Environmental Management Framework for Kosovo Energy Efficiency Renewable Energy Project

(Final)
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<th>Description</th>
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<tr>
<td>ACM</td>
<td>Asbestos containing material</td>
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<tr>
<td>CFL</td>
<td>Compact fluorescent lamp</td>
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<td>EA</td>
<td>Environmental Assessment</td>
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<td>EE</td>
<td>Energy Efficiency</td>
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<td>EIA</td>
<td>Environmental Impact Assessment</td>
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<td>EMF</td>
<td>Environmental Management Framework</td>
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<td>EMP</td>
<td>Environmental Management Plan</td>
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<td>EU</td>
<td>European Union</td>
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<td>Hg-CFL</td>
<td>Mercury containing compact fluorescent lamps</td>
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<tr>
<td>LBP</td>
<td>Lead Based Paint</td>
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<tr>
<td>MED</td>
<td>Ministry of Economic Development</td>
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<td>MESP</td>
<td>Ministry of Environment and Spatial Planning</td>
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<td>PDO</td>
<td>Project Development Objective</td>
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<td>PMU</td>
<td>Project Management Unit</td>
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<td>RE</td>
<td>Renewable Energy</td>
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<td>WB</td>
<td>World Bank</td>
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1. **SUMMARY**

The Environmental Management Framework consists of the following key elements:

(a) short description of the project and its activities
(b) assessment of Kosovo and the WB EIA related legal requirements and administrative conditions;
(c) a list and general assessment of potential impacts that might be associated with the different types of subprojects;
(d) Environmental Guidelines for proposed subprojects that provide environmental screening criteria, a scheme for an assessment of potential impacts and generic mitigation measures to be undertaken for identified subprojects in all stages - from identification and selection, through the design and implementation phase, to the monitoring and evaluation of results, as well as the requirements to an EMP Checklist; and,
(e) EMF implementing responsibilities.

Furthermore this document comprises
- the discussion of appropriate disposal solution of hazardous waste in Kosovo incl. asbestos cement, dust containing lead and others
- information on good international practice and requirements regarding removal and handling of asbestos and lead-based paint
- information on good international practice and requirements regarding removal, handling packaging, collection and treatment options for mercury containing CFLs;
- typical cost (incremental) of proper handling, storage and treatment of hazardous materials;
- information on international practices regarding provision of information, training and licensing requirements for the safe removal and handling of the hazardous materials mentioned above.
2. INTRODUCTION

2.1 PROJECT SCOPE AND OBJECTIVES AND PRE-FEASIBILITY ANALYSIS

The Project Development Objectives (PDO) of the Project are to:

(i) Reduce energy consumption in central government-owned buildings; and
(ii) Enhance the policy and regulatory environment for energy efficiency and renewable energy development.

To achieve these PDOs, the proposed project will provide:

(i) Investment finance for EE projects in all eligible central government-owned buildings;
(ii) Demonstrations on the commercial viability and program models for EE investments in municipal buildings and RE systems, such as solar water heating, for heating in select public buildings;
(iii) Support to develop a robust policy and regulatory framework which will help attract investments in and scale-up EE and RE; and
(iv) Support for project implementation.

The project will consist of energy audits in 200 central governmental buildings (e.g. ministry buildings, hospitals, university buildings), considered as future subprojects. Investment is foreseen for different government-owned buildings throughout Kosovo.

As part of project preparation, a Pre-feasibility Study of Energy Efficiency and Implementation Measures in Public Buildings in Kosovo as been executed aiming to:

(i) EE audits incl. the analyses of the integration potential for renewable energies such as solar thermal energy systems / heat pumps / biomass fuelled boilers as well as the connection to the central district heating network; (ii) Survey and Safety Management of selected hazardous materials in buildings through identification of suitable measures for implementation of state-of-the-art abatement and disposal procedures for hazardous materials during the EE improvement works and the further building maintenance.

The survey and safety management of selected hazardous materials in buildings consisted of the following items:

(1) the identification and estimation of quantities of selected potentially hazardous materials in the buildings, namely asbestos containing products, mercury from lighting and lead based-paint and
(2) a proposal of mitigation measures for the proper disposal according to the Kosova laws and regulations, EU Directives and World Bank requirements. These mitigation measures will in any case consist of:

(i) information on good international practice and requirements regarding removal and handling of asbestos (bearing on of the most sophisticated ACM abatement standards) and
(ii) information on good international practice and requirements regarding removal, handing packaging, collection and treatment options for mercury containing CFLs;
(iii) typical (incremental) costs of proper handling, storage and treatment of hazardous materials; and
(iv) information on international practices regarding provision of information, training and licensing requirements for the safe removal and handling of the hazardous materials mentioned above.
The hazardous materials which are the key focus of the pre-feasibility study were:

- Asbestos containing material (ACM), weakly bound and strong bound
- Lead based Paint (LBP)
- Mercury containing compact fluorescent lamps (Hg-CFL)

### 2.2 POTENTIAL ENVIRONMENTAL ISSUES AND PROJECT ENVIRONMENTAL CATEGORY

As the project shall fund different types of civil works in order of improving energy efficiency in public buildings, it may generate some environmental and social impacts. While the outmost of these impacts are expected to be positive (like reduced energy consumption, improved indoor temperature and comfort, reduced payments for electricity or other energy resources), the project is also expected to generate some adverse impacts like air pollution, dust, construction wastes, occupational hazards etc. All these impacts are minor, short term, site specific and can be avoided and/or mitigated during project implementation.

The main health and safety issues in the projects are expected to arise from civil works from both components. The project potential environmental impacts are generally expected to result from routing, small scale indoor construction works required for refurbishing and adaptation of interior space for the replacement of boiler and/or burner, balancing valves, thermostatic valves, automatic temperature control etc. There may be issues of small quantities of hazardous waste to be separately collected and disposed of (e.g. asbestos containing materials, small quantities of lead based paints).

In accordance with the Bank's safeguard policies and procedures, including OP/BP/GP 4.01 Environmental Assessment, the project is placed into the Bank's Category B which is applied to all proposed projects that have potential minor environmental impacts. As at this stage, the subprojects to be financed are not yet identified, the Bank requires that client will screen all proposed subprojects and ensures that subproject beneficiaries carry out appropriate EA for each subproject. For this purpose the Ministry prepared an Environment Management Framework (EMF).

This will require that for each identified object/site, the preparation of a "Checklist Environment Management Plan (EMP)" which is used for projects involving simple, low risk rehabilitation works.

The EMF outlines the environmentally relevant rules and procedures for the EA of the selected subprojects. A template for the checklist-EMP's for the subprojects is attached to this EMF.
3. **ENVIRONMENTAL MANAGEMENT FRAMEWORK (EMF)**

3.1 **EMF’S SCOPE AND OBJECTIVES**

3.1.1 **Scope**

The main goal of the EMF is to avoid, minimize or mitigate, potential negative environmental risks caused by implementation of the project.

The EMF has to ensure that the identified subprojects are correctly assessed from the environmental point of view and when needed a subproject-specific Environmental Management Plan Checklist is designed and implemented addressing site specific environmental impacts.

3.1.2 **Components**

This EMF therefore contains the following:

(f) short description of the project and its activities;

(g) assessment of Kosovo and the WB EIA related legal requirements and administrative conditions;

(h) a list and general assessment of potential impacts that might be associated with the different types of subprojects;

(i) Environmental Guidelines for proposed subprojects that provide environmental screening criteria, a scheme for an assessment of potential impacts and generic mitigation measures to be undertaken for identified subprojects in all stages - from identification and selection, through the design and implementation phase, to the monitoring and evaluation of results, as well as the requirements to an EMP Checklist; and,

(e) EMF implementing responsibilities.
3.2 ENVIRONMENTAL AUDIT POLICIES, RULES AND PROCEDURES

3.2.1 Kosovo - Main environment protection legal documents

The basic legal acts for management of hazardous materials in buildings, mitigation measures and its proper disposal are

- the Law on Waste (No. 04/L-060), adopted on January 9, 2007 with by-laws:
  - the Administrative Instruction No. 07/2009 for management of wastes containing asbestos of the Ministry of Environment and Spatial Planning of the Republic of Kosovo (MMPH)
  - the Administrative Instruction 02/2011 on Waste management of Fluorescent Tubes Containing Mercury of the MMPH
- The Law on Chemicals (No. 02/L-116); on April 27, 2007
- The Law on Biocide products (No. 03/L-119), on May 27, 2008 (acc. to directive 98/8/EC)
- The Law on Environmental Protection (No. 03/L-025), on February 26, 2009
- The Law on Integrated Prevention Pollution Control (No. 03/L-043), adopted on March 26, 2009
- The Law on Air protection from pollution (no. 03/L-160) on Feb 25, 2010
- The Law on Environmental impact assessment (no 03/L-214), on Sept 23, 2010
- The Law on Nature protection (no. 03/L-233), on Sept 30, 2010
- The Law on Construction (no. 04/L-110) on May 31, 2012
- The Law on protection from noise (no. 02/L-102) on March 30, 2007
- The Law on Integrated Prevention Pollution Control (No. 03/L-043), adopted on March 26, 2009
- Code of Construction (under approval by Parliament)

The main goal of the codes is to implement an environmental legislation fully complying with EU standards.

Law on Environmental protection regulates environment protection. It aims reduction of any harm to environment and also urges protection of natural resources emphasizing as such need for conservation of resources and their sustainable management. Law on Environmental impact assessment gives a thorough description of the type of projects/initiatives that need full and licensed EIA. As the project does not fall under the category of projects that require approved EIA, as per Kosovar legislation, this allows to proceed with project implementation without getting an approval on project EIA.

3.2.2 Kosovo - Applicable Health and Safety Regulations and Technical Standards

Noise standards: The allowed level of noise is determined according to the norms of the ISO 1996-2: 1987. It is prohibited to perform noisy works and activities in open places, which might interfere with the night tranquility from 22:00 until 07:00.

cf. Law on Noise Protection, No. 02/L-102, on March 30, 2007

Health and safety during construction and operation: All employees and all other persons related to the subject works are obligated to follow the norms, instructions and other provisions that are related with prevention of risk at work.
The employer is obliged to maintain all work related spaces and tools in a way that employees and others are protected from accidents, occupational diseases and other work related diseases. If work tools, work equipment, workshops or similar do present a risk of life for employees’ health, the employer must immediately remove them from use.

Warning Signs for risks at work should be placed at visible places. It is obligatory for employees to undergo at least once a year a proper medical examination.

*Cf. Law on construction, Law No. 04/L-110, on May, 31 May 2012
Cf. Regulation of Hygienic and Technical Measures For Security at Work, Law No 2004/01, March 18, 2004*

**Health and safety during construction and operation:** All tools, devices and working equipment that are out of use shall be placed at appropriate places where they cannot become dangerous. Electrical devices shall be isolated according to electricity conformity rules and internationally accepted standards.

Tools should be operated only with all protective measures.

When lifting or moving loads, tools and protective measures shall be used, which are adequately and tested.

*Cf. Regulation of Hygienic and Technical Measures for Safety at Work, Law No. 2004/01, March 18, 2004*

**Storage of fuel and chemical substances:** Fuel and other similar materials that are highly flammable, must not be placed with other materials but in special protective places. Hazardous materials or toxic materials should be placed in special and distinctive places, locked and under permanent surveillance. Only professional employees should have access to such places.

*Cf. Law on Chemical, Law No. 02/L-116 Date 27 April 2007

**Asbestos:** All the waste containing asbestos should be removed in compliance with Administrative Instruction Nr. 07/2009. This instruction requires any prevention of asbestos emissions in air, debarkation of asbestos in water or creation of solid waste that contains asbestos, during any activity with materials containing asbestos. It specifies that handling of materials containing asbestos must be by licensed persons/companies, quantities must be tracked properly and transport of waste containing asbestos must be marked in accordance with instructions. Packing of waste containing asbestos requires polyethylene materials that are at least 0,4 mm thick. Disposal of the waste should be done in line with Administrative Instruction Nr. 06/2008 for Administration of Hazard waste that derives from Law on Waste. Article 10 of the Al for waste containing asbestos identifies that Municipal Authority is obliged to assign the location and storage place of waste with asbestos.

**Mercury** All the waste containing mercury must be handled in line with Administrative Instruction Nr. 02/2011 on Waste management of fluorescent tubes
containing mercury. Collection must be handled by persons/companies licensed by Ministry of Environment and Spatial Planning. Such license must be issued in line with law on Waste Nr. 10/09. Such waste must be dismantled, classified and divided into types according to their characteristics. Technological process for waste recycling of fluorescent tubes containing mercury should be only done in facilities that provide safe conditions for the protection of human health and environment. Municipalities are required to inform citizens on Waste Collection Centers were the citizens would be sending waste containing mercury and Municipality, in accordance with article 15 is required to determine how to collect waste from fluorescent tubes containing mercury.

**Construction Waste.** All other construction waste that is not hazardous waste must be treated according to the Law on Waste No. 04/L-060 and Administrative Instruction No. 05/07 for Treatment of Waste created during construction or Demolition. In accordance with Law on Waste – waste originator pays for waste created so project must bear the cost for final disposal of all waste created as a result of construction works.

### 3.2.3 World Bank Environmental Assessment (EA) rules and procedures

#### 3.2.3.1 Main provisions of the EA

Per the WB safeguards policies Environmental Assessment (EA) is a process of the pre-implementation stage which evaluates a project’s potential environmental risks and impacts in its area of influence; examines project alternatives; identifies ways of improving project selection, sitting, planning, design, and implementation by preventing, minimizing, mitigating, or compensating for adverse environmental impacts and enhancing positive impacts; and includes the process of mitigating and managing adverse environmental impacts throughout project implementation.

EA is mandatory for projects, which may potentially have negative impacts. Furthermore, a well-organized public participation is mandatory in all the stages of the process.

In the case when the detailed project activities to be financed are not identified at the design stage, an Environmental Management Framework (EMF) is prepared which should: provide details on procedures, criteria and responsibilities for subproject screening, preparing, implementing and monitoring of subproject specific EIAs.

The EMF should also include Environmental Guidelines for proposed subprojects, containing an assessment of potential impacts and generic mitigation measures to be undertaken for identified subprojects in all stages - from identification and selection, through the design and implementation phase, to the monitoring and evaluation of results.

#### 3.2.3.2 Triggered WB safeguards policies

Taking into account the project might generate some environmental and social impacts it triggers the WB OP 4.01 on Environmental Assessment. At the same time, the project activities will not change boundaries, ownership or use rights in the project area and will work within the public buildings without any expansion or need of land and thus the WB OPs 4.12 is not triggered. It has also been confirmed that there will be no impacts on Forests and Natural Habitats as all public and social building are located within the existing settlements. The Ministry also confirmed
the project will avoid support civil works in public and social buildings which might be considered as Physical Cultural Resources, but as a safety precaution WB OP 4.11 is triggered with the detailed procedures to follow included in this EMF.

3.3 PROJECT POTENTIAL ENVIRONMENTAL IMPACTS

3.3.1 Potential project activities

As described in the Project scope, activities to EE would include the following:

(a) improvements in building envelop (insulation of walls, basements and attics, repair/replacement of the roofs, external doors and windows, window optimization);

(b) heating and cooling systems (boiler upgrade/replacement, fuel switching, reflective surfacing of walls behind radiators, control systems, pipe insulation, chiller/AC replacement, heat pumps);

(c) lighting (compact fluorescent lamps, high pressure sodium vapor, light emitting diodes);

(d) other energy-using systems (e.g., pumps and fans, solar water heating);

(e) small scale indoor construction works required for refurbishing; and

(f) adaptation of interior space for the accommodation of the new equipment, other small scale indoors civil works activities.

3.3.2 Potential adverse environmental impacts

The main potential impacts that derive from the rehabilitation activities are the following:

- **Dust and noise:** To avoid these impacts it is needed to follow up the existing best construction activities which are well known and applied in the country and set up in the EMP Checklist.

- **Waste handling and spill response:** Routine rehabilitation activities will generate solid and liquid wastes including drywall, machine oil, paints, and solvents. Minor spills of fuel and other materials are likely to occur during the course of civil works. Improper handling of on-site wastes and response to spills could result in adverse effects on the local environment including groundwater.

- **Asbestos:** It is very likely that asbestos has been used in premises to be proposed for rehabilitation as an insulation material and/or roofing material. In the case of inappropriate handling of asbestos, this material might be a real health concern for the construction workers, and the general public in the vicinity of the rehabilitated premises in particular when it is inhaled.
3.3.3 Potential impacts associated with indoor construction activities

Such impacts can be in the case of the usage of noxious/toxic solvents and glues and of lead-based paints.

3.3.4 Health and safety issues

In the case on non-observance of prescribed labour safety rules and procedures, the workers might be exposed to various occupational hazards as well as to various types of accidents.

All these impacts can be effectively dealt with, if they are recognized through the subprojects EA process and reflected in an EMP Checklist in the design phase in a form of special mitigation measures. These measures should be feasible and cost effective aiming at eliminating, offsetting and reducing adverse environmental impacts. The measure should not only deal with recognized risks, but should as well be used as guidance to make the EE subprojects more environmentally friendly and sustainable.

3.3.5 Potential social and economic impacts

The project will also bring positive social impacts as the proposed activities would improve indoor temperature and comfort and reduce student sick days. Furthermore, the project would contribute to reduction in emission of air pollutants, energy savings and, respectively to reduced payments for energy resources.
3.4 ENVIRONMENTAL GUIDELINES

3.4.1 Purpose and contains of the Guidelines.

The Environmental Guidelines provide guidance for environmental management and due diligence of subprojects and contain the following aspects:

(a) **practical mitigation measures** for the EE activities of the selected subprojects described above. In this regard the guidelines cover, in particular, the handling of construction generated wastes, and storage of hazardous materials under project supported activities, measures to reduce noise and dust; measures for preventing health and safety issues;

(b) **screening procedure for identifying Category C subprojects** which do not require an EA, as well as category B subprojects for which it is necessary to apply the EMP Checklist;

(c) **description of the EMP Checklist** and its use; and

(d) **requirements for conducting monitoring activities** on implementing EMPs.

3.4.2 Suggested mitigation measures

3.4.2.1 General requirements

Before starting the EE activities it is necessary to inform the local construction and environment inspectorates and local communities about upcoming activities in the media and/or at publicly accessible sites (including the site of the works).

Furthermore, it is necessary to have in place all legally required permits for proposed civil works.

All EE activities should be carried out in a safe and disciplined manner designed to minimize impacts on neighboring residents and environment.

Construction workers should be properly dressed, having when necessary respirators and safety glasses, harnesses and safety boots.

3.4.2.2 Protection of air quality and dust minimization

During rehabilitation activities it is necessary to use debris-chutes and to keep demolition debris in controlled area, spraying with water mist to reduce debris dust. It is also necessary to suppress dust during pneumatic drilling/wall destruction by ongoing water spraying and/or installing dust screen enclosures at site.

It is strictly prohibited burning of construction waste material at the site.

For the transportation of any other dusty material to the rehabilitation site watering or covering of the cargo should be implemented. Reduction of dust on rehabilitation site during dry season of the year can be accomplished by watering the ground surface.

Workers that perform the works should be introduced with protective closes and respirators.
3.4.2.3 Noise reduction

Before any beginning of the work it is recommended to inform all potentially affected parties and especially the neighbors either directly or through local billboards or newspapers on the EE activities.

The noise should be limited by using good management practice and limiting works on regular daily shift (in the schools or kindergartens - during the vacation time and or after the school classes).

The construction equipment and machinery used should be calibrated according to the Noise Standards.

3.4.2.4 Construction wastes and spills

A general requirement is that construction works (insulation works, replacement of walls, roofs, windows, demounting of facades, demolition works, etc.) should be done in a careful manner and the construction wastes should be sorted and removed in an organized way and disposed on an authorized landfill.

All valuable materials (doors, windows, sanitary fixtures, etc.) should be also carefully dismantled and transported to the storage area assigned for the purpose.

Valuable materials should be recycled within the project or sold.

The amount waste generated should be minimized, separated and handled accordingly. When waste is separated it becomes better manageable. Some materials like doors or windows might be used on site again.

Non-usable materials should be collected and taken to appropriate places for recycling. For non-recyclable wastes, in agreement with the Municipality or the Ministry, the material will be deposited on a specified landfill site.

Open burning and illegal dumping of any waste is strictly prohibited.

In addition to solid wastes, some amounts of hazardous wastes will be produced on the site: like the remaining from paints, enamels, oiled packaging, oils, material contaminated with oil, insulation material, asbestos containing material, etc, - based on the provisions of the Law of Waste - all wastes have to be collected and stored in approved interim hazardous waste storages or handed over to the Regional Waste Management Company (KLMC) for authorized for disposal on landfills for non-hazardous waste.

3.4.2.5 Asbestos issues

The general approach while handling this material is that constructors avoid crushing/destructing of asbestos plates from the roofs and or from the walls insulation and deposit them in an organized manner on the construction sites.

For detailed abatement measures, see chapter 4; for disposal see chapter 5.
3.4.2.6  Temporary storage of material (including hazardous materials)

Stockpiling of construction material should be avoided if possible.

If not, construction material should be stored on the construction site, and protected from weathering.

*For interim storage, see section 5.5.*

3.4.2.7  Ensuring workers health and safety

As mentioned above in section 3.2.2, it is strictly required to follow the provisions of the Regulation of Hygienic and Technical Measures for Safety at Work, Law No. 2004/01, during the execution of works.

The personal should have protective equipment, rubber gloves, respirators, goggles and breathing mask with filter, as well as helmets.

Prior starting civil works, all workers have to pass labor safety training course. In addition, it is necessary to carry out the routine inspection of the machinery and equipment for purpose of the trouble shooting and observance of the time of repair, training and instruction of the workers engaged in maintenance of the machinery, tools and equipment on safe methods and techniques of work.

Special attention should be paid to welding operations. It is prohibited to distribute the faulty or unchecked tools for work performance as well as to leave off hand the mechanical tools connected to the electrical supply network or compressed air pipelines; to pull up and bend the cables and air hose pipes; to lay cables and hose pipes with their intersection by wire ropes, electric cables, to handle the rotating elements of power driven hand tools.

3.4.2.8  Good housekeeping

This related to general good practice of keeping the sites tidy and organized, including environmentally relevant activities such as the storage of hazardous materials, access restrictions to non-personnel and workplace health and safety.

3.4.3  Subprojects Environmental Screening

3.4.3.1  Expected subproject environmental categories

As mentioned above, the project will support only EE activities in the existing governmental premises which will not generate significant environmental impacts if any.

The project will use the existing facilities and implement different types of EE activities - see section 3.3.1 above.

Most of these activities will generate insignificant environmental impacts if any, which are site-specific, temporary in nature and very easily manageable during the project implementation.

In some cases they would include also major refurbishing activities, replacement of roofs, as well as associated with some of hazardous materials like asbestos, residues
from paints, enamels, etc. Based on mentioned it is expected while most of the
subprojects will be Category C ("minimal or no adverse environmental impacts"), a
number of them might be also of Category B ("potential adverse environmental
impacts").

3.4.3.2 Criteria for environmental screening

Based on the description of the subprojects’ activities it is possible to identify the
type and scale of potential environment impacts and to determine which
environmental category the subproject should be attributed.

Among most important criteria for such determination would be:
(a) type of the impact;
(b) scale and magnitude of the impacts;
(c) potentially affected environmental components and people;
(d) duration of the impacts.

Taking into account potential impacts described above, all subprojects might be
classified as **Category C** ("minimal or no adverse environmental impacts") in the
following cases:
- insulation of walls, basements and attics,
- repair/replacement of external doors and windows, window optimization,
- reflective surfacing of walls behind radiators,
- pipe insulation,
- boiler upgrade /replacement,
- fuel switching (e.g. biomass, district heating connection),
- control systems,
- chiller/AC replacement,
- heat pumps, pumps and fans,
- solar water heating,
- compact fluorescent lamps,
- high pressure sodium vapor,
- light emitting diodes

The **Category B** ("potential adverse environmental impacts") should be attributed
for the subprojects which would involve the following:
- EE works involving generation of comparatively large waste quantities (e.g.
  replacement of floor, exchange of ventilation, replacement of doors and/or
  windows);
- Replacement of the asbestos roofs;
- Major refurbishing activities involving removal / reconstruction of walls
  (especially when containing Asbestos isolations or sheets);
- EE activities involving potentially hazardous materials like residues from
  paints, solvents, enamels, and the replacement of larger quantities (several
  10's) of windows and doors;
- Heat pumps involving deep (more than 25 m) drilling
3.4.3.3 Environmental screening procedure

The screening should be done at the initial stage of the subprojects selection.

Based on the description of the EE activities and on their potential environmental impacts, and using described above criteria the PMU will decide which project category should be attributed.

For that purpose it should be used a special Environmental Screening Checklist (see Annex 1). This document will be attached to all submitted subprojects.

3.4.3.4 Main EA requirements for Category C and B subprojects

As mentioned above, in the case of Category C subprojects no any further EA actions are needed beyond the Environmental Screening Checklist. For all these small scale EE activities the Contractor is required to follow good construction and housekeeping practices along with requirements related to occupational health and safety issues, avoiding all potential environmental impacts.

In the case of Category B subprojects with more significant impacts and/or related to hazardous wastes and materials, it is, necessary to complete the EMP Checklist attached as Annex 2, identifying and defining the mitigation measures to be implemented during the EE activities.

The EMP Checklist will become a part of the construction works contracts and the required mitigation measures would constitute an integral part of the subproject implementation.

All contractors will be required to use environmentally acceptable technical standards and procedures during carrying out of works.

Additionally, contract clauses shall include requirements towards compliance with all national energy efficiency, construction, health protection, safeguard laws and rules as well as on environmental protection.

3.4.4 Environment Management Plan Checklist

3.4.4.1 The scope and objective of the EMP

A project's environmental management plan consists of the set of mitigation, monitoring, and institutional responsibility measures to be taken during implementation and operation to eliminate adverse environmental and social impacts, offset them, or reduce them to acceptable levels.

An EMP is a key element of an EA report for all Category B subprojects. As the project would involve typical small scale EE activities it is proposed to be used a generic EMP checklist-type format ("EMP Checklist"), developed by the World Bank to provide "pragmatic good practice" and designed to be user friendly and compatible with safeguard requirements.

The checklist-type format attempts to cover typical preventive and mitigation approaches to common civil works contracts with temporary and localized impacts.
This format provides the key elements of an Environmental Management Plan to meet Environmental Assessment requirements of the World Bank (under OP/BP/GP 4.01).

3.4.4.2 EMP Checklist structure

The EMP Checklist has three sections:

(a) Part 1 constitutes a descriptive part ("site passport") that describes the project specifics in terms of physical location, the project description and list of permitting or notification procedures with reference to relevant regulations. Attachments for additional information can be supplemented if needed;

(b) Part 2 includes the environmental and social screening in a simple Yes/No EMS format; and

(c) Part 3 is a site-specific monitoring plan for activities carried out during the rehabilitation activities.

3.4.4.3 EMP disclosure

In case of Category B subprojects, although no need for a special public hearing, the project beneficiary should provide information to all interested parties about the construction by installing a notice plate placed at the site of the EE subproject.

All subproject specific information related to the EMF will be also publicly available on-line on the project website.

3.4.4.4 Integration of the EMP into project documents

The EMP provisions would be used for the following:

(a) inclusion of the EMP requirements in the Project Operational Manual;

(b) inclusion of Environmental guidelines in construction contracts for individual subprojects, both into specifications and bills of quantities, and the Contractors will be required to include the cost in their financial bids;

(c) highlighting of EMP follow-up responsibility within the PMU;

(d) specifying mitigation and avoidance measures during the implementation of the proposed activities; and

(e) monitoring and evaluation of mitigation/avoidance measures identified in the site-specific review and in the EMP.

3.4.5 Subprojects Monitoring

3.4.5.1 Purpose of monitoring activities

Environmental monitoring during project implementation provides information about key environmental aspects of the project, particularly the project environmental impacts and the effectiveness of mitigation measures.

Such information enables the Client (Ministry) to evaluate the success of mitigation as part of project supervision, and allows corrective action to be taken when needed.
Therefore, the EMF identifies monitoring objectives and specifies the type of monitoring, with linkages to the impacts assessed in the EA report and the mitigation measures described in the EMF.

3.4.5.2 Monitoring activities

Specifically, the monitoring section of the EMP Checklist provides:
(a) details of monitoring measures, including the parameters to be measured, methods to be used, sampling locations, frequency of measurements; and,
(b) monitoring and reporting procedures to (i) ensure early detection of conditions that necessitate particular mitigation measures, and (ii) furnish information on the progress and results of mitigation.

3.4.5.3 Subprojects Environmental supervision and reporting

The Category B subprojects implementation will be supervised by
- the PMU periodically, as well as by
- the WB (during its supervision missions) as well as could be supervised also by
- the municipal and national inspectors for hazardous waste management and for health and safety on construction sites.

Semiannually, the PMU will present short information about the EMF implementation and subprojects environmental performances as part of the Progress Reports to be presented to the WB by the Ministry.

3.5 IMPLEMENTING ARRANGEMENTS AND FUNDING

3.5.1.1 Funding for EMPs implementation

During the reconstruction phase, monitoring of the EMP Checklist implementation is going to be implemented as part of provisions of the EE supervision contract, and is the responsibility of the EE Supervision Engineer to be selected to perform the supervision of works.

Implementation of specific EMP-stipulated mitigation measures during the subprojects implementation will be funded as part of provisions of the EE works contract, and is the responsibility of the firm/contractor selected to execute the EE works.

3.5.1.2 Overall project implementing responsibilities

The overall responsibility of the project implementation and of appropriate procedures and principles regarding the environmental assessment, monitoring etc, lies with the Ministry of Economic Development, who is supported the PMU and the Steering Committee, which brings together the main stakeholders (including staff from the Ministry of Environment and Spatial Planning) to discuss the concrete works and issues under this project.

An important element in this endeavor is an agreement between the Ministry and the Contractor which commits these parties to active collaboration in developing and implementing EE subprojects in Kosovo.
3.5.1.3 Role of the Project Management Unit (PMU)

The MED has created a PMU to ensure the participation of Stakeholders at multiple levels, but also will ultimately be responsible for the implementation of the project.

The PMU will also ensure that the subproject applicants are informed sufficiently about the relevant environmental and EA issues. In this regard it will be responsible for:

(a) coordination of environmental and EA related issues;
(b) monitoring of the environmental impacts within the overall monitoring of the subprojects implementation;
(c) communication with an EA competent authority (Ministry of Environment and Spatial Planning); and
(d) ensuring the proper implementation of the EMP Checklist requirements during the subprojects' realization.

The PMU will be responsible also for:

(a) subprojects environmental screening;
(b) carry out the evaluation of the subproject's eligibility from the environmental point of view;
(c) provide necessary information on the environmental issues to the subprojects applicants (especially inform them about the environmental criteria to be used, explain all obligations regarding the EIA procedure etc.).

Additionally the PMU will be also responsible for supervising independently or jointly with the State Ecological Inspectorate the mitigation and environmental protection measures stipulated in Environmental Management Plan.

3.5.1.4 Construction companies

All EE civil works and installation activities will be done by authorized companies. They are responsible for full and qualitative implementation of the EMP Checklists provisions.

3.5.1.5 Capacity building

To improve institutional capacities with regard to EMF implementation the WB Environmental Specialist will provide special training for the PMU staff focused on:

(i) Procedural aspects of EA (stages, key actors, main responsibilities etc.); (ii) Assessment of environmental and social potentially related to the subproject supported within the project; (iii) Consulting impacts and approval of the EA and monitoring plans; and (iii) preparing EMP Checklist; (iv) Conducting field Supervision as well as preparing progress reports.

3.6 EMF DISCLOSURE AND PUBLIC CONSULTATION

3.6.1.1 EMF disclosure

The Ministry has disseminated the EMF to its relevant departments and to other interested parties for review and comments, also posting on March 31, the draft EMF on the official web page of MED (for reference seehttp://mzhe.rks.gov.net/?page=2,1) it for wide public on the web site. Beside the document they also informed interested parties on the Public Consultations (planned for April 8th, 2014).
3.6.1.2 EMF consultations

The draft EMF was consulted with all key stakeholders. On April 8th 2014 the Ministry conducted a public briefing and consultation meeting on the document (see minutes of the consultation in the Annex 3 and the list of attendants in Annex 4). This was only organized after a series of meetings organized previously with key stakeholders like MESP (different departments) Kosovo Landfill Management Managing Company etc. The meeting concluded that the draft EMF document covers practically all potential impacts and possible mitigation measures along with clear procedures from environmental screening and monitoring. The draft document was revised after the meeting, taking into account outputs from the previous consultations.

3.6.1.3 The final EMF disclosure

The final version of the EMF (Albanian, English) were posted on the Ministry’s website and submitted to the World Bank for its disclosure in the WB Info shop and will be used by the PMU and Ministry of Economic Development during the project implementation.
4. ABATEMENT OF HAZARDOUS MATERIALS IN BUILDINGS

4.1 ABATEMENT OF ASBESTOS CONTAINING MATERIAL (ACM)

4.1.1 Distinctions and Products containing Asbestos

There are basically two different kinds of asbestos products:

4.1.1.1 Strongly bound Asbestos / Non-friable Asbestos

Asbestos cement products and other hard asbestos products (density at least 1.5 kg / dm³) have a comparatively high proportion of mineral binders (Asbestos content 10-15%). The asbestos fibers are relatively tightly bound.

Typical non-friable hard asbestos products are roof and wall coverings, ventilation ducts, pipes, window sills and countertops, fittings such as flower pots, floor coverings, brake pads and containers for chemicals. These products release fibers only through mechanical processing, such as sawing, grinding, drilling or cutting and by the use of pressure washers.

Fiber cement is a hard asbestos product, strongly-bound and non-friable, mainly in roofing and facade products (brand names “Eternit” / “Salonit”), e.g. as:

- Flat sheets as base and/or architectural facing
- Flat sheets for e.g. wind shields, wall copings, and soffits
- Corrugated façade panels (waviness)
- Slates as architectural full and partial facing
- Underroof
- Planks
- Roof slates
- Corrugated roof sheets
- Flower boxes at windows or outside sections
-...

Fiber cement in internal claddings and fire-retarding sealing:

- Fire protection walls / cable ducts / prefabricated air ducts
- Partition walls
- Window sills
- Ceilings
- Electrical Meter boxes

If products are demountable, the abatement measures see 4.1.3

Appliances containing other strongly bound (non friable) asbestos materials:

- Fire flaps in Heating and Ventilation systems and channels
- Gaskets / Gasket rings at Heating pipes
- Cardboards at covered radiators or night storage heaters
- Spun asbestos fibers within insulation mattresses
- Flooring from PVC with asbestos containing layer near the glue
4.1.2.2 Weakly bound Asbestos / Friable Asbestos

Weakly bound asbestos is also called sprayed asbestos or asbestos products with soft friable asbestos fibers and have an asbestos content of more than 25 %. Sprayed asbestos often contains blue asbestos (crocidolite). Due to the relatively low binder content, asbestos fibers are not sufficiently tied. Sprayed asbestos has been used worldwide as fire protection for buildings in steel frame construction.

In construction, soft asbestos products were mainly used as insulating material in several fields of application:

- fire and noise protection (jacket / coat / seals for components made of steel, reinforced concrete and wood, especially in the attics, suspended ceilings, installation cores and technology shafts, fire dampers)
- heat protection (on heat pipes, boilers and radiators, night storage heating devices, and protective clothing)
- moisture protection (coatings of ceilings in indoor swimming pools, showers or changing rooms, storage masses of heat recovery systems, sealing cords)

Appliances containing weakly bound (friable) asbestos material:
- Sprayed asbestos as fire insulation on steel beams or steel surfaces
- Hard coating of thermal insulation (lagging) of heating pipes and similar (vessel houses, cellars)

*These products are only removable applying international Health & Safety regulations (e.g. Austrian Standard ÖNORM M 9406 – Handling of weakly bound asbestos containing materials), see 4.1.3*

4.1.2 General Rules for Abatement of Asbestos Containing Materials (ACM)

4.1.2.1 Avoiding Fiber Exposure

The general approach while handling this material is that constructors avoid crushing/destructing of asbestos plates from the roofs and or from the walls insulation and deposit them in an organized manner on the construction sites.

Also the constructors should avoid releasing asbestos fibers into the air from being crushed.

4.1.2.2 Personal Protective Clothing

It is also imperative while assessing, removing, packing or manipulating ACM material workers and supervisors have to wear disposable personal protection clothing, gloves and respirators masks FFP3.

*Figure 1: Example for personal protective clothing*
The filter class for respiratory masks is described in the European Standard EN 149. A summary is presented below:

<table>
<thead>
<tr>
<th>Filter Class</th>
<th>Filter penetration limit (at 95 L/min air flow)</th>
<th>Inward leakage</th>
</tr>
</thead>
<tbody>
<tr>
<td>FFP1</td>
<td>Filters at least 80% of airborne particles</td>
<td>&lt;22%</td>
</tr>
<tr>
<td>FFP2</td>
<td>Filters at least 94% of airborne particles</td>
<td>&lt;8%</td>
</tr>
<tr>
<td>FFP3</td>
<td>Filters at least 99% of airborne particles</td>
<td>&lt;2%</td>
</tr>
</tbody>
</table>

Table 1: Filter Classes of respiratory masks – Overview

Typically different types of respiratory masks exist on the market. For the abatement of weakly bound asbestos materials (see section 4.1.4.1) full face respiratory masks are recommended.

For handling of strongly bound asbestos containing materials such as asbestos cement the utilization of FFP3 “half” masks are recommended.

Figure 2: Example for FFP3 respiratory masks

4.1.2.3 Substitution of ACM

If the re-use of the asbestos-containing materials (ACM) is anticipated during roof/facade renovation, it is necessary to provide brief information about alternative non-asbestos materials, their availability and the rationale for the material choice made.

4.1.2.4 Hazard Management

Once the presence of ACM in the existing infrastructure has been presumed or confirmed and their disturbance is shown to be unavoidable, incorporate the following requirements in the EMP for construction works:

- Provide the host country laws and regulations for controlling worker and environmental exposure to Asbestos during construction works and waste disposal where ACM are present;

- As licensing and permitting of the asbestos abatement work is required, foresee the award of a specifically licensed company according to Administrative Instruction No. 07/2009 for management of wastes containing asbestos of the Ministry of Environment and Spatial Planning of the Republic of Kosovo (MMPH).

- Develop a abatement plan for doing works involving removal, repair and disposal of ACM in a way that minimizes worker and community asbestos exposure.

The plan should include:
(i) Containment of interior areas where removal will occur in a negative pressure enclosure (only for weakly bound ACM)
(ii) Protection of walls, floors and other surfaces with plastic sheeting
(iii) Construction of decontamination facilities for workers and equipment;
(iv) Removal of the ACM using wet methods and promptly placing the material in impermeable containers;
(v) Final clean-up with vacuum equipment and dismantling of the enclosure and decontamination facilities;
(vi) Disposal of the removed ACM and contaminated materials in an approved landfill;

- Require that the construction firms/and or individuals employed during the construction have received training in relevant health and safety issues.
- Require that contaminated disposable clothing is used only in contaminated environment and pulled off and packed in impermeable waste bags, before entering clean rooms / cars. Require that shoes are likewise properly cleaned in order not to disperse asbestos dust into clean environments
- Require that the beneficiary or the selected contractor notifies authorities of the removal and disposal according to applicable regulations and cooperates fully with representatives of the responsible agency during all inspections and inquiries.

4.1.2.5 Disposal

The Ministry of Environment and Spatial Planning (MESP) is working towards the establishment of and (interim) storage facility for hazardous materials.

Contractors should liaise with MESP regarding final disposal and treatment options, licensing requirements and applicable local regulations on this issue.

4.1.3 Abatement method for Asbestos Containing Fibre Cement Panels

The Removal of ACM containing Fibre-Cement Panels ("Eternit" / "Sallonit" or other) belongs to the removal of so called strong bonded ACM, due to the fact that those panels consist of a lesser amount of asbestos, which is firmly embedded in a cement matrix.

The terms of section 4.1.2 apply accordingly.

However, whenever fiber-cement panels are mechanically damaged or destroyed, ACM dust is set free.

Best practice is to prevent or minimize dust release, resulting from a destruction free removal process.

Main Remediation Work Steps
  - Prohibit any mechanical stress on fiber-cement panels (no drilling, cutting, smashing, cutting, dropping etc.)
  - Strive demounting procedure using lifting devices
  - Wear appropriate respiratory protection FFP3 and disposable coveralls
  - Moisten panels before uninstall;
  - Collect panels without destruction
• Pack them plastic foil / e.g. panel big-bags with Asbestos Label
• Orderly Store in an interim storage until transport and disposal at appropriate disposal site.

Further hints are:
• Nails/rivets shall be removed with sharp tools
• If the fixing can’t be released, small sheets can be pried out one by one
• Dismantling of asbestos cement panels shall happen in a work back way, for roofs from the ridge to the eaves, for walls from top to bottom
• When removing fixation materials, the product has to be secured against sliding off
• Whenever possible, products shall be lifted off rather than quarried out
• Encrustation or plant cover can be scraped off, using a wood scraper
• Broken bits and debris shall be wrapped in dust proof foil or bags
• The contaminated material has to be transported to the ground carefully
• The transportation of asbestos cement products has to take place in a way, that prevents asbestos dusts to be released (packaging)
• For cleaning use H-class vacuum cleaners only.
• Storage and transport of material has to happen in suited, closed containers

To be avoided:
• Breaking, cutting, throwing and milling of sheets
• Drilling, sawing, grinding with fast running machinery
• Cleaning with high pressure cleaners
• Shaking out of canvasses or undercover sheeting
• Usage of debris chutes

4.1.4 Abatement method for other Asbestos Containing Material

4.1.4.1 Abatement of weakly bound asbestos material

The Removal of ACM in enclosed containment is the typical way of remediation of ACM of bigger volumes with high ACM densities. The size of a containment is limited by the capacity of the installed vacuum holding devices of appropriate capacity (minimum rate of air change = 5 times per hour).

Requirements
- Under pressure shall be maintained by means of a installed vacuum holding device incl. reserve capacity
- Containments must be of proper structure and all parts must be well ventilated
- Personal safety equipment must be worn inside enclosure (disposable coveralls, overshoes, appropriate respiratory protection FFP3)
- Outside of Enclosure a bystander has to be placed for safety and control reasons
- Cf. section 4.1.2

Remediation Work Steps
- Dense compartmentalization of total enclosure including installation of required scaffolding
- Establishment of three-chamber personnel lock(s) with staff shower and of a dual chamber material lock.
- Establishment of a negative pressure (air-exchange rate and pressure according to rules) including vacuum monitoring at minimum 2 points and exhaust air extraction to the outside.
- Manual removal of ACM material from surfaces (Primary and Precision cleaning)
- Treatment, collection and packaging of un-cleanable asbestos-contaminated by-products (e.g. metal scrap, mineral wool), porous or solidified asbestos or other ACM
- Inside air sampling for clearance is recommended after finalization of removal works.

Comments:
- Asbestos removal should be performed from top to bottom
- Air flow in the enclosure should be from the top to down
- Staff must not work under under-pressure longer than 2 hours without break

4.1.4.2 Metal air ducts and steam pipes with ACM gasket rings

Requirements
- Assessment of the occurrence of ACM in gasket rings (mainly by lab analysis)
- Cf. section 4.1.2

Remediation Work Steps
- Pipe or Duct Flanges with ACM gasket ring must not be opened
- Flanges shall be moistened from all sides, e.g. with manual water sprayer
- Flanges cut out as a whole (not opened) and packed dustproof into double plastic foil
- Flanges shall be transported to scrap recycling in order to be melted in Steel production

Comments:
- In the case of opening the flanges both sides of flanges and the ambient air will be contaminated.

4.1.4.3 Textiles containing asbestos

Requirements
- Assessment of the occurrence of ACM in thermal insulations and gaskets (mainly by lab analysis), such as sealing cords of hot metal appliances.
- Cf. section 4.1.2

Remediation Work Steps
- Prior to and regularly during all manipulation works, moistening of surfaces from all sides, e.g. with manual water sprayer, in order to prevent asbestos dust generation
- Manually cut out the ACM product, preferably as a whole. Don’t use electromechanical devices that might cause dust generation and distribution.
- Pack product or parts into dustproof double plastic foil with Asbestos label
- Dispose in packed form on interim storage or suitable landfills
Comments:
- Asbestos containing textiles cannot be incinerated at temperatures under 1500 °C.

4.1.5 Transport and Disposal

See sections 4.1.2.5 and 5.6

4.2 ABATEMENT OF LEAD-BASED PAINT

4.2.1 General

Lead-containing colors form a risk of poisoning ("lead poisoning") in the production, processing and recycling of lead coated parts. In particular, aerosols and abrasion dust are hazardous when inhaled.

In Germany Lead based Paint is limited to certain applications since 1993.

Lead based paint was produced in Kosovo. Production has been stopped mid 90es. Because of its high corrosion protective characteristics lead based paint was used typically on steel structures in industrial constructions or specifically on bridges. However, because of its favorable characteristics it was also used on walls and facades.

As understood from discussions with people (e.g. professor at the university of chemistry, house owners, etc.), in Kosovo lead based paint was mainly used in industrial buildings and for outdoor structures. Lead based paint was never used instead of standard paint.

By now, lead based paint is not produced anymore in Kosovo.

4.2.2 Handling of lead based paint

For the proper handling of lead-containing coatings on wood (i.e. lead white on historic windows, inner doors etc.) or other surfaces, a standard operation procedure was developed for the sanding in Germany. The sanding by hand and without dust extraction is expressly prohibited therein.

Instead, grinding machines shall be used in combination with a dust extractor for dust class M in accordance with DIN EN 60335-2-69. When sanding paint layers, suitable respiratory protection (mask with P2 filter) shall be worn and appropriate hygiene measures shall be followed. Eating, drinking and smoking should be prohibited in the work area, hands must be washed before work breaks. Laundry facilities and disposable towels must be kept for this purpose.

The state of the art abatement procedure is very similar to the abatement of weakly bound asbestos materials using a standard containment with under-pressure

The provisions of the procedure in section 4.1.4.1 apply accordingly.
4.3 MANAGEMENT OF COMPACT FLOURESCENT LAMPS CONTAINING MERCURY

4.3.1 Mercury in CFLs

Mercury is used primarily for the manufacture of industrial chemicals or for electrical and electronic applications. A still increasing amount is used as gaseous mercury in fluorescent lamps, while most of the other applications are slowly phased out due to health and safety regulations and is in some applications replaced with less toxic but considerably more expensive Galinstan alloy. Also tilt switches used to contain mercury.

From broken pipes, mercury evaporates at room temperature and might injure health, if not cleaned and de-aerated properly.

Mercury and most of its compounds are extremely toxic and must be handled with care; in cases of spills involving mercury (such as from fluorescent light bulbs), specific cleaning procedures are used to avoid exposure and contain the spill.

Mercury can cause both chronic and acute poisoning.

4.3.2 Legal Conditions on Mercury

In the European Union, the directive on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (see RoHS) bans mercury from certain electrical and electronic products, and limits the amount of mercury in other products to less than 1000 ppm. In EU, the maximum Mercury mass is 3.5 mg per CFL, respectively 2.5 mg (< 30W) after 2012. Thus, all modern high energy efficiency lamps, do contain a minimum of Mercury.

4.3.3 Disposal of spent lamps

Defective appliances, which contain mercury and other problematic substances in the glass tube, in electronics and in the potting material, such as CFLs over every age or tilt-switches, should neither be disposed with the ordinary household waste nor in the glass container.

The proper disposal is a separate non-destructive selection (i.e. not normal waste) at dedicated organizations (e.g. municipal collecting points of problematic waste), which not only serves the environment but also the health of people coming into contact with the garbage.

Mercury containing lamps have to be collected and brought to accredited recycling companies, enabled to recycle CFLs and heavy metals.

For the situation in Kosovo, see section 5.4.

4.3.4 Recycling methods

For recycling of lamps, there are various methods. Basically, however, all the lamps be separated into their individual components, enable them to be properly processed further and either recycled in industrial applications or disposed. The unmixed glass of fluorescent lamps goes directly back into the lamp production, while mixed glass from energy saving lamps in other industrial applications is used. The metal of the base is also recycled and re-used in the industry.
In the recycling of old lamps, the following output fractions are separated:

- **80-90% Glass**: mainly soda-lime glass, which is used in the production of new bulbs.
- **7-14% Metallic components and plastics**: To be separated and fed industrial recovery or incineration.
- **1-3%** The mercury-containing phosphor powder is due to lack of economic methods at least for part disposed as hazardous waste. In the usual process the gaseous portion goes into the atmosphere.

5. **DISPOSAL OF SELECTED HAZARDOUS MATERIALS**

5.1 **STATUS OF LANDFILLS IN KOSOVO**

5.1.1 **Overview**

In Kosovo, currently only landfill sites for solid wastes from households are existent. Exception is one industrial landfill for lignite ashes. They are considered as **constructed (engineered) and/or sanitary (protected)**. There is no official landfill for hazardous waste until now.

A sanitary landfill is according to EU terms (Landfill directive 31/1999/EC) a landfill site with geotechnical as well as artificial liner (i.e. horizontal barrier, e.g. from HDPE foil) with collection of landfill gas and of leachate water (water drainage system and a water collection pond).

An engineered site has a geotechnical liner from clay, thus an artificial liner is not required.

Above mentioned landfill types are not approved for the disposal of construction waste and/or hazardous waste like asbestos cement. However, from a technical point of view they are suitable. From the operational point of view improvements are necessary, the specific requirements are described in later sections.

Currently, there are **4 regional solid waste landfills** (Prizren, Pristina, Podujeva, Gjilan) and one waste transfer station (Ferizaj) managed by the Kosovo Landfill Management Company (KLMC). While the Prizren landfill is of sanitary character, are all other sites are engineered landfills (including a geotechnical liner from clay, and no artificial liner).

**Four further landfills** are operated by the municipalities or privately.

One industrial landfill is located in Obiliq close to Thermal Power Plants "Kosovo A + B", operated by KEK, for lignite ashes from plants.
### Table 2: Landfill sites in Kosovo – Overview

<table>
<thead>
<tr>
<th>Site</th>
<th>Monthly Capacity</th>
<th>Size</th>
<th>Type</th>
<th>Catchment Area</th>
<th>Operator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pristina “Mirash”</td>
<td>7,000 Mg</td>
<td>20 ha</td>
<td>Engineered</td>
<td>Region Center</td>
<td>KLMC</td>
</tr>
<tr>
<td>Podujeva</td>
<td>2,000 Mg</td>
<td>5 ha</td>
<td>Engineered</td>
<td>Region North</td>
<td>KLMC</td>
</tr>
<tr>
<td>Prizren</td>
<td>3,500 Mg</td>
<td>25 ha</td>
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<td>Gjilan</td>
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<td>10 ha</td>
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<td>Mitrovica</td>
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<td>TPP “Kosovo” Lignite ashes</td>
<td>KEK</td>
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</table>

**Note on the Pristina landfill:**

It was stated by the landfill operator that the landfill site has problems with surface water drainage system resulting in regular flooding.

However, it was noted during the site visit that large areas at the entrance of the landfill site are not affected by flooding. It can be assumed that in these areas separate departments can be implemented where ACM could be disposed of.

In general water inflow into the compartments typically does not cause effect on the asbestos cement product. Asbestos cement can be considered as inert material that does not cause effect on the ground water. Through a daily coverage of the material a mechanical effect through strong rain or compaction machines is avoided. See explanation on operational aspects in later sections.

### 5.1.2 Legal Framework

The disposal of waste is regulated in the Law on Waste (Law No.04/L-060) from the year 2012.

All types of Asbestos containing products are part of the list of hazardous waste (Annex to Waste of Law) due to its severe carcinogenic and respiratory health impacts resulting from geometric (fibers) and chemical structure.

Therefore it is recently excluded from disposal on municipal solid waste landfills.
It has to be noted, that Asbestos is *endangering human health only in friable, dusty, unbound or uncovered form*. Therefore, if covered by earth, sand or other solid waste ACM waste does not constitute a health risk for humans.

The Law on Waste, Article 5, line 5.1.5. “Disposal of waste in landfills, without causing negative impacts to the environment and human health”, refers to the no-harm-principle.

Due to the fact, that treated strongly bound asbestos fibers (e.g. immobilized in concrete, and packed, and covered by gravel layer) do not cause negative impacts to the environment and human health, the proposal of “Controlled Co-Disposal” could be accepted by the Ministry.

Further defines the Waste of Law Article 65, line 4.15. “to prohibit receiving of hazardous waste in municipal waste landfills, except if there is a permit by the competent authority”, which allows the competent authority (i.e. Ministry of Environment and Spatial Planning) to permit the disposal of asbestos under controlled conditions onto sanitary / engineered landfills.

5.2 DISPOSAL OF ASBEST CONTAINING MATERIALS

5.2.1 Asbestos Disposal Situation

Currently for ACM *no legally compliant treatment and/or disposal option is available* in Kosovo.

As no designated disposal sites are available in Kosovo, Asbestos cement products (roof sheets) are therefore mainly disposed either

- in form of fly-tips / back-yard disposal / wild landfiling or
- reused for coverage purposes

Due to the fact, that Kosovo does not provide ACM disposal areas yet, the *storage of ACM materials* and its *export towards countries with appropriate facilities* would cause excessive costs. This would result in a continued breach of law through uncontrolled fly tipping of ACM waste, which is connected with significant environmental harm and societal costs.

The controlled transport to registered landfill sites and the disposal at designated areas is therefore of high ecological and economic advantage\(^1\) in comparison to uncontrolled handling and dumping.

Therefore, the EMF proposes to take into consideration a “Controlled Co-disposal” of ACM at existing sanitary / engineered landfill sites. See section 5.2.2.

5.2.2 Proposed Asbestos Disposal

The Consultants proposes a pragmatic way of disposing of treated /immobilized asbestos waste, including packed asbestos cement waste in specifically dedicated compartments at non-hazardous waste landfills in Kosovo.

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\(^1\) Asbestos containing waste, requires a special treatment, comprising of cautious unmounting and handling with damage or dust production, collecting into sealed plastic packages, covered transported in containers or big-bags and disposed in designated disposal areas in a controlled and registered way.
This is elaborated in the following sections in more detail.

5.2.2.1 The Austrian Case

Asbestos cement and Asbestos waste is generally classified as hazardous waste in Austria.

Without any analytical characterization or prior inspection, all types of asbestos waste can be deposited at landfills dedicated for non-hazardous waste such as construction waste, if those comply with certain technical and organization requirements.

The technical requirements regarding landfill engineering are summarized:

- Base drainage for landfills of non-hazardous waste mandatory (filter layer, leachate drains, storage basin), treatment in sewage-plant
- Waste compaction in layers, daily coverage state of the art
- Geological barrier for landfills of non-hazardous waste
  - thickness 5 m; kf coefficient of permeability < 10-7 m/s
  - thickness 3 m; kf < 10^{-8} m/s
  - thickness 1 m; kf < 10^{-9} m/s
  - thickness 0.5 m; kf < 5x10^{-10} m/s
  - if not present => artificial barrier mandatory with equal security thickness > 0.5 m; compaction in layers
- Base sealing for landfills of inert and construction waste
  - Two-part, mineral layer (20-27cm/layer), total > 50 cm
  - alternate base sealing with equal security > 20 cm permitted
  - longitudinal slope > 2%, transverse slope > 3%
- Base sealing for landfills of incineration residue and pre-treated waste
  - Three-part, mineral layer (20-27cm/layer), total > 75 cm
  - alternate base sealing with equal security > 40 cm permitted
  - special design with equal security permitted, if side-slope > 1:2 (e.g. Viennese "Dichtwandkammersystem")
  - longitudinal slope > 2%, transverse slope > 3%
- Landfill surface coverage after operational phase (re-cultivation, erosion protection);

Further, the organizational requirements are:

- Asbestos waste must not contain other hazardous substances than
  - Consolidated/immobilized asbestos or
  - asbestos fibres bound by a binding agent or
  - asbestos fibers packed in plastic.
- Asbestos waste must be deposited
  - in separate compartments used and/or dedicated only for Asbestos waste
  - under supervision of specially trained personnel
- In order to prevent a release of asbestos fibers, the asbestos waste has

2 These are ascending according to complexity and specific disposal price:
   a) landfills for residual (non-recyclable / non-incinerable) demolition masses
   b) landfills for residual waste
   c) landfills for mass waste
A complete listing of the four landfill types and its technical requirements are laid down in the Austrian Federal Waste Management Plan.
to be moisturized before dumping
- to be covered daily and before each compacting operation with appropriate materials.

- The exact location of the asbestos waste compartment has to be documented and reported to the authority.

5.2.2.2 Proposed ACM Co-disposal in Kosovo

Basing on the above mentioned Austrian way of ACM disposal at approved and monitored landfills for non-hazardous waste, the Client proposes the so-called ACM co-disposal for Kosovo:

Technical requirements of Landfill:
1. Approved sanitary/engineered landfill permanently monitored by the MESP (KLMC Regional Landfill recommended)
2. Dedication of a defined geographical area (“compartment”) within of the landfill for the safe discharging of asbestos.
3. Technical preparation of ACM dumping comprising a basic clay soil layer and the permanent disposability of cover material next to the plot for the at least daily coverage of Asbestos cement waste.

Organizational requirements of ACM dumping

1. Asbestos does neither contain heavy metals neither any other hazardous substances which might immobilize into leachate (require suitable ways of inspections, without destruction of packaging or endangering landfill staff; package shall not be opened regularly but for random inspection only.)
2. After treatment and packaging, the ACM waste shall be specifically transported to the nearest landfill for registered dumping in dedicated asbestos compartments as described above.
3. Cars / Trucks delivering ACM waste shall directly unload the packed waste, big-bags, at the defined landfill compartment, in order to prevent multiple transshipping. The mass of ACM shall be weighed at landfill entrance and documented.
4. During unloading from truck, waste material shall be moistened by landfill sprinkler or water sprayer, only for safety of landfill staff as preventive measure against fiber dust diffusion.
5. In order to avoid airborne or waterborne potential fiber dispersion, the waste material has to be covered with clay cover material daily and before each compacting operation with appropriate materials. This avoids any impact through fibers on nature or human health. Airborne fiber dispersion can be avoided as long as landfill compartment is sufficiently covered with material.
6. The location of asbestos compartments shall be marked (physically on the area as well in GIS and/or on the Map with dumping period and amounts) for reporting and protection purposes.

This method would allow Kosovo to handle the Asbestos Waste Disposal in an economically /politically viable and environmentally suitable way as well as to prevent wild landfilling of Hazardous materials and thus hidden threads for populations' health and safety.

3 Dispersion through fibres in leachate water shall be prevented, as re-infiltration and recirculation procedure is common at Kosovo landfills.
For a similar ACM waste disposal method the KEK’s Ash Disposal Dumping Site, located in Obiliq / Fushe Kosovo, could be used. A monthly amount of approx. 60,000 tons of ash allow the covering of asbestos waste through inert masses. Thus, hazardous impacts on leachate water or airborne erosion can be absolutely barred.

**5.2.3 Treatment of ACM and how it should arrive at the landfill site**

**5.2.3.1 Strongly bound Asbestos / Non-friable Asbestos:**

**Definition:**
Asbestos cement products and other hard asbestos products (density at least 1.5 kg / dm³) have a comparatively high proportion of mineral binders (Asbestos content 10-15%). The asbestos fibres are relatively tightly bound.

Typical non-friable hard asbestos products are roof and wall coverings, ventilation ducts, pipes, window sills and countertops, fittings such as flower pots, floor coverings, brake pads and containers for chemicals. These products release fibers only through mechanical processing, such as sawing, grinding, drilling or cutting and by the use of pressure washers.

Strongly bound asbestos has to packed 2 times in 200 µm PE foil or once in 400 µm PE foil and has to be labelled.

**Packaging of asbestos cement and labelling**

**Figure 3:** Example for packaging material: prefabricated and labelled big bags or PE foil 0.2mm

Packaging of asbestos is specified in the Kosovo legislation as follows:

* ACM waste should be in a safe way fiber-bound/coated or appropriately packed in un-penetrable PE foil with thickness of 400µm OR as needed with greater consistency.  
  AI-07-09 Art 9 (3)

* Landfills, storages and other places in which ACM waste is located shall be clearly marked with the adequate sign4  
  AI-07-09 Art 9 (1)

* Packed ACM has to be signed with adequate sign5.  
  AI-07-09 Art 9 (3)

Austrian legislation is providing similar indications with a minimum 400 µm or by double 200 µm.

However, due to practical reasons for handling of asbestos cement on the construction site packaging with 2 layers of PE Foil of 200 µm is more convenient and less cost intensive. Of course labelling has to be provided in addition.

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4 See Annex IV of the Administrative Instruction for Management of Hazardous Waste AI Nr. 06-2008; Placard I and Placard II

5 See Annex II of Administrative Instruction, Annex II, Placard I
Labelling is most appropriate if it is an integrated part of the PE bags where the asbestos cement is poured. This avoids unwanted removal of the asbestos label. If not available as an integrated part of the PE bag the label is supplied in rolls of 500 pieces with a size 50 x 25mm and which are self-adhesive.

Figure 4: Example Label for ACM

5.2.3.2 Weakly bound Asbestos / Friable Asbestos:

Definition:
Sprayed asbestos / asbestos products with soft friable asbestos (asbestos content 25 - 40%). Sprayed asbestos often contains blue asbestos (crocidolite). Due to the relatively low binder content, asbestos fibres are not sufficiently tied. Sprayed asbestos has been used worldwide as fire protection for buildings in steel frame construction.

In construction, soft asbestos products were mainly used as insulating material in several fields of application:

- fire and noise protection (jacket / coat / seals for components made of steel, reinforced concrete and wood, especially in the attics, suspended ceilings, installation cores and technology shafts, fire dampers)
- heat protection (on heat pipes, boilers and radiators, night storage heating devices, and protective clothing)
- moisture protection (coatings of ceilings in indoor swimming pools, showers or changing rooms, storage masses of heat recovery systems, sealing cords)

Appliances containing weakly bound (friable) asbestos material:
- Sprayed asbestos as fire insulation on steel beams or steel surfaces
- Hard coating of thermal insulation (lagging) of heating pipes and similar (vessel houses, cellars)

Treatment of Asbestos at the construction/demolition site

Kosovo legislation is specifying three “isolation methods” for asbestos.

- Destruction of the Asbestos fiber:  
  *Thermal or chemical processing of ACM to create other mineral conjunctions in order to destructureize fibers.*
- Isolation of asbestos:
  *ACM is homogeneously mixed with cement (to 10 N/mm²)*
- Strengthening of surface:
  *Coating of weakly bound ACM surfaces with suitable materials to effectively prevent fibre release*

Method 1 is very cost intensive and is therefore typically not applied. Method 2 is the most common praxis and method 3 is only applied for temporary treatment.

Specifically considering the current landfill operation praxis it is recommended that asbestos to be homogeneously mixed with cement in an enclosed area on the construction side, packed and labelled before receiving it on the landfill site.
For specific weakly bound ACM that can not be homogeneously mixed with cement (asbestos containing cartons, or plates) the material

**Packaging of asbestos cement and labelling**

For the specification of packaging material and labelling reference is made to section 5.2.3.1

*Figure 5: Example for packaging and labeling of ACM products*

### 5.2.4 Transport of ACM

In general the landfill disposal of hazardous material shall be documented by a weighing and official disposal document (date, mass, name and place of landfill).

The contractor has to prepare and to provide a coordinated transport and disposal concept as soon as the contract is signed. This concept has to include, based on the appointment with the MESP, a signed confirmation of the nearest suitable approved landfill to accept construction wastes as specified under section 5.

The Contractor shall perform or carry out all transports in fully accordance with the international Statutory and Technical Rules (ADR) and/or corresponding national rules. According to this, the transport containers and equipment require certain danger marks depending to shipped masses. Vehicles and their drivers require specific ADR approval or an ADR license. Each driver has to carry documents, identifying origin and destination, mass and waste type of his way.

The contractor has to prepare and to provide a coordinated transport and disposal concept as soon as the contract is signed. This concept has to include a signed confirmation of the subcontracted transshipping to bear all required licenses.

Removed ACM shall be packed in double-foil of at least 0.2 mm thickness (or 1x 0.4 mm) and stored in Big Packs clearly visibly signed with the Asbestos Logo. Whenever transported with fork lifter, Big Packs have to be set on wooden euro pallet in order not to damage the big-packs by the forks.

### 5.2.5 Proposal for independent Supervision

In the EU, asbestos abatement is typically performed by companies licensed for asbestos abatement works. Some countries, such as Austria and Germany do further specify independent licensed/specifically trained experts as supervisors for asbestos abatement works.

As understood from discussions with the Ministry of Environment there do not exist licensed companies in Kosovo and a very limited number of licensed experts are available in the country and it is also accepted if an individual expert is providing a license to the construction company. Due to liability reasons it is recommended that licenses should be held by the company performing the work.

Specifically related to the subject project it is further recommended that the abatement works and the treatment of the asbestos is supervised by an independent asbestos abatement expert. This expert should verify each transport
going from the construction site to the landfill site and should prepare asbestos specific documentation (photos, description of treatment and expected amounts).

5.3 DISPOSAL OF LEAD CONTAINING DUST FROM REMOVED PAINT

One treatment option within Kosovo was the immobilization of lead containing dust with fly-ash from KEK Thermo Power Plants (Kosova A + B) in Obiliq and its safe disposal on sanitary landfills into a separate cell constructed with clay layer to avoid surface water infiltration.

Alkaline conditions allowing an immobilization of heavy metals. Fly-ash is available, remaining from the process of coal combustion in the TPP. The engineered central landfill located in Obiliq, operated by KLMC (Kosovo Landfill Management Company), is surrounded by clayey overburden from the coal abstraction with a permeability of $< 10^{-8} \text{ m/s}$ and suitable for a save storage.

The disadvantage of this location are the temporary surface waters surrounding the disposal areas caused by the previous mentioned clayey surface and related low permeability. A location nearby shall be identified for the safe disposal of immobilized lead-dust.

Another option for controlled lead dust disposal are an interim storage at the “Trepca” Zinc-Lead Production Facilities in Mitrovica, where lead and zinc containing remainders from former processing are still dumped.

Lead-dust can also be exported to Macedonia (Probishtip / Zletovo) where a battery recycling plant is in operation.

Packing

All materials containing lead paint or lead-dust shall be packed in UN open-top bins (200-220 litre), sealable (zinc coated seal-ring) with a plastic sheet inlet (double sealing), which allows a temporary storage and further transportation (international standard), treatment (immobilization) and disposal (co-disposal).

**Figure 6: Example for packaging of lead containing dust or wall material**

5.4 DISPOSAL OF SPENT COMPACT FLUORESCENT LAMPS (CFL)

In Kosovo, spent CFLs, whereas all of them are containing small portions of Mercury and other hazardous materials emittible to atmosphere, water or soil, are currently neither separately collected, nor properly recycled or treated.

Thus, spent CFLs are mainly disposed on regional sanitary landfills in Kosovo.

Recently, the only possibility to treat such lamps properly, i.e. to separate Mercury and other gases from glass and scrap metal, is its export to foreign countries, where authorized companies are maintain CFL recycling centers (e.g. Alba SRB).

For the collection and undamaged transport CFLs have to be stored in certain grid shaped cardboard containers on Euro pallets and wrapped with stretch foil, while energy safety bulbs (rarely to be found during EE implementation works) have to be stored in sealable open-top UN bins (200 litre).
Method example Alba SRB:

Interseroh, an ALBA Group company, provides a convenient service aimed at saving consumers a trip to the local recycling plant: the Interseroh collection box is designed especially for taking back illuminants in small and medium quantities. Retailers and manufacturers set up these inexpensive boxes in their sales and storage areas, allowing end users to dispose of used illuminants in-store when purchasing new ones. In addition to the collection of tubes, bulbs and other lamps, the service also covers their recycling and documentation.

Collection boxes are available for different types of illuminants. Once a box is full, a quick phone call is all that is needed to arrange for it to be picked up. The entire take-back and disposal process is handled by Interseroh, in close collaboration with service partners throughout Germany.

In the future, the residual mercury-containing phosphor powder (1-3 % of CFL weight, rest is recyclable glass and metal scrap) is due to lack of economic methods at least for part disposed as hazardous waste on suitable landfills. In the usual process the gaseous portion goes into the atmosphere.

5.5 INTERIM STORAGE AND DISPOSAL

Hazardous materials like paints, oils and others should be kept on impermeable surface, and adsorbents like sand or sawdust should be kept for handling small spillage.

The Ministry of Environment and Spatial Planning (MESP) is working towards the establishment of and (interim) storage facility for hazardous materials.

Contractors should liaise with MESP regarding final disposal and treatment options, licensing requirements and applicable local regulations on this issue.

ACM specific:

If no final landfill solution is identified by the Ministry the authority shall identify and designate a proper area or building, where strong bound ACM can be stored if properly packed.

This storage facility shall be outside of frequently used buildings, but well accessible with trucks and fork lifters. The storage area shall be adequate for permanent charge and discharge of stored ACM.

For the Storage, the same technical and H&S rules apply as for the relieved decontamination area (Separation, One-Chamber Material Lock, and Access Rules).

- Prepare dense scaffold with 0,2 mm foil incl. one-chamber lock with dense doors or two-chamber lock with overlapping plastic curtains
- Require wearing of full personal safety equipment inside storage (disposable coveralls, overshoes, appropriate respiratory protection FFP3)
- Provide Residual Fiber Bonding Agent in case of damaged packages

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The ACM storage shall provide enough space to place Big-Packs (or similar products) properly side by side, whereas all big-packs have to be stored on wooden pallets. No big pack shall be stored on top of another, due to the risk of drop and unintended opening may occur.

**Figure 7:** Example for Big Pack handling in interim storage

The Storage shall be held clean from dust or rubbish and shall be sufficiently illuminated. The current content of the Storage shall be documented by a list on the door and at the Contractors documentation, showing the date and amount of incoming and outgoing ACM.

The Storage shall be regularly discharged and the landfill disposal documented by a weighing and official disposal document (date, mass, name and place of landfill).

The contractor has to prepare and to provide a coordinated transport and disposal concept as soon as the contract is signed. This concept has to include, based on the appointment with the MESP, a signed confirmation of the nearest suitable approved landfill to accept construction wastes as specified under section 5.

### 5.6 TRANSPORT

The Contractor shall perform or carry out all transports in fully accordance with the international Statutory and Technical Rules (ADR) and/or corresponding national rules. According to this, the transport containers and equipment require certain danger marks depending to transported masses. Vehicles and their drivers require specific ADR approval or an ADR license. Each driver has to carry documents, identifying origin and destination, mass and waste type of his way.

The contractor has to prepare and to provide a coordinated transport and disposal concept as soon as the contract is signed. This concept has to include a signed confirmation of the subcontracted transshipping to bear all required licenses.

Removed ACM shall be packed in double-foil of at least 0.2 mm thickness and stored in Big-Packs clearly visibly signed with the Asbestos Logo. Whenever transported with fork lifter, Big Packs have to be set on wooden euro pallet in order not to damage the big-packs by the forks.

### 6. TYPICAL COSTS OF HAZARDOUS MATERIAL ABATEMENT

Typical Incremental costs for the removal of building hazardous materials, specifically ACM or lead based paint, comprise of the following costs types:

- Project Management
- ACM/Lead Removal Works to be performed by a specialist remediation company including: installation of a enclosed abatement area; installation of special equipment such as air exchange and under pressure, etc.; waste abatement; waste treatment; decontamination of the abatement area/cleaning;
- Side works such as Scaffolding Works
- Quality Management Site Supervision (Approved ACM Remediation Supervisor / Consultant)
- Verification after remediation works through measurement or visual control
- ACM Transport and Disposal on Dumpsite
- Reinstallation Cost (New Insulation, Interior Redesign)

Cost (incremental costs) for a proper handling, storage and treatment of hazardous materials are related to the specific building, the materials identified and their location within the building, the building utilization and the amount of hazardous material identified.

Therefore Abatement costs are to be specified in each building specific environmental audit report as part of the general energy audits.
7. CULTURAL HERITAGE

7.1 DESCRIPTION OF THE KOSOVAR LEGAL AND INSTITUTIONAL FRAMEWORK

Cultural heritage in Kosovo is regulated with Law Nr. 02/L-88, approved on October 9, 2006. Matters relating to cultural heritage are governed by Law Nr. 9048, “For the Cultural Heritage”, dated April 7, 2003. The object of this law are values of Cultural heritage created through the centuries and the Law establishes relations between owners, possessors and occupiers and also establishes responsibilities of private persons and public institutions concerning the Cultural Heritage. Law specifies four types of heritage: architectural, archeological, movable and spiritual heritage. For the Project’s area of interest the focus is on Architectural heritage that covers Monuments, Ensemble of Buildings and Architectural conservation areas.

List of Cultural Heritage includes all items of the Cultural Heritage that have been selected for preservation and protection by the Competent Institution, being Kosovo Council for the Cultural Heritage. This is a body established by Parliament and they report annually to Parliament. This body cooperates with all other competent institutions that act in the field of the cultural heritage. Law mandates (article 6.3) that all architectural monuments shall be preserved in all their compositional elements, architectural and technical features. Any works of alteration to, or demolition of an architectural monument that might affect the values attributed to the monument will require written consent of Competent Institution. Competent Institution has veto over granting such permission.

7.2 COMPARISON WITH WORLD BANK POLICY AND EUROPEAN TREATIES

The Bank's policy is normally to decline to finance projects that will significantly damage non-replicable cultural property, and will assist only those projects that are sited or designed so as to prevent such damage. It will also assist in the protection and enhancement of cultural properties encountered in Bank-financed projects, rather than leaving that protection to chance.

Deviations from this policy may be justified only where expected project benefits are great, and the loss of or damage to cultural property is judged by competent authorities to be unavoidable, minor, or otherwise acceptable. Specific details of the justification should be discussed in EIA documents.

7.3 PROCESS REGARDING RENOVATION WORKS IN BUILDINGS LISTED AS CULTURAL HERITAGE

The process will comprise:

Step 1: Cultural heritage screening. The project team shall determine if any of proposed buildings for rehabilitation are also listed under the list of Cultural Heritage (provided by Kosovo Council for the Cultural Heritage). The Project shall try to avoid renovations at buildings listed on the Cultural Heritage list. In case, renovations on such building is unavoidable, then.

Step 2: Cultural heritage assessment. For buildings planned to be renovated by the Project that also are part of Cultural Heritage, Project team shall address a written request to Kosovo Council for the Cultural Heritage for permission to undertake
renovation, so a detailed design of renovation must be submitted along with request and the renovation measures and avoidance of impacts will be detailed in the EIA. Within 15 days a written answer should be received that allows or not continuation of works in the specific building. In case when written permit is given project team shall conduct renovation works and when permit is rejected then such object shall be removed from the list of planned renovations.
8. **ANNEX**

### 8.1 ANNEX 1: ENVIRONMENTAL SCREENING CHECKLIST

**Part 1 - to be completed by PMU**

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#### 3. Proposed rehabilitation activities / EE activities

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<td>Pumps and fans</td>
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<td>Replacement of the asbestos roofs;</td>
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</tr>
<tr>
<td>EE activities involving potentially hazardous materials like residues from paints, asbestos, solvents, enamels, and the replacement of larger quantities (several 10s) of windows and doors;</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Part 2 - to be completed by the PMU based on the findings of the environmental screening and scoping process**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Environmental Category (B or C)</td>
<td></td>
</tr>
<tr>
<td>EMP Checklist is required (yes or no)</td>
<td></td>
</tr>
<tr>
<td>What are the specific issues to be addressed in the EMP Checklist</td>
<td></td>
</tr>
</tbody>
</table>
### 8.2 ANNEX 2: DRAFT FORMAT FOR AN EMP CHECKLIST FOR ENERGY EFFICIENCY SUBPROJECTS

<table>
<thead>
<tr>
<th>PART 1: INSTITUTIONAL &amp; ADMINISTRATIVE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Country</strong></td>
</tr>
<tr>
<td><strong>Project title</strong></td>
</tr>
<tr>
<td><strong>Scope of project and activity</strong></td>
</tr>
<tr>
<td><strong>Institutional arrangements (Name and contacts)</strong></td>
</tr>
<tr>
<td><strong>Implementation arrangements (Name and contacts)</strong></td>
</tr>
</tbody>
</table>

### SITE DESCRIPTION

<table>
<thead>
<tr>
<th><strong>Name of Site</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Describe Site Location</strong></td>
</tr>
<tr>
<td><strong>Who owns the land?</strong></td>
</tr>
<tr>
<td><strong>Geographic description</strong></td>
</tr>
</tbody>
</table>

### LEGISLATION

| Identify national & local legislation & permits that apply to project activity |

### PUBLIC CONSULTATION

| Identify when /where the public consultation took place |

### INSTITUTIONAL CAPACITY BUILDING

| Will there be any capacity building? | [ ] No [ ] Yes, Attachment 2 includes the capacity building program |
### PART 2: ENVIRONMENTAL / SOCIAL SCREENING

<table>
<thead>
<tr>
<th>Activity</th>
<th>Status</th>
<th>Additional references</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building rehabilitation</td>
<td>[] Yes [] No</td>
<td>See Section B below</td>
</tr>
<tr>
<td>New construction</td>
<td>[] Yes [] No</td>
<td>See Section B below</td>
</tr>
<tr>
<td>Individual wastewater treatment system</td>
<td>[] Yes [] No</td>
<td>See Section C below</td>
</tr>
<tr>
<td>Historic building(s) and districts</td>
<td>[] Yes [] No</td>
<td>See Section D below</td>
</tr>
<tr>
<td>Acquisition of land 7</td>
<td>[] Yes [] No</td>
<td>See Section E below</td>
</tr>
<tr>
<td>Hazardous or toxic materials 8</td>
<td>[] Yes [] No</td>
<td>See Section F below</td>
</tr>
<tr>
<td>Impacts on forests and/or protected areas</td>
<td>[] Yes [] No</td>
<td>See Section G below</td>
</tr>
<tr>
<td>Handling / management of medical waste</td>
<td>[] Yes [] No</td>
<td>See Section H below</td>
</tr>
</tbody>
</table>

### A. General Conditions

#### Notification and Worker Safety

- The local construction and environment inspectorates and communities have been notified of upcoming activities.
- The public has been notified of the works through appropriate notification in the media and/or at publicly accessible sites (including the site of the works).
- All legally required permits have been acquired for construction and/or rehabilitation.
- All work will be carried out in a safe and disciplined manner designed to minimize impacts on neighboring residents and environment.
- Workers' PPE will comply with international good practice (always hardhats, as needed masks and safety glasses, harnesses and safety boots).
- Appropriate signposting of the sites will inform workers of key rules and regulations to follow.

---

7 Land acquisitions include displacement of people, change of livelihood encroachment on private property. This regards to land that is purchased/transferred and affects people who are living and/or squatters and/or operate a business (kiosks) on land that is being acquired.

8 Toxic/hazardous material includes and is not limited to asbestos, toxic paints, removal of lead paint, etc.
<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>PARAMETER</th>
<th>MITIGATION MEASURES CHECKLIST</th>
</tr>
</thead>
</table>
| B. General Rehabilitation and/or Construction Activities | Air Quality | • During interior demolition use debris-chutes above the first floor  
• Keep demolition debris in controlled area and spray with water mist to reduce debris dust  
• Suppress dust during pneumatic drilling/wall destruction by ongoing water spraying and/or installing dust screen enclosures at site  
• Keep surrounding environment (sidewalks, roads) free of debris to minimize dust  
• There will be no open burning of construction I waste material at the site  
• There will be no excessive idling of construction vehicles at sites |
|          | Noise       | • Construction noise will be limited to restricted times agreed to in the permit  
• During Operations the engine covers of generators, air compressors and other powered mechanical equipment should be closed, and equipment placed as far from residential areas as possible |
|          | Water Quality | • The site will establish appropriate erosion and sediment control measures such as e.g. hay bales and 1 or silt fences to prevent sediment from moving offsite and causing excessive turbidity in nearby streams and rivers. |
|          | Waste management | • Waste collection and disposal pathways and sites will be identified for all major waste types expected from demolition and construction activities.  
• Mineral construction and demolition wastes will be separated from general refuse, organic, liquid and chemical wastes by on-site sorting and stored in appropriate containers.  
• Construction waste will be collected and disposed properly by licensed collectors  
• The records of waste disposal will be maintained as proof for proper management as designed.  
• Whenever feasible the contractor will reuse and recycle appropriate and viable materials (except asbestos) |
<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>PARAMETER</th>
<th>MITIGATION MEASURES CHECKLIST</th>
</tr>
</thead>
</table>
| C. Individual wastewater treatment system | Water Quality | - The approach to handling sanitary wastes and wastewater from building sites (installation or reconstruction) must be approved by the local authorities.  
- Before being discharged into receiving waters, effluents from individual wastewater systems must be treated in order to meet the minimal quality criteria set out by national guidelines on effluent quality and wastewater treatment.  
- Monitoring of new wastewater systems (before/after) will be carried out. |
| D. Historic building(s) | Cultural Heritage | - If the building is a designated historic structure, very close to such a structure, or located in a designated historic district, notify and obtain approval/permits from local authorities and address all construction activities in line with local and national legislation.  
- Ensure that provisions are put in place so that artifacts or other possible "chance finds" encountered in excavation or construction are noted, officials contacted, and works activities delayed or modified to account for such finds. |
| E. Acquisition of land | Land Acquisition Plan/Framework | - If expropriation of land was not expected and is required, or if loss of access to income of legal or illegal users of land was not expected but may occur, that the bank task Team Leader is consulted.  
- The approved Land Acquisition Plan/Framework (if required by the project) will be implemented. |
| F. Toxic Materials | Asbestos management | - If asbestos is located on the project site, mark clearly as hazardous material.  
- When possible the asbestos will be appropriately contained and sealed to minimize exposure.  
- The asbestos prior to removal (if removal is necessary) will be treated with a wetting agent to minimize asbestos dust.  
- Asbestos will be handled and disposed by skilled & experienced professionals.  
- If asbestos material is be stored temporarily, the wastes should be securely enclosed inside closed containments and marked appropriately.  
- The removed asbestos will not be reused. |
| | Toxic/hazardous waste management | - Temporarily storage on site of all hazardous or toxic substances will be in safe containers labeled with details of composition, properties and handling information.  
- The containers of hazardous substances should be placed in an leak-proof container to prevent spillage and leaching.  
- The wastes are transported by specially licensed carriers and disposed in a licensed facility.  
- Paints with toxic ingredients or solvents or lead-based paints will not be used. |
<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>PARAMETER</th>
<th>MITIGATION MEASURES CHECKLIST</th>
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<tbody>
<tr>
<td>G. Affects forests and/or protected areas</td>
<td>Protection</td>
<td>• All recognized natural habitats and protected areas in the immediate vicinity of the activity will not be damaged or exploited, all staff will be strictly prohibited from hunting, foraging, logging or other damaging activities. • For large trees in the vicinity of the activity, mark and cordon off with a fence large tress and protect root system and avoid any damage to the trees • Adjacent wetlands and streams will be protected, from construction site run-off, with appropriate erosion and sediment control feature to include by not limited to hay bales, silt fences • There will be no unlicensed borrow pits, quarries or waste dumps in adjacent areas, especially not in protected areas.</td>
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<tr>
<td>H. Disposal of medical waste</td>
<td>Infrastructure for medical waste</td>
<td>• In compliance with national regulations the contractor will insure that newly constructed and/or rehabilitated health care facilities include sufficient infrastructure for medical waste handling and disposal; this includes and not limited to: • Special facilities for segregated healthcare waste (including soiled instruments &quot;sharps&quot;, and human tissue or fluids) from other waste disposal; and • Appropriate storage facilities for medical waste are in place; and • If the activity includes facility-based treatment, appropriate disposal option are in place and operational</td>
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</table>
## PART 3: MONITORING PLAN

<table>
<thead>
<tr>
<th>Phase</th>
<th>What (Is the parameter to be monitored?)</th>
<th>Where (Is the parameter to be monitored?)</th>
<th>How (Is the parameter to be monitored?)</th>
<th>When (Define the frequency / or continuously)</th>
<th>Why (Is the parameter being monitored?)</th>
<th>Cost (if not included in project budget)</th>
<th>Who (Is responsible for monitoring?)</th>
</tr>
</thead>
<tbody>
<tr>
<td>During activity implementation</td>
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<tr>
<td>During activity supervision</td>
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</table>
ANNEX 3

8.3 MINUTES OF THE MEETING FROM PUBLIC CONSULTATION REGARDING EMF PREPARED FOR KEEREP

Meeting started at 9.00 at the premises of Ministry for Economic development. Public Consultation was chaired by the Head of Agency for Energy Efficiency in Kosova (KEEA) Mr. Bedri Dragusha, who acknowledged the interest Kosovo has in implementation of this Project.

Then Head of PIU recruited for this project implementation, Mr. Naim Bujupi made a thorough presentation of the document called Environmental Management Framework for this project. He presented EMF as a tool to help mitigate any adverse environmental impacts that project might entail. Initially he described project components and expected benefits from the results of the project and then he mentioned that during civil works that are expected to happen in the course of project implementation as a result of renovation of buildings in order to improve the energy efficiency in such buildings. He described all necessary local legislation that will help the project team streamline works in order not to harm environment and also mentioned all international best practices in similar projects. Mr. Bujupi presented the issues of asbestos and mercury that might result from rehabilitation of governmental buildings. Doing the demolition properly is an absolute necessity and will definitely be done following all legislation in place with regard to packing and transportation of such dangerous materials, nevertheless the final disposal remains still an issue as Kosovo has no licensed places were materials like asbestos and mercury could be safely dumped. So under mitigation measures proposed he listed viable options that could be done for dumping asbestos in a properly adopted existing landfill under close supervision of project team and authorities, while for mercury it is not expected that soon enough Kosovo will one a site that can be considered as a safe place for its final destination, so mercury most probably shall be exported to a licensed facility.

For less problematic issue like noise, dust etc. he had detailed plans how to mitigate any adverse impact during project implementation.

Then the floor was opened for questions and comments.

Arsim Rashiti from OSHP (Procurement Review Body) asked Mr. Bujupi why the EMF points several time that solutions shall be done in cooperation with MESP and never mentioned say other institution and also asked it is foreseen that licensed people with required skills shall be part of the team hired by MED to do the reconstruction works in buildings that will be renovated.

Mr. Bujupi said that the project will be implemented by MED and will closely cooperate will all line ministries and other relevant institutions as the project is progressing, but issues of concern listed under EMF are more of a topic that ultimately requires and implicates cooperation with MESP. For the expertise required by companies that will be hired it is everybody’s understanding and agreement that these requirements shall be part of the tender dossier.

Farush Azemi, Environmental expert hired by MED as a part of PIU, highlighted that finding adequate dumping sites or landfills for final disposal of asbestos shall definitely be considered as a priority for him and the rest of the team.
Nezakete Hakaj from the Department of EIA, in the MESP, started by saying that she and all her colleagues in the Ministry shall do their bets to help this project achieve its goals in energy efficiency. She also mentioned that being an environmentalist she sees energy efficiency differently from others as she sees resource saving more than material benefit of the project. Still she said that regarding EIA there are some differences between WB and EU and she clearly indicated that although according the WB project is listed as category B project, nevertheless MESP is going to require complete EIA for this project. Her explanation was very brief – materials that are going to result as construction waste like asbestos and mercury are so dangerous that automatically shift the project onto a category that requires EIA. She said that a proper EIA conducted by project team or any other hired consultant will help the PIU find solutions for environmental concerns and once the Environmental consent is granted, not even PIU but also MESP shall feel more comfortable that all adverse potential impacts shall be mitigated in line with legislation in force.
### ANNEX 4: LIST OF ATTENDANTS

**List of Attendees**

<table>
<thead>
<tr>
<th>Nr</th>
<th>Emri dhe Mbiemri</th>
<th>Institucioni</th>
<th>Email</th>
<th>Nr. telefonit</th>
<th>Nënshkrimi</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Naiba Avduri</td>
<td>PUL/LED</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Fadil Avduri</td>
<td>PUL/LED</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Naedia Halaj</td>
<td>NHAIN/DMH</td>
<td></td>
<td><a href="mailto:meemore@yandex.com">meemore@yandex.com</a></td>
<td>038 600 300</td>
</tr>
<tr>
<td>4</td>
<td>Rihem Bender</td>
<td>WB</td>
<td></td>
<td><a href="mailto:bondi@yandex.com">bondi@yandex.com</a></td>
<td>044 436 983</td>
</tr>
<tr>
<td>5</td>
<td>Tenetija Pajariu</td>
<td>WB</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Zenin Rashiti</td>
<td>OSHP</td>
<td></td>
<td></td>
<td>jogli @yandex.com</td>
</tr>
<tr>
<td>7</td>
<td>Ilir Azem Hima</td>
<td>WB</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>8</td>
<td>Litor L DMA</td>
<td>WB</td>
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<tr>
<td>9</td>
<td>Bedri Dragusha</td>
<td>OSHP</td>
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<tr>
<td>10</td>
<td>Lulzim Busulj</td>
<td>PUL/LED</td>
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</tbody>
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Adresa/Address: Rr. Nënë Terezë, nr.36, Toskana, 10000 PRISHTINË, KOSOVË
web: www.rks.gov.net/mzhe, bedri.dragusha@rks.gov.net ; Tel/ Phone: +381-38-200-21555