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Ministarstvo Ekonomskog Razvoja - Ministry of Economic Development

Environmental and Social Management Framework for Kosovo
Energy Efficiency Renewable Energy Project Additional Financing

(Revised, January 2019)

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List of Abbreviations

ACM	Asbestos containing material
AF	Additonal financing
CFL	Compact fluorescent lamp
EA	Environmental Assessment
EC	Eurpoean Commission
EE	Energy Efficiency
EIA	Environmental Impact Assessment
ESA	Energy Service Agreement
ESCO	Energy Service Company
ESMAP	Energy Sector Management Assistance Program
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
EU	European Union
Hg-CFL	Mercury containing compact fluorescent lamps
KEE	Kosovo Energy Efficiency Agency
KEEF	Kosovo Energy Efficiency Fund
LBP	Lead Based Paint
MED	Ministry of Economic Development
MESP	Ministry of Environment and Spatial Planning
PDO	Project Development Objective
PMU	Project Management Unit
RE	Renewable Energy
WB	World Bank

1. **SUMMARY**

The Environmental and Social Management Framework (ESMF) consists of the following key elements:

- (a) short description of the parent project, Additional Financing (AF) project and its activities
- (b) assessment of Kosovo and the WB EA related legal requirements, administrative conditions and procedures;
- (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 ESMPChecklist; and,
- (e) ESMF 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 Kosovo Energy Efficiency and Renewable Energy Project (hereinafter referred to as the parent Project) was approved on June 18, 2014.

The Project Development Objectives (PDO) of the parent 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 parent Project provides:

- (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 parent project consists of energy audits in about 150 central governmental buildings (e.g. ministry buildings, hospitals, university buildings). This includes investment foreseen for different government-owned buildings throughout Kosovo.

As part of parent project preparation, a Pre-feasibility Study of Energy Efficiency and Implementation Measures in Public Buildings in Kosovo has been executed aiming to: (i) EE audits incl. the analyses of the integration potential for renewable energies such as solar thermal energy systems / 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 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)

3. PARENT PROJECT RESULTS

Under the sub-component 1, Package 2 (12 buildings), Package 3 (20 buildings) and Package 4 (25 buildings) are completed (December 2018). Thus, the Project had about 57 buildings renovated or under renovation by the end of 2018. The PIU completed the selection of buildings for Package 5 (30 buildings) in May 2018 in cooperation with the Project's Coordination Group and procurement for the technical designs was launched soon thereafter.

Buildings renovated under the parent Project (by November 2018) have averaged 52 percent energy savings and have resulted in more than 102 GWh in lifetime energy savings, installation of 0.8 MW or RE systems (e.g., solar water heating systems, biomass boilers) and 3,684 metric tons of CO₂e emissions reduction. These investments are saving the Government more than US\$500,000 per year and have benefitted more than 4,500 employees and users of the buildings (45 percent women). The parent Project has also trained 78 staff from auditing, design and construction firms and created substantial employment opportunities. In addition, ongoing policy dialogue on the longer-term plans for building renovation financing and implementation has led to the Government's agreement to establish the Kosovo Energy Efficiency Revolving Fund (KEEF) through additional financing which instigated Additional Financing and adjustments of the parent Project and consequently project ESMF revision.

4. ADDITIONAL FINANCING (AF)

4.1 AF PROJECT DESCRIPTION

Upon the establishment of KEEF the EC will allocate substantial grant from the EU-Instrument for Pre-Accession (IPA) to be channeled through the Bank as additional financing (AF) for the parent Project. In addition, Ministry of Economic Development (MED) will contribute to the fund.

The World Bank restructured the parent Project to include KEEF as an implementing agency under Component 1B of the Project as well as extend the Closing Date. The EU-IPA funds will be used to help capitalize KEEF and provide equity to allow it to make some investments for municipal building renovations under a revolving (ESCO) scheme. A portion of EC grant in KEEF may be provided to the beneficiaries (municipal buildings) as grants in the event the building requires non-EE investments (such as minor structural repairs) or is not able to fully repay the ESA from energy cost savings alone (due to underheating). In any case, the scope of the KEEF supported sub-projects will remain within civil works implemented through the parent Project.

In addition to municipal investments, EC funds will also be used to cover needed TA efforts, such as market studies, development of outreach materials, development of measurement and verification (M&V) procedures, legal review and amendments to KEEF

documents based on early experiences, reviews to recommend changes to Kosovo legislation and regulations to ensure the sustainability of KEEF, training and capacity building for all relevant stakeholders.

Updated project description that includes changes under the AF is provided below. Only activities under Component 1 activities carry potential environmental significance:

Component 1: Energy Efficiency and Renewable Energy Investments in Public Buildings

Description. This component includes the renovation of both central-owned government buildings and municipal government buildings with EE and RE measures.

Proposed changes. Three changes are proposed. First, KEEF will become the main implementing agency under the Project. (While MED and KEEA will no longer serve as implementing agencies, both would be represented in the KEEF Board.) Second, an addition grant from EU-IPA funds will be added as AF to support EE in municipal buildings and related technical studies (e.g., energy audits, technical designs), along with a contribution from the government. (Funds allocated under the parent Project for Component 1B will remain.) Third, the Project would introduce reflows from eligible investments using Energy Service Agreements (ESAs). All municipal investments supported by KEEF would be required to be repaid by the municipalities under these agreements.

For the EU-IPA AF, the funds would be used to support:

- (a) Financing of building renovations: Supporting the financing of renovation works for eligible buildings. KEEF would enter into ESAs with eligible beneficiaries to renovate their buildings based on ESCO system. and the beneficiary would agree to repay the investment cost plus associated KEEF fees from the resulting energy cost savings for up to 15 years. Funds would be used to hire contractors for the implementation of construction works as per the agreed technical designs.
- (b) Capital grants for building renovations: Supporting renovation of works through partial grants. In cases where the energy cost savings are determined to be insufficient to fully repay the investment cost and KEEF fees within a 15-year period, a portion of the EU-IPA Grant would be provided as a sub-grant.
- (c) Technical studies related to investments:
 - i) Awareness raising and marketing: Conducting market studies; organizing meetings and workshops to explain KEEF offerings; maintaining a KEEF website; developing and disseminating brochures describing the application and implementation procedures; etc. in compliance with EU visibility guidelines.
 - ii) Detailed energy audits: Conducting detailed energy audits to identify and assess possible energy savings measures, determine baseline energy usage, and calculating investment costs, annual energy savings, and simple payback periods; issuing of technical passports and energy performance certificates of buildings (when required); and defining investment parameters in accordance with Kosovo legislation on energy performance in buildings.
 - iii) Technical designs and construction supervision: Developing detailed technical designs and bills of quantity for renovation works in eligible buildings including technical drawings; preparing bidding documents for renovation works; hiring of contractors for construction supervision.
 - iv) Building commissioning and measurement and verification (M&V): Supporting the acceptance of works and commissioning of the renovated buildings including verifying the energy savings based

on agreed M&V protocols for the purposes of confirming municipal repayments; procuring basic equipment to support M&V (e.g., electricity and heat meters, light (lux) meters, data loggers, cameras, thermometers, humidity meters, etc.); conducting of a post-renovation energy audit for issuance of an energy performance certificate (as required).

- v) Monitoring and evaluation: Collecting data required for monitoring of KEEF's progress, including energy savings from investments; disbursed, committed and invested amounts; repayments; conducting of social surveys; carrying out of periodic program evaluations; etc.
- vi) Policy reviews and future business planning: Conducting policy reviews (e.g., budgeting, procurement, municipal finance) in order to strengthen KEEF operations, development of future business and recapitalization plans to ensure KEEF sustainability beyond Bank/EC support.

Component 2: Policy and Regulatory Support for Renewable Energy and Energy Efficiency

Description. This component provides support to the Energy Regulatory Office for EE and RE and support to MED and MESP for EE legislation and implementation.

Proposed changes. None.

Component 3: Project Implementation Support

Description. This component provides funds to support MED to effectively implement the project through the creation of a project implementation unit (PIU) under KEEA to carry out procurement, financial management, technical oversight, project monitoring and reporting, and financial audits.

Proposed changes. An additional funds from the EC grant would be added to cover additional KEEF operating costs for its first 4 years including staff; offices supplies/equipment; site visits; etc. Staff will continue to do marketing, investment screening, audit/design reviews, procurement, environmental and social safeguards, oversight, repayment collection, monitoring and reporting, etc.

4.2 KOSOVO ENERGY EFFICIENCY FUND – AF IMPLEMENTING AGENCY

Agreed with the government, EC and others and as stated in the draft EE Law, KEEF would be established as an as an independent, autonomous and sustainable non-profit legal entity, at the service of the public interest and serve as the primary financier for municipal EE building renovations in Kosovo going forward.¹ A 7-member Board will oversee KEEF, composed of representatives from the Ministries of Finance, Economic Development and Environment and Spatial Planning, the University of Pristina's Technical Faculty, Managing Director of KEEF and two (nonvoting) KEEF donors (EC and the Bank). KEEF would seek to develop a marketing strategy, investment plan and develop a sustainable business to finance EE projects not served by commercial banks, starting with the municipal and public sectors. KEEF would enter into energy service agreements (ESAs) with municipalities to finance agreed EE subprojects in municipal buildings, with ESAs not classified as municipal debt. KEEF would provide a full-service package—energy audit, technical

¹ KEEF would be established following the precedent created under the recently created Kosovo Credit Guarantee Fund.

design, contractor procurement and oversight, environmental and social safeguards, energy savings measurement and reporting. In return, the municipality would agree to repay the energy cost savings achieved for an agreed period (up to 15 years).

5. PROJECT ENVIRONMENTAL ASPECTS

5.1 POTENTIAL ENVIRONMENTAL ISSUES AND PROJECT ENVIRONMENTAL CATEGORY

As the parent project, as well as AF, fund similar 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 mainly under the Component 1. The project potential environmental impacts are generally expected to result from routing, small scale indoor and outdoor rehabilitation civil works required for refurbishing and adaptation of interior space for the replacement of boiler and/or burner, balancing valves, thermostatic valves, automatic temperature control, envelope insulation works, etc. The parent Project produced significant quantities of hazardous waste that was separately collected and temporarily stored (asbestos containing materials, small quantities of lead-based paints, Compact Fluorescent Lamps (CFLs), etc.). Given the spreaded use of asbestos in Kosovo in 1970s onwards, generation of large quantities of aforementioned types of hazardous wastes is to be expected in the AF.

In accordance with the Bank's safeguard policies and procedures, including OP/BP/GP 4.01 Environmental Assessment, the parent 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 (exact buildings and locations) 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 a parent project Environmental and Social Management Framework (ESMF) and now the AF updated ESMF.

This categorisation requires that for each identified object/site, the preparation of a "Environmental and Social Management Plan (ESMP) Checklist" which is used for projects involving simple, low risk rehabilitation works.

The ESMF outlines the environmentally and socially relevant rules and procedures for the EA of the selected subprojects. An updated template (based on the practical experience of the parent project implementation) for the ESMP Checklists for the subprojects under the AF is attached to this ESMF.

Scope of the project does not change under the AF: it remains category B project with potential environmental effects coming from rehabilitation and (rarely) minor structural repairs related civil works.

6. ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK (ESMF)

6.1 ESMF'S SCOPE AND OBJECTIVES

6.1.1 Scope

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

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

6.1.2 Components

This ESMF therefore contains the following:

- (a) short description of the project and its activities (in the section 4);
- (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 ESMP Checklist; and,
- (e) ESMF implementing responsibilities.

6.2 ENVIRONMENTAL AUDIT POLICIES, RULES AND PROCEDURES

6.2.1 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. 04/L-197); on 03. October 2014
- The Law on Biocide products (No. 03/L-119), on May 27, 2009(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
- The Law on Occupational Safety, Health and Working Environment (no. 2003/19) adopted on October 9, 2003.

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.

6.2.2 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

works 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

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

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. As no company in Kosovo is licensed to transport or manage hazardous waste, as per request of MESP, the Contractor must obtain environmental consent for such activities from MESP prior to works, and all such activities must be announced to MESP Inspector.

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 AI 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. As no company in Kosovo is licensed to transport or manage hazardous waste, as per request of MESP, the Contractor must obtain environmental consent for such activities from MESP prior to works, and all such activities must be announced to MESP Inspector.

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 where 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.

6.2.3 World Bank Environmental Assessment (EA) rules and procedures

6.2.3.1 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, siting, 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 and Social Management Framework (ESMF) is prepared which: provides details on procedures, criteria and responsibilities for subproject screening, preparing, implementing and monitoring of subproject specific EAs.

The ESMF also includes 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.

6.2.3.2 Triggered WB safeguards policies

Taking into account the parent project as well as AF 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 project avoids 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 ESMF.

6.3 PROJECT POTENTIAL ENVIRONMENTAL IMPACTS

6.3.1 Potential project activities

As described in the parent Project scope as well as AF 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.
- (g) Under the AF EC may provide grants for minor structural repair work. Regarding environmental impacts, these works do not differ significantly from the existing (parent Project) scope of activities or environmental aspects.

6.3.2 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 ESMP 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.

6.3.3 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.

6.3.4 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 ESMP 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.

6.3.5 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.

6.4 ENVIRONMENTAL GUIDELINES

6.4.1 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 ESMP Checklist;
- (c) **description of the ESMP Checklist** and its use; and
- (d) requirements for **conducting monitoring activities** on implementing ESMPs.

6.4.2 Suggested mitigation measures

6.4.2.1 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, equipped with protective clothes and equipment e.g. having and wearing when necessary respirators and safety glasses, harnesses and safety boots.

In the case the premises under works are being used, ensure safety of employees and users of the building. The building should be emptied during removal of hazardous elements (e.g. asbestos, CFLs, lead paint).

6.4.2.2 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 clothes and respirators.

6.4.2.3 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.

6.4.2.4 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, handled accordingly and waste records (containing amounts and types, final destination (landfill or processing plant location), etc.) issued and kept. 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. (The latter does not apply to the asbestos waste as it is regulated under the different Administration note.)

6.4.2.5 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, labell appropriately, pack them in a manner that would prevent dispersion of fibers and deposit them in an organized manner on the construction sites. For the weakly bound asbestos, best practices presented in the chapter 7 should be followed.

As no company is licensed to transport or manage hazardous waste in Kosovo, as per request of MESP, the Contractor must request (and obtain) environmental consent for such activities from MESP prior to works. PIU Environmental Expert must be present at all activities concerning asbestos (removal, packing, transport, storing and other) and all such activities must be announced to MESP Inspector.

For detailed abatement measures, see chapter 7; for disposal see chapter 8.

6.4.2.6 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 8.5.

6.4.2.7 Ensuring workers health and safety

As mentioned above in section 6.2.2, 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.

6.4.2.8 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.

6.4.3 Subprojects Environmental Screening

6.4.3.1 Expected subproject environmental categories

As mentioned above, the project will support only EE activities in the existing governmental premises which are expected not to generate significant environmental impacts. Due to the safety risks and risks of finding and generating large quantities of asbestos waste, most of sub-projects under the sub-component 1 are considered B category. ESMP Checkslit will be prepared and publicly consulted for each such site. Upon the public consultations, it will become a part of bidding and contracting documentation.

The project will use the existing facilities and implement different types of EE activities - see section 6.3.1 above. No new construction will be supported.

6.4.3.2 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:

- chiller/AC replacement,
- heat pumps, pumps and fans,
- solar water heating installation (if does not include working in highs).
- control systems installation,
- light emitting diodes installation,
 - plasterin and painting,
 - refurbishing
 - pipe insulation
 - reflective surfacing of walls behind radiators.

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, walls, etc; removing weakly bound asbestos, asbestos incapsulation;
- 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;
- insulation of walls, basements and attics,
- large scale repair/replacement of external doors and windows, window optimization,

- boiler upgrade /replacement,
- fuel switching (e.g. biomass, district heating connection),
- compact fluorescent lamps replacement, etc.

6.4.3.3 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.

6.4.3.4 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 theESMPChecklist attached as Annex 2, identifying and defining the mitigation measures to be implemented during the EE activities.

TheESMPChecklist 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.

6.4.4 Environment Management Plan Checklist

6.4.4.1 The scope and objective of theESMP

A project's Environmental and Social 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 ESMP 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 ESMP Checklist-type format ("ESMP 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 and Social Management Plan to meet Environmental Assessment requirements of the World Bank (under OP/BP/GP 4.01).

6.4.4.2 ESMP Checklist structure

The ESMP Checklist has three sections:

- (a) Part I 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.

6.4.4.3 ESMP 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 and publishing the ESMP Checklist on the project/KEEF web site. ESMP Checklists will be available for public commenting for at least 14 days (postal and email address for sending comments and questions in the accompanying call for comments) and relevant comments will be reflected in the final version of the ESMP Checklist.

All subproject specific information related to the ESMF will be also publicly available on-line on the project/KEEF website for at least 14 days.

6.4.4.4 Integration of the ESMP into project documents

The ESMP provisions would be used for the following:

- (a) inclusion of the ESMP requirements in the Project Operational Manual;
- (b) inclusion of ESMP Checklist in bidding documentation and 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 ESMP 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 ESMP.

6.4.5 Subprojects Monitoring

6.4.5.1 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 ESMF 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 ESMF.

6.4.5.2 Monitoring activities

Specifically, the monitoring section of the ESMP 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.

6.4.5.3 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 ESMF implementation and subprojects environmental performances as part of the Progress Reports to be presented to the WB by the Ministry

6.5 IMPLEMENTING ARRANGEMENTS AND FUNDING

6.5.1.1 Funding for EMPs implementation

During the reconstruction phase, monitoring of the ESMP 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 ESMP-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.

6.5.1.2 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.

6.5.1.3 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 parent project. In the AF, the PMU will be formed within the KEEF and will include Environmental Manager or Environmental Focal Point responsible for environmental issues assuming identical responsibilities as in the parent project (described in this ESMF).

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 ESMP Checklist requirements during the subprojects' realization;
- (e) overall environmental compliance of the project.

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.);
- (d) preparing and publicly consulting ESMP Checklist;
- (d) including ESMP Checklist in the bidding and contracting documentation.

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 and Social Management Plan.

6.5.1.4 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 ESMP Checklists provisions.

6.5.1.5 Capacity building

To improve institutional capacities with regard to ESMF 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 ESMP Checklist; (iv) Conducting field Supervision as well as preparing progress reports.

6.6 ESMF DISCLOSURE AND PUBLIC CONSULTATION

6.6.1.1 ESMF disclosure

The Ministry has disseminated the parent project ESMF to its relevant departments and to other interested parties for review and comments, also posting on March 31, the draft ESMF on the official web page of MED (for reference see <http://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 (took place on April 8th, 2014).

The updated AF ESMF is published on MED web site on 25.01.2019.

6.6.1.2 ESMF consultations

The draft parent Project ESMF 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 ESMF 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.

6.6.1.3 The final ESMF disclosure

The final version of the ESMF (Albanian, English) were posted on the Ministry's web site 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.

7. ABATEMENT OF HAZARDOUS MATERIALS IN BUILDINGS

7.1 ABATEMENT OF ASBESTOS CONTAINING MATERIAL (ACM)

7.1.1 Distinctions and Products containing Asbestos

There are basically two different kinds of asbestos products:

7.1.1.1 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" / "Sallonit"), 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 7.1.3

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

7.1.1.2 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 7.1.3

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

7.1.2.1 Avoiding Fiber Exposure

The general approach while handling this material is that constructors avoid crushing/destroying 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.

7.1.2.2 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:

Filter Class	Filter penetration limit (at 95 L/min air flow)	Inward leakage
FFP1	Filters at least 80% of airborne particles	<22%
FFP2	Filters at least 94% of airborne particles	<8%
FFP3	Filters at least 99% of airborne particles	<2%

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 7.1.4.1) 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



7.1.2.3 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.

7.1.2.4 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 ESMP 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;
- Licensing and permitting of the asbestos abatement work 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 (MESP). However, no company in Kosovo is licensed for transport or management of hazardous waste. Therefore, the Contractor must obtain environmental consent for such activities from MESP prior to works, and all such activities must be announced to MESP Inspector.
- 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.

7.1.2.5 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.

7.1.3 Abatement method for Asbestos Containing Fibre Cement Panels

The Removal of ACM containing Fibre-Cement Panels ("Eternit" / "Sallanit" 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 7.1.2 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

7.1.4 Abatement method for other Asbestos Containing Material

7.1.4.1 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 7.1.2

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

7.1.4.2 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 7.1.2

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.

7.1.4.3 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 7.1.2

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.

7.1.5 Transport and Disposal

See sections 7.1.2.5 and 8.6

7.2 ABATEMENT OF LEAD-BASED PAINT

7.2.1 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.

7.2.2 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 7.1.4.1 apply accordingly.

7.3 MANAGEMENT OF COMPACT FLOURESCENT LAMPS CONTAINING MERCURY

7.3.1 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.

7.3.2 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.

7.3.3 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 8.4.

7.3.4 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.

8. DISPOSAL OF SELECTED HAZARDOUS MATERIALS

8.1 STATUS OF LANDFILLS IN KOSOVO

8.1.1 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.

Site	Monthly Capacity	Size	Type	Catchment Area	Operator
Pristina "Mirash"	7,000 Mg	20 ha	Engineered	Region Center	KLMC
Podujeva	2,000 Mg	5 ha	Engineered	Region North	KLMC
Prizren	3,500 Mg	25 ha	Sanitary	Region South	KLMC
Gjilan	5,000 Mg	24 ha	Engineered	Region East	KLMC
Fushe Kosovo	0	10 ha	Sanitary / Closed	Municipality	--
Mitrovica	2,400 Mg	7 ha	Engineered	Municipality	Municipality
Peja	2,400 Mg	3.6 ha	Engineered	Semi-Region West	Municipality
Zvecan	1,000 Mg	3.5 ha	Controlled	Municipality	Private
Gjakove	--	--	--	n.a.	n.a.
Dragash	400 Mg	2.5 ha	Engineered	Municipality	Municipality
Obiliq TPP	60,000 Mg	234 ha	Controlled	TPP "Kosovo" Lignite ashes	KEK

Table 2: Landfill sites in Kosovo – Overview



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.

8.1.2 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, reuse or processing.

The asbestos waste generated in the implementation of parent project (Package 2) is temporarily stored in Xerxe interim storage. However, the storage was found incompliant to the ESMF and needs improvements to prevent spread of fibers and reduce potential risk to human health. In addition, the Xerxe temporary waste storage capacities are filled (Package 3 and 4 ACM waste is stockpiled at worksites) thus PMU will find another temporary storage for such waste before the AF project commences.

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 on locations (landfills) designated and approved by the Kosovo competent authority (MESP) a health risk for humans is greatly reduced.

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.

8.2 DISPOSAL OF ASBEST CONTAINING MATERIALS

8.2.1 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 mainly disposed either

- in form of fly-tips / back-yard disposal / wild landfilling 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 advantage² in comparison to uncontrolled handling and dumping.

² 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.

Therefore, the ESMF proposes to take into consideration a “Controlled Co-disposal” of ACM at existing sanitary / engineered landfill sites. See section 8.2.2.

8.2.2 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.

This is elaborated in the following sections in more detail.

8.2.2.1 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 waste³, 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; $k_f < 10^{-8}$ m/s
 - thickness 1 m; $k_f < 10^{-9}$ m/s
 - thickness 0,5 m; $k_f < 5 \times 10^{-10}$ 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 > 75cm
 - alternate base sealing with equal security > 40cm 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:

³ 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.

- 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
 - 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.

8.2.2.2 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;
4. Temporary storage until more permanent hazardous waste facility is constructed in Kosovo (the design phase is completed and location identified under the EC supported hazardous waste storage project where storages are planned to be built in order to accumulate all hazardous waste collected in Kosovo). These facilities include space for asbestos 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 waterborne⁴ potential fiber dispersion, the waste material has to be covered with clay cover material daily and before each

⁴ Dispersion through fibres in leachate water shall be prevented, as re-infiltration and recirculation procedure is common at Kosovo landfills.

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.

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.

Any selected method and location must be previously approved (in a written document/consent) by MESP and WB Environmental Specialist.

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

8.2.3.1 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 be 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 sign⁵

AI-07-09 Art 9 (1)

Packed ACM has to be signed with adequate sign⁶.

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.



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

8.2.3.2 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

⁵ See Annex IV of the Administrative Instruction for Management of Hazardous Waste AI Nr. 06-2008; Placard I and Placard II

⁶ See Annex II of Administrative Instruction, Annex II, Placard I

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 destructure 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 8.2.3.1

Figure 5: Example for packaging and labeling of ACM products



8.2.4 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. There are no licensed hazardous waste (including asbestos) management or transport companies available in Kosovo. Instead, Contractor must obtain environmental consent from MESP on case to case basis and all such activities must be announced to the MESP Inspector.

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.

8.2.5 **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 hazardous waste licensed companies or individuals in Kosovo. Therefore, MESP requests that the Contractor obtains environmental consent for such activities from MESP prior to works.

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).

8.3 **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 $< 10^{-8}$ m/s and suitable for a safe 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

8.4 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 ⁷:

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.

8.5 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.

⁷ Source: <https://www.alba.info/en/recycling/take-back-systems/fluorescent-tubes-and-energy-saving-bulbs.html>

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



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.

8.6 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. As no company in Kosovo is licensed to transport hazardous waste, the Contractor must obtain environmental consent for such activities from MESP prior to works, and all such activities must be announced to MESP Inspector. 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 in English, Albanian and

Serbian. 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.

9. **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 specified in each building specific environmental audit report as part of the general energy audits.

10. CULTURAL HERITAGE

10.1 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.

10.2 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.

10.3 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.

11. **ANNEX**

11.1 **ANNEX 1: ENVIRONMENTAL SCREENING CHECKLIST**

Part 1 - to be completed by PMU

1. Project Name:			
2. Brief Description of Sub-project			
	Nature of the project,		
	Project cost		
	Physical size [m ³]		
	Site area [m ²]		
	Location (Street Name, Plot No., City)		
3. Proposed rehabilitation activities / EE activities		Yes	No
	Insulation of walls, basements and attics		
	Repair/replacement of external doors and windows, window optimization		
	Boiler upgrade/replacement		
	Fuel switching		
	Reflective surfacing of walls behind radiators		
	Control systems		
	Pipe insulation		
	Chiller/AC replacement		
	Heat pumps		
	Heat pumps with deep (> 25 m drilling)		
	Compact fluorescent lamps, high pressure sodium vapor		
	Light emitting diodes		
	Pumps and fans		
	Solar water heating		
	EE works involving generation of comparatively large waste quantities (e.g. replacement of floor, exchange of ventilation, replacement of doors and/or		
	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, asbestos, solvents, enamels, and the replacement of larger quantities (several 10s) of windows and doors;		

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

Project Environmental Category (B or C)	
ESMP Checklist is required (yes or no)	
What are the specific issues to be addressed in the ESMP Checklist	

Environmental Screener:.....

Date:.....

11.2 ANNEX 2: DRAFT FORMAT FOR AN ESMP CHECKLIST FOR ENERGY EFFICIENCY SUBPROJECTS

PART 1: INSTITUTIONAL & ADMINISTRATIVE				
Country				
Project title				
Scope of project and activity				
Institutional arrangements (Name and contacts)	WB (Project Team Leader):	Project Management:	Local Counterpart and/or Recipient:	
Implementation arrangements (Name and contacts)	Safeguard Supervision:	Local Counterpart Supervision:	Local Inspectorate Supervision:	Contractor:
SITE DESCRIPTION				
Name of Site				
Describe Site Location			Attachment 1: Site Map <input type="checkbox"/> Y <input type="checkbox"/> N	
Who owns the land?				
Geographic description				
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?	<input type="checkbox"/> No <input type="checkbox"/> Yes, Attachment 2 includes the capacity building program			



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ENVIRONMENTAL /SOCIAL SCREENING			
Will the site activity include/involve any of the following?	Activity	Status	Triggered Actions
	A. Building rehabilitation and general conditions (0)	<input type="checkbox"/> Yes <input type="checkbox"/> No	See Section A below
	B. Minor new construction	<input type="checkbox"/> Yes <input type="checkbox"/> No	See Section A below
	C. Individual wastewater treatment system	<input type="checkbox"/> Yes <input type="checkbox"/> No	See Section B below
	D. Historic building(s) and districts	<input type="checkbox"/> Yes <input type="checkbox"/> No	See Section C below
	E. Acquisition of land ⁸	<input type="checkbox"/> Yes <input type="checkbox"/> No	See Section D below
	F. Hazardous or toxic materials ⁹	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Maybe ¹⁰	See Section E below
	G. Impacts on forests and/or protected areas	<input type="checkbox"/> Yes <input type="checkbox"/> No	See Section F below
	H. Handling / management of medical waste	<input type="checkbox"/> Yes <input type="checkbox"/> No	See Section G below
	I. Traffic and Pedestrian Safety	<input type="checkbox"/> Yes <input type="checkbox"/> No	See Section H below

⁸ Land acquisitions includes displacement of people, change of livelihood encroachment on private property this is 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.

⁹ Toxic / hazardous material includes but is not limited to asbestos, toxic paints, noxious solvents, removal of lead paint, etc.

¹⁰ Triggered when the presence/generation of hazardous materials/wastes could neither be confirmed or excluded before the works. In the case hazardous materials are found during works, the activity F measures will apply.



PART 3: MITIGATION MEASURES

ACTIVITY	PARAMETER	MITIGATION MEASURES CHECKLIST
0. General Conditions	Notification and Worker Safety	<ul style="list-style-type: none">(a) The local construction and environment inspectorates and communities have been notified of upcoming activities(b) 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). In the areas with Serbian minority, the notification procedures should be done in Serbian language as well.(c) Contractor and subcontractors have valid operating licenses. All legally required permits have been acquired for construction and/or rehabilitation.(d) The Contractor formally agrees that all work will be carried out in a safe and disciplined manner designed to minimize impacts on neighboring residents and environment.(e) Workers' Personal Protective Equipment (PPE) will comply with international good practice (always hardhats and gloves, as needed masks and safety glasses, harnesses and safety boots).(f) Appropriate signposting of the sites will inform workers of key rules and regulations to follow
A. General Rehabilitation and /or Construction Activities	Light pollution	<ul style="list-style-type: none">(a) Light should be designed not to be used when not necessary. Light should be environmentally friendly and adjusted to the purpose it serves. Efficient luminaries should be used, e.g. use of full cut off lamps for street lighting.
	Air Quality	<ul style="list-style-type: none">(a) During interior demolition debris-chutes shall be used above the first floor.(b) Demolition debris shall be kept in controlled area and sprayed with water mist to reduce debris dust.(c) During pneumatic drilling/wall destruction dust shall be suppressed by ongoing water spraying and/or installing dust screen enclosures at site.(d) The surrounding environment (sidewalks, roads) shall be kept free of debris to minimize dust.(e) There will be no open burning of construction / waste material at the site.(f) There will be no excessive idling of construction machinery or vehicles at sites.(g) All machinery and transportation vehicles are equipped with appropriate emission control equipment, regularly maintained and attested.(h) While transporting dust prone materials the load must be covered or sprayed.(i) The machinery and vehicles use petrol from the official sources (licensed gas stations) and running on fuel determined by the machinery/vehicles producer.(j) Capacity of transport will be harmonized with the waste generation pace and quantities.
	Noise	<ul style="list-style-type: none">(a) Construction noise will be limited to restricted times agreed to in the permit. Night work will be avoided and if necessary relevant permits must be obtained and the public informed.(b) During operations the engine covers of generators, air compressors and other powered mechanical equipment shall be closed, and equipment placed as far away from residential areas as possible.(c) Contractor should use state of the art machinery with low levels of noise emission.
	Water and Soil Quality	<ul style="list-style-type: none">(a) The site will establish appropriate erosion and sediment control measures (including surface runoff management and disposal) such as e.g. hay bales and / or silt fences to prevent sediment from moving off site and causing excessive turbidity in nearby streams and rivers, but also jeopardize surrounding land or buildings or other constructions.(b) Asphalt, soil and other works will be isolated from watercourses.



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		<ul style="list-style-type: none"> (c) Stored materials and waste stored outside must be placed on concrete or asphalted surfaces with the collection system or fully covered and protected from the weather conditions. (d) Machinery and transport vehicles shall not be washed, parked (for long hours) or maintained at site, but at predefined suitable areas (equipped by grease and oil separators). (e) If fuel, oil, lubricants or other hazardous or toxic liquids are stored at site they should be kept in secondary containment system tanks (e.g. double walled or bund containers). (f) Only existing water sources (pollutants free) should be used. (g) A plan in the case of emergencies /accidental pollution should be developed and workers informed on procedures. (h) In the case of leakage, the contaminated soil or water should be retained and collected and disposed as hazardous waste.
	Waste management	<ul style="list-style-type: none"> (a) Waste collection and disposal pathways and sites will be identified for all major waste types expected from demolition and construction activities. (b) 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. (c) Waste types will be collected separately. All waste will be collected and disposed properly by licensed collectors and in accordance with waste regulation, including existing waste at the site (which will be removed before the works start). (d) The records of waste disposal will be maintained as proof for proper management as designed. (e) Whenever feasible the contractor will reuse and recycle appropriate and viable materials (except asbestos and other hazardous waste). (f) Discarding any kind of waste (including organic waste) into the surrounding (especially watercourses) is strictly forbidden and so is burning of waste.
	Resource efficiency, materials management and landscape conservation	<ul style="list-style-type: none"> (a) Only existing licensed asphalt and cement plants, and stone quarries will be used. (b) Only suppliers of sand and gravel with valid licenses and concessions will be used. (c) Suppliers must obtain/hold and present all required working and emission permits and quality certifications as well as proof of conformity with all national environmental and H&S legislation. (d) All materials need to be approved by the site engineer. (e) In the case of replacement of Air Condition units', measures need to be taken to prevent release of ozone depleting substances. In the case of gases refill, the replacing gas must be allowed under the Montreal Protocol.
B. Individual wastewater treatment system	Water Quality	<ul style="list-style-type: none"> (a) The approach to handling sanitary wastes and wastewater from building sites (installation or reconstruction) must be approved by the local authorities (b) 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 (c) Monitoring of new wastewater systems (before/after) will be carried out (d) Construction vehicles and machinery will be washed only in designated areas where runoff will not pollute natural surface water bodies.
C. Historic building(s)	Cultural Heritage	<ul style="list-style-type: none"> (a) If the building is a designated historic structure, very close to such a structure, or located in a designated historic district, notification shall be made and approvals/permits be obtained from local authorities and all construction activities planned and carried out in line with local and national legislation.



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		(b) It shall be ensured that provisions are put in place so that artifacts or other possible "chance finds" encountered in excavation or construction are noted and registered, responsible officials contacted, and works activities delayed or modified to account for such finds.
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ACTIVITY	PARAMETER	MITIGATION MEASURES CHECKLIST
D. Acquisition of land	Land Acquisition Plan/Framework	<p>(a) If expropriation of land was not expected but 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's Task Team Leader shall be immediately consulted.</p> <p>(b) The approved Land Acquisition Plan/Framework (if required by the project) will be implemented</p>
E. Toxic Materials	Asbestos transport and management	<p>(a) If asbestos is located on the project site, it shall be marked clearly as hazardous material.</p> <p>(b) The asbestos will be appropriately contained and sealed to minimize exposure.</p> <p>(c) The asbestos prior to removal will be treated with a wetting agent to minimize asbestos dust.</p> <p>(d) Asbestos will be handled, transported and disposed by skilled, trained and experienced professionals.</p> <p>(e) If asbestos material is be stored temporarily, the wastes should be securely enclosed inside closed containments and marked appropriately. Security measures will be taken against unauthorized removal from the site.</p> <p>(f) The removed asbestos will not be reused.</p> <p>(g) Abatement plan for works involving removal, repair and disposal of asbestos will be prepared before the works commence. The plan should include:</p> <p>(h) Containment of interior areas where removal will occur in a negative pressure enclosure (for WBAM),</p> <p>(i) Protection of walls, floors and other surfaces with plastic sheeting,</p> <p>(j) Construction of decontamination facilities for workers and equipment,</p> <p>(k) Removal of asbestos materials using wet methods and promptly placing the material in impermeable containers,</p> <p>(l) Final clean up with vacuum equipment and dismantling of the enclosure and decontamination facilities,</p> <p>(m) Disposal/temporary storage of the removed materials.</p> <p>(n) For removal of strongly bound asbestos: Any mechanical stress on asbestos fiber cement panels is prohibited (including drilling, cutting, dropping, etc.) during and after removal, panels should be moistened before uninstalling; Waste asbestos containing panels will be packed into plastic foil or bags; Wear disposable coveralls and FFP3 respiratory protection; Collect panels without destruction. Detailed instructions and further hints for asbestos removal are available at EMF (pg. 28 also in Annex 1 of the EMP Checklist) and must be followed.</p> <p>(o) For removal of weakly bound asbestos materials (WBAM):</p> <p>(p) Vacuum holding device of appropriate capacity will be used during removal of WBAM (minimum rate of air change is 5 times per our),</p> <p>(q) The working area should be enclosed with containments of proper structure with all parts ventilated,</p> <p>(r) Establishment of a negative pressure including vacuum monitoring at minimum 2 points and exhaust air extraction to the outside,</p> <p>(s) Broken bits and debris shall be wrapped in dust proof foil or bags,</p> <p>(t) For cleaning only H-class vacuum cleaners shall be used,</p>



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		<ul style="list-style-type: none"> (u) Un-cleanable asbestos-contaminated by-products (e.g. metal scrap, mineral wool), porous or solidified asbestos or other WBAM (metal ducts, textiles) should also be collected and treated as other asbestos waste (detailed instructions available at pg. 29 of EMF, also in Annex 1 of the EMP Checklist), (v) Detailed instructions for WBAM removal are available at EMF (pg. 28, 29 also in Annex 1 of the EMP Checklist) and must be followed. (w) All asbestos should be weighed, recorded (in waste manifests, dated) and records kept. (x) The decontamination area must be set separate from the working site with (i) one-chamber material lock prepared with dense scaffolds with 0.2mm foil incl. one-chamber lock with dense doors or (ii) two-chamber lock with overlapping plastic curtains. (y) Removed asbestos will be packed in double foil of at least 0.2mm thickness (or single foil of 0.4mm) and stored in Big-Packs with clearly visible 'asbestos' warning sign. (z) It is recommended that the asbestos related works are supervised by an independent asbestos abatement expert. (aa) Transport of asbestos will be carried out in full accordance with the international Statutory and Technical Rules (ADR) and corresponding national rules (stricter one prevails). Vehicles and drivers hold specific ADR approval or license.
	Asbestos - on site protective measures	<ul style="list-style-type: none"> (a) When working with asbestos materials workers should avoid fiber exposure, wear personal protection clothing and equipment such as FFP3 respiratory masks (as described in the EMF). (b) Contaminated disposable clothing and shoes are used only in contaminated environment while removed and properly disposed before entering clean environment. (c) For removal of weakly bound asbestos materials three chamber personnel locks with staff shower and dual chamber material lock should be installed. (d) Eating, drinking and smoking is prohibited in the working area.
	Asbestos storage and disposal	<ul style="list-style-type: none"> (a) All asbestos waste will be temporarily stored at designated storage facility in Xërxë, municipality of Rahovec in line with the decision of Kosovo Ministry of Environmental Protection and Spatial Planning (No. 15/1377/1-ZSP/107/15, date:01.07.2013). The designated building must be kept secured/locked and all the asbestos waste must be labeled and properly stored so no ruptures should occur in the asbestos packages. The stored asbestos must be well protected from the weather impacts (wind, rain). (b) The asbestos storage shall provide enough space to place packed asbestos (big-packs) side by side on wooden pallets and never on top of each other. The storage will be well illuminated and clean of dust or other wastes. (c) As soon as the contract is signed, the contractor has to prepare transport and disposal concept. (d) For the storage area, the same technical and health and safety rules apply as for the relieved decontamination area: (e) - separation, (f) - one-chamber material lock prepared with dense scaffolds with 0.2mm foil incl. one-chamber lock with dense doors or two-chamber lock with overlapping plastic curtains, (g) - wearing full equipment inside storage (disposable coveralls, overshoes, appropriate respiratory protection FFP3. (h) Only companies licensed for work with asbestos in line with 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 can transport and dispose the waste asbestos.



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	Toxic / hazardous substances/waste management	<ul style="list-style-type: none"> (i) Temporary storage on site of all hazardous or toxic substances and wastes will be in safe containers with secondary containment system tanks (e.g. double walled or bund containers), labeled with details of composition, properties and handling information. Hazardous materials should be kept on impermeable surface and adsorbents like sand or sawdust should be kept for handling small spillage. (j) Hazardous waste is collected separately. (k) The containers of hazardous substances/wastes shall be placed in a leak-proof container to prevent spillage and leaking. The containers must be kept closed, except when adding or removing materials/waste. (l) All hazardous waste should be weighed, recorded (in waste manifests) and records archived. The wastes shall be transported by specially licensed carriers, temporarily stored and disposed in a licensed facility. (m) Paints with toxic ingredients or solvents or lead-based paints will not be used. (n) The containers holding ignitable, hazardous, explosive or reactive substances must be located at least 15m from the facility and 30 from the water line. (o) Contractors/subcontractors' employees and individuals employed during the reconstruction have received training in relevant toxic or hazardous waste/substances related issues. (p) All hazardous waste, including, but not limited to lead paint debris and mercury containing lamps, will be temporarily stored at designated storage facility in Xërxë, municipality of Rahovec in line with the decision of Kosovo Ministry of Environmental Protection and Spatial Planning (No. 15/1377/1-ZSP/107/15, date:01.07.2013). The designated building must be kept secured/locked. The stored waste must be well protected from the weather impacts (wind, rain). (q) There should be non-destructive collection of Mercury containing lamps in a grid shaped cardboard containers on Euro pallets and wrapped with stretch foil. The energy saving bulbs have to be stored in sealable open-top bins (200 litres). (r) 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 plastic sheet inlet (double sealing). (s) Sanding by hand of lead based paint is prohibited, instead grinding machines with dust extractor class M (specifications available at EMF) will be used. (t) Eating, drinking and smoking is prohibited in the working area. (u) The workers should wear the risk appropriate protective clothes when removing and handling CFL tubes. In the case of CFL tubes breakage, the room/space should be immediately ventilated and adequate protective clothes and respiratory protective masks worn until the cleanup is completed. No vacuuming of the broken material should be applied.
F. Affected forests, wetlands and/or protected areas	Protection	<ul style="list-style-type: none"> (a) All recognized natural habitats, wetlands 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. (b) A survey and an inventory shall be made of large trees in the vicinity of the construction activity, large trees shall be marked and cordoned off with fencing, their root system protected, and any damage to the trees avoided (c) Adjacent wetlands and streams shall be protected from construction site run-off with appropriate erosion and sediment control feature to include by not limited to hay bales and silt fences (d) There will be no unlicensed borrow pits, quarries or waste dumps in adjacent areas, especially not in protected areas.



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G. Disposal of medical waste	Infrastructure for medical waste management	<p>(e) 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:</p> <p>(f) Special facilities for segregated healthcare waste (including soiled instruments “sharps”, and human tissue or fluids) from other waste disposal; and</p> <p>(g) Appropriate storage facilities for medical waste are in place; and</p> <p>(h) If the activity includes facility-based treatment, appropriate disposal options are in place and operational</p>
H Traffic and Pedestrian Safety	Direct or indirect hazards to public traffic and pedestrians by construction activities	<p>(a) The contractor will insure that the construction site is properly secured and construction related traffic regulated. This includes but is not limited to:</p> <p>(b) Comply with the national traffic safety regulation.</p> <p>(c) Signposting, warning signs, barriers and traffic diversions: site will be clearly visible and the public warned of all potential hazards.</p> <p>(d) Only identified and agreed roads can be used.</p> <p>(e) Traffic management system and staff training, especially for site access and near-site heavy traffic. Provision of safe passages and crossings for pedestrians where construction traffic interferes.</p> <p>(f) Adjustment of working hours to local traffic patterns, e.g. avoiding major transport activities during rush hours or times of livestock movement.</p> <p>(g) Active traffic management by trained and visible staff at the site, if required for safe and convenient passage for the public.</p> <p>(h) Ensuring safe and continuous access to office facilities, shops and residences during renovation activities, if the buildings stay open for the public.</p> <p>(i) No materials or wastes should be kept on the roads or pavement.</p>



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PART 4: Monitoring Plan

Phase	What (Is the parameter to be monitored?)	Where (Is the parameter to be monitored?)	How (Is the parameter to be monitored?)	When (Define frequency / the or continuous?)	Why (Is the parameter being monitored?)	Cost (if not included in project budget)	Who (Is responsible for monitoring?)
During activity preparation	Permits and valid operation licenses (including ADR)	On site	By checking whether all permits according to the law are available on site	Prior construction works commence	It is recommended to make sure that all good practices apply	Should be part of the project budget	Site supervising engineer
	Site organization	On site	By checking proper fencing, installation of temporary sanitary facilities, sign-posting	Prior construction works commence	To ensure safety	Contractor bears full cost, usually is not identified as separate category	Site supervising engineer
	Asbestos storage	On site	The building has been cleaned from other materials or wastes and prepared to accept the waste (decontamination area has been set, containers for disposable protective clothes, etc.)	Prior to works commencement	To ensure safety of workers and local population	Part of the rehabilitation cost	Site supervising engineer
	(i) Plan for emergencies/accidental pollution, (ii) asbestos removal impact abatement plan, (iii) asbestos transport and disposal concept (iv) transport and traffic plans.	Contractor's office	Check if the documents are in place	Prior to works commencement	To ensure safety of workers and local population	Part of the rehabilitation cost	Site supervising engineer



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During implementation activity	Waste pollution (non-hazardous and hazardous such as Asbestos and CFL also not including – paints, chemicals, coatings or construction material on which these are used)	On site pollution assessment	Waste accompanying documentation that is submitted to Ministry of Environment and Spatial Planning in which type and quantities of the waste are identified	Continuous during construction, i.e. each time waste is taken from the site	Required by series of regulation on waste	Part of the regular contractor practice, should be fully bared by contractor	Site supervising engineer Ministry of Environment (inspection)
	Air quality (dust)	On site	Visual observation – check if spraying is applied, visibility, presence of dust on site, load covered or sprayed	Continuous on a daily basis, however special attention should be put during transport of materials and wastes	To keep the dust level at minimum to protect health and prevent irritations and to keep visibility for safety purposes	Contractor bears full cost, usually is not identified as separate category	Site supervising engineer
	Toxic / Hazardous material	On site visual assessment	Proper handling and storage is checked according to Material Safety Data Sheets (MSDS) and EMP (secondary containment system, on non-permeable surfaces)	Continuously, when the remains are removed	To prevent accidental spilling or injuries	Part of the regular contractor cost	Site supervising engineer
	Workers safety	On site	Random safety inspection	Continuously checking that if the PPE is available to workers, in sufficient quantities and it is used/worn at all times. The workers have	To prevent accidents and health hazard	Part of the regular contractor costs	Site supervising engineer



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				been adequately trained.			
	Hazard to public traffic and pedestrian safety	On site and on roads permitted to use for accessing site, traffic plans	Visual observation and potential complains from the public	Daily checking the signs, fences, accesses and traffic signalization and patterns	To prevent traffic disruption and accidents	Part of the regular contractor costs	Site supervising engineer
	Waste management	On site	Visual observation if there is littering, inadequate disposal, burning, separate collection	Regularly	Preventing pollution	Project cost	Site supervising engineer
	Hazardous waste – separate collection, labeling, transport	On site	Checking if the waste is collected separately, stored appropriately and labeled. Transport is carried out by licensed companies. Temporarily stored in designated building. The workers handling this waste are adequately trained. Lead paint dust and materials are packed in adequate bins.	Regularly	Preventing pollution and managing health hazard	Project cost	Site supervising engineer
	Noise	On site, Contractor's office	Checking if there is non-authorized night work, if engines are	Regularly	Managing health hazard and prevent disturbance of	Project cost	Site supervising engineer



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			covered, noise abatement equipment is in place, if there were complaints or negative inspection findings		local population and users of space		
	Materials management	Contractor's office	Check if suppliers are properly licensed and hold valid concessions and conform to relevant regulation.	Before the works commence	Preventing unauthorized non-renewable resources use, nature protection, landscape preservation	Project cost	Site supervising engineer
	Asbestos management	On site	Asbestos is wetted before removal, marked while on site and properly bagged or wrapped in foil. No mechanical stress is applied to asbestos plates and works are carried out in line with EMP and EMF abatement measures. Adequate decontamination area is set in line with EMP and EMF. WBAM – the containment with proper structure is with ventilation	Regularly	Pollution and health hazard prevention	Project cost	Site supervising engineer



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			and negative pressure with monitoring at two points.				
	Asbestos transport	Contractor's office	The company is licensed for transport and handling of asbestos waste. The transportation vehicles are approved/licensed and labeled.	Prior to transport commencement	Pollution and health hazard prevention	Project cost	Site supervising engineer
	Asbestos waste	On site	Quantities are measured and recorded while records kept. Stored quantiles are corresponding to assessments. Waste is bagged and delivered to designated building, distributed adequately in safe manner. The premises are adequately lighted.	Regularly	Pollution and health hazard prevention	Project cost	Site supervising engineer
	Mercury containing lighting	On site	Adequate cardboard containers and used for storing the bulbs which protect them from breaking.	Regularly	Pollution and health hazard prevention	Project cost	Site supervising engineer



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During supervision	activity	Waste management (municipal waste, waste paper, cartridges)	Offices	Type and quantities of the waste	Continuously, i.e. during operation	Required by series of regulation on waste	Part of the regular operation costs	Ministry of Environment and Spatial Planning(inspection)
		Air quality	Offices	Testing air for asbestos particles	Once before use of premises	EMF	Part of construction costs	Site supervising engineer



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PART 3: MONITORING PLAN							
Phase	What (Is the parameter to be monitored?)	Where (Is the parameter to be monitored?)	How (Is the parameter to be monitored?)	When (Define the frequency / or continuously)	Why (Is the parameter being monitored?)	Cost (if not included in project budget)	Who (Is responsible for monitoring?)
During activity implementation							
During activity supervision							



ANNEX 3

8.3 MINUTES OF THE MEETING FROM PUBLIC CONSULTATION REGARDING ESMF PREPARED FOR KEERP Parent Project

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 and Social Management Framework for this project. He presented ESMF 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 where 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 have 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 ESMF points several times that solutions shall be done in cooperation with MESP and never mentioned any other institution and also asked if 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 with all line ministries and other relevant institutions as the project is progressing, but issues of concern listed under



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ESMF 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 best 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.



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ANNEX 4: LIST OF ATTENDANTS



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Republika e Kosovës
Republika Kosova - Republic of Kosovo
Qeveria - Vlada - Government
Ministria e Zhvillimit Ekonomik
Ministarstvo Ekonomskog Razvoja - Ministry of Economic Development

Lista e pjesëmarrësve

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