

**Bosnia and Herzegovina**  
**Energy Efficiency in Public Buildings Project**  
**Environmental Management Framework**  
**Federation BiH**

**November 2013**

## **GENERAL INFORMATION**

The development objective of the Project is to strengthen capacity for implementation of energy efficiency measures and to increase awareness of its benefits in Bosnia and Herzegovina through retrofitting public buildings with energy efficiency measures throughout the country.

The Project is aimed at proving the technical and economic feasibility as well as numerous economic, environmental and social benefits of energy efficiency investments in public sector buildings throughout BiH.

The Project is made up of two components, the first aimed at specific investments that would improve energy efficiency in public buildings – specifically education, health and social issues sector, throughout Bosnia and Herzegovina. These buildings shall, after renovation aimed at improving energy efficiency, also be used as demonstration projects, and will be chosen by the respective line ministries using the system of scoring against a set of established criteria. Activities to be included within this component are (i) insulation of walls, roofing and attics, (ii) improvements and replacement of windows and doors, (iii) thermostatic vents and automated temperature controls, (iv) lighting systems, (v) refurbishment of the heating systems and building-based boilers, including use of cleaner fuels where it is economically and technically feasible. The Project will not involve other reconstruction activities that are not directly related to energy efficiency (bathrooms, floors, etc.) unless those activities are also aimed at improvement of energy efficiency (repairs of gutters, etc.). The second component shall be based on technical assistance for building capacity for monitoring and evaluation, and organization of trainings and support to public awareness activities that are aimed at increasing awareness of the energy efficiency activities.

## **SCOPE OF WORKS AND IDENTIFICATION OF ASSOCIATED ENVIRONMENTAL IMPACTS**

The works envisaged under this Project will be directly related to rehabilitation of public buildings in order to increase energy efficiency, and therefore lead to a decrease in heating losses in the public buildings, predominantly in the educational and health-care buildings. Majority of works will be dealing with retrofitting doors and windows, improvement of thermal insulation on external walls (works on façade), insulation works on the roofing and attic and improvement of boiler operations.

The major associated environmental impacts can be easily mitigated through the application of environmentally sound construction practices, and are mostly related to the immediate neighbors, other users of buildings, generation of dust and noise, waste management, chance findings and possible discovery and management of hazardous materials such as asbestos.

The works financed under this Project will not include expansion beyond the existing footprint onto additional land surfaces. The works will not include demolition or removal of any buildings, and shall be carried out in full compliance with the local legislation requirements in force at the State or Entity level, and in line with the World Bank Operational Policy OP 4.01 on Environmental Assessment.

As the final project locations and selected buildings are not known at the time of Project Appraisal, a template Environmental Management Plan (EMP) has been prepared within the scope of this document. This EMP will be adjusted to reflect the site-specific environmental conditions, and as such, will be included in the bidding and contractual documentation for both construction and supervision of the works. The EMP table will precisely define the mitigation measures to be implemented by the Contractor for construction works and monitoring measures that the supervisor will use to ensure the mitigation measures have been implemented. It is the duty of the Client to ensure that the EMP tables are prepared on a case-by-case basis but also that all of the local requirements are met, including any and all environmental permitting procedures.

## ANALYSIS OF LOCAL LEGISLATION AND PERMITTING REQUIREMENTS RELATED TO ENVIRONMENTAL AND ENERGY EFFICIENCY ISSUES

The following laws deal with construction works and reconstruction for the two entities of BiH:

### ***Federation BiH***

- **Law on Physical Planning and Land Use for Federation BiH** („Official Gazette FBiH“ no. 02/06; 72/07;32/08;4/10;13/10;45/10)
  - *Decree on construction site management, mandatory documentation on site and construction work participants* („Official Gazette FBiH“, no. 48/09, 75/09, 93/12)
  - *Decree on the type, content, labeling, keeping, control and nostrification of investment and technical documentation* („Official Gazette FBiH“, no. 33/10)
- **Law on Construction Land** („Official Gazette FBiH“ no. 67/05)
- **Law on Environmental Protection** („Official Gazette FBiH“ no. 33/03;36/09)
- **Law on Waste Management** („Official Gazette FBiH“ no. 33/03;36/09)
  - *Federal Waste Management Plan 2012-2017*
  - *Guidelines for the Management of Construction Wastes*

• *In addition to these, there are relevant Laws on Physical Planning and Construction at the level of Cantons within FBiH*

### **Environmental Impact Assessment Requirements**

The development of an Environmental Impact Assessment report and issuing of environmental permits for construction works and industrial plants and processes is defined within the Entity Laws on Environmental Protection, as well as in District Brčko. The EIA procedure is also defined in the relevant bylaws that further define the environmental permitting procedures for given plants and processes. According to the defined process, an environmental permit is not required for reconstruction works that are carried out within existing buildings, while construction of new buildings can be subjected to an environmental permit, depending on the characteristics of the building. In Federation BiH the larger-scale polluters also apply and receive a permit at the level of the Entity, while the lower instances are dealt with at the level of the Cantons.

According to the *Law on Environmental Protection* (Official Gazette FBiH 33/03 and 36/09) a list of activities requiring an Environmental Impact Assessment and therefore an environmental permit are defined. As far as energy efficiency retrofitting activities, such as improvement of insulation, building refurbishment, etc. these are not subject to an environmental permit.

**Note:** In case that the works will include a building that has a façade, part of building or whole building under a regime of protection defined by the Entity or State regulations, all of the necessary permits need to be obtained prior to start of works, from all relevant institutes or state-level commissions.

**ENVIRONMENTAL MANAGEMENT PLAN (EMP)**

<b>Phase: Design</b>				
<b>Environmental Impact</b>	<b>Mitigation Measure</b>	<b>Mitigation Costs</b>	<b>Institutional Responsibility</b>	<b>Comments</b>
Review of the final design documentation	Ensure that the activities in the design documentation are in line with the Environmental Management Plan	Part of the project activities, included in operational costs	Contracted design consultant together with the project implementation unit or team	
Works will be carried out on a building that is partially or fully under some protection regime as cultural heritage – either by entity or state level	<p>Ensure all works are carried out inside the building and no activities are carried out directly on the protected sections</p> <p>Ask for consent/opinion/permit from the relevant authorities/ entity institutes or state level commission for the protection of monuments.</p>	Included in project costs, cost of works can vary depending on the consent and requirements there in	Project Implementation Unit or relevant team	

Phase: Construction				
Environmental Impact	Mitigation Measure	Mitigation Costs	Institutional Responsibility	Comments
Old equipment or waste that can be reused	<p>Try to reuse or recycle all generated wastes as much as possible; in the event that reuse is not possible, dispose of wastes at designated landfill sites.</p> <p>It is forbidden to burn or use for fuel all wastes, including painted wooden parts of doors and windows.</p>		Construction contractor and end-user of building	
Construction waste	<p>Separation of all types of waste streams, reuse and recycling wherever possible</p> <p>Disposal of wastes that cannot be reused or recycled, transport and disposal of wastes at designated landfill site and in cooperation with the local waste management company; no open burning or illegal disposal of wastes.</p> <p>Hazardous wastes (smaller quantities of paints, oils, etc.) will be stored separately, in accordance with relevant legal requirements, following labeling procedures and will be handed over to the designated and authorized company or agency.</p>		Construction contractor or sub-contractor	To be defined within the design documents
Removal of materials that may contain asbestos (or other hazardous materials, such as mercury-containing light-bulbs)	<p>Removal of materials that contain asbestos will be carried out in line with the local legislation, including construction standards, work safety issues, air borne emissions of hazardous pollutants and disposal of waste and hazardous waste (in the event that there is no local legislation, the Directive 2003/18/EC of the European Parliament will be used, that amends and supplements Directive of the Council 83/477/EEC on worker protection from workplace asbestos exposure risks: threshold values of airborne dust particles is 0.1 fiber/cm<sup>3</sup>; also use the Good Practice Note: Asbestos: Health Issues at Workplace and Community; World Bank).</p>	<p>Separate sub-contract during works, if needed.</p> <p>Additional costs may be substantial, depending on the amounts of material to be removed.</p>	Construction contractor	The contractor needs to train their workers on how to assess presence of asbestos containing materials and to establish a procedure of its safe removal using proper protection equipment, storage without breaking in air-tight containers and management by an authorized agency or company (registered with entity environment ministries).

Phase: Construction				
Environmental Impact	Mitigation Measure	Mitigation Costs	Institutional Responsibility	Comments
Chance findings	In case of chance finds or other significant discoveries during excavation works stop all works and inform relevant authorities prior to proceeding.		Construction contractor	
Noise generation	Limit works to daytime intervals that are in accordance with the local legislation  Ensure non-interrupted use of building to other users or tenants  Use machinery with appropriate attests  No idling of machinery or vehicles on site	Negligible costs  Contractor costs	Construction contractor	
Dust generation	Suppression of dust with water or covering materials and working areas that can generate dust; decrease speed in transport of such materials  Demolition dust can be minimized through use of adequate covers for working areas, workers should use suitable protection equipment  Use of chutes to remove waste from higher floors	Contractor costs	Construction contractor	
Boiler rehabilitation works	Ensure all fire protection measures have been implemented, including monitoring of CO levels  Use environmentally acceptable fuels	Included in the project and is the responsibility of the end user of the building		
Setting up of construction site and removal of site upon completion of works	Plan to decrease disturbance to surroundings and neighbors (including plans to ensure proper traffic management on access roads to site)  Fencing off the site or access to site with proper safety signs  After completion of works, site will be restored to previous conditions and all wastes will be cleared in line with the provisions of this EMP, all machinery will also be removed from site.	Negligible costs  Contractor costs	Construction contractor	Will be further defined with specifications in the design documents

**Phase: Use/Operation**

<b>Environmental Impact</b>	<b>Mitigation Measure</b>	<b>Mitigation Costs</b>	<b>Institutional Responsibility</b>	<b>Comments</b>
Operation of the building boiler room and heating	Ensure use of environmentally acceptable fuels Regular maintenance Ensure all attests and certificates have been acquired in particular for fire protection and monitoring of emissions/concentrations in air		End user of the building	

Environmental Supervision and Monitoring Plan

<b>Phase: Construction</b>				
<b>WHICH</b> Parameter should be monitored?	<b>WHERE</b> Should the parameter be monitored?	<b>HOW</b> Should the parameter be monitored?	<b>WHEN</b> Should the parameter be monitored? (frequency of sampling)	<b>WHO</b> <b>is responsible for monitoring?</b>
Works are carried out in line with all relevant legal requirements (and permits if necessary)	At construction site	Part of regular supervision	During works, in line with local permitting or legal requirements	Supervisor and inspectorate
Waste management (including construction and hazardous)	At construction site	Visually to ensure waste is stored and regularly transported  Review of documentation for waste handover, in particular for hazardous wastes	Weekly	Supervisor to confirm implementation  Contractor to implement measures
Presence of asbestos or other harmful and hazardous materials on site	At construction site	Visually	Weekly, in case of chance discoveries workers should inform supervisor immediately	Supervisor to confirm implementation  Contractor to implement measures
Noise and dust emissions	At construction site	Sensory  Following complaints received	At start of works and then every 30 or 60 days	Supervisor to confirm implementation  Contractor to implement measures
Signs and safety notification	At construction site	Visually	Before start of works and then regularly during construction works	Supervisor to confirm implementation  Contractor to implement measures

## **RESPONSIBILITIES IN IMPLEMENTING EMPs**

The Environmental Management Plan (EMP) that is developed within the scope of this document, will be subject to review and updating to site-specific conditions for each of the project locations that are selected during implementation. The revised EMPs will include all specific conditions as related to each of the sites.

Revised and harmonized EMPs will be disclosed in public areas, prior to start of works and shall remain disclosed for the duration of works. The EMP will be a part of the bidding and contractual documents for works and supervision. In this manner, the contractor can be responsible for implementing the specific mitigation measures, while the site supervisor will ensure that all of the listed mitigation measures have indeed been implemented.

Supervision of civil works will produce, within the regular field visit reporting, an overview of the implementation measures, as listed in the EMP tables.

Final responsibility for implementation of the EMP provisions remains with the Project Implementation Units at the Ministry of Physical Planning of FBiH and Ministry of Physical Planning, Construction Works and Ecology of RS.

## **CAPACITY BUILDING AND PROJECT IMPLEMENTATION ARRANGEMENTS**

The final responsibility for the implementation of the EMP remains with the Project Implementation Unit, as per the World Bank environmental safeguards, the bidding and contractual documentation will allow for the responsibility of implementing specific mitigation measures to be transferred to the contractor from the PIU.

It may be beneficial to select a supervision agency or consultant that will be knowledgeable of environmental protection measures and sound environmental construction practices, and to be able to hold a short course to the contractor employees prior to the start of works on meeting fully the EMP requirements.

## **PUBLIC CONSULTATIONS AND DISCLOSURE**

The EMF and the announcement of a public consultation meeting was published at the web-site of Federal Ministry of Physical Planning at [www.fmpu.gov.ba](http://www.fmpu.gov.ba) at 24.10.2013. The public consultations have also been announced in the daily papers "Oslobođenje" on 24.10.2013, with targeted invitations sent out to various stakeholders and institutions dealing with environmental protection. Due to the lesser volume of the EMF document, copies have been sent with the invitations. The public consultations meeting has been held at 31.10.2013 in the Meeting hall of the Federal Ministry of Physical Planning in Sarajevo, starting at 10 o' clock.

Based on the conclusions of the consultations, there have been no substantial comments or changes to the EMF document. Most of the discussion was related to local procedures and environmental awareness within the scope of this Project. The list of attendees and minutes of meeting are included in Annex 1 of this EMP.

**Annex 1: Minutes of Meeting and List of Participants from Public Consultations Meetings**

1	IGOR DIZDAR	Federal Ministry of Physical Planning	igor.dizdar@fmpu.gov.ba
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11	AIDA VELADŽIĆ	Municipality Stari Grad Sarajevo	061 253 986 aidaveladzic@yahoo.com
12	AMILA HADŽIBAJRIĆ	Ministry of Security of BiH	060 330 8545 amila.hadzibajric@gmail.com
13	KENAN BUTUROVIĆ	CONING d.o.o. Sarajevo	kenan@coning.ba

**Public Consultations on the draft Environmental Management Framework for the Energy Efficiency in Public Buildings Project in Bosnia and Herzegovina for the Federation BiH**

**MINUTES OF MEETING**

The public consultations were held on 31.10.2013 starting at 10 o' clock in the building of the Federal Ministry of Physical Planning. The subject of the public consultations was the draft Environmental Management Framework.

Those present at the public consultation meeting were representatives of the Federal Ministry of Physical Planning - Igor Dizdar, Hasnija Pašalić (members of project implementation unit), and Zekija Duranović and Mirsad Ramić as participants of the discussion. As other participants there were representatives of the Federal Ministry of Environment and Tourism: Đurković Drago and Kapetanović Almira, representative of the Federal Ministry of Health - Elma Sokić Begović, representative of the Ministry of Security of BiH - Hadžibajrić Amila, representative of Stari Grad municipality - Aida Veladžić, and Dževad Čeljo representative of the Ministry of Physical Planning and Environment of the Sarajevo Canton. The consultations were also attended by Mr.Karić Mirza from "Dobos" company from Sarajevo and Mr. Buturović Kenan and Mr. Čopelj Mustafa from "Coning" from Sarajevo.

Igor Dizdar, as a moderator of this consultation meeting used the opening remarks to discuss the aim of the project and its potential environmental impact, as well as the need to develop and Environmental Management Framework document. With this, the public consultation meeting was opened.

The discussion that followed included suggestions and recommendations to the EMF as well as the project itself.

- Almira Kapetanović (FMET) believes that every building needs to have a specific Environmental Management Plan and also suggests that the plan needs to include noise as well as monitoring and reporting on CO2 emissions.
- Kenan Buturović (Coning d.o.o.) explained that for each individual building there will be a defined list of requirements through preliminary and then detailed reviews of the building.
- Đevad Čeljo (CSMPPE) suggests to also finance solar collectors and to introduce and ICT system of monitoring.
- Kenan Buturović (Coning d.o.o.) stressed that the energy savings calculated are approximately 50%.

- Drago Đurković has suggested cooperation with the Commission of the Directorate for European Integrations for Energy Efficiency, and to seek their professional assistance.

Some additional discussion followed which is not directly related to the subject of the meeting.

As there have been no specific remarks, objections or suggestions made towards the Environmental Management Framework, it was concluded to continue work on the preparation of the project, and that, as needed, the stakeholders and proposed external agencies could be involved in these activities.

The public consultations were concluded at 11:30.

#### MODERATOR OF THE PUBLIC CONSULTATIONS

Igor Dizdar

#### MINUTE-TAKER

Hasnija Pašalić