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

CONSTRUCTION SUPERVISION AND COMMISSIONING FOR ENERGY EFFICIENCY RENOVATIONS IN PUBLIC BUILDINGS IN MANİSA

Reference No:

EEPB2/WB/MoEUCC/LCS-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 RENOVATIONS IN PUBLIC BUILDINGS IN MANİSA

(REF: EEPB2/WB/MoEUCC/LCS-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 (11 campuses, 17 buildings with a total area of 323.232m2), 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 buildings to be renovated in the scope

No	Name of Campus	Beneficiary Institution	Building Type	Construction Area (m²)
1	Manisa Alaşehir State Hospital	Ministry of Health	Hospital	37.258
2	Salihli Necip Fazıl Kısakürek Social Science High School	Ministry of Youth and Sports	High School	13.510
3	Salihli Oral and Dental Health Clinics Center	Ministry of National Education	Hospital	5.097
4	Salihli Faculty of Economics and Administrative Sciences	Ministry of Youth and Sports	University	6.623
5	Turgutlu State Hospital	Council of Higher Education	Hospital	49.948
6	Turgutlu Oral and Dental Health Clinics Center	Ministry of Health	Hospital	3.524
7	Yunusemre Anadolu İmam Hatip High School	Ministry of National Education	High School	11.290
8	Yunusemre TOBB Bülent Koşmaz Science High School	Ministry of National Education	High School	10.770
9	Yunusemre Science High School	Ministry of National Education	High School	11.393
10	Muradiye Dormitory	Celal Bayar University	Dormitory	54.000
	Faculty of Arts and Sciences	Celal Bayar University	University	13.017
	Faculty of Economics and Administrative Sciences	Celal Bayar University	University	15.735
	Indoor Sports Hall	Celal Bayar University	University	3.860
	Indoor Swimming Pool	Celal Bayar University	University	4.081
	Faculty of Engineering and Natural Sciences A/B/C Blocks and Dean's Office and Technical Sciences Vocational School	Celal Bayar University	University	29.294
	Faculty of Health Sciences Dean's Office	Celal Bayar University	University	4.832
11	Soma State Hospital	Ministry of Health	University	49.000
			TOTAL	**323.232**

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 3rd quarter 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**

The commencement dates of renovation work in each building may vary due to the unexpected reasons. The Consultants shall wait for the finalization of the tender evaluation or other issues to be concluded in order to start up the construction works and shall not request any payment or compensation.

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

Task	[Nº] - Position	Required 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.
	[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.)

Task	[Nº] - Position	Required Experience
	[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.