

**Ministry of Energy
of the Republic of Uzbekistan**

**Clean Energy for Buildings in Uzbekistan
(P176060)**

**ENVIRONMENTAL AND SOCIAL
MANAGEMENT FRAMEWORK (ESMF)**

Updated

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List of Abbreviations

Acronym	Definition
ACMMP	Asbestos Containing Material Management Plan
ACMMP	Asbestos Containing Material
AOI	Area of influence
ESMP	Environmental and Social Management Plan
CERC	Contingent Emergency and Response Component
CFC	Chlorofluorocarbon
CHS	Community health and safety
E&S	Environmental and Social
ECAP	Environmental Commitment and Action Plan
EE	Energy Efficiency
EHS	Environmental, Health and Safety
EHSGs	The World Bank Environmental, Health and Safety Guidelines
EIA	Environmental Impact Assessment
EPC	Engineering, Procurement, and Construction
EPR	Emergency Preparedness and Response
EPRP	Emergency Preparedness and Response Plan
ESCP	Environmental and Social Commitment Plan
ESIA	Environmental and Social Impact Assessment
ESMAP	Energy Sector Management Assistance Program
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
ESSs	Environmental and Social Standards
FLSP	Fire and Life Safety Plan
FRS	fire and rescue services
GBVH	Gender-Based Violence and Harassment
GIIP	Good International Industry Practice
GHG	Greenhouse Gas
GOU	Government of Uzbekistan
GM	Grievance Mechanism
GRS	WB's Grievance Redress Service
HAZID	Hazard Identification
HAZOP	Hazard and Operability Study
H&S	Health and Safety
HCFC	hydro-chlorofluorocarbon
HFC	hydrofluorocarbons
HSMP	H&S Management Plan
HSMS	H&S Management System
HSS	Health and Safety Specialist
HVAC	Heating, ventilation, and air conditioning
IFC	The International Finance Corporation
IFI	International Financial Institution
ILO	International Labour Organization
LMP	Labor Management Procedure
MoE	Ministry of Energy
MEF	Ministry of Economy and Finance
MoH	Ministry of Health
MoPE	Ministry of Public Education
MoPSE	Ministry of Pre-school Education
MoPSSE	Ministry of Pre-school and School Education

Acronym	Definition
MPC	Maximum Permissible Concentrations
MSW	Municipal Solid Waste
NZEB	The Net Zero Energy Building approach
OHS	Occupational Health and Safety
PAP	Project Affected Person
PCB	Polychlorinated biphenyls
PMC	Project Management Consultant
PPE	Personal protective equipment
PSC	Project Steering Committee
PV	Photovoltaics systems
MEEPCC	Ministry of Ecology, Environmental Protection and Climate Change of the Republic of Uzbekistan
SEA	Sexual exploitation and abuse
SEP	Stakeholder Engagement Plan
SES	Stakeholder Engagement Specialist
SH	Sexual harassment
SS	Social Specialist
SWM	Solid Waste Management
TMP	Traffic Management Plan
UBEEP	National Building Energy Efficiency Program
WBG	World Bank Group
WEEE	waste electric and electronic equipment
WMP	Waste Management Plan

EXECUTIVE SUMMARY

The main priority of the Government of Uzbekistan (GOU) in improving energy efficiency (EE) and rational use of energy resources is the broad introduction of energy-saving technologies and the use of alternative energy sources in the economy, social and construction sectors. The World Bank is supporting the preparation of the Uzbekistan- Clean Energy for Buildings in Uzbekistan Project (US\$ 143 million) (“the Project”). The Project is prepared under the World Bank’s Environment and Social Framework (ESF). To assess, manage and monitor the risks described in detail in the following chapters the following instruments have been prepared:

- Environment and Social Management Framework (ESMF) (this document)
- Environmental and Social Commitment Plan (ESCP)
- Stakeholder Engagement Plan (SEP)
- Labor Management Procedures (LMP).

Specific Activities under the Project scope include:

- Activity 1: Insulation of buildings (roofs and walls) and renovation of building envelopes
- Activity 2: Replacement of low efficient gas-fired boilers with highly efficient gas fired boilers,
- Activity 3: Retrofitting/replacement/installation of HVAC systems and lighting systems
- Activity 4: Replacement of coal fired boilers with more energy efficient heat pumps and/or solar PV collectors where feasible.

Eligible facilities will include kindergartens; day-care facilities; public primary, secondary, and high schools; dormitories; student hostels; specialized schools (e.g., sports and cultural schools); central, regional, and municipal hospitals; rural clinics with beneficiaries including children, students and staff in the selected educational facilities, patients and staff working in the participating healthcare buildings.

Regarding the Project Environmental and Social Review Summary (ESRS 2021),¹ the Environmental and Social Risk Classification (ESRC) for the Project is deemed Moderate and requires an ESMF to be developed as a framework for E&S management and mitigation for sub-projects under the scope of the Works.

This ESMF includes the following chapters:

- E&S baseline data
- Regulatory framework
- Potential E&S risk (per activity)
- Mitigation and management measures
- Procedures for implementation (including E&S screening, preparation of sub-project ESMP, review and acceptance, management of contractors)
- Capacity building and training
- E&S monitoring, supervision and reporting
- Grievance mechanism
- ESMF implementation budget
- ESMF disclosure and public consultation requirements

¹ Concept Environmental and Social Review Summary, Date Prepared/Updated: 12/28/2021 | Report No: ESRSC02053, available at <https://documents.worldbank.org/en/publication/documents-reports/documentdetail/099940012282126542/concept0enviro0uzbekistan000p176060>

These chapters set out the requirements for each sub-project for compliance with the Environmental and Social Standards (ESSs), national laws and good international industry practice (GIIP). The key risk and issues for each of the Activities include general construction management risks (all activities), emergency preparedness and control, labour management, equipment procurement and materials selection, occupational health and safety, materials management, management of asbestos-containing materials, waste management, community health and safety (traffic management, dust and noise nuisances, displacement of receptors, fire and life safety) and potential cultural heritage issues where works are planned on external facades of buildings that may have historical significance. The specific risk at the sub-project level cannot be determined at this time, and a sub-project screening checklist (Annex A) is provided to support the implementers to identify risks and issues at the sub-project level and focus on management and mitigation requirements for inclusion in a sub-project ESMP and other relevant supporting management plans.

Mitigation measures are defined for each E&S risk and impact for each Activity. These will form the basis of the mitigation controls to be included in the sub-project ESMP requirements. The sub-project ESMP is also required to outline the system and procedures to implement these requirements.

The following parties have implementation roles for delivering the project:

- Ministry of Energy
- Project Steering Committee (PSC)
- Line Ministries
- Fund
- Project Management Consultant
- Procurement Committee
- Clean Energy Service Providers

The requirements for each are defined in Chapter 6, with a central role being played by the E&S staff within the PSC, namely the Environmental Specialist (ES), Social Specialist (SS), Health and Safety Specialist (HSS), and Stakeholder Engagement Specialist (SES). Responsibilities include reviewing and approving sub-project ESMP and a supervision function including regular monitoring and reporting.

A capacity building program has been defined in this ESMF (Chapter 7). Capacity building training will cover PMC capacity, Institutional capacity (national and regional level), and Contractor's capacity. The PMC will hire an E&S consultant with knowledge of the national E&S requirements and substantial knowledge of the policies and requirements of the World Bank ESF, who will develop training modules and supporting materials.

The ESMF sets out key performance indicators (KPIs) for the monitoring and reporting sub-project compliance in Chapter 8. This is supported by specific contractor monitoring and reporting obligations defined in Annex D. These covers environmental, social, labour and grievance indicators.

Grievances can be managed following a statutory grievance mechanism in Uzbekistan and the national government, regional, district, or makhalla (village) levels. In addition, a Project level grievance mechanism will be defined by the PMC for compliance with WB ESS10. All grievance mechanisms are available to all stakeholders and will be monitored by the PMC

SES and tracked via a project grievance log. Close out of grievances will draw on input from any of the relevant parties responsible for implementation, depending on the nature of the grievance. At the following address, stakeholders also have access to the WB grievance redress system via online submissions: <http://www.worldbank.org/en/projects-operations/products-and-services/grievance-redress-service>. Further information is outlined in Chapter 9.

1. Introduction

1.1. Background

Currently, the main priority of the Government of Uzbekistan (GOU) in improving energy efficiency (EE) and rational use of energy resources is the broad introduction of energy-saving technologies and the use of alternative energy sources in the economy, social and construction sectors. In particular, the Law of the Republic of Uzbekistan 4779, "On rational use of energy", dated July 14, 2020, was developed based on decrees of the State leader adopted for energy efficiency improvement and energy saving technologies and the development of renewable energy sources.

EE or, in other words, rational use of energy resources in sectors of the economy and social sphere is an important factor for increasing profitability and competitiveness of the production sector and saving energy resources, which, in turn, has a serious impact on energy security, creating new workplaces, increasing the well-being of the population and overall development of the country.

Following the Law of the Republic of Uzbekistan 4779 "On rational use of energy", dated July 14, 2020, the Ministry of Energy (MoE) is responsible for implementing necessary measures aimed at saving energy resources and increasing energy efficiency in the various sectors of the economy and monitoring the results. The Intersectoral Energy Efficiency Fund ("Fund") is the implementing agency on behalf of the MoE.

The World Bank is financing the Clean Energy for Buildings in Uzbekistan Project (US\$ 143 million) ("the Project"). The Project Development Objective (PDO) is to save energy in public buildings and enhance the enabling framework for clean energy investments in the buildings sector.

The Project has three components:

- Component 1: Clean energy investments in public buildings (US\$138 million)
- Component 2: Technical assistance, capacity building and project implementation support (US\$5 million)
- Component 3: Contingent Emergency and Response Component (US\$0 million).

This Project is expected to be the first large-scale EE intervention in the building sector by the GOU. This sector is responsible for the largest share of total final energy consumption, most of which is for space heating.

This Project is linked to the Uzbekistan National Building Energy Efficiency Program (UBEEP) to support transformational impact in the sector.

The Project was prepared under the World Bank's Environment and Social Framework (ESF), which came into effect on October 1, 2018, replacing the Bank's Environmental and Social Safeguard Policies. Under the ESF, all World Bank clients agree to comply with ten Environmental and Social Standards (ESS)² in investment project lending financed by the

² The ten ESSs are: ESS 1) Assessment and Management of Environmental and Social Risks and Impacts; ESS 2) Labor & Working Conditions; ESS 3) Resource Efficiency and Pollution Prevention and Management; ESS 4) Community Health and Safety; ESS 5) Land Acquisition, Restrictions on Land Use and Involuntary Resettlement; ESS 6) Biodiversity Conservation and Sustainable Management of Living Natural Resources; ESS 7) Indigenous Peoples / Sub-Saharan African Historically

Bank. Under the ESF, an Environmental and Social Management Framework (ESMF) is the key instrument for ensuring initial project compliance with the relevant E&S Specialists for projects where the exact locations, scope, designs, and nature of the physical investments will only be finalized and agreed upon during project implementation.

To assess, manage and monitor the risks described in detail in the following chapters, the following instruments have been prepared:

- Environment and Social Management Framework (ESMF) (this document)
- Environmental and Social Commitment Plan (ESCP)
- Stakeholder Engagement Plan (SEP)
- Labor Management Procedures (LMP).

1.2. Project Need

The building sector accounts for 60 per cent of the final natural gas consumption, 56 per cent of the final coal consumption, and 34 per cent of the final electricity consumption. Overall, the buildings sector accounts for 50 per cent of the total final energy consumption, followed by the industry and transport sectors at 22 per cent and 20 per cent, respectively. There are about 46 thousand public buildings in Uzbekistan. In those public buildings, heating is responsible for about 70 per cent of the energy consumption in regional hospitals, 84 per cent in pre-schools, 88 per cent in rural clinics, and 97 per cent in public schools. In addition, the buildings sector is directly responsible for the second-highest portion of 25 per cent of CO₂ emissions, which is largely emitted from heating using fossil fuels, and an additional 8 per cent for the electricity consumed in the buildings. Also, the combustion of fossil fuels may contribute to poor indoor air quality, leading to respiratory diseases.

1.3. Description of Project Components and Beneficiaries

The project has three components: (a) clean energy investments in public buildings; (b) TA to enhance the enabling environment for EE investments, support market development, and provide project implementation support; and (c) the Contingent Emergency and Response Component (CERC). The project will be implemented using the Investment Project Financing with Performance-Based Conditions (IPF-PBCs) instrument financed by IDA resources. The three components are further discussed below.

Component 1 (a) and (b): Clean energy investments in public buildings (US\$138 million). The purpose of Component 1 is to not only finance clean energy investments but to do so in a way which demonstrates the revolving financing mechanism (hence profitability) of clean energy investments in the buildings sector. Such demonstration, and development of the capacity needed to implement the component, supports the implementation of other activities under the broader UBEEP. The component will finance EE and, where applicable, associated d-RE investments in pre-school education, public education, and health sector facilities under the MoPSSE and MoH, respectively. The component will finance the investments under two sub-components: subcomponent 1(a) will finance goods, works, non-

Underserved Traditional Local Communities; ESS 8) Cultural Heritage; ESS 9) Financial Intermediaries; and ESS 10) Stakeholder Engagement and Information Disclosure. Detailed information on the ESF and ten ESSs can be found at <https://www.worldbank.org/en/projects-operations/environmental-and-social-framework>.

consulting services, and consulting services; and subcomponent 1 (b) will finance goods, works, non-consulting services, and consulting services subject to achievement of the PBCs.

Eligible facilities will include kindergartens; day-care facilities; public primary, secondary, and high schools; dormitories; student hostels; specialized schools (for example, sports and cultural schools); central, regional, and municipal hospitals; rural clinics; and associated administrative buildings. All facilities will need to meet the following criteria: (a) central public ownership; (b) not had extensive renovations in the past 10 years; (c) structurally and seismically safe; and (d) have no plans for office moves, closure, building demolition, or selling. The investments will need to yield at least 20 percent energy savings after renovation and have a maximum simple payback period of 15 years for the suite of renovations including the d-RE investments.³ Additional criteria will be included in the project operations manual, and the selection of public facilities will be coordinated with the public investment program for the capital reconstruction of social facilities.

The component will finance typical EE and d-RE measures. The suitable combination of EE and d-RE measures will be determined using energy audits and should result in a payback period less than 15 years. Selection of the appropriate renovation package for a specific building will be based on the following hierarchy: (a) reducing building heat demand through the insulation of the building envelope (that is, the insulation of walls, roofs, and basements of the building, replacement of inefficient windows, doors, and lighting systems, and so on); (b) heating system upgrades to supply the smaller heat load through clean energy options such as air-source heat pump, pellets, geothermal, and so on, and if these options are not economically/financially feasible, then upgrading to more efficient gas/electric boilers; and finally (c) application of on-site renewable generation to further offset the electric load if proven financially and economically viable.

Typical technical services directly related to investments to be supported under this component include (a) subproject screening (including climate change considerations), detailed energy audits, technical designs, construction supervision, and so on; (b) gender and citizen engagement and social monitoring before and after the EE investments; (c) online monitoring system for energy performance to help implement the measurement and verification framework and manage energy consumption post renovation; and (d) Environmental and Social Management Plans (ESMPs) according to the Environmental and Social Framework (ESF).

Investments in the selected facilities will be implemented using the Energy Service Agreements (ESAs) between the Fund, the MoF, and the public beneficiary. Under the ESA, the Project Management Company (PMC), hired by the MoE/Fund, will provide a full set of services for clean energy improvements at the beneficiary facility, and the beneficiary will pay for such services over the payback period of the investments primarily using energy cost savings. The services provided by the PMC will include procurement, financial management (FM), supervising contractors, overseeing environmental and social risk management, and participating in the measurement and verification of savings.

Component 2: Technical assistance, capacity building, and project implementation support (US\$5 million). This component will provide TA to enhance the enabling environment

³ The average payback period of the investments under the World Bank Deploying Energy Efficiency and Distributed Solar in the Public Buildings TA is about 10 years.

for clean energy investments in the buildings sector, support market development, and provide project implementation support.

(a) Institutional strengthening and market capacity building (US\$1 million). This subcomponent will (i) support the full operationalization of the Fund to use the revolving financing mechanism for implementing clean energy investments; (ii) provide TA to the MoE and other government agencies on the design and implementation of clean energy subprojects; (iii) provide training to facilities and public institutions owned by the ministries of Health, Ministry of Public Education and Ministry of Preschool education to enhance their energy management skills; (iv) develop and implement targeted training programs for contractors, energy auditors, engineering companies, and potential companies that provide energy service; and (iv) provide vocational and technical training on EE and d-RE investments. The subcomponent will encourage women and youth to participate in the trainings and further apply their knowledge in the clean energy market. It will support activities to improve capacity in revolving financing, project management, staffing, procurement, audit/designs, FM systems, and environmental and social safeguards management. The subcomponent will also support activities such as South-South knowledge exchange, training, twinning, and workshops (targeting local and central government authorities, design and construction companies, banks, and so on).

(b) Information dissemination and communication (US\$0.5 million). This subcomponent is particularly important to support the development the clean energy market, share knowledge with the private sector, and make the information accessible to improve awareness of clean energy opportunities and renovation. The TA will create knowledge pieces and case studies, hold workshops for targeted audiences (for example, EE providers with the potential to serve the private sector, commercial enterprises likely to implement clean energy investments such as cooled warehouse facilities, and so on), and make the information accessible to improve awareness of clean energy opportunities.

(c) Project implementation support (US\$2.5 million). This subcomponent will support activities of the Fund and PMC related to implementation of the proposed project. Although Presidential Decree No. 4779 stipulates that the Government will provide financing for Fund operations, the subcomponent will support Project management, implementation, monitoring, evaluation, and reporting, including in the areas of financial management, engineering, procurement, disbursement, and social and environmental protection.⁴ This subcomponent will also support the implementation of gender, citizen engagement, environmental, and social protection action plans.

(d) Leveraging private sector participation and financing (US\$0.5 million). The goals of this subcomponent are threefold: (i) to facilitate commercial sector participation in clean energy investments, that is, utilize the demonstration effect of the project in public buildings to facilitate clean energy investments in commercial buildings as well; (ii) support EE providers to pilot the ESAs in the commercial sector; and (iii) facilitate private sector financing of clean energy investments given the limited government financing. The TA will assess what is needed to scale up private sector investments and the barriers to private sector financing of the investments and then provide support as needed within the confines of the development objectives. The project will carefully identify two or three EE providers to support their pilot of

⁴ The estimated cost of this component will be reviewed based on findings of the Project Procurement Strategy for Development (PPSD).

the ESA business model in the commercial sector. These sub-activities will contribute toward the development of the market for clean energy investments in the buildings sector as a whole.

(e) Studies and activities to support the broader implementation of energy efficiency and distributed renewable energy investments (US\$0.5 million). This subcomponent will support the rollout of the national building EE program, including development of necessary regulations, and any further studies and surveys necessary to broadly support clean energy investments in the buildings sector.

Component 3: Contingent Emergency and Response Component (US\$0 million). This component, with a provisional zero allocation, would allow for a quick reallocation of resources within the total project financing envelope to boost the country's response in the event of an eligible national crisis or emergency. Such eligible crisis or emergency is defined as "an event that has caused, or is likely to imminently cause, a major adverse economic and/or social impact associated with natural or man-made crises or disasters." If triggered, paragraph 30 of the World Bank Policy for IPF, regarding 'Projects in Situations of Urgent Need of Assistance or Capacity Constraints' would apply. There is a low to moderate probability that during the life of the project, Uzbekistan would experience such a natural or a man-made disaster. Triggers for the CERC will be clearly outlined in the Project Operations Manual (POM) acceptable to the World Bank. Disbursements will be made against an approved list of goods, works, and services required to support crisis mitigation, response, and recovery. All expenditures under this component will be appraised, reviewed, and found to be acceptable to the World Bank before any disbursement is made. A CERC operations manual will be included in the POM.

1.3.1. Project beneficiaries

The project beneficiaries are expected to include:

(a) Children, students and staff in the selected educational facilities (preschools and schools) – EE investments in the participating buildings will improve comfort levels for both preschool children, pupils and staff. The project will address heating issues and will increase end-user satisfaction after renovations.

(b) Patients and staff working in the participating healthcare buildings – regional hospitals and rural clinics – EE investments in the selected facilities will improve indoor temperature and comfort levels meeting the sanitation norms (constant 20 degrees Celsius). Since the project will cover all regions of Uzbekistan, it is estimated that a potential 5 million hospital patients annually will benefit from the investments.

(c) Private EE service providers (e.g., energy auditors, design firms, construction companies, equipment suppliers) – Private companies supplying energy-efficient goods and/or services will benefit from increased demand, as well as enhanced experience and capacity for the preparation and implementation of EE and d-RE investments. Additionally, it will enhance the national market for EE services and bring more skills, capacity and competition into the sphere.

(d) The MOE – will be the leading government counterpart and gain experience in the administration and scale-up of nationwide energy efficiency programs across the buildings sector in Uzbekistan.

(e) The Intersectoral Energy Efficiency Fund – the implementing agency is expected to benefit from the enhanced capacity to develop and implement sustainable EE financing,

supporting its lead role in fostering EE improvements in Uzbekistan. The Fund will build its competencies in conducting energy audits, procurement, contract management, and implementing environmental and social safeguards according to the lender standards.

(f) The Ministry of Economy and Finance – will benefit from reduced energy consumption and a subsequent decrease in funding needs for those public buildings after paying back loans.

(g) The Line ministries (Ministry of Pre-School and School Education and the Ministry of Health) will also benefit from the project since they provide recommendations and priorities on building selection, evaluate bids, and guide project implementation through the Project Working Group. Social facilities under the line ministries will be responsible for repayments to the Fund according to existing budget procedures and specific agreements between the MoF and the Project.

1.4. Environmental and Social Risk Categorisation and management

As part of the environmental and social risk assessment, the Bank classifies all projects into four classifications: High Risk, Substantial Risk, Moderate Risk or Low Risk. In determining the appropriate risk classification, the Bank considers relevant issues, such as the type, location, sensitivity, and scale of the project; the nature and magnitude of the potential environmental and social risks and impacts; and the capacity and commitment of the Client to manage the environmental and social risks and impacts in a manner consistent with the Environmental and Social Standards⁵. Regarding the Project Environmental and Social Review Summary (ESRS 2021)⁶, the project's Environmental and Social Risk Classification (ESRC) is deemed Moderate. The key reasoning is summarised below.

<u>Environmental Risk Rating</u>	<u>Moderate</u>
<p>The environmental risk is assessed as Moderate. The anticipated environmental risks and impacts associated with project implementation are localized, site-specific with a low probability of serious adverse effects to human health and/or environment, limited in time, predictable and small in magnitude. However, the renovation activities of the public buildings may entail potential adverse environmental impacts such as dust and noise generation, vehicle and machines emissions, generation of construction waste including oil, grease, hydrocarbons, old electrical appliances, and lead-based paints, etc. These temporal impacts are expected to be easily manageable by applying cost-effective mitigation measures in line with the national laws, use of the World Bank Environmental, Health and Safety Guidelines (EHSGs) and Good International Industrial Practices (GIIP).</p>	
<u>Social Risk Rating</u>	<u>Moderate</u>
<p>The social risk is assessed as Moderate due to risks related to the temporary disruptions (access, relocation) and community health and safety (traffic safety, labor influx, risks of sexual exploitation and abuse (SEA)/sexual harassment (SH)) to project affected people at</p>	

⁵ Only those ESS which are relevant for the project are covered

⁶ Concept Environmental and Social Review Summary, Date Prepared/Updated: 12/28/2021 | Report No: ESRSC02053, available at <https://documents.worldbank.org/en/publication/documents-reports/documentdetail/099940012282126542/concept0enviro0uzbekistan000p176060>

the work sites and surrounding communities. Another major social risk includes the lack of prior experience of the implementing agency in managing social risks following the ESSs of the Bank's E&S Framework (ESF) including developing genuine stakeholder engagement in relation to organization of and possible challenges relating to outreach which may impede in engaging with the communities in an open and transparent manner and inclusion of eligible public buildings in remote or rural areas. The risks of labor and working conditions (including OHS) are also relevant, and risk of exclusion of women and vulnerable communities from participating during the stakeholder consultation meetings.

It is expected that small and medium sized construction companies that will be involved in the construction works within the Project will result low labor influx risks. An ESMP, to be prepared following this ESMF, will include mitigation measures during the EE activities at schools and hospitals to mitigate temporary disruptions and community health and safety impacts. Construction works are to be carried out during school holidays and special plans will be prepared to relocate of patients from hospitals, as relevant.

The Project will organize several citizen engagement activities to consider feedback from project beneficiaries. Participatory approaches in planning and monitoring such as participatory design walk-through consultations and social monitoring surveys will empower building end-users and give voice to vulnerable beneficiaries. The Project will include Grievance Mechanisms (GMs) at each site for labor-related issues, and for complaints about the Project's environmental and social management and SEA/SH risks. Risk in relation to inclusion of eligible public buildings in remote or rural areas will be mitigated through development of a transparent and effective selection criteria. Eligible facilities would need to meet the following criteria: (i) central public ownership; (ii) not had extensive clean energy renovations in the past 10 years; (iii) structurally and seismically safe; and (iv) have no plans for office moves, closure, building demolition or selling.

Overall, the Project is expected to provide generally positive social benefits due to energy efficiency and use of cleaner renewable energy in those public buildings. There are not expected to be any land acquisition impacts as the EE and d-RE investments, technologies and equipment are being placed in existing public buildings such as kindergartens, schools and hospitals. These activities are not expected to cause economic or physical displacement. The Project is expected to engage direct workers and, possibly, contracted workers for which a Labor Management Procedure has been prepared as a part of the ESMF. During project implementation, the above-mentioned risks should be mitigated with sufficient awareness, capacity-building, and monitoring systems

The Project will not finance any sub-projects categorized as Substantial or High E&S risk.

1.5. Objective and Scope of the ESMF

The ESMF sets out the principles, guidelines, and procedures to assess the overall risks and impacts of the project and determines the approach for the environmental and social management to be adopted to address the potential environmental and social risks/impacts of the Project. The ESMF follows the WB's ESF and the national legal framework for environmental, social, occupational health and safety management. The ESMF is the key document committed by MoE to comply with national legislation and WB's ESF and respective

ESSs and to be shared and consulted with stakeholders before Bank's approval. Following the Bank's approval, this ESMF will be publicly disclosed.

The main objectives of this ESMF are:

- to establish procedures for the Environmental and Social (E&S) screening, review, approval, implementation, and monitoring activities.
- to guide the preparation of the sub-project specific Environmental and Social Management Plan (ESMP).
- to specify the institutional arrangements and responsibilities and outline the necessary reporting procedures for managing and monitoring environmental and social concerns related to sub-projects.
- to determine the training and capacity building needed to implement the ESMF successfully.
- to address mechanisms for public consultation and disclosure of project documents as well as summarize the stakeholder engagement and grievance mechanism, which are detailed in the Stakeholder Engagement Plan (SEP).
- to integrate relevant measures from the Labor Management Procedures (LMP) to address labor risks associated with the project.

To enhance its capacity, PMC will maintain at least one Environmental, one Social, one Occupational Health and Safety, and one Stakeholder Engagement Specialist throughout the implementation of the project. Supervision companies, Contractors' and PMC's Environmental and Social Specialists will receive training regarding ESMF implementation to fulfil properly. The outline of this ESMF sets out:

- Baseline information on the area where the sub-projects are expected to be sited (as relevant as potential impacts) – Chapter 2
- The regulatory framework, norms, rules, guidelines, and procedures to assess, manage and monitor the sub-project environmental and social risks and impacts – Chapter 3
- Assessment of the impacts that may occur and mitigation measures that might be expected to be used for each Activity - Chapter 4
- Mitigation measures and plans to reduce, mitigate and/or offset adverse risks and impacts – Chapter 5
- Procedures for implementation of the ESMF, including Information on the agency or agencies responsible for implementing requirements for the ESMF and institutional responsibilities - Chapter 6
- Recommendation for training and capacity enhancement to manage the implementation of the ESMF – Chapter 7
- Summary of ESMF disclosure and public consultation requirements, including an outline of the mechanisms for addressing grievances - Chapter 9 (see also Project SEP)
- Estimate of budget and costs for implementing required measures – Chapter 10

The ESMF considers direct impacts and reasonably foreseeable indirect, and cumulative E&S risks and impacts throughout the project life cycle, including those specifically identified in ESS 2 to 10 (as explained later in 3.6), which for this project principally relate to development (including procurement) risks and construction risk (including contractor management).

Risks associated with the operation of the installed equipment are not considered individually as they will be managed as part of the wider facility operational management systems. These risks and issues are also considered in Chapter 4, and recommendations for training and capacity enhancement for operational management are provided in Chapter 7.

Decommissioning (end of life) impacts are considered in specifying material choices and recommendations for design to minimise waste (e.g., recyclability or re-use potential of materials). Other related decommissioning impacts (e.g., waste, pollution, etc.) will be like construction phase impacts. They must be managed in a sub-project specific decommissioning plan to be implemented at the appropriate time. These risks are not specifically considered further in this ESMF.

The decommissioning of obsolete equipment under the scope of each sub-project is considered under the relevant environmental aspects, e.g., waste management, health, safety, etc.

No associated activities as defined by ESS1, para 10 are identified in connection with the Project, and these are not considered further.

1.6. CERC implementation arrangements

If the CERC triggered, it will be clearly outlined in the Project Operations Manual (POM) acceptable to the World Bank. The adoption of the Emergency Response Manual (ERM) and relevant E&S instruments is a withdrawal condition in the Financing Agreement for the Project. The CERC section of the ESMF shall be updated by Project Implementing Entity (PIE) with a) List of activities that the CERC could finance (Positive list of goods, services, and works); and b) Environmental, social, health and safety (ESHS) assessment and management arrangements for the CERC implementation in accordance with the ESSs. PIE will be also responsible for adoption of any environmental and social (E&S) instruments which may be required for activities under the CERC, in accordance with the ERM, the ESMF, and relevant ESSs, and implementation within the timeframes specified in E&S instruments. E&S instrument will be prepared and included as part of the respective bidding process, if applicable, and in any case, before the carrying out of the relevant CERC activities.

2. Environmental and social baseline data

It is expected that the project will be implemented throughout the country, in almost all provinces and the Republic of Karakalpakstan. This section presents the general geographic and climatic conditions of the country.

Geographical location and administrative structure. The Republic of Uzbekistan is in Central Asia (Figure 1) within the Amu Darya and Syr Darya river basins and covers an area of 448.97 thousand sq. km. It is bordered on the northeast by the Republic of Kazakhstan, on the east and southeast by Kyrgyzstan, Tajikistan and Afghanistan and on the west by Turkmenistan.



Figure 1: Location of the Republic of Uzbekistan in the world map

Structurally, it consists of 12 provinces and the Republic of Karakalpakstan: the provinces are Andijan, Bukhara, Jizzak, Kashkadarya, Navoi, Namangan, Samarkand, Syrdarya, Surkhandarya, Tashkent, Fergana, and Khorezm. Also, the country also includes one autonomous republic, the Republic of Karakalpakstan (Figure 2). The capital is Tashkent city.



Figure 2: The provinces of the Republic of Uzbekistan

A summary of each province's characteristics is provided in Table 1.

Table 1: A summary overview of the provinces of Uzbekistan

Provinces	Brief description
Tashkent	Tashkent is in northeast Uzbekistan, between the western slopes of the Tien Shan mountain range and the Syrdarya River. Tashkent region has a total area of 15 250 square kilometres. The climate is sharply continental, with mild, wet winters and hot, dry summers. The region's population is 2 941 500 people, with a population density of 193 people per square kilometre. The region is divided into 15 administrative districts. Tashkent is the region's administrative capital, with around 2 million people. The region consists of 16 cities. The biggest cities - Angren, Almalyk, Akhangaran, Bekabad, Chirchiq, Yangiabad and Yangiyul. There are also 17 small cities and settlements. The region is rich in coal, copper, molybdenum, zinc, gold, silver, rare metals, etc.
Andijan	Andijan is in the Fergana Valley's eastern portion. The total area is 4 300 square kilometres. Climate is sharply continental, with sharp differences in winter and summer temperatures. The region's population is 3 253 500 people, with a population density of 757 persons per square kilometre. There are 14 administrative districts in the region. With a population of 303 000 people, Andijan is the region's administrative centre. Asaka, Shakhrikhan, Khanabad, and Karasu are other major cities. The region's natural resources include oil, ozocerite, and other mineral resources. In the region, 85 joint ventures are currently registered.

Provinces	Brief description
Fergana	The Fergana region is in the southern section of the Fergana Valley, on the border with Kazakhstan. The total land area is 6 760 square kilometres. The climate is sharply continental, with mild winter and very hot summer. Fergana has a population of 3 896 400 people, which is the largest in the country. Rural areas are home to around 70,7 per cent of the population. The region is subdivided into 15 administrative districts for administrative purposes. With a population of 214 000 people, Fergana city serves as the administrative headquarters. Kokand, Kuva, Kuvasay, Margilan, and Rishtan are some of the other major cities.
Namangan	The region of Namangan is in the north-eastern part of the Fergana Valley. The region of Namangan covers an area of 7 440 square kilometres. The climate is continental, with dry summer and mild, humid winter. According to the United Nations Population Division, the region has a population of 2 931 100 people, with 62,3 percent of the population living in rural regions. The region is subdivided into 13 administrative districts for administrative purposes. Namangan is the most populous city in the district, with 341 000 people. Other major cities include Kasansay, Pap, Uchkurgan, and Chust, all of which are in the northern part of the region.
Syrdarya	The Syrdarya region is in Uzbekistan's central region, on the left bank of the Syrdarya River. The region has a total land area of 4 280 sq. km and has a continental climate with droughts throughout the year. The region has a total population of 878 600 people. The Syrdarya region is divided into eight administrative districts, the centre of which is Gulistan. The city of Gulistan has a population of 54000 people. Other important towns and cities include Bakht, Syrdarya, Shirin, and Yangiyer.
Jizzakh	Jizzakh region is in the central part of the Republic of Uzbekistan. The total area makes 21 210 sq. km. The climate is sharply continental, with dry, hot summer and relatively mild winter. The population is 1 443 400 people, and the average density is 68 people per sq. km. The region is divided into 12 administrative districts. Jizzak city is the administrative centre of the region. The population of the capital makes 127 200 inhabitants. Other important cities are Gagarin, Galliaral, Pakhtakor, Dustlik and Marjanbulok. The region is mainly agricultural. The most important products are cotton and wheat. Tens of thousands of hectares of uncultivated land will be used for agricultural purposes.
Samarkand	Samarkand region is in the centre of Uzbekistan. The total area of the Samarkand region is 16 770 sq. km. The population makes 4 031 300 people, and more than 65% live in rural areas. The region consists of 14 administrative districts population density - of 240 people per 1 sq. km. The region's administrative centre is Samarkand city, with 368 000 people. Climate is continental and dry. Other main cities: Kattakurgan, Nurata, Urgut, Juma and Aktash.
Kashkadarya	Kashkadarya region is in the southern part of Uzbekistan. Kashkadarya region is in the Kashkadarya river basin on the western slope of Pamir, the Alay mountains. The area of the region is 28 570 sq. km. The climate is continental, dry, and in some places - subtropical. The region's population makes 3 408 300 people, and more than 73% live outside the city. Kashkadarya region is divided into 13 administrative districts, with the centre in Qarshi city. The population of the city makes 177 000 people. Other main cities are Shakhrisabz, Kitab, Kasan, Mubarak, Yakkabog, Guzar and Kamashi.
Surkhandarya	Surkhandarya region is in the southern part of Uzbekistan, borders Afghanistan. The total area of the region makes 20 100 sq. km. Climate is

Provinces	Brief description
	continental, with mild winter and hot summer. The region's population numbers about 2 743 200 people, with rural people (79,8%) living outside the city. The region consists of 14 administrative districts. Termez city is the administrative centre. The population of Termez city - 95 000 people. Other main cities: are Denau, Baysun, Sherabad, Shurchi and Sariosiyo.
Navoi	Navoi region is in the southwest of Uzbekistan, in the middle of the Kyzylkum Desert. The territory of the region is 111 100 sq. km. The climate is continental and dry. The population makes about 1 033 900 people, more than 59,4% live in the rural areas. The region is divided into eight administrative districts. Navoi city is the administrative centre with a population of 128 000 people. Other main cities: Uchkuduk and Zarafshan.
Khorezm	Khorezm region is in northwest Uzbekistan. Total area – 6 050 sq. km. The climate is continental, with cold winter and dry, hot summer. The population of the region – 1 924 200 people, 80% of which live in the rural areas. The region is divided into 11 administrative districts, and the main one is Urgench. The population of Urgench makes 135 000 people. Other large cities: Khiva and Pitnak.
Republic of Karakalpakstan	The Republic of Karakalpakstan is in the Southwest of Uzbekistan and occupies the Northwest part of the Kyzylkum Desert and the Amudarya delta. The total area of the republic - is 166 590 sq. km. The climate is sharply continental, with very hot summer and cold winter without snow. The population of Karakalpakstan – is 1.95 million people, mainly Uzbeks (32,8%) and Karakalpaks (32,1%). About 48% of the population live in the settlements, while 52% live in the cities. Republic is divided into 16 administrative regions, 12 cities and 16 settlements. The administrative centre of the Republic of Karakalpakstan is Nukus, with a population of 236 700 people. Other main cities are Khojeyli, Kungrad and Chimboy.

Topography. The natural features of Uzbekistan are varied, and terrains include a mixture of large valleys, foothills, and mountain regions (Figure 3). The northwest and the west of the Republic are deserts, while the south and southwest consist of foothills and mountains. The northernmost point of Uzbekistan is in the northeast of the Ustyurt plateau (45°36'N), the southern one - is near the city of Termez on the bank of the Amu Darya (37°11'N), the western one - is on the Ustyurt plateau (56°Ed.), the east - in the east of the Fergana Valley (73°10'E). The distance between Uzbekistan's extreme northern and extreme southern points is 925 km. Between the extreme western and eastern points, it is 1,400 km.

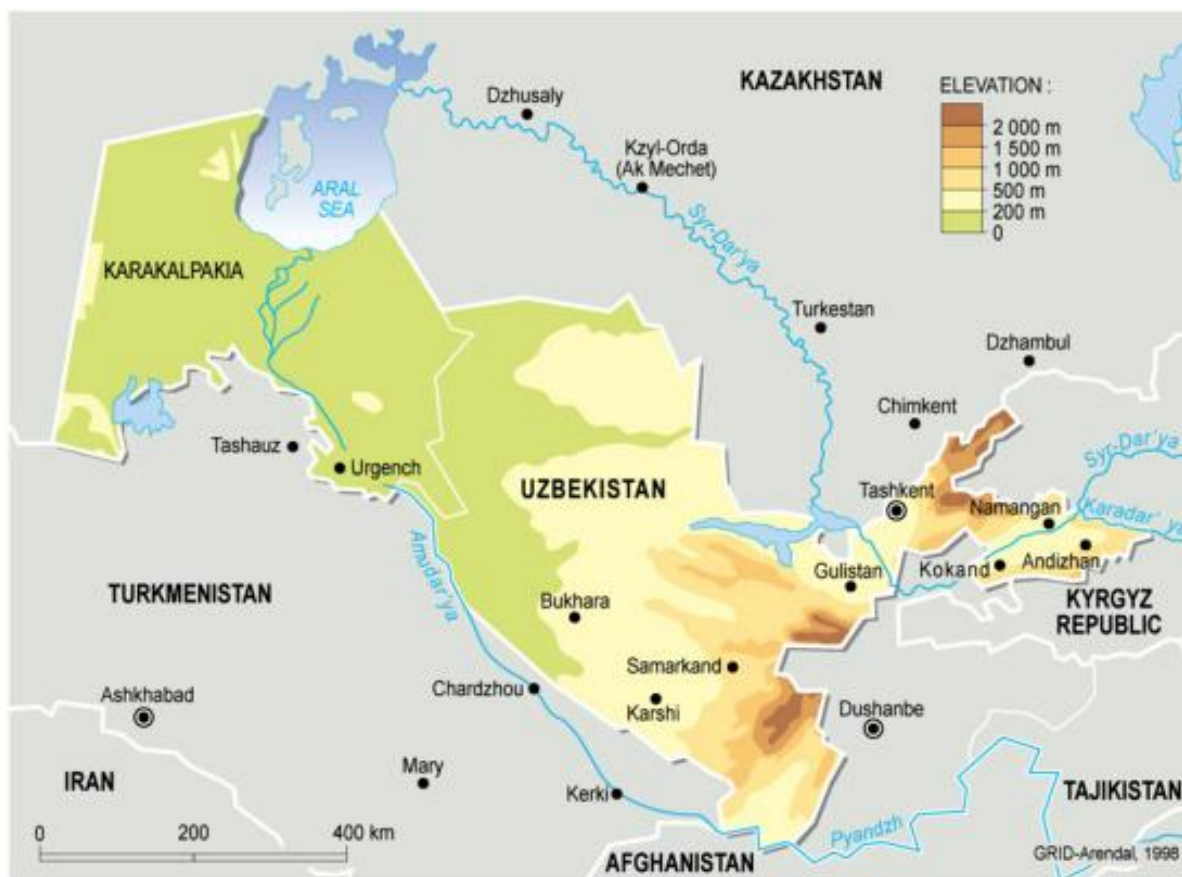


Figure 3: Topographic map of the Republic of Uzbekistan in Central Asia (source: GRID-Arendal)

2.1. Physical characteristics

Climate. Uzbekistan's climate is sharply continental, with large seasonal and daily variations in air temperature, hot and extended summer, relatively humid spring and unstable winter. The northern region of Uzbekistan is temperate, whilst the southern region is subtropical. The country's climate is characterized by seasonal and day-to-night fluctuations in air temperatures. Summer in Uzbekistan is long, dry and hot; Spring is humid, and Winter in Uzbekistan is irregular. Air temperatures in the desert can reach 45-49 degrees Celsius. In the southern region, temperatures can drop down to -25 degrees Celsius. The absolute minimum winter air temperature in the northern part of Uzbekistan (Ustyurt Plateau) recorded after 1990 was -34.2° (2006). In the plains of Uzbekistan, precipitation is minimal (between 80 and 200 millimetres). In the foothills, precipitation can be as much as 300-400 millimetres per year, and about 600-800 millimetres per year on mountain ridges' west and south-west slopes⁷.

Hydrological conditions. The available water resources of Uzbekistan consist of renewable surface and groundwater and return water from anthropogenic use (waste and drainage water). Water resources are mainly formed in transboundary river basins. There are 17 777 natural watercourses on the territory of Uzbekistan, of which 9930 are in the Amu Darya basin,

⁷ <https://www.adaptation-undp.org/explore/central-asia/uzbekistan>

and 4926 in the Syr Darya basin. More than 500 lakes are in mountain river valleys, and the largest is the Aydar-Arnasay lake system. Glaciers are in the upper reaches of individual rivers, mainly in the river basin. Pskem, with an average glacier area of 0.29 km. Uzbekistan's water resources are formed mainly due to melting water 60%, both in the Syrdarya river basin and in the Amudarya river basin.

Air quality. Uzbekistan has numerous sources of air pollution, many of which are the result of anthropogenic activities disturbing the environment (both current and past), as well as various sources of combustion (dust storms, waste burning, the mining and oil and gas industries, and vehicle emissions, etc.). Uzhydromet monitors atmospheric air pollution following the Resolution of the Cabinet of Ministers of the Republic of Uzbekistan No. 737 dated Sep.05, 2019 “On the improvement of the environmental monitoring system in the Republic of Uzbekistan” in 25 cities at 65 stationary observation points (Almalyk, Angren, Andijan, Bekabad, Bukhara, Gulistan, Denau, Kokand, Kagan, Karshi, Margilan, Mubarek, Navoi, Namangan, Nukus, Nurabad, Samarkand, Sariasiya, Tashkent, Urgench, Fergana, Chirchik, Shakhrisabz, Yangiyul). The urban air quality monitoring program tracks five main pollutants: dust (suspended solids), sulfur dioxide, carbon monoxide, nitrogen dioxide and nitrogen oxide. Up to 12 pollutants are monitored in the air at the observation sites. Available data indicates that Tashkent, Farghona, and Olmaliq are cities with consistently high levels of air pollution⁸.

Noise. The ambient noise levels at all the facilities' locations are likely equivalent to normal background levels relevant in cities or towns, consisting of baseline traffic noise and general background noise. Governmental institutions or organizations do not perform noise monitoring activities in Uzbekistan under the state environmental monitoring programme.

Contaminated land. The extent and condition of historical contamination at different sites are likely to vary considerably from site to site. Information on existing contamination at the individual project sites is not available; however, for most buildings, the main potential contamination sources are considered to comprise oils used in old generation equipment and historical ground contaminated (pre-construction of the original buildings). Indoor equipment is not considered a risk to the environment as all equipment is contained within the buildings.

2.2. Waste Management Infrastructure

In general, Uzbekistan has legislation to regulate the main aspects of waste management - classification, collection, transport and recycling of municipal, industrial, construction and hazardous waste. In 2019, Presidential Decree No. PP-4291 approved the Strategy for the Management of Solid Waste in the Republic of Uzbekistan for 2019-2028. The Strategy is aimed at planning, defining goals and objectives, ways of their effective achievement, priority areas, and stages of state policy implementation in the field of formation and development in the long term of a sustainable system in solid waste management.

The authorised body of the government in the field of waste management is the Ministry of Ecology, Environmental Protection and Climate Change (MEEPCC). Transportation and disposal of waste and the operation of collection points are handled by the state-owned enterprise “Makhsustrans” – in Tashkent city and by the state-owned enterprise “Tozakhudud” in the autonomous republic of Karakalpakstan and other regions of Uzbekistan. From 1 August 2018, private companies with a relevant licence have also been allowed to provide waste

⁸ <https://monitoring.meteo.uz/en/menu/informatsionnye-spravki2>

disposal services in Tashkent and the regions. State contracts are awarded through an electronic tendering system.

There are also 281 licensed recycling organisations located throughout the country, recycling wastepaper - 119 units, glassware - 14 units, polyethylene waste - 98 units, worn-out vehicle tyres and rubber waste - 15 units, scrap metal - 14 units and 21 units of others.

The existing waste management arrangements in proximity to the proposed works are not known. However, most of the Facilities are likely to have an agreement with general waste or hazardous/medical waste company for waste generated during the operation of the activities within the buildings. None of the Facilities is likely to have dedicated waste treatment or disposal facilities on site. Operating procedures at different facilities for managing waste are likely to be variable.

It is understood that third-party audits to verify third-party disposal option alignment with GIIP are not performed.

2.3. Transportation infrastructure

Transport and infrastructure play an important role in Uzbekistan's economy. In recent years large-scale measures have been taken to develop the transport and transport infrastructure sector, ensure a high level of transport safety, improve the transport management system and train highly qualified specialists in the sector. The Ministry of Transport has developed the Strategy for developing the Transport Infrastructure of the Republic of Uzbekistan by 2030. The total length of automobile roads is 184,000 km, including 43,000 km of common use and 4,600 km of international roads. Meanwhile, more than 80 per cent of all roads in the country are paved. All settlements of the Republic have a sustainable road network, which provides access to neighbouring districts, regions and countries.

The length of public railways is 4,642 km. The total length of electrified sections is 3729 km, operational length of electrified sections is 1646 km, including high-speed sections - 719 km.

Double landlocked Uzbekistan has no seaports. Its main river port is Termez on the Amu Darya River. The total length of internal waterways exploited in the Republic of Uzbekistan is approximately 550 km⁹.

There are currently 11 airports in Uzbekistan that Uzbekistan Airways National Air Company operates. Six of them: Tashkent, Samarkand, Bukhara, Urgench, Termez and Navoi airports are international.

2.4. Cultural heritage

At this stage of the project, the relevance of cultural heritage objects of national and international importance to the planned sub-project works has not been identified. The cultural resources may not be known or visible, the local inventorying may be inadequate, or the cultural resources may not be listed, registered or declared as 'Protected Heritage' by the laws. It is important that the proposed project's potential impacts on 'all' cultural resources are

⁹ Presentation of chief of the Uzbek agency for automobile and river transport A. Abduvaliev "Transport strategy of the Republic UZBEKISTAN and prospects of development of Trans-Asian and Euro-Asian transit carriages"

considered at the earliest possible stages of project processing, regardless of being registered or protected by the current local legislation.

2.5. Infrastructure and equipment design and safety

The structural integrity of some buildings may be unsatisfactory. Some assets are likely to be in a general state of disrepair and out of line with current national legal requirements and GIIP, particularly concerning fire and life safety provisions, seismic considerations, emergency preparedness, emissions to air and climate considerations.

On July 2023 Uzbekistan joined to the Rotterdam convention related to the use of hazardous chemicals and pesticides including asbestos. Although Uzbekistan does have asbestos legislation (see Chapter 3) it has not banned the use of asbestos and therefore all buildings may have asbestos containing materials (ACMs). There is a high likelihood that buildings contain asbestos-based cement products and other low-density asbestos products (e.g., insulation, pipe lagging). This potentially exposes workers and nearby receptors to the harmful risks of ACMs. In addition, any old transformers or electrical equipment may contain polychlorinated biphenyls (PCB) containing oils now prohibited by the Rotterdam Convention and lead-based paints.

Although Uzbekistan is a signatory to the Vienna Convention for the Protection of the Ozone Layer, there is still a high likelihood that refrigerants used in cooling systems (pre-2010) may contain prohibited refrigerants known as ozone-depleting substances or with high greenhouse gas potential.

2.6. Emergency preparedness and response

Emergency preparedness and response procedures, including standard operating procedures for the shutdown of sites, are likely to be available to varying degrees and are unlikely to confirm modern fire codes. Sites may be susceptible to varying degrees of flooding, seismic risk, and abnormal operational risks.

2.7. Socio-economic characteristics

Population. According to the Statistics Agency under the President of the Republic of Uzbekistan, as of January 1, 2023, the republic's population was 36 024,9 people. Table 2 provides an overview of the administrative divisions of Uzbekistan. It shows that most of the settlements in Uzbekistan are rural.

Table 2: Administrative division of Uzbekistan¹⁰

	Territory (thousand sq. km)	Districts	Cities	Urban type settlements	Rural settlements
(as of January 1, 2023)					
Republic of Uzbekistan	448.97	176	120	1058	10,990
Republic of Karakalpakstan	166.59	16	12	26	1,126
Regions:					
Andijan	4.30	14	11	79	455
Bukhara	40.22	11	11	68	1,473
Jizzak	21.21	12	6	42	529
Kashkadarya	28.57	13	12	117	1,042
Navoi	111.1	8	7	46	582
Namangan	7.44	13	8	115	388
Samarkand	16.77	14	11	88	1,901
Surkhandarya	20.1	14	8	112	859
Syrdarya	4.28	8	5	25	257
Tashkent	15.25	15	16	89	830
Fergana	6.76	15	9	194	998
Khorezm	6.05	11	3	56	550
Tashkent city	0.34	12	1	1	0

Moreover, according to the data, there are slightly more men in the republic - 50.3% of the population, women, respectively, and 49.7% of the total number of citizens. It is known that 30.8% of the total resident population are persons under the working age, 58.7% are working age, and 10.5% are older than the working age.

Table 3: Information on the number and density of resident population by region (As of January 1, 2023)

Regions	Territory (thousand sq. km)	The number of inhabitants (thousand people)	Population density (number of inhabitants per 1 sq. km)
Republic of Uzbekistan	448.97	36024,9	80.2
Republic of Karakalpakstan	166.59	1976,2	11.9
Andijan	4.30	3322,7	772,7
Bukhara	40.22	2009,7	50.0

¹⁰ <https://stat.uz/ru/ofitsialnaya-statistika/demography>

Regions	Territory (thousand sq. km)	The number of inhabitants (thousand people)	Population density (number of inhabitants per 1 sq. km)
Jizzakh	21.21	1475,5	69.6
Kashkadarya	28.57	3482,3	121.9
Navoi	111.10	1055.5	9.5
Namangan	7.44	2997,5	402.9
Samarkand	16.77	4118,2	245.6
Surkhandarya	20.10	2806,5	139.6
Syrdarya	4.28	896,6	209.5
Tashkent	15.14	2993,4	197.7
Fergana	6.76	3976,3	588.2
Khorezm	6.05	1958,1	323.7
Tashkent city	0.45	2956,4	6599.1

Economics. According to the Statistics Agency under the President of the Republic of Uzbekistan, in January- March 2023, Uzbekistan's gross domestic product (GDP) at current prices amounted to 198.5 trillion soums. Compared with January-March 2022, it increased by 5.5%¹¹. The volume of GDP per capita in 2022 at current prices amounted to 17 652.4 thousand soums (1 603 US dollars), an increase of 3.6 % compared to 2021.

Industry. In January- May 2023, Uzbek enterprises produced industrial products worth UZS 231.2 trillion (\$20.27bn), up 105,7% y/y. The structure of industrial production was as follows:

1. manufacturing industry - 82.2 %
2. mining - 9.5%
3. provision of electricity, gas, steam and air conditioning - 7.8%
4. water supply, sewerage, waste collection and disposal - 0.5%.

The creation of special economic zones (SEZ), the number of which has increased from seven to 21 over the past five years, and small industrial zones (SIZ) (up from 63 to 77), techno parks and clusters have become the main elements for the development of industrial production.

The government aims to ramp up the sector by implementing new projects, supporting low-power or idle enterprises and efficiently utilising empty buildings.

Energy and power. The year 2020 brought huge reforms in Uzbekistan's power sector. Addressing world anxiety over climate change, the government unveiled planned contributions to address the issue. In particular, by 2030, the government aims to cut greenhouse gas emissions by 35% compared to the levels recorded in 2010, as the climate in Central Asia is changing twice as fast as in other regions due to the drying up of the Aral Sea. At the national level, Uzbekistan is implementing a comprehensive strategy for its transition to a green economy and a programme to develop renewable and hydrogen energy. Some 200mn trees and shrub saplings are planted in the country annually. By 2030, the economy's energy efficiency is set to double, with the share of renewable energy comprising at least 25%.

Gender and vulnerable groups (including the prevalence of gender-based violence). Employment is the main source of household income in Uzbekistan. Self-employed men are

¹¹ <https://stat.uz/en/press-center/news-of-committee/38300-how-much-was-the-gdp-of-the-republic-of-uzbekistan-for-january-march-2023>

more likely than women to be independent workers (self-employed workers or employers), whereas women are more likely to be dependent workers (contributing family workers). Most employed women and men are employees. The over-representation of women in wage employment is likely a reflection of their quest for decent jobs with decent social protection, including maternity protection. Employed women are more likely to be in the public sector, which offers more stable jobs and more favourable terms and conditions. In 2018, 58.7 per cent of women and 41.3 per cent of men worked in the public sector. The proportion of women working in the private sector was 26.0 per cent and men 74.0 per cent.

There is no official data on violence against women and girls, and often such violence is underreported. However, in 2020, law enforcement agencies in Uzbekistan issued over 14,774 protection orders¹² (approximately 11,000 of them were receiving protection from their husbands), according to the Ministry of Internal Affairs. The majority were issued in Tashkent city, Samarkand, Tashkent, Fergana, Kashkadarya, Andijan regions and the Republic of Karakalpakstan. Another 4,330 women reported being subjected to physical violence, while approximately 3,200 were subjected to emotional abuse. Violence against women occurred in their families in 73% of cases; the rest occurred in public places, workplaces, and educational institutions.

In September 2019, two historic laws were released to ensure equal opportunity for men and women and protect women from violence and persecution. Despite these laws, there were no procedures for recording gender-based violence crimes, nor for the steps advised to support and protect victims. The Uzbek authorities authorised procedures in January 2020 to establish protection orders for victims of gender-based violence, allowing the appropriate state agencies to provide police and other support to those in need.

Energy Efficiency. Uzbekistan is one of the most energy-intensive economies in the world. Its primary energy intensity of GDP is almost 2.5 times the average of the European Union (Figure 4).

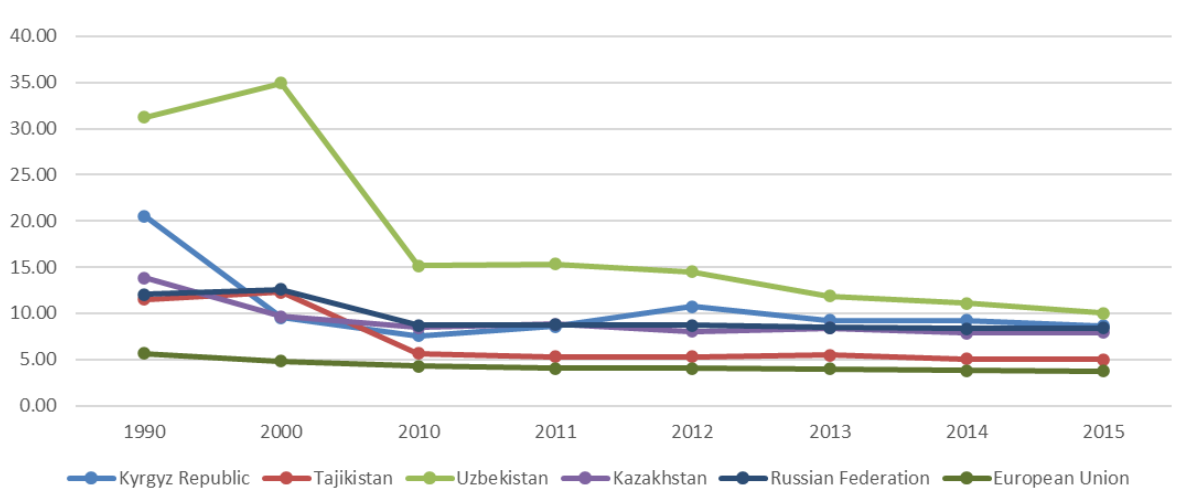


Figure 4: Energy intensity level of primary energy (MJ/\$2011 PPP GDP) of selected central Asia countries in the global context (WB data, 2020)

¹² https://uza.uz/uz/posts/iiv-2020-yilda-tazyiq-va-zoravonlikka-uchragan-14-ming-774-xotin-qizga-himoya-orderi-berildi_236643

The major share of electricity is consumed in the residential sector (41%), followed by the industrial sector at 30% and agriculture at 24%. TALCO Aluminium production consumes 60% of the industrial electricity. Electricity use in agriculture is dominated by water pumping. The two largest sectors of final energy consumption are the residential sector with 38% and the industry with 22%. Electricity consumption is dominated by industry (38%) and agriculture (29%). The third-largest electricity consumer is the residential and public sector, with 22% (Figure 5, Figure 6).

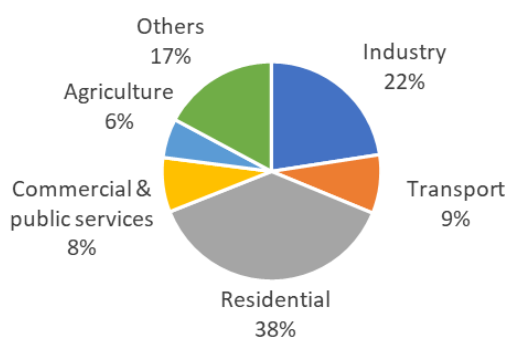


Figure 5: Final energy consumption in Uzbekistan by economic sector (IEA, 2017)

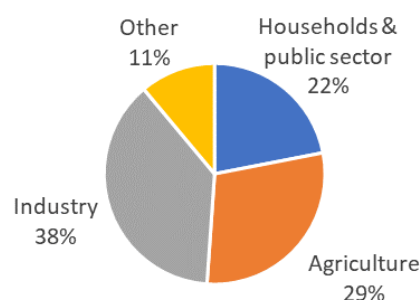


Figure 6: Final electricity consumption in Uzbekistan by economic sector (National Statistics, 2018)

Better insulations and retrofitting can achieve further electricity savings in the residential and public building sectors. A study on EE investment potentials in public buildings estimates power savings at 103 GWh of electricity based on the current building stock.¹³

Air conditioning is an essential comfort requirement given the climate in Uzbekistan. It can be assumed that with increasing welfare and comfort standards, electricity used for cooling will increase considerably during the next two decades.

Lighting and street lighting improvements are relatively easy to implement and provide a relatively fast payback of investments. Examples from other countries show a payback from 18 months to 3 years. Uzbekistan banned the sale of light bulbs over 40W on 1 January 2017. The government has also started programs to replace street lighting luminaires and in public buildings. For example, about 70% of lighting in schools was recently replaced by efficient LED lighting.

¹³ World Bank Project: 1260379 / Uzbekistan: Deploying Energy Efficiency and Distributed Solar in the Public Buildings sector (unpublished).

3. Legal and Institutional Framework

3.1. National environmental and social institutions

Key organisations with responsibility for environmental and social risk management in Uzbekistan are:

- Cabinet of Ministers of the Republic of Uzbekistan (COM);
- Ministry of Ecology, Environmental Protection and Climate Change (MEEPCC);
- The Centre for State Ecological Expertise and its regional branches, which is under the MEEPCC;
- Ministry for Emergency Situations of the Republic of Uzbekistan;
- Ministry of Health of the Republic of Uzbekistan;
- Ministry of Employment and Poverty Reduction of the Republic of Uzbekistan;
- Agency of Cultural Heritage of the Republic of Uzbekistan.

The Cabinet of Ministers of the Republic of Uzbekistan governs the executive body in the Republic of Uzbekistan following the Constitution of the Republic of Uzbekistan (Article 114) and the Law of the Republic of Uzbekistan “On the Cabinet of Ministers of the Republic of Uzbekistan” (new edition of 2019). The Cabinet of Ministers of the Republic of Uzbekistan exercises the following main functions:

- Implements measures on rational use and protection of natural resources.
- Coordinates the work of state bodies on joint conducting of natural protection events.
- Implements a large-scale ecological program of national and international importance; and
- Takes measures to eliminate the consequences of accidents and disasters and natural disasters.

The Ministry of Ecology, Environmental Protection and Climate Change (MEEPCC) is the main regulating body of state administration on environmental protection issues. The primary responsibilities of the MEEPCC include ensuring the implementation of a unified state policy on environmental safety, environmental protection, and the use and reproduction of natural resources; and enforcing state control over the compliance of ministries, state committees, departments, enterprises, institutions, and organisations, as well as individuals, concerning the use and protection of land, mineral resources, water, forests, flora and fauna, and atmospheric resources. Structurally, the MEEPCC consists of the central unit (located in Tashkent), regional units (oblast) and local (district) units.

The Centre for State Ecological Expertise: The Centre for State Ecological Expertise's activities are directly related to the evaluation of materials for EIA and the issuance of documents determining compliance with environmental requirements for planned or executed business and other activities, as well as determining the admissibility of the implementation of the object of environmental expertise.

Other stakeholders that may be relevant to the Project are listed below.

- Ministry of Water Resources of the Republic of Uzbekistan

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- Ministry of Agriculture of the Republic of Uzbekistan
 - Inspection for Control of Mining, Geological and Industrial Safety under the Ministry of Mining Industry and Geology of the Republic of Uzbekistan
 - Ministry of Internal Affairs of the Republic of Uzbekistan

3.2. Institutional Framework for implementation

An overview of the institutional framework for implementation is provided below, further details on procedures for implementation are outlined in Chapter 5, and the key implementation parties are provided in Chapter 6.

Project Management Consultant (PMC)

Project implementation will entail using energy service agreements (ESA) between the Fund and the public beneficiary as part of the revolving financing mechanism. Under the ESA, currently, a Project Management Consultant (PMC) is hired by the Fund/MoE to provide a full set of services for clean energy improvements for one and a half years. The PMC is led by a Project Director and includes a team of specialized staff responsible for project management, financial management, procurement, environmental and social risk management, monitoring and evaluation, civil works design review and contract management, as well as support staff such a secretary, fiduciary support staff, legal support, and a driver. In summary, the institutional responsibilities and arrangements for the PMC are as follows:

- Ensure operational compliance as per the World Bank policies as defined in the Project Appraisal Document, Financing Agreement and Operations Manual and Government policies.
- Recruit specialized consultants for specific technical assistance for the overall implementation of activities.
- Liaise closely and ensure overall coordination of all Project entities to ensure necessary data and information are shared and collated for reporting to Project Board and the World Bank.
- Implement the E&S risk assessment and management function for individual sub-projects following this ESMF (as elaborated further in section 6).

Before the completion of the contract period (up to 2.5 years as per the ESCP) with the PMC, the Fund will establish a Project Implementation Unit within it, which will take over all the responsibilities of the PMC for the remainder period of the Project. Further elaboration on the function of the PMC is provided in section 6.

3.3. National Environmental, Social and Occupational Health and Safety Policies and Legislation Relevant to the Project

3.3.1. Constitution

The new edition of the Constitution of the Republic of Uzbekistan was adopted by popular vote at a referendum of the Republic of Uzbekistan held on April 30, 2023. The Constitution of Uzbekistan has the following provisions relating to environmental aspects:

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- Article 49: Everyone shall have the right to a favorable environment, reliable information about its condition.

The State shall create conditions for the implementation of public control in the field of urban planning activities in order to ensure the environmental rights of citizens and prevention of harmful environmental impact.

Draft urban planning documents shall be subject to public discussion in the manner prescribed by law.

The State, under the principle of sustainable development, shall implement measures to improve, restore and protect the environment, maintain ecological balance.

The State shall take measures to protect and restore the ecological system, social and economic development of the Aral Sea region.

- Article 62: Citizens shall be obliged to protect the environment.
- Article 66: An owner, at his/her discretion, shall possess, use and dispose of his/her property. The use of any property must not be harmful to the environment or violate the rights and legitimate interests of other persons, society and the state.
- Article 68: The land, its minerals, waters, flora and fauna, other natural resources shall constitute the national wealth and shall be rationally used and protected by the state.
- Article 115: The Cabinet of Ministers of the Republic of Uzbekistan shall:
 - 4) ensure the implementation of a unified state policy in the field of environmental protection, conservation of natural wealth and biological diversity, combating climate change, epidemics, pandemics, mitigating their consequences.
- Article 123: The powers of khokims of regions, districts, cities shall include:
 - 2) implementation of measures aimed at ensuring the economic, social, cultural and environmental development of the territories.

3.3.2. Climate policy

Uzbekistan submitted its Third National Communication to the UNFCCC. It ratified the Paris Agreement in November 2018, which brought its Intended Nationally Determined Contribution (INDC) into effect for the period up to 2030. The long-term objective of the INDC is to decrease specific emissions of greenhouse gases per unit of GDP by 10% by 2030 from the 2010 level. This envisages international and financial support, ensuring access to advanced energy-saving and environmentally sound technologies and resource allocation for climate financing.

The ratification of the Paris Climate Agreement committed Uzbekistan to transition to a green economy and adoption of the following normative documents:

- Decree of the President of the Republic of Uzbekistan, № PD-4477, dated October 4, 2019, "On approval of the Strategy on the transition of the Republic of Uzbekistan to the "green" economy for the period 2019-2030".
- Decree of the President of the Republic of Uzbekistan, № PD-5863, dated October 30, 2019, "On approval of the Concept of environmental protection of the Republic of Uzbekistan until 2030".
- Priority areas of "The Strategy on the transition of the Republic of Uzbekistan to the "green" economy for the period 2019-2030" relevant to the electricity-producing industry.

- Reconstruction and modernization of generating capacities of existing power plants with highly efficient technologies based on combined cycle gas and gas turbine units.
- Improvement of configurations and modernization of main power net Activity to increase the stability of the power system.
- Implementation of organizational and technical measures, including optimization of modes.
- Increasing the level of automatization of technological processes.

3.3.3. Energy Efficiency Policy

National energy efficiency regulation of the Republic of Uzbekistan prioritizes the following: 1) develop and implement programmes aimed at the rational use of energy; 2) coordinate activities by ministries, authorities, enterprises, organizations and institutions, as well as the Government of the Republic of Karakalpakstan, regional administrations and the city administration of Tashkent in the development and implementation of energy conservation programmes and projects; 3) promote the implementation of projects that are aimed at application of energy-efficient machinery and goods, energy-efficient technologies, management practices and scientific research in this field, utilization of secondary energy resources and waste; of technologies employing the use of solar energy, wind and natural energy of watercourses; 4) facilitate development of adequate industrial base for manufacturing energy metering, accounting and control devices, as well as energy-efficient and environmentally safe equipment; 5) facilitate awareness building on the issues of energy efficiency.

To improve energy efficiency, Uzbekistan has adopted several laws and regulations; the core regulations are:

- Law of the Republic of Uzbekistan "On electric power industry" from 30.09.2009 r. №225.
- Law of the Republic of Uzbekistan "On rational use of energy" dated 25.04.1997, № 412-I. The present Law establishes general legal frameworks for energy resources conservation and sustainable energy use in the Republic of Uzbekistan. Following Article 13, mandatory energy audit inspections shall be carried out for all enterprises, organizations and institutions consuming more than six thousand tons of equivalent fuel per annum. The Government of the Republic of Uzbekistan is to establish a procedure for energy audit inspections in buildings.
- Resolution of the President of the Republic of Uzbekistan No. PP-4422 dated August 22, 2019, On Accelerated Measures to Improve Energy Efficiency of Economic and Social Sectors, the Introduction of Energy-Saving Technologies and the Development of Renewable Energy Sources - The Resolution focuses on improving electricity consumption efficiency by implementing modern mechanisms and standards in construction, providing compensation for installing energy-efficient equipment, as well as other measures. The Resolution approves the Complex program for further improving the energy efficiency of economic and social sectors, introducing energy-saving technologies and developing renewable energy sources in the Republic of Uzbekistan for 2019-2022.

In addition, several governmental strategies include EE targets:

- Strategy for **Action on five priority development areas in 2017-2021** (Decree of the President of Uzbekistan № PD-4947 from 07.02.2017) with the priorities to reduce energy and resource intensity of the economy, the broad introduction of energy-saving technologies into production, expansion of renewable energy sources, increase of labor productivity in the sectors of the economy.
- The Programme of Measures of Further Deployment of Renewable Energy and Improvement of Energy Efficiency in the Economic and Social Sphere 2017-2021 (Decree of the President of Uzbekistan № 4422 from 22.08.2019) aims at reducing the energy intensity by 8-10% annually in key economic development sectors. It envisages decreasing energy intensity (energy per GDP) consumption by approximately 2 times as a result of the broad introduction of advanced energy-saving technologies for the period 2017- 2030; replacement of 17,251 heating boilers in 6,333 organizations with savings of more than 56.5 million cubic meters of natural gas; replacement of 1,523 energy-intensive electric motors and 879 water pumps of the Ministry of Agriculture with an energy saving of 807.3 million kilowatt-hours of electricity. From 2016 household electric appliances not corresponding to energy-efficient standards cannot be imported to the Republic of Uzbekistan and will be gradually phased out.
- Strategy for the transition of the Republic of Uzbekistan to the "green" economy for the period 2019-2030 (PP-4477 of 04.10.2019). Among the others, the main objectives are:
 - To double the energy efficiency indicator and reduce the carbon intensity of GDP.
 - Further development of RES, bringing their share to more than 25% of the total electricity generation.
 - Modernization of industrial enterprises' infrastructure, ensuring their sustainability by increasing energy efficiency by at least 20% and wider application of clean and environmentally friendly technologies and industrial processes.
 - Expansion of production and use of motor fuel and motor vehicles with improved energy efficiency and environmental friendliness characteristics and development of electric transport.

3.3.4. Law on Environmental Expertise

Law on Ecological Expertise (2001) provides for mandatory expert assessment of impacts on the environment and human health, as well as a legal basis for conducting expert assessments. According to the article 3 of the law ecological expertise is carried out to determine:

- compliance of projected economic and other activities with environmental requirements in the stages preceding decision making on its implementation.
- level of ecological danger planned or carried out business and other activities, which may have or had a negative impact on the condition of the environment and public health.
- adequacy and reasonableness of the measures provided for the protection of the environment and rational use of natural resources.

The national EIA procedure is regulated by abovementioned law and the Resolution of Cabinet of Ministers № 541 of 07.09.2020: “On Approval of the Regulation on State Environmental Expertise”. This Regulation sets out the types of activities subject to State Ecological Expertise and their categories of environmental impact. There are four categories of environmental impacts of economic activities:

1. Category I – “high risk of environmental impact”
2. Category II – “medium risk of environmental impact”
3. Category III – “low risk of environmental impact”
4. Category IV – “local impact”

The Regulation on State Environmental Expertise also includes information on the procedure for mandatory public discussions and hearings on environmental impact assessments for proposed activities belonging to Environmental Impact Categories I and II prior to the State Environmental Expertise.

Based on the list of activities in the Regulation, the Project activities are not categorised according to the national classification.

However, the Regulation states that activities not included in the list may be subject to State Ecological Expertise, whereby the category of a given activity is determined based on materials submitted to the Expert Council under the MEEPCC or based on the field survey results conducted by specialist of MEEPCC. Considering the above, for some projects with a scope that may impact the wider local area, it may be necessary to contact MEEPCC to request an official screening as to the environmental impact category of the Project activities at the designing stage and further procedures ESIA and public hearings.

3.3.5. Law on Environmental Control, 2013 as amended in 2021

The main objectives of this law include:

- Prevention, detection and suppression of violation of legislative requirements relating to environmental protection and rational use of natural resources;
- Monitoring the state of the environment, identifying situations that can lead to environmental pollution, irrational use of natural resources, pose a threat to the life and health of citizens;
- Determination of compliance with environmental requirements of any ongoing economic development activities;
- Ensuring compliance with the rights and legitimate interests of legal entities and individuals performing their duties in relation to environmental protection and sustainable use of natural resources.

Article 7 of this law states that the objects of environmental control are:

- Land, its subsoil, waters, flora and fauna, and atmospheric air.
- Natural and artificial sources of impact on the environment.
- Components, action or inaction that may lead to pollution of the environment.

3.3.6. Law on the Rational Use of Energy, 1997 as amended in 2020

The law aims to ensure efficient and environmentally sound use of energy in its production and consumption; encourage the development and application energy-efficient technologies; extraction and production of less expensive petroleum products, natural gas, coal and other types of natural fuel; ensure accuracy and uniformity of measurements, as well as accounting for energy produced and consumed in terms of both quality and quantity; execution of supervision and control by the state over the efficiency of energy production and consumption, as well as over the state of energy equipment and energy supply and consumption systems.

The law establishes a general legal framework to secure the conservation of national energy resources and their efficient use. It outlines the framework for extraction, production, refining, storage, transport, transmission, distribution and consumption of thermal and electric energy and also proposes various provisions for economic measures that would enable rational energy use. The law establishes that the authorized state body in the field of rational use of energy is the MOE of the Republic of Uzbekistan.

3.3.7. Environmental legislation and standards

Environmental laws relevant to the Project are:

- The Law of the Republic of Uzbekistan “On Water and Water Use” (1993) as amended in 2020.
- The Law of the Republic of Uzbekistan “On Atmospheric Air Protection” (1996, amended on 28.09.2020).
- The Law “On the sanitary and epidemiological well-being of the population” (2015) as amended on 03.09.2021.
- The Resolution of the Cabinet of Ministries of the Republic of Uzbekistan №541 “On further improvement of the environmental impact assessment mechanism” (2020).
- The Resolution of the Cabinet of Ministers of the Republic of Uzbekistan No 14. “On approval of the regulation on the procedure for the development and agreement of projects with environmental standards” (2014).
- Resolution of Cabinet of Ministers of the Republic of Uzbekistan No.95 “On approval of general technical regulations of environmental safety” (2020).
- The Resolution of Cabinet of Ministers of the Republic of Uzbekistan No. 255 “On approval of some Administrative regulations of rendering the state services in the field of environmental management” (2018).
- “SanPiN Ruz No. 0372-20 (new edition) Temporary sanitary rules and norms for organizing the activities of state bodies and other organizations, as well as business entities during the application of restrictive measures during the COVID-19 pandemic.
- State Standard O’z DSt 950:2011 – Drinking water. Hygienic requirements and quality control.
- State standard O’z DSt 1057:2004 “Vehicles. Safety requirements for technical conditions” and O’z DSt 1058:2004 “Vehicles. Technical inspection. Method of control”
- Resolution of Cabinet of Ministers of the Republic of Uzbekistan on further improvement of the procedure for planting, maintaining and use of trees and shrubs not included in the State Forest Fund dated August 22 2022., No.464
- Presidential Decree “on measures to accelerate landscaping and further efficient organization of tree protection in the Republic of Uzbekistan” dated December 30, 2021, no. UP-46.

3.3.7.1. Waste Management Law

Waste law in Uzbekistan has recently undergone strengthening regarding the planning, construction and operation of landfills and rules for the transport of waste. Under the Law of the Republic of Uzbekistan “On Nature Protection” and “On Waste”, the MEEPCC, as well as local governing bodies, has responsibilities in solid waste management, monitoring compliance with sanitary standards, reporting and inspecting SWM facilities etc.

The Law "On Nature Protection" and Law on "On Waste" has the following general provisions:

- citizens have the right to a safe and healthy environment, to participate in the discussion of projects, and to compensation for damage to their lives.
- dangerous waste that is transported domestically or internationally must pass ecological certification and be moved by special vehicles.
- procedures for treating solid wastes and defines the authorities of various institutions involved in SWM.

Article 19 sets out that where generated waste is subject to export and import operations, or hazardous waste is subject to transportation, an environmental certification procedure shall be completed to confirm compliance with sanitary and environmental norms and standards associated with waste management.

Article 20 states that the transportation of hazardous waste shall be in specially designated types of vehicles with a waste certificate and permit. The responsibility for safe transportation of hazardous waste shall be with the transporting organisation.

Article 22 of the Law on Wastes specifies the general waste storage and disposal requirements. Waste disposal of recyclable waste is prohibited in Uzbekistan. Waste storage is carried out in accordance with sanitary norms and rules, environmental safety requirements, and methods ensuring the rational use of waste or its transfer to other parties for recycling. In addition, storage and disposal of waste in the environment, including nature conservation and protected areas, settlements, health and recreational areas, or historical and cultural facilities, is prohibited. It is also prohibited to bury waste in places other than those determined by local state authorities in accordance with the procedure established by law.

Hazardous waste in Uzbekistan is defined as waste that contains substances with at least one of the defined hazardous properties (toxicity, infectivity, explosive hazard, fire hazard, high reactivity, radioactivity) and available in such amounts and in such a way as to pose an imminent or potential risk to human life and health, the environment, or both in their current state or when exposed to other substances. Hazardous waste is classified into four groups known as ‘hazard classes’¹⁴. Waste hazard classes are:

- Class I – extremely hazardous waste
- Class II – highly hazardous waste
- Class III – moderately hazardous waste
- Class IV – low-hazardous waste.

According to the Regulations on the procedure of state accounting and control in the field of waste management (Appendix to The Resolution of Cabinet Ministries of Uzbekistan No.295, 27.10.2014), depending on toxicity and recyclability, industrial wastes are classified into the following categories:

¹⁴ SanPiN - 0128-02 29.07.02 - Hygienic classifier of industrial hazardous waste and SanPiN - 0127-02 29.07.02 – Sanitary procedures for industrial waste inventory, classification, storage and disposal.

- toxic non-recyclable waste and toxic recyclable waste
- non-toxic non-recyclable waste, and non-toxic, recyclable waste

The abovementioned regulations oblige legal entities to maintain a register of toxic and non-toxic wastes, submit state statistical reporting in the prescribed manner and take measures for maximum waste utilization, realizing or transferring them to other specialized enterprises.

Responsibility for safe transportation of hazardous waste shall be with a transporting organization (Law on Wastes, Article 20). Transportation of hazardous materials must be conducted following Resolution of Cabinet Ministries of Uzbekistan No. 35 of 16 February 2011 on “Rules of hazardous materials transportation on the territory of Uzbekistan”. The State organization “Qishloqkimyo” (Agriculture chemicals) is responsible for the transportation, handling and disposal of hazardous materials. The transportation of hazardous wastes shall be in specially designated types of vehicles with a waste transportation certificate and a permit.

According to The Resolution of the Cabinet of Ministers of the Republic of Uzbekistan No 14. “On approval of the rule on the procedure for the development and agreement of projects with environmental standards”, MSW is classified as class 5 – non-hazardous waste.

The established norm of generation of MSW is 1.17 kg daily or 437.7 kg yearly per person¹⁵. On the premise of the Rules for providing services for the collection and disposal of solid and liquid municipal waste (Annex No. 1 to the Resolution of Cabinet of Ministers No. 95 of 6 February 2019), MSW is collected by licenced waste-collecting enterprises and buried in landfills.

Other relevant regulations and standards include:

- SanPiN № 0157-04 “Sanitary requirements to the storage and neutralization of solid domestic waste on special grounds in Uzbekistan.”
- SanPiN of the Republic of Uzbekistan dated 16/11/2011 No 0300-11 “Sanitary Rules and Standards for managing collection, inventory, classification, treatment, storage and disposal of industrial waste in the context of Uzbekistan.
- SanPiN No. 0158-04 – Sanitarian Rules and Norms on collection, transportation and disposal of wastes contained asbestos in Uzbekistan.
- Regulation on the Procedure for Handling Scrap, waste of non-ferrous and ferrous metals annexed to the Decree of Cabinet of Ministers dated 06/06/2018 No. 425
- Regulation “On the Procedure for the Disposal, Collection, Pay Settlement, Storage and Removal of Waste Industrial Oils” annexed to the Decree of the Cabinet of Ministers dated 04/09/2012 No.258
- The Resolution of the Cabinet of Ministers of the Republic of Uzbekistan No. 266 “On approval of the collection and disposal of used mercury-containing lamps” (2011).
- SanPiN Ruz No. 0127-02 “Sanitary Rules for Inventory, Classification, Storage and Disposal of Industrial Waste”.

To further improve the governance system for managing household and construction waste generated in economic sectors and settlements, Presidential Decree No. 4845 of 29.09.2020 on “Measures to further improve the governance of activities in the field of management of household and construction waste” was adopted. According to it, from the beginning of 2021 an order was introduced according to which:

¹⁵ SanPiN No. 0297-11 - Sanitary rules and norms of cleaning the territories of populated areas from MSW in the conditions of Republic of Uzbekistan

- Construction waste generated during construction, reconstruction, repair or demolition of buildings and structures, including roads and utilities, shall be sent first for reuse, recycling or utilization.
- Disposal of construction waste in landfills is allowed in the absence of enterprises with appropriate technologies and capacities for the disposal and recycling of this waste on the territory of the facility location.
- During the development of design documentation for construction works, design solutions shall be provided for determining the volumes and locations of construction waste generated during the construction process and the associated works.
- Contractors must segregate the collection, and temporary storage of waste generated during construction works at the facilities where construction works are in progress.
- Construction waste transfer and disposal must be to legal entities engaged in its collection, transportation, utilisation and/or recycling, or perform such activities using their capabilities.
- Entities must establish relevant agreements with organizations specializing in waste removal services or with landfill organizations to dispose of construction waste in landfills.
- Legal entities and individuals engaged in the transportation of construction waste shall have a document stipulating delivery (sale) of construction waste to organizations engaged in recycling and (or) treatment of construction waste or placement of waste in a landfill.

3.3.7.2. Asbestos Laws

In Uzbekistan, there are sanitary norms and rules that regulate the production, use, transportation, and disposal of asbestos-containing materials:

- Sanitary rules and standards on occupational hygiene and environmental protection in producing and using asbestos-containing products” (SanPiN № 0233-07).
- The list of asbestos-cement materials and structures permitted for use and their application in construction (SanPiN № 0168-04).

Sanitarian Rules and Norms on collection, transportation and disposal of wastes contained asbestos in Uzbekistan (SanPiN No. 0158-04).

According to the Resolution of Cabinet of Ministers of Ruz No. 295 from 27.10.2014 on approval of the regulation on the procedure of state accounting and control in the field of waste management, asbestos waste is classified as toxic non-recyclable waste.

Following the waste classification catalogue under the Resolution of Cabinet of Ministers of Ruz No14 from 21.01.2014 on the approval of the regulation on the procedure for developing and approving environmental standards, asbestos-containing waste refers to several classes:

Table 4: Asbestos hazards class (Ruz No14 from 21.01.2014)

Name of waste	Hazard class	
Asbestos cement waste in lump form	3	moderately dangerous;
Asbestos cement dust	1	extremely hazardous
Asbestos waste in lump form; asbestos paper waste; asbestos chips waste	2	highly hazardous

Name of waste	Hazard class	
Asbestos dust and fibres	1	extremely hazardous

According to SanPiN No. 0158-04, wastes containing asbestos must be disposed of by methods that avoid dust generation. In the case of manually collected wastes, personnel protection equipment for respiratory organs (respirators) must be used. Bulk materials collected by other methods should be placed into impermeable bags (containers). Replacement of the bags (containers) should be conducted by mechanized methods. Solid wastes containing asbestos should be stored in places where they will not be destroyed during storage. Bags (or other containers) used to store wastes should be disposed of by grinding and packing them into dense transportable piles in the special indicated places. These bags could not be reused as wastepaper or package. All containers with asbestos wastes should have appropriate inscriptions and labelling. During the process of collecting and temporarily storing wastes containing asbestos, all workers should wear appropriate clothing and respirators. Works related with wastes loading, transportation, unloading and disposal should be mechanized; transportation should avoid spilling wastes and prevent pollution of the environment. Transportation of unpacked asbestos in open trucks and railway cars is prohibited.

Asbestos-containing waste should be buried at landfills of municipal solid waste (MSW) and non-recycled industrial solid waste.

3.3.7.3. Fire safety legislation

Law on Fire Safety of the Republic of Uzbekistan, dated 30.09.2009 No. ZRU-226. The purpose of this Law is regulation of the relations in the field of fire safety.

According to article 6 of the law, the Ministry of Emergency Situations of the Republic of Uzbekistan is a specially authorized body in fire safety. Its jurisdiction includes revision of design documentation for construction, capital repairs, reconstruction, expansion and technical retrofitting of buildings, constructions and other objects in terms of compliance with fire safety requirements; participation in the work of the commission on the selection (allocation) of sites (tracks) for construction, as well as the commission on the acceptance of completed construction (reconstruction) facilities.

Article 12 of this law also states that ensuring fire safety in the design, construction, expansion, reconstruction, and technical re-equipment of buildings and structures is the responsibility of project owners, developers, design and construction organizations.

Resolution of the Cabinet of Ministers of the Republic of Uzbekistan on the Approval of **Fire Safety Rules** No. 649 of October 20, 2020. Following are the main fire safety rules related to the Project:

Article 23. Smoking is prohibited in workplaces, health care facilities, educational institutions, and other public places, except for places specially designated for tobacco products and marked "Smoking areas".

Fire safety requirements for preschool facilities:

Premises of preschool educational facilities and premises in which mass events (performances) are held shall have at least two emergency doors.

In pre-school educational facilities, it shall be prohibited:

- covering the building with combustible materials (straw, thatch, reeds, polygal, lexan,

-
- etc.).
 - placing children in the mansard (attic) rooms of wooden buildings.
 - placement of laundries and kitchens in wooden buildings.
 - installing gas equipment on the lower level of dormitories and group rooms.
 - Place 50 or more children in structures made of wood and other combustible materials.
 - using stoves, candles, kerosene lamps, open flames and electric heaters in the rooms of buildings with children.

Fire safety requirements for healthcare facilities:

In healthcare facilities, it is prohibited:

- placing in buildings where patient rooms are located in other rooms unrelated to the treatment process (other than those specified in the design standards).
- installation of beds in corridors, halls and other evacuation routes.
- Installation of metal grilles on the windows of the rooms for patients and nursing staff.
- Pasting wallpaper on wooden walls and ceilings and painting them with flammable nitro- or oil-based paints.
- Using materials that emit toxic vapours when decorating the premises.
- Installation and use of oxygen balloons inside the premises of healthcare facilities.
- Use rubber and plastic pipes (hoses) to supply oxygen to patient rooms.
- Use of defective medical equipment.
- Installation of fire doors of heating stoves inside of patient rooms.
- Placement of workshops and warehouses in the basement and ground floors of healthcare facilities.

Fire safety requirements for educational facilities:

- Acceptance of school buildings before the beginning of the school season shall be performed by a specially appointed commission, including an official of the state fire supervision authority.
- Only furniture, equipment, templates, tools, utensils, manuals, and other visual aids related to the educational process shall be kept in the classrooms and offices.
- The number of desks (tables) in classrooms and training rooms shall not exceed the number specified in the design standards.
- Archive storage rooms shall be equipped with metal cabinets. The use of wooden cabinets treated with a flame-retardant compound is allowed.

Fire safety requirements for construction sites:

- The storage of flammable construction materials in firefighting areas is prohibited.
- When flammable construction materials and products and equipment and loads in flammable packages are stored in open areas, they must be placed in stacks or groups of not more than 100 m² in the area and not more than 2.5 m in height.
- Laying combustible insulating materials on the roof and the organization of waterproofing, laying a protective gravel layer, and installing barriers using combustible insulating materials shall be performed by dividing the sites into sections of not more than 500 m².
- The quantity of insulation and roofing materials at the workplace shall not exceed the needs of the work shift.
- Flammable insulation materials shall be stored outside the building under construction in a separate building or on a particular site at a distance of at least 18 m from the buildings under construction.

- Work-related to the use of flammable and explosive substances and materials, combustible thermal insulation materials, including the use of constructions containing combustible thermal insulation materials, shall be performed at the construction site following the permit to work signed by the person responsible for fire safety.

3.3.8. National Environmental standards

3.3.8.1. Ambient Air Quality

The system of ambient quality standards is based on the application of MACs of certain pollutants in ambient air, water and soil as defined by decisions of the Chief State Sanitary Doctor. The Sanitary Rules and Norms (SanPiN) No. 0053-23 contains a list of MPCs of 485 pollutants for air in settlements. The MPCs relevant to the Project are shown in Table 5.

Table 5: Maximum Permissible Concentrations of air pollutants (national requirements)

Parameter	MPC (mg/m ³)			
	30 min	24 Hour	Monthly	Annually
Nitrogen Dioxide (NO ₂)	0.085	0.06	0.05	0.05
Nitrogen Oxide (NO)	0.6	0.25	0.12	0.06
Sulphur Dioxide (SO ₂)	0.5	0.2	0.1	0.05
Dust	0.15	0.1	0.08	0.05
Carbon Monoxide (CO)	5.0	4.0	3.5	3.0

3.3.8.2. Noise and Vibration

The local noise standards are established by SanPiN 0267-09 "Sanitary norms and rules on providing the allowable noise in premises of residential and public buildings and in the territory of residential buildings", which are applied to residential/commercial areas in Uzbekistan and SanPiN 0325-16 "Sanitary norms of permissible noise levels at workplaces" are used to protect personnel health at workplaces. The World Health Organisation (WHO) also provides broad guidance on suitable environmental noise levels for a range of receptors. Guideline values for community noise in specific environments are detailed in its publications 'Guidelines for Community Noise' and 'Environmental Health Criteria 12 - Noise'. Both standards are presented in Table 6 and are aligned.

Table 6: National and WHO Noise Limits

Receptor/Source	National Noise Level Standards (LAeq in dBA) /WHO Guidelines Values	
	Day time (07.00-23.00) / (07.00-22.00)	Night-time (23.00-07.00) / (22.00-07.00)
Areas directly adjacent to residential buildings, health facilities, pre-schools, schools and other educational institutions, libraries	55 / 55	45 / 45
Classrooms of schools, teachers' rooms, and other educational institutions, library	40/35	

Receptor/Source	National Noise Level Standards (LAeq in dBA) /WHO Guidelines Values	
	Day time (07.00-23.00) / (07.00-22.00)	Night-time (23.00-07.00) / (22.00-07.00)
Rooms of pre-schools	40/35 ¹⁶	
Rooms in health facilities	35	25
Offices of health workers in health facilities	35	
Industrial area (workplace)	80	

The WHO guideline values consider the potential impact of noise on the quality of life and other aspects necessary for physical and mental wellbeing. Occupational H&S regulation

Vibration level in residential houses is provided in Sanitary Norms and Rules (SanPiN) № 0146-04 "Design of the living houses in climatic conditions of Uzbekistan". For residential properties, the standards are 67 dB for night-time and 72 dB for daytime with 37 and 61 Hz frequency. For the non-continuous vibration, the standards should decrease by 10 dB.

3.3.9. Occupational Health and Safety

All employers in Uzbekistan must also comply with the Law of the Republic of Uzbekistan "On Labor Safety" and the basic principle of state policy in the field of occupational safety and health - the priority of life and health of employees over the results of industrial activity. In addition, normative documents on construction norms and rules KMK 3.01.02-00 Safety engineering in construction" is the main regulatory document obliging employers to create all the necessary conditions for the safety of workers. This document describes requirements for personal protective equipment (PPE), sanitary facilities, first aid kits, food and water, and examination of employees' knowledge of safety rules (further information can be found in the Labor Management Procedure.).

3.3.10. COVID-19

Requirements for managing COVID-19 in Uzbekistan are constantly evolving. Contractor activities must always adhere to the guidelines and restrictions in place in Uzbekistan at the time of work and the COVID-19 risk assessments for the facilities where the works will take place. This may include implementing restrictive health and safety rules in indoor environments, testing programs, enforcing quarantine requirements or wearing face masks. The Uzbekistan national vaccination programme has started, and the Government uses a mixture of AstraZeneca, Moderna, Sputnik V and Sinopharm/Sinovac vaccines. The Government's official website for coronavirus information in Uzbekistan can be found at www.coronavirus.uz. An official Telegram channel is also available (<https://t.me/koronavirusinfouz>). These resources are available in Uzbek or Russian. The Ministry of Health of Uzbekistan's COVID-19 hotline number is 1003. The World Bank also has further guidance on COVID-19 precautions on construction sites in its ESF/safeguards

¹⁶ This value should be decreased to 30 dB(A) during sleeping hours of pre-school children in accordance with the 'Guidelines for Community Noise' of the WHO.

interim note: covid-19 considerations in construction/civil works projects available at 2020-10-01-11-04-ad9ef55c947057f54b4f4f76f5be54ff.pdf (portal.gov.bd).

3.3.11. Cultural heritage

The Constitution of the Republic of Uzbekistan states that "It is the duty of citizens to protect the historical, spiritual and cultural scientific and natural heritage of the people of Uzbekistan. The historical, spiritual, cultural, scientific and natural heritage shall be protected by the state" (Article 61). The Law of the Republic of Uzbekistan on the protection and use of objects of cultural heritage (#269-II of 30.08.2001, as last amended 19.04.2018). This law regulates relations in the field of protection and usage of the objective of archaeological heritages, defines ownership rights of such objectives and responsible entities, and provides a procedure for archaeological investigation of the objectives of archaeological heritage. It states (para 20) that under "saving of cultural heritages is considered their conservation, repairing, rehabilitation, adopting for current usage and conduction related scientific-production research, design and production works". Official permission from the Agency of Cultural Heritage needs to be received before starting rehabilitation works at these properties. The Decree of the Cabinet of Ministries of the Republic of Uzbekistan "About measures on further development protection and usage the historical heritages" (No.269 of 29.07.2002). This Decree regulates the registration procedure of objects that could be considered cultural heritage but have not been registered yet.

According to the abovementioned legislation, for any project works related to the rehabilitation of registered cultural heritages or work near to such objects, permission needs to be received from the province level branch of the Agency of Cultural Heritage for the: (i) conduction of works inside heritage sites, and (ii) conduction works which could be in any buffer zone relating to a heritage site. Such permission needs to be received before starting construction or rehabilitation works by the project initiator - local hokimiyats.

3.3.12. Temporary Permits

Table 7 outlines potential permits that may be applicable to the project and obtained before starting construction works. Each sub-project will have its unique requirements, and therefore local permit obligations will need to be checked at the sub-project level with the relevant local issuing authorities.

Table 7: Possible temporary Permit requirements applicable to the works.

Permit / Required Activity	Permit Title	Issuing Authority	Implementing Law	Responsible Party for Obtaining License
Construction activities	Construction Permit	Khokimiyats of the Project region	<ol style="list-style-type: none"> 1. Law "On licensing, permitting and notification procedures", No. ZRU-701 of 14.07.2021. 2. Decree of the Cabinet of Ministers "On measures to further improve the procedures for providing free land plots for entrepreneurial and urban planning activities", 	Recipient

Permit / Required Activity	Permit Title	Issuing Authority	Implementing Law	Responsible Party for Obtaining License
			No. 1023 dated 12.20.2019.	
Construction activities ¹⁷	Construction Permit (Positive Conclusion of State Ecological Expertise)	Ministry of Ecology, Environmental Protection and Climate Change	1. Law "on Environmental Expertise", No. 73-II of 25.05.2000 2. The Resolution of Cabinet of Ministers of Uzbekistan № 541 of 07.09.2020: "On Approval of the Regulation on State Environmental Expertise."	Recipient
Construction activities	Cultural Heritage Clearance	Agency of Cultural Heritage of Uzbekistan	3. Law on the Protection and Use of Cultural Heritage Objects (2001)	Recipient
Water use and water consumption	Permit for special water use or water consumption	Ministry of Mining Industry and Geology	4. Administrative regulations of rendering the state services in the issue of permission to special water use or water consumption according to appendix No. 3 of The Resolution of Cabinet of Ministers of the Republic of Uzbekistan No. 255 (2018).	Recipient

3.3.13. Social Protection Laws

The Constitution of Uzbekistan refers to social protection as one of the basic human rights. The right to social security and social services is defined in more detail in several laws, decrees, and resolutions:

- Law “On Social Partnerships” No. ZRU-376 of 25.09.2014
- Law “On Combating Human Trafficking” No. ZRU-633 of 17.08.2020
- Law “On Social Services for Elderly, Disabled, and Other Socially Vulnerable

¹⁷ Based on the Resolution of the Cabinet of Ministers of the Republic of Uzbekistan No. 541 of 07.09.2020 "On Approval of the Regulation on State Environmental Expertise", the Project works (energy modernization of existing public buildings) are not included in the list of activities which are subject to the State Ecological Expertise. However, this Regulation states that activities not included in the list are subject to State Ecological expertise, whereby the category of a particular activity is determined based on materials submitted to the Expert Council under the Ministry of Ecology, Environmental Protection and Climate Change (MEEPCC) or based on the field survey results conducted by specialist of MEEPCC. Therefore, considering the above, it is necessary to consult with the MEEPCC at the design stage to determine the environmental impact category of the Project activities and further procedures on the State Ecological Expertise.

Categories of the Population” No.ZRU-415 of 26.12.2016

- Law “On the Guarantee of the Rights of the Child” No. ZRU-139 of 07.01.2008
- Law “On Protection of Women from Harassment and Abuse” No. ZRU-561 of 02.09.2019
- Law “On Guarantees of Equal Rights and Opportunities for Women and Men” No. ZRU-562 of 02.09.2019
- Law “On the Rights of Persons with Disabilities” No. ZRU-641 of 15.10.2020

3.3.13.1. Labour and Employment Laws

The labour policy in Uzbekistan is applied at the national government level and is reflected in the following laws, regulations, and national social programmes.

- Labour Code of the Republic of Uzbekistan 1995 as amended on 01.04.2023
- Law on Occupational Health and Safety No. ZRU-410, as amended and approved on September 22, 2016
- Law “On the employment of the population” No. 642 as of 20.10.2020
- Joint Decree of the Ministry of Employment and Poverty Reduction (No. 33 K / B) and the Ministry of Health of the Republic of Uzbekistan (No. 13) "On approval of the list of jobs with unfavourable working conditions, where the employment of persons under 18 years is prohibited", registered by the Ministry of Justice of the Republic Uzbekistan, dated July 29, 2009, No. 1990
- Decree No. 133 as of 11 March 1997 approves normative acts necessary for the realization of the Labour Code of the Republic of Uzbekistan
- Decree of the Cabinet of the Ministers No. 1011 as of 22 December 2017 "On Perfection of the Methodology of Definition of Number of People in Need of Job Placement, including the Methodology for Observing Households concerning Employment Issues, also for the Development of Balance of Labour Resources, Employment and Job Placement of Population"
- Decree of the Cabinet of the Ministers No. 965 as of 5 December 2017 "On the Measures of Further Perfection of the Procedure of Establishment and Reservation of Minimum Number of Job Places for the Job Placement of Persons who require Social Protection and Face Difficulties in Searching Employment and Incapable of Competing in Labour Market with Equal Conditions"
- Decree No. 964 as of 5 December 2017, "On the Measures for Perfection of the Activity of Self-Government Bodies Aimed at Ensuring Employment, firstly for the Youth and Women"

The Republic of Uzbekistan's Ministry of Employment and Poverty Reduction is the main state institution responsible for labor, employment, and social protection policy making. The ministry is tasked with developing and regulating the labor market and ensuring the employment of the population, regulation of labor relations and labor protection, provision of social services for the population, and medical-social rehabilitation of persons with disabilities. Further information can be found in the LMP (May 2024).

3.3.13.2. Laws on Access to Information

- Law of the Republic of Uzbekistan No. 400-I as of 24 April 1997 “On guarantees and freedom of access to information”;
- Law of the Republic of Uzbekistan No. 439-II as of 12 December 2002 “On the principles and guarantees of freedom of information”;
- Law of the Republic of Uzbekistan No. 378 as of 3 December 2014 “On the appeals of individuals and legal entities” (it was edited on 11 September 2017 by the Law No. 445 “On introducing amendment and additions to the Law of the Republic of Uzbekistan “On the appeals of individuals and legal entities”);
- Law of the Republic of Uzbekistan No. 369 as of 5 May 2014 “On the openness of the activities of public authorities and Management”;
- Law of the Republic of Uzbekistan No. 78 as of 15 January 2007 “On introducing amendments and additions to the Law of the Republic of Uzbekistan “On the mass media”;
- Law of the Republic of Uzbekistan No. 547 as of 2 July 2019 “On personal data”.

Further information can be found in the SEP (May 2024).

3.4. International Labour Conventions

As a member of the International Labour Organization (ILO) since 1992, Uzbekistan has ratified 17 ILO conventions, including the eight fundamental conventions:

- C029 - Forced Labour Convention, 1930 (No. 29)
- C087 - Freedom of Association and Protection of the Right to Organise Convention, 1948 (No. 87)
- C098 - Right to Organise and Collective Bargaining Convention, 1949 (No. 98)
- C100 - Equal Remuneration Convention, 1951 (No. 100)
- C105 - Abolition of Forced Labour Convention, 1957 (No. 105)
- C111 - Discrimination (Employment and Occupation) Convention, 1958 (No. 111)
- C138 - Minimum Age Convention, 1973 (No. 138) Minimum age specified: 15 years
- C182 - Worst Forms of Child Labour Convention, 1999 (No. 182)

Further information can be found in the LMP (May 2024)

3.5. Relevant International Environmental Conventions

Uzbekistan has ratified the following international conventions relevant to the Project. Notably Uzbekistan has not ratified the Rotterdam Convention relating to hazardous material use.

Convention name
ENVIRONMENT / CLIMATE CHANGE
United Nations Framework Convention on Climate Change (UNFCCC) (New York, 1992) (Official Gazette of RM no. 61/97) including Paris Agreement (joined April 2017)

Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (12/22/1995)
Vienna Convention for the Protection of the Ozone Layer (1985).
Montreal Protocol to Protect the Ozone Layer (including 1990 and 1999 amendments)
Convention on Access to Information, Public Participation in Decision Making and Access to Justice in Environmental Matters (Aarhus Convention) (Official Gazette of RM no. 40/99)

3.6. World Bank environmental and social standards

The World Bank ESF sets out the World Bank’s commitment to sustainable development through a Bank Policy and a set of Environmental and Social Standards designed to support Borrowers’ projects to end extreme poverty and promote shared prosperity.

The Environmental and Social Standards (ESS)¹⁸ set out the requirements for Borrowers relating to identifying and assessing E&S risks and impacts associated with projects supported by the Bank through Investment Project Financing. The standards aim to support Borrowers in achieving good international practice relating to environmental and social sustainability; assist Borrowers in fulfilling their national and international environmental and social obligations; enhance non-discrimination, transparency, participation, accountability and governance; and enhance the sustainable development outcomes of projects through ongoing stakeholder engagement. The Bank believes that applying these standards, by focusing on the identification and management of environmental and social risks, will support Borrowers to reduce poverty and sustainably increase prosperity for the benefit of the environment and their citizens.

The ten Environmental and Social Standards (ESS) and their applicability to the Project are summarised in **Error! Reference source not found.** below concerning the ESRC (2021). Those that are applicable are explained in more detail below the table. Further information on the requirements of the ESS can be obtained at <https://www.worldbank.org/en/projects-operations/environmental-and-social-framework/brief/environmental-and-social-standards>.

¹⁸ www.worldbank.org/en/projects-operations/environmental-and-social-framework/brief/environmental-and-social-standards

Table 8: Applicability of the WB ESSs for the Project

ESSs	Relevant (Yes / No)	Scope	Notes
ESS 1 – Assessment and Management of Environmental and Social Risks and Impacts	Yes	All sub-projects	Individual sub-project exact scope and locator are unknown at this time. Therefore, project and subsequent sub-project level assessment, management and monitoring proportionate to the level of risk are required. A Project level assessment of risks and issues is provided in Chapter 4, with ongoing sub-project level requirements defined in Chapter 5 below.
ESS 2 – Labor and Working Conditions	Yes	All sub-projects	The project will require both skilled and unskilled labour activity requiring management of labour resource matters in line with the ESS2 and national regulations. Also addressed in the Project LMP.
ESS 3 – Resource Efficiency, Pollution Prevention and Management	Yes	All sub-projects	All sub-projects will use raw materials, energy, and potentially low volumes of water. They will also generate air pollution (dust) and hazardous and non-hazardous wastes. These impacts will require managing according to national regulations, ESS3 and GIIP.
ESS 4 – Community H&S	Yes	All sub-projects	While the risk is generally very localised, there is potential to impact receptors working and residing within the buildings until the renovation, and therefore this ESS is triggered. There are also expected to be some very limited impacts on the wider community in addition to users of the building and facilities under renovation.
ESS 5 - Land	No	n/a	It is anticipated that the land needs will remain within the fence line of existing installations. Sub-projects that require land acquisition or resettlement will not be considered for this Project. Therefore, this ESS is not triggered. Verification of land acquisition needs will be included as part of the Environmental and Social Screening Checklist (see Annex A) for each sub-project to confirm that ESS5 is not relevant and to screen out any activities to which ESS5 may apply (including economic displacement).

ESSs	Relevant (Yes / No)	Scope	Notes
ESS 6 - Biodiversity	No	n/a	The planned activity is not considered a risk of direct impact on protected areas, critical or natural habitats, or priority ecosystem services. These specific risks are not considered further.
ESS 7 - Indigenous Peoples	No	n/a	National laws, specifically the Constitution of the Republic of Uzbekistan, do not officially recognise any Indigenous Peoples (IPs). There are no known communities expected to live in the direct AOI of the Project that meet the criteria characterised in ESS7.
ESS 8 – Cultural Heritage	Yes	All-sub-projects	This ESS may be triggered on a sub-project basis depending on the findings of the sub-project screening for cultural heritage risk relating to the protection status of the proposed building where Activity is proposed and whether the works will impact this designation.
ESS 10 – Stakeholder Engagement and Information Disclosure	Yes	All-sub-projects	An important component of the Project. It will need to be well managed to ensure stakeholders are aware of project timelines, risks and impacts. Also addressed in the Project SEP.

3.7. World Bank Group Environmental, H&S Guidelines

Potential World Bank Group Environmental, H&S Guidelines (EHSGs) to the project are as follows and must be further defined at the sub-project level. The following guidelines depend on the sub-project requirements and will be defined at the sub-project level ESMP (as defined in Chapter 5).

- World Bank Group (WBG) Environment, Health, and Safety Guidelines including:
 - WBG General EHS Guidelines (April 2007) which cover the four areas of environmental; occupational health and safety (OHS); community health and safety (CHS); construction and decommissioning (as elaborated below).
 - WBG EHS Thermal Power plant (2007) & (2017 – draft)
 - WBG EHS Health Care Facilities (2007)

Emissions guidelines for new boilers as set out in the WBG EHS guidelines for Thermal Power plants are reproduced below for application where relevant.

Table 6 (C) - Emission Guidelines (in mg/Nm ³ or as indicated) for Boiler							
Combustion Technology / Fuel	Particulate Matter (PM)		Sulfur Dioxide (SO ₂)		Nitrogen Oxides (NO _x)		Excess Dry gas O ₂ Content (%)
	NDA	DA	NDA	DA	NDA	DA	
Natural Gas	N/A	N/A	N/A	N/A	200	180	3
Other Gaseous Fuels	50	30	400	300	240	200	3
Liquid Fuels (Plant ≥50MWth to <600MWth)	50	30	400 – 1000 ^(a)	400	400	200	3
Liquid Fuels (Plant ≥600MWth)	40	25	200 – 600 ^(a)	200	400	200	3
Solid Fuels (Plant ≥50MWth to <600MWth)	50	30	400 – 1000 ^(a)	400	500	200	6
Solid Fuels (Plant ≥600MWth)	40	25	200 – 600 ^(a)	200		200	6

Notes:

- Guideline values are applicable for new facilities
- Nationally legislated limits should be applied if they are more stringent
- EA may justify more stringent or less stringent guideline values due to environmental, community health, technical and economic considerations, whilst not exceeding nationally legislated limits
- In all cases, the EA should demonstrate that ambient impacts from emissions are in compliance with the requirements of Section 1.1 of the General EHS Guidelines.
- For fuels other than those specified below, the EA should justify the required emission guidelines taking account of environmental, community health, technical and economic considerations
- For projects to rehabilitate existing facilities, emission guidelines should be established by the EA considering (i) the existing emission levels and impacts on the environment and community health, and (ii) economic and technical feasibility of ensuring the existing emission levels meet the Guideline values for new facilities.

General notes:

- MWh = Megawatt thermal input on HHV basis.
- N/A = not applicable.
- NDA = Non-degraded airshed; DA = Degraded airshed; Airshed should be considered as degraded if relevant ambient air quality standards (as defined in the General EHS Guidelines) are exceeded; DA/NDA to be determined for each pollutant.
- Nm³ is at one atmospheric pressure, 0 degree Celsius, dry gas.
- MWh category is to apply to the entire facility consisting of multiple units.
- Guideline values apply to facilities operating more than a combined total of 500 hours per year (i.e., if multiple units are present, the combined total of all operational units at the facility).
- See Section 2.1 for information on how facility performance is compared with these emission guidelines. The use of fuels with a low volatile content may lead to higher emission levels of NO_x which should be justified in the EA.
- In the event that natural gas contains elevated sulfur levels, SO₂ emissions should be no greater than that for liquid fuels.
- PM defined as total suspended particulates.

Comparison of the Guideline values with standards of selected countries / region (as of January 2017):

- Natural Gas-fired Boiler – NO_x
 - EU: 100mg/Nm³
 - US: 88ng/J gross energy output
 - China: 100mg/Nm³
- Solid Fuels-fired Boiler - PM
 - EU: 20mg/Nm³, 10 (> 300MWth for coal and lignite)
 - US: 11ng/J gross energy output
 - China: 30mg/Nm³
 - India: 350mg/Nm³ (<210MWth), 140mg/Nm³ (=>210MWth)
- Solid Fuels-fired Boiler – SO₂
 - EU: 400mg/Nm³ (50 – 100MWth), 200mg/Nm³ (>300MWth)
 - US: 130ng/J gross energy output or 97% reduction
 - China: 50 – 200mg/Nm³ (subject to location)

Source: EU (Directive 2010/75/EU), US (40 CFR Part 60 Subpart JJJJ), Final Rule – June 13, 2007), China (GB13223-2011), India (The Environment (Protection) Rules, 1986).

The Project must also refer to relevant Good International Industry Practice (GIIP) including, but not limited to:

1. Voluntary Principles on Security and Human Rights (est. 2000); (<http://www.voluntaryprinciples.org/>).
2. United Nations Guiding Principles for “Protect, Respect and Remedy” Human Rights Framework (2011); (<https://www.business-humanrights.org/en/un-secretary-generals-special-representative-on-business-human-rights/un-protect-respect-and-remedy->

framework-and-guiding-principles).

3. United Nations Code of Conduct for Law Enforcement Officials; and (<https://www.un.org/ruleoflaw/blog/document/code-of-conduct-for-law-enforcement-officials/>).
4. United Nations Basic Principles on the Use of Force and Firearms by Law.
5. Use of Security Forces: Assessing and Managing Risks and Impacts (February 2017).
6. Worker's Accommodation: Processes and Standards (Guidance Note by IFC and EBRD, 2009); and
7. Stakeholder Engagement: A Good Practice Handbook for Companies Doing Business in Emerging Markets, 2007.

3.8. Summary of Gaps between World Bank and National requirements

Table 9 summarises the key gaps noted between World Bank ESSs and the national requirements. Given the nature of the Activity and the local level impacts, the gap analysis is focused on the areas specifically relevant to the Project.

Table 9: High-level summary of gaps between national regulation and WB ESSs

ESS Requirement	National Law	Gap and outline how it is addressed in this ESMF.
ESS 1 requires an assessment of risk through ESIA or, where this is not relevant, E&S audit or hazard and risk assessment. Management obligations are required for all projects via ESMP or ESMF (where individual sub-project risks are not currently defined). ESS1 also makes provisions against certain requirements for the capacity of those implementing projects	Under national law, the specific works are not subject to categorisation, and therefore no E&S assessment is required. Individual E&S aspects are managed under different laws but are not required to be managed in an integrated management approach.	All sub-projects will be required to undertake a site screening of E&S risks and impacts and the preparation of a site-specific ESMP. Component 2 of the works addresses institutional capacity and strengthening.
ESS 2 requires labor related risks, including H&S, to be managed and apply labour laws aligned with ILO core labour standards regarding core employees, contracted workers, primary supply workers and community workers.	Most of the issues relating to labor and working conditions, as highlighted in ESS 2, are covered by national law. Uzbekistan has ratified all the ILO core labour standards.	No major gaps. However, measures to ensure consistent and transparent implementation of labor laws and ESS2 requirements are required. A Labor Management Procedures (LMP) is prepared to manage labor risks (see Project LMP).

ESS Requirement	National Law	Gap and outline how it is addressed in this ESMF.
Occupational H&S	H&S aspects, especially regarding the construction industry, are further covered through comprehensive health and safety legislation; however, the requirement for H&S management plans is not totally aligned with GIIP construction safety practices.	No specific gaps. However, GIIP requirements are outlined in Chapter 5 for integration into the sub-project OHS risk assessment and ESMP to be prepared for the subproject.
ESS 3 natural resources must be used to minimise the exploitation as far as possible. Where released to air, water, or land (waste) are generated, these must be managed according to GIIP.	Pollution prevention and management locally are primarily governed by national regulations and Sanitary norms. For the most part, standards are defined that comply with GIIP; however, the governance and the infrastructure for implementing these requirements contain gaps.	Specific information in the ESMF of GIIP for application to the Project where gaps exist.
ESS 4 addresses potential risks and impacts on communities affected by project activities, including climate change, traffic, diseases, hazardous materials and emergency events.	National legislation requires an EIA for some projects. It does not require the same level of detail as the ESSs.	Possible risks and impacts as identified in the ESS 4 will be assessed, commensurate with the type of project. Measures to address these impacts will be included in the site-specific ESMP.
ESS 8 - WB requires that sites and artefacts that are part of people's cultural identity be covered under this requirement and nationally recognized sites.	National regulation identifies protected artefacts and buildings and places restrictions on use.	For this project, it is unlikely the culturally relevant sites will be impacted, given the institutions that will be selected. However, this will be assessed on a case-by-case basis and the institution's national cultural heritage status.
ESS 10 requires Stakeholder engagement throughout the project design, construction and operations	There are no specific Uzbek requirements for consultation except for a public consultation required to disclose the national EIA, which is not applicable for the type of sub-projects required for this Project.	A Stakeholder Engagement Plan (SEP) is prepared to inform engagement with stakeholders throughout the project lifetime (see Project SEP).

4. Potential environmental and social risks and application of ESSs to project components

4.1. Summary of Project Components

The project will fund the following Activities:

- Insulation of buildings (roofs and walls) and renovation of building envelopes
- Replacement of low efficient gas fired boilers with highly efficient gas fired boilers
- Retrofitting/replacement/installation of HVAC systems and lighting systems
- Replacement of coal fired boilers with integrated solar PV with more energy efficient heat pumps and/or solar collectors where feasible

Based on the screening of applicable ESSs, the ESMF has outlined the E&S risks for each activity.

4.2. Potential E&S risks

The potential E&S risks are summarised in Table 10 and separately described for each activity in the following sections. As many of the risks and subsequent impacts will be similar for each Activity, they will be discussed in full for the first Activity and then summarized for the remainder of the activities with only new risks and impacts highlighted.

Table 10: Potential E&S Aspects relevant to the Activity

Environment	Social	Occupational H&S	Community H&S
<ul style="list-style-type: none"> ● Dust ● Wastewater discharges and ambient water quality ● Hazardous material use ● Waste generation ● Noise pollution ● Contaminated land (including geology, hydrogeology, 	<ul style="list-style-type: none"> ● Socio-economic ● Labour ● Cultural heritage ● Stakeholder engagement ● Temporary relocation of students, patients, small businesses. ● Disruption of medical services and classes 	<ul style="list-style-type: none"> ● General facility design and operation ● Communication and training ● Physical hazards ● Chemical hazards (including asbestos¹⁹) ● Biological hazards ● Radiological hazards ● Working at height ● Hot Activity ● Personal Protective Equipment (PPE) 	<ul style="list-style-type: none"> ● Structural safety of project infrastructure ● Life and fire safety ● Traffic safety ● Transport of hazardous materials ● Emergency preparedness and response (community) ● Lack of needed medical attention due to disruption of hospital operations ● Spread of infectious diseases

¹⁹ Concerning asbestos, we will only comment on the potential for asbestos and report information provided by the current operators. Our ESA does not constitute a detailed asbestos audit.

Environment	Social	Occupational H&S	Community H&S
and groundwater)		<ul style="list-style-type: none"> • Emergency preparedness and response • Sexual exploitation and abuse (SEA)/Sexual Harassment (SH) 	SEA/SH

4.3. Potential receptors (site and closest off-site receptors)

The proposed activities will be within kindergartens, day-care facilities, public primary, secondary, and high schools; dormitories; student hostels; specialized schools (e.g., sports and cultural schools), and central, regional, and municipal hospitals; rural clinics; and associated administrative buildings.

The main receptors include the users of these facilities (patients and children), the facilities' staff and administration (on-site receptors), and the closest offsite receptors.

On-site receptors may include particularly vulnerable receptors, including young children and people who are sick and injured. These receptors may have little tolerance for noise, dust, or other construction nuisances. There may also be situations where shutting the electricity off to undertake construction Activity could have negative consequences for these receptors, as they may have lifesaving equipment that needs to be kept running or drugs that need to be maintained at certain temperatures, or individuals may be particularly susceptible to cold or hot temperatures if boilers or air conditioning is to be switched off.

Unlike residential areas where it is best for construction to be undertaken during the day so as not to disrupt resident's sleep, it is possible on-site receptors at these locations may be more impacted during the day by construction (particularly at day-cares and kindergartens during nap times) as most of the functions of the facilities are undertaken during the day or in the case of schools during the school holidays.

Offsite receptors will include nearby residential, commercial and industrial facilities. The extent of their impact will depend on the exact nature of the scope. Some of these facilities may have varying degrees of sensitivity to the Works based on their vulnerability and the nature of the activity undertaken. The sub-project screening checklist (annexe A) requires these receptors to be defined, including the type, nature, and vulnerability. The subsequent sub-project ESMP can employ adequate management and mitigation measures.

Throughout the subsequent review of impacts, it is considered that receptors, in general, are vulnerable and have a high sensitivity to the activities proposed.

4.4. Potential environmental and social negative impacts (all Activities)

4.4.1. ESS1 - Impact assessment and evaluation of risk

4.4.1.1. Construction EHS Management Risks (all Components)

Since the Activities will be confined within buildings of pre-schools, schools and health facilities, these activities are not required to undergo a formal environmental impact assessment (EIA) based on the environmental legislation of the Uzbekistan Republic²⁰.

The implementation of Project-funded activities is not expected to have any significant negative operational environmental and social impact. However, there are likely to be some concerns relating to E&S impacts and nuisances to surrounding areas during construction and procurement, which will require careful planning and management. The relevance and significance of the E&S impacts will depend on the activity's exact scope and the environmental and social context where the sub-project Activity will be located.

In the absence of a formal ESIA process, each sub-project must undergo a sub-project site E&S screening exercise (see Annex A for the screening checklist). The purpose of the checklist is to focus on the site-specific construction environmental and social management plan (ESMPs) of sub-projects.

During construction and rehabilitation, the Activity will be performed in and limited to the existing facilities, and no new buildings will be developed. In some facilities, the retrofitting works may require works to existing foundations, columns and beams, including strengthening of roofs. It is not expected that any additional land acquisition will be required to support this need. Only concrete/epoxy injection, replacement and repair of walls, windows, and other accessories may be necessary for other sub-projects. In general, the work is temporary and has a short-term and unavoidable character. The work can be managed and mitigated by applying site-specific ESMPs and good international industry practice (GIIP), as elaborated in subsequent sections below. The requirements for a site-specific ESMP are outlined in Annex B, covering such topics as pollution prevention, spill control, hazardous material management, etc. Supporting sub-plans (as noted in section 5) may include one or more of the following, as needed, or relevant risk and impact mitigation measures will be included as part of the site-specific ESMP depending on scope and type of impacts of each subproject:

- Noise and vibration management plan
- OHS management plan
- Waste Management Plan (Hazardous and non-Hazardous Waste) (WMP)
- Fire and Life Safety Plan (FLSP)
- Asbestos-Containing Material Management Plan (ACMMP)
- Traffic Safety Management Plan (TMP)
- Emergency Preparedness and Response Plan (EPRP)
- Community Health Management Plan
- Sub-project Stakeholder Engagement Plan (SEP) as defined in Project SEP.

²⁰ The Resolution of the Cabinet of Ministries of the Republic of Uzbekistan №541 "On further improvement of the environmental impact assessment mechanism" (2020)

4.4.1.2. Operation EHS management risks (all Components)

Once the upgrade activity has been performed, the E&S impacts during “operation” are considered to revert to the typical risk and impacts associated with the operation of the Facility are not expected to change in any way because of the upgrade Activity²¹.

The Work itself does not have ongoing E&S impacts into the operations phase, except in the case of emission monitoring for gas-fired boilers of a certain size. However, the general operation of the assets or ongoing maintenance of the buildings related to the Activity does represent a potential risk for future “operational” non-compliances with the requirements of the ESSs. Therefore, improvements or actions related to the day-to-day operation and maintenance of the buildings to bring them in line with the ESSs are recommended by establishing an environmental and social management plan (ESMP) scaled to the nature and size of the institution's organization and integrated where possible into any existing management systems for delivering and quality of healthcare services and staff and patient safety or education facilities. The ESMP should align with the accepted international framework for quality and environmental management systems, such as ISO 9001 and ISO14001) and a H&S Management system aligned with the international framework for H&S (ISO 45000).

Areas, where improvements may be made, include: i) addressing common environmental management issues (e.g. waste management (specifically hazardous (medical) waste management) following GIIP, hazardous materials storage, the use (including the identification, management of hazardous materials (including asbestos), energy use monitoring, ii) occupational H&S (OHS), iii) labor management and grievances and Code of Conduct, iv) management of community risks and impacts.

Institutional measures that may be lacking during implementation and require capacity building are outlined below:

- E&S policy
- Energy use/water use monitoring program
- Inadequate wastewater treatment and disinfection before discharge, leading to surface or ground water contamination
- Improper management of radioactive sources and retired equipment
- Lack of oversight of recruitment agencies for nurse staffing, with the associated risk of forced labour
- Lack of protection of migrant workers (e.g., in-home nurses or caretakers)
- Inefficiently planned work schedules leading to excessive working hours, inadequate rest periods, and insufficient time off
- Excessive overtime not properly compensated
- Exposure to violence and sexual harassment
- Lack of awareness or due diligence of supply chain labor risks in hospital procurement processes due to focus on cost minimization (e.g., risk of child labor or forced labor in factories that produce hospital linens)
- Lack of emergency potable water reserves for the community

²¹ This is separate from the obvious benefits of the Project relating to EE as described in the above section which are realised during the operation phase.

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- Air emissions, odors and mists/fumes from improper air handling leading to cross contamination and pathogen transmission
 - Increased vehicle traffic around health care facilities from patients, employees and visitors leading to congestion and the risk of accidents
 - Increased emergency vehicle traffic and associated noise.

More generally, a requirement to strengthen the overall H&S Management System (HSMS) within different Facilities is also recommended to address system-wide requirements relating to OHS training, documentation, reporting incidents, emergency preparedness and control, gender requirements etc. Capacity training in this regard is defined in Chapter 7.

4.4.1.3. *Emergency preparedness and control*

Activities that may result in an emergency include:

- Personnel injury.
- Project evacuation.
- Fire or explosion/major structural or equipment failures.
- Natural disasters, e.g., earthquakes.

A site-specific Emergency Response Plan (ERP) will need to be prepared by contractors for each sub-project site to protect workers and public health and safety, and the environment on and off the Project site in the event of a major natural disaster or industrial accident relating to or affecting the Facility is required an outlined in Chapter 5. This must be aligned with any EPRP in place at the Facility.

4.4.2. **ESS2 Labour (all projects)**

Workers are susceptible to impacts relating to working terms and conditions and welfare. National labour requirements broadly align with ESS 2; however, implementing this at the sub-project level remains a risk and must be monitored. Each sub-project must outline a worker's grievance process that all workers can access.

Project workers to be engaged to undertake the Works are likely to include a mix of skilled professionals hired by the sub-Project Contractors. No unskilled temporary, seasonal, migrant or community workers are expected to be used during the installation phase. Opportunities for unskilled local hiring are low.

Contractor workers are expected to be employed under contractual arrangements of Uzbekistan or their home county. For direct workers employed within Uzbekistan, the national law is consistent with the key objectives of ESS2, and Uzbekistan has signed all the core ILO conventions applicable to the Work and which inform ESS2.

Uzbek law recognises obligations for non-discrimination and equal opportunity and working conditions, the prohibition of SEA/SH, child labour and requirements to uphold minimum age obligations. In addition, National law recognises workers' rights to form and join workers' organisations of their choosing and bargain collectively without interference.

In Uzbekistan, trade unions are more common for state owned companies and not very common in private companies (Dentons, 2020). Regardless of this, the Contactor and

associated subcontractors will not prevent workers from forming associations or joining trade unions depending on their preferences. Also, workers shall be allowed to be involved in collective bargaining following Article 30 of the Labour Code as far as they comply with the established requirements for collective bargaining and agreements.

The national requirements for labour management are defined in Chapter 5 of this ESMF, including the right to a contract, upholding the rights of collective working terms and conditions, rest days, holidays, what information can be held on workers and confidentiality provisions as they relate to each category of worker. Although the risk of non-compliance is considered low based on the categories of workers expected to work on the project, there is a risk that there may be non-compliant worker practices, and therefore sub-project reporting of labour statistics and periodic labour audits against the requirements of national law are recommended and outlined further in Chapter 5.

4.4.3. Occupational health and safety (all projects)

Occupational H&S (OHS) deals with all aspects of H&S in the workplace and focuses on primary prevention of hazards. Its goal is to prevent accidents and harm to people from work-related activities. The nature of the work requires skilled workers to perform the roles; however, there may be some unskilled labor tasks, and these people may not have previous OHS training. The following hazards are identified as potentially relevant to the Activity:

- General OHS risks connected with the Activity (e.g., working at heights, using scaffolding, lifting requirements, confined spaces, electrical work etc.).
- Ergonomic hazards from carrying/lifting heavy materials and equipment.
- Exposure to excessive and continuous noise.
- Exposure to hazardous materials, including asbestos.
- Handling hazardous materials and wastes.
- Health - there is a slightly elevated risk of COVID-19 transmission when working in health facilities.
- Traffic accidents.
- Working with live electricity.

There may also be potential for workers not certified in the correct competencies to perform installation tasks resulting in accidents and injuries.

Worker health may be impacted because of the waste generated by the Project through poor handling and storage of general and hazardous wastes on-site and inadequate off-site disposal of general and hazardous wastes in municipal waste facilities. The specific risk may also arise in connection with asbestos, which is discussed further below.

A site-specific OHS risk assessment must be prepared for each sub-project, as outlined in Chapter 5, and a sub-project level H&S Management Plan (HSMP) or relevant risk mitigation measures, as part of the site-specific ESMP, are defined. This must outline specific guidance on the preventative and protective measures required following GIIP. The HSMP Plan must include requirements for suitable training levels, before the start of construction, at each site and regularly during construction (through toolbox talks).

4.5. Activity 1 - Insulation of buildings and renovation of the building envelope

Replacing the insulation of the building and renovation of the building envelope will take place on the interior and exterior of the building and, depending on the scope of work, may have a medium to long (up to one year or more) duration. The main impacts are identified as follows and discussed in more detail below:

- Equipment and material selection (including hazardous material use).
- Waste generation (including construction waste and removal of obsolete equipment and asbestos waste).
- Construction activities lead to localised nuisance effects on stakeholders (dust, noise).
- Construction activities may cause adverse effects to the H&S of construction workers (dust, asbestos), impact on receptors from the removal of heating system.
- Specific occupational and H&S risks will be present relating to working with gas and lifting heavy equipment. Specialized and trained workers will need to be employed to undertake this work and therefore, employment of local workers will be unlikely.

4.5.1. Resource use and pollution prevention

Equipment procurement and materials selection

ESS 1 requires the consideration of risk and impacts related to the entire project lifecycle. Decisions made at the design and procurement stage can significantly influence the significance of the E&S risk and impacts during construction, operation, and decommissioning. Decision making relating to the specification and procurement of materials for the Work can influence the significance of impacts and may lead to noncompliance with requirements during construction and operation.

The type of retrofitting Activity will be tailored based on the physical, geotechnical and structural analysis vis-à-vis actual conditions of each facility/building. The restructured building specifications can only be described during the detailed engineering design.

Nevertheless, impacts arising as a result of a week procurement process may include:

- Selection of insulation products that cannot achieve the required level of energy efficiency.
- Selecting cladding products that do not comply with GIIP can create a high L&FS risk for facilities if not certified in line with the national building codes and fire department regulations.
- Selection of material subject to international bans, e.g., asbestos, refrigerants or PCB contained oils.
- Goods, techniques and machinery purchases do not comply with the World Bank requirements and national standards on electrical equipment (because such a project is new for the country).

All-new infrastructure or equipment installation will likely be designed and constructed following national building codes and fire department regulations and standards and by competent persons, including relevant seismic codes and flood risk potential. However, in some cases, this may not be sufficient; for example, the current minimum requirement for the

level of thermal insulation of the new public building defined in the national regulation on thermal protection of buildings KMK 2.01.04-97 are below international best practices. In addition, there is a high risk that material specified for the Project may include ACMs subject to international bans or phaseouts. Relying on national standards for the specification of materials represents a high risk for the Project.

Material selection is also significantly influenced by the building use (residential, hospital or care homes) and the building height, and this must be considered. The selection of sub-standard insulation material or external wall cladding that may be combustible can significantly increase the risk to life and fire safety. In addition, the consideration as to whether receptors (residential, patient, school workers, school children) will reside or continue to use the facility during the renovation Activity all affect the potential significance of risk associated with the construction Activity itself and the resultant control measures (material selection, pollution prevention controls, H&S provisions etc.) required. L&FS certification of material used for insulation of all buildings must be required.

On a general level, inadequate design, construction, and maintenance of infrastructure systems to assure life and fire safety in health care facilities to which the public has access, and inadequate design, construction, and maintenance of detection and suppression systems, compartmentation, smoke control, and facility egress for patients/students, attendants and visitors with compromised manoeuvrability and mobility can have a significant impact on fire and life safety.

Asbestos Management

The risk of disturbance to existing asbestos during the works is considered high. The current age profile of the buildings earmarked for retrofit ranges between 10 to 70 years or older, which means there is a high risk of potential asbestos containing materials (ACMs) used as insulation or cladding or roof material that may be disturbed. Uzbekistan has not completely phased out the use of ACMs in cement boards.

Asbestos has significant H&S implications if not dealt with responsibly. Asbestos-containing material is a potential risk at the sub-project sites where roof tiles and building insulation materials may still be present in the building structure or removed but poorly handled or stored/disposed of on-site. These may be uncovered or disturbed during any upgrade activity involving cabling through ceilings or floors or removing insulation materials. Specialist contractors must be retained to address this risk. The potential for asbestos should be confirmed during pre-works inspections. Measures to identify, remove or contain the material put in place using specialist contractors are recommended before any activity commences. This must be in the form of an Asbestos Management Plan or relevant risk mitigation measures as part of the site-specific ESMP. (see further detail for managing asbestos risk in Chapter 5).

Materials Management (excluding asbestos)

Materials that will be utilized to retrofit buildings include cement, epoxy, aggregates, sand, steel braces/jackets, and reinforcing steel. The bulky materials (cement bags, aggregates, sand, steel braces/jackets and reinforcing steel) will require laydown space at the worksite. This activity may disturb nearby receptors and pose health and safety risks if not properly secured and managed. The risk is moderate without appropriate material management plans for material transportation, storage and handling.

Hazardous materials handling and use

Hazardous materials likely to be used during the Activity are identified as petroleum products, transformer oil, lubricating oils and solvents, coolants, paints, batteries, and fluorescent light bulbs. These materials are unlikely to be used or stored in sufficient quantities to trigger HAZID / HAZOP assessments. The impact significance is considered negligible to low with the adoption of GIIP measures for upgrade Activity. No significant quantities of hazardous materials, e.g., explosive or corrosive materials, are stored at any of the sites such that they would represent a risk to CHS.

Waste management

Sub-project works will generate waste materials, including hazardous waste such as construction and demolition waste, decommissioned electrical equipment, insulation and cladding material, concrete debris from chipping and stripping down of structural parts, pieces of rebars, wires, nails, broken glass, wood, pipes, empty containers of paint, solvents, strippers, epoxy resins, adhesives, degreasers, oily rags, used oil, spent welding electrode sticks/rods, busted lamps, possibly asbestos wastes, among others. There may also be food wastes generated by workers and other ordinary solid wastes (bits of paper, plastics, and packaging materials). In addition, they may include some hazardous waste materials, including arsenic, cadmium, lead and mercury and certain flame retardants.

Decommissioned waste electric and electronic equipment (WEEE), including monitoring and control equipment (capacitors) and lighting equipment, may also be generated. This may result in a complex mix of product types and materials, some of which are hazardous (including arsenic, cadmium, lead and mercury and certain flame retardants). WEEE recycling poses several health risks that need to be adequately managed in line with national regulations for disposal to hazardous landfills or sent for recovery based on options available in the country.

As presented in the baseline, the options for hazardous waste disposal following GIIP vary from region to region, which may result in the need to remove hazardous waste outside the region to ensure disposal options align with GIIP, resulting in a higher likelihood that proper waste disposal will be implemented.

4.5.2. Community health and safety

Specific changes to the health, safety and wellbeing of receptors and community members living and working around the planned Activity may include:

- Increased traffic volumes and the presence of heavy goods vehicles, road accidents, dust levels and deterioration of roads lead to impacts on the local community
- Changes to the integrity of structures and security, including fire and life safety risks for workers and public those who use, are under health treatment or are visiting patients in the public buildings (hospitals)
- Nuisance including dust, noise
- Temporary relocation of students, patients, and small businesses, disruption of medical services and classes)
- Temporary disruption of the normal operation of hospitals, schools, pre-school buildings
- Lack of needed medical attention due to disruption of hospital operations
- Physical hazards (falling debris/construction materials and equipment)
- Safety hazards due to unauthorized or mistaken entrance into work sites

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- Public health (effect on community H&S including sexual harassment and gender-based violence (GBV), the spread of COVID-19 and other communicable diseases, effect on occupational H&S) from an influx of workers and changes in security provision.

All the buildings (pre-schools, schools and health facilities) targeted under the project have social significance, and the receptors that use the facilities can be relatively vulnerable. Construction activities will potentially disrupt the people who use education and healthcare services.

The receptors in these buildings may be asked to move from a designated place inside the building for their safety and comfort or work from another location. For example, for schools and hospitals, the government education and health employees may be assigned to a different school or hospital, along with students and patients.

Based on the current practice for works in schools, the construction works are generally scheduled during school breaks or vacation periods when the buildings are vacant. In this way, disturbance to classes is avoided. Where this is not possible, likely at day cares and hospitals, the preference will be that the facilities are relocated to another suitable location for the duration of the construction phase.

The construction activities may occur over an extended period of up to 6 – 8 months; if this is the case, the location of temporary classrooms and health facilities should be well-planned to ensure the continuous operation of the building services.

It is possible that relocation may not be feasible (due to types of equipment required etc.) at some locations. These cases will be assessed on a case-by-case basis, and suitable times and activities will be identified for minimal disruption to the users of the facilities. Activity scheduling should be carefully managed and properly coordinated with the health facility administration for health facilities.

Other construction-related impacts may result from the Contractor's temporary office, storage area, oil and gas leaks from equipment, sanitary facilities, H&S issues related to the management of COVID-19 risks, and movement of trucks and equipment on the site during working hours and non-working hours in the schools and health facilities. These could pose occupational, and community H&S risks to workers, building occupants and surrounding communities. These activities will generate temporary and localized construction impacts and can be prevented or reduced to acceptable levels through proper planning and good international construction practices. Site-specific ESMPs to be prepared under the Project will include, as necessary, mitigation measures to reduce potential adverse impacts and risks to the public during constructions activities before the civil works begin.

Air quality (dust and fugitive gaseous emissions) (construction)

There are no point source emissions associated with any existing facilities or resulting from the planned Activity. Small mobile diesel generators may be required resulting in low emissions. Dust may be created by excavation, demolition of old equipment and structures, transportation of demolition and construction materials, and interior and external activities. Construction works in interior spaces (painting, surface preparation) can generate dust containing potentially harmful elements such as lead and carbon fibres and odour from applying epoxy resin, paint and solvent, which workers or nearby affected people can inhale. In addition, there may be dust, fumes from adhesives, polymers, and welding activities that could result in lung irritants (both workers and occupants/users of the Project facilities). The

impacts are expected to be localised, temporary and low magnitude; however, given the sensitivity of the receptors, it is necessary to manage construction dust and emissions in line with GIIP.

Noise (construction)

The Components are expected to generate noise emissions during work, including intermittent noise-producing activities (e.g., from vehicle movements and generators) and general construction-related noise caused by machinery or tools. The noise may present a nuisance, disrupt ongoing classes, or cause a nuisance to patients. The significance of the impact will vary based on the receptors remaining within the buildings; however, given the sensitivity of the receptors to noise (young children or older children, office workers, residents, out-patients versus in-patients etc.), it will be important to manage the impact of noisy activities in line with GIIP, and specific monitoring may be required.

Vibration (construction)

Chipping hammers, sanders, impact drills, air-powered wrenches, and saws of all types can all be sources of vibration that, if used repeatedly for long periods, could cause workers' hand-arm vibration injury, leading to exceedances in national norms and standards for vibration level. Vibration impacts may also cause a nuisance to students, patients or staff of the buildings, should receptors remain in the building during the construction phase. The significance of the impact will vary based on the receptors remaining within the buildings; however, given the sensitivity of the receptors and equipment (hospitals) to vibration (young children or older children, office workers, residents, out-patients versus in-patients etc.), it will be important to manage the impact of vibration activities in line with GIIP, and vibration monitoring may be required.

Traffic and transportation of construction materials (construction)

This includes transporting equipment, materials (including hazardous materials), wastes, and employees from the source to the site. Most of the equipment to be installed can be delivered via small vans or medium-size heavy goods vehicles. No abnormal load deliveries are envisaged. Given the location of the buildings in residential areas (schools) and in areas that are required to be kept clear for emergency vehicles and patients (hospitals), the sensitivity of the receptors to even small changes in traffic levels may result in a short term, but significant impact. Potential impacts may include:

1. Increased traffic flow on the road network in the immediate vicinity of the Activity leads to localised congestion and impacts along access roads and around the entrances to the Facilities, in connection with the volume of transportation required to deliver the cladding and insulation materials or transport of workers to and from the site,
2. Increased pollution (dust/sedimentation and run-off) during the transportation of materials leads to a deterioration in air quality,
3. Increased risk of road accidents/site traffic accidents due to unsafe driving habits, poor vehicle maintenance, poor condition of roads (potholes etc.),
4. Increased traffic flow on the road network and congestion for local road users due to medium and heavy goods vehicles transportation,
5. Increased greenhouse gas emissions from the operation of construction vehicles and mobile diesel generators.

Security

It is not anticipated there will be any addition or change in security provisions during the planned Activity. However, there may be a requirement to maintain the integrity of perimeter security at institutions such as schools, kindergartens or care homes where this is compromised due to planned Activity. Where this is the case, temporary security provision may cause an increased impact on local receptors regarding temporary removal of security provisions or impact due to the presence of security personnel in the school or health facility, leading to risks related to the peace and order and security of the area.

Labour influx

There is not expected to be a significant introduction of a non-local workforce as the works are spread across Uzbekistan. Work-related activities that would contribute to or result in the spread of communicable diseases are not envisaged. Although GBV/SEA/SH risks are prevalent in Uzbekistan, the nature of the Activity is not such that the small temporary labour influx is expected to present a significant risk of interactions that could exacerbate this risk. Most of the labour force will be national and are expected to be skilled, work in small numbers and work in-country for short periods.

Sexual Exploitation and Abuse/Sexual Harassment (SEA/SH)

No significant risks related to sexual exploitation and abuse/sexual harassment (SEA/SH) are expected as local workers will install equipment and insulation in schools and hospitals under the supervision of school and hospital staff, and the national laws and norms are adequate for addressing the risks.

Nevertheless, SEA/SH requirements must be reflected in all ESF instruments (i.e., site-specific ESMPs) in line with this ESMF. As part of the project's stakeholder consultations, those affected by the project will be properly informed of SEA/SH risks and project activities to get their feedback on project design and safeguard issues. The Stakeholder Engagement Plan (SEP) of the project, which will be implemented over the project's life to keep the local communities and other stakeholders informed about the project's activities, will also address SEA/SH related issues.

The grievance mechanism (GM) included in the SEP has multiple channels to initiate a complaint. SEA/SH grievances can be made confidentially. The Social Specialist will be responsible for the PMC's team to respond to SEA/SH concerns, including issues related to SEA/SH (e.g., supervising signing of Codes of Conduct (CoCs), verifying working GM for SEA/SH is in place, refer cases where needed). SEA/SH requirements and expectations will be clearly defined in the bid documents based on the project's needs, the World Bank's Standard Procurement Documents (SPDs), and the IA's policies and goals, which define the requirements to be included in the bidding documents for a CoC which addresses SEA/SH. Individual emergency preparedness and response measures for the sub-projects will also be integrated into the site-specific ESMPs.

4.5.3. Land Acquisition, Restrictions on Land Use and Involuntary Resettlement

No land acquisition and involuntary resettlement impacts are expected for the implementation of the Project and the WB ESS5 is not relevant to this Project. In case of temporary restriction of access to the facilities, it will be mitigated through implementation of the appropriate measures to be identified in the site-specific ESMPs.

4.5.4. Cultural heritage

The Activity is unlikely to impact any sites of significant cultural or archaeological significance. In general, ESS8 is not deemed to apply to the Activity except in the possible case that a building where the activity is planned has the designation of a protected building requiring additional permit and mitigation considerations to be integrated into the planned works. In particular, where the work impacts the building envelope. A requirement to perform a local screening to confirm any protections on buildings before Activity is recommended and, where necessary, consultation with the cultural heritage agency performed to understand any additional requirements.

The Activity is not expected to include any significant below ground excavations or earth movement except at the immediate location of existing foundations (strengthening Activity). The risk of unexpected below ground finds of cultural significance is deemed low. The risk of discovering previously unknown intangible cultural heritage at the work locations is also negligible. Although the cladding may change the visual impact, there will be no change to the landscape from replacing the insulation.

4.5.5. Stakeholder engagement

Stakeholder engagement is an important part of project implementation that should be undertaken across all project phases. Stakeholders will need to be consulted to provide information used to prepare the ESMP documentation, including specific information on when closures would have the least impact on the services. The ESMPs will also need to be disclosed to stakeholders for comment.

Each sub-project is also required to provide sufficient information about the potential risks and impacts of the project to its stakeholders. In addition, information on closures, relocations or changes to services of each of the facilities will need to be provided to its staff and users. For this project, we expect that stakeholder engagement will include, as a minimum, the following:

- Identification of the E&S impacts and mitigation measures in consultation with relevant stakeholders
- Disclosure for comment of the ESMP
- Public consultations on the ESMP (Annex H)
- Disclosure of the final ESMP
- Disclosure of notification of work commencing
- Notification to buildings users of relocation or changes to services
- Disclosure to local companies (local content opportunities)
- Disclosure of job opportunities
- A mechanism for contacting the institution in the event of a complaint or grievance

Each institution is likely to have some sort of communications protocol to manage its existing stakeholder grievance mechanism. There is also a need for an overarching Project grievance mechanism managed by the Stakeholder Engagement Specialist.

4.6. Activity 2 - Replacement of low efficient gas fired boilers with

highly efficient gas fired boilers

The replacement of low efficient boilers with highly efficient gas boilers is likely to have very limited E&S impact and will typically be of short duration (1 to 3 months) and be confined to the interior of the building/boiler house. The main impacts are identified as:

- Waste generation (including construction waste (hazardous and non-hazardous) and removal of obsolete equipment and asbestos waste)
- Construction activities lead to localised nuisance effects on stakeholders (dust, noise)
- Construction activities may cause adverse effects on the H&S of construction workers (dust, asbestos)
- Impact on receptors from the removal of heating system
- Specific occupational and H&S risks will be present relating to working with gas and lifting heavy equipment. Specialized and trained workers will need to be employed to undertake this work; therefore, local workers' employment will be unlikely.

In addition to the risk and impacts noted under Activity 1, the impacts noted under the following sections are also relevant.

4.6.1. Resource use and pollution prevention

Waste generation

In addition to the general waste described above, the decommissioned boilers are also likely to contain some hazardous substances (e.g., oils) and require specialist decommissioning and disposal. However, there may be an opportunity to set aside the old boiler parts as spares for other boilers. Often the new boiler will be installed in the same location as the existing boiler requiring little other infrastructure changes and waste as the new gas boilers are likely to be smaller than the existing boilers.

There may be a requirement to add new flues or pipework, and this may result in the need to remove or replace existing pipework and flues; therefore, in addition to metal waste from the pipes and ductwork, there is a high potential for exposure to ACMs and other hazardous materials generating hazardous wastes for disposal in the appropriate manner. In some cases, the waste management infrastructure may not be aligned with GIIP for the correct disposal of hazardous waste leading to a potential moderate impact.

4.6.2. Community health and safety

Some of the receptors, young children and the sick and elderly patients, may be particularly susceptible to cold temperatures. Therefore, removing the existing boiler will need to be closely coordinated with facilities to avoid any adverse impacts on these vulnerable receptors.

4.7. Activity 3 - Replacement of HVAC systems

The replacement of HVAC systems is predominantly confined to the interior of the building. Depending on the size of the building may be of short duration (1 to 3 months) or medium duration (3 to 6 months).

The main impacts are identified as follows and discussed further below:

- Equipment procurement and material selection
- Hazardous material management and handling (e.g., use of refrigerants)
- Waste generation (including construction waste and removal of obsolete equipment)
- Construction activities lead to localised nuisance effects on stakeholders (dust, noise)
- Construction activities may cause adverse effects on the H&S of construction workers
- Occupational health and safety risks
- Impact on receptors.

In addition to the risk and impacts noted under Activity 1, the impacts noted under the following sections are also relevant.

4.7.1. Resource use and pollution prevention

Equipment procurement

Old HVAC systems may include HFCs (freons), e.g., R22, banned under EU Laws. New HVAC units that use less harmful refrigerants are available, e.g., R-410A and these must be specified for use in the Activity. The replacement of the HVAC system will improve EE and possibly also eliminate the use of potentially harmful ozone-depleting refrigerants. However, the old refrigerants must be disposed of correctly (as discussed in the next section).

Waste generation

Old HVAC systems generally contain steel, aluminium, copper, brass components, and small electrical equipment such as capacitors. Most of the system can be recycled when the system is broken down and segregated (either on-site or off-site) by a reputable company.

Many older air conditioning units installed used a refrigerant called R-22., also known as Freon. Any leftover refrigerants such as freon or hydro-chlorofluorocarbon (HCFC) are considered harmful (hazardous substances) as they are identified as chemicals responsible for damaging the ozone layer.

The refrigerants (especially in older units, e.g., installed pre-2010) must be reclaimed and not left to evaporate and harm the ozone layer. A licensed company must do the containment and disposal of the refrigerant, and records (logs) of the refrigerant reclaimed must be retained.

4.7.2. Community H&S

The CHS impacts concerning the installation of HVAC systems are identified as:

- Changes to the integrity of structures and security, including fire and life safety risks for workers and those working and residing in the buildings
- Nuisance including dust, noise
- Temporary disruption of the operation of hospitals, schools, pre-school buildings
- Temporary relocation of students, patients, and small businesses, disruption of medical services and classes)
- Lack of needed medical attention due to disruption of hospital operations
- Physical hazards (falling debris/construction materials and equipment)
- Safety hazards due to unauthorized or mistaken entrance into work sites
- Public health (effect on community H&S including sexual harassment and gender-based violence (GBV), the spread of COVID-19 and other communicable diseases, effect on occupational H&S) from the influx of workers and changes in security provision.

In addition, in the instance where facilities are being used during construction, some of the receptors, young children and the sick and elderly patients, may be particularly susceptible to hot and cold temperatures; there may also be extenuating circumstances should electricity be turned off to undertake the works. Removing the existing HVAC will need to be closely coordinated with facilities staff to avoid adverse impacts on these vulnerable receptors.

Specific occupational H&S risks will relate to working at heights and working with live electricity. Specialized and trained workers will need to be employed to undertake these activities, and therefore employment of local workers will be unlikely.

4.8. Activity 4 - Replacement of coal fired boilers with electric boilers (including Solar PV where suitable)

For buildings in areas without access to natural gas, a fuel-switching from coal to electricity for heating might be a feasible solution to decrease the carbon intensity further. Old in-efficient coal boilers can be replaced by modern heat pump technology, which runs on electricity or solar PV. This is particularly effective where the buildings are well insulated. Electric boilers provide heating and hot water like any other boiler. However, this is all done using electricity rather than burning fuel. Pairing an electric boiler with solar panels address issues related to increasing electricity costs and further offers a truly renewable solution.

The main impacts related to the Activity are:

- Equipment selection
- Hazardous materials handling and use
- Waste generation
- Occupational H&S risks connected with the Activity (as defined in X)
- Changes to the integrity of structures and security, including fire and life safety risks for workers and those working and residing in the buildings
- Nuisance including dust, noise
- Temporary relocation of students, patients, and small businesses, disruption of medical services and classes)
- Temporary disruption of the operation of hospitals, schools, pre-school buildings
- Physical hazards (falling debris/construction materials and equipment)

- Safety hazards due to unauthorized or mistaken entrance into work sites
- Public health (effect on community H&S including sexual harassment and gender-based violence (GBV), the spread of COVID-19 and other communicable diseases, effect on occupational H&S) from the influx of workers and changes in security provision
- Emergency preparedness

In addition to the risk and impacts noted under Activity 1, the impacts noted under the following sections are also relevant.

4.8.1. Resource use and pollution prevention

Equipment selection

The solar PV module contains several components and materials, starting with quartzite, metallurgic grade silicon and polysilicon upstream of the supply chain, followed by ingots, wafers and solar cells in the midstream of the supply chain. This means that it encompasses several supply chain actors, making the supply chain analysis relatively complicated. Key issues relating to the supply chain for solar panels are:

1. Impact on wildlife or biodiversity (from deforestation or expansion of supplier facilities into natural or critical habitat).
2. Labour and working conditions in the supply chain. With a focus on child labour, forced labour, and occupational health and safety incidents (i.e., large numbers of fatalities or lost time incidents).
3. Suppliers' credentials for reducing chemical use per module and prohibition of materials or chemicals that are not internationally acceptable as relevant international conventions and PR3.
4. Suppliers' credentials for reducing carbon footprint in solar PV systems (carbon footprint emission from solar PV systems in the range of 14–73 g CO₂-eq/kWh).

Recently there has been significant debate surrounding solar PV panel suppliers and the companies producing the raw materials used to make solar panels (particularly polysilicon). Key allegations raised in the media and some academic research concern the use of forced labour in various segments of the supply chain of solar PV modules; these include:

- High concentration in China (about 80% of polysilicon and as high as 98% of ingot to wafer production is produced in China).
- Polysilicon production capacity is currently concentrated in Xinjiang province (about 56%), where reports have alleged the use of forced labour²² and highlighted the importance of thermal coal for its energy-intensive production.
- Intermediate products are often mixed in the manufacturing process, making traceability impossible, particularly at the upstream level.

Transparency in the supply chain and a thorough understanding of the supply chain composition are critical to compliance with the relevant requirements of ESS1, ESS2 and

²² <https://www.shu.ac.uk/helena-kennedy-centre-international-justice/research-and-projects/all-projects/in-broad-daylight>

ESS6. For compliance with ESS1, all relevant direct and indirect E&S risks and impacts for the project should be assessed. While ESS1 requires identifying risks associated with primary suppliers²³, ESS2 requires assessments to go beyond Tier 1, where significant risks of child labour or forced labour are reported in lower tiers of the supply chain of goods and materials, which are essential to the core operational functions of the project. Hence, the expectation is that E&S screening of PV panel suppliers must go beyond Tier 1 suppliers and understand the supply chain risks through detailed mapping and risk assessment to understand the Project supply chain risk and leverage. This also includes understanding how solar PV panel providers have undertaken their mapping and risk assessments of their supply chain.

4.9. Potential positive environmental and social impacts (all activities)

4.9.1. Overview

Overall, the various works under the project will provide a series of positive social and environmental impacts, as summarised below. The project is expected to bring about considerable positive social benefits related to the gains in energy efficiency and associated decrease in energy costs, and improved comfort.

- Reduced air pollution
- Improved indoor environment (due to increased thermal comfort and air quality)
- Reduced noise impact (due to replacement of windows)
- Reduced energy consumption
- Increased public awareness of energy efficiency measures
- Improved health and well-being of occupants
- Energy security
- Reduced fuel poverty
- The improved visual amenity of facilities

5. Mitigation and management measures

The following tables outline the mitigation measures for all activities

Table 11: Mitigation Measures per Project Activity

ACTIVITY	Expected E&S Risk and impacts	Proposed mitigation measures to prevent/mitigate negative impacts
All Components for each sub-project		
ESS 1 – Risk identification and mitigation		
Environmental and social impact identification	Each sub-project will have site-specific environmental and social impacts during the pre-, and construction stages will be analysed during the detailed design stage	<ul style="list-style-type: none"> • In coordination with the implementing partners, the technical design team and PMC will work jointly to undertake a site evaluation of retrofit needs and design. • The PMC, in coordination with the implementation partners (institutions), will complete an Environmental and Social Screening to identify the physical, social and other risks and issues to be addressed in the sub-project ESMP (refer to the checklist in Annex A) which will be prepared by PMC. The screening exercise will also confirm vulnerable groups. • The outputs from the E&S Screening Checklist will be shared with the Contractor along with the sub-project ESMP (refer to the template in Annex B) and relevant supporting sub-plans (refer to the guidance in Annex C). • PMC to confirm potential E&S risks and severity at each site and apply the mitigation as defined in subsequent rows. • Confirm requirements for any pre-construction surveys, e.g., noise and air quality.
E&S risk Management and Monitoring	Site-specific E&S risks at the sub-project level may not be adequately addressed.	<ul style="list-style-type: none"> • Define the sub-project organisation requirements in an organisation chart and include them in the sub-project ESMP (Annex B). • The contractor must hire at least one H&S Manager and environmental/social officer to oversee the Activity. • In the organisation chart, provide names and contact information for the nominated representatives of the PMC (regional), implementation partners (institutions) and relevant ministries (refer to section 6 for further explanation of the roles of various partners). • PMC/Contractor will review the design to ensure the design and construction approach has been optimised to reduce E&S impacts.

ACTIVITY	Expected E&S Risk and impacts	Proposed mitigation measures to prevent/mitigate negative impacts
		<ul style="list-style-type: none"> • The PMC to develop a draft sub-project ESMP (Annex B) (and relevant supporting sub-plans) and finalize them with a Contractor for implementing the Activity following this ESMF (refer to the guidance in Annex C). • Confirm requirements for any monitoring (e.g., noise, labour, other) during the performance of the Activity and outline the method in the ESMP. Provide monthly reports (monitoring and other) as outlined in Section 8 and Annex D and any additional requirements outlined in sub-project ESMP. • PMC to monitor site-specific ESMP implementation, including implementation of worker inductions.
Contractor management	Site-specific E&S risks at the sub-project level may not be adequately addressed.	<ul style="list-style-type: none"> • Contractor and sub-contractors (if any) will be selected considering the past performance on E&S management and will be required to follow the subproject ESMPs. • Lead Contractor and Tier 2 sub-contractors to demonstrate functioning HR policy aligned with ILO core conventions (refer to Annex C for the content of HR policy documentation).
Training	Inadequate training can lead to E&S impacts	<p>Contractor to establish induction training to cover the following (and reference in the sub-project ESMP):</p> <ul style="list-style-type: none"> • the project, the site layout, labour and working conditions, pay and leave, non-discrimination, grievances, occupational H&S aspects, interactions with local community members, GBVH, and interactions with any children or patients that remain in the buildings • non-discrimination, sexual harassment and GBVH in worker inductions and provide regular refresher training • disciplinary actions for harassment and GBVH in worker contracts and where and how to raise a GBVH grievance • Provide training on the worker code of conduct • All workers must have the required competencies to perform the role or receive relevant on-the-job training or other training. • OHS training to be provided before commencement of each new work activity, and regular refresher training (tool-box-talks) to be undertaken • Provide training to workers on the emergency preparedness policy and emergency preparedness management plan, including refresher training at least annually (or more frequently if found necessary) • Train drivers in the driver code of conduct
Activity 1 – Insulation of buildings and renovation of the building envelope		
ESS1		

ACTIVITY	Expected E&S Risk and impacts	Proposed mitigation measures to prevent/mitigate negative impacts
Equipment supplies and procurement	Inadequate selection of materials may harm the person using and working in the building.	<ul style="list-style-type: none"> ● The procurement of materials and equipment Implementing Partners, PMC and designers of replacement systems will adhere to the following specifications: ● No combustible materials will not be permitted on the external walls of new buildings over 18 metres (or as per GIIP, whichever is the more stringent) (Aluminium Composite Materials (ACM) and/or foam polymer insulation materials and/or other combustible external wall systems). ● Comply with national regulation and GIIP (whichever is the more stringent) regarding the use of certain combustible materials banned from being used in renovations of existing buildings – including items like external cladding panels, insulation and materials in window spandrel panels and infill panels, although not window frames. (The ban also applies to balconies, which are often made from combustible materials and have helped spread fires across walls in the past). ● Limit timber materials, including engineered timber, particularly cross-laminated timber (CLT), in the external wall of buildings. ● Consider the construction fire risks arising from the choice of materials and installation method and their mitigation, and ensure that information on residual risk is provided. Examples include the specification of adhesives (flammability), the layout of insulation panels (alignment of vertical joints and positioning of fire stops), and temporary conditions that might occur during the Activity (temporary loss of fire protection systems). ● Consider the appropriate design for fixing replacement cladding systems to ensure they are correctly installed and attached to the building. ● While renovation (energy efficiency) designs are being prepared, fire and safety standards will also be improved to the extent possible (without significant architectural changes). The national and international standards (whichever is more stringent) should be used for fire safety precautions. ● Ensure all equipment selected meets GIIP specifications for energy efficiency as defined in the technical specification. ● Consider opportunities for recycling or reusing demolition materials and log in to the sub-project waste management plan (refer to Annex C for specific content). ● Evaluate consumables and wastes and develop a strategy to minimize energy usage and re-use/recycle waste materials. ● Ensure worst-case climate change predictions (up to 2085) have been considered for the specification of materials.

ACTIVITY	Expected E&S Risk and impacts	Proposed mitigation measures to prevent/mitigate negative impacts
Emergency Preparedness and Response	Changes in the fabric of the building and other work can negatively impact exiting EPR provisions or require supplementary provisions to avoid increased risk to workers and receptors.	<ul style="list-style-type: none"> Identify key emergency concerns for the project - consider natural hazard risks (e.g., flood risk, seismic risk, weather risk in Project design and define a sub-project (refer to Annex C for typical content) Based on the project's location to existing medical facilities, define the minimum requirements for medical preparedness (e.g., site clinic, paramedic, ambulance, first aid facilities and first aiders). Include risk management protocols to manage natural hazards and climate events, including the need for appropriate welfare and shelter provisions and project risks, including fire, accident, incident, etc. Before any works commence, following national legislation and GIIP, consult with the local fire and rescue service to input requirements into the EPRP. In the EPRP, identify emergency response facilities/equipment (such as muster points, first aid kits and fire extinguishers) on the project design and include a map of the locations of these items in the EPRP. Coordinate the EPRP with the wider building EPR plan and, where necessary, work with Contractor/Implementing partners and PMC to update the building EPRP temporarily to accommodate the Activity being performed. Where existing external wall panels have been removed, pending a decision on what material to replace them with, and weather protection is needed, wall coverings or sheeting should be to the relevant standard, either LPS 1207/TS63 (temporary protective covers) or LPS 1215/TS62 (or equivalent for scaffold sheeting or netting).
ESS 2 – Labour Management		
Worker occupational H&S	Possible injuries and first aid cases result from insufficient occupational H&S provisions, knowledge or training.	<ul style="list-style-type: none"> The Contractor will follow the site-specific OHS management plan or relevant risk mitigation measures developed as part of the sub-project ESMP based on OHS risk assessment to ensure a safe working environment for the workers. Contractor to supply appropriate personal protective equipment (PPE) in line with international best practice and local legislation (helmets, as needed masks and safety glasses, ear plugs, harnesses and safety boots, etc.) in good condition and free of charge. For the proposed sub-project Activity, include the following requirements as a minimum: If public building entrances (e.g., schools, hospitals etc.) will be diverted to other building entrances during the renovation Activity, it will be ensured that appropriate structures will be established for disabled users. A fire safety plan must be prepared as part of the EPRP and/or ESMP.

ACTIVITY	Expected E&S Risk and impacts	Proposed mitigation measures to prevent/mitigate negative impacts
		<ul style="list-style-type: none"> • All activities will be implemented in line with the Law on Occupational H&S and its relevant regulations and the World Bank Group EHS Guidelines. • The Contractor will formally agree that all work will be carried out in a safe and disciplined manner designed to minimize impacts on the users of the facilities, neighbouring residents and the environment. • The Contractor will assign personnel with relevant certification and experience in charge of occupational H&S, such as an on-site Safety Officer. • Before the construction activity starts, an E&S and OHS Risk Assessment studies will be implemented for all works to be carried out. Relevant procedures and plans (including "Emergency Plans") will be implemented. • Appropriate signposting of the sites will inform workers of key rules and regulations to follow. • Occupational H&S (OHS) training and toolbox talks will be provided to the employees, indicating the possible risks regarding the work site and works to be carried out. • Training and incidents (fatalities, lost time, any significant events including spills, fire, etc.) will be recorded. • First aid kits must be provided at all worksites. • The Contractor must notify PMC/FUND immediately in case of any significant occurs related to environmental and social aspects. PMC/FUND must inform the World Bank about any significant incident (accidents, spills, injuries, fatalities, cases of sexual exploitation and abuse (SEA), sexual harassment (SH) etc.) no later than 48 hours after learning of the incident and accident (as per Annex G) and send TTL an incident investigation report together with the corrective action plan in 30 business days. • Provide sufficient lighting at night if night work is required. • Comply with the COVID-19 H&S protocols as defined in WB guidelines (refer to section 3.2.11).
Working terms and conditions	Working terms and conditions not adequately met,	<ul style="list-style-type: none"> • The Contractor must comply with the Labour Code of the Republic of Uzbekistan and the Labor Management Procedures (LMP) developed for the Project, including setting up a separate GM for workers.

ACTIVITY	Expected E&S Risk and impacts	Proposed mitigation measures to prevent/mitigate negative impacts
		<ul style="list-style-type: none"> • The Contractor and sub-contractors must demonstrate/prepare and implement Human Resources (HR) policies²⁴ aligned with ESS2 and national labour regulations. • Workers must all be contracted; no casual or day labour will be used. • Workers must be provided with a copy of their contract, which includes employer name, salary, working conditions, payment schedule, overtime provisions, leave provisions, disciplinary procedures and termination of the contract, at a minimum. • Migrant workers must be contracted under the same conditions as national workers. • Labour audits must be carried out for sub-projects that extend beyond one week to ensure worker rights are being upheld following ESS2 and national laws. • Specific recruitment undertaken for the Sub-project must follow the requirements set out in the LMP, including non-discrimination of workers, priority employment of local community members (for relevant jobs), and checks to ensure no child or forced labour. • Workers will be allowed to participate in collective bargaining and/or labour unions. Sub-project Contractors will negotiate in good faith with such collectives if required. • A worker grievance mechanism will be implemented and disclosed to all workers. Means of anonymously raising a grievance (such as a grievance box) will be provided on-site. • The Contractor must report labour statistics as defined in Annex D every month (or as defined in the sub-project ESMP).
Worker accommodation	Inadequate worker accommodation provided	<ul style="list-style-type: none"> • Should worker accommodation be provided, policies will be put in place and implemented on the management and quality of accommodation to protect and promote the project workers' health, safety, and well-being. This includes accommodation provided directly by the Contractor or accommodation paid for by the Contractor.
ESS 3 Pollution Prevention and Control		
Materials Management (including hazardous materials management)	Poor hazardous materials management can lead to pollution of the environment or impact worker health.	<ul style="list-style-type: none"> • Where possible, avoid stockpiles of materials by only ordering the supplies on an as-needed basis (particularly in the case of large materials, e.g., rolls of insulation, cladding tiles etc.) • Coordinate the delivery schedule of materials with the school/health facility administration. • Ensure that materials stockpiles are placed in a safe and secure area within the facility that the school/health facility administration approves.

24: Human resources policies are the formal rules and guidelines that Contractors should have / put in place to hire, train, assess, and reward the members of their workforce. These policies should prevent any form of discrimination in the workplace and ensure that all employees are treated fairly and equally. These policies help employers and employees understand their rights and responsibilities and set clear expectations about how to behave within the organisation. HR policies should be in written form – they may be documented in company handbooks, collective agreements, and may include dedicated policies on specific issues like non-discrimination.

ACTIVITY	Expected E&S Risk and impacts	Proposed mitigation measures to prevent/mitigate negative impacts
		<ul style="list-style-type: none"> ● Schedule delivery of materials to limit movement of delivery vehicles to the site. ● Provide a barricade around the stockpile of materials. ● Hazardous materials must be stored on-site in a secure storage unit applicable to the material with the appropriate ventilation, labelling, segregation, bunding, emergency response equipment, and PPE. All material safety data sheets will be retained on-site and, where appropriate, risk assessments performed. ● Checking our material for the hazardous material store will be coordinated and controlled by a nominated person trained in the handling and safety requirements of hazardous materials. ● The correct PPE must be provided for all workers working with hazardous materials. ● All hazardous materials must be removed from the site at the end of the works. ● Report information on hazardous materials as per requirements in Annex D.
Asbestos management	Structural work and replacement Activity may result in the exposure to asbestos	<ul style="list-style-type: none"> ● A pre-work asbestos survey will be carried out for all buildings to identify asbestos in the building and mark it for removal (if required by the Activity) or for marking (to ensure no accidental removal). ● If asbestos is located on the project site, it shall be marked clearly as hazardous material. ● In case asbestos materials are encountered at the work site, an Asbestos Management Plan must be defined, including the following provisions as outlined in Annex C: ● ACMs must be removed following the procedure for handling asbestos materials must comply with the normative documents SanPiN No 0158-04 "Sanitary Rules and Regulations on Collection, Transportation and Disposal of Asbestos-Containing Waste in Uzbekistan asbestos is identified during the dismantling work; work will be suspended until PMC is notified of the situation. Only licensed asbestos handlers are allowed to enter the premises. ● Identify suitably qualified asbestos removal specialists and engage to undertake the removal work. ● Isolate the site and provide barriers. ● Restrict access from the general public to the site, install appropriate signs and keep all access points locked at all times. ● All surfaces are to be thoroughly cleaned following the removal using HEPA filtered vacuum and wet pipe techniques. ● On completion, the site must be carefully checked for visible asbestos-containing materials. ● Any asbestos materials must be placed into asbestos plastic bags and then removed from the site by licensed waste transporter and treater.

ACTIVITY	Expected E&S Risk and impacts	Proposed mitigation measures to prevent/mitigate negative impacts
		<ul style="list-style-type: none"> • A hazardous waste manifest shall be completed for the transport, treatment and disposal of asbestos wastes offsite. • If unidentified asbestos is found, all work must stop immediately, and the areas closed off until the asbestos management procedure (as defined above can be implemented). • Notify the PMC of the proposed removal work and coordinate the activities with the PMC regarding the methods to be employed, inspections, decontamination, control monitoring and clearance inspections. • The asbestos before removal (if removal is necessary) will be treated with a wetting agent to minimize asbestos dust. • Asbestos will be handled and disposed of by skilled & experienced professionals. • If asbestos material is being 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. • The removed asbestos will not be reused and will be disposed of according to national regulations and sent to licensed facilities. • Necessary documentation for transport of the material and its disposal will be kept at the construction site and will be presented to MoE and WB if requested.
General waste	Removal of existing insulation and generation of other wastes during the construction process	<ul style="list-style-type: none"> • As part of the ESMP, a sub-project construction Waste Management Plan (WMP) will be developed (refer to Annex C) by the Contractors/PMC before the commencement of the Activity. Such plans should be reviewed and approved by PMC. The WMP must make provision for the following actions: • Waste collection and disposal pathways and sites will be identified for all major waste types expected from demolition and construction activities. • Arrangements with a solid waste transporter licensed by the local government must be obtained and evidenced. • A temporary waste area, recommended/approved by the school or health facility, must be identified before works commence. The non-hazardous waste should be placed in waste segregation bins. Separate bins will be provided for biodegradable waste (food wastes), recyclable waste (wires, pipes, rebars, and other pieces of metal), and hazardous waste. • Mineral construction wastes will be separated from general refuse, organic, liquid and chemical wastes by on-site sorting and stored in appropriate containers. • Construction waste will be collected and disposed of properly by licensed collectors.

ACTIVITY	Expected E&S Risk and impacts	Proposed mitigation measures to prevent/mitigate negative impacts
		<ul style="list-style-type: none"> • The waste disposal records will be maintained as proof of proper management. • Whenever feasible, the contractor will reuse and recycle appropriate and viable materials (except asbestos) • Excavated soil will be used as filling materials, while other recyclable materials such as wooden planks may be used for form activity and scaffolding. • Burning of garbage and construction wastes shall be strictly prohibited at the site. Materials that are a danger to building occupants, e.g., exposed nails, broken glass, steel beams, etc., should be properly collected to avoid accidents. Work areas will be maintained clear of waste materials and obstructions. Stockpiles of waste materials will not be allowed. • After a day's work, workers are required to clean the work area, and all materials and tools are stowed accordingly in preparation for the next day's work. This will also enhance efficiency and assist in maintaining a safe environment when workers return to work the next day. Wastes are properly sorted and disposed of in different waste bins or garbage containers. • Report information on waste as per requirements in Annex D.
Hazardous Waste	Decommissioning of old or obsolete insulation and other decommissioned electrical waste and general Activity may generate hazardous wastes	<p>As part of the ESMP, a sub-project Hazardous Waste Management Procedure will be prepared to cover the following requirements:</p> <ul style="list-style-type: none"> • Define hazardous waste inventory, the hazardous class, temporary storage and handling requirements on-site and ultimate disposal route (including responsibility) • Contractor to obtain relevant licenses or set up contracts with relevant licensed transportation companies and disposal companies. Evidence of contracts and license to be retained by the Contractor. • Contractor to provide relevant training to workers on the use, storage, and handling of hazardous materials as part of the work induction. • Hazardous waste should always be segregated from the non-hazardous wastes (empty containers (paints, solvents, epoxy resins, adhesives, degreasers), oily rags, and busted lamps) – define a specific location sat site for the temporary storage of hazardous waste for onward transportation and disposal by licensed contractors. • Proper labels should be affixed on bins of these types of hazardous wastes. • The contractor must undertake specific precautions if materials containing asbestos are present or encountered during works to protect workers and occupants of the building in an asbestos management procedure.

ACTIVITY	Expected E&S Risk and impacts	Proposed mitigation measures to prevent/mitigate negative impacts
		<ul style="list-style-type: none"> Temporarily storage on site of all hazardous or toxic substances will be in safe containers labelled with details of composition, properties and handling information. The containers of hazardous substances shall be placed in a leak-proof container to prevent spillage and leaching. The wastes shall be transported by specially licensed carriers and disposed of in a licensed facility. A hazardous waste manifest shall be completed for the transport, treatment and disposal of wastes offsite. Paints with toxic ingredients or solvents or lead-based paints will not be used. The used fluorescent lamps removed during the renovation/construction Activity will be disposed of at licensed facilities. Necessary documentation for transporting the material and its disposal will be kept at the construction site and presented to MoE and WB if requested. All Activities must comply with the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (1989), ratified in 1996 by Uzbekistan and avoid using hazardous materials subject to international bans or phase-outs following GIIP.
ESS 4 - Community H&S		
Health and Safety (receptors)	The Activity around the building may pose an H&S risk to persons using the facility and passers-by.	<p>As part of the health and safety plan:</p> <ul style="list-style-type: none"> Plan activities to minimise or avoid impacts on communities. Minimize interaction between building users and construction workers. When working on the exterior of the building, provide safety nets/screens for the protection of adjacent properties and passers-by. Install canopy if the building is next to a road or building that may be affected by falling debris. Conduct awareness training for all workers on sexual harassment and gender-based violence among contractors, project workers, and students (define and implement a worker's Code of Conduct). Undertake a GBVH appraisal (commensurate with the level of risk identified). Include GBVH related disciplinary actions in worker contracts and HR policies to mitigate the risks of Contractors working close to vulnerable persons.
Receptor disturbance	Temporary relocation of school classrooms, health facilities, and other building utilities potentially disrupt	<ul style="list-style-type: none"> Undertake a review of the need to relocate classrooms (or temporarily heat classrooms) during the work.

ACTIVITY	Expected E&S Risk and impacts	Proposed mitigation measures to prevent/mitigate negative impacts
	education and healthcare services. Creation of temporary classrooms /facilities	<ul style="list-style-type: none"> ● During the preparation of sub-projects, stakeholder identification and engagement will be used to understand the needs and concerns of the building occupants, including disadvantaged and vulnerable groups and make accommodations to minimize disturbances to the extent possible. ● To the extent possible, the project will try to avoid and minimize such disturbances by timing the construction works outside of use seasons or hours. ● Speak with building staff and management well before shutting off electricity, air conditioning or boilers to make sure measures are in place to protect vulnerable people in the building. ● PMC/Contractor and Implementing partner to develop a plan for any temporary relocation, if required, as part of the sub-project ESMP. ● Follow the guidelines for relocation as set out in Annex E. ● The appropriate authorities must sign off all work before receptors return to the building.
Fire and Life Safety	Where the building remains occupied during cladding and insulation removal and replacement to the exterior, this may present a higher risk of fire for receptors remaining in the building.	<ul style="list-style-type: none"> ● PMC/Contractor and Implementing partner to develop a plan for undertaking works when the building remains occupied, including exact timeframes for when any key activities will be undertaken (such as activities that require the power to be shut down). ● Undertake a review of technical specifications to understand that the technical specification meets international standards for life, and fire safety legislation, e.g., for external cladding. ● The Principal Contractor (PC), in coordination and cooperation with the PMC and designer and local fire and rescue services (FRS), should make a thorough fire risk assessment to determine what controls are required as a result of the construction work and then implement and maintain those controls and prepare a Fire and Life Safety Plan for the construction Activity. ● Include in the fire risk assessment and plan for working in the building while occupied measures to address the impact of hot work activity, waste management, and use of flammable materials in the construction process. ● Contractor to inform all workers on hot work activities, management of waste, and use of flammable materials used in the construction process in the induction process and provide topic-specific training for workers undertaking the works or handling waste and flammable materials. ● The fire risk assessment should be made in consultation with the local Fire and Rescue Service (FRS), building owner and/or responsible person for the building so that any impact of the construction work on existing general fire precautions (GFP) for the building can be considered along with appropriate fire precautions for the significant fire loading of the external wall systems.

ACTIVITY	Expected E&S Risk and impacts	Proposed mitigation measures to prevent/mitigate negative impacts
		<ul style="list-style-type: none"> ● The management arrangements for the project should ensure that all workers and facility staff/residents are aware of the precautions and controls required and a full understanding of the emergency procedures and how they should be followed. ● Appropriate instruction and training should be provided for workers on emergency procedures, including emergency escape. ● Perform daily inspection by fire safety personnel must be undertaken to confirm that the fire risk assessment is adequately implemented. ● Related to the removal replacement of cladding, insulation that may increase fire and life safety risks, precautions for reducing the fire and life safety risks should be employed considering: <ul style="list-style-type: none"> ● Sequencing of removal activity ● Management of hot activity (hot watches) ● Temporary storage area for removed material (see waste below) ● Reduction of potential sources of ignition (smoking, hot activity, use of fuels, solvents, prohibit of petrol power tools, ● Location of portable generators ● Avoidance of flammable solvents ● Use low-temperature task lighting (such as LED lights) ● electrical equipment (tools, lighting, hoists etc.) should be properly maintained to ensure it does not create an ignition source. ● Where receptors are temporarily relocated during Activity, no receptor to return to the site under the Activity is completely signed off by the relevant competent authority. The required Building Regulation completion certificate is obtained. ● Where receptors remain in the building, it is also important that proper liaison is maintained with residents/occupants of the building to keep them adequately informed about the work to take place and any additional precautions residents might need to take
Traffic	Delivery of materials and equipment to the site leads to increased community health and safety risk from increased traffic volumes and other congestion and	<ul style="list-style-type: none"> ● Obtain all national permits relevant to traffic and transportation before the start of works and ensure proper coordination with the national road agency. ● Review the site-specific risks for transportation during the site screening activity (Annex A); consider road conditions, visibility, time of travel, sensitive receptors such as schools and school children using any parts of the route and the need for parking/laydown areas.

ACTIVITY	Expected E&S Risk and impacts	Proposed mitigation measures to prevent/mitigate negative impacts
	nuisances. - increased traffic volumes	<ul style="list-style-type: none"> ● Eliminate traffic and transportation impacts where possible and during the design and E&S assessment phase. ● As part of the ESMP, develop a sub-project site-specific construction Traffic Safety Management Plan (TSMP) (refer to Annex C). The TMP (including a site map) will be reviewed and approved by PMC. The TMP must make provision for the following actions: ● Comply with all statutory vehicle limits (width, height, loading, gross weight) following National Road Traffic Regulations and any other statutory requirement on vehicle maintenance. ● Identify specific routes for delivery vehicles to approach and leave the work site. ● Arrange sub-project site layout to ensure there are measures and controls for the safe movement of vehicles to protect workers and the public, on site roads and public roads (e.g., pre-agreed delivery times (staged), routes avoiding sensitive receptors, covering loads, managing noise and dust, and conducting pre-construction/baseline road conditions surveys) – this must be accompanied by a site map illustrating the traffic protocols. ● Ensure there is an adequate area for delivery vehicles to wait if they can't be offloaded immediately (at the site or away from the site) to minimise congestion issues. ● Define signposting, warning signs, barriers and traffic diversions: the site will be visible, and the public will be warned of all potential hazards. ● Consider the need to place restrictions on delivery movements or working hours to recognise constraints of the local traffic patterns, e.g., avoiding major transport activities during rush hours or times of livestock movement. ● Consider the need for active traffic management by trained and visible staff at the site, if required, for a safe and convenient passage for the public. ● Ensure any project-related vehicles regularly attending the site demonstrate and measures and controls for maintenance equipment and vehicles (daily, weekly, annually) ● Conduct consultations with neighbouring communities about the project and the schedule of works. ● Require all Contractor drivers to sign a driver's code of conduct addressing alcohol and drug use, mobile phone use, speed limits and expected behaviours, e.g., relating to interactions with the community. ● 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.
Dust	Removal of materials and works may generate dust on	<ul style="list-style-type: none"> ● Specify low emission generators to manage fugitive emissions, particularly where there are nearby receptors (e.g., within 250m of the planned Activity)

ACTIVITY	Expected E&S Risk and impacts	Proposed mitigation measures to prevent/mitigate negative impacts
	the interior and exterior of the building	<p>The ESMP define measures to:</p> <ul style="list-style-type: none"> ● control dust such as covers, water suppression, or increased moisture content for open materials storage piles and use of water suppression for control of loose materials on paved or unpaved road surfaces. ● In case of demolition, debris chutes shall be used above the first floor. ● Demolition debris shall be kept in a controlled area and sprayed with water mist to reduce debris dust. ● In the case of pneumatic drilling during excavation, dust shall be suppressed by ongoing water spraying and/or installing dust screen enclosures at the site. ● The surrounding environment (sidewalks, roads) shall be kept free of debris to minimize dust. ● There will be no open burning construction/waste material at the site. ● There will be no excessive idling of construction vehicles at sites. ● The contractor will hire only licensed welders to do the welding works. ● To prevent the build-up of toxic metal fumes inside enclosed spaces, forced ventilation equipment will be used to induce the fast exchange of indoor and outdoor air and dissipate the toxic gases inside the rooms. Check the surrounding areas to avoid the spread of the fumes in occupied rooms or even in adjacent properties. ● For indoor concrete chipping and drilling, enclose the construction area with impermeable dust barriers and use industrial air vacuum pumps and ventilation exhaust fans to minimize dust spread and spillover. ● For chipping/drilling activities on the exterior surface of the building, install nets/sheeting and temporary screens. ● Conduct water spraying to suppress dust and minimize discomfort to nearby residents and occupants in the compound. ● Require workers to wear gas and particle masks and eye protector metal face shield. ● Keep a stockpile of aggregate and sand materials covered with well-fixed plastic sheeting, tarps or other geotextiles to avoid suspension or dispersal of fine soil particles during dry and windy days. ● Equip concrete mixing equipment with dust shrouds. ● Periodically clean up debris. ● Prohibit the idling of construction vehicles while unloading materials at the site.

ACTIVITY	Expected E&S Risk and impacts	Proposed mitigation measures to prevent/mitigate negative impacts
		<ul style="list-style-type: none"> • Provide welders and painters with PPE appropriate for welding activities and provide adequate ventilation and local exhaust to keep fumes and gases from the breathing zone and the general area. • Implement air quality and dust monitoring (where identified as necessary in the sub-project screening and sub-project risk assessment). • Report information on air quality and dust monitoring as per requirements in Annex D (where identified as necessary in the sub-project screening and sub-project risk assessment).
Noise and vibration	Noise and vibration generating activity may impact nearby noise sensitive receptors (within the building and external).	<ul style="list-style-type: none"> • Assess the need for a noise permit to conduct the works. • Noise during demolishing and construction will be limited to restricted times agreed to in the permit. • Collaborate with the management of the pre-school, school or health facility to plan construction activities to minimise disturbance to facility operations. • Strictly prohibit concrete chipping and drilling activities beyond 7:00 PM, particularly in areas near sensitive receptors and residential areas • 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. • Install temporary anti-noise barriers to protect sensitive receptors within and outside the building's premises, including surrounding properties. • Deliver prefabricated cladding/insulation to the desired size to minimize cutting activities onsite. • Restrict general hours of working to avoid sensitive periods (e.g., night-time & evenings between 7 pm and 7 am) if there are sensitive receptors. • Position plant items as far as possible from sensitive receptors on the site. • Use of quietest work methods and plant items where practicable • Monitor noise grievances through the Project grievance mechanism. • Implement noise and vibration monitoring (where identified as necessary in the sub-project screening and sub-project risk assessment) (this may be continuous or intermittent depending on risk) • Report information on noise monitoring and grievances as per requirements in Annex D (where identified as necessary in the sub-project screening and sub-project risk assessment).
Security	Impacts on receptors from security changes.	<ul style="list-style-type: none"> • As part of the sub-project site screening (Annex A), determine the changes to security risk because of the project and put in place measures to mitigate risk (such as allocation of security guards) to mitigate the risks identified.

ACTIVITY	Expected E&S Risk and impacts	Proposed mitigation measures to prevent/mitigate negative impacts
		<ul style="list-style-type: none"> • A security management protocol will need to be defined to manage security requirements. • Security workers will be assigned to protect the construction sites, project workers and other stakeholders as determined are needed on a project-by-project basis. Consider hiring as a priority local community member, or women. • Include requirements for background checks and training provided for security guards hired for the duration of the Activity. • Submit names of workers to the administration of the school/health facility. • Restrict the entry of unauthorized persons inside the construction site. • Minimize contact between construction workers and the users of the facilities.
ESS8 – Cultural heritage		
Known cultural heritage (Protected buildings)	As per national laws, works on the exterior façade or protected internal features may potentially impact buildings with protected building status (exterior or interior).	<ul style="list-style-type: none"> • PMC to review the long list of potential buildings where Activity to be undertaken to identify any potential buildings with cultural heritage protection designations. • At the sub-project level, undertake screen of buildings (refer to annex A) • Undertake a review of related technical specifications to understand projects that might trigger ESS 8. • If there is a potential risk, check the protection status with the local Cultural Heritage Agency and whether there is any need to get design approval for the external cladding. • Locate and demarcate any known cultural heritage to avoid accidental damage during the construction phase
ESS 10 – Stakeholder Engagement		
Stakeholder consultation	Lack of community support, lack of information provided to stakeholders and rumours and/or misinformation being spread.	<ul style="list-style-type: none"> • Following the Project SEP, perform a screening of receptors and stakeholders relevant to the sub-project (Annex A). • Ensure any local construction and environment inspectorates and project-affected people/communities have been notified of upcoming activities. • Ensure Local stakeholders have been notified of the Activity through an appropriate notification in the media and/or at publicly accessible sites (including the worksite). • Inform potential employees about job opportunities and manage expectations surrounding employment where necessary. • Ensure stakeholders have been consulted to determine the best time to undertake the works to have the least impact on building users, staff, neighbours and other relevant stakeholders.

ACTIVITY	Expected E&S Risk and impacts	Proposed mitigation measures to prevent/mitigate negative impacts
Grievance management	Grievances remain unresolved and escalate to protests or other actions that could impact Project performance.	<ul style="list-style-type: none"> ● Maintain a grievance mechanism during the Activity as defined in the Project SEP. ● Nominate a grievance manager for grievances directly connected with the Project. ● Define the sub-project-specific communication pathways (two way) between the PMC, implementation partners, and stakeholders to receive and resolve grievances. ● Communicate to the local community the way community members can contact the project during the scoping/ESIA phase. ● Provide information on grievance mechanisms during all Project consultations and information disclosure.
Activity 2. Replacement of low efficient gas fired boilers with highly efficient gas fired boilers		
Equipment supplies and procurement	Poor equipment and material choices increase E&S impacts.	<ul style="list-style-type: none"> ● Specify highly efficient gas boilers that meet or exceed national EE requirements and emissions to air regulations relevant to the size of the boiler.
Emergency Preparedness and Response	Changes in the fabric of the building and other work can negatively impact exiting EPR provisions or require supplementary provisions to avoid increased risk to workers and receptors.	<ul style="list-style-type: none"> ● Identify key emergency concerns for the project - consider natural hazard risks (e.g., flood risk, seismic risk, weather risk in Project design and define a sub-project Emergency Preparedness and Response Plan (EPRP) ● Coordinate with Facility EPRP to understand any additional requirements or implications for emergency preparedness and understand workforce requirements. ● Understand any risk relating to isolation of gas mains on the wider Facility and any safety features that need to be in place (e.g., permit to work/lock out tag out systems). ● In the sub-project EPRP, identify interfaces with Facility emergency response facilities/equipment (such as muster points, first aid kits and fire extinguishers) on the project design and include a map of the locations of these items in the sub-project EPRP (include any additional considerations as necessary). ● Coordinate the EPRP with the wider building EPR and, where necessary, work with Contractor/Implementing partners and PMC to update the building EPRP temporarily to accommodate the Activity being performed (e.g., increased risk of fire, explosion).
ESS2 Labour		
Worker occupational H&S	Possible injuries and first aid cases result from insufficient occupational H&S provisions, knowledge or training.	<ul style="list-style-type: none"> ● As Activity 1 above ● PLUS ● Specific occupational and H&S risks will be present relating to working with gas and lifting heavy equipment.

ACTIVITY	Expected E&S Risk and impacts	Proposed mitigation measures to prevent/mitigate negative impacts
		<ul style="list-style-type: none"> Only certified installation companies may be used to undertake the works. Specialized and trained workers will need to be employed to undertake the work. All certifications (company and worker) must be obtained and verified before work commences. Where necessary, workers dismantling old boilers or working in confined boiler rooms must wear carbon monoxide meters and monitor for any escape of gas.
Working terms and conditions	Working terms and conditions not adequately met	<ul style="list-style-type: none"> As Activity 1 above
ESS 3 Pollution Prevention and Control		
Materials Management	Poor hazardous materials management can lead to pollution of the environment or impact worker and receptor health.	<ul style="list-style-type: none"> As Activity 1 above
Asbestos management	Structural work and replacement Activity may result in exposure to ACMs	<ul style="list-style-type: none"> As Activity 1 above
General waste	Removal of obsolete equipment may generate waste during the construction process	<ul style="list-style-type: none"> As Activity 1 above
Hazardous Waste	Decommissioning of old or obsolete equipment may generate hazardous waste	<ul style="list-style-type: none"> As Activity 1 above
ESS 4 - Community H&S		
Health and Safety (receptors)	Components connected with the works may pose an H&S risk to persons using the facility (interior)	<p>As part of the health and safety plan defined in Activity 1 above, also:</p> <ul style="list-style-type: none"> Minimize interaction between building users and construction workers. Speak with building staff and management well in advance of shutting off electricity
Receptor disturbance	Temporary relocation of school classrooms, health facilities, and other building utilities potentially disrupt	<ul style="list-style-type: none"> As Activity 1 above Particular attention to impacts on vulnerable receptors (users of the facilities) when boilers are shut down, removing heating to key parts of the site and minimising these impacts.

ACTIVITY	Expected E&S Risk and impacts	Proposed mitigation measures to prevent/mitigate negative impacts
	education and healthcare services. Where the building remains occupied during this may present a higher risk of construction nuisance for receptors remaining in the building	<ul style="list-style-type: none"> • Speak with building staff and management well before shutting off electricity, air conditioning or boilers to make sure measures are in place to protect vulnerable people in the building. • Conduct awareness training on sexual harassment and gender-based violence among contractors, project workers, and students
Fire and Life Safety	The building remains occupied during work, which may pose a higher risk of fire for receptors remaining in the building.	<ul style="list-style-type: none"> • Undertake fire risk assessment and plan for working in the building while occupied (e.g., related to hot work activity, management of waste, use of flammable materials used in the construction process • Perform daily inspection by fire safety personnel must be undertaken to confirm that the fire risk assessment is adequately implemented.
Traffic	Minor disturbances may arise in connection with machines and other equipment delivery.	<ul style="list-style-type: none"> • As per activity 1 above, tailored to the size of boiler to be replaced and the geographical setting as determined through the site screening assessment (Annex A)
Dust	Removal of materials and works may generate dust on the interior of the building	<ul style="list-style-type: none"> • As per activity 1 above, tailored to the size of boiler to be replaced and the geographical setting as determined through the site screening assessment (Annex A)
Noise and vibration	Noise and vibration generating activity may impact nearby noise sensitive receptors (within the building).	<ul style="list-style-type: none"> • As per activity 1 above, tailored to the size of boiler to be replaced and the geographical setting as determined through the site screening assessment (Annex A)
Security	Impacts on receptors from security changes.	<ul style="list-style-type: none"> • As per Activity 1 above, tailored to the works as determined through the site screening assessment (Annex A)
ESS 8 - Cultural Heritage		
Protected cultural sites	Not applicable for this Activity.	<ul style="list-style-type: none"> • Not applicable for this Activity.
ESS 10 – Stakeholder Engagement		
Stakeholder consultation	Lack of community support, lack of information provided to stakeholders and	<ul style="list-style-type: none"> • As per Activity 1 above • Particular attention on informing users of the facilities when boilers are to be shut down with sufficient notice to plan to minimise possible impacts.

ACTIVITY	Expected E&S Risk and impacts	Proposed mitigation measures to prevent/mitigate negative impacts
	rumours and/or misinformation being spread.	
Grievance management	Grievances remain unresolved and escalate to protests or other actions that could impact Project performance.	<ul style="list-style-type: none"> As per Activity 1 above
Activity 3: Replacement of HVAC systems		
ESS 1 Risk Identification and mitigation		
Equipment supplies and procurement	Poor equipment and material choices increase E&S impacts and non-compliance with ESSs.	<ul style="list-style-type: none"> Prohibit the use of chlorofluorocarbon (CFC) Prohibit the use of refrigerants in HVAC equipment (new or reclaimed) containing Hydrochlorofluorocarbons (HCFCs), including the ozone-depleting refrigerant gas, e.g., R22 and R502 Prohibit the use of virgin fluorinated greenhouse gases (HFCs) with a GWP²⁵ of 2500 or more to service or maintain refrigeration equipment with a charge of 40 tonnes CO₂ equivalent or more. Consider replacing R22 with commonly used substances not to deplete the ozone layer, e.g., R-134A or R410A considering other relevant properties such as flammability. Most air conditioners use oil to keep the compressor lubricated during operation. R-22 air conditioners use mineral oil (MO), and R-410A systems use Polyol Ester Oil (POE). For cases when you are retrofitting a system to an HFC refrigerant, it is recommended to remove at least 95% of the MO before replacing it with POE oil. Monitor and report CFC, HFC or other refrigerant use as per Annex D.
Emergency Preparedness and Response	Changes in the fabric of the building and other work can negatively impact existing EPR provisions or require supplementary provisions to avoid increased risk to workers and receptors.	<ul style="list-style-type: none"> Identify key emergency concerns for the project - consider natural hazard risks (e.g., flood risk, seismic risk, weather risk in Project design and define a sub-project Emergency Preparedness and Response Plan (EPRP) Coordinate with Facility EPRP to understand any additional requirements or implications for emergency preparedness and understand workforce requirements. Understand any risk relating to isolation of gas mains on the wider Facility and any safety features that need to be in place (e.g., permit to work/lock out tag out systems).

²⁵ GWP Global Warming Potential, based on the Intercontinental Panel on Climate Change (IPCC) 4th Assessment Report figures

ACTIVITY	Expected E&S Risk and impacts	Proposed mitigation measures to prevent/mitigate negative impacts
		<ul style="list-style-type: none"> In the sub-project EPRP, identify interfaces with Facility emergency response facilities/equipment (such as muster points, first aid kits and fire extinguishers) on the project design and include a map of the locations of these items in the sub-project EPRP (include any additional considerations as necessary). Coordinate the EPRP with the wider building EPR and, where necessary, work with Contractor/Implementing partners and PMC to update the building EPRP temporarily to accommodate the Activity being performed (e.g., increased risk of fire, explosion).
ESS2 Labour		
Worker occupational H&S	Possible injuries and first aid cases result from insufficient occupational H&S provisions, knowledge or training.	<ul style="list-style-type: none"> As per Activity 1 above Specific occupational and H&S risks will be present relating to working at heights and working with live electricity Specialized and trained workers will need to be employed to undertake these activities
Working terms and conditions	Working terms and conditions not adequately met Inadequate worker accommodation provided	<ul style="list-style-type: none"> As above
ESS 3 Pollution Prevention and Control		
Materials Management	Poor hazardous materials management can lead to pollution of the environment or impact worker and receptor health.	<ul style="list-style-type: none"> As per Activity 1 above Following installation, no recovered CFC/HCFC refrigerant can be put back in the new or updated system.
General waste	Removal of obsolete equipment may generate waste during the construction process	<ul style="list-style-type: none"> As Activity 1 above
Asbestos management	Removal of old equipment and replacement Activity may result in exposure to ACMs	<ul style="list-style-type: none"> As Activity 1 above

ACTIVITY	Expected E&S Risk and impacts	Proposed mitigation measures to prevent/mitigate negative impacts
Hazardous Waste	Decommissioning old or obsolete equipment may generate hazardous waste, including substances banned under international protocols and GIIP.	<ul style="list-style-type: none"> Where work may be undertaken to remove HVAC systems with refrigerants containing CFCs/HCFCs (e.g., R22 or HCFC-22), a licenced contractor must be used and a specific CFC/HCFC management plan must be defined for approval before use. The CFC/HCFC disposal plan must require: Any refrigerant decanted from the HVAC system must be sent for destruction at a licensed facility, and all records maintained for audit by the PMC.
ESS 4 - Community H&S		
Health and Safety (receptors)	Components connected with the works may pose an H&S risk to persons using the facility (interior)	<ul style="list-style-type: none"> As part of the health and safety plan defined in Activity 1 above, also: Minimize interaction between building users and construction workers. Speak with building staff and management well in advance of shutting off electricity
Receptor disturbance	Temporary relocation of school classrooms, health facilities, and other building utilities potentially disrupt education and healthcare services. Where the building remains occupied during this may present a higher risk of construction nuisance for receptors remaining in the building	<ul style="list-style-type: none"> As Activity 1 above Particular attention to impacts on vulnerable receptors (users of the facilities) when boilers are shut down, removing heating to key parts of the site and minimising these impacts. Speak with building staff and management well before shutting off electricity, air conditioning or boilers to make sure measures are in place to protect vulnerable people in the building. Conduct awareness training on sexual harassment and gender-based violence among contractors, project workers, and students
Fire and Life Safety	The building remains occupied during work, which may pose a higher risk of fire for receptors remaining in the building.	<ul style="list-style-type: none"> Undertake fire risk assessment and plan for working in the building while occupied (e.g., related to hot work activity, management of waste, use of flammable materials used in the construction process Perform daily inspection by fire safety personnel must be undertaken to confirm that the fire risk assessment is adequately implemented.
Traffic	Minor disturbances may arise in connection with the delivery of machines equipment.	<ul style="list-style-type: none"> As per activity 1 above, tailored to the size of HVAC replacement works and the setting as determined through the site screening assessment (Annex A)

ACTIVITY	Expected E&S Risk and impacts	Proposed mitigation measures to prevent/mitigate negative impacts
Dust	Removal of materials and works may generate dust on the interior of the building	<ul style="list-style-type: none"> As per activity 1 above, tailored to the size of the replacement works and the setting as determined through the site screening assessment (Annex A)
Noise	Noise and vibration generating activity may impact nearby noise sensitive receptors (within the building).	<ul style="list-style-type: none"> As per activity 1 above, tailored to the size of the replacement works and the setting as determined through the site screening assessment (Annex A)
Security	Impacts on receptors from security changes.	<ul style="list-style-type: none"> As per activity 1 above, tailored to the size of the replacement works and the setting as determined through the site screening assessment (Annex A)
ESS 8 - Cultural Heritage		
Protected cultural sites	Not applicable for this Activity	<ul style="list-style-type: none"> Not applicable for this Activity.
ESS 10 – Stakeholder Engagement		
Stakeholder consultation	Lack of community support, lack of information provided to stakeholders and rumours and/or misinformation being spread.	<ul style="list-style-type: none"> As above Particular attention on informing users of the facilities when HVAC systems or electricity are to be shut down with sufficient notice to plan to minimise possible impacts.
Grievance management	Grievances remain unresolved and escalate to protests or other actions that could impact Project performance.	<ul style="list-style-type: none"> As above
Activity 4: Replacement of coal fired boilers with the installation of solar PV		
ESS 1 Risk Identification and mitigation		
Equipment supplies and procurement	Poor equipment and material choices increase	<ul style="list-style-type: none"> Undertake to screen²⁶ and map the supply chain to identify and assess the E&S risks throughout the entire supply chain

²⁶ Supply chain/supplier suitability should be determined through screening of the solar PV panel options through publicly available independent third-party supply chain due diligence reports, PV module manufacturer scorecards and the suppliers HR policy and the onus to do this must be placed on the EPC Contractor and Tier 1 suppliers down their supply chain

ACTIVITY	Expected E&S Risk and impacts	Proposed mitigation measures to prevent/mitigate negative impacts
	E&S impacts and non-compliance with ESSs.	<ul style="list-style-type: none"> ● Where there are gaps, provisions must be made to fill these gaps in the supply chain through the procurement process ● Ongoing supply chain mapping should also include the client's assessment of their ability to fully address the relevant risks in their supply chain because of their leverage²⁷ ● Where significant risks are identified but client leverage is low, consideration should be given to potential approaches to increase leverage through various means, including contractual and commercial options or multi-stakeholder initiatives. This should include waste management service companies (such as Toza Hudud, Vtortsevetmetal, Utilizatsiya.uz). ● In identifying supply chain labour risks, clients should use authoritative sources that provide credible and objective assessments of goods and their source countries that carry a high risk of child or forced labour. Sources must include, at a minimum, the findings of the US Department of Labor 'List of goods produced with child labour or forced labour'²⁸. ● Inclusion of supply chain considerations in the pre-qualification process to screen potential supply chain risks, such as poor health and safety and first aid training. ● Develop a Procurement Policy (including a Supplier Code of Conduct) that includes requirements for due diligence, management, and remediation, as well as assurance monitoring and aligns with European Union Guidance on due diligence for EU businesses to address the risk of forced labour and other matters in their operations and supply chain. ● Use E&S contractual language in all project contracts as a key mechanism to manage supply chain contracts. Contractual clauses in purchasing contracts may include requirements for all suppliers to: <ul style="list-style-type: none"> ○ adhere to the project procurement policy and sign on to the procurement code of conduct ○ retain documented information relating to the traceability of materials in their supply chain (invoices, production orders, batch numbers etc.) ○ prohibit the use of forced labour and child labour and require adherence to human rights policies

²⁷ Leverage is determined by the type of sourcing contracts, the importance of the commercial relationship to the supplier, and the suppliers' own market positions, including whether there are potential alternative suppliers.

²⁸ <https://www.dol.gov/agencies/ilab/reports/child-labor/list-of-goods>

ACTIVITY	Expected E&S Risk and impacts	Proposed mitigation measures to prevent/mitigate negative impacts
		<ul style="list-style-type: none"> ○ include language related to health and safety requirements aligned with GIIP for all suppliers ○ report the expansion or upgrade of any supplier facilities to support the work in particular the potential to encroach into a critical habitat or natural habitat ○ provide information on their supply chain and require Tier 1 suppliers to conduct their due diligence on their supply chain ○ cascade the same requirements to their suppliers in contracts and through direct communication of expectations ○ make provision for access to conduct assurance monitoring of supplier performance throughout the construction and operation phases ○ include mechanisms for exiting contracts where contraventions or non-conformances with the Procurement policy arise
Emergency Preparedness and Response	Changes in the fabric of the building and other work can negatively impact exiting EPR provisions or require supplementary provisions to avoid increased risk to workers and receptors.	<ul style="list-style-type: none"> ● Identify key emergency concerns for the project - consider natural hazard risks (e.g., flood risk, seismic risk, weather risk in Project design and define a sub-project Emergency Preparedness and Response Plan (EPRP) ● Based on the location of the project to existing medical facilities, define the minimum requirements for medical preparedness (e.g., site clinic, paramedic, ambulance, first aid facilities and first aiders) ● Include risk management protocols to manage natural hazards and climate events, including the need for appropriate welfare and shelter provisions and project risks, including fire, accident, incident, etc. ● Before any works commencing and following national legislation and GIIP, hold consultation with the local fire and rescue service to input requirements into the EPRP. ● In the EPRP, identify emergency response facilities/equipment (such as muster points, first aid kits and fire extinguishers) on the project design and include a map of the locations of these items in the EPRP
ESS2 Labour		
Worker occupational H&S	Possible injuries and first aid cases result from insufficient occupational H&S provisions, knowledge or training.	<ul style="list-style-type: none"> ● As Activity 1 above <p>PLUS</p>

ACTIVITY	Expected E&S Risk and impacts	Proposed mitigation measures to prevent/mitigate negative impacts
		<ul style="list-style-type: none"> • Specific occupational and H&S risks will be present relating to working at heights and working with live electricity. • Specialized and trained workers will need to be employed to undertake the works.
Working terms and conditions	Working terms and conditions not adequately met Inadequate worker accommodation provided	<ul style="list-style-type: none"> • As Activity 1 above
ESS 3 Pollution Prevention and Control		
Materials Management	Poor hazardous materials management can lead to pollution of the environment or impact worker and receptor health.	<ul style="list-style-type: none"> • As Activity 1 above
Asbestos management	Removal of old equipment and replacement Activity may result in exposure to ACMs	<ul style="list-style-type: none"> • As Activity 1 above
General waste	Removal of obsolete equipment may generate waste during the construction process	<ul style="list-style-type: none"> • As Activity 1 above
Hazardous Waste	Decommissioning old or obsolete equipment may generate hazardous waste, including substances banned under international protocols and GIIP.	<ul style="list-style-type: none"> • As Activity 1 above
ESS 4 - Community H&S		
Health and Safety (receptors)	Components connected with the works may pose an H&S risk to persons using the facility (interior and exterior)	<ul style="list-style-type: none"> • As part of the health and safety plan defined in Activity 1 above, also: • Minimize interaction between building users and construction workers. • Speak with building staff and management well in advance of shutting off electricity

ACTIVITY	Expected E&S Risk and impacts	Proposed mitigation measures to prevent/mitigate negative impacts
Receptor disturbance	Temporary relocation of school classrooms, health facilities, and other building utilities potentially disrupt education and healthcare services. Where the building remains occupied during this may present a higher risk of construction nuisance for receptors remaining in the building	<ul style="list-style-type: none"> As per Activity 1
Fire and Life Safety	The building remains occupied during work, which may pose a higher risk of fire for receptors remaining in the building.	<ul style="list-style-type: none"> Undertake fire risk assessment and plan for working in the building while occupied (e.g., related to hot work activity, management of waste, use of flammable materials used in the construction process) Perform daily inspection by fire safety personnel must be undertaken to confirm that the fire risk assessment is adequately implemented.
Traffic	Minor disturbances may arise in connection with the delivery of machines equipment.	<ul style="list-style-type: none"> As per activity 1 above, tailored to the size of boiler to be replaced and the geographical setting as determined through the site screening assessment (Annex A)
Dust	Removal of materials and works may generate dust on the interior of the building	<ul style="list-style-type: none"> As per activity 1 above, tailored to the size of boiler to be replaced and the geographical setting as determined through the site screening assessment (Annex A)
Noise and vibration	Noise and vibration generating activity may impact nearby noise sensitive receptors (within the building).	<ul style="list-style-type: none"> As per activity 1 above, tailored to the size of boiler to be replaced and the geographical setting as determined through the site screening assessment (Annex A)
Security	Impacts on receptors from security presence	<ul style="list-style-type: none"> As above
ESS 8 - Cultural Heritage		
Protected cultural sites	Sub-project Activity on exterior façades or protected internal features	<ul style="list-style-type: none"> As per Activity 1

ACTIVITY	Expected E&S Risk and impacts	Proposed mitigation measures to prevent/mitigate negative impacts
	may potentially impact buildings with protected building status (exterior or interior) as per national laws.	
ESS 10 – Stakeholder Engagement		
Stakeholder consultation	Lack of community support, lack of information provided to stakeholders and rumours and/or misinformation being spread.	<ul style="list-style-type: none"> As per Activity 1 above
Grievance management	Grievances remain unresolved and escalate to protests or other actions that could impact Project performance.	<ul style="list-style-type: none"> As per Activity 1 above

6. Procedures for implementation

6.1. Institutional arrangements and mechanisms for project implementation

Figure 7 illustrates project implementation arrangements and role-players. These are made up of the following, and the role and responsibilities of each are outlined in the sections below.

- Ministry of Energy
- Project Steering Committee (PSC)
- Line Ministries
- Fund
- Project Management Consultant
- Procurement Committee
- Clean Energy Service Providers

The Project beneficiaries are outlined in section 1.3.1.

Ministry of Energy

The Intersectoral Energy Efficiency Fund (the Fund) under the MOE (MOE) will provide a full set of services for clean energy improvements at the beneficiary facility. The beneficiary will pay for such services during the payback period of the investments using energy cost savings.

Project Steering Committee (PSC)

The MoE shall maintain, throughout the implementation of the Project, a steering committee (PSC) with the composition, including, inter alia, representatives from the relevant line ministries MoH, MoPSSE, MIFT, and MoF. The PSC will be chaired by the MoE as the lead Government institution responsible for project implementation. It will supervise the progress of implementation. The PSC will also provide strategic and operational guidance to the Fund/PMC as needed.

Line Ministries

The Ministry of Pre-School and School Education and the Ministry of Health: These ministries will each be responsible for providing recommendations and priorities on building selection, evaluating bids, and providing guidance to project implementation through the Project Working Group. Project implementation will entail the creation of Working Group at each of the Ministry of Pre-school and School Education (MoPSSE), and Ministry of Health (MoH) (separately or combined).

Figure 7: Project implementation structure

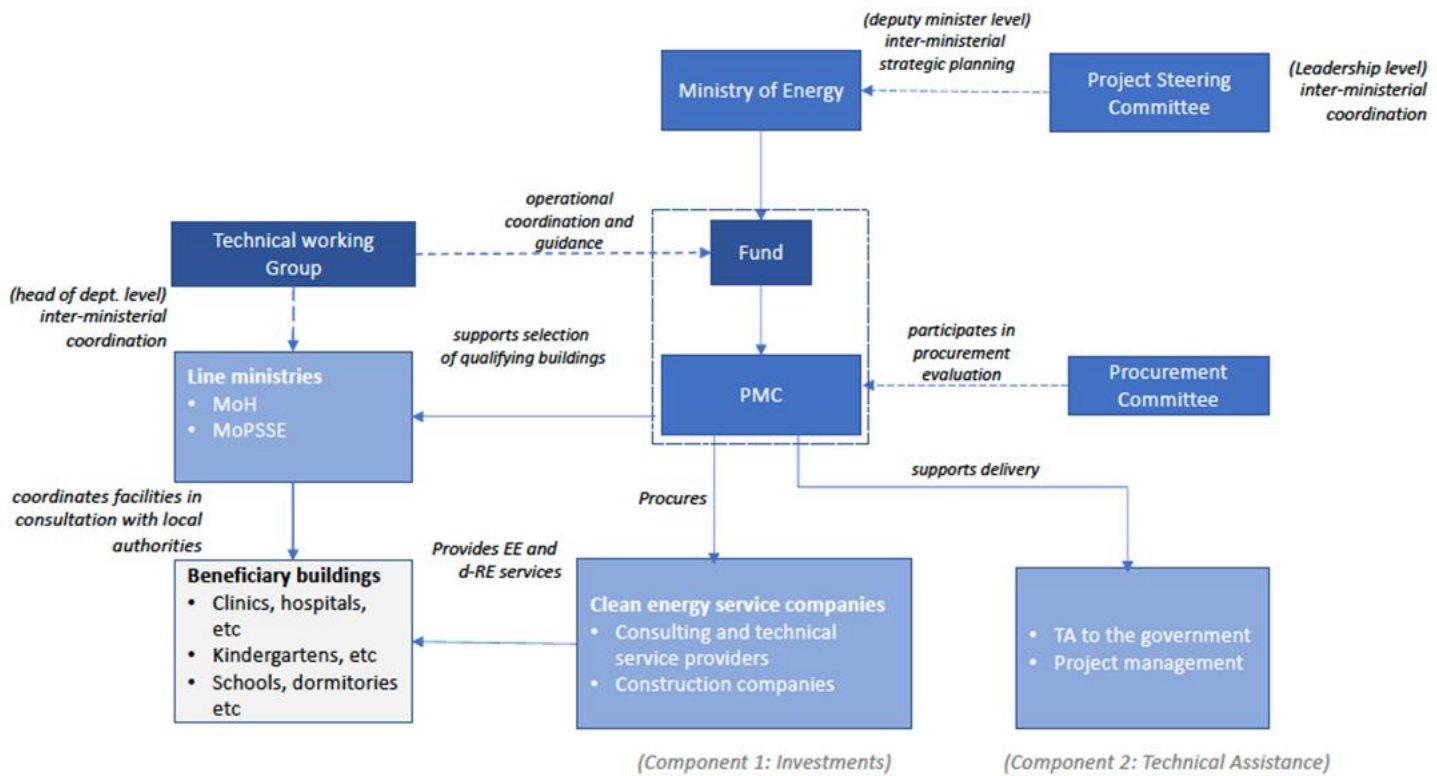
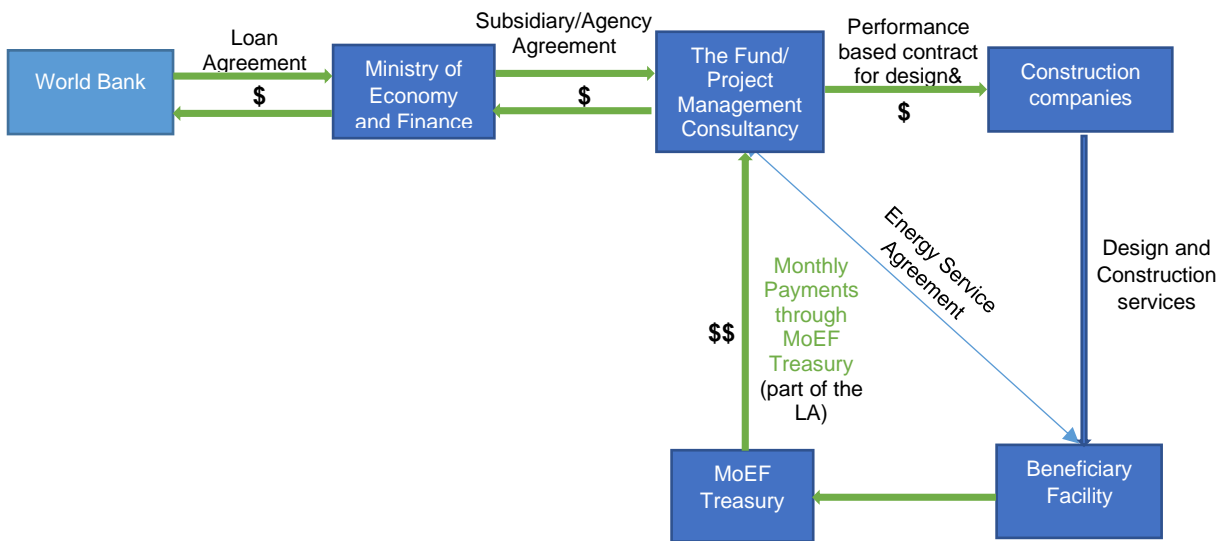


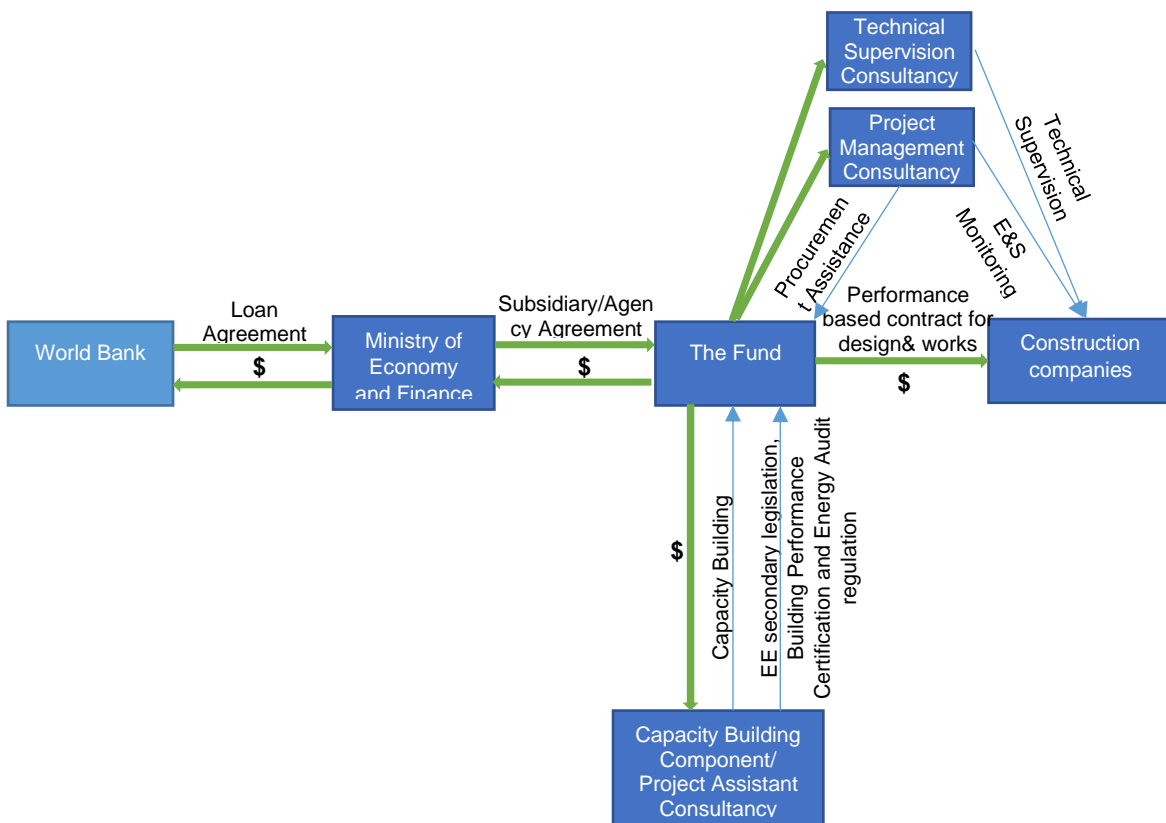
Figure 8 shows the ESA's fund flow. The Bank will lend funds to the GoU through the Ministry of Economy and Finance, which will then contribute funds to the Fund via an agency or subsidiary agreement.

Figure 8: Project flow of funds

1) Component 1



2) Component 2



Project Management Consultant

Project will be managed by a consulting company (Project Management Consultant or PMC) for up to 2.5 years, as the Fund does not have sufficient capacity now. After completion of the

PMC contract, the Fund will manage the Project itself by establishing a Project Management Unit within the Fund.

The institutional responsibilities and arrangements for the PMC are as follows:

- The PMC's main role is to ensure operational compliance as per the World Bank policies as defined in the Project Appraisal Document, Financing Agreement and Operations Manual and Government policies as applicable.
- The PMC is led by a Project Director and includes a team of specialized staff responsible for project management, financial management, procurement, environmental and social standards, monitoring and evaluation, civil Activity design review and contract management, as well as support staff such a secretary, legal support, fiduciary support staff and a driver.
- The PMC will also recruit specialized consultants as necessary for specific technical assistance for overall implementation of activities.
- The PMC will liaise closely and ensure overall coordination of all Project entities to ensure necessary data and information are shared and collated for reporting to Project Board and the World Bank.

Specific arrangements for implementation of this ESMF will fall to the following roles within the PMC (together referred to as the E&S SPECIALISTS):

- Environmental Specialist (ES)
- Social Specialist (SS)
- Health and Safety Specialist (HSS)
- Stakeholder Engagement Specialist (SES)

The E&S roles at the PMC; will be responsible for the following risk management activities:

- implementation of all steps presented in this ESMF
- facilitating the preparation of environmental and social instruments, such as E&S screening for sub-projects, site specific ESMPs, monitoring/reporting on compliance of due diligence mechanisms, set forth in the ESMF
- ensuring that project activities are carried out in accordance with the ESSs, WBG EHS Guidelines and national policies and procedures
- conducting and coordinating relevant training for the Fund staff and project stakeholders as outlined in this ESMF
- overseeing of institutional responsibilities to obtain clearances from relevant authorities where applicable.
- review and approve site -specific construction environmental and social management plans before commencement of works for each of sub-project
- establish effective grievance mechanism; liaison with other agencies, contractors, and engineering supervisors at the regional level; monitoring and evaluation; and training.
- providing regular supervision (oversight, monitoring and identifying issues of non-compliance or adverse trends) of the effectiveness of the social, environmental mitigation measures foreseen by site-specific ESMPs
- providing advice and guidance to contractors on social and environmental issues where appropriate
- preparing quarterly compliance monitoring reports and formally communicating with the World Bank on environmental and social and ESF related matters
- managing the Environmental and Social Officers assigned to the project
- overseeing stakeholder engagement activities undertaken by the Community Relations/Liaisons Manager for sub-projects

-
- reporting to the PMC on the implementation of project activities and the implementation of the Grievance Mechanism
 - oversee the implementation of the requirements of the ESCP
 - Oversee the implementation of the requirements of the LMP

Within the PMC the role of Stakeholder Engagement Specialists will be created to oversee communication requirements and implementation of the grievance mechanism related to the Project. Specific tasks may include:

- work with the implementation organisations to make necessary notifications to their staff and stakeholders as per the Project SEP
- ensure that safeguard issues are adequately communicated to relevant stakeholders
- provide updates to the media on any Activity
- coordinate the implementation of grievance redress, monitoring, and reporting (as defined in the Project SEP)

The role of the SS will be to oversee the implementation, monitoring, and auditing of the LMP.

The Main Contractor EHS Specialist(s) (required for each sub-project or each contract) will be the focus for implementation of the EHS requirements of the sub-project construction site-specific ESMPs (as outlined in the ESMF section 4.4.1.1.). The role of the Main Contractor E&S Lead will be to:

- Discuss site constraints and opportunities for all construction activities
- Ensure consistency of documentation and tracking systems
- Regular meetings to ensure materials submittals and onsite installations are in line with design stage
- Ensure coordination and collaborations between subcontractors and vendors
- Construction stage report (monthly or other suitable frequency as defined by the Sub-project construction ESMP)
- EHS KPI reporting
- Maintain H&S and Environmental risk registers
- Coordinate with external third parties
- Collaboration on grievance reporting

Procurement Committee

The role of the Procurement committee will be to implement the WB procurement process alongside the PMC including:

- Identify goods or services needed and set out in procurement order (noting procurement recommendations set out in the Chapter 5).
- Consider lists of suppliers
- Negotiate contract terms with selected suppliers
- Finalize purchase orders
- Receive and monitor invoices and process payment (following approval from the other relevant parties).
- Delivery an audit of the order.

The Facility (local school, pre-school, or hospital)

Each Facility will identify a Working Group at each institution (depending on the scale of the Activity) to work closely with the PMC and ministries in a coordinated way throughout the preparation and implementation of the procurement process, including conducting supervision during installation activity. For E&S requirements, the Facility will work closely with the E&S SPECIALISTS. In most cases, the Facilities will be responsible for ongoing operation and maintenance and, therefore, they will be responsible for implementing any operational system changes to support the project. As implementation partners, the Facilities are also likely to be the first point of call for grievances and stakeholder communications. They will work closely with the PMC Stakeholder Engagement Specialist to implement the ESMF, SEP. The Facility will, in most cases, also be the nominated party for submission of any requests for local approval /consent on behalf of the Contractor.

Clean Energy Service Providers (Contractors)

The EE contractor will be responsible for implementation of the sub-project ESMPs (approved by the PMC), preparing documentation for any consent and permits, and implementing the Activity following the ESMF and the approved ESMPs. The specific requirements for the Contractors will be set out in the procurement contract. General requirements include:

- Project manage, design and provide equipment (unless stated otherwise) for the required works in accordance with the design specification and this ESMF
- Implement the sub-project ESMP approved in accordance with this ESMF
- outsourcing detailed studies to consultants for any specific assessments required (e.g., noise monitoring) and managing and ensuring the delivery of such outsourced tasks.
- Ensure all required access to Facilities is maintained
- Removal of all construction project is the debris, material waste, and garbage
- Provide suitable PPE for all workers on site
- Adhere to any COVID-19 or other specific requirements at the sub-project Facility.
- Adhere to any restrictions applied to manage the safety of receptors in the facilities. Accept, protect, and stage incoming deliveries of materials and products to be used

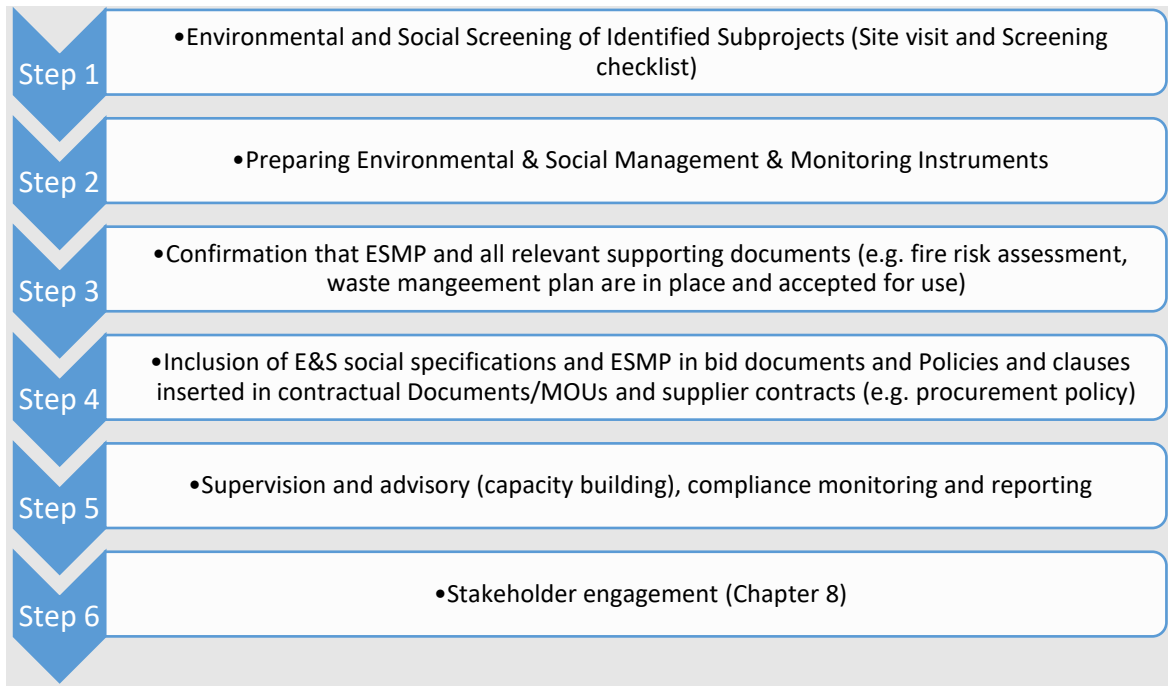
World Bank

The WB will provide preliminary review and approval of 3-4 subprojects per region or depending on type of subproject and impacts and then a no-objection for the relevant environmental and social management documents (sub-project ESMPs) and another relevant ESF document. After the remaining subproject during the implementation of the project, PMC/Fund conducts a prior review of the environmental and social assessment documents of the remaining sub-projects, and the World Bank conducts a post review.

The risk categorization of sub-projects is tentatively shared in this ESMF document. Still, if there is any change in the risk category, the PMC/Fund should discuss the new risk category with the WB and reach a consensus.

6.2. Sub-project implementation

An environmental and social screening and management process ensures that sub-projects potential adverse environmental and social impacts are identified, assessed, and mitigated. The process includes the following steps closely linked with activity planning, design, and implementation steps. The steps are:



6.2.1. Step 1 E&S Screening

The PMC will perform the screening exercise. The screening will determine the impacts to be managed and the scope for the sub-project ESMP. Appropriate screening at the sub-project level enables the PMC and the relevant Contractor to focus on those impacts most likely to give rise to significant effects on the environment. The sub-project site screening checklist in Annex A should act as a prompt for considering the impacts of the actual design and planned works and can provide feedback on the pre-feasibility stage design and management process. The site screening checklist gathers the basic information on project design and operation (including alternatives still under consideration), the proposed project site/s, and general site features and project impacts required to complete a robust ESMP. The site screening process will also identify the need for supplementary impact assessment surveys, e.g., asbestos surveys, baseline noise surveys (in particularly sensitive areas), fire risk assessments, etc.

6.2.2. Step 2 Preparing E&S risk management and monitoring instruments

Mitigation measures can be defined as practicable steps that can be taken to mitigate adverse impact from human activities at each stage of the project lifecycle (preparatory phase, construction, operational and maintenance and decommissioning). For potential impacts and risks identified by the site screening checklist, mitigation measures should be developed for each impact and risk and documented in the sub-project ESMP following the mitigation hierarchy:

-
- Avoidance
 - Minimisation
 - Mitigation
 - Compensation

The site-specific ESMP is an essential tool to facilitate project implementation of mitigation measures identified in the site screening process and sets the monitoring and reporting requirements aligned with the requirements outlined in Step 5. It is a key document for all parties, e.g., PMC, Facility, Contractors, and any relevant regulatory authorities to document how obligations will be implemented and how environmental and social, corporate governance, and business integrity requirements will be met.

The ESMP must work as a stand-alone document and establish core elements described in Annex B. It may also include thematic supporting action plans defined in Chapter 5, e.g., asbestos waste management plan. The ESMP must also cover the social, labour, community health and safety and security risks and impacts defined in Chapters 4 and 5, not just environmental management. The ESMP must contain:

- actions to implement mitigation, including supporting sub-plans, thematic action plans, emergency preparedness, and the grievance redress mechanism.
- A monitoring and reporting program.
- Institutional/organizational arrangements measures, including the procedure for continued consultation with and participation of affected people during project implementation (this may link to the communication plan), schedule and cost.
- Key monitoring and reporting requirements, including key performance indicators.

Over time the sub-project ESMP may be supplemented by more detailed contractor management procedures or site method statements, and where these are required, they should be stipulated in the ESMP.

Depending on the kind of facility a typical template of ESMP will be prepared by PMC and provided to the Contractor during bidding procedures including but not limited to the measures as required by the outline described in Annex B.

6.2.3. Step 3 Review and acceptance of E&S Management and monitoring instruments

Following a review of the ESMP and supporting documentation by the PMC, the ESMP will be accepted for use by the Contractor. At this time, monitoring activities as defined in Step 5 will be prepared. The PMC will play a review role at key stages of the sub-project implementation.

6.2.4. Step 4 Management of Contractors and vendors

The PMC will require that all contractors engaged in the Project operate in a manner consistent with the requirements of the sub-project's ESMP, including the specific requirements set out in the ESCP and ESMF. The PMC will effectively manage all contractors as follows:

1. Assessing the environmental and social risks and impacts associated with such contracts.

-
2. Ascertaining that contractors engaged in connection with the project are legitimate and reliable enterprises and have knowledge and skills to perform their project tasks according to their contractual commitments.
 3. Incorporating all relevant aspects of the ESCP/ESMF into tender documents and vendor contracts.
 4. Contractually requiring contractors and vendors to apply the relevant aspects of the ESCP, ESMF, SEP and LMP and the relevant management tools, including appropriate and effective non-compliance remedies.
 5. Monitoring contractor compliance with their contractual commitments; and
 6. In the case of subcontracting, requiring contractors to have equivalent arrangements with their subcontractors.

6.2.5. Step 5 – E&S Compliance Monitoring, Supervision and Reporting during Construction

Overall monitoring, policy guidance, and strategic oversight of the project rest with the MoE as the Government entity responsible for the Project. The MoE, in collaboration with the Fund, will consolidate progress reports on TA activities implemented by the PMC, Fund, and MoE; updates from the line ministries, and progress reports provided by the PMC on completed procurement, disbursements, physical progress of renovation Activity and Project indicators to report on overall project implementation progress. The MoE will submit the overall implementation progress reports to the Bank and other stakeholders on a semi-annual basis.

The MoE, in collaboration with the Fund, will consolidate progress reports on Project activities implemented by the PMC, Fund, and MoE; updates from the line ministries, and progress reports provided by the PMC on completed procurement, disbursements, physical progress of renovation Activity and Project indicators to report on overall project implementation progress.

The PMC will maintain a database and activity file detailing all public consultation, disclosure information and grievances collected throughout the Project, which will be available for public review.

The PMC will also closely monitor the effective implementation of all ESF instruments as ESMF/ESMP, LMP, SEP and the Grievance Mechanism designed under the Project at the sub-project level. Key information to be tracked will include the following. Further information is provided in section 8.

- List of up-to-date project details for each sub-project
- Track progress against the steps outlined in section 5.1 above
- Mark status of evidence against each step requirement
- Monitor feedback, counts and progress review of the various plans and documentation
- Monitor implementation during actual works.

Non-compliances by the Contractor (EPC or main contractor) against the requirements of the ESMF or other contract elements will be dealt with following the Project non-compliance protocol. See also section 8, monitoring.

7. Capacity building, training, and technical assistance

The ESMF implementation requires special knowledge from the beneficiaries and all project participants at each project stage. To support the objective and ensure the effective implementation of the project and a clear understanding of the E&S requirements for the project, a capacity-building program is required.

The ESRS (2021) noted that significant capacity-building would be needed to build the Borrower's capacity to manage E&S risks through specific training on the ESF and for environmentally and socially responsive sub-projects planning and implementation.

The proposed capacity building program outlined in this section provides training in both general E&S policy principles of the World Bank, relevant national legislation, and in certain specific aspects relevant to this project as defined in the ESMF (e.g., asbestos management, fire and life safety, or hazardous material management).

The PMC's E&S consultant with knowledge of the national E&S requirements and substantial knowledge of the policies and requirements of the World Bank's ESF, will develop training modules and supporting materials. The training will include basic WB requirements, national rules and procedures for safeguards, and case studies where relevant. Training will be conducted in the appropriate language of the Project.

Capacity-building training activities will cover three primary areas:

1. **PMC capacity** for the implementation of ESMF during sub-projects selection, stages of construction and functioning of the sub-projects. A hired Consultant will provide appropriate training for PIE and Environmental and Social Specialists on the requirements of the ESMF of the World Bank, assist in undertaking sub-project risk assessment and screening and oversee the development of the ESMPs (and topic-specific plans) for the rest of sub-projects. The training can be conducted in the regional centres of project sites during on-site visits and videoconferencing format.
2. **Institutional capacity** (national and regional level) for overseeing institution responsibilities in the ESMF relating to specific requirements of the ESMF, LMP, SEP, sub-project ESMPs and general E&S measures during the life of projects. Together with the PMC E&S SPECIALISTS, the Consultant will develop and deliver a training program on the general overview of the World Bank's ESF and national environmental and social requirements.
3. **Contractor's capacity** - introduction training on WB ESF and national environmental requirements, the content of ESMF and required content of sub-project ESMP and supporting plans, monitoring and reporting obligations during the project implementation for compliance with the ESMP and contractor obligations related to stakeholder engagement, labour management and grievance management and redress. The training will also include performance management for managing and reporting against the KPIs (as relevant). This training will be held as part of induction training and contractor onboarding activities.

An outline of the proposed training is provided in Table 12.

Table 12: Preliminary capacity-building plan and training program (to feed into the overall ESMF budget). Training personnel are not included (see overall ESMF budget).

Reference	Training	Duration	Target Group	Responsibility
Implementing parties - Induction training	Formal training	0.5 days	All parties	PMC
Overall ESMF implementation (including LMP, SEP)	Formal training	2 days	E&S SPECIALISTS, ESO, SES, HR	PMC
ESMF implementation training (including LMP, SEP)	Formal training	2 days	Regional ESO, SES	PMC
Inspections and audits	On-the-job training			E&S SPECIALISTS/ESO/third party specialists
Introductory training	Formal training	1 day	Implementation Partners	
Task-specific training	Formal training	One day		
Asbestos and hazardous material management awareness training	Formal training	One day	ESS, ESO, Contractors	PMC Asbestos Management Consultant
General ESMP training (including first aid training) at facilities	Formal training	Two days	All parties	PMC

8. E&S Monitoring, Supervision and Reporting

Monitoring of E&S impacts for each sub-project will allow the PMC to identify the consequences of the impacts and the effectiveness of the mitigation measures implemented. Should mitigation measures not be effective, corrective actions can be implemented. To assist in monitoring progress during actual works, the PMC will develop a suite of key performance indicators (KPIs) to centrally assist the compliance reporting from the sub-projects. The KPIs will help PMC keep track of the progress of individual sub-projects against each of the KPI requirements. The PMC will be responsible for defining the ultimate KPIs. These KPI requirements should be included in every sub-project ESMP, so the Contractor is aware of the performance obligations from the outset. Table 13 provides an overview of the minimum KPI requirements for the Project.

Table 13: Minimum KPI requirements for reporting sub-project compliance during project preparation and implementation

Phase	What	Where	How	When	Why	Cost	Who
Project preparation	ESMP for each sub-project	All sub-projects	% sub-project with approved sub-project ESMP before works commence	Monthly	To monitor completion of the screening phase and sub-project ESMP sign off.	Within project budget (section 10)	PMC
	Fair and equitable labour practices across the sub-projects	All sub-projects	% of worker grievances resolved on time	Monthly	Labor welfare	Within project budget (section 10)	Main Contractor
	Occupational health and safety	All sub-projects	% Incident investigation completed on time Lost time injury frequency rate by Contractors Person hours worked	Monthly	Public and workplace health and safety	Within project budget (section 10)	Main Contractor
	Compliance with supply chain code of conduct	All sub-projects	% sub-projects that have implemented a supplier code of conduct	Monthly	Compliance with WB requirements and worker welfare	Within project budget (section 10)	Main Contractor
	Waste management	All sub-projects	Total waste generated % CFC/HFC destroyed % Waste to landfill	Monthly	Timely completion of all waste disposal	Within project budget (section 10)	Main Contractor
	Monitor community relations	All sub-projects	Number of Community Complaints received	Monthly	Identification of community concerns before they escalate	Within project budget (section 10)	PMC Main Contractor
	Implement an effective grievance mechanism	All sub-projects	% Community Complaints received by Contractors resolved within 30 days	Monthly	Identification of community concerns before they escalate	Within project budget (section 10)	PMC Main Contractor
Project implementation	Labor monitoring	All sub-projects	% of worker grievances resolved on time	Annually	Labor welfare	To be financed by individual sub-projects	Facility to report to the line ministry

Phase	What	Where	How	When	Why	Cost	Who
	Monitor community relations	All sub-projects	Number of Community Complaints received	Annually	Identification of community concerns before they escalate	To be financed by individual sub-projects	Facility to report to the line ministry
	Waste management	All sub-projects	Total waste generated % CFC/HFC destroyed % Waste to landfill	Quarterly	Timely completion of all waste disposal	To be financed by individual sub-projects	Facility to report to the line ministry
	Energy consumption	All sub-projects	Total energy consumption	Quarterly	To identify energy savings as a result of the Project.	To be financed by individual sub-projects	The Fund

The PMC will track and monitor the KPIs defined in the ESMF, and any other project-specific KPIs defined in the sub-project ESMP.

A compliance report will be prepared by the PMC that sets out the compliance of each sub-project with the requirements of the Sub-project ESMP. The aim is to verify compliance with the ESMF, implementation progress and the extent of effective consultation and participation with stakeholders. The PMC will develop a standard checklist to support this activity.

If necessary, third-party audits may also be implemented to confirm compliance. Depending on the KPI, monthly reports with relevant PMC or Contractor information will be submitted to inform the reporting (see Annex D).

Any non-compliance will be followed up in a non-compliance report issued to the sub-project for rectification. The non-compliance report will include an outline of the non-compliance issue, action for rectification, timelines for implementation and responsibility.

The PMC will prepare and submit regular monitoring reports to the World Bank on the environmental, social, health, and safety (ESHS) performance of the project. These reports will include but are not limited to, details on the implementation of the Environmental and Social Commitment Plan (ESCP), the status of preparation and implementation of Environmental and Social (E&S) instruments required under the ESCP, stakeholder engagement activities, the functioning of grievance mechanisms, and the ESHS performance of subprojects funded by the project. The PIU will submit these six-monthly reports throughout the project implementation, commencing after the Effective Date. Each report will be submitted to the World Bank no later than 30 days after the end of each reporting period.

The PMC will prepare and submit reports on stakeholder engagement activities for the World Bank on a semi-annual basis. These reports will provide a summary of all public consultation activities (in the form of a stakeholder engagement log), grievances (grievance log) and resolutions (grievance incident form). External reporting to the Fund and other entities will also be undertaken.

The Project will also disclose a summary of the implementation of the GM and grievances received in an annual report to stakeholders. The information will be made anonymous, and no identifying information on specific individuals will be included in the reporting.

9. Grievance mechanism

9.1. Statutory grievance Redress mechanism in Uzbekistan

In Uzbekistan, any citizen has several channels to submit their complaints regarding the actions or activities of local government bodies. Grievances can be raised:

In general:

- Telephone the President's virtual reception line (tel number is 1000 or 0-800-210-00-00) or send a message to the President's Virtual reception online (www.pm.gov.uz)
- Telephone hotlines were established at each district or regional Khokimiyat
- Attend meetings with district/regional Heads of Sectors on integrated socio-economic development of the regions (4 sectors established in each district)
- Attend meetings with the leadership of line ministries and agencies that have to meet with citizens in rural areas regularly
- Write a complaint letter to the regional Khokim/ line Ministry/President
- Visit public reception offices under the President's virtual reception, established in each regional centre nationwide

At the village (makhalla) level:

- Visit the Mahalla Citizens' Assembly Office to meet with the Chair
- If a citizen is not satisfied with the reply provided by the Makhalla Chair or they have received an incomplete response, the citizen can address their concern to the District Khokimiya

At the District level:

- Visit the Khokimiyat on 'citizens reception days' to meet with the district Khokim or deputy Khokims
- Visit the Public reception offices under the President's Virtual reception, established in each district nationwide
- If a citizen is not satisfied with the reply provided at the district level or he has received an incomplete response, the citizen can apply to the Regional Khokimiyat

At the Regional level:

- Visit the Khokimiyat on 'citizens reception days' to meet with the regional Khokim or deputy Khokims

9.2. Project level Grievance Mechanism

An overarching Project grievance mechanism must be set up to comply with the World Bank's ESS10 requirements to ensure that all comments, suggestions, and objections received from

the Project stakeholders, especially from the nearby communities and facilities, are dealt with appropriately and promptly. The grievance mechanism serves as an important feedback mechanism that can improve Project impact and mitigate the risks. This mechanism will be available to all Project stakeholders and other affected parties, enabling them to submit questions, comments, suggestions and/or complaints and provide feedback on all Project-related activities.

The primary grievance focal point to raise grievances will be the Site Manager appointed by the Contractor, and the PMC Stakeholder Engagement Specialist will be responsible for overall management and monitoring of the GM. The contact information of both of these people will be provided at all locations where the work is being performed and during information disclosure activities. The Stakeholder Engagement Specialist will keep a grievance log of all grievances received by the Project and monitor the resolution of the grievance and be responsible for ensuring the grievances are closed out promptly. The MOE, the Fund and PMC will all be involved, as relevant, in providing a resolution to the grievances, which will then be noted in the grievance log by the Stakeholder Engagement Specialist.

Grievances can be raised to the Fund or the PMC, during the construction phases, through the following methods:

- Via mail or e-mail
- On the website (<https://minenergy.uz/>)
- Via telephone
- Directly to the site manager, Stakeholder Engagement Specialist, or any other worker on-site, who will take the grievance and pass it to the Stakeholder Engagement Specialist
- During public meetings and consultations
- Submission on site of a Grievance Registration Form (which is provided in Annex F)

The Project stakeholders will be informed about the grievance mechanism and the methods for raising grievances during the consultation and disclosure activities and in Project information disclosure documents.

The Contractor Project Site Manager will be primarily responsible for receiving grievances on the individual sites, and the Stakeholder Engagement Specialist (SES) will be the person responsible for receiving all grievances (everyone who receives a grievance, whether written or verbally, will pass on the information to the SES). The SES will log all grievances in a grievance log and manage the completion of the tasks required to close out each grievance. The SES will be responsible for reporting engagement and grievance related data, as shown in Chapter 6 above.

Further details on the grievance mechanism are included in the Stakeholder Engagement Plan.

9.3. World Bank Grievance Redress System

Project stakeholders who believe that they are adversely impacted by a World Bank (WB) supported project may submit complaints to the WB's Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed to address project-related concerns. Project stakeholders may submit their complaints to the WB's independent

Inspection Panel, which determines whether harm has occurred or could occur due to WB non-compliance with its policies and procedures.

Grievances can be submitted at any time after concerns have been brought directly to the World Bank’s attention and Bank Management has been allowed to respond. For information on submitting complaints to the World Bank’s corporate Grievance Redress Service (GRS), please visit <http://www.worldbank.org/en/projects-operations/products-and-services/grievance-redress-service>. For information on submitting complaints to the World Bank Inspection Panel, please visit www.inspectionpanel.org.

10. ESMF implementation budget

It is difficult to provide accurate costs estimates for implementing the requirements defined in this ESMF due to the unknown requirements of the scope at the sub-project level and the exact number of projects where works will be implemented. Estimating costs have been provided at the sub-project level for the most intrusive works, considering insulation of the building and exterior work to the façade. Works required wholly within the existing building and equipment footprint (e.g., replacement of a boiler) may not require such extensive support. The costs have been split out under Implementation Costs and Sub-project Costs.

Indicative costs are provided in the following tables.

Table 14: Indicative costs for PMC implementation and supporting activities

Requirements	Per Year	Component
Labour		
PMC E&S staff (E&S SPECIALISTS) (one Environmental Specialist, one Social Specialist, one Health and Safety specialist, one Stakeholder Engagement Specialist)	US\$105,000 (per year) (US\$ 35,000 per person)	Component 2 budget
Specialist input/studies (gender, engagement, energy audits, contaminated land, waste, cultural heritage etc.)	US\$ 50,000 (per year)	Component 2 budget
SEP Implementation (including stakeholder engagement specialist) ²⁹	US\$ 150,000	Component 2 budget
Institutional Strengthening and Capacity Building		
Preparation of Training	US\$ 45,000	Component 2 budget
E&S Training specialist	US\$ 35,000	Component 2 budget
Expenses		

²⁹ This section covers the recruitment expenses of one stakeholder engagement specialist for the implementation period of the project and implementation of the communication and public outreach activities to enhance clean energy awareness.

Requirements	Per Year	Component
Office costs/overheads (PMC)	US\$ 20,000 per year	Component 2 budget
Administrative costs (PMC)	US\$ 20,000 per year	Component 2 budget
Travel costs (PMC)	US\$ 20,000 per year	Component 2 budget
Subsistence (PMC)	US\$ 20,000 per year	Component 2 budget

Table 15: Indicative costs at the sub-project level

Sub-project costs	Indicative Costs (per sub-project)	Responsibility/Allocation
Project Site Screening report	\$US2500	Contactor cost against Component 1
Preparation of the Environmental and Social Management Plan by Local Consultants	\$US2500	Contactor cost against Component 1
Third-party specialist inputs (fire and life safety risk assessments)	\$US 2500 per project	Contactor cost against Component 1
Asbestos Site Surveys/Pre-refurbishment surveys (all sub-projects)	\$US 2500 per day (2-day survey plus Asbestos Management Plan and lab costs)	Contactor cost against Component 1
Asbestos removal and disposal (by a certified asbestos removal contractor)	\$US 10,000	Contactor cost against Component 1
Preparation of HR policies	US\$1,000	Contactor cost against Component 1
Preparation of transition plan for locations	US\$2,000	Contactor cost against Component 1
Signage and barricades to protect the project boundaries (or out of bound areas)	US\$500	Contractor cost against ESMF requirements
Disposal of refrigerants following GIIP	\$US 10,000	Contractor cost against ESMF requirements

11. ESMF disclosure and public consultation

11.1. Stakeholder engagement

The stakeholder engagement will be coordinated by the Stakeholder Engagement Specialist (SES) and supported by relevant E&S specialists in accordance with the project's Stakeholder Engagement Plan (SEP). Stakeholder engagement activities will be ongoing through the whole life cycle of the Project (Project's preparation, pre-construction, construction and operation phases). The specific timing for consultation at each location will be determined once the eligible facilities have been selected. At each of the eligible facilities, the following types of engagement will be held as defined in the Project SEP:

- Identification of project energy requirements and initial surveys:
- Design walks through with building user committees, particularly vulnerable building users, as part of the energy audit activities. Committee members and other interested end-users of the buildings will be invited to jointly walk through the building and provide their feedback on the needs.
- Social monitoring surveys supplement the walk-through consultations and collect data from students, patients and professionals working in the facilities selected on a sample basis. Questions will likely encompass subjective evaluations of comfort levels, quality of windows, joinery, heating systems, air, lighting, etc.
- Design phase consultations – Pre-commissioning roundtables to share and discuss project activities, building improvements, and the walk-through consultations and social monitoring surveys (any corrective action taken to address issues raised through the feedback process). In addition, the roundtables will serve as public information events - presenting short movies of case studies and publicly disseminating beneficiary feedback and actions taken.
- ESMP checklist and sub-project ESMP preparation consultations – public consultations, meetings and consultations with key stakeholders to determine information requirements for the ESMP and specific information on the eligible facilities (including timing constraints for construction, language requirements for stakeholders, preliminary identification of vulnerable groups).
- Pre-construction consultations – disclosure to PAPs of key Project dates and information on employment opportunities (and managing expectations of community members as to how many jobs the Project will create).
- During construction – providing information to PAPs and other interested stakeholders at key Project phases, as necessary (expected to be approximately monthly).
- Pre-operations consultation – disclosing to PAPs the timeframe for completion of the Activity.
- Project handover – official hand-over of the facility to staff and local government entities, including a final design walk-through and social monitoring surveys focused on completing the Activity.

Some of these types of engagements will depend upon the construction timeframe at each eligible facility. For example, should the construction last less than one month, it is unlikely that the 'during construction' consultations will be necessary.

Throughout project implementation, regular updates and information will be disclosed to the public via the project website (www.minenergy.uz), community meetings, and local media.

This approach ensures that all stakeholders are informed and can participate meaningfully in the project.

11.2. Consultations with stakeholders

On April 23, 2024 the Project Launch Event was held for presentation of the CEBU project with participation of all stakeholders, in particular the Ministry of Public school and Pre-school Education and its regional branches, Ministry of Health and its regional branches, the Ministry of Energy, Ministry of Investment and Trade, Ministry of Finance, Ministry of Economy, Ministry of Construction, Housing and Communal Services, the commercial banks and potential project contractors such as energy providers, private construction companies, design companies and others. The total number of participants estimated more than 200 people. This event was widely publicized and promoted in mass media and in particular, on the website of the Ministry of Energy³⁰. The launch event presentations were provided in three languages, Uzbek, Russian and English³¹ for easy understanding.

During this event the following was presented to update and consult with Project stakeholders:

- Project objectives, components and status;
- Environmental and social instruments prepared under the Project to manage the project related social and environmental risks and impacts;
- Health and Safety management;
- Investments under CEBU (Survey, Energy, Audit, Technical Design);
- Introduction to Green Building Uzbekistan and IFC Edge Tool;
- GCOM Technical Support Activities in Uzbekistan and etc.

The participants during the event have interested in details of the Project, asked the questions and after that exchanged their opinions. The Director of the Fund Elzod Rakhmanov has presented responsibilities of the Fund and answered the raised issues. The photos and links of publications in the mass media of the Project Launch Event presented in the Annex 4 to the Project SEP.

³⁰ <https://minenergy.uz/ru/news/view/3896>

³¹ <http://cebu.uz/launchevent/en/index.html>

Annex A: Sub-project Environmental and Social Screening checklist

Instructions

The purpose of the checklist is to focus on the site-specific construction environmental and social management plan (ESMPs) of sub-projects. This checklist is designed to help sub-project implementers confirm the E&S risk and impacts for a particular sub-project and identify the relevant mitigation measures in the sub-project ESMP. It is recommended that a project walkthrough supports the completion of the screening checklist.

This checklist is tailored based on the outcomes of the ESMF and is focused on the ESS1, ESS2, ESS3, ESS4, and ESS8. Any unforeseen degradation of natural habitat or critical habitat works, or works in a protected area (ESS6), work with significant risks on aquatic species or groundwater (ESS3), or impacts on indigenous peoples (ESS7) must be reassessed to determine the need for a more in-depth E&S assessment.

Sub-project name:		
Facility Address		
Proposed Start Date:		Proposed End Date:
Main Contractor (where known):		Sub-contractors
Summary of proposed works:		
Description of the location of the Works:		
MOE Contact:	Name:	Tel/Email.
PSC Contact:	Name:	Tel/Email.
Line Ministry Contact:	Name:	Tel/Email.
Facility Contact information:	Name:	Tel/Email.

Topic	Observation (Yes/no/Not Applicable or briefly described)	Remarks and follow up action.
ESS 1		
Identify receptors within 1km of the project site. Highlight all receptors and indicate potential high-risk receptors (households, industry, areas of cultural heritage) that may be subject to direct impacts.		
Identify any wider receptors communities that may realise indirect, induced impacts and describe vulnerabilities.		
Identify receptors within the facility that will be directly impacted by the works (residents, patients, school children etc.)		
If so, will receptors require relocation to support the works for how long and how many?		
Determine specific vulnerabilities of these receptors in the building (temperature-sensitive, noise sensitive, require electricity to life-		

Topic	Observation (Yes/no/Not Applicable or briefly described)	Remarks and follow up action.
saving power equipment, low immune systems etc.)?		
Determine (through consultation) if any wider stakeholder needs should be considered?		
Will the works involve an action that will cause any physical changes to the facility's footprint (expanded foundations, new drainage works, utility connections, etc.)?		
Will the works involve any action that will cause any physical changes to the Facility's structure (cladding, walls, roofing?)		
Does the project include activities described in the exclusion list? (Annex P)		
Are any utility works required to support the works (electricity, water pipelines, other)?		
Does the facility have an existing communication strategy? <i>If yes, please obtain.</i>		
Does the facility have an existing community grievance mechanism? <i>If yes, please obtain.</i>		
Does the project include the supply of PV panels?		
ESS2		
Are there any concerns regarding being able to maintain welfare standards for construction workers?		
Will the Contractor provide all construction workers?		
What are the OHS risks presented by undertaking the works? (In high-risk situations, a separate OHS risk screening may be required)		
Is the project likely to negatively impact gender equality and women's empowerment?		
ESS3		
Will the Works produce dust emissions or any other pollutants?		
Will the Works produce solid wastes?		
Will any of the wastes be hazardous wastes?		
Will the Works generate any wastes that cannot be disposed of following GIIP within Uzbekistan?		
Confirm the Works will not involve the release and/or use of chemicals and hazardous materials subject to		

Topic	Observation (Yes/no/Not Applicable or briefly described)	Remarks and follow up action.
international action bans or phase-outs.		
Is there potential to release hazardous materials (e.g., persistent organic pollutants, ozone-depleting substances, lead-based paints, mercury or other heavy metals into the air?		
Will the Works disturb the fabric of the building with potential exposure to Asbestos Containing Materials (ACM)?		
Has an asbestos survey been performed for the facility? <i>If yes, please obtain.</i>		
What hazardous materials are likely to be used?		
Is there a risk for storing the materials on-site (hazardous and non-hazardous)?		
Will there be the removal of old HVAC systems?		
Does the facility have an existing Emergency Preparedness Plan? <i>If yes, please obtain.</i>		
ESS4		
Are there any routes around the Facilities on or around the location used by the public for access to services, recreation or other facilities that will be affected by the Project?		
Are there any transport routes around the location that is susceptible to congestion which can cause nuisance or life safety risks?		
Is the Work in a location that will be highly visible to many people?		
Will the work impact the life and fire safety provisions at the Facility (temporarily or permanently)?		
Are there any receptors particular at risk from GBV/SEA/SH risks?		
Is the facility located in an area known for extreme weather events (flooding, winds, etc.)?		
Is there potential for the Facility to be located on or near contaminated land?		
Will the Works have variable impacts on women and men, different ethnic groups, and social classes?		

Topic	Observation (Yes/no/Not Applicable or briefly described)	Remarks and follow up action.
Are the Works likely to directly or indirectly increase social inequalities now or in the future?		
Is there potential for temporary relocation of students/staff due to renovation works?		
ESS5		
Confirm the requirement for any physical resettlement or livelihood impacts?		
Will any of the workers at the facilities permanently or temporarily lose their jobs due to the Project and therefore require livelihood restoration?		
Has legal ownership of the Facility been approved?		
Review the local cadastre to identify any issues with land ownership.		
ESS8		
Will the Works cause alteration, damage or removal of any cultural heritage site?		
If yes - Request the local agency in charge of cultural heritage to ensure the structure is not a listed building.		
Will the Works constrain access to cultural sites for the communities?		
Other		
Will there be any ongoing operational sub-project specific considerations (e.g., emissions to air)? Please outline?		
Is any further baseline survey work required? Please outline?		
Will the proposed Works have the potential to generate cumulative impacts with other known existing planned activities? Please outline?		
SUMMARY OF E&S SCREENING (to be completed by PMC E&S staff)		
Confirm the risk categorisation (High, moderate, low)		
Confirm ESS triggers		
ESS1 (Y/N, don't know)		
ESS2 (Y/N, don't know)		
ESS3 (Y/N, don't know)		
ESS4 (Y/N, don't know)		
ESS5 (Y/N, don't know)		
ESS* (Y/N, don't know)		
Scope of site-specific ESMP understood? (Y/N)		
Supporting sub-plans or E&S risk assessment required (Y/N)		
OHS management plan		

Topic	Observation (Yes/no/Not Applicable or briefly described)	Remarks and follow up action.
Noise and vibration management plan		
Waste Management Plan (WMP)		
Fire and Life Safety Plan (FLSP),		
Asbestos Management Plan (AMP)		
Traffic Safety Management Plan (TMP)		
Emergency Preparedness and Response Plan (EPRP).		
Environmental and social monitoring plan		
Community health and safety management plan		
Sub-project Stakeholder Engagement Plan (SEP)		
Receptor re-location plan		
Other relevant comments:		
List of supporting photographs:		
List of supporting documents:		
Location / Receptor Map:		

Annex B: Outline for Site-Specific/Subproject ESMP (ESS 1, Annex 1, Part E)

An ESMP consists of mitigation, monitoring, and institutional measures during the implementation and operation of a project to eliminate adverse environmental and social risks and impacts, offset them, or reduce them to acceptable levels. The ESMP also includes the measures and actions needed to implement these measures. The sub-project will (a) identify the set of responses to potentially adverse impacts; (b) determine requirements for ensuring that those responses are made effectively and promptly, and (c) describe the means for meeting those requirements.

To do this, the sub-project will prepare a construction sub-project ESMP. Depending on type of facility the sub-project ESMP shall include all the following sections elaborated following this ESMF and tailored to the scope of works and the findings on the E&S sub-project screening (Annex A).

Section number	Section heading	Overview of Content
1	Introduction	Outline the scope of works, the key parties relevant to the works
2	E&S policy	Based on the E&S Policy outlined in this ESMF.
3	Contractor Management System	Overview of Contractor E&S management system for implementing the works (proportionate to the scale of the works)
4	Summary of E&S risks and receptors	With reference to the findings of the sub-project screening checklist and this ESMF summarize all anticipated adverse environmental and social impacts. Include a key receptor map for receptors within 1km.
5	Legal requirement (National	Description of national legal obligations relevant to the works
6	International requirements	Based on the E&S screening, confirm the international and Lender standards applicable to the works
7	Procedure for E&S risk assessment and control	Detailed risk assessment (see format below)
8	Mitigation measures	For each risk, describe with technical details mitigation measure, including the type of impact to which it relates and the conditions under which it is required (e.g., continuously or in the event of contingencies), together with designs, equipment descriptions, and operating procedures, as appropriate
9	Roles and responsibilities	Contractor roles and responsibilities identifying which party is responsible for carrying out the mitigation and monitoring measures (e.g., for supervision, enforcement, monitoring of implementation, remedial action)
10	Communication arrangements	with the Fund/PMC, Facilities and other requirements identified during the site screening. In some cases, a separate SEP may be required

Section number	Section heading	Overview of Content
11	Sub-contractor management	Outline requirements for sub-contractor management.
12	Inspections, monitoring and auditing	In line with requirements set out in the main ESMF and based on relevant E&S aspects as identified in the sub-project screening (Annex A). Set out the (a) a specific description and technical details of monitoring measures, including the parameters to be measured, methods to be used, sampling locations, frequency of measurements, detection limits (where appropriate), and definition of thresholds that will signal the need for corrective actions; 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.
13	Reporting	Overview of reporting requirements (including requirements of Annex D as a minimum)
14	Incident and accident reporting (and corrective action management)	Overview of site-specific incident reporting procedure, including the link to reporting to the PMC and the required E&S statistics in Annex D.
15	Training (induction training (all workers) and topic-specific training (specific tasks, e.g., hot works, waste management, hazardous materials handling).	Outline of induction training and any other training identified as necessary for the works (e.g., hot works training). Training matrix for all roles identified on the project to identify which training is required for which contractor role. Description of competencies required for all roles
16	Management of change (integration with site-wide change procedure)	Outline of management of change requirements, including requirements for updating risk register, approvals by PMC and E&S triggers for change.
17	Data management	Description of E&S documentation and filing protocols.
18	Implementation schedule	As per the main works schedule, including E&S specific requirements.
19	Budget	E&S implementation budget
20	Supporting sub-plans	The sub-project screening identifies the sub-plans required to implement the Works. An outline of the content of these plans is provided in Annex E.

Annex C: Outline for Supporting Sub-plans/ procedures

Plan	Scope	Content
<p>HR Policy (maybe in one document or a suite of documents and tailored to the size of the works and the company implementing the works).</p>	<p>All contractors</p>	<ul style="list-style-type: none"> ▪ Policy manual and formal policies for implementation on topics of gender, equal opportunity, employment and nondiscrimination, child labor, forced labor, migrant labour, freedom of association, workers' representatives, trade union ▪ Statement on employee code of ethics/code of conduct, including receipt of gifts, corruption, external dealings and GBE/SEA/VAC/SH Code of Conduct ▪ Description of means for management of personnel records with the correct level of confidentiality ▪ Job descriptions for all specific duties and responsibilities (including qualifications) required for the Project, including training requirements ▪ Statement on compensation and benefits that complies with national laws and IFC PS2, including a defined system for administering and tracking salary payments (including overtime payments ▪ There are clearly defined procedures for defining working hours, rest periods, holiday pay, overtime, sick pay, maternity pay, allowances, accommodation payments, and leave entitlements. and means for payment that align with PS2 ▪ Statement/policies relating to privacy expectations, discrimination, bullying and harassment, equality and diversity, health and safety expectations for the workplace, including GBV/SEA ▪ Statement on workplace safety, specifically standards for workplace violence, drug and alcohol use, including expectations for testing, smoking policy, the use and carrying of weapons, and disciplinary actions ▪ Non-discriminatory HIV / AIDS and infectious disease policy ▪ Clearly defined policy on dealing with grievances and harassment (e.g. in the form of a Worker Grievance Mechanism ▪ Procedures relating to fatality or medical discharge and ▪ Termination and redundancy policy.

Plan	Scope	Content
Occupational health and safety	All health and safety during the project	<ul style="list-style-type: none"> ■ Project description. ■ Responsibilities of particular personnel. ■ Consultation, induction and training. ■ Identification of hazards, including assessment and control risks (physical, electrical, biological risks). ■ Managing subcontractors. ■ Managing incidents. ■ Monitoring and review of the plan.
Noise and vibration management plan		<ul style="list-style-type: none"> ■ Introduction ■ Description of works ■ Noise limits ■ Working hours ■ Noise control measures ■ Permit requirements (if relevant) ■ Public notifications and communications (link to communications plan) ■ Vibration action levels ■ Noise and vibration monitoring ■ Roles and responsibilities (including qualifications) ■ Audit and reporting.
Site Waste management plan	General and hazardous waste disposal	<ul style="list-style-type: none"> ■ Introduction ■ Description of works ■ Waste legislation ■ Identify who is responsible. They will be required to hold sufficient authority to ensure compliance with the WMP by other site operatives. ■ Identify the types and quantities of waste - all waste streams produced during construction, operation and decommissioning require to be identified. ■ Hazardous Classes – hazardous wastes will be classified according to the national law classification system. ■ Identify waste management options - as described in the construction and operational ESMPs above, a waste hierarchy for on and off-site options needs to be prepared. Where hazardous wastes are being generated, particular attention to the arrangements for identifying and managing such waste will need to be addressed and procedures put in place. ■ Identify waste management sites - the location of waste management sites will need to be identified; ideally, most local sites will be used to minimize transportation costs. It is important that legal contracts are in place when using waste disposal contractors and that waste disposal contractors comply with the legal responsibilities of the local and national areas.

Plan	Scope	Content
		<ul style="list-style-type: none"> ■ Training - all staff must be trained to ensure they understand the requirements of the WMP and their responsibilities therein; this includes in-house teams and sub-contractors. ■ Plan - using the steps above, establish indicative percentages of the waste quantities to be produced over the Project's life span. ■ Measures - the quantities of wastes produced will be recorded every month, and where possible, measures taken to re-use, reduce or recycle waste as appropriate; and ■ Monitor – throughout the Project life cycle, waste management on-site will be monitored to ensure compliance with the WMP ■ Evidence of due diligence on waste providers
<p>Fire and Life Safety Plan (FLSP) (maybe an update to the existing FLSP operated by the Facility).</p>		<ul style="list-style-type: none"> ■ Introduction and objectives ■ Emergency evacuation concept ■ Roles and responsibilities ■ Emergency procedures ■ Precautions during repairs ■ Procedures when operated ■ Drill procedures ■ Description of safety features and operation of fire systems ■ Instructions to occupants ■ Requirements for those needing assistance ■ Inspection, monitoring, and testing of fire equipment ■ Fire preparedness and control
<p>Emergency preparedness and response plan</p>	<p>Dust storms Extreme heat Natural hazards Fire Explosion Spills</p>	<ul style="list-style-type: none"> ■ Title ■ Details of the crisis management team ■ List of contacts with external organizations (names), address, telephone numbers) and individual responsibilities for making these contacts ■ List of individual responsibilities under the headings ■ Preparation in the event of an accident ■ Actions during the emergency (for each scenario) ■ Actions after the emergency. ■ Sources of necessary information and locations of the pollution control facilities ■ Accident and incident reporting ■ Spill response ■ Locations of emergency equipment (such as first aid kits, and extinguishers) and muster points
<p>Asbestos Management Plan (AMP)</p>		<ul style="list-style-type: none"> ■ Introduction ■ Scope ■ Equipment to remove from site ■ Personal Protective Equipment (PPE) ■ Decontamination Procedures e.g.

Plan	Scope	Content
		<p>a) Identify the location of all visible ACM and spray each lightly but thoroughly with water.</p> <p>b) Once the ACM is damp, pick up all visible ACM with shovels and place them in a clear plastic bag.</p> <p>c) If ACM debris is partially buried in soil, remove it from the soil using a shovel and place it in the plastic bag.</p> <p>d) Insert a large label inside each plastic bag, stating clearly that the contents contain asbestos, are dangerous to human health, and must not be handled.</p> <p>e), i.e., the plastic bags are securely placed into labelled asbestos waste containers (clean metal drums) and sealed each drum.</p> <p>f) Soil that contained ACM debris must not be used for backfilling and must instead be shovelled by hand into asbestos waste containers.</p> <p>g) At the end of the operation, clean all shovels and any other equipment with wet rags and place the rags into plastic disposal bags inside asbestos waste containers.</p> <ul style="list-style-type: none"> • Disposal method ACM should be disposed of safely at a local hazardous-waste disposal site, if available, or at the city municipal dumpsite after arranging safe storage with the site operator. • Dealing with unexpected finds On discovering unexpected ACM on a Project site, the contractor must: <ul style="list-style-type: none"> a) Stop all work within a 5 m radius of the ACM and evacuate all personnel from this area. b) Delimit the 5 m radius with secure fencing posts, warning tape and easily visible signs warning of the presence of asbestos. c) If the site is in an inhabited area, place a security guard at the edge of the site with instructions to keep the general public away. d) Notify the Safeguard Specialist and arrange an immediate site inspection.
<p>Traffic Safety Management Plan (TMP)</p>		<ul style="list-style-type: none"> ■ Introduction ■ Site address and description of works (brief) ■ Work program (including specific instructions for travelling at night, if needed) ■ Routing of demolition and construction vehicles ■ Procedures for notification of routing to contractors, delivery vehicles, visitors and users of the Facility ■ Site plan showing traffic management controls (vehicle access, egress, delivery loading and unloading locations, material laydown, skips, etc.) ■ Estimate of vehicles accessing the site (day/week) ■ Delivery restrictions (timing, location) etc.)

Plan	Scope	Content
		<ul style="list-style-type: none"> ▪ Wheel wash facilities (where relevant) ▪ Vehicle call up procedure (where relevant) ▪ Responsibilities (supervision, controlling, monitoring vehicle movements) ▪ Interaction with public vehicles/emergency vehicles ▪ License requirements (as applicable) ▪ Diversion requirements (as applicable) ▪ Utility works (as applicable) ▪ Driver code of conduct (all passengers must wear a seat belt, one seat per person, no use of mobile phones, drug and alcohol use policies etc.). ▪ General management and communication requirements ▪ Grievance management (link with main grievance management procedure)
Environmental and social monitoring plan (may be combined into topic-specific plans or combined into one plan)		<ul style="list-style-type: none"> ▪ Sub-project specific monitoring plan addressing the impact, monitoring requirements, frequency, responsibility, and reporting requirements (template provided at the end of this table). ▪ Monitoring methodology (for each monitoring parameter) ▪ Site map showing monitoring location
Community health and safety management plan		<ul style="list-style-type: none"> ▪ Covered by dust, noise, transport, emergency preparedness and communication plans.
Sub-project Stakeholder Engagement Plan (SEP) / communication plan (may be an amendment to existing facility plan)		<ul style="list-style-type: none"> ▪ Introduction. ▪ Stakeholder identification (key audiences) ▪ Communication requirements (messages) ▪ Previous engagement undertaken ▪ Communication methods/outreach plan ▪ Roles and responsibilities ▪ Communication schedule ▪ Interfaces with Facility communication requirements ▪ Grievance mechanism.

Environmental and Social Monitoring Plan (Example)

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 continuous?)	Why (Is the parameter being monitored?)	Cost (if not included in project budget)	Who (Is responsible for monitoring?)

Annex D: Contractor Weekly/Monthly Monitoring and Reporting obligations (construction phase)

Each Sub-Project Contractor must submit to the PMC the following five forms on a weekly/monthly [** delete as appropriate*] basis. These forms must be included in the subproject ESMP and referred to in the sub-project CONTRACT.

- E&S Reporting Form A: E&S statistics
- E&S Reporting Form B: Environmental statistics
- E&S Reporting Form C: Labour statistics
- E&S Reporting Form D: Labour numbers
- E&S Reporting Form E: Worker grievances

FORM A – E&S Statistics

Sub-project name:								
Form A – E&S Statistics								
Weeks	1	2	3	4	5	6	7	X
Fatality	0							
Dangerous occurrences / Major injury (or Reportable injury as defined under OSH Law)	0							
Lost Time injury	0							
Cumulative man-hours lost	0							
First Aid injury	0							
H&S Incidents	0							
Property incident	0							
Security incident	0							
Environmental incident	0							
Social Incident	0							
Near miss (H&S, E, Security)	0							
Non-compliances (legal)	0							
Non-conformance (ESMF/ESMP)	0							
GBV/SEA/SH								
COVID-19 cases								
Total working hours (cumulative)								
Total working hours (this week)								

FORM B – Environmental and Social Data (construction)

Sub-project name:								
Form B – E&S Statistics								
Weeks	1	2	3	4	5	6	7	X
Emissions to air (dust) exceedances								
Noise exceedances ³²								
Municipal water consumption (m3)								
Drinking water (m3)								
Total wastewater discharges collected by tanker for offsite treatment and disposal or discharged directly to sewer.								
Total discharge to surface waters / ground								
Hazardous solid waste (volume and type)								
Type X								
Hazardous liquid waste (volume and type)								
Type X								
Non-hazardous waste (volume and type)								
Type X								
Recycled (solid) (volume and type)								
Type X								
Recycled (liquid) (volume and type)								
Type X								
Emergency response drills / training completed								
Toolbox talks completed								
Induction completed								
Key equipment fuel use (quantities according to fuel type)								
Transport vehicles fuel use (quantities according to fuel type)								
Refrigerants (quantities according to each refrigerant type)	0							
Electricity consumed	0							

³² Noise monitoring should be performed as per the locations defined in the C-ESMP.

Sub-project name:								
Form B – E&S Statistics								
Weeks	1	2	3	4	5	6	7	X
Community Grievances								

FORM C – Labour Statistics

Sub-project name:						
Form C– labour category						
Position type	Local*		Uzbekistan		International	
	M	F	M	F	M	F
Low skilled worker days/hrs						
Semi-skilled worker days/hrs						
Skilled worker days/hrs						
Managerial position						
Total						

*Local is defined as within 25km of the proposed works (or as defined by the sub-project screening)

FORM D – Labour Numbers

Sub-project name:								
Form D – Labour numbers								
Weeks	1	2	3	4	5	6	7	X
TOTAL EMPLOYEES (no. of employees on site)								
[insert contractor name]								
Total working hours (permanent)								
Total overtime hours worked								
Total working hours (male)								
Total working hours (female)								
Part time / casual labourer								
[insert contractor name]								
Total working hours (permanent)								
Total working hours (male)								
Total working hours (female)								
Part time / casual labourer								
[insert contractor name]								

FORM E - Worker Grievances

Sub-project name:								
Form E – Worker Grievances (all contractors)								
Weeks	1	2	3	4	5	6	7	X
Number of Employee Grievances submitted	0							
Number of Employee Grievances resolved	0							
Number of Disciplinary procedures/actions	0							
Staff turnover: Hire / Leavers	0							

Reporting Air quality and Dust monitoring (construction and operation)

Where continuous air quality and dust monitoring is identified as necessary in the sub-project screening and risk assessment, a monthly air quality and dust report must be submitted containing the following information.

Monthly air quality and dust summary report

- Introduction and applicable thresholds
- Monitoring methodology
- Measurement locations (continuous dust monitors or other grab samples) (including map)

Worksite reference	Measurement reference	Address

- Summary of results

Monitoring site ID	Coordinates (X, Y)	Location description	Dust risk rating for the site	Monitoring site active during the period	Mean 1-hour PM10 concentration (µg/m3)	Minimum 1-hour PM10 concentration (µg/m3)	Maximum 1-hour PM10 concentration (µg/m3)	Number of 1-hour periods exceeding trigger level of 190 µg/m3	Data capture rate (%)

- Exceedances
- Complaints
- Raw data (hourly monitored data)

Reporting Noise monitoring (construction and operation)

Where noise monitoring is identified as necessary in the sub-project screening and risk assessment. A noise report must be submitted monthly containing the following information.

Monthly noise summary report

- Introduction and applicable thresholds
- Monitoring methodology
- Measurement locations (noise and vibration as relevant) (including map)

Worksite reference	Measurement reference	Address

- Summary of results

Provide a summary of the measured noise levels at the monitoring location over the reporting period. The L Aeq,T is presented for each of the relevant time periods averaged over the calendar month, along with the highest single period L Aeq,T that was found to occur within the month.

Works ite refere nce	Measure ment reference	Site Addr ess	Free field or façade measure ment	Weekday average (LAeq,T) ³³		Satur day Avera ge LAeq, T (high est day LAeq, T		Sund ay / Publi c Holid ay Avera ge LAeq, T (high est day LAeq, T)	
				Dayti me	Nighti me	Dayti me	Nighti me	Dayti me	Nighti me

- Summary of measured vibration levels

Provide a Summary of Measured PPV Data over the Monitoring Period presents a summary of the measured vibration levels at each monitoring location over the reporting period. The highest PPV measured during the monitoring along any axis is presented in the table.

³³ The LAeq,T should be presented for each of the relevant time periods (day/night) or other reference periods) averaged over the calendar month, along with the highest single period LAeq,T that is found to occur within the month.

Worksite Reference	Measurement Reference	Monitor Address	Highest measured in any axis, mm/s	PPV

- Exceedances
- Complaints
- Raw data (hourly monitored data)

Annex E: Guidance on Selecting Areas for Temporary Classrooms and Temporary Health Facility

Guidance on the Selection of Areas for Temporary Classrooms

The project will keep in mind the H&S of the surrounding areas to ensure that the temporary school site is conducive to the learning of students.

- MoPSSE is required to prepare temporary relocation plans for education facilities during construction Activity and coordinate it with PMC.
- The site shall be set up within the school compound in available rooms and areas of the school building that are not subject to retrofitting such as library and laboratories.
- Discuss with the school administration and stakeholders the implementation of flexible class schedules such as class shifts, weekend classes, and extension of classes during school breaks, or conduct of online classes.
- Avoid locating the temporary classrooms near the main entrance where vehicles and materials delivery and other construction services may take place.
- Select a site with roofing or shade to protect teachers and students from exposure to sun or rain.
- Examine the safety of the site and check against any hazardous areas such as noisy areas, falling debris, diggings, open electrical wires, and dusty surroundings. - Provide temporary barricade for the classroom.
- Ensure that the temporary classroom has easy access to toilet facilities with adequate water and sanitation provisions.
- Ensure that the temporary area is provided with adequate lighting and ventilation.
- Ensure that there is provision for mobility of handicapped/disabled persons at the temporary site.

Guidance on Selection of Areas for Temporary Health Facility

The temporary site for the health facility will enable continued health services during retrofitting sections of the building. It is the responsibility of the PMC to closely coordinate with the health facility administration on relocation planning to identify the critical use of affected rooms, the number of patients and occupants needing to be relocated, essential utilities and equipment that may be affected (e.g., power supply which are essential to powered life support equipment), and other limitations in the movement of critical care. The identification of the temporary health facility site should allow for provision of appropriate/safe delivery of care and services but recognize that expectations of service delivery at a receiving site may have to be revised. Interim measures to be considered during planning may include:

- MoH are required to prepare temporary relocation plans for health facilities during construction Activity and coordinate it with PMC.
- Identify areas in another wing or separate building of the health facility as temporary sites for the affected sections of the building.
- If there are no areas available within the compound, consider the staging of temporary care area at local government or community facilities. Consider other appropriate accommodation facilities such as hotels as temporary sites.

-
- Plan the movement of essential equipment and consumables to the temporary sites where possible to support health service delivery including staff/resource support and specialized equipment needed.
 - Ensure that beds and other equipment at the temporary site can be accommodated to the most appropriate clinical care and requirement.
 - Plan for the temporary reduction of healthcare service system load by establishing a diversion of patient transfers to other nearby public health facilities.
 - If the Emergency Department section will be affected by the building retrofitting, adopt a “See, Treat, and Transfer (STT)” model of clinical care that focuses on providing health service that can support walk-ins and emergencies of time critical nature, implement immediate attention and intervention, before deciding on referral or transfer to another suitable facility.
 - Ensure security of the temporary health care facility site and that movement of patients and staff through the facility is safe.
 - Develop a system of informing the staff and the public about the temporary disturbance and the relocation of the affected site.
 - Ensure that the temporary site is well-ventilated and has functioning utilities for water, power, and sanitation.
 - Put up safe barricades and signages for guidance of the public in finding the location of relocated medical services.

Annex F: Sample Grievance Submission and Resolution Form

Reference No: _____

Note: You have a right to remain anonymous if you prefer or request not to disclose your identity to the third parties without your consent. In case of anonymous grievances, the decision will be disclosed at the MoE website <https://minenergy.uz/>

First name _____

Last name _____

- I wish to raise my grievance anonymously
 I request not to disclose my identity without my consent

Contact Information:

(Please mark how you wish to be contacted (mail, phone, e-mail)).

- by mail (please provide your mailing address):

by phone: _____

by e-mail _____

Preferred Language for communication: Uzbek Russian Other (*indicate*) _____

Description of Incident or Grievance

(What happened? Where did it happen? Who did it happen to? What is the result of the problem? Date of Incident/ Grievance)

Date of Incident/ Grievance

One-time incident/grievance (date _____)

Happened more than once (how many times? _____)

Ongoing ((currently experiencing problem _____)

What would you like to see happen to resolve the problem?

Signature: _____ Date: _____

Please return this form to:

(Contact information of Grievance Coordinator of Project Management Company)

Annex G: SAMPLE ESIRT Reporting form

All the incidents and accidents related to any significant incident (accidents, spills, injuries, fatalities, cases of sexual exploitation and abuse (SEA), sexual harassment (SH) etc.) shall be reported to the Bank within the 48 hours as per ESCP and PMC/FUND shall submit an incident investigation report per ESIRT to TTL together with the corrective action plan in 30 business days.

The incident notification report should be 1 – 2 pages and include, at a minimum, the following information:

- a. Country, name of project, name of PMC/FUND Manager and Environmental and Social Specialists.
- b. Preliminary classification of the incident
- c. What was the incident? What actually happened? To what or to whom?
- d. Where and when did the incident occur?
- e. How did we find out about it and when?
- f. Are the basic facts of the incident clear and uncontested, or are there conflicting versions?
- g. What are those versions?
- h. What were the conditions or circumstances under which the incident occurred (if known at this stage)?
- i. Is the incident still ongoing or is it contained?
- j. Is loss of life or severe harm involved?
- k. What measures have been or are being implemented?
- l. Has anyone in the PMU or other government agencies been informed? If so, how specifically? What has response to date been?

Annex H: Participation list of public consultation meeting

This table is to be filled after conducting the public consultation meetings

Subject:

Location:

Date:

Name	Occupation	Employer	Email/Telephone No. (optional)	Signature

Annex P: Exclusion list

Project does not finance the following activities:

- Production or trade in any product or activity deemed illegal under host country laws or regulations or international conventions and agreements.
- Production or trade in weapons and munitions.³⁴
- Production or trade in alcoholic beverages (excluding beer and wine).³²
- Production or trade in tobacco.³²
- Gambling, casinos and equivalent enterprises.³²
- Trade in wildlife or wildlife products regulated under CITES.³⁵
- Production or trade in radioactive materials.³⁶
- Production or trade in or use of unbonded asbestos fibers.³⁷
- Purchase of logging equipment for use in primary tropical moist forest.
- Production or trade in pharmaceuticals subject to international phase outs or bans.
- Production or trade in pesticides/herbicides subject to international phase outs or bans.
- Drift net fishing in the marine environment using nets in excess of 2.5 km. in length.
- Production or activities involving harmful or exploitative forms of forced labor³⁸/harmful child labor.³⁹
- Commercial logging operations for use in primary tropical moist forest.
- Production or trade in products containing PCBs.⁴⁰
- Production or trade in ozone depleting substances subject to international phase out.³⁸
- Production or activities involving harmful or exploitative forms of forced labor³⁶/harmful child labor.³⁷
- Commercial logging operations for use in primary tropical moist forest.
- Production or trade in products containing PCBs.³⁸
- Production or trade in ozone depleting substances subject to international phase out.⁴¹
- Production or trade in wood or other forestry products from unmanaged forests.
- Production, trade, storage, or transport of significant volumes of hazardous chemicals, or commercial scale usage of hazardous chemicals.⁴²
- Production or activities that impinge on the lands owned, or claimed under adjudication, by Indigenous Peoples, without full documented consent of such peoples
- Any subproject/activity with land acquisition and involuntary resettlement impacts.
- Any subproject/activity with high and substantial environmental and social risks and impacts.

34 This does not apply to project sponsors who are not substantially involved in these activities. "Not substantially involved" means that the activity concerned is ancillary to a project sponsor's primary operations.

35 CITES: Convention on International Trade in Endangered Species of Wild Fauna and Flora. A list of CITES listed species is available from the Environment Division.

36 This does not apply to the purchase of medical equipment, quality control (measurement) equipment and any equipment where IFC considers the radioactive source to be trivial and/or adequately shielded.

37 This does not apply to the purchase and use of bonded asbestos cement sheeting where the asbestos content is less than 20%.

38 Forced labor means all work or service, not voluntarily performed, that is extracted from an individual under threat of force or penalty.

39 Harmful child labor means the employment of children that is economically exploitive, or is likely to be hazardous to, or to interfere with, the child's education, or to be harmful to the child's health, or physical, mental, spiritual, moral, or social development.

40 PCBs: Polychlorinated biphenyls - a group of highly toxic chemicals. PCBs are likely to be found in oil-filled electrical transformers, capacitors and switchgear dating from 1950-1985.

41 Ozone Depleting Substances (ODS): Chemical compounds which react with and deplete stratospheric ozone, resulting in the widely publicized 'ozone holes'. The Montreal Protocol lists ODSs and their target reduction and phase out dates. A list of the chemical compounds regulated by the Montreal Protocol, which includes aerosols, refrigerants, foam blowing agents, solvents, and fire protection agents, together with details of signatory countries and phase out target dates, is available from the Environment Division.

42 A list of hazardous chemicals is available from the Environment Division. Hazardous chemicals include gasoline, kerosene and other petroleum products.