BOSNIA AND HERZEGOVINA

FEDERATION OF BOSNIA AND HERZEGOVINA

ADDITIONAL FINANCING FOR ENERGY EFFICIENCY PROJECT–ID P165405

TERMS OF REFERENCE FOR COMBINED CONSULTANCY SERVICES

PERFORMING DESIGN, WORKS SUPERVISION

Objects in ZE-DO canton

Contracts No:BEEPAF-P165405-CQ-30-CS-21-FBIH

1. Background:

The Government of Bosnia and Herzegovina (BH) has recognized the importance of energy efficiency to support sustainable economic growth and move towards EU accession and has received the financing for the Additional Financing for the Bosnia and Herzegovina Energy Efficiency Project (AF) from the International Bank for Reconstruction and Development (IBRD) credit funds. The project development objective is to demonstrate the benefits of energy efficiency improvements in public sector buildings and support the development of scalable energy efficiency financing models.

The project will be supported by a US$32 million IBRD/IDA credit funds for BH, which is made available to the two entities (US$ 19.23 million allocated to the Federation of Bosnia and Herzegovina (FBH). The project will consist of three components implemented separately in each entity:

Component 1: Energy efficiency investments in public facilities

Component 2: Support for the development of scalable financing mechanisms and capacity building

Component 3: Project Management

The project implementation unit (PIU) established within the Ministry of Spatial Planning of the Federation of Bosnia and Herzegovina (FMPP) will be responsible for the preparation, coordination, management and implementation of the project in the Federation of Bosnia and Herzegovina, including procurement, contracting, and payments of all goods, works and services related to the project.

This Terms of Reference (ToR) define the nature and detailed scope of an assignment to provide combined engineering services, which will include: preparing designs for energy efficient retrofits, supporting preparation of bidding documents for civil works, supervision of civil works;

1. Objectives

For the preparation and implementation of energy efficiency investments in public buildings (financed under Component 1 outlined above) in 2020, the PIU on behalf of the FMPP ('the client') intends to hire a Consultant Company ('the consultant') who will perform all of the following services: performing design, conducting supervision and commissioning of civil works.

The objective of the energy efficiency investments financed as part of the project is to demonstrate the benefits related to energy efficiency (EE), including reduction of energy consumption in selected buildings, demonstration of the economic viability of investments, including reduced recurrent energy costs and associated public expenditures. In addition, the energy efficiency improvements are expected to generate demonstrable co-benefits, such as reduced CO2 emissions and improved indoor comfort levels.

2. Description and Scope of Services:

3.1 GENERAL DEFINITION OF SERVICES

The services will be performed for the public buildings listed in Annex 1 of this ToR. The services to be provided by the Consultant are described in detail in section 3.2. The assignment will be executed in two (2) tasks whereby the Task 1 will be compensated on the basis of the Lump-Sum contract provisions.

The realization of the required tasks is the subject to availability of credit Funds to be obtained by the relevant Canton from the Federal Ministry of finance.

3.2 DETAILED SCOPE OF WORK

Task 1. Design

The Consultant will be responsible for preparation and delivering the documentation related to the Design to the FMPP.

The Consultant shall:

- (1) review detailed energy audit (DEA) reports (Annex 2), (2) visit selected public buildings, (3) check and compare actual buildings' conditions with those given in DEA report, (4) check and assess technical feasibility for the implementation of DEA recommended energy saving measures, and (5) report to the Client his findings, particularly those related to the feasibility of implementation of DEA recommended investment package. Technically non-feasible energy saving measures shall be excluded from the further consideration in agreement and after approval by the PIU.
- Prepare technical design documentation with all associated textual (descriptions, technical requirements and specifications), numerical (BoQ and priced BoQ) and graphical (drawings) fully in line with local legislation including energy efficiency in FBiH technical codes and good engineering practice for recommended and accepted energy saving measures (investments); as well as calculations on meeting the energy efficiency standards. A recalculation of energy savings and CO2 emissions should be carried out if the measures proposed by the project differ from those proposed by the optimal DEA scenario. It is also important to make economic calculations of the return on investment.As part of the technical design documentation, the Consultant is expected to also pay attention to the optimization of technical design documentation in accordance with financial costs of investments including inter alia: (i) optimization of window opening system (e.g. reduce the number of casements with opening handles where not practical); (ii) development of clear window specifications in terms of thermal performance; (iii) installation of local temperature control with thermostatic radiator valves, cleaning of radiators and/or other required improvements at radiators; and (iv) automatic central heating control system;
- The drawings will include the details that are usually produced in Federation of BH and will be issued at the scales required by the Federation of BH norms and standards. For technical requirements that will be linked to new equipment or equipment not included by the FBH standards, the Consultant shall follow the EN standards or other recognized international standards;
- The design (and technical part of the bidding documents) shall also take into account FBH regulations on environmental protection, any environmental management plans for public buildings and the Environment Management Plan provided by the Client (see Annex 3); the Consultant shall stipulate in the bidding documents the use of environmentally friendly materials, equipment and technologies;
- Prepare technical parts of bidding documents (including bills of quantities) for various procurement categories, i.e. works for reconstruction and/or building retrofit, supply and installation of equipment (including list of goods to be supplied and installed, and a cost estimate of goods and other related contractor services for installation). In the bidding document, a provision should be included that contractors shall provide training about operation and maintenance of new equipment and installations. The bidding documents shall be prepared in a format

that meets the World Bank requirements (NCB procurement method) and Client requirements (template will be provided by the Client). In case of differences between local and the Bank procurement rules and requirements, the Bank one shall prevail (e.g. avoiding mentioning of manufacturer name, product brand name, etc.);

- Provide assistance to the Client in permitting process for obtaining all necessary conditions, approvals and permissions from local authorities with regards to technical design and works conducting including permission for construction up to the technical acceptance and use permit; this requires close coordination with canton/municipalities to prepare required technical documentation as well as active and continuous cooperation with the Consultant responsible for the Audit of technical design documentation during preparation of design documents and their audit;
- Prepare draft plan for execution of construction works in cooperation with administration of public buildings selected to accommodate their needs and work schedule;

The consultant shall also provide the assistance with evaluation of technical parts of submitted bids by construction companies, including the following:

- Assist the client, as required, with review of bidder's requests for clarifications, preparing draft answers and clarification on bidder requests during the bidding process for consideration and follow-up by the Client.
- Assist the Client, as required, with evaluation of technical parts of bids received under the tenders' procedures for which the technical design documentation were developed by the Consultant and in accordance with the qualification information, criteria and procedures stipulated in the biding documents;
- Verify compliance of technical responsiveness of the bids with requirements set out in the bidding document, including deviations and missing information as well as issues concerning quality of goods, materials and technology proposed;
- Analyse responsiveness of the bids with the Norms and Standards specified in the bidding documents.

The objects, for which development of Design is required, are mentioned in Annex 1.

Task 2. Works Supervision

Consultant's service must be done in accordance with local law, energy efficiency regulations in FBiH, national standards and regulations. The works supervision ensures that the measures are implemented in accordance with the technical designs and specifications in satisfactory precision and quality and in accordance with the Client's requirements. This task covers duties and responsibilities of the Project Manager described in the general and particular conditions in the standard bidding documents for ICBs small works[1]. This includes inter/alia:

- Verify technical documentation developed by the works contractor(s) to determine whether there are any modifications suggested compared to the original technical and bidding documentation;

[1] http://siteresources.worldbank.org/INTPROCUREMENT/Resources/SBDsmworks-EN-Apr2015.pdf

- Coordinate with the relevant stakeholders (the Client, building administration, canton/municipality, and, as applicable, the relevant line Ministry) and the civil works contractor(s) on the detailed works plan and schedule;
- Carry out the supervision of all works, and the supply and installation of goods, including quality control of materials, equipment and installations, and their compliance with the technical design requirements, regulation and environmental requirements (including the Environmental Management Plan/check list provided in Annex 3) in the Federation of Bosnia and Herzegovina; this also includes spot-checks pertaining to adequate registration/ licensing of workers employed on site;
- Visit the buildings once per week or more frequently if required by the Client and based on the needs and progress of works at each building.The Consultant will prepare a short report (Progress Report) after each visit on the work progress, including compliance with the work plan and technical documentation, the Environmental Management Plan, time schedule, quality assurance (including quality of works and materials/equipment delivered on the work site) and taking into account relevant standards and norms of the Federation of Bosnia and Herzegovina that could be affected by the energy efficiency works. Building visit reports will also include photographs providing a good view of the works progress, and highlightany issues or problems at the worksite.
- Sign regularly erection diaries and construction books and verify installed goods and materials as well as performed works;
- Verify payment certificates submitted by the Contractors, based on verified statement of works and contract requirements;
- Address problems that may occur, such as delays of delivery and installation, and bring issues to the Client’s attention and recommend solutions to address the issues and avoid delays;
- Prepare requests to the Contractor, in coordination with the Client, to remedy all defects, to replace the non-adequate equipment and to install the goods in accordance with the technical requirements;
- Seek the Client’s and the beneficiary’s approval for any additional works required or modifications to be introduced prior to performance of such work; if agreed modifications were introduced by the Constructor with prior written approval of consultant, the client and the beneficiary, the consultant shall verify the final technical documentation, detailed technical design (after the work completion) and related cost estimates; the consultant should not approve any extended or additional works prior to obtaining a written approval of the Client;
- Be responsible for design revisions required as per site conditions during the implementation of the project in the minimum possible time;
- Obtain (if necessary) approvals of the relevant authorities to the modifications in detailed technical designs during contract implementation;
- Be responsible for (i) supervising the training provided by the works Contractor to the beneficiaries' maintenance staff (as included in the contract for equipment suppliers/works contractors), (ii) ensuring gathering attests, certificates and guarantee/warranty documentation from the contractor on the works and installed equipment, and providing the Client with the technical specification of the goods and equipment, the operation manuals and the maintenance protocols and schedules, and (iii) providing the Client with all necessary information on the newly installed equipment and materials;
- Organize and manage commissioning and testing of the works and site handover; this includes managing acceptance and commissioning procedures and verifying formal agreements on the successfully implemented works and their completion,

managing any follow-up activities required for formal acceptance of the works (if there remain any deficiencies requiring repeated commissioning), ensuring adequate technical documentation of the accomplished works, verifying final commissioning of the work sites, and verifying final payments invoices, including report of the client on payment of retention.

The objects, for which the Works Supervision is required, are mentioned in Annex 1.

4. Output/Deliverables and Time Schedule:

The deliverables include the following documents for each building separately:

Task 1:

The deliverables include the following documents:

- Final technical documentation (including lay-out, drawings, detailed technical design, bill of quantities and cost estimate, calculations on energy efficiency standards) of retrofitting measures to be implemented in each building (including supply and installation goods, and implementation of works), in compliance with local norms and standards; the final documentation takes into account comments received from the Client and the Beneficiary and adequately addresses these. The technical documentation is expected to be submitted in local language in four (4) hard copy and one (1) copy on CD ROM (MS Word, Excel, AutoCAD (.dwg) for drawings);Task shall be completed and submitted to the Client for final approval within 140 days starting from Contract signature.
- Technical part of bidding documents for selected buildings, as described in Task 1, arranged in procurement packaged and in a format that meets the World Bank and the local requirements (template will be provided by the Client). The technical part is expected to be provided in local language; Documents shall be submitted by email and in in one (1) copy on CD ROM (MS Word, Excel). Task shall be completed and submitted to the Client within 10 days starting from Client approval of proposed technical documentation.
- Reports on findings about feasibility for implementation of DEA recommended investment package, in MS Word format, with associated photo documentation, in local and English language, submitted via email; deadline is 7 calendar days from the first visit to the building;
- Draft answers to bidder’s inquiries (in local language and per email) and technical (written) inputs on responsiveness of bids in accordance with criteria agreed with PIU and defined in Bidding Documents in a format to be agreed with the Client (local language). Written clarifications concerning the potential bidders' enquiries on the bidding documentation shall be submitted to the Client within three (3) days from receipt of such request. The report on compliance of bidders’ proposals with the qualification requirements of bidding documentation shall be submitted to the Client within five (5) days from receipt of such proposals. Wherever any proposal is found to be technically non-responsive the report shall explain in details the reasons of such deviations.

Task 2:

- Consultant's Detailed Works plan and Schedule; Revised plans, if any revision done;
- Progress Reports, on a two weeks basis including all the detailed mentioned above (local language);
- Verified interim and final payment certificates based on verified construction books (monthly);
- Environmental Check-List Report;
- Final acceptance and commissioning report for each building certifying the quality of the works, materials and equipment including final technical documentation after the work completion in compliance with local regulations;
- Other reports as relevant (e.g. final technical documentation in case of any modifications made as approved by the Client and relevant authorities during construction).

Progress Reports shall be submitted in one (1) copy on CD ROM (MS Word, Excel) in local language every fourteen (14) days.

Verified interim and final payment certificates in six (6) hard copies in local language and shall be submitted to the Client by 10th of every month

Environmental Check-List Report in one (1) hard copy and one (1) copy on CD ROM (MS Word, Excel) in local language and shall be submitted to the Client within fifteen (15) days after acceptance on the successfully implemented works;

Final acceptance and commissioning report in three (3) hard copies and one (1) copy on CD ROM (MS Word, Excel) in local language.

5. Duration

- Task 1: 140 days
- Task 2: The perceived Works duration is:

Works for 30 objects in ZE-DO canton: 4 months (supervision services 5 months, 15 days before/after the Works) – expected period: from 01.03.2021 to 01.10.2022.

6. Qualification requirements and basis for evaluation

The Consultant should be a qualified firm or joint venture of firms (up to 3 companies for a joint venture) that have demonstrated experience in preparing technical documentation for energy efficiency measures in large public, commercial and residential multi apartment buildings, and supervision of works (of several sites at the same time). The firm must propose a team capable of successfully carrying out all aspects of the ToR with in-depth experience in executing similar consultancies. The Consultant shall demonstrate his capability to mobilize enough skilled staff for carrying out the project activities within the allocated timeframe and include all necessary engineering specialists as part of the proposal by including in the technical proposal the

Curriculum Vitae of the proposed key staff, including educational background, relevant working experience in similar projects, and by confirming their availability during the period of the contract.

Interested consultants must provide information indicating that they are qualified to perform the services by fulfilling following requirements:

- Company information: name, registration, address, telephone number, facsimile number, year of establishment, contact person for the project, fields of expertise;
- Confirmation on no obligations relating to the payment of direct and indirect taxes in accordance with the relevant laws of Bosnia and Herzegovina (may not be older than three (3) months) or with the relevant law of the country from the EOI submitter
- Hold a license from Ministry of Spatial Planning of the Federation of Bosnia and Herzegovina for Design and license for performing energy audit and certification of buildings for complex building systems in FB&H or if not available will be obtained within 30 days as condition to sign the contract. Such consultant shall provide a confirmation along with the EOI that he will secure the license in case he is selected to submit technical/ financial proposals
- Details of experience for minimum three (3) similar assignments undertaken in last five (5) years for Task 1 and minimum three (3) similar assignments undertaken in last five (5) years for Task 2, including value of consulting services and value of works, location, name of the Client, type of services provided, contract period of execution;
- Curricula Vitae (short version, specifying experience in similar assignments, nine (18) CVs of key personnel from various professions requested under such services) of key staff who will be working on the assignment(s) with minimum:
    - Team Leader, responsible for managing/overseeing the entire consultancy contract implementation; University degree (Master's equivalent) in architecture, mechanical, electric or civil construction engineering or related field; minimum seven (7) years of experience in relevant field, including project management of similar assignments;
    - Deputy of team leader, responsible for assisting to team leader for managing/overseeing the entire consultancy contract implementation; University degree (Master's equivalent) in architecture, mechanical, electric or civil construction engineering or related field; minimum seven (7) years of experience in relevant field, including project management of similar assignments;
    - Responsible key staff for managing/coordinating supervision of civil works; university degree (Master's equivalent) in architecture or civil engineering and at least seven (7) years of work experience in relevant field;
    - At least seven (7) graduate architect and/or civil engineers with competency exam passed and at least five (5) years of work experience in relevant field;
    - At least three (2) additional graduate architect and/or civil engineers;
    - At least four (3) graduate mechanical engineers with competency exam passed and at least seven (7) years of work experience in relevant field;
    - At least two (1) additional graduate mechanical engineer:
    - At least three (1) graduate electrical engineers with competency exam passed and at least seven (7) years of work experience in relevant field;

- At least one (1) additional graduate electrical engineer:

One (1) administrative assistant (support personnel, not needed CV).

ANNEXES

Annex 1 – Draft List of selected public buildings

Annex 2 – Detailed Energy audits for selected public buildings

Annex 3 - Environmental Management Plan/check list

Annex 1 – Draft List of selected public buildings

This annex includes the draft list of selected public buildings and might be a subject to change.

No.	Building Name	Canton	Location	Works to be implemented (ENG)	Heated area (m2)	Total Investment estimation (BAM with VAT)
1.	JU Medicinska škola Zenica	ZDK	Crkvice b.b., Zenica	(S2) - Scenario 2 - 1.Thermal insulation of the exterior walls, 2.Windows and doors replacement; 3.Thermal insulation of the flat roof, 4.Thermal insulation of the ceiling under the sloping roof; 5.Partial lightening replacement (CFLs); 6.Installation of thermostatic valves; 7.Installation of heat exchanger; 8. Installation of automatic control of heating (S2) 9.Establish the energy management team	3448	548.813,00
2.	JU Osnovna škola „1. mart“ Jelah	ZDK	Husein Kapetana Gradaščević a, Jelah, Tešanj	(S3) - Scenario 3: - 1. External windows and doors replacement; 2.External wall insulation; 3. Roof insulation; 4.Boiler and energy products replacement (pellet); 5. Hydraulic balancing of the heating system; 6. Installation of three frequency controlled pumps for the heating system; 7. Installation of thermostatic valves; 8. Installation of heating performance measures; 9. Partial lightening replacement (CFLs);.	1.919	389.512,20
3.	JU OŠ Safvet-beg Bašagić	ZDK	Donja Mahala 42, Visoko	(S5) - Scenario 5: -1.External wall insulation and thermal insulation of the ceiling under the sloping roof; (school building and sports hall) 2. External windows and doors replacement; 3. Heating system improvements.; 4.Boiler and energy products replacement; 5. Partial lightening replacement (CFLs);.	2.740	410.957,50
4.	JU Mješovita srednja stručna škola Kakanj	ZDK	Šehida, Kakanj	(S3) - Scenario 3: - 1. External wall insulation; 2. Roof insulation; 3. External windows and doors replacement; 4. Installation of thermostatic valves; 5.Installation of new pellet boiler; 6. Partial lightening replacement (CFLs);.	2.659	484.636,12
5.	JU OŠ "Safvet-beg Bašagić" Breza	ZDK	Breza	(S1) - Scenario 1: -1.1.External wall insulation; 1.2. Thermal insulation of the ceiling above heated area and flat roof; 1.3. External windows and doors replacement;	2.260	410.957,50

No.	Building Name	Canton	Location	Works to be implemented (ENG)	Heated area (m2)	Total Investment estimation (BAM with VAT)
6.	JU OŠ "Novi Šeher"	ZDK	Novi Šeher, Maglaj	(S2) - Scenario 2 - 1.Thermal insulation of the exterior walls, 2.Windows and doors replacement; 3.Thermal insulation of the ceiling under the sloping roof; 4.Partial lightening replacement (CFLs); 5.Boiler and energy products replacement; 6.Installation of thermostatic valves; 7.Establish the energy management team	1.082	337.001,00
7.	JU OŠ "Vareš"	ZDK	Put mira br.37, Vareš	(S2) - Scenario 1 - 1. Partial windows and doors replacement; 2. Thermal insulation of the exterior walls, 3.Thermal insulation of the ceiling under the sloping roof (school building); 4.Thermal insulation of tne roof (sports hall); 5. Heat energy meters installation; 6.Partial lightening replacement 7.Establish the energy management team	2.849	213.507,45
8.	JU OŠ "Vozuća"	ZDK	Vozuća bb, Zavidovići	1.Thermal insulation of the exterior walls, 2.Windows and doors replacement;	965	52.911,60
9.	JU Mješovita srednja škola Zenica	ZDK	Dr. Adolfa Goldberga 10, Zenica	(S3) - Scenario 3: - 1.External wall insulation; 2.Roof insulation; 3.External windows and doors replacement; 4.Improvements of the heating system; 5.Installation of thermostatic valves; 6.Partial lightening replacement (CFLs); 6. Installation of 12 solar panels	3.967	557.295,10
10.	JU OŠ "Musa Ćazim Ćatić" Visoko	ZDK	Veliko Čajno, Visoko	(S2) - Scenario 2: - 1.External wall insulation;2.Thermal insulation of roof; 3.External windows and doors replacement; 4.Thermal insulation of cellings above non-heated area; 5. Installation of thermostatic valves; 6.Boiler and energy products replacement (gas); 7. Partial lightening replacement (CFLs);.	2.109	286.786,78
11.	JU OŠ "Kulin Ban" Tešanjka	ZDK	Trg žrtava osmog oktobra, Tešanjka	(S2) - Scenario 2 - 1.Windows and doors replacement; 2.Thermal insulation of the exterior walls, 3.Thermal insulation of the ceiling under the sloping roof;	1.634	275.702,50

No.	Building Name	Canton	Location	Works to be implemented (ENG)	Heated area (m2)	Total Investment estimation (BAM with VAT)
12.	JU OŠ Rašid Kadić" Kakanj	ZDK	Gradac br. 240, Brnjic Kakanj	(S2) - Scenario 2: - 1. External windows and doors replacement; 2.External wall insulation; 3.Thermal insulation of ceilings above heated area; 4. Thermal insulation of roof; 5. Heat energy meters installation; 6.Partial lightening replacement (CFLs);.	1.627	152.530,00
13.	JU "Musa Ćazim Ćatić" Olovo	ZDK	Školska bb, Olovo	(S2) - Scenario 2: 1.Installation of heating control valve; 2. Hydraulic balancing of the heating system; 3. Partial lightening replacement (CFLs);.	1.145	7.997,09
14.	JU Mješovita srednja škola "Mehmedalij a Mak Dizdar" i JU Gimnazija "Mushin Rizvić" Breza	ZDK	Šehidska 34 Breza	(S2) - Scenario 2 - 1.External wall insulation; 2.Thermal insulation of roof; 3.External windows and doors replacement; 4.Installation of thermostatic valves; 5.Installation of new pellet boiler; 6.Partial lightening replacement (CFLs);.	3.328	483.408,42
15.	JU OŠ "Mak Dizdar"	ZDK	Ćurkovića put 17, Zenica	(S3) - Scenario 3 - 1.External wall insulation; 2.External windows and doors replacement; 3.2.Installation of thermostatic valves, Heat energy meters installation,Hydraulic balancing of the heating system; 4.Partial lightening replacement (CFLs);.	5.375	737.389,80
16.	JU OŠ "Mula Mustafa Bešeskija"	ZDK	Donje Moštre, Visoko	(S1) - Scenario 1 - 1.External wall insulation; 2.External windows and doors replacement; 3.Thermal insulation of tne roof (sports hall); 4.Installation of thermostatic valves; 5.Partial lightening replacement (CFLs);.	2.378	334.586,00
17.	JU Mješovita srednja škola "Nordbat 2"	ZDK	Zvijezda 36, Vareš	1.Thermal insulation of the exterior walls, 2.Windows and doors replacement; 3.Thermal insulation of the flat roof; 4. Installation of automatic control of heating; 5.Partial lightening replacement (CFLs);	2.161	142.010,00
18.	JU Mješovita srednja industrijska škola Zenica	ZDK	Bulevar Kralja Tvrtka I, Zenica	(S1) - Scenario 1 - 1.External wall insulation; 2.Thermal insulation of the roof; 3.External windows and doors replacement; 4.Installation of thermostatic valves; 5.Partial lightening replacement (CFLs);.	3.514	585.415,61

No.	Building Name	Canton	Location	Works to be implemented (ENG)	Heated area (m2)	Total Investment estimation (BAM with VAT)
19.	JU OŠ "Mustafa Mulić" Šije	ZDK	Šije, Matuzići	(S2) - Scenario 2 - 1.Thermal insulation of the exterior walls, 2.Windows and doors replacement; 3.Thermal insulation of the roof, thermal insulation of the ceiling under the sloping roof; 4.Boiler and energy products replacement (pellet); 5.Hydraulic balancing of the heating system; 6. Installation of three frequency controlled pumps for the heating system; 7.Installation of thermostatic valves; 8.Heat energy meters installation; 9.Partial lightening replacement (CFLs);	950	165.649,50
20.	JU OŠ "Skender Kulenović"	ZDK	Radakovo. Zenica	(S1) - Scenario 1: - 1.External wall insulation; 2. Thermal insulation of the roof; 3.External windows and doors replacement; 4.Installation of thermostatic valves; 5.Installation of heating control valve; 6.Partial lightening replacement (CFLs);.	3.461	594.649,81
21.	JU OŠ "Kulin ban"	ZDK	Gornje Rosulje 1, Visoko	(S1) - Scenario 1: - 1.External wall insulation; 2. Thermal insulation of the ceiling below the sloped roof; 3.External windows and doors replacement; 4.Installation of new pellet boiler, and heating system reconstruction, 5.Installation of daylight sensor; 6. Installation of motion sensor;	3.008	540.162,82
22.	JU OŠ "Miroslav Krleža"	ZDK	Travnička cesta, Zenica	(S2) - Scenario 2: - 1.External wall insulation; 2.Installation of thermostatic valves; 3.Partial lightening replacement (CFLs);.	3.443	196.048,97
23.	JU OŠ "Arnauti" Zenica	ZDK	Arnauti bb, Zenica	(S3) - Scenario 3 - **2**.Partial windows and doors replacement; 5.Heat energy meters installation; 10.Partial lightening replacement (CFLs);.	1.472	44.731,44
24.	JU "Mašinski fakultet Univerziteta u Zenici"	ZDK	Fakultetska 3, Zenica	(S3) - Scenario 3; - 1.Thermal insulation of the external walls; 2. External windows and doors replacement; 3.Thermal insulation of the roof; 4. Installation of automatic control of heating (S3) 5.Installation of thermostatic valves; 6.Partial lightening replacement (CFLs);	6.216	987.158,00

No.	Building Name	Canton	Location	Works to be implemented (ENG)	Heated area (m2)	Total Investment estimation (BAM with VAT)
25.	JU "Metalurško-tehnološki fakultet Univerziteta u Zenici"	ZDK	Travnička cesta, Zenica	(S3) - Scenario 3; - 1.Thermal insulation of the external walls; 2. Thermal insulation of the roorf; 3.Partial windows and doors replacement; 4.Installation of thermostatic valves; 5. district heating substations replacement; 6.Partial lightening replacement (CFLs);	5.819	839.795,00
26.	JU "Filozofski fakultet Univerziteta u Zenici"	ZDK	Zmaja od Bosne 56, Zenica	(S3) - Scenario 3; - 1.Thermal insulation of the external walls; 2.Thermal insulation of the roof; 3.Partial windows and doors replacement; 4.Installation of thermostatic valves; 5.Partial lightening replacement (CFLs); 6.Hydraulic balancing of the heating system;	2.680	447.469,00
27.	Rektorat Univerziteta u Zenici	ZDK	Fakultetska ulica, Zenica	(S3) - Scenario 3; - 1.Thermal insulation of the external walls; 2.Thermal insulation of the ceiling below the sloped roof; 3.Windows and doors replacement; 4.Installation of thermostatic valves; 5.Heat energy meters installation; 6.Replacement of heat exchange stations; 7.Partial lightening replacement (CFLs);	831	132.111,00
28.	Metalurški institut "Kemal Kapetanović" – Dokumentacijski centar - Biblioteka	ZDK	Fakultetska 3, Zenica	(S3) - Scenario 3; - 1.Thermal insulation of the external walls; 2.Thermal insulation of the roof; 3.Windows and doors replacement; 4.Installation of thermostatic valves; 5.Replacement of heat exchange stations; 6.Partial lightening replacement (CFLs);	876	287.679,00
29.	JU Gimnazija „Rizah Odžečkić“	ZDK	Stjepana Radića 43, Zavidovići	Roof replacement	1467	n/a
30.	JU Gimnazija „Muhsin Rizvić“	ZDK	Ulica šehida 32, Kakanj	Roof replacement	2240	n/a

Annex 2 – Detailed Energy audits for selected public buildings

Annex 3 - Environmental Management Plan/check list

General part

The Contractor is obliged during the works to follow relevant laws and regulations relevant to the scope of the works, which apply at the level of the Municipality, the Canton and the Federation of Bosnia and Herzegovina, relating to physical planning and construction, environmental protection and health and safety at work.

The table above refers to environmental protection measures from potential impacts during different stages of project development. The Contractor is required to always comply with the provisions of this Environmental Management Plan, and the Project Manager (professional supervision) and / or members of the Project Implementation Unit should properly monitor the implementation of the proposed measures.

Environmental Management Plan (EMP)

Stage: Designing				
Impact on environment	**Mitigation measures**	**Mitigation costs**	**Institutional responsibility**	**Comments**
Overview of final project documentation	Ensure that the activities in the project documentation comply with the Environmental Management Plan, the Law on Fire and Fire Protection and in accordance with the Rule book on storage and keeping fuel oil ("Official Gazette of SFRJ", No. 45/67)	Part of project activities, included in operational costs	Contracted Design Consultant, together with Project Implementation Unit or team	

Stage: Construction				
Impact on environment	**Mitigation measures**	**Mitigation costs**	**Institutional responsibility**	**Comments**
Old equipment or waste that can be used again	Attempt to reuse or recycle the resulting waste as much as possible, in case it is not possible to reuse it, dispose waste into specific landfills. It is forbidden to burn or use all waste for fuel, including painted wooden parts of doors and windows. Long-term storage of such waste near the site is also not permitted.		Contractor or facility end user	
Construction waste	Separation of all types of waste, reuse and recycling wherever possible. Disposal of waste that cannot be reused or recycled, transported and disposed at specific landfills in cooperation with local waste management companies; there is no open incineration or illegal disposal of waste. Hazardous waste (smaller amount of paint, oil etc.) will be kept separately after the marking procedure and will be handed over to certain and authorized		Contractor or subcontractor	Will be defined within scope of project documentation

Stage: Construction				
Impact on environment	**Mitigation measures**	**Mitigation costs**	**Institutional responsibility**	**Comments**
	firms or agencies, in accordance with relevant legal requirements. Avoid long-term waste collection on site.			
Removal of materials that may contain asbestos (or other hazardous materials such as mercury bulbs)	Removal of asbestos-containing materials will be carried out in accordance with local laws, including construction standards, workplace safety issues, emissions of hazardous pollutants and disposal of waste and hazardous waste (in case there are no local regulations, Directive 2003/18 / EC of the European Parliament will be used, which will amend Council Directive 83/477 / EEC on the protection of workers from exposure to asbestos at work: the limit values of the floating dust particles are 0.1 fiber / cm3; also use the Good Practice Handbook: Asbestos: Health problems at work and community; World Bank).	Special subcontract during works, if necessary. Additional costs may be significant, depending on the amount of material to be removed.	Contractor	The Contractor should train his workers on how to evaluate the presence of asbestos-containing materials and to establish a safe removal process with appropriate protective equipment, continuous safe storage in hermetically sealed containers and management by an authorized agency or firm (registered within Ministries of Tourism and environment of entities).
Placement of the fuel oil tank	For existing tanks: Determine whether they are placed in accordance with the Law on fire protection and firefighting and in accordance with the Rule book on placement and keeping of fuel oil ("Official Gazette of SFRJ", No. 45/67)	Included in investment Special subcontract during works, if necessary. Additional costs may be significant.	Designer/Supervisor; Contractor	
	In case of a move of tank per User request: Ensure that the tanks are placed in accordance with the Law on fire protection and firefighting and in accordance with the Rule book on placement and keeping of fuel oil ("Official Gazette of SFRJ", No. 45/67)	User	Designer/Supervisor; User	
Random finding	In case of a random finding or other important discoveries during the excavation, all work must be		Contractor	

Stage: Construction				
Impact on environment	**Mitigation measures**	**Mitigation costs**	**Institutional responsibility**	**Comments**
	suspended and notified to the competent authorities before proceeding.			
Noise generation	Limit the work to daily intervals that are in accordance with local laws. Ensure uninterrupted use of the building for other users or tenants. Use machines with the appropriate attestations. Without unnecessary use of machines or vehicles on the ground.	Insignificant costs. Contractor's costs.	Contractor	
Dust generation	Suppression of dust with water or covering material and work surface that can create dust; reduce the speed in transporting these materials. Dust during the demolition can be reduced by using appropriate masks to work in the area; workers should use appropriate protective equipment.	Contractor's costs.	Contractor	
Organization of site and its removal after completion of works	Plan activities to minimize disturbance to the environment and neighbors (including plans to ensure proper traffic management at site access) Enclosing the construction site or setting up the marking measures. After completion of the works, the enclosed area will be returned to its original state and the entire waste will be cleaned in accordance with the provisions of this EMP, all the machines will be removed from the area. All scaffolds, cranes and other auxiliary equipment will be installed in such a way as to ensure workers' safety, but also the safety of passers-by. Everyone working on a site must be clearly marked with restricted access rights. Workers will also have to use adequate personal protective equipment.	Insignificant costs. Contractor's costs.	Contractor	It will be further defined with the specifications in the project documentation

Supervision plan for environment and monitoring

Stage: Construction				
WHICH Parameter should be monitored?	**WHICH** Parameter should be monitored?	**WHICH** Parameter should be monitored?	**WHICH** Parameter should be monitored?	**WHICH** Parameter should be monitored?
The works are carried out in accordance with all relevant legal requirements (and permits if necessary)	The works are carried out in accordance with all relevant legal requirements (and permits if necessary)	The works are carried out in accordance with all relevant legal requirements (and permits if necessary)	The works are carried out in accordance with all relevant legal requirements (and permits if necessary)	The works are carried out in accordance with all relevant legal requirements (and permits if necessary)
Waste management (including works and hazards)	Waste management (including works and hazards)	Waste management (including works and hazards)	Waste management (including works and hazards)	Waste management (including works and hazards)
The presence of asbestos or other harmful and hazardous materials on site	The presence of asbestos or other harmful and hazardous materials on site	The presence of asbestos or other harmful and hazardous materials on site	The presence of asbestos or other harmful and hazardous materials on site	The presence of asbestos or other harmful and hazardous materials on site
Noise and dust emission	Noise and dust emission	Noise and dust emission	Noise and dust emission	Noise and dust emission
Safety signs and notifications	Safety signs and notifications	Safety signs and notifications	Safety signs and notifications	Safety signs and notifications