renovations; and (iii) identify environmental, social (E&S) and occupational health and safety (OHS) risks and impacts associated with the planned renovation works, including customization of the Project-level Environmental and Social

Management Plans (ESMPs), Occupational, Health and Safety Plans (OHSPs) to each building, and support management of social aspects (i.e. consultations to be carried for each building on the proposed Project activities) in compliance with the Environmental and Social Framework (ESMF)[1] and Stakeholder Engagement Plan (SEP)[2] of the Project.

Table 1: List of the Campuses to be renovated

No	Building Name	Construction Area of Buildings (m2)	No of Buildings	Campus Area (m2)
1	Kılıçarslan Borsa İstanbul Vocational and Technical Anatolian High School A Block	4.513,00	1	17.106,83
	Kılıçarslan Borsa İstanbul Vocational and Technical Anatolian High School B Block	5.830,68	1	
	Kılıçarslan Borsa İstanbul MTAL High School Additional Building and Atelier	6.763,15	3	
2	Karatay Hamza Yerlikaya Sports High School	7.815,40	1	12.333,40
	Karatay Hamza Yerlikaya Sports High School Dormitory	4.518,00	1	
3	Celaleddin Karatay Tarım Vocational and Technical Anatolian High School	3939,16	1	8.457,16
	Celaleddin Karatay Tarım Vocational and Technical Anatolian High School Dormitory	4.518,00	1	
4	Çatalhüyük Anadolu Lisesi	7282,65	1	11.800,65
	Çatalhüyük Anadolu Lisesi Pansiyon	4.518,00	1	
5	Karatay Fen Lisesi	5152,76	1	10.228,56
	Karatay Fen Lisesi Pansiyon	5.075,80	1	
6	Nizamülmülk Anadolu Lisesi	5.664,58	1	5.664,58
7	Karatay Belediyesi 23 Nisan İmam Hatip Ortaokulu	4.575,52	1	4.575,52
8	Karatay TOKİ Anadolu Lisesi	5.731,00	1	5.731,00
9	Karatay Belediyesi İmam Hatip Ortaokulu	4.575,52	1	4.575,52
10	Akabe İmam Hatip Ortaokulu	6.415,00	1	6.415,00
11	İsa Can Bezirci Ortaokulu	4.575,52	1	4.575,52
12	Ayşe Hüseyin Özkan İlkokulu	3.868,84	1	3.868,84
13	Karatay Hürriyet Ortaokulu	3.868,84	1	3.868,84
	Total	**99.201,42**	**21**	

The Consultant shall adhere to the Project's Stakeholder Engagement Plan, Labor Management Procedures[3] and Environmental and Social Management Framework (where applicable) in the performance of all tasks described in this ToR.

III. Description of the Consultant's Tasks

Task 1: **Survey plans and drawings:** Survey plans and drawings of buildings will be provided to the Consultant. PIU will organise a meeting with the Consultant who prepared the energy audit reports and the draft survey plans. The Consultant shall visit the buildings that will be renovated to review and produce if needed the up-to-date status of zones/rooms in the building interrelating with the proposed energy efficiency measures (EEMs). These survey plans and drawings shall include architectural dimensioning including sections of zones/rooms and exact positioning, specifications and scaling of any

[1] https://www.kabev.org/wp-content/uploads/2026/07/Rev-AF_P500777_EEPB2-ESMFFinal.pdf

[2] https://www.kabev.org/wp-content/uploads/2025/10/Rev2_P500777-AF_SEP_Final.pdf

[3] https://www.kabev.org/wp-content/uploads/2024/01/P500777_TR-Energy-Efficiency-in-Public-Buildings-2_Labor-Management-Procedure.pdf

equipment and mechanical/electrical infrastructure. The Consultant shall also illustrate its comments and/or possible enhancements of these interventions and their interactions with other systems to the drawings. A scaled site-layout shall also be submitted with these plans and drawings.

Deliverables

1.1 Survey Plans and Drawings

Task 2: Detailed renovation designs, technical specifications, and bill of quantities, including commissioning and measurement and verification plans

2.1) Detailed Renovation Designs, Technical Specifications, and Bill of Quantities

The technical designs and all tender documents for the construction tender shall be prepared based on the given energy audit reports and a cost-benefit analysis, using clear energy savings indicators, which then should be monitored and verified upon project completion.

The Consultant shall prepare the detailed renovation designs and technical specifications for works to be tendered and implemented in the selected public buildings. Detailed renovation designs should include architectural (including comparative drawings clearly showing the revisions/differences/interventions before and after renovation) and engineering services (all mechanical and electrical services, including but not limited to: heating, cooling, ventilation, hot and cold water supply systems, electrical supply system, lighting system, gas distribution, power and service sockets, telephone/television/radio, lifts, building management/automation system (if any) etc.) related to renovation and collateral works.

The implementation of the provisions of the regulation regarding the protection against the proliferation of buildings shall be marked on the relevant technical drawings.

Detailed renovation designs and general and specific technical specifications for all the renovation works shall be prepared in accordance with MoEUCC's "Construction Works, Civil, Mechanical Works and Electrical Works General Specifications". However, if no proposed interventions are being considered for a particular area (e.g., no lighting or other electrical measures), detailed (e.g., electrical) drawings may not be required.

In case a solar PV installation measure exists in the finally approved energy efficiency measures (EEMs) list, the Consultant shall organize and coordinate the entire Call Letter process (GES Çağrı Mektubu) with the beneficiary and/or building owner institution, electricity distribution grid operator company and/or Turkish Electricity Distribution Grid Operator (TEDAŞ). The Consultant shall receive the Call Letter at the end of the formal application process. All formal application tax, duties and costs shall be borne by the Client.

The Consultant shall carry out the mechanical/electrical design process by keeping in mind that these systems will need an approval from the relevant central and regional energy authorities (Ministry of Energy and Natural Resources (MENR), Turkish Electricity Distribution Grid Operator (TEDAŞ) or Turkish Electro-mechanic Industries Co. (TEMSAN) and regional environment authorities (Environmental Impact Assessment Exemption, etc.). Hence, all provisional design and calculations shall be made based on not only the building's electrical/thermal loads but also the capacity and availability of the connected transformer of local electrical grid, the regional grid operator's feedbacks/opinions.

Design drawings should be presented in such a way that:

- The technical designs and drawings can easily be understood,
- The energy efficiency renovations should be visually transposed to the beneficiary and the construction contractor,
- They clearly show the renovation interventions before and after renovation so the beneficiary and construction contractor can easily understand what sections/areas/systems/components are to be renovated,
- Clear and understandable "General Notes" and "Project Specific/Key Notes" should be

embedded in the design plans/drawings so that the beneficiary and construction contractor can easily understand what the Contractor will do at which areas/sections/systems/components,

- Scope of demolition work and new work shall be clearly identified on the drawings,
- They are legible,
- All information from previous revisions and updates are included.
- No details will be provided in the areas not subject to any intervention.

The design drawings should include the following aspects:

- Site layout for each building (within the campus, considering the scope of buildings and any other works (if applicable) required outside the buildings.
- Floor plans (focusing on the areas related with the renovation works) and system cross-sections and details as necessary from the points of renovation,
- Elevations showing scope of demolition and new works. Demolition drawings, plans, section and details as necessary
- Occupational Health and Safety (OHS) related tentative placements on drawings including but not limited to:
  - vehicle and pedestrian roads and possible measures to be taken,
  - social facilities of workers (i.e., dining hall, dormitory, health unit, if any, resting places, showers and toilets, etc., if they are inside the building, their floors and locations will also be shown.),
  - warehouses and waste areas,
  - emergency assembly areas escape routes,
  - areas where lifting vehicles (tower cranes, etc.) will be used and scaffolding will be erected, etc., horizontal and vertical lifelines are necessary,
  - Holes and openings threatening safety of workers, structural voids that can cause falls from heights.

The technical drawings and details will be in 1/50 scale, and details including system details (for interventions 1/20, 1/5 scales, 1/1 scale if needed), which have to be compliant with the applicable regulations in force:

(i) **Architectural drawings:** Site layout, floor plans/construction plans with all partition types and details provided for the areas subject to intervention, lighting plan for ceilings, system cross-sections from the points of renovation.

Architectural survey projects will be used as a basis, and demolition, application, and detail drawings will be prepared as architectural equivalents of the measures to be taken in accordance with the energy audit reports. In the demolition drawings, all constructions to be removed from the existing building (cladding, window sills, downpipes, etc.) will be shown with hatching, and the demolition items describing the demolition will be indicated on the edge of the drawing. In the application projects, different layers will be created for all constructions in the drawing program, and drawings will be prepared on the base according to the architectural application drawing technique. Expansions and construction items will be written at every necessary point in the plan, section, and elevation drawings. Architectural detail drawings developed specifically for the building will be prepared at every point deemed necessary.

For areas with PV panel applications above the parking lot, a plan drawing indicating the existing site slopes and elevations will be prepared, and a PV panel drawing will be prepared. The drawing, prepared by taking the structural system from the static project and the placement of the photovoltaic panels from the electrical project, will clearly define the excavation/fill and top finishes, and the connection point of the cable channels to the transformer will be shown in the

project. The drawing sheet will include plans, sections, and elevations.

(ii) **Mechanical drawings** (in conformity with the heating zone where the building is located): The mechanical installation drawings should include the components recommended to be replaced by the energy audit. Heating, cooling, ventilation and sanitary plumbing projects and system drawings specific to each project with the mechanical calculation reports should be prepared according to the obtained energy audit reports in conformity with electrical and architectural designs. Heat insulation calculations and reports should be prepared according to TS 825 Standard.

The mechanical calculation report should include descriptions of existing and proposed systems. Capacity calculations and selection criteria for the devices and equipment to be modified should be prepared. The operational scenario should be described in detail to serve as the basis for the automation project.

(iii) **Electrical drawings:** The electrical installation drawings should include the components recommended to be replaced by the energy audit. MV distribution, transformer, generator, UPS, lighting, socket (mains and UPS), mechanical and force distribution, cable transportation, earthing and lightning protection, elevator, table loading tables, strong current column diagram and calculations (lighting, heating, short circuit, voltage drop). EE comparisons (comparison of current and new status) should be shown in the corresponding plans. Necessary infrastructure plans should be prepared for the remote monitoring of energy consumption.

(iv) **Structural drawings:** Structural plans, sections and details along with structural calculations based on relevant in force codes/regulations for the works to be done independent of the existing structure (i.e., open parking lot canopies, canopy rooftop PV systems, etc.) Superposition plan of new components and existing structures (i.e., frame systems supporting rooftop PV system, solar hot water collectors, etc.) Structural design and calculation reports of newly added systems/components in compliance with in-force codes/regulations (i.e., structural calculations and reports of the frames supporting the PV panels, solar hot-water collectors, etc.). Structural calculation reports and checks which will verify that the existing structure will be able to safely support the newly added systems (i.e., verification report of the roof being able to safely bear rooftop PV systems, solar hot water collectors, etc.). If applicable, seismic calculations and design of the limitations of the suspension pipe network must be performed.

All implementation projects will be prepared in accordance with the Administration's objectives, ensuring that there are no interdisciplinary conflicts in the projects. The compatibility of architectural and engineering projects will be ensured, and the control of the projects through superposition and cross-referencing is the responsibility of the Consultant. The Consultant will provide information and technical support required during the preparation of revision projects related to changes that may occur during the implementation of the projects or that arise later, free of charge. The Consultant's obligation will continue until the completion of the construction works related to the project. The Consultant will provide opinions on project changes and assembly details as needed within the specified period and will submit the necessary drawings to the Administration. If the Consultant does not provide opinions, there is no right to appeal the decisions taken by the Administration.

The compliance of renovation designs with standards and regulations in force in Türkiye shall be certified by the Consultant. The specifications shall be prepared in accordance with the Building Code, current By-law Concerning Construction in Planned Areas, By-Law on Building Energy Performance and related Turkish legislation and standards.

The Consultant should also propose measures to be taken in order to meet the national norms, standards and legislations on additional aspects (e.g., indoor air quality, humidity, comfort levels, fire protection measures).

Regarding hospitals, if the Ministry of Health or hospital administration's request for pandemic cases measures for any of its buildings in list, mechanical drawings should include measures to be taken such us modifications in filters or mechanical installations for pandemic cases patient rooms.

The draft renovation design must be submitted to the beneficiary for formal consent, and to any required

third parties for review and certification. Any comments provided by the beneficiary, third party auditor or the Client must be taken into account before the designs are finalized.

Within the scope of the preparation of technical specifications, the Consultant shall;

- Submit final Bill of Quantities (BoQs), all related design calculations, and relevant final cost comparison analysis. Prepare BoQs in compliance with unit price guidelines of MoEUCC or other relevant state authorities or market prices. BoQs prepared by the Consultant should be in compliance with pricing preambles, technical specifications and other relevant parts of the documents to be prepared for the tender process. The BoQs and related cost estimation tables shall be prepared by using an accurate and easy-to-use cost estimating software that is approved by the Client.
- As specified above, for the Preliminary Design and Detailed Renovation Design Stage specified above, the Technical Specifications, Bills of Quantities, final designs, and system/detailed drawings shall be prepared and submitted to the Client for approval, following the decision of the Client on which parts of these works shall be integrated to the relevant parts of the tender documents.
- The Consultants shall prepare all the deliverables in close cooperation with the Client and with due care and diligence. Any of the items in these documents shall not contradict with each other and all material specifications shall be in accordance with the specifications of the first quality materials satisfying the Turkish Standards, or otherwise international standards.

The Consultant, before finalizing and submitting the technical renovation designs and tender documents to the Client, shall present the detailed renovation designs of the buildings to the beneficiary (and their user/occupant committees) considering their needs and the function of the building. The Consultants shall submit a letter countersigned by the principal and/or directorates of the relevant public buildings and the Consultant's representative indicating that the principal and/or directorate is informed about and agreed on the Final Architectural, Structural, Mechanical and Electrical works subject to tendering following the decision of the Client on the works approved to be integrated to the relevant parts of the tender documents.

Revisions shall be made by the Consultant, in drawings or other documents in case of any discrepancy or mistake recognized during the Construction Phase.

Further definition and details of intended detailed renovation designs is provided on the Project's website in the form of "***Detailed Renovation Designs Checklists"***. Please refer to this checklist document for a detailed overview of how detailed renovation design documentations are going to be checked by MoEUCC and eventually approved as a result of this process.

Web-link: https://www.kabev.org/kutuphane/kontrol-listeleri/

2.2) Commissioning Plans

Commissioning is a quality-based process that focuses on verifying and documenting that the equipment and systems are designed, installed, tested, and operated properly to meet the described requirements including the energy performance. Commissioning helps to deliver a safe and healthy project, optimizes energy use, reduces operating costs, provides adequate maintenance personnel orientation and training, and provides documentation. Commissioning is often perceived as focusing solely on testing at the end of the construction phase, but commissioning is a collaborative process to plan, deliver and operate all processes so that they work as intended by the designer.

Commissioning starts with project planning and includes design, construction, commissioning, acceptance and training, and warranty phase services. The commissioning process has four overarching principles that begin at project inception and continue throughout use and operation:

- Creating measurable project performance descriptors
- Planning and executing the commissioning process
- Verifying and documenting compliance with requirements including energy performance,
- Effectively transfer all acquired knowledge to the building administration and O&M personnel.

Commissioning process requires good planning. In this context, the determination of the systems and equipment to be handled in the process and how the test and training activities to be developed will be carried out should be discussed at the planning stage. Planning is the coordination and integration of systems and equipment in the commissioning process with other construction phase activities. The detailed integration of the commissioning works with the construction program is critical to maintaining the milestones in the project program.

The Consultant shall prepare commissioning plans for each building for the healthy execution of the whole process and will create a suitable matrix for forming a commissioning team to oversee, implement, and execute commissioning process activities. The leadership responsibility of the commissioning team shall be determined at the beginning of the project and a task assignment shall be made. The person generally responsible for the commissioning process is "Commissioning Officer" or "Commissioning Agent" or "Commissioning Agent/Authority".

The responsibilities of the commissioning team matrix include the following:

a) Identifying experts responsible for performing commissioning activities for specific systems and assemblies
b) Organizing a pre-construction commissioning process meeting
c) Planning the commissioning process activities and integrating them into the project construction program
d) Handling program changes
e) Documenting and developing test procedures and data sheets
f) Conducting and documenting commissioning team meetings
g) Monitoring compliance with project requirements by making periodic site visits
h) Verifying completion of items specified in construction checklists
i) Observing the tests
j) Verifying the tests and their results
k) Verifying test data reports
l) Verifying the training of operation and maintenance (O&M) personnel and users according to project requirements
m) Monitoring, diagnosing and documenting problems and deviations related to project requirements and documenting their solutions
n) Writing and examining the progress reports of the commissioning process
o) Examining the construction progress reports
p) Verifying that new equipment and systems are incorporated into the maintenance management program
q) Notifying all commissioning team members of decisions that cause changes in project needs.

The buildings consist of static systems building envelope, building structure, etc. and dynamic systems (HVAC, lighting etc.). During the commissioning process, all systems and equipment that could have a significant impact on the building's ability to meet the energy performance targets shall be included in the study. The consultant will prepare comprehensive measurable energy performance descriptors according to Building envelope renovation, HVAC/Electrical equipment list. This detailed list and outputs should be consist all required descriptions based on KABEV Commissioning Guideline that will shared by PIU.

The commissioning process is not limited to functional tests and training, but also confirms the energy performance of the EEMs. The objective is to capture the system behavior regarding energy performance and compliance with the energy audit objectives in the form of an operational verification. Hence, operational verification of EEMs shall be clearly stated in the commissioning plan to achieve a preliminary energy performance assessment of the EEMs.

Further definition and details of the commissioning process are provided on the Project's website in the form of the "***Commissioning Handbook"***. Please refer to this handbook for a detailed process overview and intended outcome of the process.

Web-link: https://www.kabev.org/kutuphane/kilavuzlar/

2.3) Measurement and Verification Plans

The M&V plan explains how to verify energy savings for each EEM and how to adjust the Reference Energy Consumption (or baseline), including methods, calculation details and parameters for baseline adjustment (e.g. HDD, CDD, occupancy etc.)

The Consultant shall prepare the M&V plans, which will include the method for verification of savings, important measures to be taken, the timing of these activities, the duties and responsibilities of the parties, and how to ensure quality assurance for this process. Further definitions and details of the M&V process is provided on the Project's website in the form of the "***M&V Guidelines"***. Please refer to this guideline document for a detailed process overview and intended outcome of the process.

Web-link: https://www.kabev.org/kutuphane/kilavuzlar/

2.4) Visual Presentation Materials

The Consultant shall prepare graphic representation (rendering) of the buildings, zones, rooms and design steps, which are interrelated with the EEMs. The graphic representations shall include creation of three-dimensional images and animations showing the attributes of proposed renovation designs. These efforts shall be supported by high resolution and quality photos of existing status for comparison and it shall include photos of:

- At least four different façades
- Roof (from above showing All the roofing, preferably with the help of a drone camera)
- Fenestration systems
- Heating system (Boilers, pumps, piping, valves, insulation, etc.)
- Cooling system (chillers, Cooling towers, pumps, valves, piping, insulation, outdoor a/c units, rooftop units, etc.)
- DHW (accumulation tanks, heat exchangers, pumps, insulation, piping, etc.)
- Solar water heater system
- Ventilation system (air handling units, piping, ducts, etc.)
- Lighting system (fixtures, bulbs, panels, etc.)
- Room thermostats, radiators, fan-coil units, etc.
- Automation system
- Renewable Energy systems, if exists

Up to 500-1000 presentation visuals including posters, brochures, catalogues and leaflets will be prepared, printed and distributed by the Consultant for each building complex to give information and to raise awareness about the EEMs implemented in the building, and the benefits of these applications.

The graphic designs of the presentation visuals will be subject to the Client approval before printing. All visual materials shall include the logo and the names of the Client and the Project, the template of which will be provided by the Client. The posters will be presented especially in the areas/sections where innovative and green applications are implemented.

2.5) Final Synthesis Report

The Consultant shall submit a synthesis report after completion of all final designs and relevant tender documents. The report shall at least cover;

- An executive summary indicating overall information regarding the scope of the services, amendments, final decisions, EE measurements and methodologies indicating comparison of energy consumption before and after renovation works.
- An overall Report that brings together in one place all the information used to produce the Consultant's recommendations for renovation works of the buildings assessed in the project. The report shall only cover the methodologies, summary of processes, brief of the recommendations and summary of findings.
- Building executive summary reports for each public building under the scope of the Consultant.

- Consultant should revise and finalize investment Grade Energy Audit Reports and M&V and Commissioning plans if needed.

The Consultant shall provide a full risk assessment, performance indicators and an implementation strategy for the Construction process, to be used by the Client.

The consultant will revise and finalize the Investment-Grade Energy Audit Reports and the M&V and Commissioning plans in case of any changes to the list of measures during the construction period, and submit them to the Ministry.

The consultant will prepare a report outlining:

- The Final Synthesis Report,
- The Investment-grade Energy Audit Reports, and
- The M&V and Commissioning plans,
- Points to be considered during the implementation phase of the audit report and the implementation projects during the construction supervision period,
- Points to be considered regarding the preparation of monthly construction progress activity reports and monthly Environmental, Social and Occupational Health and Safety (ESH) activity reports during the implementation,

and will present this report to the Ministry's Project Implementation Unit and Provincial Directorate personnel through a meeting they will organize.

Deliverables

2.1 Detailed Renovation Designs, Technical Specifications & Bill of Quantities,
2.2 Commissioning Plans
2.3 M&V Plans
2.4 Visual Presentation Materials
2.5 Final Synthesis Report

Task 3: Identify environmental and social risks and support management of environmental and social aspects

3a) Identify environmental (including Occupational Health and Safety) and social risks and impacts associated with the building renovations: Identify any potential environmental and social (E&S) and OHS risks and impacts (as described in the project's Environmental and Social Management Framework [ESMF]) associated with the building renovation, including identifying presence and quantity of any hazardous materials (specifically asbestos and mercury containing light-bulbs) that would have to be removed as part of the renovation works.

3b) Adjust the Project-level Environmental and Social Management Plans: The Project has an Environmental and Social Management Framework (ESMF) (Web link: https://www.kabev.org/kabev2-cevresel-sosyal/) that includes a Project-level Environmental and Social Management Plan (ESMP) (Annex-3 of ESMF) with OHS aspects.

In order to identify the E&S risk rating of the proposed subprojects, the Consultant will prepare the E&S Screening Forms for each subproject according to the E&S Screening Form provided in Annex-1 of the ESMF. The E&S Screening Forms will be reviewed by MoEUCC.After approval of the E&S Screening Forms and the proposed E&S risk levels by MoEUCC, the Project-level ESMP presented in Annex-3 of the ESMF will be customized in accordance with the identified E&S and OHS risks.

The customized ESMPs (including OHS measures) shall define the environmental and social mitigation, monitoring and management measures applicable to each sub-project, including, among others, waste and hazardous materials management requirements, pollution prevention and control measures, environmental monitoring requirements, implementation arrangements, and associated cost estimates for the proposed measures as well as occupational health and safety risks, worker protection measures,

OHS related mitigation measures, monitoring arrangements and other occupational health and safety provisions relevant to the scope of works. The customized ESMPs shall, as a minimum, include technical specifications and bills of quantities for the removal, packaging, transportation, interim storage and disposal of hazardous materials. This shall include the identification of appropriate interim storage and licensed disposal facilities for asbestos-containing materials, mercury-containing lightbulbs and end-of-life solar panels, in accordance with the Project ESMF and the applicable national legislation of Türkiye.

The customized ESMPs (including OHS measures) will be submitted to the MoEUCC for review and approval. Following MoEUCC's review, the Consultant shall support the disclosure of the draft ESMPs on MoEUCC's website for at least 10 days and assist MoEUCC in organizing stakeholder consultations in accordance with the requirements of the ESMF and SEP. Physical copies of the ESMPs shall also be made available at the relevant construction site offices and other easily accessible locations within the local area throughout the consultation and implementation period.

The disclosed ESMPs will provide information on the potential environmental and social risks and impacts of the sub-projects, the proposed mitigation measures, and the Project Grievance Mechanism, including how stakeholders can submit concerns, suggestions, and grievances.

Following the consultations, the Consultant shall revise the ESMPs, as appropriate, to reflect stakeholder feedback and consultation outcomes. The finalized ESMPs will then be submitted to MoEUCC for final approval and subsequently integrated into the construction contractor bidding documents.

The Consultant shall also ensure that each customized ESMP includes, as annexes, templates/outlines for the site-specific sub-management plans (e.g., Waste Management Plan, Pollution Prevention Plan, and Community Safety and Traffic Management Plan), prepared in accordance with the Project ESMF.**3d) Support Management of Social Issues**

3d.1. Consultation Documentation and Reporting

The Consultant shall document all stakeholder engagement activities carried out under Section 3c and submit meeting records, including meeting minutes, participant lists, photographs, and summary of stakeholder feedback, to the Client within three (3) business days following each consultation activity..

3d.2. Grievance Mechanism (GM) Procedure

- The Consultant implement the responsibilities assigned to the Supervision Consultant under the EEPB2 Project Grievance Mechanism, in accordance with the SEP.
- The Consultant shall design, submit for the Client's approval and manufacture the grievance boxes and place them where the Client deems appropriate.
- The grievance boxes shall be inspected by the Consultant every three (3) business days during the feasibility phase and daily during the construction phase.
- The Consultant shall register all grievances, complaints, suggestions, and feedback received through grievance boxes or verbal channels in the Grievance Register, facilitate their resolution in accordance with the Grievance Mechanism, and provide feedback to the complainant within 15 days.
- The Consultant will submit a monthly the "Grievance Mechanism Report," including the Grievance Log and the status of grievance resolution, to the Client during the first week of each month.

3d.3. Trainings

- All project personnel assigned within the scope of the Project shall participate in all relevant environmental and social training programs provided by the Client. The scope and content

of these trainings shall be in accordance with the Capacity Support commitments set out in the ESCP[4] and the training topics outlined in the EEPB2 ESMF[5].

- The Consultant's Environmental and Social Specialists shall participate in the "Grievance Mechanism Procedures Training" provided by the Client.

3d.3. Visual Materials

- The Consultant will design posters and brochures for the promotion of the Project and the Grievance Mechanism and submit them for approval by the Client.
- The Consultant will also be responsible for the printing and placement of approved designs in relevant locations.

Deliverables

3.1 Final Customized Environmental and Social Management Plans (ESMPs) with OHS aspects (both in Turkish and English), including as annexes the templates/outlines for site-specific sub-management plans such as the Waste Management Plan, Pollution Prevention Plan, and Community Safety and Traffic Management Plan.

3.2 Consultation Reports (Turkish and English), including meeting minutes, participant lists, photographs, and summary of stakeholder feedback.

3.3 Grievance Mechanism Reports (Turkish and English), including the grievance log and photographs of grievance boxes.

3.4 Training Reports (Turkish and English), participant lists, and photographs.

3.5 Posters (15 copies per campus) and brochures (200 copies per campus)

VI. Timeline & Submission Requirements for Deliverables

This assignment will be held in the 1st half of 2027 and finalized in 4 months' period. The deliverables for each task will be submitted to and approved by the Client. The Consultant must obtain approval for each deliverable before moving to subsequent tasks. The Client shall give a decision within 15 days of receipt of a review or approval request. The deadlines for the submission of the deliverables (including Client's review and approval durations) are given below.

Table 3: Deliverables

Tasks	**Deliverables**	**Submission Deadline** (after effectiveness of the contract)
1	**1.1** Survey Plans and Drawings	3 Months
2	**2.1** Detailed Renovation Designs, Technical Specifications & Bill of Quantities	
	2.2 Commissioning Plan	
	2.3 M&V Plan	
	2.4 Visual Presentation Materials	
	2.5 Final Synthesis Report	
3	**3.1** Final customized Environmental and Social Management Plans (ESMPs) with OHS aspects.) One Waste Management Plan, Pollution Prevention Plan, and Community Safety and Traffic Management Plan for the Final Environmental Protection and Development Project.	4 Month
	3.2 Grievance Mechanism Report (Turkish and English), photos of grievance boxes.	

[4] https://www.kabev.org/wp-content/uploads/2026/07/EEPB2-AF_ESCP_negoriated-final.pdf

[5] https://www.kabev.org/wp-content/uploads/2026/07/Rev-AF_P500777_EEPB2-ESMFFinal.pdf

	3.3 Training Reports (Turkish and English), list of participants, photographs and delivery receipts	
	3.4 Posters (15 copies per campus) and brochures (200 copies per campus)	
	3.5. Stakeholder Engagement meeting minutes (Turkish and English), list of participants and photographs	

All deliverables (including subproject-specific E&S documents) need to be prepared in Turkish. The M&V plan, and commissioning plan of one of the buildings will be translated into English.

All deliverables will be submitted as (i) one hard copy (signed and stamped), (ii) soft copy (on an SSD (Solid State Drive)), and (iii) uploaded to an online platform, which the Client addresses.

The metric system of weights and measures shall be used. The drawings shall be submitted in the format, labelling, grouping and details as required by the Client. The plot size, parcel, map sheet for all buildings shall be listed and integrated into the drawings and other required documents.

Digital formats shall be as follows:

- Format of Reports/Documents : MS Office Word/Excel/PowerPoint & PDF
- Format of Drawings : AutoCAD 2006 (or newer) & PDF

Printing formats shall be as follows;

- Format of Reports/Documents : A4 or A3 including where appropriate drawings could be reduced to A3 size
- Format of Drawings : A1 size (unless otherwise required or agreed)
- Scale of Drawings : To be agreed with the Client.
- Format of Visual Presentation Materials
    - Format of Posters : A0, A1 and A2 size /min. 300dpi
    - Format of Brochures : A5 (6 page) size/min. 300dpi

As indicated in the General Conditions of Contract all the drawings, reports, plans, specifications, and any other documents produced under this Contract are the property of the Client.

VII. Facilities provided by the Consultant

The Consultant must ensure that its professional staff has adequate support and equipment. All costs for equipment and administrative and logistic support must be covered by the Consultant and included in the bid price, including:

- All costs arising from the activities of its staff during the contract period, including accommodation, allowances, transportation, insurance, etc.
- Automotive, equipment, equipment for field and lab tests, office supplies, hardware and software (software for modelling and static/dynamic analysis of critical structures) etc.
- All communication costs, including fax, email, telephone, etc.
- All the equipment, instruments, services and logistical support required for the implementation of the contract, and any costs incurred during its preparation of documents and drafts, copying, printing, qualified translation, interpretation etc.
- Technical equipment at the monitoring site.

VIII. Support to be provided by the client to the Consultant

- The Client provides inputs, project data, reports etc. about the buildings with the RFP if exist. The Consultant/s shall verify the provided inputs during the field studies and in all cases; the assignment shall be undertaken according to the Consultant's own inputs.

- If any delay or no response received from the beneficiary or other third parties during the execution of aforementioned tasks, the Consultant shall inform the Client in a timely manner with indicating the possible grounds. The Client will accelerate the process or give consent to proceed the task.

IX. Team Composition and Qualification Requirements for the Key Staff

- The Consultant firm should (i) be in the consulting business for not less than the last 10 years prior to deadline for submission of interests, (ii) have at least 5 years of similar experience prior to deadline for submission of interests in the Services listed in this TOR, (iii) demonstrate sound administrative and financial capacity, (iv) demonstrate availability of the key experts for the performance of the services described in this TOR.
- The working language of the Project is English. All the team members assigned by the Consultant must possess proficiency in English language. Day-to-day communication language will be Turkish or English at the field level to ensure smooth communication among all participants, direct and indirect, of the Project.
- All key staff and support staff shall be mobilized immediately after the contract signature.

Table 5: Key staff's qualifications

Task	[Nº] - Position	Required Experience
All Tasks	[K-1] - Team Leader (1):	Architect, Civil, Electrical or Mechanical Engineer with at least fifteen (15) years of professional experience, including at least ten (10) years in similar energy efficient building design and five (5) years in a manager position.
	[K-2] - Architect (1):	Architect with at least five (5) years of professional experience, including at least three (3) years in similar energy efficient building design.
	[K-3] - Mechanical Engineer (1):	Mechanical Engineer with at least seven (7) years of professional experience, including five (5) years in similar energy efficient building design.
	[K-4] - Electrical Engineer (1):	Electrical Engineer with at least seven (7) years of professional experience, including five (5) years in similar energy efficient building design.
	[K-5] - Structural Engineer (1):	Civil Engineer with at least seven (7) years of professional experience, including at least five (5) years in structural engineering of superstructures.
	[K-6] - Cost and Planning Engineer (1):	University degree in engineering with at least five (5) years of professional experience, including at least two (2) years in tender documentation. These experiences should be mainly on development of project specifications, time schedules and budgets of prepared designs of similar buildings.
	[K-7] - Measurement & Verification Expert (1)	Certified Measurement and Verification (M&V) Expert with at least five (5) years of professional experience.
	[K-8] – Commissioning Specialist (1)	Engineer with at least ten (10) years of professional experience, including three (3) years of test & commissioning work experience.
	[K-09] - Environmental Specialist (1):	Environmental Engineer with at least five (5) years of professional experience, including at least three (3) years in the national environmental legal framework, environmental impact/risk assessment, preparation of environmental assessment tools (ESMP, Environmental and Social Impact Assessment (ESIA), etc.) and

Task	[Nº] - Position	Required Experience
		knowledge in environmental safeguard policies and ESSs of the World Bank's Environmental and Social Framework (ESF) or other international development institutions, GIIPs.
	[K-10] - Social Specialist (1):	At least bachelor's degree in social science or related field at least five (5) years of professional experience, including at least three (3) years' experiences in stakeholder engagement, social risk and impact assessment and management instruments (SEP, LMP, ESMP, ESIA, etc.) and knowledge of the World Bank's Environmental and Social Framework (ESF), including environmental and social standards, or similar environmental and social policies of IFIs.
	[K-11] – Occupational Health and Safety Specialist (1):	Occupational Health and Safety (OHS) Specialist with at least ten (10) years of professional experience, including at least three (3) years in OHS assessment and management in construction projects financed by international finance institutions or other international donors, preferably the World Bank and with a knowledge in environmental and social safeguard policies and ESSs of the World Bank or other international development institutions; A Class Occupational Safety Expert certificate received from the From the Ministry of Labour and Social Security of the Republic of Türkiye or equivalent international certificate.
All Tasks	[N-…] - Technical Support Staff	Support staff for the technical services with at least three (3) years of professional experience shall be proposed additionally as required (architects, surveyors, mechanical and electrical technicians/junior engineers, OHS personnel, etc.)
	[N-…] -Administrative Support Staff	Support staff for the administrative services shall be proposed additionally as required (clerks, drivers, secretary, etc.)

Note: In addition to the Key Experts, at least one female intern will be employed, selected from among students or recent graduates of relevant engineering or architecture faculties.

Annex-1: List of Buildings and Energy Efficiency Measure to be implemented in each building covered under the Assignment

Annex-1:

List of Buildings and the EEM to be implemented				
No.	**Building / Institution**	**No. of Buildings**	**Gross Floor Area (m²)**	**Proposed Energy Efficiency Measures (Basis for Design Drawings)**
1	Kılıçarslan Borsa İstanbul Vocational and Technical Anatolian High School (Blocks A–B, Annex Building and Workshops)	5	17,106.8	1. External wall insulation with 8 cm rock wool insulation (5 blocks) 2. Additional 14 cm glass wool insulation on the roof (5 blocks) 3. Replacement of existing boilers with high-efficiency condensing boilers and revision of the piping system (Measures will be taken to ensure there are no insulation deficiencies.) 4. Installation of thermostatic radiator valves (TRVs).

List of Buildings and the EEM to be implemented				
No.	**Building / Institution**	**No. of Buildings**	**Gross Floor Area (m²)**	**Proposed Energy Efficiency Measures (Basis for Design Drawings)**
				5. Replacement of circulation pumps with IE4/IE5 variable-speed (VSD) pumps. 6. Installation of window-integrated decentralized mechanical ventilation units with heat recovery for classrooms, libraries and teachers' rooms (385 m³/h fresh air capacity, EC fan, 20 W power consumption). 7. Installation of a Building Automation and Control System including energy monitoring and implementation of ISO 50001 Energy Management System**.** 8. Replacement of existing lighting fixtures with high-efficiency LED luminaires (the power factor correction system will be reviewed and upgraded if necessary). 9. Installation of 49,6 kWp rooftop photovoltaic (PV) system 10. Replacement of toilet cistern mechanisms and installation of faucet aerators. 11. Repair of window locking mechanisms and replacement of weather seals where necessary.
2	Hamza Yerlikaya Sports High School (School and Dormitory)	2	12,333.4	1) External wall insulation of the dormitory building with 8 cm of rock wool 2) Roof insulation with 14 cm of glass wool (for 2 buildings) 3) Replacement of existing boilers with high-efficiency condensing boilers and revision of the piping system (Measures will be taken to ensure there are no insulation deficiencies.) 4) Installation of thermostatic radiator valves (TRVs)**.** 5) Installation of a window-integrated fresh air system for classrooms and teachers' rooms (window type with EC fan, 385 m³/h fresh air flow, 20W energy consumption) 6) Installation of a Building Automation and Control System including energy monitoring and implementation of ISO 50001 Energy Management System**.** 7) Replacement of existing lighting fixtures with high-efficiency LED luminaires (the power factor correction system will be

List of Buildings and the EEM to be implemented				
No.	**Building / Institution**	**No. of Buildings**	**Gross Floor Area (m²)**	**Proposed Energy Efficiency Measures (Basis for Design Drawings)**
				reviewed and upgraded if necessary). 8) Installation of 49,6 kWp rooftop photovoltaic (PV) system 9) Replacement of toilet cistern mechanisms and installation of faucet aerators. 10) Repair of window locking mechanisms and replacement of weather seals where necessary.
3	Celaleddin Karatay Agricultural Vocational and Technical Anatolian High School (School and Dormitory)	2	8,457.2	1) External wall insulation of the school and dormitory building with 8 cm rock wool 2) Roof insulation with 12 cm of glass wool (for 2 buildings) 3) Replacement of boilers with condensing boilers and revision of the piping system (Measures will be taken to ensure there are no insulation deficiencies.) 4) Thermostatic valve application (Variable flow system - existing circulation pump will be used.) 5) Installation of a window-integrated fresh air system for classrooms and teachers' rooms (window type with EC fan, 385 m³/h fresh air flow, 20W energy consumption) 6) Installation of a Building Automation and Control System including energy monitoring and implementation of ISO 50001 Energy Management System**.** 7) Replacement of existing lighting fixtures with high-efficiency LED luminaires (the power factor correction system will be reviewed and upgraded if necessary). 8) Installation of 49,6 kWp rooftop photovoltaic (PV) system 9) Replacement of toilet cistern mechanisms and installation of faucet aerators. 10) Repair of window locking mechanisms and replacement of weather seals where necessary.
4	Çatalhöyük Anatolian High School (School and Dormitory)	2	11,800.7	1) External wall insulation of the dormitory block with 8 cm rock wool insulation (5 blocks) 2) Additional 12 cm glass wool insulation on the roof (2 blocks) 3) Replacement of boilers with condensing boilers and revision of the piping system (Measures will be taken to ensure there are

List of Buildings and the EEM to be implemented				
No.	**Building / Institution**	**No. of Buildings**	**Gross Floor Area (m^2)**	**Proposed Energy Efficiency Measures (Basis for Design Drawings)**
				no insulation deficiencies.) 4) Thermostatic valve application (Variable flow system - existing circulation pump will be used.) 5) Installation of a window-integrated fresh air system for classrooms and teachers' rooms (window type with EC fan, 385 m^3/h fresh air flow, 20W energy consumption) 6) Installation of a Building Automation and Control System including energy monitoring and implementation of ISO 50001 Energy Management System**.** 7) Replacement of existing lighting fixtures with high-efficiency LED luminaires (the power factor correction system will be reviewed and upgraded if necessary). 8) Installation of 49,6 kWp rooftop photovoltaic (PV) system 9) Replacement of toilet cistern mechanisms and installation of faucet aerators. 10) Repair of window locking mechanisms and replacement of weather seals where necessary.
5	Karatay Science High School (School and Dormitory)	2	10,228.6	1) External wall insulation of the school and dormitory block with 8 cm rock wool insulation (5 blocks) 2) Additional 12 cm glass wool insulation on the roof (2 blocks) 3) Replacement of boilers with condensing boilers and revision of the piping system (Measures will be taken to ensure there are no insulation deficiencies.) 4) Thermostatic valve application 5) Replacement of circulation pumps with IE4/IE5 variable-speed (VSD) pumps. 6) Installation of a window-integrated fresh air system for classrooms and teachers' rooms (window type with EC fan, 385 m^3/h fresh air flow, 20W energy consumption) 6) Installation of a Building Automation and Control System including energy monitoring and implementation of ISO 50001 Energy Management System**.** 7) Replacement of existing lighting fixtures with high-efficiency LED luminaires (the power factor correction system will be reviewed and upgraded if

List of Buildings and the EEM to be implemented				
No.	**Building / Institution**	**No. of Buildings**	**Gross Floor Area (m^2)**	**Proposed Energy Efficiency Measures (Basis for Design Drawings)**
				necessary). 8) Installation of a 37,2 kWp rooftop photovoltaic (PV) system 9) Replacement of toilet cistern mechanisms and installation of faucet aerators. 10) Repair of window locking mechanisms and replacement of weather seals where necessary.
6	Karatay Municipality 23 April Imam Hatip Secondary School	1	4.575,5	1) Roof insulation with 12 cm of glass wool 2) Replacement of existing boilers with high-efficiency condensing boilers and revision of the piping system (Measures will be taken to ensure there are no insulation deficiencies.) 3) Installation of thermostatic radiator valves (TRVs)**.** 4) Replacement of circulation pumps with IE4/IE5 variable-speed (VSD) pumps. 5) Installation of window-integrated decentralized mechanical ventilation units with heat recovery for classrooms, libraries and teachers' rooms (385 m^3/h fresh air capacity, EC fan, 20 W power consumption). 6) Installation of a Building Automation and Control System including energy monitoring and implementation of ISO 50001 Energy Management System**.** 7) Replacement of existing lighting fixtures with high-efficiency LED luminaires (the power factor correction system will be reviewed and upgraded if necessary). 8) Installation of 21,7 kWp rooftop photovoltaic (PV) system 9) installation of faucet aerators. 10) Repair of window locking mechanisms and replacement of weather seals where necessary.
7	Karatay Municipality Imam Hatip Secondary School	1	4.575,5	1) Roof insulation with 12 cm of glass wool 2) Replacement of existing boilers with high-efficiency condensing boilers and revision of the piping system (Measures will be taken to ensure there are no insulation deficiencies.) 3) Installation of thermostatic radiator valves (TRVs)**.**

List of Buildings and the EEM to be implemented				
No.	**Building / Institution**	**No. of Buildings**	**Gross Floor Area (m²)**	**Proposed Energy Efficiency Measures (Basis for Design Drawings)**
				4) Replacement of circulation pumps with IE4/IE5 variable-speed (VSD) pumps. 5) Installation of window-integrated decentralized mechanical ventilation units with heat recovery for classrooms, libraries and teachers' rooms (385 m³/h fresh air capacity, EC fan, 20 W power consumption). 6) Installation of a Building Automation and Control System including energy monitoring and implementation of ISO 50001 Energy Management System**.** 7) Replacement of existing lighting fixtures with high-efficiency LED luminaires (the power factor correction system will be reviewed and upgraded if necessary). 8) Installation of 24,8 kWp rooftop photovoltaic (PV) system 9) installation of faucet aerators. 10) Repair of window locking mechanisms and replacement of weather seals where necessary.
8	Nizamülmülk Anatolian High School	1	5.664,6	1) Roof insulation with 12 cm of glass wool 2) Replacement of existing boilers with high-efficiency condensing boilers and revision of the piping system (Measures will be taken to ensure there are no insulation deficiencies.) 3) Installation of thermostatic radiator valves (TRVs)**.** 4) Replacement of circulation pumps with IE4/IE5 variable-speed (VSD) pumps. 5) Installation of window-integrated decentralized mechanical ventilation units with heat recovery for classrooms, libraries and teachers' rooms (385 m³/h fresh air capacity, EC fan, 20 W power consumption). 6) Installation of a Building Automation and Control System including energy monitoring and implementation of ISO 50001 Energy Management System**.** 7) Replacement of existing lighting fixtures with high-efficiency LED luminaires (the power factor correction system will be reviewed and upgraded if necessary). 8) Installation of 18,6 kWp rooftop

List of Buildings and the EEM to be implemented				
No.	**Building / Institution**	**No. of Buildings**	**Gross Floor Area (m²)**	**Proposed Energy Efficiency Measures (Basis for Design Drawings)**
				photovoltaic (PV) system 9) installation of faucet aerators. 10) Repair of window locking mechanisms and replacement of weather seals where necessary.
9	İsa Can Bezirci Secondary School	1	4.575,5	1) Roof insulation with 12 cm of glass wool 2) Replacement of existing boilers with high-efficiency condensing boilers and revision of the piping system (Measures will be taken to ensure there are no insulation deficiencies.) 3) Installation of thermostatic radiator valves (TRVs)**.** 4) Replacement of circulation pumps with IE4/IE5 variable-speed (VSD) pumps. 5) Installation of window-integrated decentralized mechanical ventilation units with heat recovery for classrooms, libraries and teachers' rooms (385 m³/h fresh air capacity, EC fan, 20 W power consumption). 6) Installation of a Building Automation and Control System including energy monitoring and implementation of ISO 50001 Energy Management System**.** 7) Replacement of existing lighting fixtures with high-efficiency LED luminaires (the power factor correction system will be reviewed and upgraded if necessary). 8) Installation of 24,8 kWp rooftop photovoltaic (PV) system 9) installation of faucet aerators. 10) Repair of window locking mechanisms and replacement of weather seals where necessary.
10	Karatay TOKİ Anatolian High School	1	5.731,0	1) Roof insulation with 12 cm of glass wool 2) Replacement of the existing windows with a 4+16+4 mm PVC solar control frame system. 3) Replacement of existing boilers with high-efficiency condensing boilers and revision of the piping system (Measures will be taken to ensure there are no insulation deficiencies.) 4) Installation of thermostatic radiator valves (TRVs)**.** 5) Replacement of circulation pumps with IE4/IE5 variable-speed (VSD) pumps.

List of Buildings and the EEM to be implemented				
No.	**Building / Institution**	**No. of Buildings**	**Gross Floor Area (m²)**	**Proposed Energy Efficiency Measures (Basis for Design Drawings)**
				6) Installation of window-integrated decentralized mechanical ventilation units with heat recovery for classrooms, libraries and teachers' rooms (385 m³/h fresh air capacity, EC fan, 20 W power consumption). 7) Installation of a Building Automation and Control System including energy monitoring and implementation of ISO 50001 Energy Management System**.** 8) Replacement of existing lighting fixtures with high-efficiency LED luminaires (the power factor correction system will be reviewed and upgraded if necessary). 9) Installation of 24,8 kWp rooftop photovoltaic (PV) system 10) installation of faucet aerators.
11	Çumralıoğlu Foundation Anatolian Imam Hatip High School	1	6.847,3	1) Roof insulation with 12 cm of glass wool 2) Replacement of existing boilers with high-efficiency condensing boilers and revision of the piping system (Measures will be taken to ensure there are no insulation deficiencies.) 3) Installation of thermostatic radiator valves (TRVs)**.** 4) Replacement of circulation pumps with IE4/IE5 variable-speed (VSD) pumps. 5) Installation of window-integrated decentralized mechanical ventilation units with heat recovery for classrooms, libraries and teachers' rooms (385 m³/h fresh air capacity, EC fan, 20 W power consumption). 6) Installation of a Building Automation and Control System including energy monitoring and implementation of ISO 50001 Energy Management System**.** 7) Replacement of existing lighting fixtures with high-efficiency LED luminaires (the power factor correction system will be reviewed and upgraded if necessary). 8) Installation of 14,88 kWp rooftop photovoltaic (PV) system 9) installation of faucet aerators. 10) Repair of window locking mechanisms and replacement of weather seals where necessary.

List of Buildings and the EEM to be implemented				
No.	**Building / Institution**	**No. of Buildings**	**Gross Floor Area (m^2)**	**Proposed Energy Efficiency Measures (Basis for Design Drawings)**
12	Akabe Imam Hatip Secondary School	1	6.415,0	1) Roof insulation with 12 cm of glass wool 2) Replacement of existing boilers with high-efficiency condensing boilers and revision of the piping system (Measures will be taken to ensure there are no insulation deficiencies.) 3) Installation of thermostatic radiator valves (TRVs)**.** 4) Replacement of circulation pumps with IE4/IE5 variable-speed (VSD) pumps. 5) Installation of window-integrated decentralized mechanical ventilation units with heat recovery for classrooms, libraries and teachers' rooms (385 m^3/h fresh air capacity, EC fan, 20 W power consumption). 6) Installation of a Building Automation and Control System including energy monitoring and implementation of ISO 50001 Energy Management System**.** 7) Replacement of existing lighting fixtures with high-efficiency LED luminaires (the power factor correction system will be reviewed and upgraded if necessary). 8) Installation of 22,32 kWp rooftop photovoltaic (PV) system 9) installation of faucet aerators. 10) Repair of window locking mechanisms and replacement of weather seals where necessary.
13	Ayşe Hüseyin Özkan Primary School	1	3.868,8	1) Roof insulation with 12 cm of glass wool 2) Renovation of the heating system (Variable flow system - existing circulation pump will be used.) (Measures will be taken to ensure there are no insulation deficiencies.) 3) Installation of thermostatic radiator valves (TRVs)**.** 4) Installation of window-integrated decentralized mechanical ventilation units with heat recovery for classrooms, libraries and teachers' rooms (385 m^3/h fresh air capacity, EC fan, 20 W power consumption). 5) Installation of a Building Automation and Control System including energy monitoring and implementation of ISO 50001 Energy Management System**.**

List of Buildings and the EEM to be implemented				
No.	**Building / Institution**	**No. of Buildings**	**Gross Floor Area (m²)**	**Proposed Energy Efficiency Measures (Basis for Design Drawings)**
				6) Replacement of existing lighting fixtures with high-efficiency LED luminaires (the power factor correction system will be reviewed and upgraded if necessary). 8) Installation of 11,2 kWp rooftop photovoltaic (PV) system 9) installation of faucet aerators. 10) Repair of window locking mechanisms and replacement of weather seals where necessary.
Total	13 institutions / 21 buildings	21	102,179.8	

Note: The measures listed above constitute the minimum design scope for the preparation of architectural, mechanical, electrical and renewable energy system drawings and associated technical specifications. The Consultant shall verify the existing conditions on site and incorporate all necessary details required for implementation and tendering purposes.

REPUBLIC OF TURKEY

MINISTRY OF ENVIRONMENT, URBANIZATION AND CLIMATE CHANGE (MOEUCC)

GENERAL DIRECTORATE OF CONSTRUCTION AFFAIRS (GDCA)

"Türkiye Second Energy Efficiency in Public Buildings Project"

Loan No: 9688-TR | Project ID: P500777

CONSULTANCY SERVICES FOR

DESIGN AND CONSTRUCTION SUPERVISION SERVICES FOR ENERGY EFFICIENCY RENOVATIONS IN PUBLIC BUILDINGS

Reference No:

EEPB2/WB/MoEUCC/LCS-DES&SUP-01

TERMS OF REFERENCE

"For Construction Supervision"

Issued on: October, 2026

TERMS OF REFERENCE
(TOR)
FOR TIME BASED CONTRACT

CONSULTING SERVICES ON THE CONSTRUCTION SUPERVISION AND COMMISSIONING FOR ENERGY EFFICIENCY BUILDING RENOVATIONS

(REF: EEPB2/WB/MoEUCC/LCS-DES&SUP-01)

I. Introduction

The Ministry of Environment Urbanization and Climate Change (MoEUCC) has applied for financing from the World Bank to support the Türkiye Second Energy Efficiency in Public Buildings Project (EEPBP2, hereinafter called the "Project") and intends to use part of the proceeds for consulting services specified under this Terms of Reference.

The Project will support the renovation of central government and central-government affiliated buildings (i.e., public buildings under central line ministries) to improve their energy efficiency (EE) and increase on-site renewable energy (RE) use. The Project would be implemented through two components: (i) EE investments in central government buildings; and (ii) technical assistance (TA) and project implementation support. The General Directorate of Construction Affairs (GDCA) under the MoEUCC has been delegated to assume overall responsibility for the Project. This will include completion of the necessary activities to support Project preparation as well as implementation for the six-year Project period.

The GDCA established a Project Implementation Unit (hereinafter called the "Client") to administer all aspects of the Project, including selection of the buildings, procurement of the various contractors (e.g., energy audits, technical designs, renovation works, construction supervision, savings verifications, technical assistance, or consultancies, etc.), and monitoring. Through the Project, approximately 400 public buildings will be renovated for EE. Investment measures would include upgrades of building envelope (insulation, windows, doors), space and water heating, cooling, ventilation, air conditioning, pumps/fans, lighting, and installation of on-site RE systems that primarily aim to offset the facility's energy consumption, e.g., rooftop or ground-mounted solar photovoltaic (PV) systems). A limited amount of funds could be allocated to ancillary measures (e.g., rewiring, minor structural repairs, painting, seismic safety, fire safety, improving access) provided that the simple payback period of the overall subproject does not exceed the maximum payback period of 20 years. In order to ensure further decarbonization and deeper renovations, the Project aims to maximize replacement of fossil fuel-based boilers by electric heat pumps or RE-based heating to the extent that is technically and financially feasible, and seeks to reach nearly-zero energy building (NZEB) standard for at least 20% of the renovated buildings.

Within the framework of the Project, a consulting firm (hereinafter called the "Consultant") will be employed to carry out construction supervision and building commissioning.

II. Scope of Services

For EE renovations of the public buildings listed below in Table 1 and in Annex 1 Annex 1 (13 campuses, 21 Building blocks with a total area of 99.201,42 m^2), the Consultant will be required to (i) carry out construction supervision and building commissioning services; (ii) supervise remedial works to rectify defects that arise during the Defects Notification Period (DNP), including preparing commissioning reports and issuance of energy performance certificates (EPCs) after the renovation; and (iii) prepare Measurement and Verification (M&V) reports.

Table 1: List of the Campuses to be renovated in the scope

No	Building Name	Construction Area of Buildings (m2)	No of Buildings	Campus Area (m2)
1	Kılıçarslan Borsa İstanbul Vocational and Technical Anatolian High School A Block	4.513,00	1	17.106,83
	Kılıçarslan Borsa İstanbul Vocational and Technical Anatolian High School B Block	5.830,68	1	
	Kılıçarslan Borsa İstanbul MTAL High School Additional Building and Atelier	6.763,15	3	
2	Karatay Hamza Yerlikaya Sports High School	7.815,40	1	12.333,40
	Karatay Hamza Yerlikaya Sports High School Dormitory	4.518,00	1	
3	Celaleddin Karatay Tarım Vocational and Technical Anatolian High School	3939,16	1	8.457,16
	Celaleddin Karatay Tarım Vocational and Technical Anatolian High School Dormitory	4.518,00	1	
4	Çatalhüyük Anadolu Lisesi	7282,65	1	11.800,65
	Çatalhüyük Anadolu Lisesi Pansiyon	4.518,00	1	
5	Karatay Fen Lisesi	5152,76	1	10.228,56
	Karatay Fen Lisesi Pansiyon	5.075,80	1	
6	Nizamülmülk Anadolu Lisesi	5.664,58	1	5.664,58
7	Karatay Belediyesi 23 Nisan İmam Hatip Ortaokulu	4.575,52	1	4.575,52
8	Karatay TOKİ Anadolu Lisesi	5.731,00	1	5.731,00
9	Karatay Belediyesi İmam Hatip Ortaokulu	4.575,52	1	4.575,52
10	Akabe İmam Hatip Ortaokulu	6.415,00	1	6.415,00
11	İsa Can Bezirci Ortaokulu	4.575,52	1	4.575,52
12	Ayşe Hüseyin Özkan İlkokulu	3.868,84	1	3.868,84
13	Karatay Hürriyet Ortaokulu	3.868,84	1	3.868,84
	Total	**99.201,42**	**21**	

III. Description of the Consultant's Tasks

The Consultant as "the Engineer" or "the Project Manager" shall be responsible to carry out all the duties envisaged in World Bank's Standard Procurement Documents (SPD) of the eventual works Contracts that has been awarded as an outcome of the Consultant's respective tasks under its Lump Sum Contract for Energy Audit Reports, Detailed Designs and Technical Specifications for Energy Efficiency Building Renovations. The Consultant shall also be responsible as the "Engineer" or "the Project Manager" to provide details and instruct the Contractor/s whenever it necessitates during the course of works and execute the services in accordance with applicable national laws and regulations as well as the Contractor's Environmental and Social Management Plans (C-ESMPs), Contractor's Occupational Health and Safety Plans (C-OHSPs) and site specific sub-management plans (including the Waste Management Plan, Pollution Prevention Plan, and Community Safety and Traffic Management Plan) based on the customized sub-project-level ESMPs (including OHS measures). Significant issues shall be subject to approval of the Client as indicated in the General Conditions (GCC) or Special Conditions (SCC) of the Construction Contracts.

The Consultant's Key Experts (e.g., Structural, Mechanical, Electrical, Engineers and Architects, Environmental, Social and OHS Specialists) shall check the site and review the existing designs for their applicability to the field. If any revision is needed in the existing designs, a report will be provided to the Client and revisions will be approved by the Project Manager. The Consultants shall provide sufficient, qualified and experienced staff to ensure proper construction supervision of the works and

engineering services both during the Construction period and during the Defects Notification/Maintenance period.

Task 1: Carry out construction supervision and building commissioning services

The Consultant's responsibilities include, but are not limited to:

Initiation of the Works:

- The Consultant shall follow up on evacuation of buildings (if needed) with respect to the Contractor/s' work program/s closely on site and shall communicate with related authorized persons for public buildings (in compliance with the mitigation measures identified within the subproject level ESMPs, C-ESMP,C-OHSPs and site specific sub-management plans including the Waste Management Plan, Pollution Prevention Plan, and Community Safety and Traffic Management Plan). The Client shall be informed simultaneously of the actual evacuation progress. In case of delays with evacuation, the Consultant will take the necessary measures, in close cooperation with the Client and the Contractor/s, to ensure the timely completion of the works.
- The Consultant shall collect the necessary documents required for obtaining the modification construction permit (if needed) from the municipality and assist the Contractor/s for obtaining the modification construction permit/s. The Consultant shall also sign the documents to be submitted for the construction permit.
- The Consultant shall review the Initial Inspection Reports of the buildings prepared by the Contractor showing the initial status. The report shall include existing status pictures of areas to be intervened. Additionally, the Consultant shall review any alteration request of Contractor(s) to the designs, plans, technical specifications, BOQs, etc. that were originally prepared during the Lump-Sum (first phase design services) Contract. In case of existence of any findings that may adversely affect the quality of the work, increase the Contract Price, or delay the execution of the Works, the Consultant may require the Contractor to provide an estimate of the expected effect of the future event or circumstance on the contract price and completion date of the Works. In case it is considered that any alterations in any of the Contract Documents are necessary by the Consultant, the Consultant shall prepare and submit such alterations to the Client with the Initial Inspection Report. The report should be supported by the necessary photos, calculations, details and time and cost implications. The Consultant shall state whether the alterations will cause any delay in the work program, and therefore the Contractor(s) to be entitled any time extension or not, supported by necessary documentation. On receiving written approval from the Client, the Consultant shall promptly amend the existing designs or supply any additional designs, plans, drawings and specifications where required or found necessary for the satisfactory completion of the works. The Client shall not be responsible from the consequences of the fact of which the Client is not informed in advance.
- The Consultant shall ensure that the Contractor deliver the hoarding panels and install them around the construction site appropriately before construction work starts.
- Support PIU in the preparation of the E&S Screening Form in line with the EEPB2 ESMF and conduct initial project site assessment.
- The Consultant shall ensure that the Contractor's Contract clearly defines the OHS and E&S management requirements as well as the responsibilities of the Engineer/Project Manager, Environmental Specialist, Social Specialist and OHS Specialist.
- Ensure that the Contractor's Environmental and Social Management Plans (C-ESMPs), Contractor's Occupational Health and Safety Plans (C-OHSPs) and site-specific sub-management plans (including the Waste Management Plan, Pollution Prevention Plan, and Community Safety and Traffic Management Plan) are prepared by the Contractor in line with the customized sub-project-level ESMPs (including OHS measures). The Consultant, in collaboration with MoEUCC shall ensure that the Contractor's Environmental and Social Management Plans (C-ESMPs), Contractor's Occupational Health and Safety Plans (C-OHSPs) and site specific sub-management plans

(including the Waste Management Plan, Pollution Prevention Plan, and Community Safety and Traffic Management Plan) are reviewed, approved and in place before initiation of works on sites.

- The Consultant shall ensure that the implementation complies with the requirements of the WB and national legislation specified in the construction tender documents as well as EEPB2 ESMF.

Supervision of Works

- The Consultant shall supervise and oversee all aspects of the construction and installation of the various components of the works and engineering services to ensure strict compliance with the drawings and contract documents.
- The Consultant shall ensure the construction progress complies with the work-plan, building access plan, and restrictions (for access to users during the construction phase).
- The Consultant shall take Weekly Site Pictures from at least 5 points for each building, showing the progress on the site with dates, record them, and submit to the Client in an acceptable format by the 1st week of each month via electronic mail.
- The Consultant shall carry out the Services with all due diligence, care and in timely manner so as not to cause any delay. It is deemed that the Consultant familiarized himself with the nature of Project and is expected to take all sorts of precautions during the performance of Services to get the works completed by the Contractors on time.
- It is the duty of the Consultants to interpret the drawings and specifications and to consult with the Contractors as required to ensure compliance with the Contract Documents and the construction/installation work-plan.
- In case the Contractor may execute some of the works (i.e., concrete) in night hours rather than daily hours because of the sustainability of services in buildings or any other reasons. In that case, Consultant will arrange his staff employment according to this condition without any extra cost to the Client and the Contractor.
- The Consultant shall arrange weekly and monthly meetings with Contractor/s, inform the Client about progress of the work, activities, health and safety issues, and attend any meetings reasonably convened by the Client and provide any information or evidence reasonably required by the Client at any public meetings or inquiries, which might be held in connection with the Project.
- Since the similar construction works may also be supervised by other Consultants in other sites, the Consultant shall co-operate with the other Consultants and join the meetings whenever required by the Client.

Supervision of ESMPs and OHS Plans/Procedures

- Immediately notify the PIU about any serious incident which may have significant adverse effects on the environment, communities, the public or workers.
- Ensure that all health & safety measures are respected by the construction company in compliance with the monitoring and reporting requirements of relevant official authorities, EEPB2 ESMF, customized sub-project-level ESMPs (including OHS measures), Contractor's Environmental and Social Management Plans (C-ESMPs), Contractor's Occupational Health and Safety Plans (C-OHSPs) and site-specific sub-management plans (including the Waste Management Plan, Pollution Prevention Plan, and Community Safety and Traffic Management Plan) and the World Bank E&S requirements.
- The Consultant shall take necessary measures for environmental, social and occupational health and safety aspects. The Consultant shall ensure that the Contractor's activities are following the C-ESMP, C-OHSP, EEPB2 Project level SEP and LMP (https://www.kabev.org/wp-content/uploads/2024/01/P500777_TR-Energy-Efficiency-in-Public-Buildings-2_Labor-Management-Procedure.pdf) as well as the site-specific sub-management plans and report progress and ESHS performance of the sub-projects to the PIU on monthly basis. The Consultant shall

supervise the Contractor's implementation of environmental and social mitigation measures as identified in the C-ESMP, C-OHSP, SEP, LMP and the site-specific sub-management plans. The Consultant shall provide feedback and give notice to the Client regarding OHS, environmental and social issues at sites. If the Contractor is found to be non-compliant with the C-ESMP and C-OHSP as well as the site-specific sub-management plans requirements, the Consultant shall file a non-conformity report and any relevant payment orders should be put on hold, until non-compliance issues are remedied satisfactorily or issue a fine (Liquidated Damages) in consultation with Client.

- The Consultant shall supervise the Contractor on behalf of the Client for performing and implementation of all Occupational Health and Safety activities (including mitigation/prevention measures to address communicable diseases/pandemic risks) in accordance with the enforcement of the related Turkish Laws and legislations, and measures specified in the C-ESMP, C-OHSP, SEP, LMP and the site-specific sub-management plans. The Consultant duties and responsibilities shall include:
    - Conduct regular visits including all sub-projects at least once a week to check the Contractor/s' OHS documents and compliance, provide on-the job trainings, ensure compliance of the works with OHS practices and regulations, and issue non-compliance notices to the Contractor/s follow up on the corrective actions and status of non-compliances and report the same to the Client.
    - Organize regular site visits with at least one OHS Specialist, Environmental Specialist and Social Specialist as stated in key staff qualification table below as minimum standard.
    - Increase staff numbers where more personnel are needed without any additional cost to the client (for example, when it is not feasible to inspect all sites at least once a week).
    - Ensure that the workers are provided with OHS training required by legislation and be informed as a minimum on the OHS and ES risks of the works they will be performing and required mitigation and precautionary measures and have complete health records and personal files in accordance with pertinent legal requirements and avoid access of the workers to work site if there are any non-compliance. Ensure that all workers receive the OHS training required under applicable legislation as well as the training specified in the customized sub-project-level ESMPs, C-ESMPs, C-OHSPs, in line with the EEPB2 ESMF, and are informed of the OHS and E&S risks associated with their assigned tasks, including the relevant mitigation and precautionary measures. Ensure that complete health records and personnel files are maintained in accordance with legal requirements and ensure that workers who do not meet the required training, medical, or legal compliance requirements are not permitted to access the work site.
    - Ensure that workers are provided with appropriate personal protective equipment (PPE) relevant and suitable to the activities they perform, receive training on its correct use and that such equipment is properly used and maintained during the works.
    - Make available an OHS expert regardless of risk level (e.g., high elevations scaffolds, confined space, crane works, digging works, etc.).
    - Check and ensure that all equipment, machinery and tools used on site comply with applicable national legislation and standards and prevent the use of any equipment identified as non-compliant or unsafe.
    - Ensure that all project-related incidents and accidents are promptly reported to the PIU and fully documented in accordance with the Project's incident reporting procedures and the PIU shall subsequently notify the Bank within 48 hours of any incident or accident related to the Project which has, or is likely to have, a significant adverse effect on the environment, the affected communities, the public or workers including health and safety serious injuries and road accidents. Incident/accident notifications shall provide sufficient detail regarding the incident or accident, including its nature and severity, indicating immediate measures taken or that are planned to be taken to address it, and any information provided by the contractor(s).

- Participate in the Contractor/s' regular OHS and ES meetings which will be held monthly and provide input for needed improvements.
- Prepare and submit monthly Environmental, Social, Health and Safety (ESHS) monitoring reports to the Client, providing an assessment of compliance with and implementation of the commitments and measures defined in the customized sub-project-level ESMPs, C-ESMPs, C-OHSPs, and other applicable E&S instruments (such as project level SEP and LMP) and management plans including the site-specific sub-management plans. The reports shall include a summary of OHS and E&S performance, monitoring results, inspections, incidents and accidents, training records, grievances, non-compliances, corrective actions, and any other relevant ESHS matters during the reporting period.
- The Consultant shall conduct periodic checks of lifting vehicles, boiler and tanks and control scaffolding, welding tubes, small hand tools, and similar OHS critical equipment etc. are met the requirements of legislation and other relevant the standards (e.g., CE, TSE, BS).
- Review and approve the method statements and risk assessments prepared by the Contractor(s) prior to the commencement of each activity, ensuring that they are adequate, site-specific, and consistent with the applicable OHS and E&S requirements. Where necessary, provide guidance to the Contractor(s) to support the preparation and improvement of these documents.
- The Consultant shall conduct periodic site safety inspections together with the Project Manager, Construction Manager, and E&S/OHS specialists to assess compliance with applicable OHS and E&S requirements. Document any deficiencies identified during the inspections and formally communicate them to the Contractor(s), together with the required corrective and preventive actions and agreed timelines for implementation.
- Where urgent, imminent, or life-threatening non-compliances are identified that require immediate intervention to prevent serious injury, fatality, or significant environmental harm, suspend the relevant works and ensure that they do not resume until the identified deficiencies have been satisfactorily addressed. In such cases, promptly notify the Client and provide updates on the actions taken and the status of the corrective measures.

- The Consultant shall provide feedback and give notice to the Client regarding OHS and environmental and social issues at sites.
- The Consultant shall ensure that the Contractor's Contract clearly defines the OHS and E&S management requirements as well as the responsibilities of the Engineer/Project Manager, Environmental Specialist, Social Specialist and OHS Specialist. The Consultant shall be responsible for supervising the Contractor's compliance with these requirements and providing instructions where necessary. The Consultant shall also participate in and support project monitoring meetings organized by the Client. The consultant will provide support in matters such as responding site-specific technical questions and distributing survey questions. Monitoring meetings may be conducted either virtually or in person.

Ensure that all workers receive trainings on environmental, OHS and social aspects including Code of Conduct, Worker's Grievance Mechanism, Sexual Exploitation and Abuse/Sexual Harassment/Gender Based Violence (SEA/SH/GBV) in line with EEPB2 ESMF and sub-project specific E&S instruments and documents.

Grievance Mechanism

- The Consultant should ensure that the Project's Grievance Mechanism established by the Client is implemented by the Contractor and remains accessible, visible, and available to both workers and community members at the project sites.
- The Consultant shall ensure that all grievances received from workers and local community members are recorded by the Contractor and reported to the Client through the monthly ESMP monitoring reports.

- The Consultant shall support the Client in responding to inquiries and grievances received through the Project Grievance Mechanism in a timely manner.
- The Consultant shall provide logistical and data collection support for stakeholder communication activities, including information meetings, awareness-raising activities, and trainings organized at the project sites, as requested by the Client.

Progress Payments to Contractors, Variations

- The Consultant shall check the Contractor's valuations for payment on account and issue certificates according to the Conditions of Contract used and shall also be responsible for agreeing with the Client on each payment certificates in payable amount. The actual procedure and presentation of the certificates, supporting documents, etc. shall be discussed and agreed with the Client.
- If a payment certificate is not prepared by the Contractor, the Consultant will prepare the payment certificate for the Contractor.

Tests

- The Consultant shall approve an appropriate Material Testing Laboratory for all tests required that will be mentioned in Contractors' Technical Specification and shall discuss the various testing requirements stipulated in its documents with personnel of the laboratory. The Consultant shall give at least 24 hours' prior notice to the laboratory for all tests, which are required to be undertaken. All samples shall be properly labelled in accordance with the requirements of the laboratory and the Consultant shall be responsible for the delivery of all samples for testing and for the collection of all test reports.
- The involvement of the approved accredited Materials Testing Laboratory is limited to the actual performance of the tests in accordance with the Consultant's laid down procedures and/or the specified standards stated in the Contract. The Consultant shall be responsible for interpreting the results received, instructing the repetition or the carrying out of additional tests and taking whatever action necessary to ensure compliance with the contract requirements. The Laboratory staff may from time to time offer advice to the Consultant on any matter within the scope of their competence but it is up to the Consultant whether to accept or reject such advice or suggestion. If any advice or suggestion is accepted by the Consultants, they shall become completely responsible for it as if the advice or suggestion has been of its own initiative.
- The Consultant shall stipulate the criteria, the planning and the procedure for all tests and inspections necessary for the materials (such as pull-out tests for anchorages (embedded new reinforcements), equipment, plant and workmanship and the commissioning of the Works and shall provide supervision and inspection for these tests. The Consultant shall compile a record of all such tests and compare the results with the specifications, standards or with the performance criteria that has been guaranteed by the suppliers or contractors.

Accounts, Claims

- In any case, all the correspondences received from the Contractor/s shall be reviewed, evaluated and responded within one week. Any claim from the Contractor(s) under the construction contracts shall be evaluated by the Consultant and necessary recommendation shall be made the latest within two weeks, as well.
- The Consultant shall review and report on any financial claims submitted by the Contractors within 2 weeks of receipt of such claim submission. Report on any claim shall include (not limited to) determinations, the justification letter, cost-benefit analysis, all probable effects on approved work plan and the final decision on any variation.

Disputes

- The Consultant shall assist in the setting of all disputes or differences, which may arise between the Client and the Contractors, in a timely manner. In the case of litigation and arbitration the Consultant shall assist the Client in the preparation of the documents needed by the Client.

Completion of Works and Commissioning

- Confirm the projects' compliance with the investment plan. In case of deviation from those plans, justification of the differences and evaluation of consequences in terms of compliance of the project with the eligibility criteria of the facility.
- Before issuing the Certificate of Completion of the Works, the Consultant will enforce any obligation placed on the construction contractor to remove all obstructions, surplus materials, plant, wreckage, rubbish and temporary works.
- Upon completion of the works, the Consultant will require the construction contractor to remove all plant, equipment and materials except those required to complete any outstanding or remedial works and facilities required by the Consultant during the Defects Notification Period.
- The Consultant shall witness the performance tests carried out after completion and will analyze, evaluate and approve the final performance tests with the concurrence of the Client. The analyses, results and conclusions with recommendations shall be compiled in the Commissioning Report to be submitted to the Client.
- The Consultant shall oversee training of O&M staff on new equipment.
- The Certificate of Completion shall be prepared and issued by the Consultant in consultation with the Client, following the successful completion of the works. The issuance of the Certificate of Completion shall be subjected to:
    - The Contractor having provided the operation and maintenance (O&M) manuals, training of O&M staff on new equipment, as well as all the drawings and documents handed over to the Client requested in the contract.
    - Preparation of problem registration list (Issues Log) for the minor defects.

Reporting Requirements for this Task:

- **Initial Inspection Report:** The report should be prepared within 1st month after the Works Contract is signed with the Contractor and indicate the early findings on tendered documents for the Works and if any alterations needed, include the necessary calculations, details, the opportunities that the effects may be avoided or reduced, and time and cost implications.
- **Monthly Progress Reports** for works contract. These will describe the physical and financial progress of the works and will address contractual and technical matters. They shall provide information on (tentative list below that can be amended):
    - (i) a description of physical progress, with reference to the program (including progress charts and dated photographs in color giving all information regarding the progress of the Works);
    - (ii) explanations for differences between actual and forecast progress;
    - (iii) a summary financial report containing cash-flow forecasts and budget expenditure:
    - (iv) status of payments and requests for payment:
    - (v) explanations for differences between actual and forecast cash-flow o summary of claims and disputes;
    - (vi) major milestones, obstacles, achievements, constraints on progress and problems encountered and appropriate identified solutions;
    - (vii) remarks on procedural issues;
    - (viii) variations and proposals for future variations to the timing and budgets of individual activities;
    - (ix) a projection of activities for the forthcoming month;

(x) recommendation for further actions and improvements, both short- and long-term;

(xi) records of human resources, mechanical equipment and materials, testing and quality control, with copies of the test results and, statistical evaluation of the test results in table or graphical form. Action taken with regard to poor results shall be stated;

(xii) local issues/stakeholder issues (including any grievances received by nearby communities and/or workers);

(xiii) a summary of site-specific environmental, social, and OHS performance, including progress in the implementation of the customized sub-project-level ESMPs, C-ESMPs, C-OHSPs, and other applicable E&S instruments (such as project level SEP and LMP) and management plans including the site-specific sub-management plans; the status of compliance with their requirements; and any environmental, social, or OHS issues, incidents, non-compliances, risks, and corrective actions identified during the reporting period;

(xiv) The report shall include the percentages of the Work items completed and planned, and also the actual and planned cash-flows for each work item as of the reporting period prepared in the project planning tools (such as Primevera, Asta, etc) accepted by the client.

The report shall be submitted to the Client by the fifth day of following month. Any comment by the Client on the report shall be reviewed and re-submitted to the Client within a week.

- **Other reports upon request.** The Client may request the Consultant to submit specific reports on the issues related to the execution of the works. The Consultant will make the requested report in such manner within maximum 10 business days following the request. The Consultant is obliged to provide all assistance to the Client, upon request, in drawing up reports to the bodies that comprise the institutional framework for project implementation described in the introduction to this project task, relating to project implementation reports, financial reports and etc.

Task 2: Supervise remedial works to rectify defects that arise during the Defects Notification Period (DNP)

The Defects Notification Period (DNP) is 12 months, starting after issuing the Certificate of Completion.

- Defects Notification Certificate of the renovated buildings shall be performed by the Consultant to verify and document that the equipment and systems were designed, installed, tested, and properly operated to meet the described requirements of the construction contract.
- Energy Performance Certificate (EKB) of the buildings after the completion of the works with the BEP-TR program shall be prepared.
- Preparation and submission of as-built drawings, shop drawings, operating and maintenance manuals for all items of equipment and plants incorporated in or associated with the works, shall be controlled and followed by the Consultant in timely manner. As-built drawings, operating and maintenance manuals should be obtained from the Contractor during the issuing of taking-over certificate. Otherwise, the Client might ask the Consultant for the conversion of the approved shop drawings into as-built drawings if Client considers that the Consultant is not strictly following up the work. The Consultant shall also prepare and submit to the Client's approval a report giving all information about the "as-built-conditions" including (but not limited to) calculations, drawings, specifications, test reports and final cost analysis.
- Visual presentation materials shall be prepared by using high resolution and quality photos of before and after status of the buildings, zones, rooms and renovation steps, which are interrelated with the EEMs.
- The Consultant shall continue to be responsible for the supervision and inspection of the construction and completion of the Works during the DNP as defined in the works contracts. The level of supervision shall be appropriate to the scale of the works being carried out. The

Consultant will provide adequate number of technical staff acceptable to the Client on each construction site during the DNP. These inspections and supervision are to ensure that works, agreed to be carried out during the DNP, are properly carried out and have been completed and that any failure of any part of the Works has been rectified. If any defect is discovered, during this period, the Consultant shall promptly investigate the reason for it, report to the Client and take required actions to rectify the defect. A report of these inspections shall be submitted to the Client, which shall include all details of any defects, faults, accidents or breakdowns, which have occurred together with the estimated costs of repair and the time scales within which they will be completed.

- The Consultant will provide minimum number of technical staff acceptable to the Client on each construction site during the Defects Notification Period. Defects are expected to be minimum for a competent Consultant Firm during defects Notification period. Therefore, the Consultant should consider minimum number of staff assigned in DNP consisting of technicians as well.

Reporting Requirements for this Task:

The Reports should cover, but not necessarily be limited to, the information as follows:

- **Commissioning Reports:** After all the items in the problem registration list (issues log) are closed and the trainings are completed, a final commissioning (Cx) report is prepared, which includes the documentation and results of the work done.

  All kinds of machinery, equipment and systems used in the project, user manuals, operation and maintenance manuals, handbooks that contain system diagrams should be hung in technical places, manufacturer catalogues, authorized service contact information, as-built projects, calculations, test reports, commissioning forms and minutes and other related documents will be submitted with the final commissioning report.

  The report should consist of the following headings:

  a) Equipment and systems included for works
  b) Executive summary
  c) Issues Log List
  d) Floor plans and/or system flowcharts
  e) Basic tests checklists
  f) Pre-functional checklists
  g) Initial start-up forms

  Functional performance test forms

  h) Energy performance assessments*
  i) Training documents
  j) System guides
  k) Other documents and images
  l) Annex

  * Early performance evaluation of the EEMs. The objective is to capture the system behavior regarding energy performance and compliance with the audit objectives. The methodology for each individual analysis will require determining the energy performance of each EEM. This is a snapshot of the energy performance; the subsequent 12-month M&V process will provide a detailed evaluation of the energy savings. Further definition and details of the intended commissioning process is provided in the project's website in the form of the "***Commissioning Handbook***". Please refer to this guideline document for detailed process overview and intended outcome of the process.

Web-link: https://www.kabev.org/kutuphane/kilavuzlar/

- **Final Completion Report**, to be delivered in 2 months after issuance of Certificate of Completion of each Works Contract. The reports shall contain at least:
    - Draft Final Accounts
    - Approved As-Built drawings (signed by the Contractor & Consultant)
    - Energy Performance Certificates (EKB)
    - Data on the technical difficulties encountered and how they were solved;
    - Evaluations on Contractor's ESHS performance
- **Visual Presentation Materials:** Up to 500-1000 presentation visuals including posters, brochures, catalogues and leaflets will be prepared, printed and distributed by the Consultant for each building complex to give information and to raise awareness about the energy efficiency measures implemented in the building, and the benefits of these applications.

  The grounds of the Visual Presentation Materials will be before/after renovation comparison and it shall include high resolution and quality photos of:
    - At least four different façades
    - Roof (from above showing All the roofing, preferably with the help of a drone camera)
    - Fenestration systems
    - Heating system (Boilers, pumps, piping, valves, insulation, etc.)
    - Cooling system (chillers, Cooling towers, pumps, valves, piping, insulation, outdoor a/c units, rooftop units, etc.)
    - DHW (accumulation tanks, heat exchangers, pumps, insulation, piping, etc.)
    - Solar Water heater system
    - Ventilation system (air handling units, piping, ducts, etc.)
    - Lighting system (fixtures, bulbs, panels, etc.)
    - Room thermostats, radiators, fan-coil units, etc.
    - Automation system
    - Renewable Energy systems
    - Co-generation/tri-generation units

  The graphic designs of the presentation visuals will be subject to the Client approval before printing. All visual materials shall include the logo and the names of the Client and the project, the template of which will be provided by the Client. The posters will be presented especially in the areas/sections where innovative and green applications are implemented.
- **DNP quarterly reports.** A report of the DNP inspections shall be submitted to the Client, which shall include all details of any defects, faults, accidents or breakdowns, which have occurred together with the estimated costs of repair and the time scales within which they will be completed. The reports shall be prepared on a quarterly basis.
- **DNP final report** shall be submitted by the time of the expiration of the DNP giving full details of all works carried out during the period. This report shall be submitted by the Consultant to the Client at least 30 days prior to issuing the Defects Notification Certificate for the completed Works.

Task 3: Preparation of Measurement and Verification (M&V) report

The M&V period covers 12 months, starting on the date of building commissioning.

- Conduct required measurements to prepare the M&V Report. M&V of savings will be made in accordance with TS ISO 50.006 and IPMVP Option C (full facility renovation) in combination with other options as needed. The Consultant should compare the baseline and final energy bills and adjust for degree days (HDD and CDD), changes in operating use, changes in energy prices, occupancy rates, etc.

- Prepare M&V reports for all buildings by the end of DNP. The M&V reports need to be consistent with the format to be published by MENR. The PIU will review and approve the M&V report or request from the Contractor to revise the report. The M&V report shall demonstrate the amount of savings realized by comparing the actual energy consumption with the reference energy consumption in which the necessary adjustments are made according to the TS ISO 50.006 standard and IPMVP will be calculated.

Reporting Requirements for this Task:

The Reports should cover, but not necessarily be limited to, the information as follows:

- M&V reports for all renovated buildings

IV. Timeline

This assignment is expected to initiate in the second half of 2027 and finalized in a period of in twenty (20) months period (8 months for construction and 12 months for Defects Notification Period) and M&V Reporting Period), subject to completion of the construction contracts. A tentative time schedule for the completion of the consultants' services for the above-mentioned tasks are given below;

Table 2: Tentative Timeline

N°	Tender Package	Months									
		2	4	6	8	10	12	14	16	18	20
1	Group of Campuses										

Construction Supervision **Defects Notification Period**

V. Reporting Requirements

Reports shall be prepared for each "Works Contract Package" which are to be supervised. The Client shall give a decision within 15 days of receipt of a review or approval request. The deadlines for the submission of the reports (including Client's review and approval durations) are given below.

Table 3: Reporting Requirements

Task	Reports		Submission Deadline
1	1.1	Initial Inspection Report	Within 1st month after the Works Contract is signed
	1.2	Monthly Progress Reports	Together with the submission of the interim payment certificate for each month
	1.3	Other reports upon request	10 business days following the request
	1.4	Certificate of Completion and Defects Notification Certification	Following the successful completion of the works
	2.1	Commissioning Report	With the closure of all the items in the problem registration list (issues log)
	2.2	Final Completion Reports	2 months after the issuance of Certificate of Completion
2	2.3	Visual Presentation Materials	
	2.4	DNP Quarterly Reports	Quarterly during DNP
	2.5	DNP Final Report	by the time of the expiration of the DNP
3	3.1	M&V Report	Quarterly reports and final report one year after the renovation works are completed

All deliverables need to be prepared in Turkish. Only one selected M&V Report and executive summary sections of every deliverable will be translated into English.

All deliverables will be submitted as (i) one hard copy (signed and stamped), (ii) soft copy (on a SSD (Solid State Drive), and (iii) uploaded to an online platform, which the Client addresses.

The metric system of weights and measures shall be used. The drawings shall be submitted in the format, labelling, grouping and details as required by the Client. The plot size, parcel, map sheet for all buildings shall be listed and integrated into the drawings and other required documents.

Digital formats shall be as follows:

- Format of Reports/Documents : MS Office Word/Excel/PowerPoint & PDF
- Format of Drawings : AutoCAD 2006 (or newer) & PDF

Printing formats shall be as follows;

- Format of Reports/Documents : A4 or A3 including where appropriate drawings could be reduced to A3 size
- Format of Drawings : A1 size (unless otherwise required or agreed)
- Scale of Drawings : To be agreed with the Client.
- Format of Visual Presentation Materials
    - Format of Posters : A0, A1 and A2 size/min. 300dpi
    - Format of Others : A4 size/min. 300dpi

As indicated in the General Conditions of Contract all the drawings, reports, plans, specifications, and any other documents produced under this Contract are the property of the Client.

VI. Facilities provided by the Consultant

Supervision of the works and engineering services both during the construction and defects Notification period including M&V works and ensure that the works are executed in accordance with recent regulations and rules. All costs for equipment and administrative and logistic support must be covered by the Consultant and included in the bid price, including:

- All costs arising from the activities of its staff during the contract period, including accommodation, allowances, transportation, insurance, etc.
- Automotive, equipment, equipment for field and lab tests, office supplies, hardware and software (software for modelling and static/dynamic analysis of critical structures), etc.
- All communication costs, including fax, email, telephone, etc.
- All the equipment, instruments, services and logistical support required for the implementation of the contract, and any costs incurred during its preparation of documents and drafts, copying, printing, qualified translation, interpretation etc.
- Technical equipment at the monitoring site;

VII. Support to be provided by the Client to the Consultant

- The Client will sign letters with the beneficiary buildings that describe the responsibilities of the beneficiary, including appointing a contact/facility coordinator for all project phases, facilitating access to buildings or facilities, providing existing documentation, etc. The Client shall, where possible, assist the Consultants in obtaining approvals, permissions from the Municipalities and other State Authorities in respect of the Services to be performed.
- The inputs (contract drawings, Bill of Quantities, tender documents, etc.) shall be provided free of charge by the Client to the Consultants. The Consultant shall return all such drawings and documents received to the Client upon the completion of services.

- The Works Contractors' bidding documents are already arranged to incorporate clauses to provide temporary office facilities to the Consultant depending on the size and location of the construction sites, the size and number of rooms (generally the site office has approximately 80 m2 area and includes 1 meeting room, 3 room, 1 WC and 1 Kitchen) shall be jointly determined by the Client and the Consultant considering the needs of the Client as well. However, these will be constructed by the Contractors and will take some time.
- The Consultants will be fully responsible for providing their central site office until the Contractor/s are in place to make site offices available. The central office shall be furnished and equipped by the Consultant, whereas the site offices shall be furnished by the Contractor. All sort of running expenses for the site offices except water and electricity (to be provided by the Contractor) shall be under the Consultant's responsibility.
- The Consultant shall not be required to deliver any equipment and materials provided by the reimbursable expenses and which have been used for the Services to the Client upon the completion of services.

VIII. Team Composition and Qualification Requirements for the Key Staff

- The Consultant firm should (i) be in the consulting business for not less than the last 10 years prior to deadline for submission of interests, (ii) have at least 5 years of similar supervision experience prior to deadline for submission of interests in the Services listed in this TOR, (iii) demonstrate sound administrative and financial capacity, (iv) demonstrate availability of the key experts for the performance of the services described in this TOR.
- The working language of the Project is English. All the team members assigned by the Consultant must possess proficiency in English language. Day-to-day communication language will be Turkish or English at the field level to ensure smooth communication among all participants, direct and indirect, of the Project.
- All key staff and support staff shall be mobilised immediately after the first Construction Contract signature in way to evaluate the design and make the necessary adjustment before the works commence.

Table 4: Key staff's qualifications

Task	[Nº] - Position	Required Experience
All Tasks	[K-1] - Team Leader	Architect, Civil, Electrical or Mechanical Engineer with at least fifteen (15) years of professional experience, including at least ten (10) years in similar energy efficient building supervision and five (5) years working in a manager position.
	[K-2] - Civil Engineer	Civil Engineer with at least ten (10) years of professional experience including at least five (5) years in similar energy efficient building supervision.
	[K-3] - Architect	Architect with at least ten (10) years of professional experience, including at least five (5) years in similar energy efficient building supervision experience
	[K-4] - Mechanical Engineer	Mechanical Engineer with at least ten (10) years of professional experience including five (5) years in similar energy efficient building supervision.
	[K-5] - Electrical Engineer	Electrical Engineer with at least ten (10) years of professional experience including five (5) years in similar energy efficient building supervision.
	[K-6] - Cost and Planning Engineer	University degree in engineering with at least five (5) years of professional experience including at least two (2) years in preparation of progress payments, claim management, time schedules and reporting of construction projects that include similar buildings.

Task	[Nº] - Position	Required Experience
	[K-7] - QA/QC Engineer	University degree in engineering with at least five (5) years of professional experience including at least two (2) years in quality assurance and control experience in construction projects that include similar buildings.
	[K-8] - Measurement & Verification Expert	Mechanical Engineer with at least ten (10) years of professional experience including two (2) years in measurement & verification (M&V) including measuring, collecting and analyzing data for the purpose of verifying and reporting energy savings in EE renovations. Energy manager or audit-project certification issued by the Ministry of Energy and Natural Resources is also mandatory.
	[K-9] – Commissioning Expert	Engineer with at least ten (10) years of professional experience including three (3) years of test & commissioning work experience.
	[K-10] - Environmental Specialist	Environmental Engineer with at least five (5) years of professional experience including at least three (3) years in the national environmental legal framework, environmental impact/risk assessment, preparation of environmental assessment tools (ESMP, Environmental and Social Impact Assessment (ESIA), etc.) and knowledge in environmental safeguard policies and ESSs of the World Bank's Environmental and Social Framework (ESF) or other international development institutions, GIIPs.
	[K-11] - Social Specialist	At least bachelor's degree in social science or related field at least five (5) years of professional experience, including at least three (3) years' experience in stakeholder engagement, social risk and impact assessment and management instruments (SEP, LMP, ESMP, ESIA, etc.) and knowledge of the World Bank's Environmental and Social Framework (ESF), including environmental and social standards, or similar environmental and social policies of IFIs.
	[K-12] – Occupational Health and Safety Specialist	Occupational Health and Safety Specialist with at least five (5) years of professional experience, including at least three (3) years in OHS assessment and management in construction projects financed by international finance institutions or other international donors, preferably the World Bank and with a knowledge in environmental and social safeguard policies and ESSs of the World Bank's ESF or other international development institutions; A or B Class Occupational Safety Expert certificate issued from the Directorate General of Occupational Health and Safety or equivalent international certificate.
	[N-…] - Technical Support Staff	Support staff for the technical services with at least three (3) years of professional experience shall be proposed additionally as required (architects, surveyors, mechanical and electrical technicians/junior engineers, OHS personnel, etc.)
	[N-…] -Administrative Support Staff	Support staff for the administrative services shall be proposed additionally as required (clerks, drivers, secretary, etc.)

Note: In addition to the Key Experts, at least one female intern will be employed, selected from among students or recent graduates of relevant engineering or architecture faculties.