

Revised draft

KYRGYZ REPUBLIC

Kyrgyzstan Renewable Energy Development Project (KRED)

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

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LIST OF ABBREVIATIONS AND ACRONYMS

ACM	Asbestos Containing Materials
ACMMP	Asbestos Containing Materials Management Plan
ARAP	Abbreviated Resettlement Action Plan
BPI NAS KR	Biology and Soil Institute of the National Academy of Sciences of the Kyrgyz Republic
CC	Civil Code
DDR	Due Diligence Report
DEIS/PZVOS	Draft Environmental Impact Statement
DMS	Detailed Measurement Survey
EIS	Environmental Impact Statement
ESIA	Environmental and Social Impact Assessment
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
FS	Feasibility Study
GBV	Gender-Based Violence
GGOHSESA	General guidelines on OHS and ESA
GRM	Grievance Redress Mechanism
HH	Household
IDA	International Development Association
IFIs	International Financial Institutions
IR	Involuntary Resettlement
IVM	Integrated Vector Management
KGS	Kyrgyz som
LAR	Land Acquisition and Resettlement
LC	Land Code
MH	Ministry of Health
MLSSM	Ministry of Labour, Social Security and Migration
MNRETS	Ministry of Natural Resources, Ecology and Technical Supervision
MoE	Ministry of Energy
MPC	Maximum Permissible Concentration
NEHC	National Energy Holding Company
NGO	Non-governmental organization
OHS	Occupational Health and Safety
PAP	Project Affected Persons
PBC	Performance-Based Conditions
PMU/PMO	Project Management Unit/Project Management Office
POP	Persistent Organic Pollutants
PPE	Personal Protective Equipment
ROW	Right-of-Way
RAP	Resettlement Action Plan
RPF	Resettlement Policy Framework
SEE	State Environmental Expertise
SHPS	Small Hydroelectric Power Station
SIA	Social Impact Assessment
SS	Safeguards Specialist
TOCH	Tangible Objects of Cultural Heritage
ToR	Terms of Reference
USD	U.S. dollar
WB	World Bank
WB ESS	World Bank Environmental and Social Standards
WB ESF	World Bank Environmental and Social Framework

EXECUTIVE SUMMARY

1.0. INTRODUCTION

The ever-increasing growth of electricity consumption in Kyrgyzstan and persistent shortage, a need to develop cost-effective and medium-term projects for development of the energy sector has been felt. Accordingly, Government of the Kyrgyz Republic is planning to develop generation of additional energy through renewable sources including augmentation of small and medium hydropower projects. To achieve the intended objectives a comprehensive project titled “Kyrgyzstan Renewable Energy Development Project (KRED)” has been planned to be implemented by the Ministry of Energy of the Kyrgyz Republic (MoE) in association with their different Open Joint-Stock Companies (OJSC) with financial assistance from International Development Association.

For the implementation of proposed KRED project, it is not only mandatory to comply with applicable national legislations/regulatory framework on environment and social issues but to carry out due diligence on such issues as per the provisions of World Bank's Environmental and Social Framework (ESF) to meet the overall requirement of sustainable development. To address these requirements a detailed Environmental and Social Management Framework (ESMF) is prepared.

This ESMF defines a mechanism for integrating environmental and social concerns into the planning and execution of proposed KRED Project. The ESMF thus defines processes for planning and implementing the environmental and social safeguards management and lays down the management procedures and protocols for the purpose that includes the framework for identification, assessment, management and monitoring of environmental and social concerns at both organizational and project/subprojects levels so as to avoid, reduce/minimize and/or mitigate project environmental and social risks and adverse impacts.

As the technical / feasibility studies, detailed designs) are underway, and specific intervention locations under the project are not finalized and their specific impacts are not known by project appraisal, a framework approach is adopted. In this context, in accordance with the ESS1, an Environmental and Social Management Framework (ESMF) has been prepared.

Therefore, this ESMF provides guidance for assessing sub project specific E&S Risk & Impacts and also provides triggers for specialized studies e.g., Environmental and Social Impact Assessment and Environmental and Social Management Plan (ESIA& ESMP), Social Impact Assessment (SIA) and development of Resettlement Action Plan (RAP) & as well as specific studies such as Biodiversity Assessment etc. to be conducted when a sub-project encounters such issues for more focused attention/measures. Additionally, guidelines/procedure/plans to address Gender, Labor and Stakeholders issues etc. including institutional mechanism for implementing/monitoring the E&S management during the project execution and operation & maintenance phase have also been included in this ESMF.

The Project being financed by the International Development Association will be implemented by the Ministry of Energy of the Kyrgyz Republic.

The ESMF outlines expected environmental and social risks and impacts of the project and to provide a system for monitoring and managing such impacts during project implementation. Additionally, this framework describes institutional roles and responsibilities for managing environmental and social risks under the project, and the feedback and grievance mechanisms by which citizens and other interested parties can interact with the project implementation agency.

2.0. PROJECT OVERVIEW

The KRED project comprises of four components mainly:

Component 1: Rehabilitation and Construction of Small and Medium-scale Hydropower Plants (estimated US\$ 39 million IDA financing). This component will support priority investments and provide technical assistance and capacity building activities aimed at increasing hydro capacity in the country. Chakan HPP shall be responsible for implementation of this Component 1, which comprises the following two subcomponents:

Sub-component 1.1: Construction of new hydropower plant and rehabilitation of existing hydropower plant. MoE and Chakan HPP is provided shortlisted subproject to be financed under this subcomponent which include Karakul, Tar, and Bystrovska HPPs, of which the first two are for new construction and the last one is for reconstruction. Proposed subprojects technical parameters are given below.

Item #	Subproject name	Dam height, m	Reservoir size, million m ³	Capacity, MW	Type of work
1.	Karakul HPP	8	0,05	29	Construction
2.	Tar HPP lower	24	1,6	19	Construction
3.	Bystrovka HPP (run of river)	-	-	8.7	Reconstruction

The one of the proposed subproject for new construction is Karakul HPP which located in Karakul city of Jalal-Abad oblast. A substation may be required for this HPP. If there will be a substation, then it will be constructed on the territory allotted for the HPP - no additional land is required for it. Power line for new HPP may also be required. But power line route is not identified. Details of HPP, substation and lines are not known at this stage and will be identified upon the results of feasibility study. Possible social and environmental risks and impacts will also be determined only after ESIA.

The another new HPP is Tar HPP lower located in Kara-Kulzha rayon of Osh oblast. Same as for the above HPP, a substation may be required. If there will be a substation, then it will be constructed on the territory allotted for the HPP - no additional land is required for it. Power line for new HPP may also be required. But power line route is not identified. Details of HPP, substation and lines are not known at this stage and will be identified upon the results of feasibility study. Possible social and environmental risks and impacts will also be determined only after ESIA.

Bystrovka HPP is an existing one. It has its own infrastructure. Only reconstruction works will be carried out in this subproject. All reconstruction activities will be held on the territory of the subproject. No structures and lands are required for this. Reconstruction works will not have any adverse impacts for environment and population near the HPP. There may be temporary impacts for population during reconstruction works.

Sub-component 1.2: This subcomponent will finance provision of technical assistance and capacity building to Chakan HPP to support project implementation. The specific technical assistance activities will include: (i) finalization of the feasibility study and preparation of the bid documents for the selected hydropower projects; (ii) preparation of safeguards documents; (iii) consulting services for construction supervision and implementation of safeguards instruments as needed; (iv) feasibility studies for rehabilitation and construction hydropower projects in the future; and (v) training and capacity building for dam safety and optimization of hydro reservoirs to support integration of solar energy

Component 2: Technical Assistance to Preparation of Kambarata-1 Large Hydropower Plant (estimated US\$ 2 million IDA financing). The activities covered under this component include the update of the feasibility study, environmental and social studies and the draft of procurement documents and implementation agreements. Given the large investment needs (approximately US\$2.9 billion according to the feasibility study 2014), this work will be complemented by Bank-executed technical assistance to evaluate potential financing options, including potential phasing, co-financing options and potential role of PPP approach. EPP shall be responsible for implementation of Component 2.

Component 3: Preparation and Grid Integration of Renewable Energy Projects. This component will prepare the power system for increased deployment and integration of variable renewable energy, with a focus on supporting the solar pilot project, which is planned in Phase 2 using World Bank guarantee instrument. The Component shall comprise the following two sub-components:

Sub-component 3.1: Grid enforcement and strengthening to facilitate integration of hydro and solar power (estimated US\$ 10 million potential GCF financing). This subcomponent will finance upgrading and strengthening of existing grid infrastructure to facilitate the development of large-scale renewable energy.

Sub-component 3.2: Technical assistance and capacity building (estimated US\$2 million potential GCF grant financing). This subcomponent will finance provision of technical assistance and capacity building to MoE, NEGK and other key stakeholders to enhance institutional capacity for managing the development and integration of large-scale solar power. The specific activities under the subcomponent could include: (i) the development and implementation of grid code, such as connecting code for renewable energy; (ii) policy and regulatory review and assessments to strengthen regulatory and institutional frameworks for renewable energy development; (iii) the development and implementation of measures for short term demand forecasting, including sub-hourly forecast for near-real time; and day ahead, month-ahead, year-ahead forecast for planning, and sub-hourly wind and solar power forecast; (iv) enhancement of the means, tools, and procedures for planning and managing different types of reserves and dispatching protocols and procedures; (v) feasibility studies for solar and wind projects, including wind and solar resource measurement as well as environmental and social impact assessment; and (vi) training and capacity building.

Two options are being proposed by the NEGK to be financed under Component 3 to strengthen the Power grid to facilitate integration of hydro and solar energy activities.

Option 1: Construction of the 220kV Isanova substation and 220-110kV overhead lines.

Option 2: modernization of automation systems. Both options are under World Bank's review.

If the option 1 is selected, 220 kV Isanova substation with a new overhead line of 220kV will be reconstructed/augmented. The power line is needed, but the route is not known. The territory for the substation has been allotted, no additional land is required. No other structures (warehouses) will be required. Possible social and environmental risks and impacts will also be determined during KRED implementation.

If the option 2 is selected, the existing system of emergency automatics together with SCADA and other similar systems in the existing networks will be improved in order to improve the reliability and safety of the power system. This will not require any additional facilities or warehouses. NEGK will upgrade its equipment of automation systems in the existing grids. There will be no any significant adverse social or environment impacts under this activity. Technical details of the

substation and lines are not known at this stage and will be identified upon the results of feasibility study.

Component 4: Institutional Strengthening and Project Implementation Support (estimated US\$ 1.5 million including US\$ 1million from IDA financing and US\$ 0.5 million from GCF grant). This component will finance activities aimed at strengthening the energy companies' technical, operational and management functions, and ensuring effective Project implementation.

3.0.PROJECT BENEFICIARIES

Beneficiaries of Phase 1 of the Project are the electricity consumers, including industrial, commercial, and residential customers. The newly constructed and rehabilitated hydropower plants under this phase will help increase power supply in the Kyrgyz Republic and improve the quality of power in the country. In addition, the local population is expected to benefit to a certain extent from employment opportunities during the repair and rehabilitation phases. The implementing agencies will also benefit significantly from the capacity building and technical assistance they will receive, which will improve their capacity to plan, develop, manage, and maintain existing hydropower systems and services. Consequently, they will be able to deliver better, more reliable, and cost-effective services to customers.

In addition, it will also be ensured that ensuing benefits like compensation at replacement cost to all PAPs including vulnerable, marginalised, and disadvantaged groups for any adverse impact in accordance to provisions of RPF are provided to all affected persons. MoE/PMO will also ensure that no person or community are disproportionately impacted to the extent possible and all possible measures in accordance to mitigation hierarchy shall be implemented as prescribed in ESMF.

4.0. PROJECT LOCATIONS

The project activities will be implemented in Osh, Jalal-Abad, and Chui oblasts under all four components.

5.0. PROJECT IMPLEMENTATION ARRANGEMENTS

The implementation arrangements of the proposed project will build on the current arrangement under Electricity Sector Modernization and Sustainability Project (KEMS), where a Project Management Office (PMO) is being established with key staff being hired including procurement, financial management and disbursement, E&S specialists. The same PMO will implement this proposed project, with enhanced capacity from additional specialists as needed and the Government of the Kyrgyz Republic will be committed to ensuring that the MoE PMO will be staffed with relevant qualified staff responsible for implementation of the safeguards functions as per the Bank's ESS and capacity building activities as per the KRED ESCP agreed between the MoE and the Bank. This ESCP specifies the main responsibilities and actions to be undertaken by MoE to ensure project, compliance with the WB ESSs. Meanwhile, MoE has instructed Joint Stock Companies: Chakan HPP, EPP and NEGK to support the project preparation including coordination and preparation of required project documents. The PMO being established under MoE is headed by a Director and will have dedicated teams of staff to work on environmental and social standards, procurement, financial management, accounting and internal auditing disbursement.

6.0. POLICY/LEGAL FRAMEWORK

The legal framework for environmental and social issues in the Kyrgyz Republic is well developed and all project activities are regulated by several laws and regulations including applicable Civil, Land and Labor codes. As per Kyrgyz law, construction of new HPPs or rehabilitation of existing ones requires ESIA to be conducted. Hence, environmental and social impacts will be analyzed for all sites covered under Components 1 and 2 during project implementation in line with the

requirements of this ESMF and findings from this assessment will inform the implementation of works at each site. In addition to national legislation and regulations on environmental and social issues, the Kyrgyz Republic is also signatory to several international treaties dealing with environmental and social issues, provisions of which are also obligatory to be followed.

The World Bank's Environmental and Social Standards relevant to proposed the project have been identified and gaps in national or state regulations considered while formulation of ESMF.

7.0. THE PROJECT RISK RATING AND RELEVANCE OF THE WORLD BANK ENVIRONMENTAL AND SOCIAL STANDARDS (ESS)

The project recognizes the following standards as relevant: ESS 1, ESS 2, ESS 3, ESS 4, ESS 5, ESS 6, ESS 8, and ESS 10. The environmental and social risks are both rated as High mainly due to the activities under the Component 2.1 TA activities for Kamar-Ata-1 HPP. The project also triggers OP/BP7.50 on International Waterways.

Direct and indirect environmental risks and adverse impacts are expected under all components of the project. The project environmental risk is rated **High** mainly due to the activities under the Component 2.1, which is expected to finance TA for preparatory studies for a large Kamar-Ata-1 HPP (1.6GW, 160-260m dam). While the project will not finance any civil works at Kamar-Ata-1 HPP, it may indirectly cause significant environmental impacts through development of feasibility studies, ESAs and bidding documents that may be further used for the construction purposes. The potential environmental risks and impacts may lead to permanent inundation of the reservoir area and permanent changes in landscapes, impacts on river flows, quality and morphology; terrestrial and aquatic ecosystems, ecosystem services and disturbance to biodiversity; pollution and waste disposal during construction, vibration impacts from blasting and heavy equipment, changes in hydrology of the Naryn river.

Occupational and community health and safety risks and impacts are also expected to be adverse and significant considering the large number of workers to be deployed at the site during construction; the project also requires substantial security measures to protect the large site. This is also relevant to other soft-type activities under the project: (i) TA to support development of key studies for other priority investment projects under Component 1.2; (iv) TA for development of key studies for other renewable energy projects under Component 3.2.

The exact location and scale of hard-type activities under the Component 1 and Component 3 are not yet finalized, and will be further selected during project preparation. Component 1 on rehabilitation and construction of small and medium scale hydropower plants, and under Component 3.1 NEGK provided a list of two options. First option is to construct of the 220 kV Isanova substation and 220-110kV overhead lines, the second option is a transition and implementation from manual control of the power system to automation of the work of dispatch control emergency automation. Both options are being reviewed by the Bank. The above-mentioned activities will have potential direct adverse environmental impacts during construction and implementation stage. The works are expected on small and medium HPPs, which may include Karakul and Kara-Kulzha areas around larger HPP plants, though more sites can be added/removed during the project preparation. The risks relate to: (i) increased pollution due to construction waste; (ii) generation of dust, noise and vibration due to movement of construction machinery; (iii) disturbance and pollution of natural ecosystems and biodiversity; (iv) spills of fuel and lubricants during construction; (v) landscape disturbance; (vi) water pollution and sedimentation. Additional risks associated with construction of new HPPs might relate to conversion of aquatic and terrestrial habitats, changes in in-stream flows and fish entrainment.

Stream morphology and sediment management and general pollution prevention and control and reservoir management, which covers water quality and reservoir erosion, slope stability and sedimentation should also be monitored. Cumulative impacts of the project activities on HPPs may lead to direct natural habitat loss from the accumulated project footprints, aquatic habitat fragmentation due to the isolation of river reaches and habitats between impoundments/barriers, or degradation of ecosystem services due to the fundamental alteration of hydrological conditions and sediment and nutrient transport along the length of a river to its estuary. Also, risks and adverse impacts of both components relate to Occupational Health and Safety (OHS) hazards related to working at heights for assembly of towers and stringing, and electrical works, health impacts of low levels of electromagnetic radiation, those related to the use and disposal of hazardous materials such as transformer oils and possibility of poly-chlorinated biphenyles (PCBs) in obsolete transformers. Most of these risks and adverse impacts are temporary, localized, mitigable and mainly expected to occur at the construction stage under Components 1 and 3.

The social risk is rated as High given the potential indirect social impact from the Component 2.1 TA activities for Kamar-Ata-1 HPP. The TA activities include undertaking and updating of a feasibility study, basic design and bid documents for the future planned Kamar-Ata 1, including developing and updating the environmental impact assessment study and land acquisition and resettlement plans. The potential indirect risks include: (1) stakeholder and citizen engagement in a project due to economic and physical displacement, worker retrenchment, and restoration of economic activities, if any; (2) potential resettlement; (3) establishment of an effective grievance mechanism for handling a potentially large volume of complaints; (4) labor management challenges, including working terms and conditions, OHS, and the establishment of safe and effective work camps; (5) community health and safety issues. These risks will be further assessed during project preparation. The activities under the components 1 and 2 may also require land acquisition, restriction on land use or involuntary resettlement due to rehabilitation and new construction works. The proposed Project interventions are expected to take place on public land, as suggested by the MoE, however the scale is not known at this stage and the sites will be further selected during project preparation.

Other social risks under the Component 1 may also have impacts on livelihoods downstream, such as fishing, availability of irrigation water supply, impacts on lands cultivated on the river basin. Risks related to child and forced labor are considered to be low as per specific type of activities in the energy sector. Labor management and influx risks under ESS2 as well as possible impact on community health and safety under ESS4, including Sexual Exploitation and Abuse (SEA) /Sexual Harassment (SH) maybe moderate under TA for Kamar-Ata-1 due to significant scope of the works beyond the project, and low under components 1 and 3. This to be re-assessed and confirmed throughout project preparation and implementation, and in case if workers are recruited externally, contractors will be required to adopt and comply with specific E&S risks mitigation instruments. Risks of social exclusion can occur during engagement with (i) the development community to motivate the private sector to consider investing in the country's energy sector through the TA under Phase I and (ii) project beneficiaries and affected parties during project preparation and implementation. The engagement process should consider including stakeholder analysis and engagement planning, public disclosure of information, and meaningful consultation with all stakeholders with special attention to the needs of the disadvantaged and vulnerable groups and women's participation in project activities. The more detailed scope of anticipated risk and impacts associated with these components will only be known once the ESA studies have been completed. The potential impacts will be assessed in the ESA as part of feasibility study for and further to be updated based on detailed design at the project implementation stage. MoE capacity to manage E&S risks and impacts has also been considered in the overall E&S risk rating. Although the 3 PIUs have limited experience in implementing Bank funded projects under the ESF, the Borrower will rely on capacity building planned under each component. Considering all the above issues,

the social risk is rated as High, it will be revisited (prior to Appraisal) based on a further assessment made during preparation.

The Project is expected to have mostly positive social impacts as it will improve resilience of energy services which is important for continued operation of critical infrastructure and to provide mitigation and adaptation service to the people. Access to power and ensuring reliable electricity contribute to health, livelihood, and gender benefits.

Moreover, ensuring reliable electricity supply contributes to improved public services, increasing economic and empowerment opportunities for women as well as overall better safety and health. Two categories of social risks are recognized: one, as related to the impacts of the project activities, mainly related to land acquisition and land use restrictions, and livelihoods downstream; and the other, related to possible social exclusion during engagement with the potential investors and project affected parties, including vulnerable groups. The nature of impacts and extent of physical interventions will become clearer once the final designs of subprojects will be finalized. The following draft instruments will need to be prepared by appraisal: (i) Environmental and Social Management Framework (ESMF), including agreed TORs for ESIA for Component 2; (ii) Resettlement Policy Framework (RPF); (iii) Stakeholder Engagement Plan (SEP); (iv) Labor Management Procedures (LMP) and (v) Environmental and Social Commitment Plan. The ESMF will assess risks and impacts and guide appropriate mitigation measures to be taken for all components. The ESMF will include procedures to screen environmental and social risks of the subprojects and guide the preparation of subproject-specific ESIA and ESMPs, including Biodiversity Assessment and Management Plans, if needed. It will include standard ESMP checklists, plans to manage hazardous waste, PCB waste, traffic management plans and other known E&S impacts and risks, as well as describe relevant legislations, institutional arrangements, and proposed capacity building measures. However, these likely impacts will be addressed through many measures including avoidance, minimization in that order of priority to the extent possible. The above listed risks is a key reason for classification of environmental and social risk of the project as High.

On the other hand, the proposed activities and subprojects financing will also enhance sustainability of the energy supply, which in general combines the introduction of new technologies, policies and activities aimed to integrate socio-economic principles with environmental concerns in order to increase electricity generation, and thus improve the quality of electricity in the regions of the Kyrgyz Republic.

In the screening process as per ESS 1, scoping of key environmental and social risks and impacts of the Project has been undertaken and appropriate mitigation measures identified, as laid out in this ESMF. Sub-project specific ESIA will be conducted prior to the implementation of activities. Specific risks and impacts are outlined in the ESMF and will be elaborated in the subsequent ESIA and ESMPs. Sub-component activities will employ contracted workers who will be subject to the provisions of LMP, SEP, GRM and World Bank Group Environment, Health and Safety Guidelines in compliance of ESS 2. The Project will provide GRM for community as well as to contracted workers. Additionally, each sub-project contractor will prepare a Construction-ESMP with labor protocol to address such issues. Measures to comply with ESS3 stipulations have been identified in light of the construction activities proposed. These include measures to mitigate air pollution including noise, land and water pollution, management of construction wastes such as muck/debris as well as hazardous waste. All activities will be compliant with the applicable regulations and ESS 4. The legislations and policy related to land acquisition and resettlement as well as provisions of ESS 5 shall be implemented in accordance with provisions of RPF. To the extent possible, Government land shall be secured for construction of HPPs and in case of private land, direct purchase on the principle of willing buyer-willing seller on negotiated rate using provisions of Kyrgyz Republic land purchase policy and RPF shall only be used. To ensure that

ESS6 requirements are met, additional studies will be undertaken as part of site-specific ESIA, where required. The findings of the studies will inform the consequent ESMPs and relevant portions of the same will be integrated with the bidding documents and contracts. To facilitate compliance with ESS8, guidance on ‘chance find’ procedure, in line with Kyrgyz requirements are included to manage impacts on any artefacts found during construction / rehabilitation works.

The process of preliminary consultation has already commenced during the ESMF development to know the people’s opinion about project, which will be further expanded during finalization of ESMF. However, a detailed Stakeholder Engagement Plan (SEP) with mapping out all the different types of stakeholders, timings and modes of communication and consultation has also been prepared for implementation during ESIA and project execution. The Plan linked the GRM with the SEP to address the issue of transparency and feedback. ESS 10 recognizes the importance of open and transparent engagement vis-à-vis project stakeholders by the borrower.

8.0. POTENTIAL ENVIRONMENTAL & SOCIAL IMPACTS & MITIGATION MEASURES

Screening of potential environmental & social risks & impacts of proposed project components has been undertaken considering the existing baseline environmental and social setting of project area. The proposed sub-projects are likely to create positive as well as negative impacts on the environmental and social setting.

Potential environmental risks and impacts may lead to permanent flooding of the reservoir area and permanent landscape changes, impacts on river flow, quality and morphology; ecosystems, ecosystem services and biodiversity loss; pollution and waste disposal during construction, vibration impacts from blasting and heavy equipment, changes in the hydrological regime of the Naryn River. While The locations are not finalized, as per currently available information, no critical habitats are likely to be impacted by these activities as these are more than 10km from potential sites. Detailed studies under 1.2 for small HPPs and Component 2 for Kamar Ata 1, will be undertaken during project implementation. Detailed ESIA/ESMP will confirm this as required by the ToR for site specific assessments.

In addition, the laying of power lines from the hydroelectric power station will also be designed, which will be carried out along a special route to the converter substation to the existing power lines. Accordingly, the installation of large wire supports will require the construction of an access road, which will be permanent in the future, for maintenance of power lines and preventive maintenance. Accordingly, such works related to the laying of new lines and roads will have certain environmental & social impacts from the implementation of the necessary energy transmission operations (this type of impact applies to all projected HPPs).

In the case of the Isanova substation (3 Component), during the installation of the substation and the laying of an underground cable from it, it will be carried out in special trenches. Works related to the laying of new trenches will also have a certain impact on the environment. When laying an overhead line from a substation, it will cause less impact, and the implementation in this case will be less than in the first case.

The implementation of the project will have direct and indirect social risks and impacts. The potential indirect social risks under Component 2 will include: (1) stakeholder and citizen engagement in a project due to economic and physical displacement, worker retrenchment, and restoration of economic activities, if any; (2) potential resettlement; (3) establishment of an effective grievance mechanism for handling a potentially large volume of complaints; (4) labor management challenges, including working terms and conditions, OHS, and the establishment of

safe and effective work camps; (5) community health and safety issues. Other social risks under the Component 1 may also have impacts on livelihoods downstream, such as fishing, availability of irrigation water supply, impacts on lands cultivated on the river basin.

The risks under the components 1 and 2 may also require land acquisition, restriction on land use or involuntary resettlement due to rehabilitation and new construction works. The proposed Project interventions are expected to take place on public land, as suggested by the Client, however the scale is not known at this stage and the sites will be further selected during project preparation. Risks related to child and forced labor are considered to be low as per specific type of activities in the energy sector. Labor management and influx risks as well as possible impact on community health and safety, including Sexual Exploitation and Abuse (SEA) /Sexual Harassment (SH) maybe moderate under TA for Kambar-Ata-1 due to significant scope of the works beyond the project, and low under components 1 and 3.

Risks of social exclusion can occur during engagement with (i) the development community to motivate the private sector to consider investing in the country's energy sector through the TA under Phase I and (ii) project beneficiaries and affected parties during project preparation and implementation. The engagement process should consider including stakeholder analysis and engagement planning, public disclosure of information, and meaningful consultation with all stakeholders with special attention to the needs of the disadvantaged and vulnerable groups and women's participation in project activities. The more detailed scope of anticipated risk and impacts associated with these components will only be known once the ESIA studies have been completed.

9.0. ENVIRONMENTAL & SOCIAL MANAGEMENT PLAN

The basic purpose of the ESMF is to design/formulate mitigative measures and plan for assessment and management protocol to address identified/potential environmental & social risk/impacts during implementation & operation stage. The ESMF is designed on the principles of avoidance, minimization & mitigation, including offsetting /compensating any residual issues to meet the requirement of sustainable development and compliance of Bank's ESSs.

The nature of impacts and scope of activities will be clarified once the subproject designs under components 1 and 3 are finalized. Site specific ESIA will assess the risks and impacts, and provide recommendations on appropriate mitigation measures to be performed for each site by results of which ESMP will be prepared. It is also required to prepare a ToR for ESIA for Kambar-Ata-1 HPP under Component 2. Moreover, vulnerable and aggrieved groups have been identified through the SEP, and will be consulted, and their concerns and views considered in ESIA, SEP, RPF and project design. The Borrower will conduct meaningful and coordinated consultations with stakeholders under the project related to prepared instruments (ESIA, RPF, SEP).

10.0. CAPACITY BUILDING AND TRAINING:

The project will conduct special trainings to ensure effective project implementation and a clear understanding of the environmental and social risk management requirements under the World Bank's ESS. Due to the high E&S risk associated with the proposed project, a comprehensive training/skill enhancement programme is needed for EA staff in general and E&S staff in particular to ensure effective implementation of safeguard issues as well as to meet the requirements of the WB ESS.

To meet above requirements, PMO will involve a consultant with knowledge of national environmental and social management requirements, as well as substantial knowledge of the World Bank ESSs requirements for developing different training modules for EA staff including

the E&S specialist after assessing the requirement and will then conduct the same. The broad training topics will include the basic requirements of the World Bank's ESS, ESIA, ESMP, OHS, LMP and RAP implementation etc. including exposure to best international practices on E&S management. The budget provision of USD 50 000 has also been made in ESMF. The trained E&S staff of PMO shall act as trainer for E&S staff of Contractors on E&S requirements and specific contract conditions on safeguards. In addition, the World Bank will organize training during project implementation to respective PMO staff and other involved agencies within the first year of the project implementation, in order of relevance, followed by, at minimum, annual refresher trainings as needed throughout project implementation. Also, training for project workers is expected to be delivered by the contractors at the commencement of engagement of project workers, followed by, at minimum, one annual refresher training.

11.0. INSTITUTIONAL ARRANGEMENT

The MoE will be responsible for managing the entire multiphase program with Chakan, EPP, NEGK respectively providing full technical support under their components as appropriate. A Project Steering Committee, chaired by MoE and involving key stakeholders, shall be established to facilitate coordination and provide strategic advice during implementation. The World Bank will conclude Project Agreements with the implementing entity/ies. While initial discussions were that Chakan, EPP, and NEGK to be the project implementing units (PIU) for Component 1, 2 and 3 respectively, the option of one Project Management Office (PMO) under the MoE is likely to prevail. In the latter case, Chakan, EPP and NEGK will provide all necessary technical support to the PMO during preparation and implementation of the project. The MoE will be the coordinating and implementing Ministry responsible for the overall coordination of the project (including with the President's Office, the Ministry of Finance, and line ministries and agencies). The MoE will also generally manage the project through the PMO, and the Deputy Minister of Energy will have overall responsibility for ensuring unhindered and high-quality implementation of the project. It will also be the responsibility of the MoE to review and approve the annual work plans and budget (prepared by the PMO), providing relevant technical inputs, especially at the strategic and policy level or on issues related to economic stimulus.

The PMO shall be responsible for all fiduciary functions (e.g., purchasing, financial management, preparation of annual reports, budgets, etc.). It will also be responsible for coordinating and supervising technical, and environmental and social (E&S) standards-related requirements of relevant components. It's expected that PMO will have a staff including environmental, social and OHS specialists capable to manage E&S risks and OHS, which will be also working closely with each of the Project beneficiary institutions (Chakan, EPP and NEGK). The type and number of specialists to be hired as a local staff and additional consultants (if needed) will be defined during the project preparation stage, once the implementation arrangements are finalized. Chakan and EPP companies and MoE have limited experience and capacity for implementing MDB-funded projects. NEGK is implementing CASA-1000 one Bank-financed project under the Operational Policies (OP), and is staffed with proper environmental and social specialists, who should be sufficient to support grid lines and substations construction. EPP has experience with MDB-financed projects, has developed internal capacity through the implementation of ADB project on Toktogul Hydropower plant rehabilitation and has existing PIU. Chakan is building its capacity by implementing ADB funded solar power project. Recently, the Electricity Sector Modernization and Sustainability Project (P177871) under the ESF has been prepared by MoE with assistance of the short-term environmental and social consultants. It is the first project under ESF which will be implemented by MoE. Based on the PMO capacity assessment results, the project will provide capacity building assistance for established PIUs to ensure full compliance with the ESSs.

Chakan HPP prepared a shortlist of three small HPPs - Karakul, Tar and Bystrovska HPPs. Chakan HPP is responsible for component 1: Rehabilitation and construction of small and medium hydropower plants. For component 2: Technical assistance in the preparation of the Kambarata large HPP-1, JSC EPP is responsible for implementation. OJSC NEGK is implementing Component 3, which includes physical investments to modernize and strengthen the transmission system, as well as technical assistance and capacity building activities to improve system operating conditions and strengthen institutional capacity.

MoE has staff positions in the procurement, financial management, and technical fields. PMO will also hire Environmental and Social Specialists, who will oversee the overall coordination of the implementation of project specific ESIA, ESMP, RAP etc., and will report to the Ministry of Energy and the WB on the integration of E&S requirements into procurement documents and contracts.

The contractors must work in full compliance with national environmental and social legislation and as well as according to the ESMP, LMP and OHS requirements that meet WB ESSs. In addition, contractors are required to comply with the national legislation related to road safety, occupational health and safety; Life & fire safety; environmental protection; and community health and safety. All ESMP-related activities will be funded by contractors in line with Contractors' ESMP (C-ESMP) that will be prepared before commencement of works and approved by the designated Engineer/Supervision Consultant for each subproject. Contractors will also be asked to designate a person responsible for environmental, social, health and safety issues as well as ESMP implementation. Similarly, to ensure effective implementation of the ESMP, the beneficiaries of the subprojects under Components 1 and 3, in most cases local municipalities, will also appoint responsible persons with the main tasks of overseeing the implementation of the subprojects and reporting to the Ministry of Energy/PMO on all environmental, social, health and safety issues.

12.0. GRIEVANCE REDRESS MECHANISM & DISCLOSURES

To facilitate timely, effective and efficient resolution of grievances and complaints to the satisfaction of all parties involved a 3 tier Grievance Redress Mechanism is developed for the proposed project. The GRM provides a transparent and credible process for achieving fair, effective and lasting results. GRM also enhances trust and cooperation as an integral component of broader community consultation that promotes corrective action.

Territorial department of the energy companies at the **first level**, who are responsible for helping members of the community and other social work (conflict resolution, overall community upkeep, etc.). Their responsibility is to receive/register a grievance, then communicate it to the PMO and assist in the process of reviewing and responding to applicants.

At the **second level**, the **PMO Social Specialist** will register grievance in the Grievance Log, review and respond to the applicant. The Social Specialist of the PMO will report on the status of handling complaints on a monthly basis.

At the **third level** a **Grievance Redress Commission (GRC)** will be formed, including the MoE KR and PMO representatives, district and local level office managers, and one village leader as needed. GRC will resolve issues that were not resolved at the first and second levels or matters that came directly to the PMO or MoE. To promote the transparent and efficient implementation of the project, the PMO and MoE KR will accept and investigate queries from any Project-affected parties, including anonymous queries.

The Project GRM does not prevent applying to a court in accordance with the legislation of the Kyrgyz Republic. If a grievance resolution requires special verification (consideration), additional materials or other measures, the terms for resolution may be extended but not more than for 30 calendar days in accordance with the Law of the Kyrgyz Republic "On Procedure of Handling Public Appeals", No. 67, dated May 4, 2007. Anonymous complaints will also be considered under the Project and relevant measures will be undertaken.

Grievance Log

All incoming grievances, queries, suggestions shall be subject to registration in the Grievance Log. The log information is copied and included into the e-database. The e-database must contain at minimum the relevant information about filing date, registration number, essence of the issue, responsible person, time for resolving the complaint and feedback (positive or negative). The specialist shall track the process of consideration of a complaint based on its registration number. Provisions of easy access & confidentiality on sensitive issues particularly of SEA/SH nature have also been made part of GRM to avoid fear and retribution of complaint. The contractor will be responsible for developing the workforce management procedure, occupational health and safety plans as well as SEA/SH protocols which will apply to their own and subcontractors' employees who work on the Project. These procedures and plans will be submitted to PMO for review and approval before the contractors are allowed to mobilize to the field of construction.

In addition to seeking to resolve their grievances through the GRM communities and individuals adversely affected by a World Bank (WB) supported project such as this operation may also submit complaints to the Grievance Redressal Service (GRS) established by the World Bank. The GRS ensures that complaints received are promptly reviewed in order to address project-related concerns.

13.0. INFORMATION DISCLOSURE AND CONSULTATIONS

Through the process of consultation and disclosures, MoE/OJSCs would envisage to build participation of stakeholders' at each stage of project planning and implementation. MoE would be responsible not only for ensuring participation of the community in the consultation process but to make it effective ensure integration of the feedback received from stakeholder into the project plans where it deems fit. A dedicated and comprehensive Stakeholders Engagement Plan (SEP) is being developed by the Ministry of Energy of the Kyrgyz Republic (MoE) for the KRED Project. The SEP is developed in accordance with the recommendations and requirements of the Environmental and Social Standard, ESS 10 of the World Bank and is a part of social and environmental assessment of the Project. The SEP as one of the main Project documents will support the Project management and implementation. Along with measures to minimize adverse impacts of the Project, the open social engagement is part of the Project's cohesive approach to maintaining positive relationships with the local community and other stakeholders under the Project.

During project preparation an extensive mapping of the stakeholders shall be carried out to identify individuals and groups likely to be affected directly or indirectly, vulnerable groups and other interested parties such as government agencies/ authorities and NGOs, which may differ between subprojects, will be done during implementation. Meaningful consultation will be carried out on an ongoing basis as the nature of issues, impacts and opportunities evolves. Meaningful consultation is a two-way process, that: (a) Begins early in the project planning process to gather initial views on the project proposal and inform project design; (b) Encourages stakeholder feedback, particularly as a way of informing project design and engagement by stakeholders in the identification and mitigation of environmental and social risks and impacts; (c) Continues on an ongoing basis, as risks and impacts arise; (d) Is based on the prior disclosure and dissemination of relevant, transparent, objective, meaningful and easily accessible information in a timeframe that enables meaningful consultations with stakeholders in a culturally appropriate format, in relevant local language(s) and is understandable to stakeholders; (e) Considers and responds to feedback; (f) Supports active and inclusive engagement with project-affected parties; (g) Is free of external manipulation, interference, coercion, discrimination, and intimidation; and (h) Is documented and disclosed by the Borrower.

The information disclosure would provide citizen centric information on the policies and the details of sub-projects along with its implementation process of KRED. It would be carried out in

accordance to the World Bank's Environmental and Social Standard 10 on Stakeholder Engagement and Information Disclosure. The KRED Information Disclosure Procedure would ensure that information concerning safeguard documents of the KRED's activities is made available to the public in the local language without any confidentiality. The feedback of the project affected persons/citizens would be captured through the Project Management Office and conveyed to MoE/OJSC/Contractors for necessary action.

14.0. MONITORING AND EVALUATION

The MoE PMO will ensure the overall coordination of the Project. The PMO will be staffed with highly qualified specialists in environmental and social measures who will deal with ESMF/ESIA/ESMP implementation. The MoE/PMO /JSC would monitor the implementation of the environmental and social safeguards in all subprojects to ensure conformity to the requirements of the ESMF/ESIA and ESMP.

In addition, the MoE PMO safeguards and engineering team will monitor compliance of environmental and social safeguards and submit regular quarterly monitoring reports on implementation of ESCP. The MoE PMO will also comply with the provisions of any other E&S documents required under the ESF, such as Environmental and Social Management Framework (ESMF), Resettlement Policy Framework (RPF), Environmental and Social Management Plans (ESMP), Resettlement Plans, Labor Management Procedures (LMP) and Stakeholder Engagement Plan (SEP), and the timelines specified in those E&S documents.

Compliance to ESMP should be reported by contractors to the MoE PMO, and then the PMO submits to the WB a semi-annual report. Environmental and social monitoring during implementation of subprojects should provide information on the key environmental and social aspects of subprojects, in particular its impact on the environment, social impacts of activities and the effectiveness of mitigation measures undertaken. This information will enable the PMO under to assess the success of mitigation measures and monitoring under the Project, and will allow to update activities, if necessary, in timely manner.

In addition to above, to ensure coordination and information sharing and timely decision-making on strategic and the program aspects at the highest level, the Project will be monitored by the KRED Inter-ministerial Steering Committee. Further, many Key Performance indicators (KPI) have also been developed to ensure effectiveness of monitoring and compliance status.

15.0. BUDGET FOR ESMF IMPLEMENTATION

A budget for the ESMF implementation will be allocated for PMO safeguards team hiring, as well as for training and awareness and the monitoring activities of Executive Agency – MoE and Implementing Agency such as Chakan, NEGK, EPP JSCs. This is currently estimated to be 1,639,000 USD. This includes the cost of hiring specialists, training, and preparation of site-specific ESIA's.

1.0. INTRODUCTION

1.1. Background

The ever-increasing growth of electricity consumption in Kyrgyzstan and persistent shortage, a need to develop cost-effective and medium-term projects for development of the energy sector has been felt. Accordingly, Government of the Kyrgyz Republic is planning to develop generation of additional energy through renewable sources including augmentation of small and medium hydropower projects. To achieve the intended objectives a comprehensive project titled “Kyrgyzstan Renewable Energy Development Project (KRED)” has been planned to be implemented by the Ministry of Energy of the Kyrgyz Republic (MoE) in association with their different Open Joint-Stock Companies (OJSC) with financial assistance from International Development Association and administered by the World Bank.

For implementation of proposed KRED project, it is not only mandatory to comply with applicable national legislations/regulatory framework on environment and social issues but to carry out due diligence on such issues as per the provisions of World Bank's Environmental and Social Framework (ESF) to meet the overall requirement of sustainable development. To address these requirements a detailed Environmental and Social Management Framework (ESMF) is prepared.

1.2. Objectives of the ESMF

This ESMF defines a mechanism for integrating environmental and social concerns into the planning and execution of proposed KRED Project. The ESMF thus defines processes for planning and implementing the environmental and social safeguards management and lays down the management procedures and protocols for the purpose that includes the framework for identification, assessment, and management of environmental and social concerns at both organizational and project/subprojects levels so as to avoid, reduce/minimize and/or mitigate project environmental and social risks and impacts.

Since the complete details of the subprojects are not yet known, carrying out subproject specific Environmental and Social Impact Assessment (ESIA) and preparation of project specific Environmental and Social Management Plan (ESMP) is not possible at this stage. Due to the activities of the Component 2.1, which is expected to finance TA for preparatory studies for a large Kambar-Ata-1 HPP (1.6GW, 160-260m dam), the project is rated as a **High risk** project. The ESMF objective for Component 2 is to guide in preparation of ToR for ESIA for Kambarata-1 HPP, including identification of all E&S risks and impacts and formulating their mitigation measures.

Therefore, this ESMF provides guidance for assessing subproject specific E&S Risk and Impacts and also provides triggers for specialized studies e.g., ESIA, SIA&RAP as well as specialized studies such as Biodiversity Assessment etc. to be conducted when a sub-project encounters such issues for more focused attention/measures. Additionally, guidelines/procedure/plans to address Gender, Labor and Stakeholders issues etc. including institutional mechanism for implementing/monitoring the E&S management during the project execution and operation & maintenance phase have also been included in the ESMF for KRED Project.

The ESMF objectives are to outline expected environmental and social risks and impacts of the project and to provide a system for monitoring and managing such impacts during project implementation. Additionally, this framework describes institutional roles and responsibilities for managing environmental and social risks under the project, and the feedback and grievance mechanisms by which citizens and other interested parties can interact with the project implementation agency.

1.3. Purpose of the ESMF

The Environmental and Social Management Framework is an instrument that examines the issues and impacts associated when a project consists of a program and/or series of sub-projects, and the impacts cannot be determined until the program or sub-project details have been identified. The ESMF sets out the principles, rules, guidelines and procedures to assess the environmental and social impacts. It contains measures and plans to reduce, mitigate and/or offset adverse impacts and enhance positive impacts, provisions for estimating and budgeting the costs of such measures, and information on the agency or agencies responsible for addressing project impacts.

Since the details of specific interventions for Karakul, Tar, Bystrovka and Kambarata HPPs (feasibility studies, detailed designs) are not defined and their specific impact is not known at project appraisal, an ESMF is prepared in accordance with ESS1. It specifies the rules and procedures for activities and for the preparation of adequate Contractors - Environmental and Social Management Plans (C-ESMPs).

Due to the activities of the Component 2.1, which is expected to finance TA for preparatory studies for a large Kambar-Ata-1 HPP (1.6 GW, 160-260 m dam), the project is rated as a **High risk** project. While the project will not finance any civil works at Kambar-Ata-1 HPP, it may indirectly cause significant environmental impacts through development of feasibility studies, ESAs and bidding documents that may be further used for the construction purposes. The potential environmental risks and impacts include permanent inundation of the reservoir area and permanent changes in landscapes, impacts on river flows, quality and morphology; terrestrial and aquatic ecosystems, ecosystem services and disturbance to biodiversity; pollution and waste disposal during construction, vibration impacts from blasting and heavy equipment, changes in hydrology of the Naryn river. Occupational and community health and safety risks and impacts are also expected to be adverse and significant considering the large number of workers to be deployed at the site during construction; the project also requires substantial security measures to protect the large site. The potential social indirect risks include: (1) stakeholder and citizen engagement in a project due to economic and physical displacement, worker retrenchment, and restoration of economic activities, if any; (2) potential resettlement; (3) establishment of an effective grievance mechanism for handling a potentially large volume of complaints; (4) labor management challenges, including working terms and conditions, OHS, and the establishment of safe and effective work camps; (5) community health and safety issues. These risks will be further assessed during project preparation. The activities under the components 1 and 2 may also require land acquisition, restriction on land use or involuntary resettlement due to rehabilitation and new construction works.

1.4. Approach and methodology for the preparation of ESMF

The ESMF has been prepared following the standard methodology consisting of the steps listed below:

- Review of the project details and meeting/discussions with the management of Chakan HPP, ES and NEGK OJSCs representatives and WB team
- Review of the policy and regulatory requirements

- Conduct reconnaissance field visit by group of experts and MoE team and initial scoping and screening to determine the key environmental and social parameters and aspects that are likely to be impacted by the project activities
- Collect and analyze of baseline environmental and social data with the help of secondary literature review and field data collection
- Consult with the stakeholders including beneficiary/affected communities and developing the consultation process
- Assess the potential and likely impacts of the project activities
- Prepare an outline environmental and social management issues according to the requirements of the adopted 10 ESSs of the ESF
- Compile of the individual thematic reports into ESMF

The methodology for the preparation of the ESMF is presented in Figure 1.

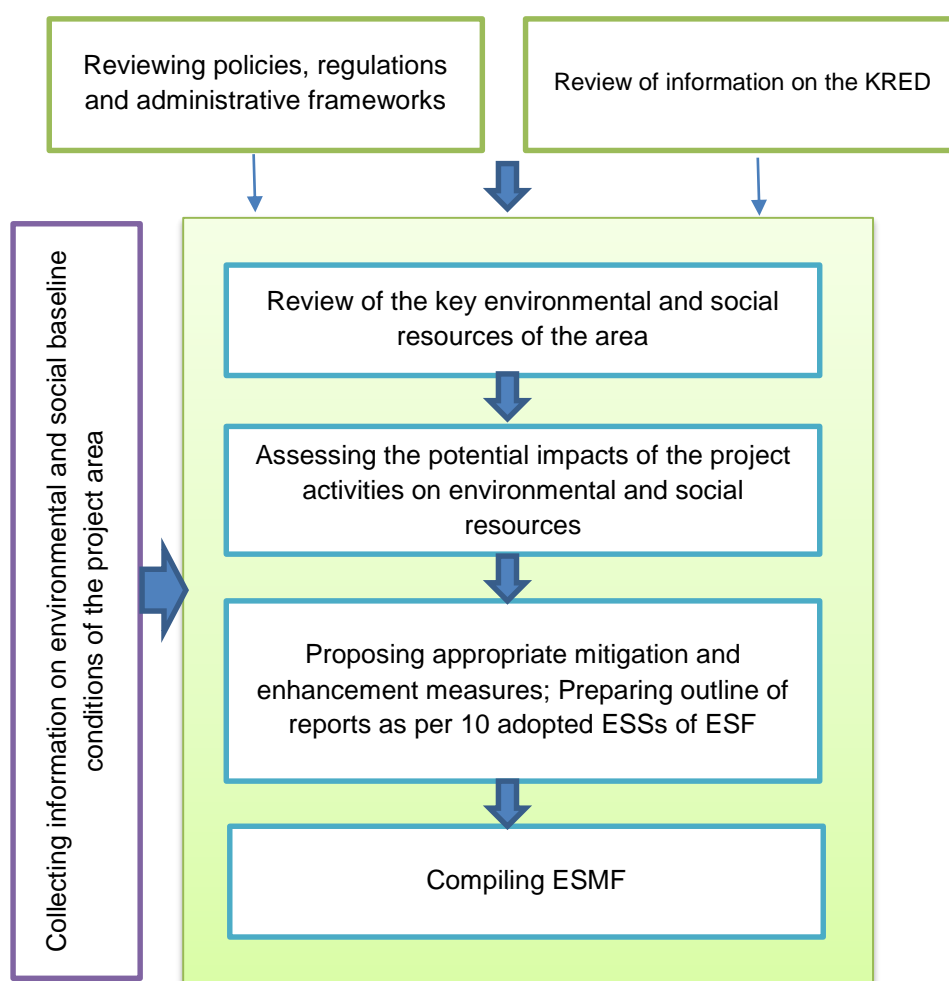


Figure 1. ESMF Preparation Approach

The ESMF has checklists to determine where and when Environmental and Social Impact Assessments (ESIAs)/ Management Plans (ESMPs) and Resettlement Action Plans (RAPs) will be required for a particular site (for resettlement, the criteria are also specified in the RPF).

1.5. Structure of the ESMF

The overall KRED ESMF structure is prepared according to the rules and guidelines prescribed by applicable National and State laws, rules and the World Bank's Environmental and Social Standards. The framework structure is presented below.

Executive summary

Chapter 1 – Introduction: This chapter describes objectives and scope of ESMF, purpose and structure of the ESMF.

Chapter 2 – Project overview: This chapter presents project details, objectives, description of components, location and project expenditures.

Chapter 3 – Policy and Regulatory Framework: This chapter provides an overview of the policy that influences the environmental and social impact and management /mitigation measures. The policies and regulations include National & State laws, regulations and guidelines as well as the World Bank' ESS.

Chapter 4 – Approach and Methodology: This chapter describes the approach and methodology adopted in formulation of ESMF for the proposed project.

Chapter 5 – Environmental and Social Baseline: This chapter describes baseline environmental & Social setting of the project area, within which the proposed project will be implemented. The baseline environmental & social conditions of the project area have been assessed based on both secondary data and supplemented by primary investigations wherever required.

Chapter 6 – Screening of Potential Environmental and Social Impacts and Mitigation Measures: This chapter presents the screening of potential environmental & social impacts of proposed project. The Chapter also includes suggested mitigation measures and ESMP to avoid/minimize the likely impacts during pre-construction, construction and operation phases of proposed subprojects.

Chapter 7 – Institutional Arrangements: This chapter describes the suggested institutional arrangement for ESMF implementation, supervision and monitoring mechanism during project implementation phase. This chapter also presents details of required capacity building and training with estimated cost.

Chapter 8 – Grievance Redress Mechanism and Stakeholder Engagement Plan: This chapter presents grievance redress mechanism and stakeholder engagement plan.

Chapter 9 –Monitoring and Evaluation Plan: This chapter presents Monitoring and Evaluation Plan of implementation.

2.0. PROJECT OVERVIEW

2.1. Project background

Kyrgyz Republic is a landlocked, lower-middle-income country with rich natural endowments, including minerals, forests, arable land and pastures, and significant potential for expansion of agriculture, hydroelectricity production, and tourism.

In October 2021, the Government of Kyrgyz Republic launched a medium-term development program for 2021 to 2026 with the goal of “leaving no one behind.” The priority areas of the program include anti-crisis measures; management reform; establishment of an enabling environment for development; development of key sectors of the economy, including energy; social development; foreign policy and national security; and special priorities. Energy is presented as a key sector to be reformed, including through gradual tariff adjustments toward cost recovery, exploiting the country’s renewable energy potential, modernization of sector assets, and transition to the wholesale electricity market.

Following a number of restructurings over the past decade, as of today three joint stock state-owned enterprises (SOEs) responsible for power generation, transmission, distribution and retail, together are responsible for the construction and operation of most the power sector’s infrastructure. The SOEs consist of two generation companies, the Electric Power Plants (EPP) and the Chakan hydroelectric power plant, one transmission and distribution company namely the National Electricity Grid of Kyrgyzstan (NEGK), which consolidated the transmission company and four regionally divided distribution companies. There are also several small private generation and supply companies. The energy sector also comprises the heating segment, with the Bishkek Combined Heat and Power Plant (CHP) owned by EPP supplying more than half of the capital city’s heating demand. The National Energy Holding Company (NEHC) is designed to govern subsidiary energy SOEs via unified decision making based on the government’s energy sector strategy. The Ministry of Energy (MoE), which was re-established in 2021, consolidates the policy making and oversight functions in the energy sector. The State Regulatory Agency for Energy and Fuel (the Regulator) mapped under the MoE, regulates domestic electricity, gas, and heating tariffs and performs licensing functions.

To date, less than one-fifth of the country’s hydropower potential has been exploited while the least cost expansion plan in the Energy Sector Master Plan financed by ADB includes significant new solar and hydro capacity, including small and large sized hydro sites. Some high potential projects have been identified, among which the Kambarata-1 Project on its own has the potential to increase the existing hydropower output by more than 30 percent (see Box 1), which would be evenly produced during summer and winter periods with the high dam option. Moreover, the country’s mountainous terrains are an ideal location for small hydropower investments. On the solar side, the country has an estimated technical solar power potential of 650 GW, which has not been exploited so far. The quality of the solar power is comparable to some of the best in the region, with an estimated annual power and heat output of about 300 kWh/m² and up to 750 kWh/m², respectively. The often-quoted estimates from MoE indicate that there is potential for five to eight billion kilowatt-hours (kWh) of electricity generation from small hydro plants annually. More recent studies¹ estimated that between 87 and 92 new SHPP sites are available to be developed or rehabilitated, which are estimated to have a total installed capacity of roughly 180 MW.

¹ Estimates of SHPP potential provided in the UN sources also included 22 MW of potential capacity from rehabilitating 39 existing sites and 75 MW of capacity from constructing 7 SHPPs at existing irrigation water reservoirs. The number of plants and their combined capacities varied slightly among documents developed by the Ministry and by the UN (UNDP and UNIDO); however, this fluctuation is likely a result of rounding.

2.2. Project development objectives

The Project development objective is to increase hydropower generation and enhance grid integration of renewable energy in the Kyrgyz Republic.

KRED PDO indicators are the following:

- Generation capacity of hydropower constructed or rehabilitated
- Increased generation from RE
- Private capital mobilized for RE
- Net greenhouse gas emissions
- Reduction of average interruption duration

2.3. Project location

The project activities will be implemented in Osh, Jalal-Abad and Chui oblasts under all four components.

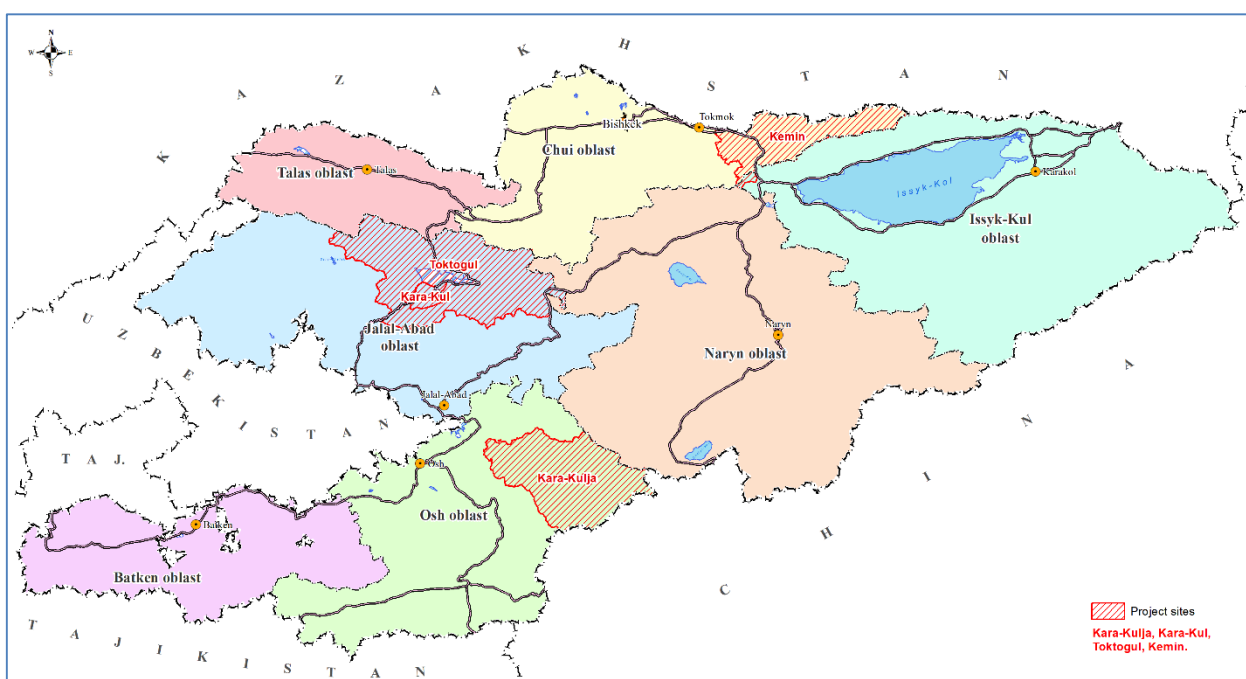


Figure 2. Map of the project sites

2.4. Project description

The proposed Kyrgyz Renewable Energy Development Project (KRED) supports Kyrgyz Republic Government's ambitious vision 2030 towards an affordable and green future. The government announced in recent White Paper its comprehensive vision for the energy sector, its challenges and opportunities, and an ambitious implementation roadmap for reforms over the next decade, where renewable energy is an integral part. The proposed KRED will support the country's objective of increasing the availability of renewable energy, diversifying the electricity mix with the development of new technologies, and promoting the participation of the private sector in a transparent manner. The multi-phase approach helps to meet first the urgent needs in hydro rehabilitation and new hydro projects; develop the nascent solar generation; and then to scale-up new generation capacity in hydro and solar. The proposed project will help the Government achieve its goals for renewable energy generation including 100 MW of small-medium hydropower by 2026 and competitive procurement of solar and wind of 700 MW by 2030 as mentioned above. In its latest Nationally Determined Contribution (NDC), the country aims to

reduce greenhouse gas (GHG) emissions by 43.62 percent in 2030 from ‘business-as-usual’ levels and achieve carbon neutrality by 2050. Of the overall mitigation goal, 60 percent or approximately 6.0 billion tons of CO₂ equivalent of the reduction is expected to come from the energy sector and the development of renewables is a key goal to achieve the Paris Agreement targets in 2025 and 2030.

The proposed KRED is structured as a Multiphase Programmatic Approach (MPA) including IDA loans, guarantees, climate co-financing and private sector financing, with a front-runner Phase I project focused on public finance and two future phases tapping on private sector financing over an 8-year period. Structuring the KRED as an MPA responds to the Government’s need for long-term support to build institutional capacity to implement public strategic projects and track record of bankable transactions to attract credible private sector sponsors and financiers.

The proposed project is aligned with the overarching goal of the Country Partnership Framework 2019-22 to promote diversified, export-oriented, inclusive, sustainable growth, focusing on conditions for private sector investment.

2.4.1. Implementing Agency

The implementation arrangements of the proposed project will build on the current arrangement under Electricity Sector Modernization and Sustainability Project (KEMS), where a Project Management Office (PMO) is being established with key staff being hired including procurement, financial management and disbursement, E&S specialists. The same PMO will implement this proposed project, with enhanced capacity from additional specialists as needed.

Meanwhile, MoE has instructed Chakan HPP, EPP and NEGK to support the project preparation including coordination and preparation of required project documents. The PMO being established under MoE is headed by a director and will have dedicated teams of staff to work on environmental and social standards, procurement, financial management, accounting and internal auditing disbursement.

The Government of the Kyrgyz Republic will take substantial measures and actions to ensure that the Project is implemented in accordance with the World Bank environmental and social standards (ESS).

This document describes the institutional roles and responsibilities for environmental and social risk management within the project, as well as feedback and grievance mechanisms through which citizens and other stakeholders can interact with the project management office.

The ESMF will ensure the environmental and social sustainability of the subprojects throughout their implementation cycle, and will provide engineers and consultants with the proper institutional and regulatory framework for future processes and procedures.

2.4.2. Project Components

The KRED consists of the following four main components that seek to address the generation capacity gap over a short-term horizon and to lay the groundwork for subsequent phases. The MoE will be responsible for managing the entire multi-phase program, while Chakan HPP OJSC, Electric Stations OJSC and National Electrical Grid of Kyrgyzstan” (NEGK) OJSC will be responsible for specific components, as indicated below. The scope and funding of each component are detailed below.

Component 1: Rehabilitation and construction of small and medium-sized hydropower plants (estimated IDA funding – USD 39 million). This Component will support priority

investments and provide technical assistance and capacity building activities to increase national hydropower capacity. The Component will be implemented by JSC “Chakan HPP” and consists of two following subcomponents:

Subcomponent 1.1: Construction of new and rehabilitation of existing HPP. This subcomponent will finance construction of new small and medium HPPs and rehabilitation of some existing HPPs that will be selected based on several key factors, including: (i) priority investments as determined by the Lowest Cost Power Generation Expansion Plan; (ii) manageable environmental and social impacts and readiness for implementation; and (iii) lack of alternative funding sources on a short-term horizon.

Sub-component 1.1: Construction of new hydropower plant and rehabilitation of existing hydropower plant. MoE and Chakan HPP is provided shortlisted subproject to be financed under this subcomponent which include Karakul, Tar, and Bystrovka HPPs, of which the first two are for new construction and the last one is for reconstruction. Proposed subprojects technical parameters are given below.

Item #	Subproject name	Dam height, m	Reservoir size, million m ³	Capacity, MW	Type of work
1.	Karakul HPP	8	0,05	29	Construction
2.	Tar HPP lower	24	1,6	19	Construction
3.	Bystrovka HPP			8.7	Reconstruction

The one of the proposed subproject for new construction is Karakul HPP which is located in Karakul city of Jalal-Abad oblast. A substation may be required for this HPP. If there will be a substation, then it will be constructed on the territory allotted for the HPP - no additional land is required for it. Power line for new HPP may also be required. But power line route is not identified. Details of HPP, substation and lines are not known at this stage and will be identified upon the results of feasibility study. Possible social and environmental risks and impacts will also be determined only after ESIA.

The another new HPP is Tar HPP lower located in Kara-Kulzha rayon of Osh oblast. Same as for the above HPP, a substation may be required. If there will be a substation, then it will be constructed on the territory allotted for the HPP - no additional land is required for it. Power line for new HPP may also be required. But power line route is not identified. Details of HPP, substation and lines are not known at this stage and will be identified upon the results of feasibility study. Possible social and environmental risks and impacts will also be determined only after ESIA.

Bystrovka HPP is an existing one. It has its own infrastructure. Only reconstruction works will be carried out in this subproject. All reconstruction activities will be held on the territory of the subproject. No structures and lands are required for this. Reconstruction works will not have any adverse impacts for environment and population near the HPP. There may be temporary impacts for population during reconstruction works.

Sub-component 1.2: This subcomponent will finance provision of technical assistance and capacity building to Chakan HPP to support project implementation. The specific technical assistance activities will include: (i) finalization of the feasibility study and preparation of the bid documents for the selected hydropower projects; (ii) finalization of safeguards documents; (iii) consulting services for construction supervision and implementation of safeguards instruments as needed; (iv) feasibility studies for rehabilitation and construction hydropower projects in the future; and (v) training and capacity building for dam safety and optimization of hydro reservoirs to support integration of solar energy

Component 2: Technical Assistance to Preparation of Kambarata-1 Large Hydropower Plant (estimated US\$ 2 million IDA financing). The activities covered under this component include the update of the feasibility study, environmental and social studies and the draft of procurement documents and implementation agreements. Given the large investment needs (approximately US\$2.9 billion according to the feasibility study 2014), this work will be complemented by Bank-executed technical assistance to evaluate potential financing options, including potential phasing, co-financing options and potential role of PPP approach. EPP shall be responsible for implementation of Component 2.

Component 3: Preparation and Grid Integration of Renewable Energy Projects. This component will prepare the power system for increased deployment and integration of variable renewable energy, with a focus on supporting the solar pilot project, which is planned in Phase 2 using World Bank guarantee instrument. The Component shall comprise the following two sub-components:

Sub-component 3.1: Grid enforcement and strengthening to facilitate integration of hydro and solar power (estimated US\$ 10 million potential GCF financing). This subcomponent will finance upgrading and strengthening of existing grid infrastructure to facilitate the development of large-scale renewable energy.

Currently, two options are being considered to be financed under Component 3:

- Option 1: Construction of the 220kV Isanova substation and 220-110kV overhead lines.
- Option 2: Transition and implementation from manual control of the power system to automation of the work of dispatch control and emergency automation. Both options are under Bank's review.

If the option 1 is approved, 220 kV Isanova substation with a new overhead lines 220kV with laying of fiber-optic cables in the lightning rod (on the scheme of the approach-exit from VL 220kV "Datka-Uzlovaya 1, 2") of length of about - 1.2 km, new HVL-110kV "Isanova - Kara-Shoro-1, 2" (3 km) will be constructed. The power line is needed, but the route is not known. The territory for the substation has been allotted, no additional land is required. No other structures (warehouses) will be required. Possible social and environmental risks and impacts will also be determined only after ESIA.

If the option 2 is approved, a transition and implementation from manual control of the power system to automation of the work of dispatch control and emergency automation will be financed under this component. For this activity no lands or construction of structures are required. Under this option no social or environmental impacts are likely to be significant. The existing system of emergency automatics together with SCADA and other similar systems in the existing networks will be improved in order to improve the reliability and safety of the power system. This will not require any additional facilities or warehouses. NEGK will upgrade its equipment of automation systems in the existing grids. Details of the substation and lines are not known at this stage and will be identified upon the results of feasibility study.

Likely Activities under option 1, which may have an environmental impact:

- (i) Delivery of equipment to the site;
- (ii) Construction of new concrete saddles;
- (iii) Installation of equipment;
- (iv) Use of devices to install equipment;

- (v) Handling of hazardous waste and waste of auxiliary production (construction waste, packaging, rags, sorbents, etc.).

Sub-component 3.2: Technical assistance and capacity building (estimated US\$2 million potential GCF grant financing). This subcomponent will finance provision of technical assistance and capacity building to MoE, NEGK and other key stakeholders to enhance institutional capacity for managing the development and integration of large-scale solar power. The specific activities under the subcomponent could include: (i) the development and implementation of grid code, such as connecting code for renewable energy; (ii) policy and regulatory review and assessments to strengthen regulatory and institutional frameworks for renewable energy development; (iii) the development and implementation of measures for short term demand forecasting , including sub-hourly forecast for near-real time; and day ahead, month-ahead, year-ahead forecast for planning, and sub-hourly wind and solar power forecast; (iv) enhancement of the means, tools, and procedures for planning and managing different types of reserves and dispatching protocols and procedures; (v) feasibility studies for solar and wind projects, including wind and solar resource measurement as well as environmental and social impact assessment; and (vi) training and capacity building.

Component 4: Institutional strengthening and project implementation support (estimated funding – USD 1.5 million, including USD 1 million from IDA, and USD 0.5 million as GCF grant). This Component will finance activities aimed at strengthening the technical, operational, and managerial functions of energy companies and ensuring efficient implementation of the Project. Specific activities to be supported include:

- i. Strengthening the technical and operational capacity of Chakan HPP, Electric Stations OJSC and NEGK (including fiduciary, technical, operational and management functions) through targeted training and technical assistance; as well as conducting activities aimed at raising gender awareness and closing the gender gap in energy companies through instruction, training and supervision of female staff and trainees in energy companies.
- ii. Conducting key sectoral studies, including feasibility studies for other priority investment projects and other sectoral studies to improve the sector planning framework.
- iii. Providing project implementation support, including strengthening the Project Management Office by providing it with qualified fiduciary, environmental and social consultants, conducting project monitoring and evaluation activities, organizing Project audit by qualified companies acceptable to the World Bank, and covering additional Project operating costs. The Component will also implement community engagement activities, including community outreach campaigns, roundtables to obtain community feedback and inform the community how their feedback influences Project implementation decisions, and disclosures of information on various websites.

The project is mainly expected to support:

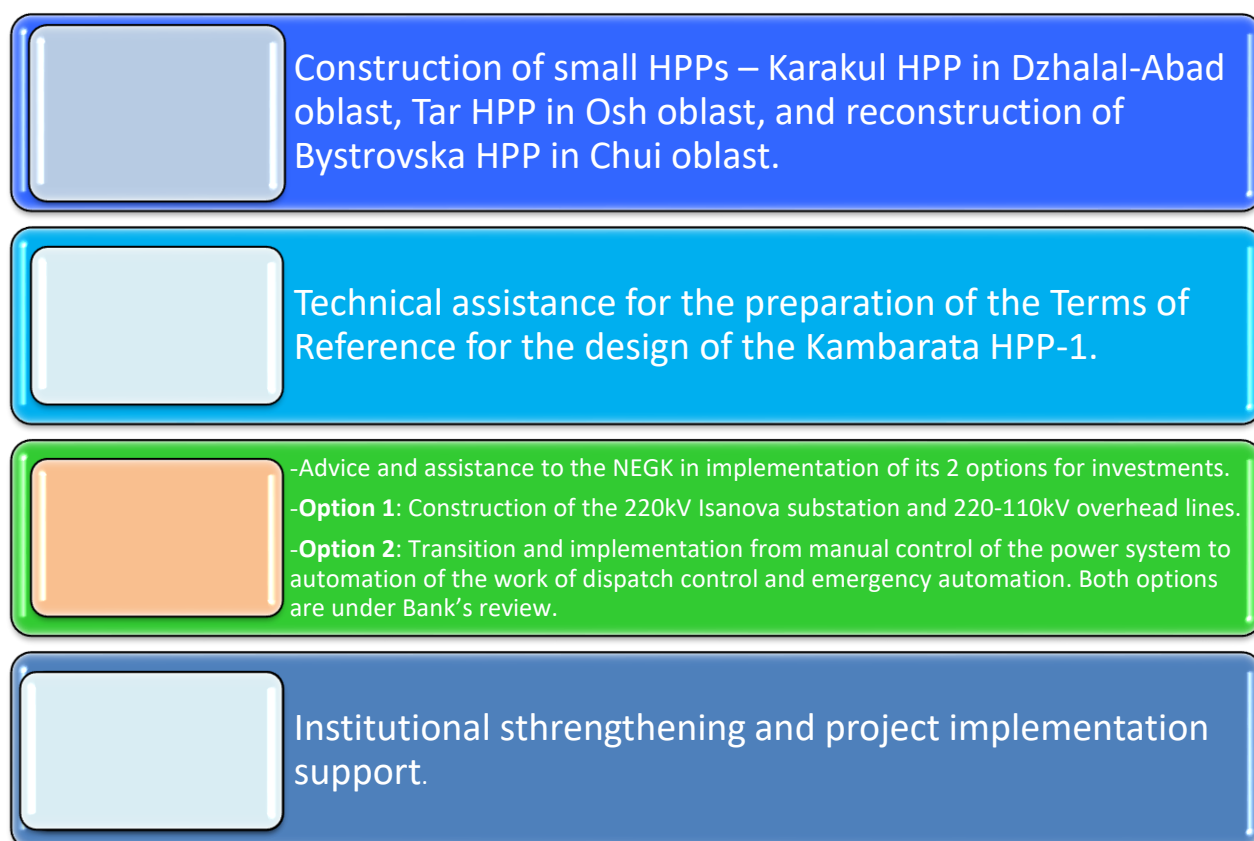


Figure 3. Proposed activities under each component

2.4.3. Project Beneficiaries

Key beneficiaries of the Project are the electricity consumers, including industrial, commercial, and residential customers. The newly constructed and rehabilitated hydropower plants under this phase will help increase power supply in the Kyrgyz Republic and improve the quality of power in the country. In addition, the local population is expected to benefit to a certain extent from employment opportunities during the repair and rehabilitation phases. The implementing agencies will also benefit significantly from the capacity building and technical assistance they will receive, which will improve their capacity to plan, develop, manage and maintain existing hydropower systems and services. Consequently, they will be able to deliver better, more reliable, and cost-effective services to customers.

In addition, it will also be ensured that ensuing benefits like compensation at replacement cost to all PAPs including vulnerable, marginalised and disadvantaged groups for any adverse impact in accordance with provisions of RPF are provided to all affected persons. MoE/PMO will also ensure that no person or community are disproportionately impacted to the extent possible and all possible measures in accordance to mitigation hierarchy shall be implemented as prescribed in ESMF.

2.5. Details of project expenditure

Project total cost is US \$54.50 million, of which US \$42 million is IDA credit and US \$12.50 – Green Climate Fund funds.

Detailed expenditures is provided in the Table 1 below.

Table 1. Project detailed expenditures by components

Item No.	Component name	Project cost (USD million)	Source of funding
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Component 1: Rehabilitation and Construction of Small and Medium-scale Hydropower Plants			
1.	Sub-component 1.1: Construction of new hydropower plant and rehabilitation of existing hydropower plant.	39 M	IDA credit
2.	Sub-component 1.2: Technical studies and consultancy services.		IDA credit
Component 2: Technical Assistance to Preparation of Kambarata-1 Large Hydropower Plant			
3.	Technical Assistance to Preparation of Kambarata-1 Large HP	2 M	IDA credit
Component 3: Preparation and Grid Integration of Renewable Energy Projects			
4.	Sub-component 3.1: Grid enforcement and strengthening to facilitate integration of hydro and solar power	10 M	GCF credit
5.	Sub-component 3.2: Technical assistance and capacity building	2 M	GCF grant
Component 4. Institutional Strengthening and Project Implementation Support			
6.	Institutional Strengthening and Project Implementation Support	1 M	IDA grant
		0.5 M	GCF grant

3.0. POLICY AND REGULATORY FRAMEWORK

The supreme legislative instrument in the Kyrgyz Republic is the Constitution of the Kyrgyz Republic of 05.05.2021, hereinafter referred to as the "Constitution". All laws must comply with the Constitution, and only the Parliament may make additions, amendments or adopt laws, or ratify international agreements. According to the Constitution, the Kyrgyz Republic is a democratic republic with a popularly elected president who heads the executive branch and a unicameral legislature consisting of 90 deputies.

Relations in the field of environmental protection and rational use of natural resources are regulated by the Constitution of the Kyrgyz Republic, laws and other regulatory legal acts of the Kyrgyz Republic adopted in accordance with them.

3.1. LEGAL AND REGULATORY FRAMEWORK

The applicable laws, acts and relevant policies in the context of the project are presented in Tables 2, 3 and 4. KRED Project will ensure that project activities implemented are consistent with provisions of such legal framework.

Table 2. Regulatory and legal provision (environment)

Item No.	Laws, acts and provisions	Relevance/Applicability to the project
I. Constitutional Provisions (Kyrgyz Republic) says the following about the relationship between the citizen and nature		
1.	Article 12, para 1.	Recognizes the diversity of forms of ownership, and guarantees equal legal protection of private, state, municipal and other forms of ownership.
2.	Article 12, para 2.	Property is inviolable. No one may be arbitrarily deprived of his property. Seizure of property by the state against the will of the owner is allowed only by a court decision.
3.	Article 15, para 2.	Seizure of property for public needs, as defined in the Basic Law, may be carried out by a court decision with fair and prior provision for compensation for the value of this property and other losses caused as a result of the alienation.
4.	Article 16, para 3.	Land, with the exception of pastures and forests, may be in private and municipal forms of ownership.
5.	Article 49 of the Basic Law refers to the right and obligation of citizens to a favorable environment and respect for the environment:	<ol style="list-style-type: none"> 1. Everyone has the right to an ecological environment favorable for life and health. 2. Everyone has the right to compensation for harm caused to health or property by actions in the field of natural resources. 3. Everyone is obliged to protect and preserve the natural environment, flora and fauna.
II. Legislation on natural resources and the environment		
1.	Law on environmental protection of 1999.	Sets out the public policy and general legal framework for the use of natural resources and environmental protection
2.	Law on ecological expertise of 1999	Law which is the authorized body in the field of environmental protection to conduct State Environmental Expertise (SEE) of proposed projects
3.	Law on Protection of Surface Waters, 2009	Provides a framework for the protection of water bodies, including the development and approval of water protection measures, as well as the definition of rules and the application of sanctions for violations.
4.	Law on Production and Consumption Waste of 2001	Regulates relations arising in the process of generation, collection, storage, use, neutralization, transportation and disposal of production and consumption waste, as well as state administration, supervision and control in the field of waste management.
5.	Law of the Kyrgyz Republic "Technical Regulations "Safety of	Indicates the priority of recycling building materials, products and structures through their industrial processing in order to obtain secondary raw materials to create new building materials,

	building materials, products and structures”	products and structures with the necessary technical characteristics. The above law provides for the responsibility for the safe disposal of waste throughout the life cycle.
III. Laws concerning occupational health and safety, as well as the protection of cultural heritage.		
1.	Constitution	Offers protection to workers by providing that they are entitled to working conditions that meet the basic requirements of health and safety in the workplace. The Ministry of labor, social security and migration is primarily responsible for occupational health and safety.
2.	Occupational Safety and Health Law of the Kyrgyz Republic of 2003	Provides the basis for regulation of working conditions, including workplace safety features, workplace safety procedures, and workplace hygiene
3.	Labor Code of the Kyrgyz Republic of 2004	It governs employment relationships and other relations, directly related, directed to protection of the rights and freedoms of the parties of employment relationships, establishment of the minimum guarantees of the rights and freedoms in the sphere of work.
4.	International Labor Organization on March 31, 1992	The Kyrgyz Republic joined the International Labor Organization. An analysis by this organization in 2008 found that the <i>Occupational Safety and Health Law</i> of the Kyrgyz Republic met international norms and standards, although it also revealed a lack of trained government inspectors to enforce law. (ILO 2008). This is being addressed by additional capacity on OHS in PMO.
5.	The 1999 Law on the Protection and Use of Historical and Cultural Heritage (last revised in 2014)	Guarantees state protection of historical monuments and establishes a system of protection of objects of local, state, and international historical or cultural significance, and the Ministry of Education and Science has custodial powers. The Ministry maintains an official state register of cultural heritage, which lists more than 5,000 objects of local, state, and international importance.

The legislation most relevant to the Project is summarized in Table 3.

Table 3. Environment legislation of the KR

Legislation	Legislation Year of adoption (changes)	Purpose / Content
Law on Environmental Protection	1999 (2002, 2003, 2004, 2005, 2009, 2013, 2014, 2015, 2016)	Provides state policy and a general legal framework for the use of natural resources and environmental protection, including environmental impact assessment, setting environmental standards and the legal regime for protected areas.
Concept of ecological safety of the KR	2009 (2012)	Establishes the basic principles of environmental policy and identifies global, national and local environmental issues; priorities in the field of environmental protection at the national level, as well as tools for ensuring environmental safety.
Law on environmental expertise	1999 (2003, 2007, 2015)	Provides a legislative framework for the authorized body in the field of environmental protection to conduct an environmental review and approve the EIA. Identifies (in general) projects requiring environmental assessment and expertise.
Law on water resources	1994 (1995, 2012, 2013, 2016)	Regulates the use and protection of water resources, including the prevention of adverse impacts, and seeks to improve cooperation and enforcement. Regulates the quantity and quality of water discharged into the environment and prohibits the discharge of industrial, domestic and other wastewater into water basins.

Legislation	Legislation Year of adoption (changes)	Purpose / Content
		Provides water protection zones where activities that may adversely affect water quality are prohibited.
Law on drinking water	1999 (2000, 2003, 2009, 2011, 2012, 2014)	Regulates the availability of drinking water and its quality.
Law on specially protected natural areas	1994 (2011)	Regulates the organization, protection and use of biosphere reserves; national parks; other protected areas with unique natural territories, flora or fauna or cultural heritage values; and protected areas for recreational use.
Law on biosphere reserves No. 48	1999	Sets legal standards for biosphere reserves to conserve, restore and use areas rich in natural and cultural heritage and support long-term sustainable economic and social development, including recreation, restoration of natural resources, long-term environmental control, monitoring and education.
Law on the protection and use of flora	2001 (2003, 2007, 2009, 2010, 2016)	Regulates the use, protection and reproduction of flora. Key principles include conservation of biodiversity and growth of wild plants and ecosystems; rehabilitation and conservation of rare, endangered and endemic species; and use and rehabilitation of natural plant resources based on scientific principles.
Fisheries Law	1997 (1998, 2008, 2013)	Regulates commercial fishing in order to conserve and develop fish stocks, increase aquaculture and meet the needs of the population for fish products.
Law on wildlife	1999 (2003, 2014, 2015)	It is established that the animal world is the property of the national state. Regulates the protection of wildlife in the design and construction of infrastructure, including habitats for fauna species, migration routes, and nesting and breeding areas. Contains definitions of wildlife, rare and endangered species, wildlife protection, and wildlife use.
Water Code	2005 (2012, 2013, 2016)	Creates a unified legal framework governing the use, protection and development of water resources to ensure sufficient and safe supply and preserve the environment.
Regulations on protection of surface waters of the Kyrgyz Republic	2016	Provides a legislative framework for defining, defining quality standards for water basins used for fisheries and irrigation, and enforcing regulations regarding discharges to water basins, among other things.
Law on protection of atmospheric air	1999 (2003, 2005)	Regulates atmospheric air quality and air quality management.
Law on the protection and use of historical and cultural heritage	1999 (2014, 2015, 2017)	Creates a system for the protection of objects of local, state and international historical or cultural significance. Includes definitions key terms and types of protected objects.
Law of the Kyrgyz Republic on labor safety	2003	Provides a framework for regulating working conditions, including workplace safety features, workplace safety procedures, and workplace hygiene.
List of Rare and Endangered Species of Animals and Plants Included in the <i>Red Book of Kyrgyzstan</i>	2005, 2009	Species included in the Red Book and their habitats are protected by law and proposed development projects should include measures to prevent negative impacts, as well as mitigation measures designed to prevent habitat destruction and the destruction or extinction of species.
General Technical Regulations on Environmental Safety	2009	Regulates the complex legal and regulatory general technical requirements aimed at achieving an optimal degree of ordering the system of environmental protection, ensuring the safety of products, processes for human life and health and the environment, including flora and fauna. This regulation establishes requirements for ensuring environmental safety in the field of production and consumption waste management in the design and implementation of activities at the facilities of economic and other activities for the

Legislation	Legislation Year of adoption (changes)	Purpose / Content
		<p>processes of production, storage, transportation and disposal of products and introduces a ban on:</p> <ul style="list-style-type: none"> - commissioning of facilities of economic and other activities that are not equipped with technical means and technologies of neutralization and safe disposal of waste; - production and handling of waste with an unspecified class of hazard for the environment; - import of waste into the territory of the Kyrgyz Republic for the purpose of their disposal and neutralization; - disposal of waste in the territories of the residential zone, forest parks, recreational and water protection zones; - unauthorized placement, incineration of waste in the environment and extraction of buried waste.
Procedure for handling production and consumption waste in the Kyrgyz Republic		Regulates the process of waste generation and the procedure for its regulation, as well as establishes special requirements for the disposal of consumer waste and requirements for waste disposal facilities.
	Para 17	<p>Accumulation and storage of waste on the territory of the owner of the waste is allowed temporarily in the following cases:</p> <ul style="list-style-type: none"> - the impossibility of their timely use in the subsequent technological cycle due to the lack of appropriate technologies and / or production capacities; - the need to accumulate waste for the formation of a transport party in order to transfer it to another individual or legal entity, according to the contract; - lack of consumers; - elimination of the consequences of man-made accidents or natural phenomena. <p>The procedure defines the requirements for the storage of "hazardous waste", such as: used containers and packaging of chemicals; mercury-containing waste; used batteries and oil products.</p>
Legislation on energy saving and safety in the electric power industry		
Law of the Kyrgyz Republic "On Energy"	October 30, 1996 No. 56	Defines the basic principles of organization and regulation of economic activity in the fuel and energy complex. The law applies to all enterprises of the fuel and energy complex, regardless of their form of ownership.
Article 14		All types of planned activities in the fuel and energy complex are preliminary considered and evaluated by the competent state authorities in terms of their impact on the environment and are carried out after their positive conclusion.
Law of the Kyrgyz Republic "On Electric Power Industry".	January 28, 1997 No. 8	Establishes market principles for the functioning of the industry by "creating a competitive environment and forming an energy market, stimulating the development of the private sector and attracting investments." In accordance with the provisions of this law, any public, private legal entities and individuals can engage in the import, export and sale of electricity if they have a license obtained from the regulatory body. The law establishes the rights and obligations of the national transmission network and distribution companies. One of the cornerstone provisions of the law is that the national transmission network does not have the right to restrict access to its networks, since electricity transits through it. The law also fixed the rights and obligations of consumers and the scheme of their contractual relations with suppliers.
Law of the Kyrgyz Republic "On Energy Saving".	July 7, 1998 №88	Regulates the legal framework for the implementation of energy conservation requirements and the efficient functioning of enterprises. The law establishes the legal norms for the implementation of the state policy for increasing the efficiency of

Legislation	Legislation Year of adoption (changes)	Purpose / Content
		energy use, as well as the legal norms for the creation and functioning of institutional economic and information mechanisms for the implementation of this policy. The purpose of this Law is to create conditions for increasing the efficiency of use in the extraction, production, processing, transfer (transportation), storage, distribution and consumption (conversion) of fuel and energy resources, protection of the interests of consumers and producers. Fuel and energy resources by regulating relations between business entities, as well as between the state and legal entities and individuals in the field of energy conservation.
Law of the Kyrgyz Republic "On the electric power industry" Article 28. Nature protection	January 28, 1997	All license holders are required to bear the costs associated with the prevention or minimization of pollution arising in the course of their activities.
Article 29. Environmental impact assessment		When deciding on the choice of a site for new HPPs (for Tar, Karakul, Kambarata-1), before issuing a building permit, an assessment of its impact on the environment is carried out. Reports on this must be provided to the public, and the study of public opinion is carried out in accordance with the legislation of the Kyrgyz Republic.
Article 31. Responsibility for violation of the law		A state, private enterprise or any other person that has violated this Law, other legislative acts, licenses shall bear material, administrative and criminal liability established by law. Bringing the perpetrators to disciplinary, administrative or criminal liability does not exempt them from compensation for the losses caused by them in accordance with the legislation of the Kyrgyz Republic. The power supply organization is responsible for the implementation of plans for the development of power grids, the timely and high-quality conduct of their repair and maintenance, for preparing for work in winter conditions.
Regulations on the procedure for the destruction (processing) of products (goods) recognized as unsuitable for sale		Determines the procedure for the destruction or processing of products and goods in case they are recognized as unsuitable for consumption and sale. All products manufactured, imported, purchased and sold by legal entities and individuals on the territory of the Kyrgyz Republic must comply with the requirements of regulatory documents for safety and quality indicators of interstate standards (GOST), standards of the Kyrgyz Republic (KMS), sanitary, veterinary and sanitary, environmental, building codes and regulations. If the products do not meet the above requirements in terms of safety indicators, they are subject to mandatory sanitary and hygienic examination and in case of detection of hazardous products, the use (use) of which poses a danger to health, human life and the environment, issues related to export, destruction.

Environmental impact assessment is carried out in accordance with the following rules:

- Regulation on the Procedure for Environmental Impact Assessment in the Kyrgyz Republic (February 13, 2015, No. 60);
- Regulations on the procedure for conducting state environmental expertise in the Kyrgyz Republic (May 7, 2014, No. 248);
- Law "On environmental expertise" No. 54 of 1999 (amended on May 04, 2015),
- Law "On environmental protection No. 53 of 1999 and
- Law "On general technical regulation on environmental safety". No. 151 of 2009.

Environmental assessment in the Kyrgyz Republic is based on two subsystems: (i) EIA (“Environmental Impact Assessment”) or OVOS (the Russian acronym for “Environmental Impacts Assessment”) and (ii) Environmental Expertise (State Environmental Expertise, SEE). Based on the "list", a project check is carried out to determine whether the project is subject to an environmental assessment or not. Where required, the EIA is carried out by an EIA consultant hired by the project proponent. The environmental assessment continues the EIA documents to be subjected to further reviews.

The resulting EIA/EA is then submitted for public consultation, after which changes are made according to public feedback. Subsequently, the EIA report, the Statement of Environmental Consequences and other supporting documents are submitted for the State Environmental Expert Review (SEE). After that, the project will be approved, rejected or sent for re-examination.

The continuation of the SEE depends on the project, but cannot be more than 3 months after the Project Initiator submits all EIA/EE documents to the SEE. Public Environmental Expert Review (PER) is organized and conducted at the initiative of local residents, local administrations and civil societies registered in the Kyrgyz Republic. The results of the public environmental review are sent to the body that implements the state environmental review, which is responsible for making decisions on the implementation of the objects of the review.

The materials submitted for the State Ecological Expertise to review should reflect (depending on the nature of the planned activity) design solutions for the implementation of the best available technologies;

- rational use and reproduction of natural resources, complex processing and disposal of waste; ensuring effective wastewater treatment, their use for technical needs;
- preservation and restoration of soil cover, flora and fauna, compliance with the status of objects of specially protected natural areas;
- reclamation of disturbed lands;
- ensuring the protection of the population and the environment from the harmful effects of anthropogenic physical, chemical, and biological factors.

A public consultation was held for EE at the feasibility study stage. The results of the public consultations will be included in the public environmental review (PER), which may be done as part of the EIA or may also be initiated in parallel with the SEE. The duration of the SEE depends on the complexity of the project, but should not exceed 3 months after the project initiator submits all EIA documents for the SEE.

According to the “List of Investment Activities” in Annex 1, the Project screening has been done and determined that **generation of electricity (construction of hydropower plants)** is subject to environmental impact assessment. In this regard, Tar, Karakul and Kamar-Ata-1 HPPs will require conduct of the full-scale Environmental (Social) Impact Assessment.

As for the Bystrovka HPP and NEGK substation rehabilitation works will require the Project Proponent (the Consultant/PIU) to prepare the OVOS as a section of the technical design of the HPP and obtaining positive conclusion from the State Environmental Expertise.

The legal and policy framework of the project is based on national laws and regulations regarding land acquisition policy, citizen engagement, information disclosure policy in the Kyrgyz Republic, and WB ESS5 - land acquisition, land use restrictions and involuntary resettlement.

Table 4. Regulatory and legal provision (social)

Item No.	Laws, acts and provisions	Relevance/Applicability to the project
I. Constitutional Provisions (Kyrgyz Republic)		
1.	Article 15, para 1.	Private, state, municipal and other forms of ownership are equally recognized and protected in the Kyrgyz Republic.
	Article 15, para 2.	Property is inviolable. No one may be arbitrarily deprived of his property. The right to inherit is guaranteed. Expropriation of property against the will of the owner shall be permitted only pursuant to a court decision in accordance with the procedure prescribed by law.
	Article 15, para 2, sub-para. 3	Expropriation of property for public and state needs, as defined by law, shall be carried out by court decision by granting just and prior security for compensation of the value of this property and the losses caused by expropriation of the property
4.	Article 16, para 3.	Land, with the exception of pastures and forests, may be in private and municipal forms of ownership.
The conversion into state ownership of property owned by citizens and legal entities (nationalization) is carried out on the basis of the law with compensation for the value of this property and other losses.		
Civil Code of the Kyrgyz Republic		
	Civil Code ² , 1996, 2021	Provides that the party whose rights have been violated may claim full compensation for damages, unless national law or agreements (contracts) prepared in accordance with national law indicate a violation.
	Article 14, paragraph 1	Indicates that the recoverable losses include: <ul style="list-style-type: none"> • expenses that the person whose right has been violated has made or will have to make to restore the violated right, loss or damage to his property (actual damage), as well as: • unearned income that this person would have received under normal conditions of civil circulation if his right had not been violated (lost profit).
	Article 14, paragraph 2	If the person who violated the right received income as a result, the person whose right was violated has the right to demand compensation, along with other losses, for lost profits in an amount not less than such income.
	Article 14, paragraph 2	Lost profit that the party should have received under normal circumstances if its rights had not been violated (opportunity costs).
	Article 15	Establishes that losses caused to a citizen or legal entity as a result of illegal actions (or inaction) of state bodies, local self-government bodies or officials of these bodies, including the publication by a state body of an act that does not comply with the law, are subject to compensation from the state, as well as local governments in cases provided for by law.
	Article 23, paragraph 4	Land plots can be alienated or transferred from one person to another to the extent that their turnover is allowed by the land legislation of the Kyrgyz Republic
Land Code (June 2, 1999, No. 45; last amended on March 17, 2021, No. 33)³		
	Article 49, paragraph 1, subparagraph 5	The land owner or land user has the right to request compensation, as specified in the legislation of the Kyrgyz Republic.
	Article 66 paragraph 1	Establishes that the right to land and related structures may be terminated, including when the land is necessary for state or public purposes.

² <http://cbd.minjust.gov.kg/act/view/ru-ru/4?cl=ru-ru>

³ <http://cbd.minjust.gov.kg/act/view/ru-ru/112189?cl=ru-ru>

Item No.	Laws, acts and provisions	Relevance/Applicability to the project
	Article 66 paragraph 4	A land plot may be acquired for state or public needs only after payment of the cost of the right to the land plot and reimbursement of losses.
	Article 68	Defines the withdrawal of a land plot for state and public needs and provides that:
	Article 68, paragraph 1	Land can be acquired (purchased) for state and public purposes on the basis of an agreement between the authorized body and the land owner or land user. If the land owner or land user does not agree with the acquisition (purchase), the competent authority has the right, within two (2) months, to apply to the court with a request to conduct the acquisition with payment to the owner or land user of compensation for the land from the date of the official refusal by the land owner / land user;
	Article 68, paragraph 3	When determining compensation for acquired land, it must reflect the market value of rights to land and related buildings, losses incurred by the land owner or land user and obligations towards third parties.
	Article 68, paragraph 4	When land plots are acquired for state or public needs with the consent of the landowner or land user, the owner/user may be allocated land in return with the same value of that land, which will be counted towards compensation for the acquired land.
	Article 78, paragraph 2	Determines the mode of use in respect of public lands. In particular, this indicates that public lands in settlements, cities and villages (for example, roads, streets, squares, sidewalks, driveways, park lanes, boulevards, mini-parks, reservoirs, etc.) cannot be located in private ownership and only in exceptional cases can be leased to authorized state bodies, legal entities and individuals for a period not exceeding 5 years.
	Article 78, paragraph 3	The authorized state body may permit the construction of light structures on public lands.
The Labor Code of the Kyrgyz Republic (August 4, 2004 No. 106, last amended on June 26, 2018 No. 62)		
	Labor Code	Regulates labor relations and other directly related relations aimed at protecting the rights and freedoms of participants in labor relations, establishing minimum guarantees of rights and freedoms in the sphere of labor
	Article 9	Prohibits discrimination and guarantees all citizens equal rights to work; discrimination in labor relations is prohibited. Any differences, exclusions or preferences, refusal to hire, regardless of nationality, race, gender, language, religion, political views, social status, education, property status, leading to a violation of equality of opportunity in the world of work are prohibited.
Law of the Kyrgyz Republic "On labor protection", adopted on August 1, 2003		
	Law on labor protection	Establishes the legal framework for regulating relations in the field of labor protection between employers and employees and is aimed at creating working conditions that meet the requirements of preserving the life and health of workers in the process of work.
	Article 2	Labor protection requirements are provided by legal entities and individuals specified in part two of Article 2 of this Law, when they carry out any type of activity, including the design, construction, reconstruction and operation of facilities, the construction of machines, mechanisms and other equipment, the development of technological processes, organization of production and labor. The law provides employees with the rights and guarantees to work in conditions that meet the requirements of labor protection. The law establishes the obligations of the employer to ensure safe working conditions and labor protection of employees.

Item No.	Laws, acts and provisions	Relevance/Applicability to the project
The main document regulating occupational health and safety (OHS) is the Labor Code.		
	Chapter 17 of the Labor Code	Establishes general provisions on employer and employee responsibility for labor protection, compliance of production facilities and products with labor protection requirements, provision of workers with personal protective equipment, training and briefing of workers on labor protection, sanitary facilities and medical services, and medical check-ups for workers.
	Labor Code Chapter 18	Regulates the employer's liability for damage caused to an employee by an injury, occupational disease or other health damage at work.
Law of the Kyrgyz Republic "On Labor Protection"⁴ ("Labor Protection Law")		
		Establishes the regulatory framework in the field of labor protection and applies to employers, employees of all legal entities operating in the Kyrgyz Republic, of any organizational and legal form and form of ownership. The law defines the main directions of state policy in the field of labor protection, establishes the powers of authorized state bodies in the field of labor protection, principles and procedures for state supervision and control over compliance with labor protection requirements. In addition, labor protection requirements in construction are included in the Construction Code SN 12-01:2018 "Labor protection in construction".
Law on state registration of rights to real estate and related transactions dated December 22, 1998 No. 153, with the latest amendments dated February 25, 2021 No. 21)⁵		
	Article 1	States that state registration of rights to real estate and transactions with it (hereinafter referred to as state registration of rights) is a legal act for the recognition and confirmation by the state of rights to real estate, their encumbrances (restrictions), as well as real estate transactions, ensuring the protection of registered rights and encumbrances (restrictions), with the exception of cases provided for by this Law.
	Article 4	Any title or other document on the rights or their restrictions subject to mandatory registration.
	Article 6	Property rights that are not subject to registration but are recognized and protected by the state include: <ul style="list-style-type: none"> • Rights of access to communication lines, pipelines, geodetic places and other parts of the infrastructure intended for public use; • Rights of spouses, children and others; • Temporary rights, lease or sublease for up to 3 years; • Actual use rights for the principal or primary use of the property; • Rights arising from tax claims; • Encumbrances arising from general health, public safety, environmental regulations, etc.
	Article 7	Any title or other document on the rights or their restrictions shall be submitted to the registration authority no later than thirty days from the date of conclusion (drawing up) of the above document.
Legislative framework for asset valuation in the Kyrgyz Republic Asset valuation is carried out on the basis of the Provisional Rules for Appraisers and Appraisal Companies (Government Decree of August 21, 2003 No. 537 ⁶);		

⁴ August 1, 2003 (last amended July 26, 2016).

⁵ <http://cbd.minjust.gov.kg/act/view/ru-ru/160>

⁶ <http://cbd.minjust.gov.kg/act/view/ru-ru/6710>

Item No.	Laws, acts and provisions	Relevance/Applicability to the project
Valuation Standards for Appraisers (Government Decree of April 03, 2006 No. 217) ⁷ and other provisions of national legislation as necessary.		
Legislation of the Kyrgyz Republic on stakeholder engagement and information disclosure.		
	Law of the Kyrgyz Republic "On Guarantees and Freedom of Access to Information" ⁸ (December 5, 1997 № 89, as last amended March 18, 2017 № 47)	Regulates the process of implementation of the constitutional right of everyone to freely seek, receive, process, produce, transmit and disseminate information. Everyone is guaranteed the right of access to information, and that the state protects everyone's right to seek, receive, process, produce, transmit and disseminate information. In addition, restrictions on access to classified and confidential information are established only by the Law.
	Law of the Kyrgyz Republic "On Guarantees and Freedom of Access to Information" ⁹ (last edition of March 18, 2017 #47)	Regulates access to information which is in organizations and institutions not related to state bodies and affects rights and legal interests of applicant directly.
	Law of the Kyrgyz Republic "On Access to Information Held by State Bodies and Local Self-Government Bodies" of 28.12.2006.	Relates to information held by state bodies and local self-government bodies. The law was adopted to ensure implementation and protection of the rights of citizens and legal entities to access to information and achievement of maximum information openness, publicity and transparency in the activities of state bodies and local self-government.
Decree of the President of the Kyrgyz Republic "On the implementation of the Law of the Kyrgyz Republic "On access to information held by state bodies and local self-government bodies of the Kyrgyz Republic" dated May 8, 2007, DP N240. ¹⁰		
Decree of the Prime Minister of the Kyrgyz Republic dated April 22, 2008 N210 (On approval of the forms of the report on the progress of the implementation of the Law of the Kyrgyz Republic "On access to information held by state bodies and local self-government bodies of the Kyrgyz Republic" and Instructions for filling them out). ¹¹		
	The Law of the Kyrgyz Republic "On Access to Information of State Bodies and Local Self-Government Bodies of the Kyrgyz Republic" ¹² (dated December 28, 2006 No. 213, with the latest amendments dated June 30, 2022 No. 53).	Ensures the implementation and protection of the right of access to information located under the jurisdiction of public authorities and local governments, and the achievement of maximum information openness, publicity and transparency of their activities. <ul style="list-style-type: none"> • Local self-government carries out its activities on the principles, which include: • - openness and responsibility of local governments to the local community and the performance of their functions in the interests of the local community; • - expression of the will of citizens through the system of local self-government, as well as through meetings of citizens and kurultai; • - protection of the rights and legally protected interests of local communities; • - publicity and consideration of public opinion. • Local self-government bodies work in close cooperation with state authorities in order to create conditions for the implementation of the constitutional rights of citizens of the Kyrgyz Republic to participate in resolving issues of state and local importance.
	Law of the Kyrgyz Republic "On the Procedure for Considering Citizens' Appeals" ¹³	Provides that the grievance of citizens of the Kyrgyz Republic must be registered, duly considered and resolved in a fair, timely and accountable manner. Every citizen has the right to appeal in

⁷ <http://cbd.minjust.gov.kg/act/view/ru-ru/99527>

⁸ <http://cbd.minjust.gov.kg/act/view/ru-ru/589>

⁹ <http://cbd.minjust.gov.kg/act/view/ru-ru/589>

¹⁰ <http://cbd.minjust.gov.kg/act/view/ru-ru/4605?cl=ru-ru>

¹¹ <http://cbd.minjust.gov.kg/act/view/ru-ru/22262>

¹² <http://cbd.minjust.gov.kg/act/view/ru-ru/202010>

¹³ <http://cbd.minjust.gov.kg/act/view/ru-ru/202100>

Item No.	Laws, acts and provisions	Relevance/Applicability to the project
	The Law of KR "On the procedure of consideration of citizens' appeals" (March 4, 2007, № 67 with last amendments of July 27, 2016, № 151). Articles 2 and 4	person or through his/her representative to state authorities, local self-government bodies and their officials, who are required to provide a reasoned response within the time frame established by law.
	Article 8	A grievance registered with a state body or local government must be considered within 14 working days, it can be exceptionally prolonged for not more than 30 days.
	Law on Safeguarding and Protection Against Domestic Violence (28 April, 2017)	This law aims to improve protection measures for survivors, simplifies reporting procedures and introduces behavior correction for perpetrators.
	Law on Local Self-Government (July 15, 2011 No. 101, last amended on August 8, 2019 No. 118).	Establishes the principles of organizing local self-government at the level of administrative-territorial units, determines the role of local self-government in the exercise of state power, establishes the organizational and legal foundations for their activities, establishes the competence and principles of the relationship between local self-government bodies and state authorities, state guarantees of local legal communities for self-government. Local self-government carries out its activities, including on the principles of: <ul style="list-style-type: none"> - openness and responsibility of local governments to the local community and the performance of their functions in the interests of the local community; - the will of citizens through the system of local self-government, as well as through meetings of citizens and kurultai; - protection of the rights and legally protected interests of local communities; - publicity and consideration of public opinion. Local self-government bodies work in close cooperation with state authorities in order to create conditions for the implementation of the constitutional rights of citizens of the Kyrgyz Republic to participate in resolving issues of state and local importance.

The Kyrgyz Republic recognizes and adopts international rights in the field of environmental protection, in which international obligations are of primary importance.

International treaties adopted by the Kyrgyz Republic relevant to the project

1. Aarhus Convention (2001) on access to information, public participation in decision-making and access to justice in environmental matters;
2. Rotterdam Convention on the prior informed consent (PIC) procedure for certain hazardous chemicals and pesticides in international trade (2000);
3. Stockholm Convention on persistent organic pollutants (2006);
4. Convention on biological diversity (1996) and the attached Cartagena protocol on biosafety (2005);
5. Convention on the Protection of the World cultural and natural heritage (1992);
6. United Nations Framework Convention on climate change (2000);
7. Ramsar Convention on wetlands (2002);
8. Convention on the conservation of migratory species of wild animals (2013);
9. Basel Convention on the control of transboundary movements of hazardous wastes and their disposal (1996).
10. Forced Labour Convention, 1930;
11. Freedom of Association and Protection of the Right to Organise Convention, 1948;
12. Right to Organise and Collective Bargaining Convention, 1949;
13. Equal Remuneration Convention, 1951;

14. Abolition of Forced Labour Convention, 1957;
15. Discrimination (Employment and Occupation) Convention, 1958;
16. Minimum Age Convention, 1973;
17. Worst Forms of Child Labour Convention, 1999.

3.2. World Bank environmental and social standards (ESS)

The Environmental and Social Framework of the World Bank defines the World Bank's commitment to sustainable development through the Bank's policies and a set of environmental and social standards designed to support borrower projects to end extreme poverty and promote shared prosperity.

The Environmental and Social Standards set out requirements for Borrowers to identify and assess the environmental and social risks and impacts associated with projects supported by the Bank through Investment project financing. The Bank believes that the application of these standards, by focusing on identifying and managing environmental risks, will assist borrowers in their goal of reducing poverty and improving sustainable prosperity for the benefit of the environment and their citizens.

All works to be financed under this project will comply with national laws and other regulations on environmental protection, land acquisition and labor protection, as well as applicable environmental and social standards and World Bank guidelines.

The World Bank environmental and social Policy is supported by 10 standards that the Borrower must adhere to in implementing projects financed by the World Bank or the World Bank Group.

ESS 1: Assessment and Management of Environmental and Social Risks and Impacts

The Bank requires assessment and management of environmental and social risks and impact of projects under Bank financing to ensure that they are environmentally sound and sustainable. ESS1 suggests adopting mitigation hierarchy approach to anticipate and avoid risks and impacts, where avoidance is not possible minimize the risks and impacts to acceptable level and compensate for significant residual impact where techno-economically viable.

This requires selection of suitable instruments from various tools like ESIA, Environment Audit, Hazard and Risk Assessment, Social and Conflict analysis, Environmental & Social Management Plan (ESMP), Environmental & Social Management Framework (ESMF), Strategic Environmental & Social Assessment (SESA), Environmental & Social Commitment Plan (ESCP) and subsequently monitoring and reporting the issues depending on the complexity of the project. For KRED project, this ESMF will guide the preparation of site specific Environmental and Social Impact Assessment for the smaller HPPs, and the level of assessment required would be determined by a screening and scoping exercise. A detailed Terms of Reference will be prepared for the Kambarata-1 HPP.

ESS 2: Labor and working conditions

The ESS 2 on Labor and working condition requires promoting worker-management healthy relationship, developing strategies to improve working condition like fair treatment of workers and vulnerable groups that are involved in the project and preventing all forms of forced and child labors. This standard is applicable to project workers including full time, part time, temporary, contractual and migrant worker.

This standard helps to monitor health of the worker, working conditions, hours of work and other necessary requirements including grievance mechanism and measures related to Occupational Health and Safety and shall be complied in accordance with ESS.

ESS 3: Resource Efficiency and Pollution Prevention and Management

The ESS 3 on Resource Efficiency and Pollution Prevention and Management promotes the sustainable use of resources (i.e. Energy, Water, Raw Materials) by identifying, avoiding or minimizing adverse impact both long term & short term caused by different pollutants on Health and Environment. The Standard also includes both Hazardous and Non-hazardous Waste Generation through minimizing and managing risks associated during entire life cycle of the Project.

ESS 4: Community Health and Safety

The ESS 4 on Community Health and Safety recognizes the exposure to risks and impacts that may cause due to project activities. Therefore, anticipating and avoidance of adverse impact on communities affected by the project from both routine and non-routine circumstances should be done. Accordingly designs & constructions to be modified that will ensure quality and safety to the community in conformance with climate change. Comprehensive Risk Hazard assessment and emergency action plan should be prepared in coordination with local authorities and affected communities.

ESS 5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement

The ESS 5 on Land Acquisition, Restrictions on Land Use and Involuntary Resettlement emphasizes for avoidance or minimization of involuntary resettlement or forced eviction to the extent it is feasible by exploring all viable alternative project designs.

Where involuntary resettlement is not viable, appropriate mitigation will be taken in accordance with sustainable development programs to alleviate the adverse impacts on displaced persons by providing timely compensation and at-least restoring their livelihood and improving their living standard to pre-displacement levels or to levels prevailing prior to the beginning of project implementation, whichever is higher. The Resettlement activities shall be executed by providing sufficient investment for displaced person who will be directly benefitted for the project and they should be meaningfully consulted and should have opportunities to participate in planning and implementation of resettlement programs.

ESS 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources

This ESS affirms World Bank's commitment to protect and support conservation of biodiversity and natural habitat, application of mitigation hierarchy, designing and implementation of remedial measures that affect biodiversity. Sustainable management of the project should be done to provide benefit and to minimize damaging effects of the project as the bank does not support projects that involve significant conversion or degradation of critical natural habitats.

This policy ensures the need to support livelihood of local communities through adoptive practices that can integrate conservation and development of the project area.

ESS 8: Cultural Heritage

The ESS 8 on Cultural Heritage recognizes that cultural heritage provides continuity in tangible and intangible forms between the past, present and future. The objective of the standard is to integrate sustainable development and protection of cultural heritage from adverse impact of the project by providing meaningful consultation and promoting equitable share of benefits with reference to the PCR. This standard tries to preserve Physical Cultural Resources (PCR) and in avoiding their destruction or damage. PCR includes resources of archaeological, paleontological, historical, architectural, and religious (including graveyards and burial sites), aesthetic, or other cultural significance, including any tangible objects of cultural heritage discovered during excavation under chance finds procedure. Accordingly, this standard sets out measures designed to protect cultural heritage throughout the project life cycle.

ESS 10: Stakeholder Engagement and Information Disclosure

This standard requires Stakeholder Engagement Plan (SEP) for projects under Bank financing for open and transparent engagement with project stakeholders to improve the environmental and social sustainability of project. The effective SEP helps to identify the main stakeholders of the project and mechanism for public consultation and information disclosure as well as grievance redressal system.

3.3. World Bank's environmental and social risk classification

As part of its environmental and social procedures, the Bank classifies all projects into one of four classifications: high risk, substantial risk, moderate risk, or low risk. In determining the appropriate risk classification, the Bank takes into account relevant issues such as the type, location, sensitivity and scale of the project; the nature and extent of potential environmental and social risks and impacts; and the Client's ability and willingness to manage environmental and social risks and impacts in accordance with Environmental and Social Standards.

Direct and indirect environmental risks and adverse impacts are expected under all components of the project.

The project **environmental risk is rated High** mainly due to the activities under the Component 2.1, which is expected to finance TA for preparatory studies for a large Kamar-Ata-1 HPP (1.6GW, 160-260m dam).

While the project will not finance any civil works at Kamar-Ata-1 HPP, it may indirectly pose risks and also cause significant environmental impacts through development of feasibility studies, ESAs and bidding documents that may be further used for the construction purposes. The potential environmental risks and impacts include permanent inundation of the reservoir area and permanent changes in landscapes, impacts on river flows, quality and morphology; ecosystems, ecosystem services and disturbance to biodiversity; pollution and waste disposal during construction, vibration impacts from blasting and heavy equipment, changes in hydrology of the Naryn river.

The exact location and scale of activities under the Component 1 and Component 3 are not yet finalized. Rehabilitation and construction of small and medium scale hydropower plants, and construction of substation and overhead lines, transition and implementation from manual control of the power system to automation of the work of dispatch control and emergency automation may have potential direct adverse environmental impacts during construction and implementation stage. The currently available technical parameters are summarized below:

Item #	Subproject name	Dam height, m	Reservoir size, million m ³	Capacity, MW	Type of work
1.	Karakul HPP	8	0,05	29	Construction
2.	Tar HPP lower	24	1,6	19	Construction
3.	Bystrovka HPP (run of river)	-	-	8.7	Reconstruction

The risks relate to: i) increased pollution due to construction waste; (ii) generation of dust, noise and vibration due to movement of construction machinery; (iii) disturbance and pollution of natural ecosystems and biodiversity; (iv) spills of fuel and lubricants during construction; (v) landscape disturbance; (vi) water pollution and sedimentation. Also, the risks and adverse effects of both components relate to occupational health and safety (OHS) hazards associated with work at height during the assembly of supports and stretching, electrical work, health effects of low levels of electromagnetic radiation associated with the operation and disposal of hazardous materials, such as transformer oils, and the possibility of polychlorinated biphenyls (PCBs) in legacy transformers. Most of these risks and adverse impacts are temporary, localized, mitigable and mostly expected during the construction phase. Additional risks associated with construction of new HPPs might relate to conversion of aquatic and terrestrial habitats, changes in in-stream flows and fish entrainment.

The main risks to community's health and safety include the aspects of dam safety and reservoir security during operation, and dam safety, traffic safety and labor influx during construction. Construction activities will also introduce traffic hazards as the permanent access road passes through villages homes, schools and businesses located close to the road. There is risk to the safety of road users (pedestrians, cars, livestock) particularly due the operation of hauling trucks carrying quarry aggregates to the SHPP sites and operation of other large and heavy machinery. In order to address risks and impacts that might affect community health and safety, the ESMF will include an assessment of work-related health risks; works and road safety; excessive noise and dust levels, site safety awareness and access restrictions; labor influx (if any), and SEA/SH. All these issues will be screened and addressed in site-specific ESIA's to be prepared once the investment locations are identified and detailed designs available.

The ESMF will require that site-specific ESIA's specify the necessary measures for ensuring efficient waste management, compliance with good labor-management practices, disclosing information, and maintaining effective communication with local communities throughout the duration of works. As Kamar-Ata 1 is a strategic object and considered as national security site, security forces will be involved during construction. Construction of smaller HPPs under Component 1 may also involve security personnel, especially if some explosives are to be used for dam construction. The ESMF and further ESIA's will need to reflect mitigation measures for presence of security forces, such as increased awareness among population, training for contactors, Codes of Conduct. The ESMF will also highlight the need for training and will include specific guidelines and requirements, and provisions in this regard for PMO staff, local authorities, and project-affected people and beneficiaries. The site-specific ESIA's will also include (i) emergency response actions, including immediate notification of PAPs; (ii) measures to address SEA/SH risks, including, where necessary, action plans, Codes of Conduct, outreach, etc.

The cumulative impact of project activities on HPPs may result in direct loss of natural habitat due to accumulated project footprints, fragmentation of aquatic habitat due to isolation of river sections and habitats between reservoirs/barriers, or degradation of ecosystem services due to fundamental change in hydrological conditions. conditions and transport of sediments and nutrients along the length of the river to its mouth.

The project social risk is rated as High. The main social risks are: (i) land acquisition and involuntary resettlement required in due to (a) (re)construction of small and medium-scale HPPs and (b) (re)construction of 220kV Isanova substation and 220-110kV overhead lines; (c) transition and implementation from manual control of the power system to automation of the work of dispatch control and emergency automation; (ii) impacts on livelihoods downstream, such as fishing, availability of irrigation water supply, impacts on lands cultivated on the river basin; (iii) social exclusion risk, the interests of vulnerable and disadvantage groups will need to be considered in the project design to ensure that they have equal access to project benefits and are not disproportionately negatively impacted by the project. However, these likely impacts will be addressed through many measures including avoidance, minimization in that order of priority to the extent possible. The resettlement issues shall be addressed by implementing provisions of progressive RPF that provides for compensation at replacement cost and other measures to restore livelihood etc.

3.4. Comparison between ESF and National and State requirement

The gap analysis of the national legislation of the Kyrgyz Republic and World Bank’s Environmental and Social Framework is given in the Table 5 below.

Table 5. Comparing the national Legislation and requirements of the WB ESS reflecting the impacts and mitigation measures

Item No.	ESF Objectives	National and State Laws and Requirements	Gaps	Direct and indirect environmental and social risks and adverse impacts	Recommended Actions
ESS 1 - Assessment and Management of Environmental and Social Risks and Impacts					
	<p>ESS1 objectives are: To identify, evaluate and manage the environment and social risks and impacts of the project in a manner consistent with the ESSs.</p> <p>This standard adopts a mitigation hierarchy approach to: (a) Anticipate and avoid risks and impacts; (b) Where avoidance is not possible, minimize or reduce risks and impacts to acceptable levels; (c) Once risks and impacts have been</p>	<p>Law "On environmental expertise" No. 54 of 1999 (amended on May 04, 2015),</p> <p>Law "On environmental protection No. 53 of 1999 and</p> <p>Law "On general technical regulation on environmental safety". No. 151 of 2009;</p> <p>Regulation on the Procedure for Environmental Impact Assessment in the Kyrgyz Republic (February 13, 2015, No. 60);</p> <p>Regulations on the procedure for conducting state</p>	<p>The system of environmental risk classification under Kyrgyz law is based on a includes a list of activities that are either subject to or not subject to an EIA. According to Appendix 1 of the Regulations on the procedure for conducting an environmental impact assessment in the Kyrgyz Republic according to the Government Decree dated February 13, 2015 No. 60 - Energy facilities: thermal power plants, thermal power plants, hydroelectric power plants; as well as associated HPPs, high-voltage power lines and reservoirs, are included in the mandatory List types of economic activities subject to environmental impact assessment (national draft EIA - Rus. OVOS).</p> <p>According to the same Regulations on the procedure for conducting environmental impact assessment in the Kyrgyz Republic, according to Government Decree No. 60 dated February 13, 2015, it will be necessary to go through all 3 stages of environmental impact assessment</p>	<p>Environmental and social risks are assessed by the Project as high. High risks are associated with social and environmental conditions in the provision of ESCP.</p> <p>Potential environmental risks and impacts may lead to permanent flooding of the reservoir area and permanent landscape changes, impacts on river flow, quality and morphology; ecosystems, ecosystem services and biodiversity loss; pollution and waste disposal during construction, vibration impacts from blasting and heavy equipment, changes in the hydrological regime of the rivers.</p> <p>Potential social risks may lead to land acquisition and involuntary resettlement required in due to (a) (re)construction of small and medium-scale HPPs and (b) (re)construction of 220kV Isanova substation and 220-110kV overhead lines; (c) transition and implementation from manual control of the power system to automation of</p>	<p>To address them, the following tools have been prepared: (i) Environmental and Social Management Framework (ESMF); (ii) Stakeholder Engagement Plan (SEP); (iii) Resettlement Policy Framework (RPF); and (iv) Labor Management Procedures (LMP), (i) Environmental and Social Commitment Plan.</p> <p>The ESMF covers applicable ESF Standards and the EHS Guidelines of the World Bank Group. In line with ESF, the more stringent of the National and WBG stipulations will apply. The ESMF has checklists to determine where and when Environmental and Social Impact Assessments (ESIAs)/ Management Plans (ESMPs) and Resettlement Action Plans (RAPs) will be required for a particular site (for resettlement, the criteria are also specified in the RPF).</p> <p>Scoping of key environmental and social risks and impacts of the Project has been undertaken and appropriate mitigation measures identified, as laid out in this ESMF. The provision of detailed ESIA process described in ESMF aims to address the biophysical and socio-economic issues associated with the</p>

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	<p>minimized or reduced, mitigate; and (d) Where significant residual impacts remain, compensate for or offset them, where technically and financially feasible.</p> <p>To adopt differentiated measures so that adverse impacts do not fall disproportionately on the disadvantaged or vulnerable, and they are not disadvantaged in sharing development benefits and opportunities resulting from the project.</p> <p>To utilize national environmental and social institutions, systems, laws, regulations and procedures in the</p>	<p>environmental expertise in the Kyrgyz Republic (May 7, 2014, No. 248).</p>	<p>according to the national assessment system, given the high level of impact estimated at more than 11 points.</p> <p>While under the ESF, risk is classified based on the due diligence and judgement of the Bank team. However, certain provisions in ESS 1 are not fully reflected in national legislation – for example, in social risk assessment, the need for identification of vulnerable and disadvantaged groups and application of differentiated measures to prevent disproportionate impacts or disadvantage in sharing development benefits. National law also does not elaborate on other types of social risk assessment and mitigation such as community health and safety although some of these aspects are present in other state regulations for example those on air or water pollution, and food security.</p>	<p>the work of dispatch control and emergency automation; (ii) social exclusion risk, the interests of vulnerable and disadvantage groups will need to be considered in the project design to ensure that they have equal access to project benefits and are not disproportionately negatively impacted by the project.</p>	<p>Project and utilize broad stakeholder consultation in the preparation of the Project and follows the implementation of the SEP. KRED further promotes sustainable development and prescribes the requirement of activity-specific ESMPs, where applicable.</p> <p>Sub-project specific ESIA's will be conducted prior to contract finalization to inform the implementation of activities.</p> <p>This Project will apply relevant waste management guidelines in all relevant activities.</p> <p>Cumulative impact assessment of the HPPs and associated facilities will be conducted prior to the implementation of activities as part of site specific ESIA's.</p>

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	<p>assessment, development and implementation of projects, whenever appropriate.</p> <p>To promote improved environmental and social performance, in ways which recognize and enhance Borrower capacity.</p>				
ESS 2 – Labor and Working Conditions					
	<p>ESS2 recognizes promotion of safety and health at work and fair treatment, non-discrimination and equal opportunity of project workers. This standard recognizes protection of project workers,</p>	<p>Labor Code of the Kyrgyz Republic of 2004</p> <p>Law of the Kyrgyz Republic on labor protection of 2003¹⁴ (Article 2¹⁵)</p> <p>Law of the Kyrgyz Republic on labor safety</p>	<p>Over the last twenty years, Kyrgyz labor legislation has evolved as the country has adopted supplementary legislation and introduced amendments to its key labor laws. The Kyrgyz Republic has also ratified eleven ILO conventions on issues such as forced and child labor, freedom of association, rights to organize and collective bargaining, non-discrimination, and labor inspection (see Annex III). The national Labor Law, last amended in April 2021, establishes state</p>	<p>The risks and adverse impacts of components 1 and 3 of the project relate to occupational health and safety (OHS) hazards associated with work at height during the assembly of supports and stretching, electrical work, health effects of low levels of electromagnetic radiation associated with the operation and disposal of hazardous materials such as transformer oils and the possibility of polychlorinated biphenyls (PCBs) in</p>	<p>The project must be implemented in accordance with the applicable requirements of ESS 2 in a manner acceptable to the World Bank, by implementing appropriate health and safety measures, including emergency preparedness and response measures, identifying mechanisms for contacting project workers, and incorporating requirements for labor in the HSESP specification in procurement documents and contracts with contractors and supervisory firms.</p>

¹⁴ Establishes the legal framework for regulating relations in the field of labor protection between employers and employees and is aimed at creating working conditions that meet the requirements of preserving the life and health of workers in the process of work.

¹⁵ Labor protection requirements are provided by legal entities and individuals specified in part two of Article 2 of this Law, when they carry out any type of activity, including the design, construction, reconstruction and operation of facilities, the construction of machines, mechanisms and other equipment, the development of technological processes, organization of production and labor. The law provides employees with the rights and guarantees to work in conditions that meet the requirements of labor protection. The law establishes the obligations of the employer to ensure safe working conditions and labor protection of employees.

Item No.	ESF Objectives	National and State Laws and Requirements	Gaps	Direct and indirect environmental and social risks and adverse impacts	Recommended Actions
	<p>including vulnerable workers such as women, persons with disabilities, children (of working age, in accordance with this ESS) and migrant workers, contracted workers, community workers and primary supply workers, as appropriate. ESS2 prevents the use of all forms of forced labor and child labor and supports the principles of freedom of association and collective bargaining of project workers in a manner consistent with national law, as well as provides project workers with accessible means to raise workplace concerns.</p>	<p>Occupational Safety and Health Law of the Kyrgyz Republic of 2003</p> <p>International Labor Organization on March 31, 1992</p>	<p>guarantees of labor rights and freedoms of citizens, creates favorable working conditions, and protection of rights and interests of employees and employers. In addition to this Law, the government has approved fourteen other laws and more than twelve regulations that directly relate to labor relations. Collectively, the body of legislation enacted in the country covers many of the objectives and requirements of ESS 2. Grievance registration and follow-up procedures are available through the Law on Appeals of Citizens; however, they are general to all project effected persons and do not spell out specific grievance process for employees as is required under ESS 2.</p>	<p>legacy transformers. Most of these risks and adverse impacts are temporary, localized, mitigable and mostly expected during the construction phase.</p> <p>Workers will not work in hazardous contaminated areas and will be protected by appropriate protective measures and personal protective equipment. Workers should be made aware of how complaints can be registered in the workplace should they arise.</p>	<p>The Project includes construction and rehabilitation of small-scale HPPs, including updating of ToR for Kambarata-1 feasibility study. Components activities will employ contracted workers who will be subject to the Project LMP, GRM and the World Bank Group Environment, Health and Safety Guidelines in compliance with ESS 2. The Project worker will adhere to minimum wages. The Project will provide GRM for community as well as contracted workers. Additionally, each sub-project contractor will prepare a Construction-ESMP with labor protocol to address such issues.</p> <p>In accordance with ESS 2 and relevant national legislation, the Project prohibits the use of forced or fixed-term labor. Based on the requirements of ESS2, LMP has been prepared, identifying direct employees, contractors and subcontractors.</p> <p>Direct workers: The PMO complies with national labor laws and practices when hiring project staff. PMO employees are not government/civil servants as they are contracted to provide a wide range of services. The implementing agency applies two types of employment contracts: one-year employment contracts and short-term employment contracts. Direct workers are permanent employees with one-year employment contracts at fixed monthly wage rates. All personnel procedures are documented and stored in folders. Monthly time sheets are also neatly filed and stored.</p>

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					<p>Contractors: Contractors are guided by the legal provisions of the Labor Code of the Kyrgyz Republic. The PMO will also procure the services of local service providers/construction providers at the national and local levels. They will hire local staff and make employment and service contracts for the hired staff. Contractors will be required to follow health and safety regulations, which include, among other things, strict adherence to established health and safety regulations and procedures, which depend on the type of work carried out, the use of PPE, training activities and monitoring.</p> <p>Subcontractors: Subcontractors (including local private firms) will be hired by contractors to carry out project activities in the project sites. They are required to comply with local labor laws and regulations during the implementation of the subproject.</p> <p>The ESMF includes sections of General guidelines on OHS and ESA, including specific tools that must be prepared by the customer or contractor prior to commencement of work (OHS and ESA checklists, codes of conduct; safety training, etc.). Civil works contracts will include social and environmental mitigation measures based on the WB General guidelines on OHS and ESA and the ESMF. All civil works contracts will include industry standard codes of conduct that include measures to prevent gender-based violence/sexual exploitation and abuse (GBV/SEA). A local Grievance Mechanism</p>

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					(GRM) will be provided specifically for contract workers.
ESS 3 – Recourse and Efficiency, Pollution Prevention and Management					
	<p>ESS3 recognizes sustainable use of resources, including energy, water and raw materials. This standard avoids or minimizes adverse impacts on human health and the environment by avoiding or minimizing pollution from project activities and avoids or minimizes project-related emissions of short and long-lived climate pollutants, as well as generation of hazardous and non-hazardous waste as well as minimizes and manages the risks and impacts associated with pesticide use.</p>	<p>Law on environmental protection of 1999. Law on Protection of Surface Waters, 2009 Law on Production and Consumption Waste of 2001</p>	<p>The national regulatory framework for pollution prevention prioritizes public health protection and is based on defining thresholds for permitted concentrations of pollutants to which humans may be exposed. The environmental regulation requires calculation of the expected emissions (including noise) and discharges as part of the EIA, so that compliance of an intended project with the established thresholds is proven.</p>	<p>Rehabilitation and construction of small and medium-sized hydropower plants, as well as modernization and expansion of the network (substations, lines, etc.) may have a potential direct adverse environmental impact during the construction and implementation phase. Risks are associated with: i) increased pollution from construction waste; (ii) generation of dust, noise and vibration due to the movement of construction equipment; (iii) disturbance and pollution of natural ecosystems and biodiversity; (iv) spills of fuels and lubricants during construction; (v) landscape disturbance; (vi) water pollution and sedimentation. Additional risks associated with the construction of new hydropower plants may be associated with the transformation of aquatic and terrestrial habitats, changes in the flow of the river and the involvement of fish.</p>	<p>The ESMF covers issues of resource efficiency, pollution prevention and management, it requires that ESIA surveys and proposed mitigation measures related to relevant ESS3 requirements, including raw materials, water use, air pollution, hazardous materials and hazardous wastes, be included in the scope of the Contractors-ESMP, as appropriate. Design, construction, reconstruction and repair of hydraulic structures, hydro-mechanical and electrical equipment of HPPs, the territory and water area in the area of responsibility of the HPP, as well as the main and auxiliary equipment, mechanization and automation facilities must comply with national legal norms, the requirements of international technical regulations and standards. The Project will develop and implement measures and procedures for managing waste and hazardous materials during construction and operation phase of project. Contractors will prepare a waste management plan, covering all types of waste including muck and debris, domestic waste, as well as hazardous waste as part of the C-ESMP. C-ESMP will also include steps to manage borrow material, include source pit</p>

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ESS 4 – Community Health and Safety					
	<p>ESS4 recognizes that project anticipates and avoids adverse impacts on the health and safety of project-affected communities during the project life-cycle from both routine and non-routine circumstances. This standard promotes quality and safety, and considerations relating to climate change, in the design and construction of infrastructure, including dams, avoids or minimizes community exposure to project-related traffic and road safety risks, diseases and hazardous materials and has in place effective measures</p>	<p>Labor Code of the Kyrgyz Republic of 2004</p> <p>Law of the Kyrgyz Republic on labor safety</p>	<p>The general principles of protecting the health and safety of citizens and communities are embedded in the Constitution of the Kyrgyz Republic and the Law on Environmental Protection. These laws stipulate that everybody has a right to live in a natural environment that is not harmful to their health. To achieve this goal, thresholds are established to limit human exposure to hazardous environments based on several physical, chemical, and biological parameters.</p>	<p>In the HPP design area, communities already affected by climate change may also experience accelerated or enhanced impacts as a result of project activities. loss of cultivated areas or other economic activity is possible in the water area of the dam and in the area of responsibility of the HPP.</p> <p>The health and safety of the public is also endangered during construction work and traffic violations, as well as the risks of unauthorized entry to construction sites leading to accidents, the operation of trucks, construction equipment, the use of building materials, etc.,</p>	<p>Although the Project aims to improve the lives of people in selected urban and rural areas, it needs to be ensured that Project activities do not pose any unintended negative consequences on communities primarily during construction period. A dedicated health and safety management plan will be developed.</p> <p>Several measures will be undertaken by the KRED, including requiring contractors to develop Health and Safety Plan as part of the C-ESMP to address the impacts on local communities of moving construction equipment; measures and actions developed to assess and manage specific risks and impacts outlined in the ESMF and subsequent ESMPs. All activities will be compliant with the National applicable regulations and ESS 4.</p> <p>Community health and safety, such as traffic disruption and risks of unauthorized entry to construction sites resulting in accidents, operation of trucks, construction equipment, use of building materials, etc., will all be mitigated through the implementation of ESMPs that will include appropriate measures in this regard, including fencing construction sites, posting warning signs and information at construction sites, conducting training and demonstration activities, etc.</p> <p>As outlined in the ESMF, the project involves construction work that requires labor to be</p>

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	to address emergency events. ESS4 ensures that the safeguarding of personnel and property is carried out in a manner that avoids or minimizes risks to the project-affected communities.				delivered primarily locally - the level of labor influx is expected to be low because of the nature and scale of the activities, so the associated risks are low and manageable. For each HPP, schemes and ways of evacuating workers from zones of calculated possible flooding or soil collapse to elevations above the calculated level of such flooding, landslide, collapse or to special safe rooms should be developed. WB Dam Safety requirements will be followed. Explications of evacuation plans should be posted in conspicuous places. Explications when the main lighting is turned off should be illuminated from backup autonomous power sources.
ESS 5 – Land Acquisition, Restrictions on Land Use, and Involuntary Resettlement					
	ESS5 recognizes that project avoids involuntary resettlement or, when unavoidable, minimize involuntary resettlement by exploring project design alternatives	Civil Code ¹⁶ , 1996, 2021 Land Code, 1999, 2021 (Article 49, para 1, subpara 5 ¹⁷ ; Article 66, paras 1 ¹⁸ , 4 ¹⁹ ; Article 68, paras	The Land Code of the Kyrgyz Republic states that land acquisition (withdrawal) is an exceptional measure for terminating the right to land plot. The Constitution and several laws refer to the need to compensate for land acquisition although there is no specific requirement to prepare land acquisition or resettlement action plans with detailed procedure.	Project-related land acquisition or restrictions on land use may result in physical displacement (relocation, loss of residential land or loss of housing), economic displacement (loss of land, assets, or access to assets resulting in loss of sources of income or other means to existence). The term "involuntary resettlement" refers to these impacts.	When procuring private land cannot be avoided, it will be done on the principles of willing buyer willing seller basis following the principle of voluntary land acquisition as prescribed in ESS5, provisions of RPF and provisions of Kyrgyz Republic land purchase policy (Civil code, Part II, Chapter 23 “Buy and Sell”). In the eventuality if voluntary land acquisition is not feasible and to address issues associated with involuntary land acquisition, the client has prepared a Resettlement Policy

¹⁶ <http://cbd.minjust.gov.kg/act/view/ru-ru/4?cl=ru-ru>

¹⁷ The land owner or land user has the right to request compensation, as specified in the legislation of the Kyrgyz Republic.

¹⁸ Establishes that the right to land and related structures may be terminated, including when the land is necessary for state or public purposes.

¹⁹ A land plot may be acquired for state or public needs only after payment of the cost of the right to the land plot and reimbursement of losses.

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	<p>and avoids forced eviction. ESS5 mitigates unavoidable adverse social and economic impacts from land acquisition or restrictions on land use by: (a) providing timely compensation for loss of assets at replacement cost and (b) assisting displaced persons in their efforts to improve, or at least restore, their livelihoods and living standards, in real terms, to pre-</p>	<p>1²⁰, 3²¹, 4²²; Article 78, paras 2²³, 3²⁴)</p> <p>Labor Code, 2004, 2018</p> <p>Law on labor protection, 2003</p> <p>Law on state registration of rights to real estate and related transactions, 1998 2021</p> <p>Legislative framework for asset valuation</p>	<p>Under Kyrgyz national law affected persons are those who either have formal legal rights to land or assets and/or have a claim to land or assets that is recognizable under national law. The latter this mainly applies to land titles allocated by relevant authorities, but not yet registered according to the legislation. Users of land or property without proof of such recognizable claim are not eligible to receive compensation. This is one of the main legal gaps existing between national legislation and ESF.</p> <p>National law is silent regarding restoring and improving living conditions of the project affected households, particular attention to vulnerable persons and additional assistance to them.</p>	<p>Experience and research show that physical and economic displacement, if left unchecked, can lead to serious economic, social and environmental risks: production systems can be dismantled; people face impoverishment if their productive resources or other sources of income are lost; people may be relocated to environments where their production skills are less applicable and competition for resources is greater; public institutions and social networks may be weakened; kin groups may be dispersed; cultural identities, traditional power, and the potential for mutual assistance may be reduced or lost.</p>	<p>Framework (RPF) that describes the next steps for preparing and implementing Resettlement Action Plans (RAPs). The framework clarifies the resettlement principles, organizational arrangements and design criteria to be applied to subprojects or project components to be prepared during project implementation. Once the subproject or individual project components are identified and the required information is available, the framework will be expanded into a specific resettlement activity. Project activities that will result in physical and/or economic displacement will not commence until such specific plans have been finalized and approved by the Bank.</p> <p>Social screening is carried out to identify possible social impacts and involuntary resettlement (IR). A template for screening potential social impacts and IR is provided in the ESMP prior to the appraisal of each subproject.</p>

²⁰ Land can be acquired (purchased) for state and public purposes on the basis of an agreement between the authorized body and the land owner or land user. If the land owner or land user does not agree with the acquisition (purchase), the competent authority has the right, within two (2) months, to apply to the court with a request to conduct the acquisition with payment to the owner or land user of compensation for the land from the date of the official refusal by the land owner / land user.

²¹ When determining compensation for acquired land, it must reflect the market value of rights to land and related buildings, losses incurred by the land owner or land user and obligations towards third parties.

²² When land plots are acquired for state or public needs with the consent of the landowner or land user, the owner/user may be allocated land in return with the same value of that land, which will be counted towards compensation for the acquired land.

²³ Determines the mode of use in respect of public lands. In particular, this indicates that public lands in settlements, cities and villages (for example, roads, streets, squares, sidewalks, driveways, park lanes, boulevards, mini-parks, reservoirs, etc.) cannot be located in private ownership and only in exceptional cases can be leased to authorized state bodies, legal entities and individuals for a period not exceeding 5 years.

²⁴ The authorized state body may permit the construction of light structures on public lands.

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	<p>displacement levels or to levels prevailing prior to the beginning of project implementation, whichever is higher. This standard improves living conditions of poor or vulnerable persons who are physically displaced, through provision of adequate housing, access to services and facilities, and security of tenure. Also, this standard conceives and executes resettlement activities as sustainable development programs, providing sufficient investment resources to enable displaced persons to benefit directly from the project, as the nature of the</p>				<p>When procuring private land cannot be avoided, it will be done on the principles of willing buyer willing seller basis following the principle of voluntary land acquisition as prescribed in ESS5, provisions of RPF and provisions of Kyrgyz Republic land purchase policy (Civil code, Part II, Chapter 23 “Buy and Sell”).</p>

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	<p>project may warrant. ESS5 ensures that resettlement activities are planned and implemented with appropriate disclosure of information, meaningful consultation, and the informed participation of those affected.</p>				
ESS 6 – Biodiversity Conservation and Sustainable Management of Living Natural Resources					
	<p>ESS6 protects and conserves biodiversity and habitats. This standard applies the mitigation hierarchy and the precautionary approach in the design and implementation of projects that could have an impact on biodiversity. ESS6 promotes the sustainable management of living natural</p>	<p>Water Code Law on specially protected natural areas Law on biosphere reserves Law on protection of atmospheric air on the protection and use of flora Fisheries Law Law on wildlife Regulations on protection of surface</p>	<p>The Kyrgyz Republic has a strong regulatory framework for protecting, conserving, and restoring biodiversity, but legal provisions for sustainable use of living natural resources do not provide regulatory basis enabling to meet social needs of forest-dependent communities and maximize benefits of its economic use while preserving forest ecosystems, preventing forest degradation and depletion of its resources. National legislation mainly focuses on protecting and conserving species and less so on preserving habitats. The Law on Red Book and Red List of Species prohibits any activities that would damage habitats that support species under protection, meaning that any proposed activity in such habitats</p>	<p>Potential environmental risks and impacts may lead to permanent flooding of the reservoir area and permanent landscape changes, impacts on river flow, quality and morphology; ecosystems, violation of biodiversity; pollution and disposal of waste during construction, vibration impacts from blasting and heavy equipment, changes in the hydrological regime of rivers. Thus, the construction of hydroelectric power plants impact on biodiversity can adversely affect biodiversity and ecosystems.</p>	<p>In the ESIA, potential site-specific high risks to biodiversity will be assessed for each individual subproject and, if necessary, appropriate mitigation measures will be included in the ESMP in accordance with the mitigation hierarchy. All activities/sub-projects located in natural habitats (including wetlands, forests, mountain pastures, etc.) will only be eligible for project funding if the requirements of ESS6 are met. ESS6 requires project activities to be prudently directed towards the conservation of biodiversity and habitats, using risk and impact mitigation measures. In particular, if needed a separate Biodiversity Management/Action Plan should be prepared for subprojects. The scope of feasibility and E&S studies as a part of TA sub-components will also consider these aspects of ESS6.</p>

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	resources and supports livelihoods of local communities, including Indigenous Peoples, and inclusive economic development, through the adoption of practices that integrate conservation needs and development priorities.	waters of the Kyrgyz Republic List of Rare and Endangered Species of Animals and Plants Included in the <i>Red Book of Kyrgyzstan</i>	must prove that the proposed mitigation measures are sufficient to meet this requirement.		
ESS 7 - Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities			Law on biosphere reserves No. 48		N/A
Not relevant as there are no such social groups in the Kyrgyz Republic.					
ESS 8 – Cultural Heritage					
	ESS8 protects cultural heritage from the adverse impacts of project activities and support its preservation and addresses cultural heritage as an integral aspect of	Law on the protection and use of historical and cultural heritage	National legislation comprehensively covers many aspects related to historical and cultural heritage. The Law on Protection and use of Historic-Cultural Heritage mandates the State to acknowledge the general cultural values of humankind, support cultural development and international cultural relations, ensure the availability of cultural assets for the public, and preserve the freedom of every citizen to	Project activities may include land development and the possible discovery of cultural heritage sites not previously identified or included in the national catalog for the protection of monuments of the past. This applies to the projected zones of the water area of the HPP, the zones of responsibility of the HPP, as well as the territories allocated for the main and auxiliary equipment,	Since project activities may include land development and possible discovery of cultural heritage, the ESMF includes a section on the protection of cultural heritage, as well as proper “chance find” procedures to be included in the site-specific ESIA/ESMP and checklists. While in general the proposed activities will not have direct physical impacts on heritage sites, indirect impacts from project funded activities will be carefully considered and

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	<p>sustainable development. This standard promotes meaningful consultation with stakeholders regarding cultural heritage and promotes the equitable sharing of benefits from the use of cultural heritage.</p>		<p>express his or her own cultural identity. The State establishes a system for protecting items of local, state and international historical or cultural importance.</p>	<p>mechanization and automation of production.</p>	<p>mitigation measures provided for in the ESMF to be integrated. The document also provides for the application of national requirements specified in the Law on the Protection and Use of Historical and Cultural Heritage (1999), which establishes legal norms for the protection and use of material historical and cultural heritage in the territory of the Kyrgyz Republic. The law determines that in the case where construction work begins before the adoption of a new regulation, it would be advisable to include it in the requirements for tender documents. A Management Plan must be prepared to prevent damage to existing/cultural heritage sites. The contractor must respect and establish protection zones, procedures, management plans in accordance with the plan and must be agreed with the MoE KR and LSG.</p>
ESS9 – Financial Intermediaries					
	<p>ESS9 sets out how the FI will assess and manage environmental and social risks and impacts associated with the subprojects it finances. Standard promotes good environmental and social management practices in the subprojects the FI finances and</p>		<p>N/A</p>	<p>The project does not consider and will not use financial intermediaries.</p>	<p>N/A</p>

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	promotes good environmental and sound human resources management within the FI.				
ESS 10 – Stakeholder Engagement and Information Disclosure					
	<p>This ESS establishes a systematic approach to stakeholder engagement that will help Borrowers identify stakeholders and build and maintain a constructive relationship with them, in particular project-affected parties. This standard assesses the level of stakeholder interest and support for the project and to enable stakeholders' views to be taken into account in project design and environmental and social performance.</p>	<p>Law on Guarantees and Freedom of Access to Information, 1997, 2017</p> <p>Law on Access to Information held by State Bodies and Local Self-Government Bodies, 2006</p> <p>Law on the Procedure for Considering Citizens' Appeals, 2007, 2016</p> <p>Law on Local Self-Government, 2011, 2019</p>	<p>In general, a robust legislation exists, however, it needs to be applied consistently.</p> <p>In regard to investment projects, national legislation and norms are focused mainly on stakeholders, engagement during project preparation stage. The existing legal framework describes a grievance procedure in detail without differentiating into local, regional/central levels as in the IFI-funded projects.</p> <p>No special rules exist in national legislation regarding the involvement of vulnerable or disadvantaged individuals and groups in public consultation process and project activities.</p> <p>Regulations on information disclosure and meaningful consultation with project-affected persons are not as clearly prescribed as under ESF.</p>	<p>In the absence of an active civil society and a sufficient degree of civil power, government agencies and investors use the remaining segments by type of public participation in the decision-making process - this is the degree of Imitation of participation.</p>	<p>The priority of the project is to identify the stakeholders that can be positively and negatively impacted by project activities, in particular the impact on people's lives and the sustainability of livelihoods. In this regard, the MoE has compiled a list of key stakeholder groups, highlighting high and medium levels. This process of consultation has already commenced during the ESMF development to know the people's opinion about project. However, a detailed Stakeholder Engagement Plan (SEP) with mapping out all the different types of stakeholders, timings and modes of communication and consultation has also been prepared for implementation. During project preparation an extensive mapping of the stakeholders shall be carried out to identify individuals, and groups likely to be affected directly or indirectly, vulnerable groups and other interested parties such as government agencies/ authorities and NGOs, which may differ between subprojects, will be done during ESIA and project execution. The Plan linked the GRM with the SEP to address the issue of transparency and feedback.</p>

Item No.	ESF Objectives	National and State Laws and Requirements	Gaps	Direct and indirect environmental and social risks and adverse impacts	Recommended Actions
	<p>ESS10 promotes and provides means for effective and inclusive engagement with project-affected parties throughout the project life-cycle on issues that could potentially affect them and ensures that appropriate project information on environmental and social risks and impacts is disclosed to stakeholders in a timely, understandable, accessible and appropriate manner and format. This standard also provides project-affected parties with accessible and inclusive means to raise issues and grievances, and allow Borrowers to respond to and manage such grievances.</p>				

4.0. APPROACH AND METHODOLOGY

4.1. Due diligence and Scoping

The ESMF has been prepared generating information through both primary and secondary sources including consultations and library research. Detailed activities planned under each sub-project were identified and listed. This information has been primarily collected from initial discussions with the identified project implementation team of KRED along with representatives of MoE and its OJSCs and other stakeholders. Secondary data sources such as preliminary detailed project reports, sample site survey and assessment sheets, identified investment planning and related project schedule plans provided by the MoE and its OJSCs were also used. In addition, preliminary impact assessments for sub-projects/schemes identified and environmental and social documentation for similar previous projects undertaken by MoE have also used the preparation of ESMF.

The basic approach broadly involved following:

- Review of environment & social baseline information from secondary sources;
- Review of existing national & state specific legislations and policy and guidelines and Environmental & Social Standards of World Bank;
- Review of project related documents; and
- Stakeholders' consultations.

4.2 Understanding the laws and policies applicable to environment and social impact assessments

A review of applicable national and state laws and regulations has been undertaken to understand the applicability of these laws to the proposed projects. Additionally, the relevant guidelines by the state power utilities, for planning, construction and operations of the substations and distribution lines were also reviewed.

The World Bank's Environmental and Social Standards applicability for proposed project components has been identified and gaps in national or state regulations to be considered while formulation of ESMF.

Identification of Area of Influence

The area of influence for each of the sub-projects will be identified considering nature and type of activities proposed to be undertaken under KRED, once the designs are available for assessment.

Establishing Environmental & Social Baseline

For the ESMF, on the basis of available secondary data as well as spot verifications made during field visits, environmental and social baseline of project area has been established for elaboration in the site specific ESIA's.

The prime parameters for environmental baseline include:

- Topography and Drainage
- Geology
- Flora & Fauna (Bio-diversity)
- Forest & Protected Area
- Soil type/ Quality
- Climate & Air Quality
- Noise Pollution
- Water Resource
- Land Use Pattern

Parameters for the social baseline include:

- Demography [population, age, gender, literacy, occupation, economic status, income level and employment]
- Basic amenities & infrastructure facilities

Screening of Potential Environmental & Social Impact and Mitigation Plan

Screening of potential environmental & social risks & impacts of proposed project components have been undertaken considering the existing baseline environmental and social setting of project area.

The methodology adopted to identify the potential environment and social impacts is based on experience gained from implementation of similar projects and baseline assessments of work activities anticipated in this proposed project. The methodology takes in to account wide range of receptors:

- Physical & chemical environment (e.g. water, soil, etc.);
- Biological environment (forest, animals, birds, etc.); and
- Communities, social groups and individuals (loss of land, loss of agricultural production, tribal, vulnerable groups (women and backward classes), socio-economic condition, health and safety risks).

The proposed sub-projects are likely to create positive as well as negative impact on the environmental and social setting in two distinct phases during the construction phase, which may be regarded as temporary or short term; and during the operation phase that may be long-term effects.

A detailed and generic Environmental and Social Management Plan (ESMP) has been formulated for management of potential E&S issues/impacts to be implemented during project execution and subsequently in O&M stage as established during scheme specific ESIA.

These covers:

Gender Development Framework (GDF)

GDF has been formulated to ensure the gender specific needs (for both men and women), which are to be considered while assessing and managing the impacts of the proposed project.

Labor Management Procedure (LMP)

The LMP has been formulated to identify the main labor requirements and risk associated with the project along with resources necessary to address project labor issues.

Stakeholder Engagement Plan (SEP)

The SEP has been formulated for transparent engagement with project stakeholders to improve the environmental and social sustainability of project. An effective SEP will help to identify the main stakeholders of the project and mechanism for public consultation and information disclosure as well as grievance redress system.

Resettlement Policy Framework (RPF)

The RPF has been developed to provide guidelines for resettlement and restriction on land use under Component 1 in cases where the private land for small-scale HPP sites is acquired in accordance with the requirements of the World Bank's Environmental & Social Standard (ESS-5) - Land Acquisition, Restrictions on land use and Involuntary Resettlement. The endeavor of RPF shall be to ensure compensation at replacement cost with total transparency including applicable resettlement measures to all eligible land owners/Project Affected Persons (PAPs). Based on information provided by the NEGK, resettlement and restriction on land use is not proposed under Component 3. Under option 1 where it is proposed to construct 220kV Isanova substation and overhead lines, land for construction of substation and its overhead lines has transformed one year ago from local municipality ownership to the NEGK. The subproject site is located near the mountain, there are no private lands and structures. As for the option 2 under Component 3, there will be activities on automatization of control and emergency system of the NEGK. For this activity no land acquisition or resettlement is required.

Biodiversity Management Plan

During screening, if it is found that proposed sites are located inside any protected areas (Wildlife Sanctuaries, National Parks, Biosphere Reserves, etc.) or any notified / recognized migratory path / fly path is encountered in spite of utmost care/optimization, a separate biodiversity assessment study shall be carried out as part of the Environment & Social Assessment to develop a detailed Biodiversity Management Plan to address such issues.

Grievance Redress Mechanism

The grievance redress mechanism has been evolved to provide a time bound process to address all grievances/issues/non-compliances that will be brought to notice of Committee/KRED during project implementation stage.

Consultation

Consultations with key stakeholders including affected community, local & state government entities and key ministries at the state level were undertaken to know views and concerns about environmental and social issues/concerns of the project. This activity ensured appropriate participation and gathering views from the environment and social perspective of all the stakeholders, which is integrated in this ESMF to be adopted during different stages of the project implementation.

Monitoring and Evaluation Plan

The Monitoring and Evaluation Plan has been formulated to ensure the effective implementation of provisions of ESMF while carrying out ESIA and subsequently at different phases of project execution/O&M.

Disclosure

Once the framework for environment and social management is finalized, the framework would be disclosed to the public including Executive Summary in local language.

Capacity Building & Training

Special trainings will be conducted by the project to ensure effective project implementation and a clear understanding of the environmental and social risk management requirements under the World Bank's ESS. The broad training topics will include the basic requirements of the World Bank's ESS, ESIA, ESMP, OHS Plan and RAP implementation etc including exposure to best international practices on E&S management. The budget provision of USD 28,000 has also been made in ESMF for same. The trained E&S staff of PMO shall act as trainer for E&S staff of Contractors on E&S requirements and specific contract conditions on safeguards.

This would facilitate effective monitoring of the environment and social issues and ensure mitigation measures are being implemented appropriately.

Budget Estimates

The costs to be incurred to implement the various requirements of the ESMF have been budgeted. The broad cost estimates have been provided for capacity building, training and implementation of the ESMF and mitigation measures.

5.0. ENVIRONMENTAL & SOCIAL BASELINE

5.1. Environmental Baseline

5.1.1. Construction of the Tar SHPP in the Osh region

The Tar River, near the village of Sai, the terrain allows the construction of a small dam hydroelectric power station. Tar River, some 25 km upstream from its confluence with the Kara Darya River, and some 60 km upstream from Andijan Dam. Two main sites are under consideration for Tar SHPP, at coordinates N40.577 E73.685 and N40.573 E73.708 respectively. These sites are not mutually exclusive, and could be developed as a cascade. Sites further upstream could also be considered.

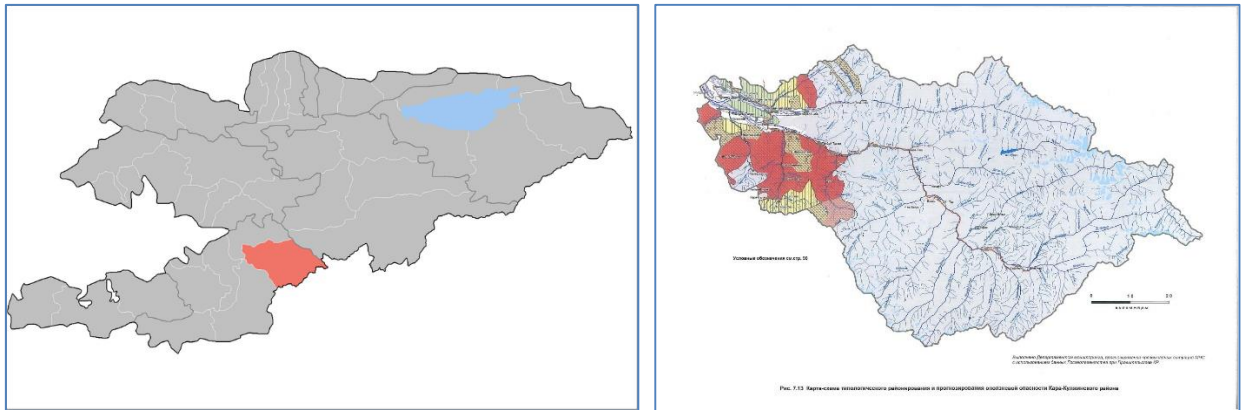


Figure 4. Karakulja district

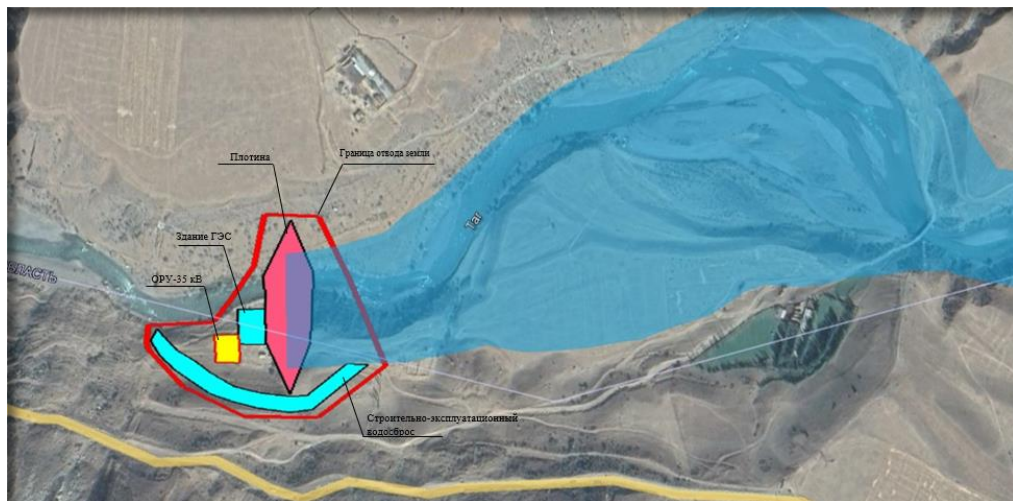


Figure 5. Proposed location of the Tar HPP with schematic layout

5.1.1.1. Climate

The climate of the region varies from moderately hot, in the lower reaches of the Tar rivers, to severely cold, closer to the axial parts of the ranges. The average air temperature in January is -10-14.8°C (the minimum temperature is up to -40°C), in July it is +15, +25°C (the maximum temperature is +30°C). The annual amount of precipitation is 350-571 mm. The height of the snow cover is: in the valley part - up to 20 cm, in the mountainous part - up to 100 cm.

5.1.1.2. Water Resource

The main water courses of the area are the Tar and Kara-Kulja rivers (with Buiga, Kyzyl-Suu, Karaguz, and Zhalspak-Tash tributaries). The maximum river flow rates are timed to June-July and amount to 492 m³ / s (river Tar) and 245 m³ / s (river Kara-Kulja).

The Tar River, the left component of the Karadarya. It is 147 km long and has a basin area of 3,840 km². The river originates in the southwestern slopes of the Fergana and in the northern slopes of

the Alaykuyu Range. It is formed by the confluence of the Oital and Alai-kuu rivers. The average annual water flow is 46, 7 m³/sec., the highest 248 m³/sec. and the lowest 8, 19 m³/sec. High water in June-July. According to the type of feeding, refers to the snow-glacier rivers.

5.1.1.3. Flora and Fauna

In the mountains up to 1500 m - semi-desert vegetation (wormwood, ephemera, saltwort) on gray soils. Above, up to 3000 m - dry mountain steppes, then meadow steppes on mountain brown and brown soils; here on the slopes of the Chatkal and Fergana ranges there are walnut-fruit forests (an area of 70 thousand hectares) from wild fruit plants: walnut (27 thousand hectares), apple trees (11.5 thousand hectares), pistachios, almonds, cherry plums, hawthorn, barberry, etc. On the slopes of the Alai and Turkestan ranges there are juniper forests. At an altitude of 3000-4000 m there are subalpine and alpine meadows with cobresia, geranium and other vegetation on mountain meadow soils; serve as summer pastures.

The fauna species reported in the project area include: - fox, wolf, badger, ermine, brown bear, wild boar, roe deer, porcupine, in the highlands - mountain goat, snow leopard.

The nearest Natural protected area is the State natural park "Kara-Shoro" (IUCN Category II) established in August, 1996. The purpose of the park is conservation of the nature complex including geological formations, hydrological regimes, flora and fauna, and endangered species. It covers 14,440 hectares. Kara-Shoro River passes through the central part of the park. Natural Park is located in distance of nearly 36 km away from the Tar SHPP site and is interfered by mountain ridges.

Another nearest Natural protected area is State Nature Reserve "Kulun-Ata" (IUCN Category II) established in August, 2004 and is located on the lands of the State forest fund of Kara-Kulja forestry (10,453 ha) and State land reserve of Kara-Kulja district (17,327 ha) of Osh region on an area of 27,780 ha. The main goal of organizing the reserve is to preserve the biodiversity of this region, the rich gene pool of juniper-coniferous forests, flora and fauna, and the unique mountain-lake ecosystems. Natural Reserve is located in distance of nearly 35 km away from the Tar SHPP site and is interfered by mountain ridges.

5.2. Construction of the Karakul SHPP in the Jalal-Abad region

Karakul SHPP is located on the river Karasuu, in the western part of the city of Karakul, in the Toktogul district, Jalal-abad region. The site of the retaining structure of the SHPP is located on the Karasuu River, 1.7 km above the river estuary, the alignment of the station building on the left bank of the Naryn River, 300 m above the confluence of the Karasuu River. The approximate coordinates of the headworks and powerhouse are N41.629 E72.649 and N41.626 E72.636 respectively. The catchment area of the Karasuu River is 1080 km². SHPP capacity is 18 MW (2 hydraulic units of 9 MW each) with an average annual output of 110 million kWh.

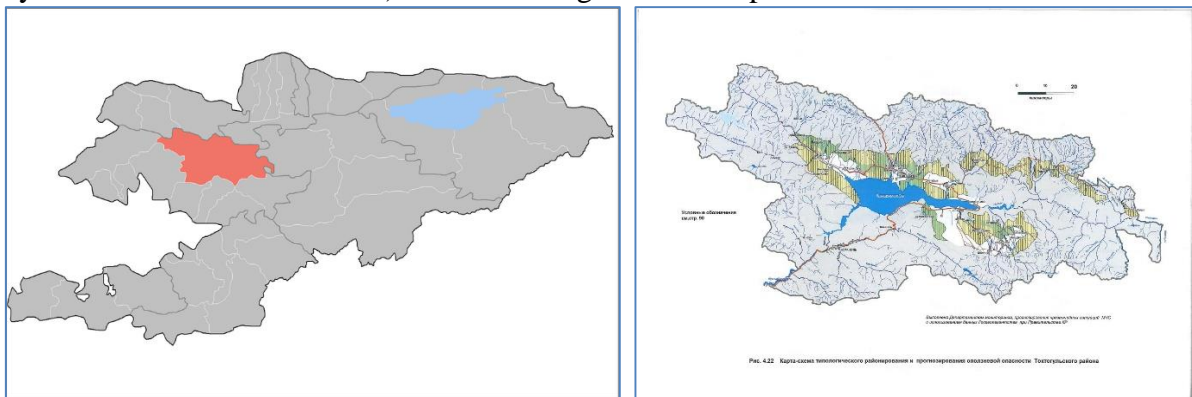


Figure 6. Toktogul district

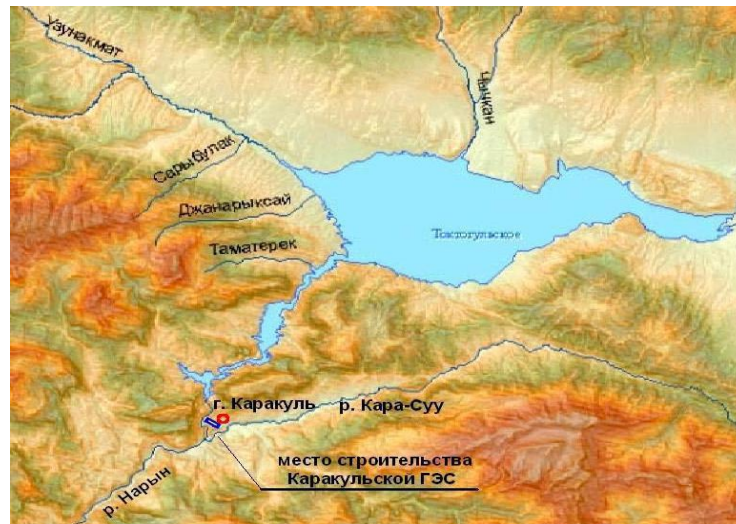


Figure 7. Location of Karakul HPP

5.2.1. Climate

Jalal-Abad region is included in the climatic region of South-Western Kyrgyzstan, which is the warmest and most humid region of the republic. Unlike other areas, during the cold season, a significant amount of precipitation falls here under the influence of southern cyclones.

The climatic conditions of the Toktogul district are characterized by the following data: the average air temperature in January is -8°C in the valley part, -12°C in the mountainous part. In July, the average monthly temperatures are $+26^{\circ}\text{C}$ in the valley and $+8^{\circ}\text{C}$ in the mountains. Minimum air temperature minus 38°C , maximum $+38^{\circ}\text{C}$. The average annual precipitation is 400 mm in the valleys and 400-600 mm in the mountainous parts of the region. The daily maximum precipitation can reach 40 mm in the valley and up to 70 mm in the mountains.

5.2.2. Water Resource

A distinguishing feature of the territory in this region is density of the hydrographic network and water content in the rivers. The largest rivers are Naryn, Chatkal, and Kara-Darya. The Naryn River cuts through the spurs of the Fergana and Chaak-Too ridges and within the Jalal-Abad region it is fed by the Kyok-Irim, Kempir-Ata, Nichke-Sai and other rivers on the left, and by the Tooluk, Torken, Chychkan, Uzun-Akmat, Kara-Suu and other rivers on the right. These river valleys are deeply cut; the river currents are turbulent and there are many rapids.

The Karasu River (which is 89 km long with the catchment area of 1,080 km²) is one of the small left tributaries of the Naryn River, which starts in the Kapkatash tract at a height of 3,970 m and it is also called Kapkatash in the upper reach before flowing into the Kapkatash Lake. The Karasu River basin (on the left side) has many clusters of small glaciers and snowfields; the average weighted height is 2,370 m. Geologically, the basin is composed mostly of carbonate, metamorphic, intrusive and less often effusive rocks. Conglomerates, clayey sandstones, shales, as well as loose rocks such as pebbles, gravel and others prevail at the river entry.

5.2.3. Flora and Fauna

Soil and vegetation cover in this region is distinguished by great diversity and vertical zonality. The lowest areas of the region (absolute height of 500 - 900 m) are occupied by the belt of deserts and semi-deserts. sagebrush-ephemeral desert and semi-desert vegetation on light and typical grey soils are spread here. These soils are characterized by loose fine-cloddy structure, relatively low content of humus and high content of mineral nutrients. When irrigated, the soils are very fertile and suitable for cultivation of a wide variety of crops. Typical plants for this belt are spring sedge and white wormwood, widespread in Central Asia species of saltwort, which form saltwort absinthial deserts. The belt of steppe vegetation covers vast areas, occupying high adyrs and partly lowlands in the range of 900 – 1,300 m above sea level. Dark grey soils with relatively high content

of humus prevail here among the soil covers. Vegetation cover is formed of bulbous barley, hairy-grass, bluestem grass, as well as wormwood and saryndyz. Large areas here are covered by xerophytic woodland, with scattered specimens of pistachio, hawthorn bushes, and etc. at the background of steppe or meadow grass stand.

A forest-steppe belt is at the altitudes of 1,000 - 2,200 m. Here, walnut and fruit forests alternate with steppe meadows, shrubs and apple redwoods. Soils under forests are black-brown forest soils, while under shrubs, meadows and steppes these are dark gray mountain-steppe soils. Soils under the walnut forests have special features: they are rich in humus making them of dark color, have a nutty structure and high moisture capacity. Areas under these forests on the territory of the Jalal-Abad region are approximately 70 thousand hectares. They are on the foothills of the Fergana and Chatkal ridges facing Fergana. Some walnut trees also appear at an altitude of about 800 m above sea level. Walnut forests are more widely spread within the altitudes of 1,000-1,200 m to 1,800-1,900 m. Apple trees grow in the second tier of the walnut forests, and below are cherry plums, barberry, rose hips, and etc.

Open southern and partly eastern slopes of the forest-steppe belt are covered by ephemeroid meadows and steppes with the prevailing bulbous barley, downy spike-grass, bluestem grass, awnless brome, and etc. Tall umbrella grasses, such as prangos and ferula, are widespread among the motley grasses. These areas of meadow-steppes, which occupy large areas, are mainly used as late spring and summer pastures. Smooth slopes and flat watersheds of this belt are used for rainfed crops.

The subalpine belt occupies a significant mountainous part of the region and is at the altitudes of 2,000 - 3,000 m. Subalpine meadows and forest vegetation consisting of spruce, fir, juniper, maple, birch, and etc., are widespread here. The soil cover of the subalpine belt is represented by mountain brown soils in the areas covered with bushes and various meadows, and reddish forest soils in the areas covered with spruce and fir forest. Grass cover is represented by: flemy, crested grass, shamrock, fimbriate gobelia, blackberry, and etc. Subalpine meadows are good summer pastures with duration of use up to four months.

The Alpine belt occupies the highest parts of the ridges and is higher than 3,000 m above sea level. It is characterized by cespitose semi-turfy soil type. Most of the alpine belt is covered with cliffs and talus without vegetation cover, a smaller part is occupied by alpine meadows. The most common type of alpine vegetation is phytocenosis dominated by the monadelphous onion. Together with onion, there are hill geraniums, white-flowered potentilla, sagebrush, ramwood, and etc. The alpine meadows belt is important for cattle grazing, but not for a long period. Among rare species of the flora are Kaufmann and Greig tulip and sage.

Fauna. According to the National Academy of Sciences of the Kyrgyz Republic, in the vicinity of the project area, the fauna species reported include: argali, snow leopard, Turkestan lynx, brown bear, golden eagle and saker falcon.

The nearest Natural protected area is The Alatau State Natural Park (IUCN Category II) is located in the Toktogul district of the Jalal-Abad region. The total area is 56,826.4 hectares. The purpose of the park is conservation of the unique natural complexes and biodiversity, protection of rare and endangered flora and fauna, and extension of network of specially protected areas of Kyrgyz Republic. Natural Park is located in distance of nearly 65 km away from the Karakul SHPP site and is interfered by mountain ridges.

Another nearest Natural protected area is The Sary-Chelek Nature Reserve (IUCN Category Ia) located in Aksy District, Jalal-Abad Region. Established in 1959, it currently covers 23,868

hectares. In 1978 it was designated as a World Biosphere reserve by UNESCO. Natural Reserve is located in distance of nearly 75 km away from the Karakul SHPP site and is interfered by mountain ridges.

5.3. Construction of Kambarata-1 HPP in Jalal-Abad region

The projected hydroelectric power station on the Naryn River, near the village. Kara-Jygach, Toktogul district, Jalal-Abad region. It will be prospectively included in the Naryn-Syrdarya HPP cascade in the upper stage.

The project for the construction of the Kambarata HPP-1 was developed back in the Soviet years. As planned, the facility was to become the largest hydroelectric power station in Kyrgyzstan. The plant's capacity will be 1,864 megawatts. For comparison: the capacity of the Toktogul HPP is 1,200 megawatts. For the construction of the Kambarata HPP-1, according to preliminary data, \$2.9 billion is needed.

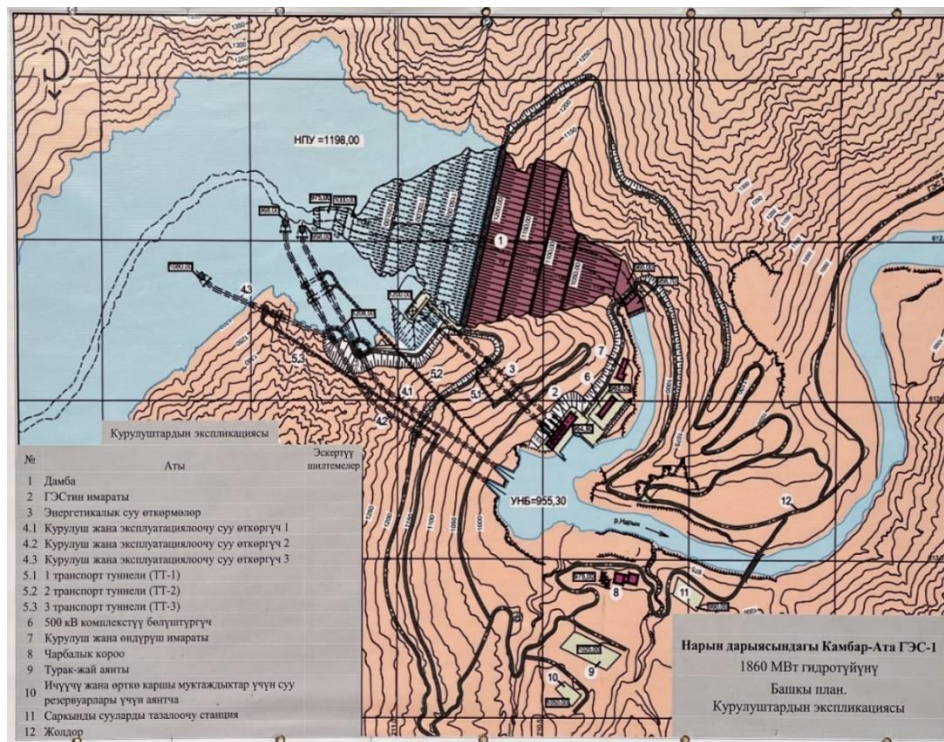


Figure 8. Explication of Kambarata HPP construction



Figure 9. Designed level of the HPP dam

The design and construction work for the Kambarata-1 HPP should be considered in more detail. This would cover a full-scale ESIA, terms of reference for which would be developed, draft of which is part of this ESMF, under Component 2. The Kambarata-1 component would require the adoption of additional dam safety measures. The bank's environmental and social requirements under ESS4 include: (a) dam design and construction supervision by competent professionals; (b) preparing and carrying out the reports and plans necessary for the construction of the new dam as referred to in paragraph 3(b), namely:

- 1) conducting an examination by an independent group of experts at the stage of research, design, and construction of the dam, as well as at the beginning of operation;
- 2) preparation and implementation of: a construction supervision and quality assurance plan, a tooling plan, an operation and maintenance plan, and an emergency plan;
- 3) carrying out preliminary selection of contractors during procurement and competitive procedures; and
- 4) conducting periodic inspections to check the safety of the dam after construction is completed and taking measures to eliminate safety deficiencies

A more detailed description of the work should be done as part of the study should be in line with Good Practice Note on Dam Safety <https://openknowledge.worldbank.org/handle/10986/35484>.

The nearest Natural protected area is the State Natural Park "Kan-Achuu" (IUCN Category II) established in September 11, 2015 and is located on the lands of the State Forest Fund of the Toguz-Torouz forestry (3,090.2 ha), the State land reserve of the Kok-Irim Aiyl Aimak (27,406.3 ha). Natural park is located in distance of nearly 30 km away from the Kambar-Ata-1 site.

5.4. Rehabilitation of the Bystrovka SHPP in the Chui Region

Bystrovka SHPP is located on the left bank of the Chu River in its middle course near the Kemin town, the center of the Kemin district of the Kyrgyz Republic. 4 km east of Kemin City in the Chuy oblast of Kyrgyz Republic at N42.782 E75.749. Kemin district is located in the eastern part of the region, its territory stretches in the sub-latitudinal direction and is limited: by the Zaili ridge and the territory of the Republic of Kazakhstan on the north; the territory of Chui district on the west; the territory of Issyk-Kul region on the south and east, the border of which passes along the ridge of the Kyrgyz and Kungei Ala-Too ranges.

Installed capacity of the Bystrovka HPP is 8.7 MW, secured capacity – 2,300 kW, it can generate an average of 46 million kWh of electricity, which corresponds to 5,287 hours of HPP operation during the year.

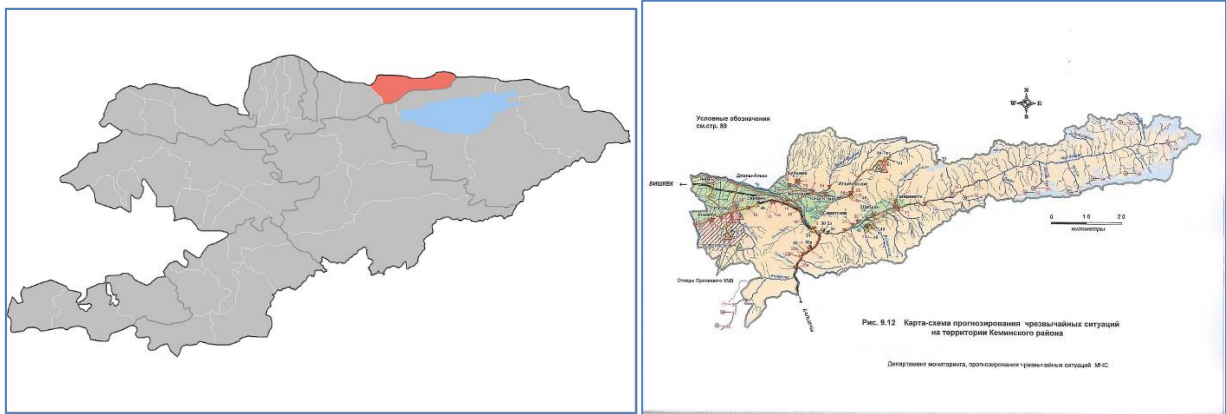


Figure 10. Kemin district

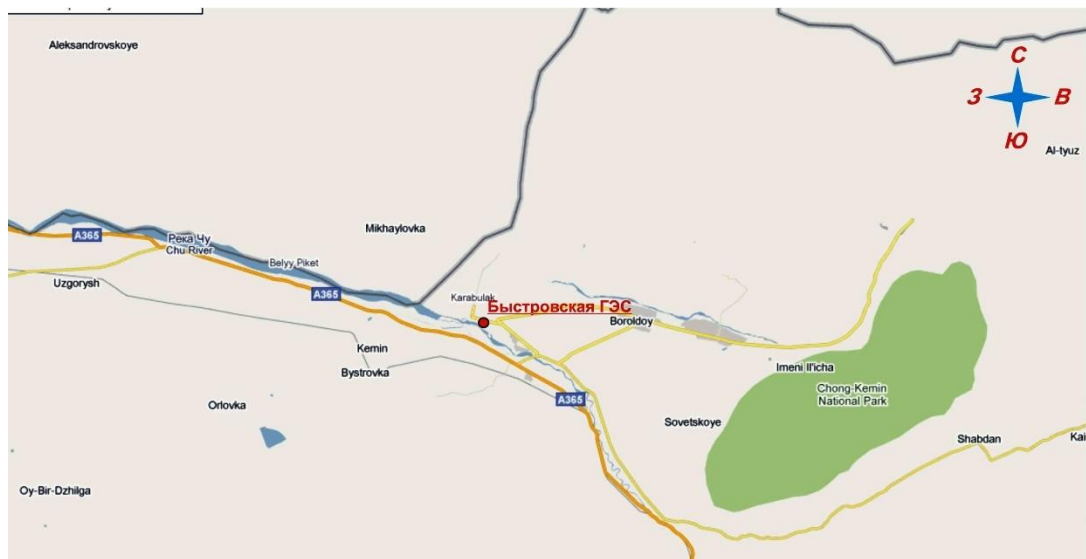


Figure 11. Location of Bystrovka HPP

5.4.1. Climate

The area of the district is divided into three parts: the eastern part of the Chui Valley; Chon-Kemin Valley and Kichi-Kemin Valley. More than half of the area is public land, which includes forested areas, a mountain zone with pastures and rock massifs. Climatic features of the Chui and Kichi-Kemin valleys are subject to common patterns and have similar characteristics typical for the eastern part of the Chui region. The climate is continental with dry hot summers and moderately cold winters. The average July temperature is 25°C. Autumn is dry and warm, followed by sharp transition to winter. Snow cover is not permanent. The number of days per year with snow cover is 52, the average height of snow cover in the range of 0.8-1.3 km is 16 cm. The atmospheric precipitation is within 400 mm per year, of which about 40% are in spring.

5.4.2. Water Resource

The Chu River is the largest river; the remaining rivers in this area belong to the Chu River basin. The flow rates of 1% of these rivers provision are as follows: the Orto-Kaiyndy River 37.0 m³/sec on the right bank of the Chu River; the Cholok-Kaiyndy River 28.0 m³/s; Kek-Tash River 12.9 m³/s; Kalmak-Ashuu River 36.1 m³/s; Teghermenti-Suu 37.5 m³/s; Dauransu River 24.2 m³/s; Balyksay River 20.7 m³/s; Uzunbulak River 12.4 m³/s; Zholbulak River 38.6 m³/s; Kichi-Kemin River 23.1 m³/s; Ichke-Suu River 59.0 m³/s; Kyr-Tabylgy River 85.0 m³/sec; left bank of the Chu River - Kurgak-Terek River 29.4 m³/sec; Kyz-Kiya River 15.4 m³/s; Dzhel-Aryk River 87.8

m³/sec; unnumbered (near the Kyzyl-Oktyabr settlement) 16.3 m³/sec; Chon-Almaly River 10.2 m³/s; Kichi-Almaly River 12.1 m³/sec; and Kyzyl-Suu River 15.6 m³/sec.

The average annual flow of the Chu River is 53 m³/s, the maximum flood of 350 m³/s (regulated by the Orto-Tokoi reservoir); the Chon-Kemin River is the highest of the maximum 189 m³ /s. Most rivers in the area are fed by a mix of glacier-snow and rain. The highest total discharge is in July and August.

5.4.3. Flora and Fauna

The densely populated plains of the Chu valley are mostly developed, and the natural landscape is heavily modified. The Chu valley and the northern slope of the Kyrgyz ridge is one of the most studied areas of the Republic in terms of flora-geobotanical aspects. The Chu valley belongs to the Chu and Kemin districts of the North Tien Shan province.

Vegetation of the Chu valley is diverse and has a pronounced altitudinal zonation. Plain areas of the valleys: Chui, Kichi-Kemin and Chon-Kemin, as well as foothill strips are covered by semi-desert and arid-steppe belt, where gray soils and light chestnut soils prevail. Natural vegetation cover includes wormwood-ephemera semi-desert, wormwood-gramineous, wormwood-fescue steppes, swampy meadows, reed and shrub thickets (sea buckthorn, barberry and rose hips). Foothills, low and medium slopes of mountains are occupied by the steppe and forest-meadow-steppe belts, where chestnut, chernozemic, chernozemic -like, reddish, meadow and other soils prevail. In the foothills there are mainly fescue steppes, couch grass, grassland steppe; higher are meadow-steppes and tall grass meadows. Steppe vegetation is found on sunlit slopes, while meadows, bushes and sparse woodlands are on shaded slopes. On the slopes of the northern exposition (above 1,300 m) there are bushes (of rose hips, meadowsweet, barberry, and etc.) and forests. Along the gorges of the Kyrgyz Ala-Too and in the Chon-Kemin valley, there are sparse forests of spruce, juniper, birch, maple, rowan and others. Subalpine meadows and meadow-steppes begin at a height of 2,400 m and are notable for their varied vegetation cover. Alpine meadows are located at an altitude of over 2,800 m, where cobresia and motley grasses usually grow. Alpine steppes are dominated by sheep fescues; among bushes, only stunted mountain ash, some species of rose hips and creeping juniper are found. There is a glacial-nival belt above the 3,600 m mark.

Fauna. The fauna of the Chui Valley is part of the West-Tenir-Too zoogeographical region. According to experts, there are more than 300 species of vertebrates, including more than 15 species of fish, about 280 species of birds and 50 species of mammals.

Ducks, terns, gulls, diving ducks, pheasant, lapwing, and etc. are found in the reedy thickets on the banks of the reservoirs and in swampy places. Lizards, snakes, adders, vipers, moccasins and other reptiles can be found in the steppe zone. Among mammals there are vole, jerboa, shrewmice, wolf, fox, badger, marmot, squirrel, roe deer, bear, argali, ibex and leopard.

The nearest Natural protected area is the State natural park "Chon Kemin" (IUCN Category II) established in August, 1997. The purpose of the park is conservation of the unique nature complexes in Chong-Kemin Valley of the Kemin District and organization of recreation for local and foreign tourists. The area of the park is 123,564 hectares. The park is located in 30 km from the regional center Kemin and in 135 km from Bishkek.

5.5. Social Baseline

Fifty-six percent of total land in Kyrgyzstan (10.7 million hectares) is classified as agricultural land. Forest land comprises 4.5% of the country's total land area, and deforestation is occurring at a rate of 0.3% a year. About eight million hectares (75%) of agricultural land is pasture.

The most important problems in land use are soil erosion and salinization in improperly irrigated farmland.

An estimated 60% of Kyrgyzstan's land is affected by topsoil loss, and 6% by salinization, both problems with more serious long-term than short-term effects. Uncertain land tenure and overall financial insecurity have caused many private farmers to concentrate their capital in the traditional form—livestock—thus subjecting new land to the overgrazing problem.

As per Government officials of Land Cadastre and Land Development there are four types of land owners/users: Government, Municipal, private/individuals and individuals who have rental agreement (50 years) with the Government on State owned land. In addition, there are individuals who are squatters and do not legally own the land. The numbers of such individuals are unknown but exist.

5.5.1. Construction of the Tar SHPP in the Osh region

5.5.1.1. Socio-economic indicators

Kara-Kulja district was formed in 1937. The district covers an area of 5813 km². The number of permanent populations according to the National Statistical Committee of the Kyrgyz Republic as of January 1, 2021 is 99.9 thousand people. The average population density is 16 people per 1 km². There are 55 settlements on the territory belonging to 11 aiyl aimaks: Alaikuu (6 settlements), Kapchygai (4), Kenesh (2), Karaguz (6), Kara-Kochkor (4), Kara-Kulzha (4), Kyzyl- Dzhar (6), Ylay-Talin (5), Oi-Tal (2), Sary-Bulak (7), Chalmin (4), Kashka-Dzhol (5).

The administrative center is the village of Kara-Kulzha with a permanent population of 15,770 people.

5.5.1.2. Population

The total resident population of the Osh region, according to the National Statistical Committee of the Kyrgyz Republic as of January 1, 2021, is 1287.0 thousand people, of which the resident population is 1391.7 thousand people, including 79.2 thousand people in the Alai region ; 126.9 thousand people in the Aravan district; 86.0 thousand people in the Kara-Kulzha district; 413.7 thousand people in the Kara-Suu district; 275.1 thousand people in the Nookat district; 252.3 thousand people in the Uzgen district; 30.2 thousand people in the Chon-Alay district. There are 7 districts, 3 cities of district significance (Kara-Suu, Nookat and Uzgen), 88 rural districts and 114 rural settlements in the region. The average population density is 42.4 people per 1 km². A large population, coupled with a shortage of jobs and a lack of economic prospects, is forcing people to migrate from disadvantaged areas (often dry, mountainous or irrigated areas with high population density) to large urban centers and less populated rural areas.

The national composition of the population. Major nations. Kyrgyz - 173,920 people or 73.6%, Uzbeks - 61,299 people or 25.9%.

Ethnic groups. Hemshils (sub-ethnic groups of Armenians) - 276 people or 0.1%. Turks - 267 people or 0.1%, Russians - 241 people or 0.1%, Tatars - 123 people or 0.05%, others - 329 people or 0.1%.

Gender. Women make up 50.5% (118365 people), men 49.5% (116201 people).

5.5.1.3. Unemployment ²⁵.

²⁵ Source: National Statistical Committee of the Kyrgyz Republic <http://www.stat.kg/ru/oshskaya-oblast/>.

Migrants from the villages tend to migrate to Osh and Jalal-Abad (the largest industrial centers) and the surrounding areas. Osh region is characterized by a high poverty rate of up to 28.9% and unemployment of up to 6%.

Table 6. Registered unemployed in the districts Osh region (persons at the end of the period)

	April	
	2018	2019
In the region	13595	18837
districts:		
Alay	1529	1453
Aravan	1218	2708
Kara-Kulja	1779	2058
Kara-Suu	2472	2862
incl. the city of Kara-Suu	137	194
Nookat	3750	6258
incl. the city of Nookat	207	438
Uzgen	1748	2471
incl. the city of Uzgen	306	510
Chong-Alay	1099	1027

Table 7. Average monthly salary of one employee by region (som)

Osh reg.	2018		2019	
	March	January-March	March	January-March
By region	10768,0	10143,7	10787,9	10394,9
districts:				
Alay	13291,1	12269,2	14094,2	12933,7
Aravan	9564,0	8731,1	10049,4	9242,7
Kara-Kulja	12189	11284,6	11886,2	11467,0
Kara-Suu	9505,2	9362,6	9776,3	9712,7
incl. the city of Kara-Suu	12356,9	12002,7	13184,0	12404,7
Nookat	11079,3	10105,0	10628,3	10287,1
incl. the city of Nookat	9789,4	9819,7	10535,6	10022,6
Uzgen	10036,7	9631,5	9768,3	9602,5
incl. the city of Uzgen	12013,4	11210,3	12213,1	11664,3
Chon-Alay	14960,0	14185,0	15062,1	14332,5

5.5.1.4. Industry and Agriculture

South-Eastern Fergana (Osh and surrounding areas) is the most densely populated region with a developed manufacturing industry (textile, machine-building and metalworking, food), cotton growing, tobacco growing, significant horticulture and viticulture. At the same time, in this agricultural region of the country, there is a low level of production efficiency, outdated and physically deteriorated agricultural equipment, a lack of qualified specialists, a low level of marketing services, an underdeveloped system of purchases and sales, low cost of agricultural products and a low level of emergency preparedness of agricultural producers. lack of production capacity to ensure production and processing. Currently, 52% of existing water supply systems in rural areas are obsolete, 21% of villages have no water supply system at all, and the capacity of irrigation systems has decreased by 25% on average.

Thus, based on official data, the population living in rural areas is mostly engaged in fieldwork and husbandry. The urban population is engaged in trade and services, industry is underdeveloped. The densely populated areas of the district and its infrastructure are drawn to the main road and power facilities, and the construction of SHPS is a necessary condition for improving the quality of life and growth of the economy.

5.5.1.5. Cultural heritage

Many historical and architectural monuments have been preserved on the territory of the region: sites of ancient hunters, burial grounds, settlements, rock paintings, settlements, mausoleums, mosques, a caravanserai, fortresses, etc. It is known from written sources that in the ancient state of Davan, which includes the present territory of the Osh region, there were more than 70 large and small cities (2nd century BC). A monument of the Kokand period are the remains of the Daroot-Kogon fortress, the Sogolon caravanserai near Kara-Shoro, located on the caravan route from the valley of the river Zhazy through the pass to the valley of the river Arpa. Rock paintings are also historical monuments of the region. These are Abshirsay, Aravan, Nookat and Syurettash rock paintings, which mainly depict Davan horses, mountain goats, tamga-shaped signs, musical instruments, human figures and various inscriptions.

5.6. Construction of the Karakul SHPP in the Jalal-Abad region

5.6.1. Socio-economic indicators

The Toktogul district is located in the northern part of the region within the Naryn river valley and is bounded by the Talas and Suusamyr mountain ranges in the north, At-Oynok range in the west, a complex system of the Babash-Ata, Fergana and Kekirim-Too ranges in the south. Mountain territories are characterized by high dissected relief. Absolute marks of the mountain ranges reach 4,165 m (Uzun-Ahmat Ridge), 4351 m (Kekirim-Too Ridge), and 650-850 m in the valley part. Administratively, the HPP area is in the western part of the Karakul town, in the Toktogul district of the Jalalabat region on the Karasuu River. Territorially, the Kara-Kul town of regional importance with a population of 27.2 thousand people (23.2 thousand of urban population and - 2 thousand rural population, and the Ketmen Tebe settlement - 2.1 thousand people) is within the boundaries of this district.

5.6.2. Population

The population of the region is international: the overwhelming majority are Kyrgyz people (69.8%), there are also Uzbeks (24.4%), Russians (2.1%), Ukrainians (0.3%), Tajiks (0.8%), Turks (0.6%), and representatives of other nationalities.

5.6.3. Industry

The main industries are: electric power (58.6% of industrial output), non-ferrous metallurgy (6.4%), fuel (16.3%), light industry (5.7%), machine-building (7.9%) and food (3.5%). The regional industries - electric power, non-ferrous metallurgy and fuel have the leading positions in the republic. This region also produces: furniture, construction materials, clothes, cotton fiber, shoes, flour, meat, milk, soft drinks, canned vegetables, vegetable oil, fermented cigarettes, and etc.

The largest industrial enterprises of the region are: the Toktogul Hydro Power Plants Cascade, Tash-Komur HPP, Joint Venture “Kyrgyz Petroleum Company”, JSC ELP Mailuu-Sai, the Makmal Gold Mining Factory, Joint Venture “Kyrgyzmunaigas”, and etc.

The majority of the region's agricultural output was produced by peasants (62.2%), which specialized in growing cotton, tobacco and vegetables. In recent years, sugar beet and other crops for the production of vegetable oil have been grown in the region. Livestock industry accounts for 37.1% of the total agricultural output; sheep, goats, cows, horses, chickens and other poultry are permanently reproduced.

5.6.4. Cultural heritage

The Kara-Suu site of ancient people in this region testifies that people lived here in the Stone Age. There are writings on the stones, petroglyphs in Saimaluu-Tash (the 2nd century BC - 8th century AD) and Chaar-Tash, Torken burial mound (1st- 5th centuries), remaining of the Kulbes-khan and Chanchar-khan fortresses (10th - 12th centuries), as well as the ruins of the Kulbes-khan and Chanchar-khan fortresses (10th-7th centuries). There are also the ruins of a fortress in Toguz-Toro, the Fazil Shah burial mounds (12th century) and Arstanbap (16th century), the mausoleum of the prophet Ydyrys (early 19th century), and the rebuilt mausoleum of Kurmanbek batyr.

5.7. Rehabilitation of the Bystrovka SHPP in the Chui Region

5.7.1. Socio-economic indicators

Bystrovka SHPP is located on the left bank of the Chu River in its middle course near the Kemin town, the center of the Kemin district of the Kyrgyz Republic. 4 km east of Kemin City in the Chuy oblast of Kyrgyz Republic at N42.782 E75.749. Kemin district is located in the eastern part of the region, its territory stretches in the sub-latitudinal direction and is limited: by the Zaili ridge and the territory of the Republic of Kazakhstan on the north; the territory of Chui district on the west; the territory of Issyk-Kul region on the south and east, the border of which passes along the ridge of the Kyrgyz and Kungei Ala-Too ranges.

5.7.2. Population

Permanent population (as of 2020) is 48,5 thousand people (16.5 thousand people of the urban population; 10.4 thousand people in the Kemin town, 6.1 thousand people in the Orlovka town and 0.1 thousand people in the Bordun town; and 38.4 thousand of the rural population. The average population density is one of the lowest in the region and is 12,7 persons per 1 km² area.

The capital Bishkek, the cities of Tokmok, Kara-Balta, Kant, Shopokov, Ak-Suu and numerous villages are located in the Chui Valley. Kemin district is a densely populated part of the valley with developed rare earth and mining (Ak-Tyuz, Dolpran, Orlovka), and agricultural production (main crops: sugar beet, cereals, fodder crops, vegetables; main livestock sectors: cattle, poultry and sheep breeding).

5.7.3. Cultural heritage

The archaeological monuments of ancient times on the territory of the region are the Georgiy Hill attributed to the Stone Age, Alamudun site of ancient people, dwellings of Bronze Age in Kaında and Zhaiylm, sites of Sak-Uzun period in Kara-Balta. The preserved archaeological and architectural monuments of the Middle Ages are sites of ancient settlement of Ashmara, Sui Yab, Nevaket, Balasagyn, Ak-Beshim, and etc.

5.8. Construction of Kambar-Ata-1 HPP in Jalal-Abad region

5.8.1. Socio-economic indicators

The Toktogul district is located in the northern part of the region within the Naryn river valley and is bounded by the Talas and Suusamyr mountain ranges in the north, At-Oynok range in the west, a complex system of the Babash-Ata, Fergana and Kekirim-Too ranges in the south. Mountain territories are characterized by high dissected relief. Absolute marks of the mountain ranges reach 4,165 m (Uzun-Ahmat Ridge), 4351 m (Kekirim-Too Ridge), and 650-850 m in the valley part.

5.8.2. Population

Administratively, the HPP area is in the western part of the Karakul town, in the Toktogul district of the Jalalabat region on the Karasuu River. Territorially, the Kara-Kul town of regional importance with a population of 27.2 thousand people (23.2 thousand of urban population and - 2 thousand rural population, and the Ketmen Tebe settlement - 2.1 thousand people) is within the boundaries of this district.

5.8.3. Economy

The population of the region is international: the overwhelming majority are Kyrgyz people (69.8%), there are also Uzbeks (24.4%), Russians (2.1%), Ukrainians (0.3%), Tajiks (0.8%), Turks (0.6%), and representatives of other nationalities.

The main industries are: electric power (58.6% of industrial output), non-ferrous metallurgy (6.4%), fuel (16.3%), light industry (5.7%), machine-building (7.9%) and food (3.5%). The regional industries - electric power, non-ferrous metallurgy and fuel have the leading positions in the republic. This region also produces: furniture, construction materials, clothes, cotton fiber, shoes, flour, meat, milk, soft drinks, canned vegetables, vegetable oil, fermented cigarettes, and etc.

The largest industrial enterprises of the region are: the Toktogul Hydro Power Plants Cascade, Tash-Komur HPP, Joint Venture “Kyrgyz Petroleum Company”, JSC ELP Mailuu-Sai, the Makmal Gold Mining Factory, Joint Venture “Kyrgyzmunaigas”, and etc.

The majority of the region's agricultural output was produced by peasants (62.2%), which specialized in growing cotton, tobacco and vegetables. In recent years, sugar beet and other crops for the production of vegetable oil have been grown in the region. Livestock industry accounts for 37.1% of the total agricultural output; sheep, goats, cows, horses, chickens and other poultry are permanently reproduced.

5.8.4. Cultural heritage

The Kara-Suu site of ancient people in this region testifies that people lived here in the Stone Age. There are writings on the stones, petroglyphs in Saimaluu-Tash (the 2nd century BC - 8th century AD) and Chaar-Tash, Torken burial mound (1st- 5th centuries), remaining of the Kulbes-khan and Chanchar-khan fortresses (10th - 12th centuries), as well as the ruins of the Kulbes-khan and Chanchar-khan fortresses (10th-7th centuries). There are also the ruins of a fortress in Toguz-Toro, the Fazil Shah burial mounds (12th century) and Arstanbapa (16th century), the mausoleum of the prophet Ydyrys (early 19th century), and the rebuilt mausoleum of Kurmanbek batyr.

5.9. Re-Construction/Augmentation of existing Isanova substation in Osh Oblast

The site for the Isanova substation under consideration is located close to Kurshab town, in the Uzgen distric in the southwest of the Fergana Range.

The district area is 3,308 km², which is 11.8% of the area of the region. The district covers southwestern slopes of Fergana ridge, in the south it is limited by Uzgen and Akademik Adyshev ranges,

in the west it is a plain part of Fergana depression, coinciding with Uzgen-Kurshab plain. Most of the territory is occupied by mountain and foothill zones - 88%, and valley zones - 12%.

Climate of the area depends on the altitude of the terrain, summer is hot, winter is moderately cold, snow cover is significant. Average January air temperature in Uzgen-Kurshab Depression -3.2°C, in July +23.6°C, in the mountains in January -10 °C, in July +15 °C. The average annual air temperature is 11°C. The warm period of the year is 210-235 days. Average annual precipitation is 350-600 mm, on the slopes of Ferghana Ridge - 900 mm. The main waterways are Kara-Darya, Yassy and Kurshab rivers, which flow into Andijan water reservoir.

Two transmission lines: 220 kV 1.2 km and 3 km 110 kV lines would be supported under the project.

The state natural park "Kara-Shoro" created to preserve the unique natural forest complexes and mineral water sources is located on the territory of the district but more than 25 km from Kurshab town.

5.9.1. Physical environment

5.9.2. Population

The permanent population according to the National Statistical Committee of the Kyrgyz Republic as of January 1, 2020 is 278.5 thousand people. Average population density is 75.7 people per 1 km². There are 99 rural settlements located on the territory belonging to 19 ayil aimaks. The district center is Uzgen with a permanent population as of January 1, 2020 according to the National Statistical Committee of 61,6 thousand people.

5.9.3. Economy

Agriculture and cattle breeding are developed in the region. The main production is tobacco farming. The area suitable for agriculture is 266,4 thousand hectares (20,9 thousand hectares are irrigated), 188,8 thousand hectares of which are pastures. There are 37,205 households in the district. There is an experimental breeding station for cattle breeding, a nursery for growing fruit trees, and a tobacco-fermentation plant in the district. Industrial enterprises and household factories for the production of consumer goods are located in Uzgen. There are forestry enterprises in Myrza-Ake village. The Osh-Uzgen-Bishkek, Osh-Uzgen-Kara-Kulja, Uzgen-liri-Suu-Jalal-Abad, Uzgen-Kara-Kulja-Gulcha highways pass through the area.

5.9.4. Cultural heritage

Uzgen is interesting with its rich history. The first settlements on the site of modern Uzgen were formed as early as the I-II centuries B.C. The city is situated on the bank of the large Kara-Darya River, in the eastern part of the Fergana Valley. Such a favorable location made this town a very important center of trade and culture in ancient times. For a long time, the town played a crucial role as the most important trading point between China and Central Asia.

In XII century A.D. the city became the capital of Karakhanid Kaganate, which was moved here from Balasagun captured by Mongol tribes, located in Chui valley and now known as Burana Tower. During this period the main sights of Uzgen were built - three Uzgen mausoleums and Uzgen minaret. Uzgen cultural-historical complex consists of several outstanding monuments of

Central Asian architecture: the Uzgen Minaret and a group of three mausoleums built at different times, but representing a single architectural ensemble. The constructions date back to the XI-XII centuries AD. This is the era of the Karakhanids whose western capital was Uzgen. The constructions from the Karakhanid period have distinctive features: their exterior decoration is made of various brick and ganchi patterns, without the use of glaze and color inserts. It became the hallmark of medieval architecture in Kyrgyzstan.

6.0. POTENTIAL ENVIRONMENTAL & SOCIAL IMPACTS AND MITIGATION MEASURES

Based on initial screening and due diligence of the activities involved in the project on construction and rehabilitation of small-scale hydro power plants, potential environmental and social risks and impacts are anticipated to be **high** due to activities under component 2.1, while under components 1 and 3 are expected lower levels of impact. The basic purpose of the ESMF is to design/formulate mitigative measures and plan for assessment and management protocol to address identified/potential environmental and social risk/impacts during implementation and O&M stage. ESMF also set requirements and procedure for sub-project specific ESIA if after screening it establishes that sub-project activities may pose certain E&S impacts, which require specific intervention to manage/minimize them. The ESMF is designed on the principles of avoidance, minimization and mitigation, including offsetting /compensating any residual issues to meet the requirement of sustainable development and compliance of Bank's ESSs. The key environmental and social issues associated with HPPs' construction and rehabilitation works and corresponding preventive and/or mitigation measures are designed following principle of mitigation hierarchy: "Avoid, Minimise, Mitigate and Offset" in that order of preference.

6.1. Overview of Potential Environmental and Social Risks and Impacts

Component 1 supports construction / rehabilitation of small HPPs. The construction of HPPs has positive and negative impacts for environment and people. Its positive impacts include generation of clean energy and attendant economic benefits. Spillover effects of local employment generation, infrastructure development and improved connectivity close to the site. Adverse impacts of HPPs include changes to land use, including permanent submergence in the project site and near-by areas, with potential loss of biodiversity and other living resources dependent on the site and/or loss of agricultural or homestead land, cultural resources, loss of access to resources separated due the creation of the HPP, changes in the flow regime, and its consequences for downstream flows in terms of ecology, socio-economic uses of water for fishery and/or transport of goods, loss of livelihoods, marginalization of disadvantaged groups as well potential of increased damage during accidents. During the construction of HPPs, there could be substantial negative impacts on the environment including air pollution, degradation of water quality and soil pollution in the construction area, and where spoils of construction are disposed of, increased use of non-renewable natural resources like stone, and earth/soil, risk of accidents due to increased heavy traffic for moving equipment, occupational health and community health and safety issues due to the nature of construction and work force, including migrant labour, stress on local community resources.

Technical Assistance to develop HPPs supported under Component 1 and 2 can also pose risks and potential negative environmental and social impacts due to relative isolation of candidate sites, and extensive nature of studies required for the development of HPPs. Given the nature of the technical assistance activities risks and impacts could arise from desk-based as well as field-based work, in addition to use of the outputs of the TA. For the process of implementation of the TA activities, following E&S aspects will be accounted for: Occupational Health and Safety of workers to be engaged in the TA activities; potential of harm to biophysical environment during field surveys and analysis; and chance find of important cultural heritage.

Component 3 supports transmission infrastructure through financing assets and technical assistance. While TA related impacts are described above, construction/augmentation of transmission infrastructure could have impacts related to change/restriction of land-use under the lines, including footings, removal of /disturbance to resident flora and fauna, soil erosion, consumption of non-renewable resources for the line construction. There are few adverse impacts of operation of transmission lines, except for periodic maintenance related disturbance and periodic clearance of vegetation within safe distance of conductors. Substation construction and operations can result in various risks and impacts on the natural environment and people near by. These include impacts from change in land-use, drainage alteration and erosion, installation of specialized equipment requiring use of hazardous chemicals like oils and SF6 a green house gas with very high global warming potential, risks of fire and related hazards, and loss of land and livelihood related impacts on people occupying the site before construction of the substation.

Impacts from HPPs on various environmental attributes are described below along with potential mitigation measures.

6.1.1. Soil/ Forest/Vegetation

One of the most important impacts of hydropower on the environment is loss of large areas of land for reservoirs. This could result in reduction of floodplain forests, the loss of all flora and fauna, the disappearance of pastures where land is used for grazing cattle.

Construction of reservoirs also changes the hydrological regime of rivers, their ecosystems, and the species composition of hydrobionts. The warming of waters sharply increases, which intensifies the loss of oxygen and other processes caused by thermal pollution. This together with the accumulation of biogenic substances, creates conditions for the overgrowth of water bodies and due to the slow renewal of waters, their ability to self-purify is sharply reduced.

Mitigation measures

Law of the Kyrgyz Republic dated February 12, 2007, No. 15 requires an appropriate action protocol for valuable tree species in the Kyrgyz Republic and requires an appropriate action protocol for their cutting/removal and compensation. These would need to be undertaken in line with conclusions of a specially authorized state forest management body.^[11] The local governments have the power to decide with the approval of environmental protection authority. Compensation can be made in terms of payment of replacement cost or in-kind replacement of equivalent space/area.

Where practical transplantation is an option which explored, where survival of the transplanted individuals is considered likely. Provision of 35% of replacement cost as maintenance charge is added to provide resources after the planting has been completed.

Additional measures in line with ESS6 would be recommended in the ESMP depending on whether modified, natural or critical habitat is potentially impacted. In each case the mitigation hierarchy would be followed.

[\[1\] Law of the Kyrgyz Republic dated February 12, 2007 No. 15 "On the prohibition of felling, transportation, acquisition and sale, harvesting and use, export and import of especially valuable \(walnut and juniper\) tree species in the Kyrgyz Republic" \(minjust.gov.kg\).](#)

6.1.2. Watershed Impacts

Facilities required for the project like access roads, transmission lines for electricity and/or water can affect the condition of the watershed by causing habitat fragmentation or hindrance to movement of wildlife.

Erosion and sedimentation rates could also be affected, especially in hilly terrain.

Mitigation Measures

Site specific ESIA's will include Biodiversity studies that will cover all the facilities needed for the operational phase of the HPPs. ESMPs will propose additional measures required to allow for such movements if such impacts are likely to be encountered

Assessment of sediment load and its effect on receiving waters will be undertaken as part of the ESIA for each location. Catchment area treatment will be included as part of the mitigation measures and integrated with the design elements for the project.

Based on the findings of the specific ESIA differentiated measures will be implemented including erosion protection.

6.1.3. Impacts on Wildlife/Avian Fauna/ Ichthyofauna

As indicated in the baseline section, secondary information indicates that legally recognized protected areas and natural habitats of known high biodiversity value are located quite far from candidate sites. However non-migratory bird species and local fish species are likely to be impacted due to the construction of the HPPs.

Along the candidate stretches of Tar River, given the density of population and the scarcity of agricultural land, there are few empty lands around the future hydroelectric power station. The adjacent lands to the banks of the river are occupied by farms and fields.

In the area around proposed location of the Karakul HPP, heavy traffic along the Bishkek-Osh highway does not leave any natural habitats. In addition, road elements - slopes, embankments, excavations, fences, the roadbed itself, all hinder movement of wildlife near by.

While no systematic biodiversity survey is available, Kambarata HPP site reports rock partridge (*Alectoris chukar*) nesting and living in the gorges along the banks of the Naryn. While the species is not on the IUCN threatened category (it is LC in IUCN list), reservoir area could include the slopes representing places of feeding of local populations of partridges. This could lead to bird migration, at least within a radius of 5-10 km from the HPP, which will be a source of constant noise and disturbance for the birds.

Available records show that there are quite large specimens of Marinka (*Schizothorax*) in the Naryn River. Naryn, Tar and Karakul rivers have also reported large specimens of trout (*Salmo trutta L.*). Presence of *Brook Trout* in the Naryn, Tar and Chu rivers is reliable. Trout is quite sensitive to increasing water temperature and sensitive to water purity, which will be warmer and

dirty in the hydroelectric reservoir (and further when discharged into the river). Fluctuations in the water level in the reservoir adversely affect the reproduction of fish; dams block the way for spawning of local fish.

More detailed information on these species, including their conservation status, are provided in Annex 4.

The table lists the species of animals and plants recorded in the territories and their national and international conservation status.

Common name	Scientific name	National protection status	International protection status	Place of registration (river, location)
Animals				
<i>Marinka</i>	<i>Schizothorax</i>	LC	LC	All rivers
<i>Brook Trout</i>	<i>Salmo trutta L.</i>	LC	LC	All rivers
<i>Rock partridge</i>	<i>Alectoris chukar</i>	LC	LC	Kambarata-1
Plants				
<i>Sedge</i>	<i>Carex</i>	LC	LC	Karasuu
<i>Juniper</i>	<i>Juniperus sp.</i>	LC	LC	Karasuu
<i>White poplar</i>	<i>Populus alba</i>	LC	LC	Karasuu
<i>Wild plum</i>	<i>Prunus sogdiana</i>	LC	LC	Karasuu
<i>White willow</i>	<i>Salix alba</i>	LC	LC	Karasuu
<i>Hawthorn</i>	<i>Crataegus turkestanica</i>	LC	LC	Tar
<i>Wild pistachio</i>	<i>Pistacia</i>	NT	LC	Tar
<i>Horsetail ephedra</i>	<i>Ephedra equisetina</i>	NT	LC	Kambarata-1
<i>Prickly cushion</i>	<i>Acantholimon dense</i>	VU	LC	Kambarata-1

IUCN Red List Categories and Criteria - LC; Vulnerable – VU; Near Threatened – NT;

Mitigation Measures

Detailed surveys for terrestrial and aquatic ecology will be carried out to establish the ecological baseline for flora and fauna, and likely impacts will be assessed as part of the ESIA for each site. Mitigation measures will be recommended in line with the mitigation hierarchy described in ESS6 and included in the relevant bidding and contract documents as well as operation protocols.

For areas with known population resident ground based birds like partridges, following measures have already been identified areas with known bird populations should be marked, e.g. nesting areas, feeding grounds, migration corridors, water bodies, etc. instruct the staff on caring for the broods and draw up a protocol of actions when meeting with them.

To minimize fish blocks and facilitate the passage of fish through hydraulic structures, it is necessary to create fish locks in which the fish does not make any effort, or fish storage facilities, from which the fish is reloaded into a buffer pond, and instruct the staff on monitoring of these actions. Alternatively, fish ladders could be designed to facilitate movements of fish across the HPP. This will be investigated as part of the design.

Following EFlow study findings for the respective site, necessary water flows down river to maintain ecological functions will be recommended.

6.1.4. Air & Noise Pollution from Construction Activity

Dust generation, noise, and vibration generation - will occur during most types of restoration and construction work. The scale of impact will be greatest where blasting and drilling are undertaken, especially close to sensitive receptors like existing settlements (Karakul, Tar).

Blasting operations will be during the construction of new HPPs. During the explosion of explosives, a significant amount of gases is formed (600-1000 liters per 1 kg) and heat is released (2.5 10³-7.110³ J per 1 kg), which ensures the heating of the explosion products to a temperature of 1900-4500 ° C. Explosive work is accompanied by massive emissions of dust, as well as gas ingredients.

These are also exhaust emissions from vehicle traffic carrying construction materials and machinery used during site clearing and site leveling, digging, and backfilling of trenches, etc. However, this will also be temporary and intermittent only during the construction phase.

Noise and vibrations are caused by the work of earth-moving machines. These machines can produce noise levels in excess of 70 dB(A) if they are not properly maintained. This may cause concern to the settlement if it is located within 500 m.

Given the nature of most of the work, these impacts are expected to be short-term with moderate risk and can be mitigated by implementing the measures recommended by the WB ESS, which contains a summary of potential environmental risks and impacts along with general mitigation measures.

Mitigation Measures

The contractor will implement the measures specified in the ESMP (to be prepared as part of the ESIA for each subproject) to prevent pollution in line with generic measures discussed below. The ESMP will be part of the contractors' standard tender documents.

To prevent air pollution, vehicles carrying construction materials and equipment will only drive on the existing access road. Vehicles will only be used following regular technical checks to ensure that exhaust emissions are within regulatory limits.

During drilling and blasting operations use of hydraulic stemming of wells, in which the efficiency of gas and dust suppression is 55% would be recommended in the ESMP.

Regular maintenance of the equipment will be carried out to prevent excessive noise. The maintenance schedule shall be prepared by the Consultant and maintained by the contractor. Construction work at night will be prohibited if the settlement/residential area is within 500 m of the construction site.

A blast management plan (BMP) will be required to be prepared and implemented as a risk control plan used in explosive blasting. It aims to ensure blasts do not harm people in the area and limit damage to the environment. A BMP is prepared by the shot firer before every blast and after consulting those involved in the blast. A BMP is the recommended method for planning safe use of explosives.

These and other measures indicated above shall also be included in the tender document.

6.1.5. Impact of Hazardous & Other Waste

Waste Generation - The program will generate two types of waste: non-hazardous and hazardous. Non-hazardous waste will be generated during most of the construction activities and will be represented by construction waste. In addition to this waste, used welding electrode stubs, packaging materials, sealant waste and wood will be generated. The storage of such wastes in areas close to human settlements and their untimely or improper disposal can affect air quality, cause soil and water pollution, and disrupt aesthetics and landscape.

Creation of a shift camp for the construction of a hydroelectric power station. These camps can produce solid and liquid waste (household waste). These wastes can contaminate the soil and waterways around the site if not handled properly.

Hazardous Waste – Two types of hazardous materials are expected to require special attention during project implementation – (i) asbestos found in roofs and (ii) lead paint.

During the rehabilitation of the Bystrovka HPP, specific energy waste will be generated (cables, braid, etc., which are difficult to dispose of). The formation of asbestos waste is possible, since it was widely used in the Soviet energy sector, it will have to be disposed of according to a special protocol and at authorized landfill.

Mitigation Measures

The contractor, in accordance with contractual obligations, must fulfill the obligations of a waste producer, that is, keep records of them, submit reports. Particular attention should be paid to the handling and disposal of spoils from cutting – muck and debris so that these are disposed of in designated locations only, reducing potential pollution of water and land close to the work sites. All E-waste will be treated in the same way as hazardous waste.

Modular bio-toilets will be installed in all construction camps and sites. Upon completion of construction work, the construction site will be cleared of all remaining materials and debris to eliminate the possibility of contamination.

6.1.6. Emission of Green House Gas (GHG)

At the global level, replacing fossil fuel-based energy with renewable hydro power would avoid GHG emissions, which would be replaced with the energy from HPPs. However, improper waste management, especially the incineration of construction and household waste, can lead to air pollution.

During the operation phase, eutrophication processes develop in the HPP reservoir as a result of the discharge of polluted wastewater from upstream farms and farms containing biogenic elements into rivers and reservoirs. GHGs, such as methane, could also be generated from the decay of biomass submerged in the reservoir.

As part of individual ESIA's, proper GHG analysis, including reservoir modeling, will be undertaken to identify potential measures to reduce such emissions.

6.1.7. Water Resource

6.1.7.1. River types and category of use

The rivers under consideration are fed mainly by the melt waters of seasonal snows, which form the spring flood, and the melt waters of high-mountain snows and glaciers, which provide the main runoff in the second half of summer. According to the nature of the intra-annual distribution of runoff, the rivers belong to the so-called "Tien Shan" type, since they have high water in the warm (vegetation) period of the year and low water in the cold season.

Of the considered rivers, only the Tar belongs to the Kara-Darya River basin and has a local category. The Karasuu and Naryn rivers belong to the Syrdarya river basin. The rivers Chu and Naryn have transboundary status (Source: Passport data of the rivers. State Committee of the Kyrgyz Republic for Water Resources and Land Reclamation, 2018). Passport data of 4 rivers are given below:

Hydrological passport data of the 4 rivers

No.	River name	Type (local, cross-border)	Where does it flow	Length (km)	Belonging to the basin	Catchment area km ²
1	Karasuu	Local	Naryn	89	Syrdarya	1080
2	Tar	Local	Karadarya	172	Karadarya	4420
3	Naryn	cross-border	Syrdarya	807	Syrdarya	599000

4	Chu	cross-border	-	1186	-	67500
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Since EFlows provide a measure of the river flow that should not be lost as it is needed to sustain the eco-system, and people who rely on that ecosystem, implementing a strategy to provide for e-flows is essential for hydropower development. Further provision of EFlows provides a way to mitigate the impact of the hydropower development on a river system.

As part of the respective ESIA studies, the consultants will refer to the IFC publication: Good Practice Handbook for E-flow (WB-GPH available at: https://www.ifc.org/wps/wcm/connect/b5c4fc9d-8eaf-46da-833b-3dd07c0bc985/GPH_Eflows+for+Hydropower+Projects_Updated_compressed.pdf?MOD=AJPERES&CVID=mhN3tCS) for Hydropower Projects, especially for the guidance of hydropower activities in emerging markets or developing nations. This document provides information on the potential effects of hydropower on water resources, e-flows assessments, methods and tools and provides a decision support tree for selecting e-flows methods for individual projects, e-flows and adaptive management and terms of references for e-flows assessments. This will inform the relevant recommendations for each site and be included in the respective ESMP.

6.1.7.2. Fishery status

In accordance with the Law of the Kyrgyz Republic "On Fishing", as well as in accordance with the Government Decree "On the development of fisheries and the use of natural and artificial reservoirs in the Kyrgyz Republic" dated September 7, 2009 No. 561 (as amended on February 19, 2019 No. 67) - Naryn, Chu, Tar and Karasu are natural and artificial reservoirs in the Kyrgyz Republic, intended for the development and use of fisheries for fish farming, fish farming and fishing.

This status prohibits any activity that pollutes the river, the discharge into the river of untreated wastewater and substances exceeding the established MPC standard, normalized substances in the water of water bodies used for fisheries water use, in accordance with the Rules for the Protection of Surface Waters of the Kyrgyz Republic (As amended by the Decree of the Government of the Kyrgyz Republic dated December 15, 2017 No. 813)²⁶.

The Government Decree "On the development of fisheries and the use of natural and artificial reservoirs in the Kyrgyz Republic" dated September 7, 2009 No. 561 (as amended on February 19, 2019 No. 67), including the project rivers (#3.68; 3.1; 3.22; 3.41 in the list of rivers) determines the procedure and conditions for granting the natural and artificial waterbodies of national importance or their individual sections for the purpose of fishing and fish farming in the Kyrgyz Republic. The Department of Fisheries under the Ministry of Agriculture is in charge for managing and distribution of this Fishery Fund based on quotas.

Hence, mitigation measures for any impacts on Fishery, would be recommended in line with the provisions of the relevant decrees.

6.1.8. Occupational Health and Safety

HPPs rehabilitation and construction works may create Occupational Health and Safety risks for construction workers. Risks include injury due to faulty machinery / tools/ equipment, fall from heights, accidental collisions, exposure to electric shocks, injury from shrapnel due to blasting

²⁶ Source: Decree of the Government of the Kyrgyz Republic dated March 14, 2016 No. 128 "On approval of the Rules for the protection of surface waters of the Kyrgyz Republic" (minjust.gov.kg)

works, or unhealthy working environment due to confined spaces or exposure to hazardous material, and below ground construction.

Use of heavy machinery and vehicles poses an additional risk to workers, even when they are not involved in the operation/maintenance of those equipment.

Mitigation measures

The mitigation measures for such situations will be developed by following national requirements and adapting the WBG EHS guidelines (https://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/sustainability-at-ifc/policies-standards/ehs-guidelines), whichever is more stringent. The relevant guidelines are the General guidelines, construction material extraction, power transmission and distribution. The Contractors will have to follow Occupation Safety and Health rules, which include among others strictly implementation established norms and procedure H&S which depends on type on conducting works, usage of PPE, training activities and monitoring. In addition, all workers need to be introduced to working procedure with hazardous materials (such as asbestos materials). Contractors have to provide workers with appropriate living conditions: safe water supply, washing conditions, rooms for rest and etc. Therefore, it is essential that an effective and site-specific Occupational health and safety Management Plan along with emergency preparedness is prepared at planning stage itself and implemented at site for ensuring incident free HPPs rehabilitation and construction works and safety of communities.

6.1.9. Community Health and Safety

During the construction of the hydroelectric power plant, construction work, soil transportation may create some problems for local residents. This is relevant for the Tar and Karakul locations, where the population is permanent, and construction is being carried out near the settlement and the existing Bishkek-Osh transport road. Moreover, a movement of heavy tracks may destroy or deteriorate conditions of roads inside settlements. Other material transport would also need to be carefully planned. Polluting discharges such as oil and grease from power plant construction and operation could be other potential risks.

In the area of the Kambarata hydroelectric power station, it is possible to expropriate the territory using the special protection regime of Kambarata-2, excluding the penetration of livestock herds and shepherds during the construction and blasting period.

During the operation phase, the risk of the electromagnetic frequency (EMF) impact from the HPP operation must be adjusted within the allowable range.

Communities around the dams might underestimate the hazards linked to activities around dams and waterways, particularly the possibility and effects of sudden changes in water level and flow.

Therefore, Dam safety needs to be a top priority at every stage of a dam's lifecycle – whether that be design, tendering, construction, operation, maintenance, refurbishment, upgrade or decommissioning.

Mitigation Measures

When the start of construction is announced, the vicinity of a settlement or access road to sites should be regulated and marked with appropriate/planned traffic management measures. To

facilitate the identification of these areas at night, signal lights and reflective tapes will be placed along the border to improve visibility and clarity.

Sufficient lighting and fencing of construction sites inside settlements at night. Agreed temporary closure of roads within settlements due to increased traffic due to the access of trucks and vehicles to construction sites. Existing outdoor toilets should be covered/fenced to prevent access by small children and accidents.

Tanks for collecting food waste and municipal solid waste should be with lids to prevent access and scattering of debris.

The Contractor should make blasting at a regular period in the day so that the population in the valley becomes aware of the most likely delay periods.

The dam constructors and operators should aim to minimize environmental risks and protecting downstream communities, as well as ensuring sustainable operations. To achieve this, they need to develop and implement a holistic and compliant dam safety program that considers ways to reduce the likelihood of risks occurring as well as how to reduce the potential consequences if risks do occur. ESIA's will confirm that the requirements of ESS4 in context of each site are met and prepare plans that are in line with World Bank's Good Practice Notes on Dam Safety.

6.2. Construction of Isanova substation in Osh region

The key expected environmental impact is related to installation of electrical equipment and resulting waste, and other possible associated production waste (ceramics, ferrous and non-ferrous metals, etc.).

Potential environmental impacts associated with the construction and operation of the Transmission lines (TL) under option 1:

Given the very short distance of proposed TL construction (1.2 km of 220 kV and 2.1 km of 110 kV lines), TL construction related environmental impacts are likely to be short-term and can be mitigated by applying internationally recognized best construction practices specified in the ESMP measures. Typically, such impacts are associated with the following aspects: (a) location, establishment, and operation of construction camp; (b) construction of transmission towers needed to support power lines; (c) construction of temporary access roadways to the tower sites required throughout the project.

The impacts associated with the TL can be summarized as follows:

- loss of vegetation, but only at the location of towers' construction sites);
- temporary loss of harvest of crops under OHL from substation;
- moderate to low fragmentation of habitat;
- low risk on fauna species on the location and nearby areas of TL towers;
- low increase in soil erosion;
- low and local exposure to dust during the construction process;
- low potential noise effects during TL construction;
- low level of local traffic disruption;
- low and local impact on existing water resources;
- low risk of exposure to unconfirmed health effects from electric and magnetic fields (after

TL commissioning); and

- low risks of exposure to occupational health and safety issues.

Potential impacts during the construction of access roads. Construction work will require the use of existing road network and/or building of new access roads to provide access to TL towers installation sites.

For the construction of these roads, it will be required to allocate areas of farmland (arable land, grazing land, etc.), which will be temporarily taken out of production. After the TL construction, they will be restored to the original condition (re-cultivated) or transferred to the local authorities based on an agreement with land users, without restoration to the original condition.

Potential impacts on flora and fauna. The Project may impact plant species, some of it may be listed in the Red List of the KR, endemic plants and precious varieties of trees and shrubs, including those featured in the IUCN Red List of Threatened Species, which may grow on the chosen areas for TL towers construction. To minimize the TL on these species the ESMP may propose before construction to relocate them to the similar habitats.

Potential Social Impacts. The land requirement for tower base and restriction imposed on land use in the RoW/SG corridor may need transformation of farmland, TL construction will affect local land users and may involve involuntary resettlement activities.

The social impact of the project is local and largely temporary. With the exception of sections planned for tower installations, land acquisition in these areas will be conducted on a regular basis, and all rights of persons, affected by the Project, will be respected in accordance to legal requirements of the KR and RPF prepared in accordance to requirements of ESS5. Within the framework of the Project, a resettlement program will be implemented; thereby a detailed RAP will be developed and implemented before start of actual site construction activities.

For the mitigation of socio-economic impact following measures will be taken: a) at the organizational stage before construction begins - payment of compensation to all persons, who will be resettled in connection with the project, before the land is occupied, the buildings have been moved or demolished, if any, or in case if the project activities damage lands or agricultural crops, in accordance with the developed and adopted RAP, compensation would be paid; b) during the construction phase – the project staff/contractors are assigned to clearly delineated area sections, ensuring adherence to the required standards of technical and ecological safety, and compliance with local codes of conduct and traditions.

Potential social and economic benefits. The benefits of the proposed transmission line relate more to the following: contribution to poverty reduction and improvement of the country's socio-economic conditions; increased capacity of the national transmission company, including creation of new jobs during the construction of TL on the Project territory and, accordingly, increased incomes of the population; improvement and expansion of the road system.

Potential impact during the TL operation. The TL impacts during the operation phase will be of low and moderate significance. In order to protect the population from the impact of the electric

field, created by TL, sanitation-protective zones are set along the route of the high-voltage line, beyond which the electric field intensity does not exceed 1 kV/m.

Mitigation measures.

Compliance with the environmental legislation of the Kyrgyz Republic will help reduce the impact of the project on the environment. In accordance with the Law “On Ecological Expertise”, the development of a national draft EIA and coordination with the Ministry of Natural Resources is required for the implementation of the facility. NEGK will be responsible for obtaining the relevant permits provided for by the legislation of the Kyrgyz Republic. Table 8 details to guide the site-specific measures.

6.3. Screening of Potential Negative Social Impacts

Project social risk is rated as high. The main social risks are: (i) land acquisition and involuntary resettlement required in due to (a) (re)construction of small and medium-scale HPPs; (b) construction of substation and overhead lines; (c) transition and implementation from manual control of the power system to automation of the work of dispatch control and emergency automation; (ii) economic and physical displacement, worker retrenchment, and need for restoration of economic activities, if any; (iii) labor management challenges, including working terms and conditions, OHS, and the establishment of safe and effective work camps; (iv) community health and safety issues; (v) impacts on livelihoods downstream, such as fishing, availability of irrigation water supply, impacts on lands cultivated on the river basin; (vi) social exclusion risk, the interests of vulnerable and disadvantage groups will need to be considered in the project design to ensure that they have equal access to project benefits and are not disproportionately negatively impacted by the project. However, these likely impacts will be addresses through many measures including avoidance, minimization in that order of priority to the extent possible. The resettlement issues shall be addressed by implementing provisions of progressive RPF that provides for compensation at replacement cost and other measures to restore livelihood etc.

6.3.1. Standing Crop

The erection of DTR/poles and subsequently stringing of electricity distribution networks may involve movement of men, machinery, and equipment across agricultural fields. This may cause damage to the standing crops in agriculture field.

Mitigation measures

Mitigation measures to reduce impact on loss of standing crop include:

- Constructions to be undertaken during the lean agricultural season after the harvest are over to the extent possible.
- Use of village roads and earth bunds between agricultural plots for movement of equipment and workers, wherever feasible.
- When damage to standing crops cannot be avoided due to the construction work, the farmer will be fully compensated for all damages as assessed by concerned authorities.

6.3.2. Land Use Pattern

The project proposes to construct new small and medium scale HPPs, which needs land plots. According to the initial screening, it is expected that the MoE will use the state or municipal lands for construction of HPPs. The MoE will consider feasible alternative project designs to avoid or minimize land acquisition or restrictions on land use, especially where this would result in physical or economic displacement, while balancing environmental, social, and financial costs and benefits, and paying particular attention to gender impacts and impacts on the poor and vulnerable.

When land acquisition or restrictions on land use (whether permanent or temporary) cannot be avoided, the Local Municipality will offer affected persons compensation at replacement cost, and other assistance as may be necessary to help them improve or at least restore their standards of living or livelihoods as per the ESS5. Compensation rates may be subject to upward adjustment where negotiation strategies are employed. In all cases, a clear basis for calculation of compensation will be documented, and compensation distributed in accordance with transparent procedures.

To ensure that the landowner receives due compensation for land losses or other damages sustained by him during the construction of HPPs under KRED, following mitigation measures will be undertaken:

- The payment of compensation for land loss and structure damages would be made transparent and before construction commencement.

6.3.3. Loss of Land

Land requirements for each HPP would be depending on technical considerations. Wherever possible, the project will try as much as possible to use state or municipal lands, to minimize private land procurement. When not feasible or in the absence of state land only private land may be procured for the project on willing buyer willing seller basis. After transfer/possession of land the HPP area shall be declared as prohibited zone.

Mitigation Measure

Measures to mitigate loss of land are as follows;

- Efforts may be made by MoE to utilize state or municipal land for constructions of HPPs to the extent possible;
- There will be complete restriction on use of private irrigated /cropped agricultural land;
- When procuring private land cannot be avoided, it will be done on the principles of willing buyer willing seller basis following the principle of voluntary land acquisition as prescribed in ESS-5 and or provisions of RPF;
- The affected persons will also be compensated for the loss of standing crop, if any

6.3.4. Impact of Labor Influx

Labor would be required for construction and rehabilitation of the small-scale HPPs. Unskilled labor would be required for civil work and would be preferably sourced from local areas. However, skilled labor in subspecialty required for construction and rehabilitation works supervision may include some migrant labors.

The basic issues related with migrant labor may include:

- Conflict amongst workers, and between workers and local community, based on cultural, religious or behavioral practices.
- Discontent amongst local community on engagement of outsiders.
- Mild outbreaks of certain infectious diseases due to interactions between the local and migrant populations. The most common of these are respiratory (TB), water borne (Stomach infections, typhoid) and sexually transmitted diseases (HIV, Syphilis and Hepatitis).
- Workers that are mobilized from other regions may become vectors for transmission of COVID-19 infection onto work sites. Close working and living conditions of workforce may also create conditions for the easy transmission of COVID-19 and the infection of large numbers of people.
- Use of community facilities such as health centers, mosque, transport facility etc. by migrant labor may lead to discontent with local community.
- In case contractors bring in unskilled migrant labor, there stands the risk of exploitation of a laborer. This can happen in the form of hiring underage laborers, low and unequal wage payments, forced labor and discrimination on basis of the basis of religion or ethnicity.

Mitigation Measure

Measures to mitigate impacts from labor influx and related issues are presented in Labor Management Procedure.

The prime measures to mitigate impacts from labor influx include:

- The workers would be advised for not to allow themselves to be influenced in the execution of their duties by any consideration other than the legitimate and reasonable interests of the respective labors to avoid conflict with local community.
- Expats or transient workers would be advised to adhere to national requirements and guidelines with respect to COVID-19.
- The workers would be advised to inform the project manager to get their health checked as soon as possible if he/she witnesses any symptom of communicable disease and start treatment as soon as possible to avoid transmission to others.
- Due to the labor influx or otherwise at the project site the Contractor must commit to take measures to mitigate the effects of the gender-based violence.
- Provide training to staff on the prevention of sexual exploitation, sexual abuse.
- Any worker who is subject to sexual harassment either by actions or words must immediately bring the matter to the attention of his supervisor/manager as well as project manager.
- No worker would discriminate against other workers on any basis including that of Religion, Language, Nationality, Ethnicity etc.
- Project workers will be trained prior to commencement of construction works, as well as contractors' workers will sign the Code of Conduct, which is a part of LMP prepared for this project.
- The Code of Conduct must be strictly complied with during the construction.

6.3.5. Impact on Common Property Resources

For access to subproject location, the contractor would use the existing road i.e. existing National/State highway or village road. During construction phase due to the movement of the construction related vehicle and machinery some of the roads especially village roads may get damaged. Additionally, some village roads may not be in a condition that it can be used for movement of construction vehicle. In such conditions, use of such roads would further lead to deterioration of the common property resources. Some culvert or any common utilities e.g. distribution poles may also get damage during the construction activities causing hardship to the community in general.

Mitigation Measures

Wherever required before using village road, minor improvement would be carried out by contractor which would also help in augmentation and strengthening of road network particularly in peri-urban and rural area leading to positive impact for local people. In case of damage to the road or culvert or any common utilities during the construction activities it would be the responsibility of the contractor to repair the same (to abide the procedure for restoration).

6.3.6. Traffic and Blockage of Access Way

The transportation of construction materials, machinery, equipment in some cases may interfere with movement of local transport or block the existing roads including village and districts road, state, and national highways. In some instances, temporary closure of the road line may be required to facilitate such activities. This disruption in movement would cause inconvenience to the local population as access would be interrupted temporarily.

Mitigation Measures

- During construction period near the village or settlement, adequate care/caution would be taken so as not to cause any hindrance to the movement of traffic and local people. Schedule of traffic movement shall be consulted with the municipality.
- Safety barricade with reflective stickers will be placed along the existing roads. Heavy machineries like excavator, truck etc. used for construction works will be operated inside barricaded area.
- Warning sign boards will be placed before and after the construction area for easy identification of construction activities by vehicle drivers. Further, reflective stickers will be placed at a comfortable distance before the barricading area to guide the drivers.
- Due permission from local municipality shall be obtained before undertaking such activity.

6.3.7. Women Work Participation and Decision Making

Participation of female workers in energy sector are considerably less.

Mitigation Measures

Adequate measures will be undertaken to safeguard gender issues in the project area in order to increase Women's participation in activities of the Energy sector. This would include programs

for skill upgradation to increase employment potential in the project activities. Further, women involvement will be ensured through formal and informal group consultations so that their participation is ensured during implementation of the project. If any female labor are employed at construction site, appropriate arrangements for their safety at the workplace and facilities like separate toilet, rest area would be made for them.

6.4. Positive Social Impacts

Overall, the project is expected to bring socio-economic benefits to the country and increase opportunities for further electrification of currently non-electrified areas, improving the quality of electricity supply, increasing voltage, and reducing outages. Project activities may have small land acquisition related implications. These are mostly small TSS with few land requirements. In addition, PMO will conduct a thorough review of the land, as well as its ownership, to identify the risk of impact on the social environment. Preference will be for the use of public land. If there is a need to use private land, they can be acquired in accordance with the requirements of ESS5 and national legislation. Social risks and issues of HPP construction, rehabilitation, modernization and expansion of the existing HPPs at appraisal stage are not known yet. Direct potential social impacts are limited, site-specific, largely reversible, and can be readily addressed through mitigation measures.

6.5. Environmental & Social Management Plan

The basic purpose of the ESMF is to design/formulate mitigative measures and plan for assessment and management protocol to address identified/potential environmental & social risk/impacts during implementation & operation stage.

The nature of impacts and scope of activities will be clarified once the subproject designs are finalized. ESIA will assess the risks and impacts, and provide recommendations on appropriate mitigation measures to be performed. Moreover, vulnerable and aggrieved groups have been identified through the SEP, and will be consulted, and their concerns and views considered in ESIA/ESMP, SEP, RPF and project design. The MoE will conduct meaningful and coordinated consultations with stakeholders under the project related to prepared instruments (ESIA, RPF, SEP).

The table 8 below presents potential environmental and social risks and impacts during the design, construction and operation stages for components 1 and 3 which also support construction (of small HPPs and Transmission infrastructure) and the recommended general measures to be included in the project to mitigate negative impacts to a minimum. Subsequently, for each subproject, ESIA must be conducted and corresponding ESMPs must be prepared, which will identify appropriate specific measures.

SUMMARY ENVIRONMENTAL & SOCIAL MANAGEMENT PLAN

Table 8. Impacts and general mitigation measures during design, construction, and operation stages

Sr. No.	Project activity/ stage	Potential Impact	Proposed mitigation Measures	Parameter to be monitored	Measurement and frequency	Institutional Responsibility	Implementation schedule
Preconstruction/design stage							
Component 1.							
1.	Pre-Construction \design	Soil erosion	Conduct necessary geological surveys of soils in riverbeds for stability should provide a comprehensive study of the engineering-geological conditions of the area (site, section, route) of the projected construction, including relief, geological structure, seismotectonic, geomorphological and hydrogeological conditions, composition, condition and properties of soils, geological and engineering-geological processes, and making a forecast of possible changes in engineering and geological conditions in the field of interaction of the designed objects with the geological environment in order to obtain the necessary and sufficient materials to justify the design preparation for construction,	Results of Engineering-geological surveys Rock/soil classification	One time	Design Consultant.	Engineering and geological surveys for the construction of buildings and structures of I and II levels of responsibility are carried out by Contracting legal entities and individuals who have received a license for their production in accordance with the established procedure by the bodies of architecture and urban planning by the executive authorities. The quality and completeness of the surveys are confirmed by the expertise and organizations of the Client's Consultants.

ESMF for Kyrgyz Renewable Energy Development Project (KRED)

Sr. No.	Project activity/ stage	Potential Impact	Proposed mitigation Measures	Parameter to be monitored	Measurement and frequency	Institutional Responsibility	Implementation schedule
			including engineering protection measures for the construction site and environmental protection.				
2.	Engineering and environmental, or certain types of work (blasting, drilling, sampling, etc.)	Pollution of soil and water resources	The collection and processing of survey materials should be carried out during the engineering and geological surveys for each stage (stage) of the development of pre-project and design documentation, taking into account the results of the collection at the previous stage. When conducting complex survey work, the program of engineering and geological surveys should be linked to programs of other types of surveys (in particular, engineering and environmental surveys) in order to avoid duplication of certain types of work (drilling, sampling, etc.). comply with the requirements of regulatory documents on labor protection, the conditions for compliance with fire safety and environmental protection	Conditions of survey contracts	One time, at the beginning of survey work	Design Consultant.	When conducting complex survey work, the program of engineering and geological surveys should be linked to programs of other types of surveys (in particular, engineering and environmental surveys) in order to avoid duplication of certain types of work (explosions, drilling, testing, etc.) comply with the requirements of regulatory documents on labor protection, conditions for compliance with fire safety and environmental protection

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Sr. No.	Project activity/ stage	Potential Impact	Proposed mitigation Measures	Parameter to be monitored	Measurement and frequency	Institutional Responsibility	Implementation schedule
3.		Loss of natural vegetation and threat to Biodiversity or wildlife at sites selected for HPP facilities.	<p>Areas with valuable/sensitive natural vegetation, wildlife resources will be excluded.</p> <p>For new HPP locations, undertake Biodiversity Assessment in case such areas are identified to prepare Biodiversity Management plan as part of the ESMP to be integrated with the Contract documents and/or Operations Manual.</p> <p>Protected areas (national parks, nature reserves, etc.) will be excluded when power transmission line routes can be changed.</p> <p>When considering all hydraulic structures of HPPs, the suitability of the proposed designs of fish passage devices for specific species living in the rivers where the construction of dams is planned should be assessed. Typically, the devices should be oriented to allow the passage of brook trout and marinka, which dominate all the rivers under consideration.</p>	<p>Flora and Fauna Management Plan</p> <p>Estimate of numbers of trees to be cut/removed</p> <p>Area of bushes removed; including species details</p>	<p>For managing threats to Biodiversity, one time design review to be undertaken by Ministry of Energy and clearance of Ministry of Environment to be obtained</p> <p>Adequacy of Contractors' plan confirmed by Supervision Consultant before commencement of works in such locations</p>	<p>Design Consultant.</p> <p>Contractor implements mitigation measures;</p> <p>The Construction Supervision Consultant regularly monitors the activities of the Contractor.</p>	
4.	Site selection for Construction/rehabilitation of small-scale HPP	Possible resettlement	<p>Preferences will be given to state or municipal land when planning new small-scale HPP construction.</p> <ul style="list-style-type: none"> - Avoid land acquisition or resettlement of local populations as much as possible; - Minimize the scale of 	<p>Extent of land acquisition</p> <p>Type of current activities on such land</p> <p>Confirm need for RAP</p>	One-time	Safeguards consultants or PMO safeguards team	Prior to construction commencement

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Sr. No.	Project activity/ stage	Potential Impact	Proposed mitigation Measures	Parameter to be monitored	Measurement and frequency	Institutional Responsibility	Implementation schedule
			resettlement impacts; - In case of impact, RAP preparation and implementation; - Properly inform the population of their rights to compensation in the event of land acquisition; - Effective engagement with local communities to minimize grievances from the public;				
5		Risks of disproportionate project impacts on disadvantaged or vulnerable groups due to specific conditions	Identified vulnerable and disadvantaged groups and guidelines for informing/involving them in project implementation.	Ensure that vulnerable groups have equal opportunities to participate in a (sub)project activities, access information and project benefits, and provide feedback or complaints. A (sub)project representatives will help to ensure comprehensive coverage of all population groups. In municipalities and territorial units under the Project, trainings and awareness-raising sessions will be performed to ensure wider participation of target population groups. All of the above stakeholder engagement techniques specifically targeted at vulnerable groups will be used.		PMO Representatives of municipalities	Prior to construction commencement

Component 3

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Sr. No.	Project activity/ stage	Potential Impact	Proposed mitigation Measures	Parameter to be monitored	Measurement and frequency	Institutional Responsibility	Implementation schedule
1.	Implementation of the Resettlement Action Plan (RAP)	<ul style="list-style-type: none"> - Negative impact on PAP assets, including income generating to livelihoods. - Disruption of normal life for PAP (loss of lands, incomes natural resources, etc.) - Temporary or permanent land alienation and exploitation. - Households' resettlement. - Grievances and conflicts with the local population. 	<ul style="list-style-type: none"> - Development and implementation of RAP. - During the organizational period (before the start of the construction works) – compensation payments to all PAP (proprietors and users of the objects affected by the Project). - Construction work on agricultural and household lands, whenever possible, must be planned to take place after harvest. - Informing the local communities about the mechanisms of grievances and appeals. - Implementation of "Persons affected by the project/ interested parties" management plan 	<p>Documented approval of the RAP implementation</p> <ul style="list-style-type: none"> • Compensation payments • Income level of PAP • Number of resettlement and compensation grievances. 	Before the construction start	PMO, MOE	The budget will be presented at the RAP
2.	Lease contracts and/or easement for construction of temporary construction camps and temporary	<ul style="list-style-type: none"> • Disruption of income generating activity • Loss of agriculture, tress, etc. equivalent to loss of income • Temporary loss of access to public and 	<ul style="list-style-type: none"> • Implementation of RAP • Compliance with the standards and legal requirements of the KR. • Consider alternative access roads to construction sites (if needed) • Implementation of "Land work" management plan. 	Lease documents for all land plots needed	Before the construction start	PMO, MOE	The budget will be presented at the RAP

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Sr. No.	Project activity/ stage	Potential Impact	Proposed mitigation Measures	Parameter to be monitored	Measurement and frequency	Institutional Responsibility	Implementation schedule
	access roads	business facilities.					
3.	Land transformation and purchase of land plots for the OTL ²⁷ towers construction	<ul style="list-style-type: none"> • Transfer of land plots needed for tower installations into lands of industry, transport, connection, protection and other purposes. 	<ul style="list-style-type: none"> • Compliance with the RAP requirements on the procedures of land transformation, land purchase from proprietors, and compensation payments to the state and PAP. • Implementation of "Persons affected by the project/ interested parties" management plan • Implementation of "Cultural heritage" management plan and compliance with HCH protection zones 	Purchase documents for all land plots needed	Before the construction start	PMO	The budget will be presented at the RAP
4.	Obtaining necessary licenses and permits	<ul style="list-style-type: none"> • Law violation / project disruption • License to cut down precious wood varieties (juniper) 	<ul style="list-style-type: none"> • Timely receipt of permits and licenses, presented in 3.2.1. «Required licenses, permits and agreements». • Implementation of management plan "Endangered species protection (the IUCN red list, endemic species)" • Implementation of management plan "Cultural Legacy" 	Availability of licenses and permits: <ul style="list-style-type: none"> • License to cut down precious wood varieties (juniper); • Water supply license (with use of groundwater resources). Receipt of technical conditions to connect to engineering technical	Before the construction start	Contractor	Included in the total budget of the project

²⁷ The mechanism of land transformation is presented in Section 3.1 (detailed information with support plans will be presented in the RAP)

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Sr. No.	Project activity/ stage	Potential Impact	Proposed mitigation Measures	Parameter to be monitored	Measurement and frequency	Institutional Responsibility	Implementation schedule
				water supply networks (water pipe).			
Construction Stage							
Component 1							
1.	Community safety	Threats to personnel and communities' health and safety;	Dams should provide water releases for the livelihoods of the local population and the conservation of ecosystems - types of traditional nature use of the population in the downstream. In some cases, such releases are necessary to maintain the normal state of floodplain lands and river deltas. The use of automated systems, operational information, models and forecasts, detailed technical manuals makes it possible to effectively manage the work of the reservoir.	An agreement on the terms of operation of dams should contain not only commercial terms, but also environmental and social obligations. During the implementation of all stages of dam projects, the safety of people must be guaranteed. All agreements governing the operation of the dam must be available and openly discussed by interested parties.	One-time	Design Consultant	Before approval of final design for bidding documents
2.		Emergency threats to personnel and communities near the construction sites	To have in place effective measures to address emergency events MoE needs to prepare Emergency preparedness plan. The generic coverage under these two components are as follows: Coverage 'On-Site Emergency Plan': The On-site emergency plan shall include the following: • Name, Designation & Contact Numbers of the organization, nearby hospitals, fire agencies	Emergency Preparedness Plan	One-time	Developed by the Contractor, cleared by the PMO E&S specialist	Prior to construction commencement

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			<p>etc. and key personnel including their assigned responsibilities in case of an emergency.</p> <ul style="list-style-type: none"> • The roles and responsibilities of executing personnel • Site Layout Diagram showing location of fire extinguishers, emergency collection area and fire alarm, assembly points. • Listing of Potential Emergencies Situations/ preventive measures / control & response measures • Location of Emergency Control Centre (or designated area for emergency control / coordination) with requisite facilities. • Medical services / first aid • List of emergency equipment including fire extinguishers, fire suits etc. • Mock drill provisions 				
3.		Any bias or discrimination against individuals or groups in terms of their access to the development related resources and benefits from the project, especially groups that	Appropriate social, environmental, labor standards, standards of interaction with stakeholders in the implementation of project activities will be developed and include clauses on non-discrimination based on age, religious, ethnic, gender, physical, etc. characteristics.	Thorough analysis of individuals and groups; Complying appropriate standards of interaction with stakeholders in the implementation of project activities;		PMO, Representatives of municipalities	Prior to construction commencement

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Sr. No.	Project activity/ stage	Potential Impact	Proposed mitigation Measures	Parameter to be monitored	Measurement and frequency	Institutional Responsibility	Implementation schedule
		may be disadvantaged or vulnerable.					
4.		Risks or impacts related to ownership and use of land and natural resources, including (if applicable) potential impacts of the project on local land use and tenure arrangements, access to and availability of land, food security and land values, as well as any relevant risks related to conflicts or disputes over land and natural resource rights.	Subprojects will be carefully assessed and designed to ensure that existing legal rights (including collective rights, related rights and women's rights) are protected from unintended negative project impacts or other unintended consequences.	The RPF will ensure clear and adequate rules for the recognition of relevant land tenure rights under the national laws; (b) establish fair criteria and effective, transparent and inclusive procedures for resolving land disputes and complaints; and (c) include procedures for informing/consulting the affected persons of their rights and for ensuring that they can obtain independent advice/assessment of property GRM	Monitoring of RAP implementation; GRM	PMO, Representatives of municipalities	Prior to construction commencement
5.	Earth works	Erosion and soil degradation.	<ul style="list-style-type: none"> • Areas from which filling material or extra stockpiled soil is taken will be landscaped to minimize erosion and hazards to people and livestock. • The construction camp will be located in a stable and even area. • Embankments and excavated slopes will not be left unattended for a long time. Appropriate slope stabilization measures will be taken in accordance with the design (e.g. gabions). • Movement of vehicles on unpaved roads will be avoided as far as possible. Operation of vehicles and 	<ul style="list-style-type: none"> - reduction of the land allotment area due to architectural and planning solutions; - reclamation of disturbed lands; - survival rate of strengthening, grassing and afforestation of slopes, banks of reservoirs; - efficacy of anti-erosion measures; anti-landslide 	Continuous to follow earthworks and related items	Contractor implements mitigation measures; The Construction Supervision Consultant regularly monitors the activities of the Contractor.	during construction work

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			<p>machinery near water channels, reservoirs will be minimized.</p> <ul style="list-style-type: none"> After completion of construction works, power transmission line routes, other construction sites will be completely cleared of debris. 	<p>and anti-mudflow measures; shore protection measures:</p>			
6.		Waste generation.	<ul style="list-style-type: none"> Vehicles and equipment will not be repaired in the field. If unavoidable, measures should be taken to avoid dirt and water contamination. Domestic wastewater from the construction camps will be collected in septic tanks and cesspools for further disposal in the municipal wastewater treatment plants. Waste oils will be collected and transferred to a licensed company for disposal. Inert recyclable waste from the facility (such as cardboard, coils, broken/used parts, etc.) will be transferred for recycling. Hazardous waste will be stored separately and treated depending on the nature of the waste. Solid domestic waste from the construction camp will be placed so that not to contaminate the soil. A solid waste management plan shall be drawn up by the contractor. <p>Only identified Debris/ Muck disposal sites to be used.</p>	<ul style="list-style-type: none"> separate waste collection by types and hazard classes; identification and operation of organization of waste accumulation/ storage/ disposal sites in line with ESMP; timely removal of waste, taking into account the hazard class and methods of disposal/storage/burial. 	Monthly	Contractor implements mitigation measures; The Construction Supervision Consultant regularly monitors the activities of the Contractor.	during construction work

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Sr. No.	Project activity/ stage	Potential Impact	Proposed mitigation Measures	Parameter to be monitored	Measurement and frequency	Institutional Responsibility	Implementation schedule
7.	Construction of buildings, installation of energy equipment,	Hazardous waste	Hazardous waste will be stored separately and handled according to the nature of the waste.	Quantity of generation of production and consumption of waste during the construction Quantity transferred to other organizations for further processing, as well as disposal at specialized waste disposal sites.	Quarterly	Contractor implements mitigation measures; The Construction Supervision Consultant regularly monitors the activities of the Contractor.	during construction work
8.		Specific waste from the electric power industry	This type of waste includes waste containing discarded electronic and other electrical devices, as well as their parts. Energy organizations that generate these types of waste are recommended to separate storage of waste, with subsequent transfer to the ownership of interested parties specializing in the extraction and reuse of the resulting non-ferrous metals, precious metals and other types of secondary material resources (plastic, glass, wood and rubber). Personnel maintaining facilities where hazardous waste is likely to be generated should be aware of: a) a list of such facilities; b) methods for determining harmful substances; c) the toxic effect of these substances and signs of	Checklist for confirming handling of PCB containing equipment to cover Waste segregation Isolated Storage Authorized transfer to processors	Semi-Annually	Contractor implements mitigation measures; The Construction Supervision Consultant regularly monitors the activities of the Contractor.	during construction work

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Sr. No.	Project activity/ stage	Potential Impact	Proposed mitigation Measures	Parameter to be monitored	Measurement and frequency	Institutional Responsibility	Implementation schedule
			<p>poisoning by them; d) methods of collection and safe storage of waste; Upon detection of equipment that may contain PCBs, personnel actions are required according to the protocol for handling PCBs.</p>				
9.	Earthworks, Traffic movement, blasting, transfer of light material	Deterioration of air quality	<ul style="list-style-type: none"> • To determine background air quality, an air quality analysis is conducted at the new site prior to the mobilization of the construction team. • Construction camps will be established at least 500 m away from the community. • Construction equipment, generators and vehicles shall be in good working order and properly configured to minimize exhaust emissions. • Fugitive dust emissions will be minimized by spraying water onto the soil where necessary. • Project vehicles should avoid driving through populated areas and cultivated fields as much as possible. • If unavoidable, speed should be reduced to 15 km per hour to avoid excessive dust emissions. • When laying power transmission lines in the populated areas, mandatory coordination with the population is required to minimize any 	<p>- Conduct an atmospheric air quality analysis close to sources/vulnerable receptors</p>	Quarterly	<p>Contractor implements mitigation measures; The Construction Supervision Consultant regularly monitors the activities of the Contractor.</p>	during construction work

Sr. No.	Project activity/ stage	Potential Impact	Proposed mitigation Measures	Parameter to be monitored	Measurement and frequency	Institutional Responsibility	Implementation schedule
			negative impacts. purification of fuel and raw materials from harmful impurities; - exclusion of dry methods of processing dusty materials, - sealing of production facilities and vehicles during the transportation of various products and materials,				
10.	Excavation, Discharge from camps,	Surface water and groundwater pollution	<ul style="list-style-type: none"> • Not to allow contamination of water resources by disposal of muck/debris in river course. Only identified Debris/ Muck disposal sites to be used. The Surface water: <ul style="list-style-type: none"> - sanitary cleaning of the reservoir bed, strengthening of its banks; - measures to reduce leakage of oil products; - clearing of reservoirs and systems of inter-basin and intra-basin runoff redistribution; - arrangement of water protection zones and coastal protective strips; - Ensuring accounting for water intake and wastewater discharge; - introduction of a reverse and repeated-successive water supply cycle; - use of the best available 	<ul style="list-style-type: none"> • As necessary, conduct quality analysis of the nearby groundwater at the construction sites. Conduct groundwater quality analysis (when working in river beds) prior to mobilizing construction teams to establish baseline water quality conditions. 	Semi-annually	Contractor implements mitigation measures; The Construction Supervision Consultant regularly monitors the activities of the Contractor.	during construction work

Sr. No.	Project activity/ stage	Potential Impact	Proposed mitigation Measures	Parameter to be monitored	Measurement and frequency	Institutional Responsibility	Implementation schedule
			wastewater treatment equipment waters; - improvement of sewerage and wastewater treatment systems; - prevention of emergency wastewater discharges; - use of equipment and pipelines resistant to corrosive and abrasive effects of aggressive liquid media; - arrangement of tanks and reservoirs with appropriate communications for the accumulation of emergency wastewater discharges; The groundwater: - efficient disposal of surface wastewater from the site; - artificial increase of planning marks of the territory; - arrangement of protective waterproofing and wall or reservoir drainage; - careful execution of works on the construction of water-bearing engineering networks; - erection of embankment dams from soils and materials with low filtration properties; - proper organization of waste accumulation; - creation of impervious screens				

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Sr. No.	Project activity/ stage	Potential Impact	Proposed mitigation Measures	Parameter to be monitored	Measurement and frequency	Institutional Responsibility	Implementation schedule
			and curtains; - grouting of inactive water wells, anomalous dips and funnels in water-resistant layers above aquifers. • Locate construction camps no closer than 500 m away from rivers and main canals				
11.	Site Preparation, Construction of facilities	Loss of natural vegetation and impacts on wildlife.	<ul style="list-style-type: none"> • Minimize removal of natural vegetation. Provide openings for unhindered passage by way of underpass, fish-ladder, etc as appropriate for terrestrial and aquatic habitat. • Do not use herbicides to destroy vegetation along the power transmission line route (or elsewhere in the project). • Develop a tree felling plan for each site / power transmission line route jointly with the municipality and coordinate with the appropriate government agencies in line with applicable law, where required: • Develop a tree planting plan together with the municipality. • The design of the site should include tree plantings. • Local tree species must be selected for planting; • No garbage shall be left in unauthorized place or in the open air. 	Conduct surveys to confirm implementation of agreed measures	Annually	Contractor implements mitigation measures pertaining to works related impacts; The Construction Supervision Consultant regularly monitors the activities of the Contractor.	during construction work

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Sr. No.	Project activity/ stage	Potential Impact	Proposed mitigation Measures	Parameter to be monitored	Measurement and frequency	Institutional Responsibility	Implementation schedule
			<ul style="list-style-type: none"> • Project staff is not permitted to engage in any hunting or animal trapping activities. - capture and resettlement of valuable animals from the flood zone of reservoirs; - removal from the zone and introduction in the adjacent territories of endemic, rare and listed in the Red Book plants; - organizational and technical measures to improve the conservation of forests (forest reclamation, fire prevention measures, etc.). 				
12.		Land acquisition and loss of assets	<ul style="list-style-type: none"> • New HPP equipment should preferably be installed on the state or municipal land. Otherwise, the land will be purchased from the owner on a "willing seller-buyer" basis. SIA/RAP will be prepared if there is any land acquisition and involuntary resettlement. If this is impossible, the land will be purchased at willing buyer and willing seller basis. • Appropriate compensation will be paid to the landowner for the land under the power transmission line pole or TSS to be constructed as part of the proposed project. 	<ul style="list-style-type: none"> • Number of PAP; • Number of land parcels acquired; • Size of lands acquired; • Number of PAPs compensated; • Number of grievances addressed etc. 	Monitoring social impacts, documentation systems and grievance mechanism.	PMO social specialist, Representatives of municipalities	During construction period

Sr. No.	Project activity/ stage	Potential Impact	Proposed mitigation Measures	Parameter to be monitored	Measurement and frequency	Institutional Responsibility	Implementation schedule
			<ul style="list-style-type: none"> • Compensation will be paid for the crops damaged during the construction activities. • Compensation will be paid to the landowner, and lack of land ownership will not be a barrier to compensation. • A complete record must be kept for the determination and payment of compensation. • The use of land under the power transmission line/ TSS shall be ensured. • Avoidance of operation of the construction equipment outside the right-of-way. • Use of the existing tracks/roads for access to poles and power transmission lines. • If new access roads are required, cultivated land should be avoided as much as possible. • Damage to crops shall be compensated for. • Ensuring timely payment of compensation and transfer of rights; • Compensation disbursement prior to starting construction in particular land; • Provisions of RAP (if applicable) are implemented. • If possible, the power transmission line will be routed along the existing road/slope. 				

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Sr. No.	Project activity/ stage	Potential Impact	Proposed mitigation Measures	Parameter to be monitored	Measurement and frequency	Institutional Responsibility	Implementation schedule
			<ul style="list-style-type: none"> Grievance mechanism for the community will be established. Other aspects of the RPF include the institutional and implementation framework, monitoring and documentation systems, and grievance mechanism. 				
13.		Negative economic and social impacts related to forced land acquisition or restricted access to natural resources.	<p>Potential subprojects will be assessed and designed to ensure PAPs or population will have no negative economic and social impacts from the project activities. Forced land acquisition or restricted access to natural resources will be avoided or minimized.</p> <p>The Environmental and Social Management Framework (ESS 1) and the Resettlement Policy Framework (ESS 5) have been developed to serve as "guidelines", to provide detailed information on the procedures, criteria and responsibilities for pre-screening of each subproject, preparation, implementation and monitoring the economic and social impacts.</p> <p>Extensive consultation with the PAPs</p>	Number of complaints received through GRM Resolution status	Regular monitoring and reporting on land impacts.	PMO, Representatives of municipalities	During construction period
14.		Risks or impacts related to ownership and use of land and natural resources,	Subprojects will be carefully assessed and designed to ensure that existing legal rights (including collective rights, related rights and women's	GRM	Regular monitoring and reporting on land and any other social impacts.	Representatives of municipalities PMO specialists	During construction period

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Sr. No.	Project activity/ stage	Potential Impact	Proposed mitigation Measures	Parameter to be monitored	Measurement and frequency	Institutional Responsibility	Implementation schedule
		including (if applicable) potential impacts of the project on local land use and tenure arrangements, access to and availability of land, food security and land values, as well as any relevant risks related to conflicts or disputes over land and natural resource rights.	rights) are protected from unintended negative impacts of the project or other unintended consequences. The RPF (RAP) will ensure clear and adequate rules for the recognition of relevant land tenure rights under national law; (b) establish fair criteria and effective, transparent and inclusive procedures for resolving land disputes and complaints; and (c) include procedures for informing/consulting affected persons of their rights and for ensuring that they can obtain independent advice / assessment of property				
15.		Impacts on the health, safety and welfare of workers and project-affected communities	Provision of PPE (special clothing, special footwear, head, face, hand, eye, respiratory and hearing protection) to employees of relevant professions and positions (according to the classifiers of occupations of workers, positions of employees and tariff categories), taking into account the characteristics and conditions of the work they perform, should be carried out by the employer in accordance with the collective agreement, but in no less nomenclature, volumes and terms of use, determined by	Number of incidents with severity Number of near-miss occurrences GRM monitored for any complaints from workers	Monthly / As per need in case of accidents	PMO, Contractor, Supervision Consultant	During construction work

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Sr. No.	Project activity/ stage	Potential Impact	Proposed mitigation Measures	Parameter to be monitored	Measurement and frequency	Institutional Responsibility	Implementation schedule
			<p>state rules and norms for providing employees with these PPE.</p> <p>For the movement of vehicles on the territory of the organization, traffic patterns must be developed and installed in prominent places. Regulated by the development and enforcement of Environmental Management Plans, as well as occupational health and safety plans (EMPs, OHS) which Contractors must develop; Timely notification to the public of the upcoming construction activities and schedules</p>				
16.		Tangible objects of cultural heritage might be unexpectedly discovered during the construction.	<p>All ESMPs of subprojects will have special provisions in all contracts for the construction works on "chance finds procedure", which will specify how chance finds related to the subproject will be handled.</p> <p>Tangible objects of cultural heritage will specify (a) not to move any chance finds until assessed by competent professionals and actions identified, (b) notify appropriate authorities of finds or sites by cultural heritage experts, (c) fence off the finds or site to avoid further disturbance, (d) have finds or sites</p>	<p>Reporting of finds on site Reporting to relevant local authorities GRM reports</p>	<p>Monitoring ESMP implementation in part of chance finds Reporting</p>	PMO site engineers, Contractors	During construction period

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Sr. No.	Project activity/ stage	Potential Impact	Proposed mitigation Measures	Parameter to be monitored	Measurement and frequency	Institutional Responsibility	Implementation schedule
			assessed by cultural heritage experts, (e) identify and implement actions consistent with ESS 8 on cultural heritage and the National procedures.				
17.		Risk of sexual exploitation/ abuse and harassment (SEA/SH) Forced child labor	Based on WB project experience, the risk assessed as significant, Labor Management Plan (LMP) will be developed, with due consideration of GRM, including SEA/SH. Risks of child labor will be regulated by the ESMP. The project will create an effective and robust grievance system to deal with all grievances, including SEA/SH including a code of conduct A separate dedicated privacy window will be created to manage SEA/SH complaints, if any.	Confirmation of implementation of Code of Conduct Conduct GRM reports	Monthly	Contractor implements mitigation measures; The Construction Supervision Consultant regularly monitors the activities of the Contractor	During construction period
18.		Damage to the irrigation network and municipal infrastructure	Operation of the construction equipment and project vehicles should be avoided near canals and watercourses. Any damage caused by the project activities should be fully removed. Minimize damage to the existing infrastructure. Drains and drainage channels for draining water from the floor surface of buried rooms (rooms for throttle valves, jet relays, pumping pumps) must be maintained in good order and ensure complete drainage of water. Manhole covers and edges of wells should be made flush with the floor of	Monitoring of condition during site inspection	Quarterly/Whenever complaint received	Contractor implements mitigation measures; The Construction Supervision Consultant regularly monitors the activities of the Contractor	

Sr. No.	Project activity/ stage	Potential Impact	Proposed mitigation Measures	Parameter to be monitored	Measurement and frequency	Institutional Responsibility	Implementation schedule
			<p>corrugated steel or other metal that prevents people from slipping. Crossings through ditches, ditches or trenches should be arranged, where necessary, safe passages with barriers for pedestrians. All damaged infrastructure should be restored to its original condition.</p>				
19.		Blocked access	<p>If the existing routes are blocked, alternative routes should be identified in consultation with the affected communities.</p> <p>The contractor will prepare and implement a management plan to minimize the impact on local routes. Territory, water areas, premises and workplaces at each hydroelectric power station, alternative and safe routes for traveling across the territory to the place of work / residence, or evacuation, operational plans for firefighting and evacuation of people in case of fire or emergency should be developed and brought to the attention of all personnel and the public.</p> <p>Traffic signs and markings must be installed on the transport routes of organizations. The boundaries of the carriageway of transport routes should be</p>	Visual inspection during site visit	Quarterly	Contractor implements mitigation measures; The Construction Supervision Consultant regularly monitors the activities of the Contractor	

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			<p>established taking into account the dimensions of vehicles with transported goods. The distance from the borders of the carriageway to the structural elements of buildings and equipment must be at least 0.5 m, and when people are moving, at least 0.8 m.</p> <p>Fences must be equipped with warning inscriptions, safety signs, as well as signal lighting that provides good visibility of the fence site at night from all sides of the possible passage of vehicles and pedestrians.</p> <p>In places of crossing ditches, ditches and trenches, transitional bridges with a width of at least 0.6 m with railings should be arranged.</p> <p>Passages for personnel in places with a slope of more than 20 degrees must be equipped with stairs with railings.</p>				
20.		Noise and vibration	<p>It is necessary to ensure an acceptable noise level near the project sites:</p> <ul style="list-style-type: none"> - (70 dB(A) - for industrial areas day and night; - 45 dB(A) at night and 55 dB(A) during the day for residential areas. <p>Blasting operations during construction (applies to Kamarata</p>	<p>Ambient Noise levels</p> <p>Speed limit of vehicles,</p> <p>Silence zones delineation at</p> <p>Traffic diversions near settlements at night.</p> <p>Spot surprise check for speed limits</p> <p>Working hours</p>	Quarterly or Whenever complaint is received	Contractor implements mitigation measures; The Construction Supervision Consultant regularly monitors the activities of the Contractor.	

Sr. No.	Project activity/ stage	Potential Impact	Proposed mitigation Measures	Parameter to be monitored	Measurement and frequency	Institutional Responsibility	Implementation schedule
			<p>and new HPPs), which cause short-term waves of vibration, must be carried out according to drilling and blasting projects and working drawings agreed with the territorial technical supervision body and organizations operating these facilities.</p> <p>All electrical, air and other communications located near the explosion sites, as well as operational facilities, must be protected from possible damage by the blast wave and other explosion products.</p> <p>Installation of the least noisy equipment;</p> <ul style="list-style-type: none"> - arrangement of casings, mufflers, screens; - installation of vibration-isolated foundations and shock absorbers under equipment to prevent vibration transmission to building structures; - use of noise silencers at the exhaust and suction of technological equipment, as well as noise suppression of ventilation installations; - application of anti-vibration coatings for air ducts; - selection of soundproof fences, ceilings, doors and windows; 				
21.		Occupational Health and Safety	The contractor will prepare and implement an occupation health and	Visual inspections Training logs	Daily for compliance Weekly for training	Contractor implements mitigation measures;	

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			<p>safety plan, in accordance with the WBG EHS Guidelines.</p> <p>The plan must contain the following sections:</p> <ul style="list-style-type: none"> • Objectives • Scope of work • Compliance with the relevant regulations • Hazard identification and risk assessment • Hazard inventory and risk matrix • OHS training and briefings, including use of Personal Protective Equipment (PPE) • Incident and accident reporting <p>The plan must contain the following information:</p> <ul style="list-style-type: none"> • Security fences at the construction site to avoid any unauthorized intrusions. • Observance of vehicle speeds near/inside the settlements. • Firefighting equipment and their proper application in case of need. • OHS training for personnel. • Precautions when transporting, handling and storing hazardous substances. • The use of warning signs. 			<p>The Construction Supervision Consultant regularly monitors the activities of the Contractor.</p>	
22.		Communities' health related issues	<p>Equipping construction camps with septic tanks and cesspits.</p> <p>Construction camps must:</p> <ul style="list-style-type: none"> - Be at least 500 m away from any groundwater wells in use; 	<p>Confirm distance from settlement</p> <p>Availability/access to medical facilities</p>	<p>Each time new construction camp is established</p> <p>Quarterly</p>	<p>Contractor implements mitigation measures;</p> <p>The Construction Supervision Consultant regularly monitors the</p>	

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Sr. No.	Project activity/ stage	Potential Impact	Proposed mitigation Measures	Parameter to be monitored	Measurement and frequency	Institutional Responsibility	Implementation schedule
			<ul style="list-style-type: none"> - Have appropriate containers for solid waste and a way to dispose of it; - Have first-aid kits. <p>The construction team must be aware of:</p> <ul style="list-style-type: none"> - Infectious diseases (such as HIV/AIDS, hepatitis B and C); - The requirements and regulations on gender-based violence and violence against children; - The availability of appropriate guidelines against the spread of COVID-19. - Creation of protective zones, zones of development restriction; - limiting the height of buildings and structures, stepped building; - electromagnetic shielding of buildings and water areas of high fishery importance. 			activities of the Contractor.	
23.		Influx of labor force	<p>Restrict rest and accommodation areas within the boundaries of the work sites (as much as possible);</p> <p>Use non-solid (non-timber) fuels for cooking and heating;</p> <p>Develop and comply with the Code of Conduct for Workers to ensure protection of the local community against gender-based violence and other social problems, protection of flora and fauna, including the prohibition of felling trees and hunting. Workers should understand</p>	<p>Number of local labor (male & female);</p> <p>Distance of labor camps;</p> <p>Number of training sessions on specific topics (infectious diseases HIV/AIDS, GBV etc);</p> <p>Number of cases on violation of Code of conduct;</p> <p>Others</p>	<p>Monitoring LMP implementation including Contractors' Code of Conducts</p> <p>Regular reporting GRM</p>	Contractors/PMO site engineers	During construction period

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			<p>that violations of the Code of Conduct may result in severe penalties, up to and including termination of employment;</p> <p>Communicate the minimum requirements for sanitation and hygiene to employees;</p> <p>Take measures to prevent and treat employees affected by infectious diseases;</p> <p>Conduct training, information campaigns among workers and the community on the prevention of the spread of infectious diseases HIV/AIDS;</p> <p>Taking action against an employee failing to comply with the basic rules of conduct that may threat safety and health of the community or the environment;</p> <p>Avoid the use of drugs and alcohol in the workplace/construction site;</p> <p>Install checkpoints, gates to the construction sites to secure equipment, machinery and materials, and to ensure safety of the site personnel.</p> <p>To avoid conflicts with local residents, the contractors are encouraged to employ local residents as much as possible without compromising the quality of the performed work.</p>				

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Sr. No.	Project activity/ stage	Potential Impact	Proposed mitigation Measures	Parameter to be monitored	Measurement and frequency	Institutional Responsibility	Implementation schedule
			The Contractor will manage the influx of labor force to avoid conflicts between local communities and workers, as follows: - Locate construction camps in designated areas at least 500 m away from settlements; - Conduct training on topics related to respectful interaction with the local communities; - Include in the Code of Conduct the application of penalties, up to and including termination of employment in case of violation.				
24.		Gender issues	The sites for the construction team should be 500 m from the nearest community, as was recommended earlier. The construction team should avoid entering villages and settlements. Communities will be informed and consulted before starting work in or near the populated areas.	The Code of Conduct must be strictly complied with during the construction. Provide training to staff on the prevention of sexual exploitation, sexual abuse.	Monitoring LMP implementation including Contractors' Code of Conducts Regular reporting GRM	Contractors/PMO site engineers and social specialist	During construction period
25.		Child labor	Child and forced labor should not be used in the subproject.	The Contractor must commit itself against the use of child and forced labor, take measures to mitigate the effects of the gender-based violence.	Monitoring LMP implementation including Contractors' Code of Conducts Regular reporting GRM	Contractors/PMO site engineers and social specialist	During construction period

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Sr. No.	Project activity/ stage	Potential Impact	Proposed mitigation Measures	Parameter to be monitored	Measurement and frequency	Institutional Responsibility	Implementation schedule
26.		Impacts on the historical, cultural, archaeological heritage	The Contractor shall develop "chance find" procedures in case of discovery of any cultural and historical heritage sites. Work shall be suspended if any monuments or artifacts of historical, cultural or archaeological significance are discovered. Notify the appropriate authorities to make further decisions to resume work. The existing cemeteries shall not be damaged. Work in the vicinity of cemeteries must be performed after informing/consulting with the relevant communities.	Sites for new construction should be selected at a distance from any known historic or cultural building or site.	Monitoring of ESMP implementation; Reporting	Contractors/PMO site engineers and environmental specialist	During construction period
Component 3:							
Mobilization period							
1.	Preparation and installation of construction camps	<ul style="list-style-type: none"> Air pollution. Noise. Soil pollution. Fires. Safety of the workforce and population. Local community's grievances 	<ul style="list-style-type: none"> Project duration planning (total and seasonal) in accordance with harvesting (for agricultural lands) and periods of farm production. Construction sites must be located on prepared land plots with topsoil removed Temporary storage and placement of vegetation must not limit local population movement or block existing roads. Eliminate the possibility of 	Implemented MP. Report on every construction camp	<ul style="list-style-type: none"> Before the construction start. Instructions are performed throughout the Project duration. 	Contractor	Included in the total budget of the project

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			<p>unexpected fire ignition and environmental pollution.</p> <ul style="list-style-type: none"> • Prohibit workers from campfires and burning vegetation or waste. • Ensure environmental protection and safety measures. • Mandatory education, training, and control of all workers. Fencing of dangerous sectors. • Use only required quantity of equipment to reduce air pollution and noise impact. • Spread awareness among workers about prohibition of animal culling and hunting within the project, destruction of bird nests, etc. within the Project. Inform all interested parties about availability of grievances review mechanisms. 				
2.	Construction of new temporary roads and reconstruction of existing roads (if necessary) along the	<ul style="list-style-type: none"> • Removal of topsoil • Impact on flora and fauna • Local activation of erosion processes 	<ul style="list-style-type: none"> • Approval of locations for temporary and permanent access roads by LSG • Work schedule must be approved by local authorities to comply with noise standards when working with equipment and machinery 	<ul style="list-style-type: none"> • Implemented MP. • Report on every construction camp 	<ul style="list-style-type: none"> • Before the construction start; • Instructions are performed throughout the Project duration. 	Contractor	Included in the total budget of the project

Sr. No.	Project activity/ stage	Potential Impact	Proposed mitigation Measures	Parameter to be monitored	Measurement and frequency	Institutional Responsibility	Implementation schedule
	OTL route (exits; river crossings, channels, access to storage facilities)	<ul style="list-style-type: none"> • Landslides and mudslides • Noise. • Air pollution. • Surface water and soil pollution from POL spill • Local population grievances 	<ul style="list-style-type: none"> • Removal, storage and preservation of topsoil to be used in recultivation after the Project is finished. • Avoid storing on sensitive for flora and fauna sectors, near protection zones of water and HCH objects. • Use only technically serviceable transport, use exhaust pipes, avoid using idle engine unnecessarily. • Special slope protection measures must be implemented on erosion slopes, zones susceptible to landslides and mudslides. • Implement dust suppressing measures through a range of methods to prevent air pollution, which is caused by land work and transport movement (to reduce the impact on plants and workers) • Prohibit washing of cars and machinery beyond specially allocated facilities • Refueling of POL must be done in specially allocated facilities (with pallets) to preserve the environment. 				

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Sr. No.	Project activity/ stage	Potential Impact	Proposed mitigation Measures	Parameter to be monitored	Measurement and frequency	Institutional Responsibility	Implementation schedule
			<ul style="list-style-type: none"> • Immediately remove contaminated soil if POL is spilled. • Avoid driving on a territory without roads to prevent damaging topsoil; • Ensure environmental protection and safety measures, mandatory; education, training, and control of all workers. Fencing of dangerous sectors; • Eliminate/minimize construction work during animal mating seasons; • Use only required quantity of equipment to reduce air pollution and noise impact on fauna; Inform all interested parties about availability of grievances review mechanisms. 				
Construction Period							
1.	Community safety	Emergency threats to personnel and communities near the construction sites	<p>To have in place effective measures to address emergency events</p> <ul style="list-style-type: none"> • MoE needs to prepare Emergency preparedness plan. The generic coverage under these two components are as follows: • Coverage 'On-Site 	Emergency Preparedness Plan	One-time	Developed by the Contractor, cleared by the PMO E&S specialist	Prior to construction commencement

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			<p>Emergency Plan': The On-site emergency plan shall include the following:</p> <ul style="list-style-type: none"> • <input type="checkbox"/> Name, Designation & Contact Numbers of the organization, nearby hospitals, fire agencies etc. and key personnel including their assigned responsibilities in case of an emergency. • <input type="checkbox"/> The roles and responsibilities of executing personnel • <input type="checkbox"/> Camp site Layout Diagram showing location of fire extinguishers, emergency collection area and fire alarm, assembly points. • <input type="checkbox"/> Listing of Potential Emergencies Situations/ preventive measures / control & response measures • <input type="checkbox"/> Location of Emergency Control Centre (or designated area for emergency control / coordination) with requisite facilities. • <input type="checkbox"/> Medical services / first aid • <input type="checkbox"/> List of emergency equipment including fire extinguishers, fire suits etc. 				

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			<ul style="list-style-type: none"> <input type="checkbox"/> Mock drill provisions 				
2.	Preparation of foundation pits for towers	<ul style="list-style-type: none"> Air pollution. Noise and vibrations. Disturbance of local population Danger for local population and livestock. 	<ul style="list-style-type: none"> The schedule of planned works must be approved with LSG to comply with noise standards when using machinery and equipment. LSG must be informed about locations of foundation pits for the OTL towers. Complying with Code of conduct and labor protection of workers, and ensuring safety of local population. Use only required quantity of equipment will allow to reduce air pollution and noise impact The population and fauna. Use only technically serviceable transport, use exhaust pipes and avoid unnecessary idle engine work. Mandatory compliance with the border of a construction site. Prevention of POL spills by prohibiting use of faulty or unregulated equipment. Implement dust-suppressing measures through a range of methods to prevent air pollution, which is caused 	Implemented MP. Report on every construction camp	During construction works and when moving to a new construction site	Contractor	Included in the total budget

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Sr. No.	Project activity/ stage	Potential Impact	Proposed mitigation Measures	Parameter to be monitored	Measurement and frequency	Institutional Responsibility	Implementation schedule
			<p>by land work and transport movement.</p> <ul style="list-style-type: none"> • Refueling of POL must be done in specially allocated facilities (with pallets) to preserve the environment. • Immediately remove contaminated soil if POL is spilled. • Noise generating equipment must only be used during daytime. • Fencing of a construction site zone (foundation pits), installation of public information boards, lightning at nighttime. 				
3.	OTL tower foundations installation	<ul style="list-style-type: none"> • Air pollution. • Noise • Disturbance of local population 	<ul style="list-style-type: none"> • The schedule of planned works must be approved with LSG to comply with noise standards when using machinery and equipment • Complying with Code of conduct and labor protection of workers, and ensuring safety of local population. • Use only required quantity of equipment would allow reducing air pollution and noise impact on the population and fauna. • Use only technically serviceable transport, equipment and machinery. 	Implemented MP. Report on every construction camp	During construction works and when moving to a new construction site	Contractor	Included in the total budget of the Project

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Sr. No.	Project activity/ stage	Potential Impact	Proposed mitigation Measures	Parameter to be monitored	Measurement and frequency	Institutional Responsibility	Implementation schedule
			<ul style="list-style-type: none"> Implement dust-suppressing measures through a range of methods to prevent air pollution, which is caused by land work and transport movement. Fencing of a construction site zone (foundation pits), installation of public information boards, lightning at nighttime. 				
4.	Construction and installation of towers	<ul style="list-style-type: none"> Air pollution Soil pollution from POL spills. Impact on birds health and safety 	<ul style="list-style-type: none"> Complying with Code of conduct and labor protection of workers, and ensuring safety of local population. Rational land use in stockpiling of structures during the construction Mandatory compliance with the border of a construction site. Installation of bird protection devices Immediately remove contaminated soil if POL is spilled. Fencing of dangerous zones at a construction site and/or installing information boards Include BPD to eliminate death of birds from electric shock on contact with wires, tower components and other parts of electric structures 	<ul style="list-style-type: none"> Implemented MP. Report on every construction camp 	During construction works and when moving to a new construction site	Contractor	Included in the total budget of the Project

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			<p>(in low-lying parts of rivers and reservoirs crossing)</p> <ul style="list-style-type: none"> • Ensure environmental protection and compliance with safety regulations. • Mandatory education, training, and control of all workers. Obtaining access permit (if necessary). 				
5.	Suspention and installation of wires and cables	<ul style="list-style-type: none"> • Soil pollution from POL spills • Safety and health 	<ul style="list-style-type: none"> • Complying with Code of conduct and labor protection of workers, and ensuring safety of local population. • All construction and installation work on the OTL objects must be done in strict compliance with the project, developed specifically for this particular TL. Operations must be conducted based on national standards and documents, with mandatory compliance with safety regulations for construction of OTL and and implementation of electric installation operations. • Installation of anti-climbing devices after completion of final suspention and/or installation of informational boards. • Fencing of dangerous zones at a construction site and/or installing information boards 	Implemented MP. Report on every construction camp	During work on a new construction site	Contractor	Included in the total budget of the Project

Sr. No.	Project activity/ stage	Potential Impact	Proposed mitigation Measures	Parameter to be monitored	Measurement and frequency	Institutional Responsibility	Implementation schedule
			<ul style="list-style-type: none"> • In places, where roads and the TL cross, road signs must be installed, prohibiting stopping of cars in SR. • Ensure environmental protection and compliance with safety regulations. • Mandatory education, training, and control of all workers. Obtaining access permit (if necessary). • Immediately remove contaminated soil if POL is spilled 				
	<p>Connection , measurement in chain and in SR zone and control of adherence to sanitary and environmental standards according to the legislature of the KR for linear objects.</p>	<ul style="list-style-type: none"> • Electric magnetic impact • Air pollution from the equipment. • Acoustic noise from wires. • Impact on health and safety of the workers and local population • Soil pollution from POL spills 	<ul style="list-style-type: none"> • Complying with Code of conduct and labor protection of workers, and ensuring safety of local population. • Ensure environmental protection and safety measures. • Mandatory education, training, and control of all workers. Obtaining access permit (if necessary). • Informing and approving the schedule of planned works with local population and LSG. • Monitoring of factual electric magnetic fields intensity, building of the 	<p>Implemented MP. Report on every construction camp</p>	<p>During work on a new construction site</p>	<p>Contractor</p>	<p>Included in the total budget of the Project</p>

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			<p>fields map for planning and control of duration time for service personnel at this type of objects.</p> <ul style="list-style-type: none"> • Electric field intensity beyond the SR must be below 1kV/m. • Limit time workers spend in zones with various magnetic field intensity, the total duration must not exceed maximum permissible for the zone with the highest intensity. • At areas of the TL passing, it is recommended for personnel to wear shielding clothing for protection, if needed using stationary or portable protective shields. • Ensure environmental protection and compliance with safety regulations. • Mandatory education, training, and control of all workers. Obtaining access permit (if necessary). 				

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			<ul style="list-style-type: none"> Reducing potential acoustic noise from the OTL operation, in particular when choosing the phase structure and the distance between phases, considering the maximum noise level must not exceed acceptable standards. Electric network enterprise must raise awareness among the population of safety measures in operation or being around TL. Machinery and equipment on pneumatic mode must be grounded when used for work in SR, a metal chain, connected to the frame or bodywork, can be used as a ground wire Use only technically serviceable transport, use exhaust pipes and avoid unnecessary idle engine work. Immediately remove contaminated soil if POL is spilled. 				
5.	Earth works	Erosion and soil degradation.	• Areas from which filling material or extra stockpiled soil is taken will be	- reduction of the land allotment area due to	Continuous to follow earthworks and related items	Contractor implements mitigation measures;	during construction work

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			landscaped to minimize erosion and hazards to people and livestock. <ul style="list-style-type: none"> • The construction camp will be located in a stable and even area. • Movement of vehicles on unpaved roads will be avoided as far as possible. Operation of vehicles and machinery near water channels, reservoirs will be minimized. • After completion of construction works, power transmission line routes, other construction sites will be completely cleared of debris. 	architectural and planning solutions; <ul style="list-style-type: none"> - reclamation of disturbed lands; - survival rate of strengthening, grassing and afforestation of slopes, banks of reservoirs; - efficacy of anti-erosion measures; anti-landslide and anti-mudflow measures; shore protection measures: 		The Construction Supervision Consultant regularly monitors the activities of the Contractor.	
6.		Waste generation.	<ul style="list-style-type: none"> • Vehicles and equipment will not be repaired in the field. If unavoidable, measures should be taken to avoid dirt and water contamination. • Domestic wastewater from the construction camps will be collected in septic tanks and cesspools for further disposal in the municipal wastewater treatment plants. • Waste oils will be collected and transferred to a licensed company for disposal. • Inert recyclable waste from the facility (such as cardboard, coils, broken/used parts, etc.) will be transferred for recycling. Hazardous waste will be stored separately and 	<ul style="list-style-type: none"> - separate waste collection by types and hazard classes; - identification and operation of organization of waste accumulation/ storage/ disposal sites in line with ESMP; - timely removal of waste, taking into account the hazard class and methods of disposal/storage/burial. 	Monthly	Contractor implements mitigation measures; The Construction Supervision Consultant regularly monitors the activities of the Contractor.	during construction work

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			treated depending on the nature of the waste. • Solid domestic waste from the construction camp will be placed so that not to contaminate the soil. A solid waste management plan shall be drawn up by the contractor. Only identified Debris/ Muck disposal sites to be used.				
7.	Installation of energy equipment,	Hazardous waste	Hazardous waste will be stored separately and handled according to the nature of the waste.	Quantity of generation of production and consumption of waste during the construction Quantity transferred to other organizations for further processing, as well as disposal at specialized waste disposal sites.	Quarterly	Contractor implements mitigation measures; The Construction Supervision Consultant regularly monitors the activities of the Contractor.	during construction work
8.		Specific waste from the electric power industry	This type of waste includes waste containing discarded electronic and other electrical devices, as well as their parts. Energy organizations that generate these types of waste are recommended to separate storage of waste, with subsequent transfer to the ownership of interested parties specializing in the extraction and reuse of the resulting non-ferrous metals, precious metals and other types of secondary material resources (plastic, glass, wood and rubber).	Checklist for confirming handling of PCB containing equipment to cover Waste segregation Isolated Storage Authorized transfer to processors	Semi-Annually	Contractor implements mitigation measures; The Construction Supervision Consultant regularly monitors the activities of the Contractor.	during construction work

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			<p>Personnel maintaining facilities where hazardous waste is likely to be generated should be aware of:</p> <ul style="list-style-type: none"> a) a list of such facilities; b) methods for determining harmful substances; c) the toxic effect of these substances and signs of poisoning by them; d) methods of collection and safe storage of waste; <p>Upon detection of equipment that may contain PCBs, personnel actions are required according to the protocol for handling PCBs.</p>				
13.		<p>Negative economic and social impacts related to forced land acquisition or restricted access to natural resources.</p>	<p>Potential subprojects will be assessed and designed to ensure PAPs or population will have no negative economic and social impacts from the project activities. Forced land acquisition or restricted access to natural resources will be avoided or minimized.</p> <p>The Environmental and Social Management Framework (ESS 1) and the Resettlement Policy Framework (ESS 5) have been developed to serve as "guidelines", to provide detailed information on the procedures, criteria and responsibilities for</p>	<p>Number of complaints received through GRM Resolution status</p>	<p>Regular monitoring and reporting on land impacts.</p>	<p>PMO, Representatives of municipalities</p>	<p>During construction period</p>

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Sr. No.	Project activity/ stage	Potential Impact	Proposed mitigation Measures	Parameter to be monitored	Measurement and frequency	Institutional Responsibility	Implementation schedule
			pre-screening of each subproject, preparation, implementation and monitoring the economic and social impacts. Extensive consultation with the PAPs				
14.		Risks or impacts related to ownership and use of land and natural resources, including (if applicable) potential impacts of the project on local land use and tenure arrangements, access to and availability of land, food security and land values, as well as any relevant risks related to conflicts or disputes over land and natural resource rights.	Subprojects will be carefully assessed and designed to ensure that existing legal rights (including collective rights, related rights and women's rights) are protected from unintended negative impacts of the project or other unintended consequences. The RPF (RAP) will ensure clear and adequate rules for the recognition of relevant land tenure rights under national law; (b) establish fair criteria and effective, transparent and inclusive procedures for resolving land disputes and complaints; and (c) include procedures for informing/consulting affected persons of their rights and for ensuring that they can obtain independent advice / assessment of property	GRM	Regular monitoring and reporting on land and any other social impacts.	Representatives of municipalities PMO specialists	During construction period
15.		Impacts on the health, safety and welfare of workers and project-affected communities	Provision of PPE (special clothing, special footwear, head, face, hand, eye, respiratory and hearing protection) to employees of relevant professions and	Number of incidents with severity Number of near-miss occurrences GRM monitored for any	Monthly / As per need in case of accidents	PMO, Contractor, Supervision Consultant	During construction work

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			<p>positions (according to the classifiers of occupations of workers, positions of employees and tariff categories), taking into account the characteristics and conditions of the work they perform, should be carried out by the employer in accordance with the collective agreement, but in no less nomenclature, volumes and terms of use, determined by state rules and norms for providing employees with these PPE.</p> <p>For the movement of vehicles on the territory of the organization, traffic patterns must be developed and installed in prominent places.</p> <p>Regulated by the development and enforcement of Environmental Management Plans, as well as occupational health and safety plans (EMPs, OHS) which Contractors must develop;</p> <p>Timely notification to the public of the upcoming construction activities and schedules</p>	complaints from workers			
16.		Tangible objects of cultural heritage might be unexpectedly	All ESMPs of subprojects will have special provisions in all contracts for the construction works on "chance finds procedure", which will specify	Reporting of finds on site Reporting to relevant local authorities GRM reports	Monitoring ESMP implementation in part of chance finds Reporting	PMO site engineers, Contractors	During construction period

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		discovered during the construction.	how chance finds related to the subproject will be handled. Tangible objects of cultural heritage will specify (a) not to move any chance finds until assessed by competent professionals and actions identified, (b) notify appropriate authorities of finds or sites by cultural heritage experts, (c) fence off the finds or site to avoid further disturbance, (d) have finds or sites assessed by cultural heritage experts, (e) identify and implement actions consistent with ESS 8 on cultural heritage and the National procedures.				
17.		Risk of sexual exploitation/ abuse and harassment (SEA/SH) Forced child labor	Based on WB project experience, the risk assessed as significant, Labor Management Plan (LMP) will be developed, with due consideration of GRM, including SEA/SH. Risks of child labor will be regulated by the ESMP. The project will create an effective and robust grievance system to deal with all grievances, including SEA/SH including a code of conduct A separate dedicated privacy window will be created to manage SEA/SH complaints, if any.	Confirmation of implementation of Code of Conduct GRM reports	Monthly	Contractor implements mitigation measures; The Construction Supervision Consultant regularly monitors the activities of the Contractor	During construction period
18.		Damage to the irrigation network and municipal infrastructure	Operation of the construction equipment and project vehicles should be avoided near canals and watercourses.	Monitoring of condition during site inspection	Quarterly/Whenever complaint received	Contractor implements mitigation measures; The Construction Supervision Consultant regularly monitors the	

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Sr. No.	Project activity/ stage	Potential Impact	Proposed mitigation Measures	Parameter to be monitored	Measurement and frequency	Institutional Responsibility	Implementation schedule
			<p>Any damage caused by the project activities should be fully removed. Minimize damage to the existing infrastructure.</p> <p>Drains and drainage channels for draining water from the floor surface of buried rooms (rooms for throttle valves, jet relays, pumping pumps) must be maintained in good order and ensure complete drainage of water. Manhole covers and edges of wells should be made flush with the floor of corrugated steel or other metal that prevents people from slipping. Crossings through ditches, ditches or trenches should be arranged, where necessary, safe passages with barriers for pedestrians. All damaged infrastructure should be restored to its original condition.</p>			activities of the Contractor	
19.		Blocked access	<p>If the existing routes are blocked, alternative routes should be identified in consultation with the affected communities.</p> <p>The contractor will prepare and implement a management plan to minimize the impact on local routes. Territory, water areas, premises and workplaces at substation, alternative and safe routes for traveling across the territory to the place of work / residence, or evacuation,</p>	Visual inspection during site visit	Quarterly	Contractor implements mitigation measures; The Construction Supervision Consultant regularly monitors the activities of the Contractor	

Sr. No.	Project activity/ stage	Potential Impact	Proposed mitigation Measures	Parameter to be monitored	Measurement and frequency	Institutional Responsibility	Implementation schedule
			<p>operational plans for firefighting and evacuation of people in case of fire or emergency should be developed and brought to the attention of all personnel and the public.</p> <p>Traffic signs and markings must be installed on the transport routes of organizations. The boundaries of the carriageway of transport routes should be established taking into account the dimensions of vehicles with transported goods. The distance from the borders of the carriageway to the structural elements of buildings and equipment must be at least 0.5 m, and when people are moving, at least 0.8 m.</p> <p>Fences must be equipped with warning inscriptions, safety signs, as well as signal lighting that provides good visibility of the fence site at night from all sides of the possible passage of vehicles and pedestrians.</p> <p>In places of crossing ditches, ditches and trenches, transitional bridges with a width of at least 0.6 m with railings should be arranged.</p> <p>Passages for personnel in places</p>				

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Sr. No.	Project activity/ stage	Potential Impact	Proposed mitigation Measures	Parameter to be monitored	Measurement and frequency	Institutional Responsibility	Implementation schedule
			with a slope of more than 20 degrees must be equipped with stairs with railings.				
20.		Noise and vibration	<p>It is necessary to ensure an acceptable noise level near the project sites:</p> <ul style="list-style-type: none"> - (70 dB(A) - for industrial areas day and night; - 45 dB(A) at night and 55 dB(A) during the day for residential areas. <p>Installation of the least noisy equipment;</p> <ul style="list-style-type: none"> - arrangement of casings, mufflers, screens; - installation of vibration-isolated foundations and shock absorbers under equipment to prevent vibration transmission to building structures; - use of noise silencers at the exhaust and suction of technological equipment, as well as noise suppression of ventilation installations; - application of anti-vibration coatings for air ducts; - selection of soundproof fences, ceilings, doors and windows; 	<p>Ambient Noise levels</p> <p>Speed limit of vehicles,</p> <p>Silence zones delineation at</p> <p>Traffic diversions near settlements at night.</p> <p>Spot surprise check for speed limits</p> <p>Working hours</p>	Quarterly or Whenever complaint is received	Contractor implements mitigation measures; The Construction Supervision Consultant regularly monitors the activities of the Contractor.	
21.		Occupational Health and Safety	<p>The contractor will prepare and implement an occupational health and safety plan, in accordance with the WBG EHS Guidelines.</p> <p>The plan must contain the following sections:</p> <ul style="list-style-type: none"> • Objectives 	<p>Visual inspections</p> <p>Training logs</p>	<p>Daily for compliance</p> <p>Weekly for training</p>	Contractor implements mitigation measures; The Construction Supervision Consultant regularly monitors the activities of the Contractor.	

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Sr. No.	Project activity/ stage	Potential Impact	Proposed mitigation Measures	Parameter to be monitored	Measurement and frequency	Institutional Responsibility	Implementation schedule
			<ul style="list-style-type: none"> • Scope of work • Compliance with the relevant regulations • Hazard identification and risk assessment • Hazard inventory and risk matrix • OHS training and briefings, including use of Personal Protective Equipment (PPE) • Incident and accident reporting <p>The plan must contain the following information:</p> <ul style="list-style-type: none"> • Security fences at the construction site to avoid any unauthorized intrusions. • Observance of vehicle speeds near/inside the settlements. • Firefighting equipment and their proper application in case of need. • OHS training for personnel. • Precautions when transporting, handling and storing hazardous substances. • The use of warning signs. 				
22.		Communities' health related issues	<p>Equipping construction camps with septic tanks and cesspits.</p> <p>Construction camps must:</p> <ul style="list-style-type: none"> - Be at least 500 m away from any groundwater wells in use; - Have appropriate containers for solid waste and a way to dispose of it; - Have first-aid kits. <p>The construction team must be aware of:</p>	<p>Confirm distance from settlement</p> <p>Availability/access to medical facilities</p>	<p>Each time new construction camp is established</p> <p>Quarterly</p>	<p>Contractor implements mitigation measures;</p> <p>The Construction Supervision Consultant regularly monitors the activities of the Contractor.</p>	

ESMF for Kyrgyz Renewable Energy Development Project (KRED)

Sr. No.	Project activity/ stage	Potential Impact	Proposed mitigation Measures	Parameter to be monitored	Measurement and frequency	Institutional Responsibility	Implementation schedule
			<ul style="list-style-type: none"> - Infectious diseases (such as HIV/AIDS, hepatitis B and C); - The requirements and regulations on gender-based violence and violence against children; - The availability of appropriate guidelines against the spread of COVID-19. - Creation of protective zones, zones of development restriction; - limiting the height of buildings and structures, stepped building; - electromagnetic shielding of buildings and water areas of high fishery importance. 				
23.		Influx of labor force	<p>Restrict rest and accommodation areas within the boundaries of the work sites (as much as possible);</p> <p>Use non-solid (non-timber) fuels for cooking and heating;</p> <p>Develop and comply with the Code of Conduct for Workers to ensure protection of the local community against gender-based violence and other social problems, protection of flora and fauna, including the prohibition of felling trees and hunting. Workers should understand that violations of the Code of Conduct may result in severe penalties, up to and including termination of employment;</p>	<p>Number of local labor (male & female);</p> <p>Distance of labor camps;</p> <p>Number of training sessions on specific topics (infectious diseases HIV/AIDS, GBV etc);</p> <p>Number of cases on violation of Code of conduct;</p> <p>Others</p>	<p>Monitoring LMP implementation including Contractors' Code of Conducts</p> <p>Regular reporting</p> <p>GRM</p>	Contractors/PMO site engineers	During construction period

ESMF for Kyrgyz Renewable Energy Development Project (KRED)

Sr. No.	Project activity/ stage	Potential Impact	Proposed mitigation Measures	Parameter to be monitored	Measurement and frequency	Institutional Responsibility	Implementation schedule
			<p>Communicate the minimum requirements for sanitation and hygiene to employees;</p> <p>Take measures to prevent and treat employees affected by infectious diseases;</p> <p>Conduct training, information campaigns among workers and the community on the prevention of the spread of infectious diseases HIV/AIDS;</p> <p>Taking action against an employee failing to comply with the basic rules of conduct that may threat safety and health of the community or the environment;</p> <p>Avoid the use of drugs and alcohol in the workplace/construction site;</p> <p>Install checkpoints, gates to the construction sites to secure equipment, machinery and materials, and to ensure safety of the site personnel.</p> <p>To avoid conflicts with local residents, the contractors are encouraged to employ local residents as much as possible without compromising the quality of the performed work.</p> <p>The Contractor will manage the influx of labor force to avoid conflicts between local communities and workers, as follows:</p>				

ESMF for Kyrgyz Renewable Energy Development Project (KRED)

Sr. No.	Project activity/ stage	Potential Impact	Proposed mitigation Measures	Parameter to be monitored	Measurement and frequency	Institutional Responsibility	Implementation schedule
			<ul style="list-style-type: none"> - Locate construction camps in designated areas at least 500 m away from settlements; - Conduct training on topics related to respectful interaction with the local communities; - Include in the Code of Conduct the application of penalties, up to and including termination of employment in case of violation. 				
24.		Gender issues	<p>The sites for the construction team should be 500 m from the nearest community, as was recommended earlier.</p> <p>The construction team should avoid entering villages and settlements. Communities will be informed and consulted before starting work in or near the populated areas.</p>	<p>The Code of Conduct must be strictly complied with during the construction.</p> <p>Provide training to staff on the prevention of sexual exploitation, sexual abuse.</p>	<p>Monitoring LMP implementation including Contractors' Code of Conducts Regular reporting GRM</p>	Contractors/PMO site engineers and social specialist	During construction period
25.		Child labor	Child and forced labor should not be used in the subproject.	The Contractor must commit itself against the use of child and forced labor, take measures to mitigate the effects of the gender-based violence.	Monitoring LMP implementation including Contractors' Code of Conducts Regular reporting GRM	Contractors/PMO site engineers and social specialist	During construction period
26.		Impacts on the historical, cultural, archaeological heritage	The Contractor shall develop "chance find" procedures in case of discovery of any cultural and historical heritage sites. Work shall be suspended if any monuments or artifacts of historical,	Sites for new construction should be selected at a distance from any known historic or cultural building or site.	Monitoring of ESMP implementation; Reporting	Contractors/PMO site engineers and environmental specialist	During construction period

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Sr. No.	Project activity/ stage	Potential Impact	Proposed mitigation Measures	Parameter to be monitored	Measurement and frequency	Institutional Responsibility	Implementation schedule
			<p>cultural or archaeological significance are discovered.</p> <p>Notify the appropriate authorities to make further decisions to resume work.</p> <p>The existing cemeteries shall not be damaged. Work in the vicinity of cemeteries must be performed after informing/consulting with the relevant communities.</p>				
Operation stage							
Component 1: SHPPs							
1.	Operation	Ecological function of the river	<p>Ensuring transparency, responsibility and public participation in the development of projects affecting water and energy resources;</p> <p>Preliminary participation in the discussion and approval of projects by potentially interested groups of the population;</p> <p>Protecting the rights of people whose interests may be affected during the implementation of the project, and developing measures to eliminate social injustice;</p> <p>Maintain adequate hydraulic regime downstream of the dam including e-flow in line with assessment undertaken as part of the ESIA.</p>	<p>Confirm economic use of reservoir</p> <p>Regular flow measurements downstream of HPP</p>	Weekly	Chakan; Ministry of Energy	

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Sr. No.	Project activity/ stage	Potential Impact	Proposed mitigation Measures	Parameter to be monitored	Measurement and frequency	Institutional Responsibility	Implementation schedule
2.	Operation and Maintenance	Soil and water contamination	<p>Power plants must have proper solid waste collection and disposal procedures.</p> <p>Power plants must have an appropriate wastewater collection system (septic tank, cesspools). The wastewater collection system may be connected to the municipal sewage system. Or send these to the municipal system</p> <p>Waste oils and chemicals must be disposed of in accordance with their safety data sheet.</p> <p>Non-toxic recyclable waste (e.g. cardboard) may be reused or given to waste paper offices.</p> <p>Toxic waste must be stored separately and disposed of in accordance with the draft waste standards agreed upon with the relevant state authorities.</p> <p>Power supply stations should have special containers for collection of used transformer oils with their further transfer for recycling or neutralization.</p> <p>Soil contaminated by fuel/chemical spills will be removed and disposed of properly in accordance with the liquid waste generation rules.</p>	<p>Availability of local wastewater treatment systems.</p> <p>Integrity of storage areas and containers</p>	Quarterly	Local Municipality; JSCs EPP or Chakan	
3.	Operation and Maintenance	Safety and health of employees	The employer is obliged to create safe working conditions for the employees: - develop internal regulatory documentation, conduct briefings and	<p>Availability of PPE</p> <p>First Aid / medical facility</p> <p>Training logs</p>	<p>Daily for compliance</p> <p>Weekly for training</p> <p>Quarterly for signage and</p>	JSCs NEGK; EPP or Chakan	

Sr. No.	Project activity/ stage	Potential Impact	Proposed mitigation Measures	Parameter to be monitored	Measurement and frequency	Institutional Responsibility	Implementation schedule
			<p>knowledge tests in accordance with legal requirements, inform employees about all circumstances, which the safety of the workplace depends on.</p> <ul style="list-style-type: none"> - use equipment and designs that meet the requirements of standards and other regulatory documentation; - comply with the terms of periodic repairs and maintenance of equipment; - comply with the fire and electrical safety requirements when equipping the production and office facilities; - install necessary protective devices and structures; - provide sufficient lighting, ventilation, maintain an optimum temperature regime in the workplace; - remove dust and waste in a timely manner; - provide workers with protective clothing and footwear, as well as other personal protective equipment in accordance with the specifics of production; - provide employees with up-to-date instructions on occupational safety and visual materials; - create at the workplaces and production facilities all the necessary alarm systems, ensure placement of safety signs, etc. <p>Information boards about the risk of electrocution and how to avoid</p>		<p>information</p>		

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Sr. No.	Project activity/ stage	Potential Impact	Proposed mitigation Measures	Parameter to be monitored	Measurement and frequency	Institutional Responsibility	Implementation schedule
			<p>accidents shall be placed in the populated areas near grid stations and power transmission lines.</p> <p>Perform tree trimming under the power transmission lines.</p>				
4.	Operation and Maintenance	Public health	<p>Warehouses for the storage of hazardous substances at HPPs must also comply with the requirements of the sanitary rules for the design, equipment and maintenance of warehouses for the storage of highly toxic substances.</p> <p>Proper disposal of solid waste and wastewater.</p> <p>Timely decontamination of the transformer oils in case of leakage.</p> <p>Adherence to the SPZ regime, prevention of exposure to EMI caused by high voltage power transmission lines.</p> <p>Compliance with the relevant regulations, requirements and guidelines to prevent the spread of viral infections, including COVID-19.</p>	<p>Number of incidents</p> <p>Proper arrangements for disposal</p>	When complaints are received	JSC NEGK; HPP or Chakan	
5.	Major repairs	Loss of agricultural farming	<p>No agricultural farming must be damaged during the construction and repair works.</p> <p>Any damage during the repair and maintenance must be compensated.</p>	<p>Number of PAPs compensated for loss of agricultural farming;</p> <p>Number of lands with loss of agricultural products etc;</p>	Whenever major repairs are required	JSC NEGK; EPP or Chakan	

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Sr. No.	Project activity/ stage	Potential Impact	Proposed mitigation Measures	Parameter to be monitored	Measurement and frequency	Institutional Responsibility	Implementation schedule
6.	Operation and Maintenance	Noise exposure	<p>Use of the properly operating equipment.</p> <p>Noise measurements to determine levels and ensure that they are within acceptable limits. If excessive Proper disposal of solid waste and wastewater.</p> <p>Timely decontamination of the transformer oils in case of leakage.</p> <p>Adherence to the SPZ regime, prevention of exposure to EMF caused by high voltage power transmission lines.</p> <p>Compliance with the relevant regulations, requirements and guidelines to prevent the spread of viral infections, including COVID-19. levels are found, appropriate measures, such as replacing faulty equipment and/or installing a noise barrier, shall be taken.</p>	<p>Periodic monitoring of noise levels and EMF levels</p> <p>Availability of testing facility and Test results for COVID19, when symptoms are noted on personnel</p>	Quarterly or whenever complaints are received	JSC NEGK; EPP or Chakan	
7.	Operation and Maintenance	Persistent organic pollutants, PCBs from repair or rehabilitation of substations	<p>Transformers purchased under the project will not contain PCBs.</p> <p>Measures to prevent soil contamination in the event of an oil leak (e.g. use of sealed pans, oil collection tanks, concreting of the site for transformers). If detected, it is necessary to timely neutralize transformer oils containing PCBs.</p> <p>Utilization of transformer oil</p>	<p>Quantity of transformer oil</p> <p>Test results of analysis undertaken for PCB presence</p> <p>Visual inspection of information/signage availability</p>	<p>As and when testing undertaken</p> <p>Quarterly for signage</p>	JSC NEGK; EPP or Chakan	

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Sr. No.	Project activity/ stage	Potential Impact	Proposed mitigation Measures	Parameter to be monitored	Measurement and frequency	Institutional Responsibility	Implementation schedule
			<p>with PCBs is carried out by a specialized organization with experience.</p> <p>Chemicals and materials containing flammable, explosive and toxic components should be stored in special warehouses that comply with design solutions and are isolated from other premises.</p> <p>Toxic materials and liquids should be stored in special warehouses outside production facilities and in storerooms equipped with forced ventilation and fire extinguishing equipment, in normatively established quantities. Safety signs should be posted on the doors of these warehouses warning of the presence of toxic substances and prohibiting their use. A table with the storage standards for these materials should be posted on the inside of the door of the storage units</p>				
8.	Operation and Maintenance	Gender issues	<p>Employment opportunities for women will be created.</p> <p>Provision of separate sanitary facilities and places of rest for women and prevention of harassment.</p>	Provide training to staff on the prevention of harassment.	Whenever complaint is received through GRM	JSC NEGK; EPP or Chakan	

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Sr. No.	Project activity/ stage	Potential Impact	Proposed mitigation Measures	Parameter to be monitored	Measurement and frequency	Institutional Responsibility	Implementation schedule
Component 3							
1.	Operation and Maintenance	Soil and water contamination	<p>Waste oils and chemicals must be disposed of in accordance with their safety data sheet.</p> <p>Non-toxic recyclable waste (e.g. cardboard) may be reused or given to waste paper offices.</p> <p>Toxic waste must be stored separately and disposed of in accordance with the draft waste standards agreed upon with the relevant state authorities.</p> <p>Substations should have special containers for collection of used transformer oils with their further transfer for recycling or neutralization.</p> <p>Soil contaminated by fuel/chemical spills will be removed and disposed of properly in accordance with the liquid waste generation rules.</p>	<p>Availability of local wastewater treatment systems.</p> <p>Integrity of storage areas and containers</p>	Quarterly	JSCs NEGK	
2.	The OTL operation	<ul style="list-style-type: none"> • Electric magnetic impact on biosphere • Health of service personnel. • Environmental impact (landslides, mudslide, 	<ul style="list-style-type: none"> • In a timely manner conduct an informational campaign on safety rules around the operational TL for the local population and LSG • Mandatory anti-climbing devices on towers • Numerical, warning and phase signs must be attached to every tower 	<ul style="list-style-type: none"> • Compliance with establish limits of EMF. • Evaluation of compliance with standards of operational procedures and requirements <p>Data on birds collision and electrocution</p>	After the completion of construction work / annually	MoE/NEGK	Included in the total budget of the Project

Sr. No.	Project activity/ stage	Potential Impact	Proposed mitigation Measures	Parameter to be monitored	Measurement and frequency	Institutional Responsibility	Implementation schedule
		avalanche, etc.) <ul style="list-style-type: none"> • Acoustic noise from wires • Helath and safety • Disruption of local population 	<ul style="list-style-type: none"> • Workers must be informed on accountability and responsibility, as well as emergency actions • Establish action and instructions plan for EHVEN employees in accordance with JSC NEGK documents. • Monitoring of factual electric magnetic fields intensity, building of the fields map for planning and control of duration time for service personnel at this type of objects. • Electric field intensity beyond the SR must be below 0.5 kV/m • Limit time workers spend in zones with various magnetic field intensity, the total duration must not exceed maximum permissible for the zone with the highest intensity • At areas of the TL passing, it is recommended for personnel to wear shielding clothing for protection, if needed 				

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Sr. No.	Project activity/ stage	Potential Impact	Proposed mitigation Measures	Parameter to be monitored	Measurement and frequency	Institutional Responsibility	Implementation schedule
			<p>using stationary or portable protective shields.</p> <ul style="list-style-type: none"> • Ensure environmental protection and compliance with safety regulations. • Mandatory education, training, and control of all workers. Obtaining access permit (if necessary). • Include BPD to eliminate death of birds from electric shock on contact with wires, tower components and other parts of electric structures (if bird deaths occur at certain sectors). • To reduce acoustic and electric magnetic impact on the environment, outer-diameter can be increased (if needed). <p>Explanation and implementation of grievances review mechanisms</p>				
3.	Operation and Maintenance	Safety and health of employees	The employer is obliged to create safe working conditions for the employees: - develop internal regulatory documentation, conduct briefings and knowledge tests in accordance with legal requirements, inform employees	Availability of PPE First Aid / medical facility Training logs	Daily for compliance Weekly for training Quarterly for signage and information	JSCs NEGK;	

ESMF for Kyrgyz Renewable Energy Development Project (KRED)

Sr. No.	Project activity/ stage	Potential Impact	Proposed mitigation Measures	Parameter to be monitored	Measurement and frequency	Institutional Responsibility	Implementation schedule
			<p>about all circumstances, which the safety of the workplace depends on.</p> <ul style="list-style-type: none"> - use equipment and designs that meet the requirements of standards and other regulatory documentation; - comply with the terms of periodic repairs and maintenance of equipment; - comply with the fire and electrical safety requirements when equipping the production and office facilities; - install necessary protective devices and structures; - provide sufficient lighting, ventilation, maintain an optimum temperature regime in the workplace; - remove dust and waste in a timely manner; - provide workers with protective clothing and footwear, as well as other personal protective equipment in accordance with the specifics of production; - provide employees with up-to-date instructions on occupational safety and visual materials; - create at the workplaces and production facilities all the necessary alarm systems, ensure placement of safety signs, etc. <p>Information boards about the risk of electrocution and how to avoid accidents shall be placed in the</p>				

ESMF for Kyrgyz Renewable Energy Development Project (KRED)

Sr. No.	Project activity/ stage	Potential Impact	Proposed mitigation Measures	Parameter to be monitored	Measurement and frequency	Institutional Responsibility	Implementation schedule
			populated areas near grid stations and power transmission lines. Perform tree trimming under the power transmission lines.				
4.	Operation and Maintenance	Public health	Warehouses for the storage of hazardous substances at substations must also comply with the requirements of the sanitary rules for the design, equipment and maintenance of warehouses for the storage of highly toxic substances. Proper disposal of solid waste and wastewater. Timely decontamination of the transformer oils in case of leakage. Adherence to the SPZ regime, prevention of exposure to EMI caused by high voltage power transmission lines. Compliance with the relevant regulations, requirements and guidelines to prevent the spread of viral infections, including COVID-19.	Number of incidents Proper arrangements for disposal	When complaints are received	JSC NEGK;	
5.	Major repairs	Loss of agricultural farming	Agricultural fields must be damaged during the repair works. Any damage during the repair and maintenance must be compensated.	Number of PAPs compensated for loss of agricultural farming; Number of lands with loss of agricultural products etc;	Whenever major repairs are required	JSC NEGK;	

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Sr. No.	Project activity/ stage	Potential Impact	Proposed mitigation Measures	Parameter to be monitored	Measurement and frequency	Institutional Responsibility	Implementation schedule
6.	Operation and Maintenance	Noise exposure	<p>Use of the properly operating equipment.</p> <p>Noise measurements to determine levels and ensure that they are within acceptable limits. If excessive Proper disposal of solid waste and wastewater.</p> <p>Timely decontamination of the transformer oils in case of leakage.</p> <p>Adherence to the SPZ regime, prevention of exposure to EMF caused by high voltage power transmission lines.</p> <p>Compliance with the relevant regulations, requirements and guidelines to prevent the spread of viral infections, including COVID-19. levels are found, appropriate measures, such as replacing faulty equipment and/or installing a noise barrier, shall be taken.</p>	<p>Periodic monitoring of noise levels and EMF levels</p> <p>Availability of testing facility and Test results for COVID19, when symptoms are noted on personnel</p>	<p>Quarterly or whenever complaints are received</p>	JSC NEGK;	
7.	Operation and Maintenance	Persistent organic pollutants, PCBs from repair or rehabilitation of substations	<p>Transformers purchased under the project will not contain PCBs.</p> <p>Measures to prevent soil contamination in the event of an oil leak (e.g. use of sealed pans, oil collection tanks, concreting of the site for transformers). If detected, it is necessary to timely neutralize transformer oils containing PCBs.</p> <p>Utilization of transformer oil</p>	<p>Quantity of transformer oil</p> <p>Test results of analysis undertaken for PCB presence</p> <p>Visual inspection of information/signage availability</p>	<p>As and when testing undertaken</p> <p>Quarterly for signage</p>	JSC NEGK;	

ESMF for Kyrgyz Renewable Energy Development Project (KRED)

Sr. No.	Project activity/ stage	Potential Impact	Proposed mitigation Measures	Parameter to be monitored	Measurement and frequency	Institutional Responsibility	Implementation schedule
			<p>with PCBs is carried out by a specialized organization with experience.</p> <p>Chemicals and materials containing flammable, explosive and toxic components should be stored in special warehouses that comply with design solutions and are isolated from other premises.</p> <p>Toxic materials and liquids should be stored in special warehouses outside production facilities and in storerooms equipped with forced ventilation and fire extinguishing equipment, in normatively established quantities. Safety signs should be posted on the doors of these warehouses warning of the presence of toxic substances and prohibiting their use. A table with the storage standards for these materials should be posted on the inside of the door of the storage units</p>				
8.	Operation and Maintenance	Gender issues	<p>Employment opportunities for women will be created.</p> <p>Provision of separate sanitary facilities and places of rest for women and prevention of harassment.</p>	Provide training to staff on the prevention of harassment.	Whenever complaint is received through GRM	JSC NEGK;	

The foregoing issues would need to be contextualized for each site, and ESIA for each small HPP sub-project would need to be prepared to ensure that the potential environmental and social risks are assessed. It will also help to confirm that specific measures from the above-mentioned candidate measures are specified with adequate details (timing, intensity, etc.) in the ESMP prepared following such assessment. Annex 8 provides guidance on the contents of ToR document.

For the largest HPP, Kambar-Ata 1, elaborate terms of reference will be prepared under Component 2 covering the above issues, and implementation of comprehensive ESIA would be supported as part of KRED project in ToR in Annex 9. If needed, comprehensive biodiversity assessment will be undertaken for the influence area of that HPP ensure that impacts on the riverine and terrestrial ecology are properly managed in line with ESF requirements.

6.6. Guidance for managing E&S Risks and Impacts of TA under Components 1, 2, and 3.

The environmental and social risks and impacts from TA activities need to be managed as is required by ESS1. The outputs of TA sub-components would be reviewed to confirm that ESF requirements are integrated appropriately with each deliverable. Given the nature of the technical assistance activities – which is focused on detailed studies for the electricity sector (Designs for HPPs, Transmission infrastructure, E&S studies etc.) – risks and impacts could arise from desk-based as well as field-based work, in addition to the use of the outputs of the TA. In addition, for the process of implementation of the TA activities, following aspects will be accounted for: Occupational Health and Safety of workers to be engaged in the TA activities; potential of harm to biophysical environment during field surveys and analysis; and chance find of important cultural heritage.

The risks of Occupational Health and Safety could emerge from fieldwork especially as new construction related surveys will be supported. These could include injury or exposure to harmful material during the activities. These should be managed by briefing the relevant staff regarding the likely field conditions and providing initial familiarization with processes to be followed for the surveys, including handling heavy equipment, potentially polluting chemicals, and use of PPE as well as evacuation protocols during accidental emergencies. Protection measures from pandemic like situations would also need to be integrated into the work plan. Terms of Reference for individual studies would incorporate these measures that will confirm compliance with requirements of ESS1,2,3.

Additional risks and impacts related to safety of personnel and community may also materialize in case non-local staff are required for the assignment in substantial numbers. The personnel assigned to these tasks should be briefed on requirements of the ESSs. This should necessarily cover the measures to counter SEA/SH incidents. Each assignment's Terms of Reference will require the selected contractor to sign the Code of Conduct on SEA/SH to ensure compliance with ESS4 requirements.

Field work poses additional risks of harm to local flora and fauna during the transportation and use of heavy equipment as well as potential hunting/removal by personnel. While these are likely to be sporadic and small scale, procedures for handling such chance encounters of such wildlife help ensure effective management of any adverse impacts. This is particularly important for baseline surveys to be undertaken for various TA studies and ToRs will reflect the measures site teams would need to follow to confirm that ESS6 stipulations are met.

Artefacts that could constitute may be encountered in case of soil/sub-soil testing and need to be handled appropriately. Terms of Reference for field investigations would need to provide guidance for handling such 'chance finds' in line with applicable legislation and ESS8 requirements.

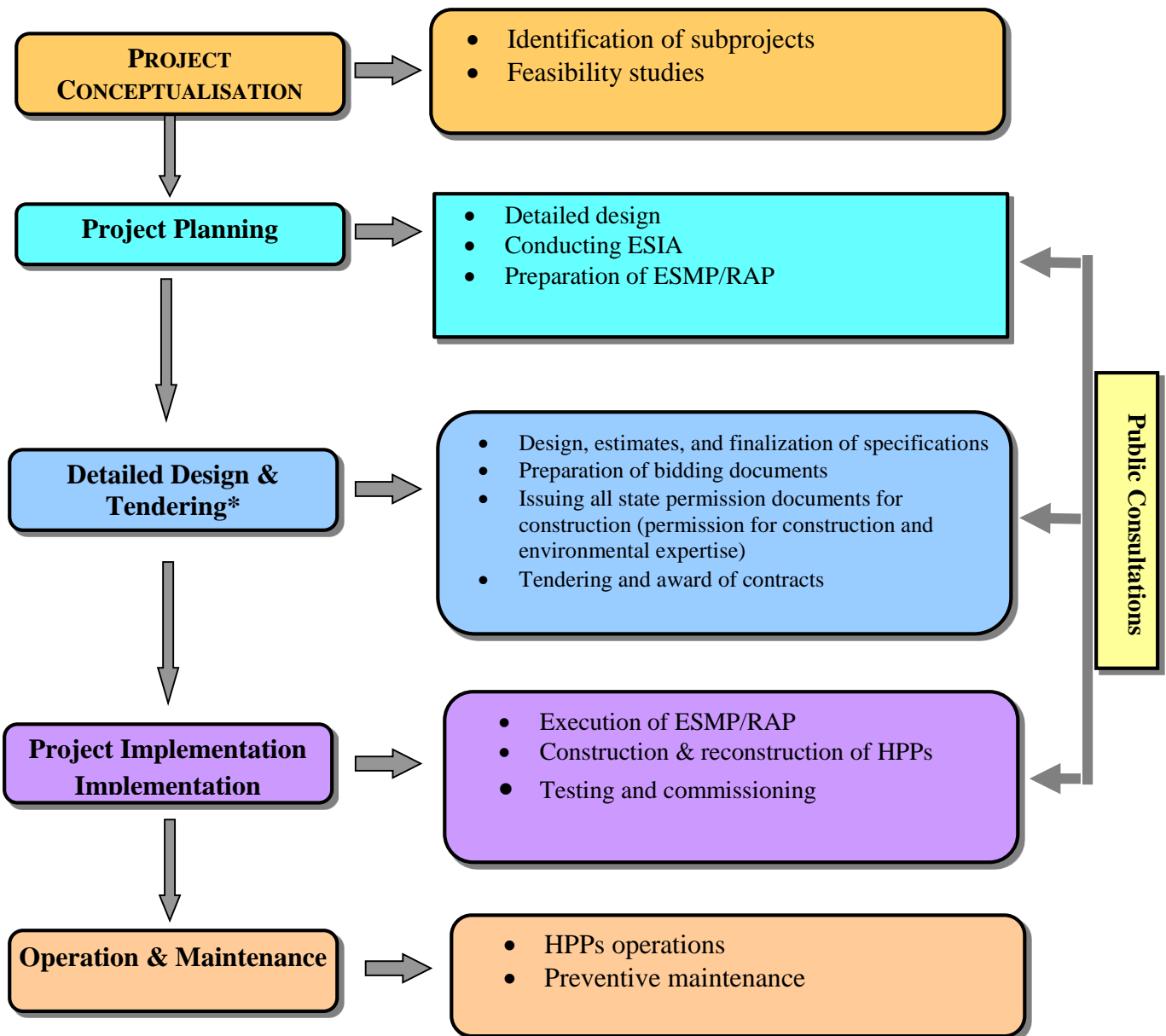
7.0. INSTITUTIONAL ARRANGEMENT

The process of integration of E&S safeguard throughout project cycle and organizational structure for E&S safeguards implementation under KRED project including the mechanism for monitoring, supervision and reporting of the E&S safeguards implementation is described in the subsequent sections.

7.1. Project Cycle and E&S Safeguards

The stages of the KRED project cycle for construction and rehabilitation of small-scale HPPs and updating ToR for feasibility study of Kamarata-1 HPP along with other sub-components of proposed project include:

Figure 12. Project cycle



7.1.1 Project Conceptualization

The proposed KRED will support the country's objective of increasing the availability of renewable energy, diversifying the electricity mix with the development of new technologies, and promoting the participation of the private sector in a transparent manner. The multi-phase approach helps to meet first the urgent needs in hydro rehabilitation and new hydro projects; develop the nascent solar generation; and then to scale-up new generation capacity in hydro and solar. The proposed project will help the Government achieve its goals for renewable energy generation including 100 MW of small-medium hydropower by 2026 and competitive procurement of solar and wind of 700 MW by 2030.

The proposed KRED program is structured as a simultaneous MPA, allowing overlapping phases, i.e. subsequent phases are not dependent on completion of previous phases.

The 1st phase will prioritize and finance out of IDA resource new construction of 1-2 small and medium scale hydro (up to 30MW) and/or rehabilitation of obsolete facilities (up to 50 MW), to be selected from the long list of hydro sites proposed by Chakan in coordination with Ministry of Energy. This phase will also advance the technical, environmental and social impact studies for one large hydro plant project (Kambarata 1), aligning them with the latest standards to enable co-financing by multilaterals financial institutions. Forthcoming GCF grant and concessional loan will also finance grid strengthening to enable RE integration. In addition, this phase will provide technical support to develop options to facilitate access to commercial financing and to strengthen the institutional capacity and financing to prepare the power system for the integration of variable renewables. This phase will help increase energy generation in the short term, while preparing for larger public and private investments in the mid-term to long term. This phase will also focus on regulatory and sector policy reforms needed for the sector to improve its credit worthiness to be able to attract commercial financing and ensure that conditions and enabling environment to attract the private investment are in place.

Following identification of subproject, a Feasibility study would be carried out. The feasibility study, besides analyzing the technical/engineering and financial and economic aspects would essentially include environmental and social considerations. The feasibility study would consider technical justifications, economic and financial performance and environmental and social constraints mapping for analyzing each of the subproject. The subprojects, which do not require ESIA under Kyrgyz regulations, would then be prioritized based on demand of consumers, business needs, external environment factors and environmental and social complexities involved. As a part of the Feasibility study for each sub-project, KRED (through its E&S Consultant) would screen for "Significant Environmentally and Socially Sensitive Areas" or "Exclusion Zones" e.g. National Parks, etc. These would be identified from secondary literature and using Surveys held in the Kyrgyz Republic in social, economic and energy sectors. Through the screening process (see tools in Annex 2 and Annex 5) efforts would be made to avoid these "Significant Environmentally and Socially Sensitive Areas" or "Exclusion Zones". Subsequently, a preliminary survey would be conducted to identify forest, archaeological sites, historical and cultural places etc. In case additional environmentally or socially sensitive areas are identified during the survey the same would be

informed to the KRED PMO and the (respective site offices of KRED) for initiating actions for avoidance or necessary corrective actions.

7.1.2 Project Planning & Approvals

The project planning stage would include all activities related to preparation of Detailed Project Report (DPR) for all sub-projects under KRED. The environmental and social impact assessment of each sub-project location would also be carried out during this stage. During this stage of the project, Technical Consultant would carry out assessment of the proposed/existing sub-project identified from the Analysis of Alternative during the Project Conceptualization for optimum location of sub-projects. As part of the environmental and social (E&S) studies a second level screening of the proposed/existing sub-project/locations, would be conducted to identify environment and social risks. The risks on the sub-projects would then be avoided through realignment and/or alternative considerations. Screening of potential environmental and social impact for each sub-project would be carried out to ascertain whether specialized studies (e.g., Resettlement Plan, Biodiversity Assessment, etc) need to be conducted. Considering the scope of studies for each sub-projects under KRED, baseline information would be collected from surveys, field studies and secondary sources. This baseline information would be utilized for carrying out the Environmental and Social Impact Assessment and for preparation of Environmental and Social Management Plan. In case any specialized studies are required the following actions would be undertaken;

- Resettlement Action Plan: No private land is proposed to be acquired for proposed project subcomponents. In case of construction of small or medium-scale HPPs where private ownership land is required to be acquired and resultant resettlement cannot be avoided, a Resettlement Action Plan (RAP) would be prepared. The plan would identify all people affected by the project and justify their displacement after consideration of alternatives that would avoid or minimize displacement. It would also present the entitlements for each of the project affected persons.
- Biodiversity Assessment/Management Plan: Such assessment would aim at identifying potential impacts on flora and fauna if line traverses through notified protected areas or other ecological sensitive areas including notified migratory path /fly way etc. to develop a detailed & comprehensive Biodiversity Management Plan listing mitigation measure to protect /conserve biodiversity of such areas.

The final Environmental and Social Management Plan, including the Biodiversity Management plan and Resettlement Action Plan (if required) would be sent to the KRED PMO/MoE Management for approval and the same would also be forwarded to the World Bank for concurrence.

During public consultations on project's activity and ESF instruments discussed in project's sites have been raised the following feasible feedbacks from the part of stakeholders;

- Paying much attention to safety issues during detailed design of HPPs;
- Selecting on a competitive basis a reliable and experienced contractors for construction of HPPs;
- Replacing old bridges and other structures to new one with inclusion of them into the BoQ;
- Involving local population to the construction works;
- Establishing training institute for the workers of energy sector to have a very experienced staff in energy sector;

- Broad awareness raising on the activity of energy sector, construction of small and medium HPPs, development of reliable energy projects etc.

Measures on most of the raised questions will be taken into account or addressed during HPPs detailed design, construction and operation periods by the side of the MoE and its respective Implementing Agencies. For more details, Minutes of the public consultations are annexed to this ESMF.

7.1.3 Detailed Design, Tendering & Award

KRED would start the tender process after approval from internal management and World Bank. The contracts would be awarded to competent contractors through bidding process. The subproject specific ESMP would be part of the contract document for implementation by the contractors/subcontractors executing the subprojects.

7.1.4 Project Implementation

The construction phase would begin with the check survey being carried out by the contractor. Through the check survey the contractor would verify the site profile and make necessary changes/ (modification) wherever required. Once the locations/sub-projects are finalised, the contractor would approach the local authority for required clearances to start construction work. In case there are any grievances regarding the construction or rehabilitation of HPPs works, consultation would be held between local people and Contractor with involvement of respective Local Office of KRED. However, in case even after all these efforts there is a failure to come to a consensus, then the sub-project may be excluded from the project or shifted to other location after meeting all technical requirements. During civil construction work, due care would be taken by the Contractor to implement the Construction Environmental and Social Management Plan (C-ESMP) to minimize/mitigate environmental and social impacts based on the approved ESMP. Occupational and community health & safety aspects would also be given due importance by the Contractor during construction work. KRED PMO would also have oversight on the implementation of all these activities. Implementation of Resettlement Action Plan, if applicable would be taken up prior to the initiation of the civil works. The Contractor would be responsible for carrying out regular reporting to Local Office of KRED for the implementation C-ESMP to meet the requirements of the ESMP. In turn, the Local Office would report to KRED PMO.

7.1.5 Project Operation & Maintenance

KRED PMO will continuously monitor implementation of environment and social safeguards at selected sub-projects. The Local Offices would assist the KRED PMO to carry out monitoring of the sub-projects. The Implementing Agencies will customize/prepare the operation phase ESMP based on the final design of elements supported under the project and specific technical guidelines for operations being supported under the project using the guidance in the ESMF as the starting point.

7.2. Institutional Arrangement

The MoE will be the coordinating and implementing Ministry responsible for the overall coordination of the project (including with the President's Office, the Ministry of Finance, and line ministries and agencies). The Ministry of Energy will also generally manage the project through the PMO, and the Deputy Minister of Energy will have overall responsibility for ensuring unhindered and high-quality implementation of the project. It will also be the responsibility of the MoE to review and approve the annual work plans and budget (prepared by the PMO), providing relevant technical inputs, especially at the strategic and policy level or on issues related to economic stimulus. Project Management Office shall be responsible for all fiduciary functions (e.g., purchasing, financial management, preparation of annual reports, budgets, etc.) and safeguards/safety functions, including environmental and social assessment and safety assurance, preparation of documents and the appointment of safety specialists to local and regional authorities for oversight, monitoring and compliance.

The MoE will be responsible for managing the entire project, while JSC Chakan HPP, JSC Electric Stations and JSC National Electric Grid of Kyrgyzstan (NEGK) will each be responsible for specific components falling within the competence of the units.

The PMO, established under the Ministry of Energy, is led by a director and will have dedicated staff teams to work on environmental and social standards, procurement, financial management, accounting and internal audit of payments and preparation of necessary project documents required by bank policy for all project components.

Chakan HPP prepared a shortlist of three small HPPs - Karakul, Tar and Bystrovska HPPs. Chakan HPP is responsible for component 1: Rehabilitation and construction of small and medium hydropower plants. For component 2: Technical assistance in the preparation of the Kambarata large HPP-1, JSC “Electric Stations” is responsible for implementation. These investments will require full (for new) or partial (for rehabilitation) ESIA in line with Kyrgyz regulations.

OJSC NEGK is implementing Component 3, which includes physical investments to modernize and strengthen the transmission system, as well as technical assistance and capacity building activities to improve system operating conditions and strengthen institutional capacity. These activities may be managed through ESMP prepared using the guidance in this ESMF.

MoE has staff positions in the procurement, financial management, and technical fields. PMO will also hire Environmental and Social Specialists, who will oversee the overall coordination of the implementation of project specific ESIA, ESMP, RAP etc., and will report to the Ministry of Energy and the WB on the integration of E&S requirements into procurement documents and contracts.

The actual investments will be made by the contractors selected through public bidding. The contractors must work in full compliance with national environmental and social legislation and ESIA/ESMP requirements. In addition, contractors are required to comply with the national legislation related to road safety, occupational health and safety; fire safety; environmental protection; and community health and safety. All ESMP-related activities will be funded by contractors. Contractors will also be asked to designate a person responsible for environmental, social, health and safety issues as well as ESMP implementation. Similarly, to ensure effective implementation of the ESMP, the beneficiaries of the subprojects under Components 1 and 3, in most cases local municipalities, will also appoint responsible

persons with the main tasks of overseeing the implementation of the subprojects and reporting to the Ministry of Energy/PMO on all environmental or social issues.

Additional staff on short-term or long-term assignment as necessary will be mobilized to manage the E&S risks in accordance with the ESSs and the ESMF institutional assessment/needs will be mobilized.

The PMO mandate is to coordinate policies and investments in sustainable natural resource management, climate change mitigation and adaptation, environmental monitoring, and awareness-raising. The executive agency, represented by the MoE, will promote key aspects of landscape restoration efforts across the country and support a range of activities designed to address degradation factors and seize opportunities to improve sustainable land management.

7.3. Capacity Building & Training

The project will conduct special training sessions to ensure effective project implementation and a clear understanding of the environmental and social risk management requirements under the World Bank's ESS. Given the due to high E&S risk associated with the proposed project, a comprehensive training/skill enhancement programme is needed for EA staff in general and E&S staff in particular to ensure effective implementation of safeguard issues as well as to meet the requirements of the WB ESS.

To meet above requirements, PMO will involve a Consultant with knowledge of national environmental and social management requirements, as well as substantial knowledge of the World Bank ESSs requirements for developing different training modules for EA staff including the E&S specialist after assessing the requirement and will than conduct the same. The broad training topics will include the basic requirements of the World Bank's ESS, ESIA, ESMP, OHS Plan and RAP implementation etc including exposure to best international practices on E&S management and will be provided to MoE/PMO, Chakan HPP, EPP, NEGK and their regional staff. The budget provision of USD 28000 has also been made in ESMF for same. The trained E&S staff of PMO shall act as trainer for E&S staff of Contractors on E&S requirements and specific contract conditions on safeguards.

In addition, the World Bank will organize training during project implementation to respective PMO staff and other involved agencies within the first year of the project implementation, in order of relevance, followed by, at minimum, annual refresher trainings as needed throughout project implementation. Also, training for project workers is expected to be delivered by the contractors at the commencement of engagement of project workers, followed by, at minimum, one annual refresher training.

Table 9. Preliminary training plan for environmental and social standards

	Training title	Time and estimated duration	Target group	Responsible	Projected cost
1.	Review of the World Bank ESSs and their implementation during the project cycle. National environmental requirements in the	During the first year of the Project Duration - 0.5 day.	PMO staff including regional project staff	Consultant	US \$4000

ESMF for Kyrgyz Renewable Energy Development Project (KRED)

	preparation and implementation of projects				
2.	Implementation of ESMF/ESIA, ESMP, RAP, LMP, SEP, GRM	Before selecting subprojects Duration - 2 days.	PIU staff including regional project staff	Consultant	US \$8000
3.	Implementation of ESIA, ESMP, RAP	Before selecting sub-projects Duration - 2 days.	Local stakeholders in the regions	Consultant	US \$4000
4.	Environmental and social sensitivity of the project area: ESIA/ESMP	Immediately after signing the contract	Contractors	Consultant	US \$8000
5.	Reporting on E&S performance and compliance	During the first six months of the Project Duration - 0.5 days.	IA staffing, including regional project staff	Consultant	US \$4000
	TOTAL				US \$28000

8.0 GRIEVANCE REDRESS MECHANISM

8.1. Grievance Redress Mechanism

The main purpose of the Grievance Mechanism is to facilitate timely, effective and efficient resolution of grievances and complaints to the satisfaction of all parties involved. Specifically, the GRM provides a transparent and credible process for achieving fair, effective and lasting results. GRM also enhances trust and cooperation as an integral component of broader community consultation that promotes corrective action.

GRM Objectives

- ✓ Register, verify, consider, track and respond to grievances or queries received related to social, environmental and other issues related to the Project activity;
- ✓ Find mutually agreed solutions satisfactory for the Project and Project Affected Parties and resolve any grievances / complaints on-site through consulting with the affected party;
- ✓ Facilitate the development process at the local level with maintaining transparency and establish the level of responsibility before the Project Affected Party;
- ✓ Ensure a possibility for providing feedback;
- ✓ Provide a possibility to vulnerable individuals and / or groups to express views thereof.

8.1.1 Grievance Redress System of KRED

To facilitate timely, effective and efficient resolution of grievances and complaints to the satisfaction of all parties involved a 3 tier Grievance Redress Mechanism is developed for the proposed project. The GRM provides a transparent and credible process for achieving fair, effective and lasting results. GRM also enhances trust and cooperation as an integral component of broader community consultation that promotes corrective action.

Territorial department of the energy companies at the **first level**, who are responsible for helping members of the community and other social work (conflict resolution, overall community upkeep, etc.). Their responsibility is to receive/register a grievance, then communicate it to the PMO and assist in the process of reviewing and responding to applicants.

At the **second level**, the **PMO Social Specialist** will register grievance in the Grievance Log, review and respond to the applicant. The Social Specialist of the PMO will report on the status of handling complaints on a monthly basis.

At the **third level** a **Grievance Redress Commission (GRC)** will be formed, including the MoE KR and PMO representatives, district and local level office managers, and one village leader as needed. GRC will resolve issues that were not resolved at the first and second levels or matters that came directly to the PMO or MoE. To promote the transparent and efficient implementation of the project, the PMO and MoE KR will accept and investigate queries from any Project-affected parties, including anonymous queries. Table 10 shows the detailed process on grievance review and timing of replying.

Table 10. Grievance Redress Matrix

To whom is the grievance filed	Form of submission	Grievance management procedure	Time for grievance handling
<p>THE FIRST LEVEL <u>Territorial department of an energy company</u> Address: Tel.: Fax: E-mail address: Secretary responsible for maintaining the GRM Log</p>	<p>Verbal, written, in electronic format</p>	<p>1. Registration in a Grievance Log with indication of date and time; 2. A secretary of a local commission shall register a grievance; 3. An applicant is provided a feedback; 4. If a grievance is not satisfied, the grievance is redirected to the central level.</p>	<p>5 days</p>
<p>THE SECOND LEVEL Project Management Office Address: Tel.: Fax: E-mail address: Social specialist responsible for maintaining the GRM Log:</p>	<p>Verbal Written In electronic format by filing an e-application</p>	<p>1. PMO registers grievances / proposals in the Grievance Log; 2. Maintains and monitors the process of reviewing and responding to complaints; 3. Monthly the PMO Social Specialist reports on the status of work with grievances to the MoE KR and World Bank. 4. Consideration of the grievance may require additional verification of the issue, including the collection of additional documents; 5. If necessary, an information on the status of grievance review in written form is filed with the higher authority on a monthly basis (depending on the nature of the issue); 6. A grievance at this level must be resolved.</p>	<p>7 days</p>
<p>THE THIRD LEVEL Grievance Redress Commission (GRC) at the PMO level Address: Tel.: Fax: E-mail address: Social specialist responsible for maintaining the GRM Log:</p>	<p>Verbal Written In electronic format by filing an e-application</p>	<p>1. Unresolved or dissatisfied grievances at the second level will be reviewed by the GRC. 2. If the complainant will not satisfy with the GRC resolution, he/she may apply to the court.</p>	<p>14 days</p>

The Project GRM does not prevent applying to a court in accordance with the legislation of the Kyrgyz Republic. If a grievance resolution requires special verification (consideration), additional materials or other measures, the terms for resolution may be extended but not more than for 30 calendar days in accordance with the Law of the Kyrgyz Republic “On Procedure of Handling Public Appeals”, No. 67,

dated May 4, 2007. Anonymous complaints will also be considered under the Project and relevant measures will be undertaken.

The more sensitive grievances such as Gender-Based Violence (GBV) including Sexual Exploitation and Abuse / Sexual Harassment (SEA/SH) are described in para 8.3. separately. To ensure management oversight of grievance handling, the PMO M&E will be responsible for monitoring the overall process, including verification that agreed resolutions are implemented.

Information about the GRM will be publicized as part of the PR/community communication (e.g., through websites, social media). Brochures and posters will be displayed in public places, Project offices, subdivisions and information desks of MoE KR and etc. Information about the GRM will also be posted online on the MoE KR website. The overall process for the GRM will be comprised of six steps, as described in Table 11 below:

Table 11. Process of Filing and Handling a Complaint

Step 1: Uptake
Step 2: Sorting and processing
Step 3: Acknowledgement and follow-up
Step 4: Verification, investigation, and action
Step 5: Monitoring and evaluation
Step 6: Providing Feedback

Step 1: Uptake. Project stakeholders will be able to provide feedback and report grievances / complaints through several channels: verbally, by mail, telephone, email, social media, and WhatsApp messenger.

Step 2: Sorting and processing. Complaints and feedback will be compiled at PMO level by the Social Specialist at PMO and recorded in a register. These are assigned to the respective individuals/agencies to address.

Step 3: Acknowledgement and follow-up. The responsible person/ agency will communicate with the complainant and provide information on the likely course of action and the anticipated timeframe for resolution of the grievance / complaint. If grievances / complaints are not resolved within indicated period at each level, the responsible person will provide an update about the status of the complaint/question to the complainant and again provide an estimate of how long it will take to resolve the issue

Step 4: Verification, investigation, and action. This step involves gathering information about the grievance to determine the facts surrounding the issue and verifying the grievance’s / complaint’s validity and then developing a proposed resolution, which could include changes of decisions concerning eligibility for mitigation, assistance, changes in the program itself, other actions, or no actions. Depending on the nature of the complaint, the process can include site visits, document reviews, a meeting with the complainant (if known and willing to engage), and meetings with others (both those associated with the project and outside) who may have knowledge or can otherwise help resolve the issue. It is expected that many or most grievances would be resolved at this stage. All activities taken during this and the other steps will be fully documented, and any resolution logged in the register.

Step 5: Monitoring and evaluation. Monitoring refers to the process of tracking grievances and assessing the progress that has been toward resolution. The PMO will be responsible for consolidating, monitoring, and reporting on grievances / complaints, queries, and other feedback that have been received, resolved or pending. This will be accomplished by maintaining the grievance register and records of all steps taken to resolve grievances or otherwise respond to feedback and questions.

Step 6: Providing feedback. This step involves informing those to submit grievances / complaints, feedback, and questions about how issues were resolved or providing answers to questions. Whenever possible, complainants should be informed of the proposed resolution in person (communicating by telephone or other means).

If the complainant is not satisfied with the resolution, she/he will be informed of further options, which would include pursuing remedies through the World Bank, as described below, or through avenues afforded by the Kyrgyz Republic legal system. On a monthly basis, the PMO will report to the Ministry of Energy on grievances resolved since the previous report and on grievances that remain unresolved, with an explanation as to steps to be taken to resolve grievances that have not been resolved within 30 days. Data on grievances and/or original grievance logs will be made available to World Bank missions on request, and summaries of grievances and resolutions will be included in periodic reports to the World Bank.

8.2. Grievance Log

All incoming grievances, queries, suggestions shall be subject to registration in the Grievance Log. The log information is copied and included into the e-database. The e-database must contain at minimum the relevant information about filing date, registration number, essence of the issue, responsible person, time for resolving the complaint and feedback (positive or negative). The specialist shall track the process of consideration of a complaint based on its registration number.

An inquiry / proposal or complaint may be filed through the following channels:

PMO mail address: _____

PMO phone: _____

PMO email: _____

Online application by filing a complaint form on the Project website:

The Ministry of Energy will offer its district and local channels.

8.3. Handling of Sensitive Grievances

Taking into account the standards regarding the prevention of SEA/SH, which, in accordance with the requirements of the World Bank, must be observed in all projects financed by the World Bank, these standards will be observed and responsibilities take action to raise awareness on the prevention and suppression of SEA/SH. The Project staff and contractors will be informed of oversight principles and SEA/SH risk prevention at all stages of the Project implementation.

GRM will ensure access and confidentiality of a complaint filing mechanism and will allow an applicant not to be afraid of possible retaliation. These complaints will be handled without any delay and all those responsible will be held accountable. The SEA / SH issues will require adoption of certain additional

measures:

- Gender sensitivity will be sought in the employment of Social Specialist, who will work at PMO.
- Social specialists will be informed about SEA/SH issues.
- In addition to the socio-cultural characteristics and non-violent communication ways in the training of workers, SEA/SH will also be on the agenda. Worker training will include the following information on SEA / SH:
 - Definition of violence against women in national and international documents;
 - Types of violence (physical, sexual, economic, emotional);
 - Legal sanctions;
- The grievance mechanism will be accessible and ensure the confidentiality of personal information.
- Information activities will be carried out to inform women about the mechanism. The following types of information will be provided during these activities.
 - The following types of information are presented in these studies:
 - Women's rights
 - Self-protection in cases of violence and sexual abuse
 - Emergency phone numbers
 - Contact information of the institutions and organizations they can apply to
 - Grievance mechanism and privacy policy
 - The confidentiality principle of the grievance mechanism will be repeated in all information materials.

The Project will utilize additional mitigation measures proportional to risk. The contractor will be responsible for developing the workforce management procedure, occupational health and safety plans as well as SEA/SH protocols which will apply to their own and subcontractors' employees who work on the Project. These procedures and plans will be submitted to PMO for review and approval before the contractors are allowed to mobilize to the field of construction. All contractors will be required in the contract to commit against the use of child and forced labor, introduce mitigation measures against SEA/SH, and PMO staff in charge of contractor supervision will monitor and report the absence of forced labor and cases of SEA/SH. All personal data and complaints received by the GRM will be treated in a confidential manner unless the complainants consent to the disclosure of their personal information. Especially, the confidentiality of sensitive issues and complaints related to SEA/SH raised by communities will be followed.

8.4. World Bank Grievance Redress Service

Communities and individuals who believe that they are adversely affected by a project supported by the World Bank may also complaint directly to the Bank through the Bank's Grievance Redress Service (GRS) (<https://www.worldbank.org/en/projects-operations/products-and-services/grievance-redress-service>). A complaint may be submitted in English, Kyrgyz or Russian, although additional processing time will be needed for complaints that are not in English. A complaint can be submitted to the Bank GRS through the email grievances@worldbank.org.

The complaint must clearly state the adverse impact(s) allegedly caused or likely to be caused by the Bank-supported project. This should be supported by available documentation and correspondence to the extent possible. The complainant may also indicate the desired outcome of the complaint. Finally, the complaint should identify the complainant(s) or assigned representative/s and provide contact details.

Complaints submitted via the GRS are promptly reviewed to allow quick attention to Project-related concerns.

8.5. Grievance monitoring and reporting

The monitoring of Grievance management will be through a set of indicators ensuring effective and timely resolution of grievance. The indicators will be measures within the reporting periods. The indicators are listed below:

- ✓ Number of Grievances received;
- ✓ Number (%) of Grievances acknowledged within the timeframe;
- ✓ Number (%) of Grievances unilaterally decided;
- ✓ Number (%) of Grievances closed within the specified time-frame;
- ✓ Number (%) of grievance related to a same or repeated event and /or location to identify areas most affected by potentially negative impacts of the project;
- ✓ Number (%) of grievance received comparing to the previous reporting period;
- ✓ Number (%) of complainant satisfied with the process (timely, fair);
- ✓ Number (%) of complainant satisfied with the outcome.

PMO will be responsible for:

- Analyzing qualitative data on the number, substance and status of the complaints and uploading them to the project databases created by PMO;
- Monitoring unresolved issues and proposing actions to resolve them;
- Preparation of GRM reports as part of the project progress reports to be submitted to the WB.

Semi-annual reports submitted to the WB should include a section on GRM that provides updates on the following:

- GRM implementation status (procedures, training, public awareness campaigns, budgeting, and etc.);
- Qualitative data on the number of complaints received (applications, proposals, complaints, requests, positive feedback), indicating the number of complaints resolved;
- Quantitative data on the type of complaints and responses to them, issues provided and complaints that remained unresolved;
- The level of satisfaction with the action taken (response);
- Any corrective actions taken.

8.6. GRM Budget

All costs involved in resolving the complaints/grievances (meetings, consultations, communication and reporting/information dissemination) will be covered by the PMO KRED; costs related to escalation of grievances to Court of Law would also be met by PMO KRED.

8.7. ESMF Disclosure and Public Consultations

The environmental and social assessment process was done with the participation of all stakeholders. The draft of the ESCP, SEP and LMP documents were published in official language [Russian language] on the MoE, ES, EH, NEGK and Chakan HPP websites dated 20 January, 2023, together with the announcement of planned public consultations. In addition, information about the planning consultations was also disseminated through the MoE and regional administrations. In addition, as part of the disclosure

process, a number of meetings were held with stakeholders, in particular, during the stage of concept development, senior officers from the Presidential Administration, the Cabinet of Ministers, the Ministry of Energy of the Kyrgyz Republic, the Ministry of Finance of the Kyrgyz Republic and other organizations were involved. It was further decided to limit consultations at this stage to key stakeholders due to the fact that further consultations will be held at the evaluation stage in accordance with the regulations of the Ministry and the rules of the World Bank. Online meetings were held between representatives of the Ministry of Energy, Chakan GES, ES, National Power Grid of Kyrgyzstan (NEGK) and energy companies with the project consultants on social and environmental issues, where the planned activities to implement the WB ESS requirements were discussed.

9.0 CONSULTATIONS AND INFORMATION DISCLOSURE

The MoE shall conduct a meaningful consultation in a manner that provides stakeholders with opportunities to express their views on project risks, impacts, and mitigation measures, and allows the MoE to consider and respond to them. A dedicated and comprehensive Stakeholders Engagement Plan (SEP) is being developed by the Ministry of Energy of the Kyrgyz Republic (MoE) for the KRED Project. The SEP is developed in accordance with the recommendations and requirements of the Environmental and Social Standard, ESS 10 of the World Bank and is a part of social and environmental assessment of the Project. The SEP as one of the main Project documents will support the Project management and implementation. Along with measures to minimize adverse impacts of the Project, the open social engagement is part of the Project's cohesive approach to maintaining positive relationships with the local community and other stakeholders under the Project. During project preparation an extensive mapping of the stakeholders shall be carried out to identify individuals and groups likely to be affected directly or indirectly, vulnerable groups and other interested parties such as government agencies/ authorities and NGOs, which may differ between subprojects, will be done during implementation.

Meaningful consultation will be carried out on an ongoing basis as the nature of issues, impacts and opportunities evolves. Meaningful consultation is a two-way process, that: (a) Begins early in the project planning process to gather initial views on the project proposal and inform project design; (b) Encourages stakeholder feedback, particularly as a way of informing project design and engagement by stakeholders in the identification and mitigation of environmental and social risks and impacts; (c) Continues on an ongoing basis, as risks and impacts arise; (d) Is based on the prior disclosure and dissemination of relevant, transparent, objective, meaningful and easily accessible information in a timeframe that enables meaningful consultations with stakeholders in a culturally appropriate format, in relevant local language(s) and is understandable to stakeholders; (e) Considers and responds to feedback; (f) Supports active and inclusive engagement with project-affected parties; (g) Is free of external manipulation, interference, coercion, discrimination, and intimidation; and (h) Is documented and disclosed by the Borrower.

Through the process of consultation and disclosures, MoE/OJSCs would envisage to build participation of stakeholders' at each stage of project planning and implementation. MoE would be responsible not only for ensuring participation of the community in the consultation process but to make it effective ensure integration of the feedback received from stakeholder into the project plans where it deems fit.

The information disclosure would provide citizen centric information on the policies and the details of sub-projects along with its implementation process of KRED. It would be carried out in accordance to the with the Law of the Kyrgyz Republic "On Guarantees and Freedom of Access to Information" and the Law of the Kyrgyz Republic "On Access to Information Held by State Bodies and Local Self-Government Bodies", as well as the World Bank ESS 10 Stakeholder Engagement and Information Disclosure.

The KRED Information Disclosure Procedure would ensure that information concerning safeguard documents of the KRED's activities is made available to the public in the local language without any confidentiality. The feedback of the project affected persons/citizens would be captured through the Project Management Office and conveyed to MoE/Energy Companies/Contractors for necessary action.

Based on the above, the public consultations need to be held at all project proposed sites with involvement of all project stakeholders and interested parties.

The objectives of consultations are to: (a) provide adequate information on project objective, its proposed activities and benefits to the public; (b) results of the environmental and social assessment; (c) discussion of ESF instruments prepared for the project; (d) potential positive and negative E&S impacts resulting from project activities; (e) collecting feedbacks and addressing them etc.

Also, according to the World Bank policy, project stakeholders should be fully consulted and given the opportunity to participate in the planning and implementation of ESMF process. A public awareness and consultation campaign should be conducted by the MoE PMO.

9.1. Information disclosure

In accordance to the World Bank’s policy and national legislation on access to information, all draft ESF documents in Russian language were published on the websites of the following organizations:

1. Ministry of Energy KR - <https://minenergo.gov.kg/ru/news/116>;
2. JSC “Chakan HPP” - https://www.chakanges.kg/content/articles_view/188;
3. JSC Electrical Plant - <http://www.energo-es.kg/ru/press-center/news/v-sootvetstvii-s-natsionalnym-zakonodatelstvom-kyrgyzskoy-respubliki-ministerstvo-energetiki-kyrgyzskoy-respubliki-vnosit-na-obshchestvennoe-obsuzhdenie-proekty-dokumentov/>;
4. JSC NEHK - https://nehk.energo.kg/content/articles_view/1092;
5. JSC NEGK - <http://www.nesk.kg/ru/svyazi-s-obshchestvennostyu/novosti-i-press-relizy/2770-20-01-2029>.

In addition, information on planning consultations was also disseminated through the respective Implementing agencies and local municipalities participating in the project.

Final ESMF incorporating comments given by all participating states will be submitted to World Bank. Once approved by World Bank, it will be disclosed on MoE website and the external website of the World Bank on its portal.

In order to inform stakeholders about the project, the JSC “Chakan HPP” under the MoE held consultations with stakeholders in the proposed subprojects sites from January 28 to 31, 2023. The data on conducted consultations is given in the Table 12.

Table 12. Information on public consultation held

Item #	Name of subproject	Date conducted	Venue	Number of participants, including women
1.	Karakul HPP	January 28, 2023	Karakul city	52/4
2.	Kambarata1 HPP-1	January 28, 2023	Karakul city	
3.	Tar HPP	January 28, 2023	Ylai-Talaa village, Kara-Kulzha rayon of Osh oblast	46/4
4.	Bystrovka HPP	January 30, 2023	Nur village of Kemin city, Chui oblast	35/5
5.	NEGH	January 31, 2023	MoE Office, Bishkek	20/6

The public consultation on the project, as well as draft ESF instruments prepared for the project held in the format of meeting where participated the representatives of local self-government authorities, representatives of respective Implementing agencies and other stakeholders (the lists are attached to the Minutes of public consultations).

Main feedbacks received during consultations from the key stakeholders are as follow:

- Compensation for land acquisition;
- Technical characteristics of HPPs to be constructed;
- Project details;
- Interest rate for the IDA credit;
- Readiness of the feasibility studies for HPPs;
- Benefits from the construction and reconstruction of HPPs etc.

All feedbacks raised during public consultations are addressed at respective sites.

9.2.Public Consultations

In total, the public consultation meeting was attended by 153 people, out of them 19 women. The meeting provided brief information on the project, its components, implementing agencies and draft documents on the management of socio-environmental risks associated with the project. In the course of public consultations, the meeting participants were provided with information on the project, its expected environmental and social impacts, proposed mitigation measures, procedure of environmental and social assessment. The final documents will be published on the website of the Ministry of Energy of the Kyrgyz Republic and respective Implementing Agencies' websites. Detailed information about the public hearings, as well as discussions on the project documents are presented in the attached minutes of the meeting (Annex 7).

9.3.Feedback mechanism

The feedback of the project affected persons/citizens would be captured through the local offices of KRED and conveyed to KRED PMO for necessary action. The feedback mechanism as discussed in the Grievance Redress Mechanism would be used.

10.0 MONITORING AND EVALUATION

10.1. Monitoring and reporting

MoE has staff positions in the procurement, financial management, and technical fields. PMO will also hire Environmental, Social, and OHS Specialists, who will oversee the overall coordination of the implementation of project specific ESIA, ESMP, RAP etc., and will report to the Ministry of Energy and the WB on the integration of E&S requirements into procurement documents and contracts. Preliminary ToRs for the positions are included in Annex 10.

Environmental and social monitoring in the implementation of subprojects must contain information on the key environmental and social aspects of subprojects, their impact on the environment, the social consequences of impacts and the effectiveness of measures taken to mitigate impacts. This information allows the PMO ESF staff /local officials to monitor the implementation of environmental and social measures, evaluate the effectiveness of mitigation measures, and allows for timely corrective action to be monitored, how often, where, and who should be monitored.

The implementation of environmental protection and OHS measures will be monitored by the environmental specialist of the PMO and at the local level. Representatives of the environmental authority may also be involved in the monitoring. The goal is to verify the main points of compliance with the ESMP, the progress of implementation, the amount of consultation, and the involvement of local communities. A standard checklist from the evaluation studies will be used for the activity report. An independent environmental, health and safety audit will be conducted in the medium term of the project and at the end of the project. Audits are necessary to ensure that (i) the ESMP has been properly implemented and (ii) mitigation measures have been identified and implemented appropriately. The audit will be able to identify any revisions to the ESMP approach to improve its effectiveness.

Part of the social risk management measures will be carried out on an ongoing basis by the PMO social specialist to ensure that there are no unintended consequences during construction work on land, production assets, illegal users, people's livelihoods, etc. Monitoring will also cover health and labor issues, as well as stakeholder engagement activities. If some problems are identified, mitigating measures will be proposed in progress reports or in individual corrective action plans (CAPs) (details are provided in the environmental and social reporting section below).

10.2. Key Performance indicators (KPI)

KPI as defined below shall be used to monitor and evaluate the outcomes of citizen's engagement and social performance:

- ✓ The Project information is available for public to comment;
- ✓ Actions listed in the ESMF and any further document and Information Disclosure programme are implemented as scheduled;
- ✓ The minutes of consultation meetings are recorded and meetings logged in a register;
- ✓ Grievances are logged and tracked through to resolution within a timeframe of 20 calendar days from acknowledgement of receipt (evidenced by an up-to-date grievance register);
- ✓ Semi-annual Grievance Report to be prepared and made publicly available;
- ✓ Any future Contractors progress reports include summary of the grievance mechanism (summary of new grievances recorded and update on the resolution of existing grievances);
- ✓ Annual reports on the implementation of the grievance process are made available as part of

annual external reporting on the E&S performance of the Project which shall be made publicly available.

10.3. Environmental and social monitoring

In order to ensure the implementation of the environmental and social measures specified in the subproject specific ESMP, the subproject ESMP will include specific monitoring plan with identified monitoring indicators/variables and corresponding limits. Monitoring should be carried out as follows:

- Visual monitoring - during the construction phase of subprojects, environmental and social specialists must constantly monitor the implementation of the ESMP. This will be achieved through monthly inspections by specialists of construction / reconstruction projects throughout the construction period.

Contractors' obligations, non-compliance action and remedies will be included in the works contracts and monitored through Engineer/Supervision Consultant team. If specialists observe a violation to the ESMP implementation, they will record these violations and request the contractor to rectify them. Additional measures, such as suspension of the works, or withhold of payments will be managed as per the works contracts terms.

Special checklists for monitoring will be developed as part of the ESIA, which can be supplemented with the attachment of photos from the monitoring site.

For all facilities, environmental and social specialists will check the timeliness of contractors' reports on discharges into water bodies, emissions into the atmosphere and solid waste, which contractors must periodically submit to regional committees on ecology and environmental protection.

- Instrumental monitoring of environmental quality, e.g. air and water quality. In the case of complaints of violations or nuisances from the local population, instrumental measurements of air or water quality should be carried out by an environmental specialist through the involvement of a certified laboratory. If the national standards are exceeded, the contractor shall take additional measures to reduce the identified exceedances to compliance with the standards.

Visual monitoring will be done through weekly audits of environmental performance by contractors throughout the construction period.

Separately, World Bank experts will also visit select sites annually to monitor compliance. As mentioned above, in the case of non-compliance, specialists investigate the nature and cause(s) of non-compliance and, if necessary, decide what is necessary to ensure compliance subproject or funding is suspended.

10.4. Reporting on environmental and social activities

Environmental and social indicators, including monitoring, must be properly documented (registered) and reported. All Contractors are legally required to have occupational safety and health log and accident book on sites, for recording details of any accidents that occur at construction sites. This is a requirement is under national law for construction projects. In the case of instrumental monitoring, it is necessary to keep a log of environmental monitoring data.

For subcomponents related to construction/rehabilitation, contractors will develop a format (checklist) for site inspections building on the checklist in the ESMP to streamline the environmental and social oversight process prior to the start of work. On a monthly basis, the contractor submits summary reports on the implementation of the ESMP. The list of measures that are checked by the environmental and safety specialists during the site visit should correspond to the measures specified in the ESMP for the subproject being monitored. Information on the results of construction/rehabilitation monitoring should be provided to local specialists on a quarterly basis. Based on semi-annual reports prepared by the PMO specialists, the PMO prepares a summary report on ESMP implementation, which will be included in the progress reports and submitted to the World Bank.

Monitoring reports during project implementation should include information on key environmental and social aspects of project activities, especially with respect to environmental and social impacts and the effectiveness of mitigation measures. Using this information, the PMO and the World Bank be able to assess the success of mitigation measures as part of project oversight and allow corrective action to be taken if necessary. While there is no requirement of reporting on status of implementation of ESMP measures, inspections are undertaken to confirm compliance by officials from Environmental Inspectorate under Ministry of Natural Resources and Environment and Technical Safety.

ESMP subproject monitoring section of the report is responsible to provide the following:

- (a) comprehensive data on monitoring measures, including parameters to be measured, methods to be used, sampling locations, frequency of measurements; and
- (b) monitoring and reporting procedures to: (i) ensure early identification of conditions requiring mitigation measures; and (ii) provide information on the progress and results of mitigation.

The PMO will provide summary information on ESMF implementation and the subproject environmental and social activities as part of the progress reports and submit them to the WB every six months.

If social monitoring has identified any impacts, they need to be mitigated immediately. If there is an impact on land, production assets, illegal users, people's livelihood, etc., then the construction work must be stopped. A Corrective Action Plan (CAP) should be developed. The CAP contains information on the sub-component of the project, construction work status, types of impacts and social impact assessment, proposed mitigation measures. CAP is prepared by the subcomponent performer and approved by the relevant PMO. All unanticipated subproject impacts that occur outside the right-of-way should be compensated/mitigated by the Contractor. This should be reflected in the tender documents.

The PMO M&E Specialist is responsible for the overall information gathering on progress and results. It is postulated that semi-annual reports and quarterly reports be submitted to the WB. These reports should include information on implementation and progress (success), as well as financial reports, project implementation reports, social audit meeting minutes, and feedback and complaints received. The PMO is responsible for compiling the completion report. All environmental and social standards performance are monitored by the PMO Environmental, OHS, and Social specialists. Despite minor social impacts, potential negative impacts must be prevented or mitigated during construction and operation.

The environmental and social monitoring system starts from the stage of preparation of a sub-component of the project through the operation phase to prevent negative impacts of the project and monitor the effectiveness of mitigation measures. This system helps the WB evaluate the success of mitigation as part of project oversight and allows an action to be taken when necessary. The monitoring system provides

technical assistance and monitoring, where necessary, early detection and follow-up of mitigation conditions.

10.5. Occupational Health and Safety (OHS) issues

OHS issues will be covered in all supervision and monitoring activities. This includes checking whether there have been any incidents or accidents on the subprojects, checking logs and the availability and use of protective and preventative equipment, and workers training and records. Respectively, the ESF sections of all progress reports will include specific section on OHS implementation.

The PMO will also ensure that at the project launch workshop and in the operational manual contain adequate provisions for occupational health and safety.

Notification of incidents and accidents will be as follows:

- a. PMO shall promptly notify the Association of any incident or accident related to the Project which has, or is likely to have, a significant adverse effect on the environment, the affected communities, the public or workers. The notification shall be no later than 48 hours after taking notice of the incident or accident.
- b. PMO shall provide sufficient details regarding the incident or accident, indicating immediate measures taken to address it, and include information provided by any contractor and supervising entity, the injured party and regulatory authority, if necessary and as appropriate. Subsequently, as per the Association’s request, prepare a report on the incident or accident and propose any measures to prevent its recurrence within an agreed timeframe. An incident or accident report, acceptable to the Association, shall be submitted within 30 days after the occurrence of the incident or accident.
- c. Other incidents and accidents not subject to immediate notification and reporting in accordance with this provision, shall be included in the regular Project reports and throughout the project implementation.
- d. Requirements for the implementation of a system for recording and managing incidents in the field of health and safety and labor protection should be transferred to the PIU contractors / subcontractors through tender documents.
- e. During the implementation and operation phase, the PIU and its Consultant shall also monitor the implementation by the contractor/subcontractor of a system for recording and managing incidents in the field of health and safety and labor protection.

10.6. Budget for ESMF implementation

An estimated budget for the implementation of the ESMF is provided below in Table 13, together with relevant budget items and costs.

Table 13. Budget Items and Estimated Costs

Budget Items	Estimated Costs (\$)
Hiring of PMO E&S, OHS Specialists	139,500
Preparation of the Environmental and Social Instruments, including ESIA with ESMP as well as SIA and RAP and related instruments for small HPPs,	1,500,000

Kambara Ata 1, and E&S documentation for rehabilitation of HPPs, and new transmission lines.	
PMO Monitoring Activities (for 60 months)	20,000
Training and awareness activities to be provided for PMO, stakeholders, beneficiaries, and Contractor’s ESHS Specialists including costs of consultant who will develop different training modules for EA and its respective division staff and international trainings, GRM costs	28,000* + 22,000
Total	1,639,500

* Refer Table 9 for details of training modules already identified

11.0 CONCLUSION

This ESMF is the result of an iterative process that has included collection of available data, consultations with stakeholders, short site visits, and review by experts. It applies to all components that will be covered in KRED project. Its findings indicate that while Kyrgyz legislation covers many aspects of the requirements of ESF, additional considerations need to be added for confirming compliance with the applicable ESSs viz. ESS1, 2, 3, 4, 5, 6,8, and 10. It includes information about generic risks and impacts of HPPs, facilities associated with these for their smooth operation, and transmission lines. It provides guidance on the necessary mitigation measures required to address the potential Environmental and Social risks and impacts. It has analyzed the implementation arrangements and makes recommendations, including for strengthening PMO of the MoE, to facilitate the subsequent site/sub-project specific assessments to be carried out during implementation of KRED. A budget estimate has been prepared accounting for requirement of additional manpower, capacity building, and extensive E&S work, based on draft Terms of Reference for ESIA for small HPPs and Kambar Ata 1 annexed to this ESMF. At this stage of the project, MoE is of the opinion that this guidance is appropriate to support carrying out the necessary assessments to meet WB ESF requirements and for smooth implementation of the project in coming years.

12.0 ANNEXES

Annex 1. Types of Activities Mandated to Undergo ESIA by National Legislation

1. Energy facilities:

- 1) district heating and power plants, combined heat and power plants and hydroelectric power plants;
- 2) industrial plants that produce electricity, steam and hot water;
- 3) gas pipelines, petroleum pipelines and hot water pipelines;
- 4) high-voltage power transmission lines;
- 5) warehouses for oil and petroleum products, gas and solid fuel;
- 6) ash dumps.

2. Water bodies.

3. Enterprises engaged in production and processing of oil, petroleum products and gas.

4. Enterprises engaged in production of construction materials (cement, asphalt, asbestos coating, asbestos cement pipes).

5. Agriculture:

- 1) projects with the aim of agricultural intensification;
- 2) projects for the management and reorganization of land assets;
- 3) water management projects in agriculture;
- 4) reclamation projects with the view of rezoning;
- 5) poultry farms, intensive livestock farming complexes and fish farms;
- 6) reclamation projects.

6. Mining industry:

- 1) exploration and mining;
- 2) extraction of minerals (carbonate of lime, basalt, salt, sand, gravel, clay, etc.);
- 3) coal mining;
- 4) ore mining;
- 5) ore processing;
- 6) production of base, rare and precious metals;
- 7) disposal and burial of waste, including hazardous and toxic waste.

7. Metalworking industry:

- 1) machine building;
- 2) production of semiconductor materials;
- 3) repair services for air and rail transport;
- 4) production of radio and television equipment;
- 5) foundry and metal-rolling production.

Annex 1.1. The list of exceptions identifies the types of projects that WB does not fund.

WB does not fund the following projects:

- 1) Production or trade in any product or activity deemed illegal under host country laws or regulations or international conventions and agreements, or subject to international bans, such as pharmaceuticals, pesticides/herbicides, ozone depleting substances, PCB's, wildlife or products regulated under CITES.
- 2) Production or trade in arms and ammunition.
- 3) Production or trade in alcoholic beverages (except beer and wine).
- 4) Production or trade in tobacco.
- 5) Gambling, casinos and equivalent enterprises.
- 6) Production or trade in radioactive materials. 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.
- 7) Production or trade in unbonded asbestos fibers. This does not apply to purchase and use of bonded asbestos cement sheeting where the asbestos content is less than 20%.
- 8) Drift net fishing in the marine environment using nets in excess of 2.5 km. in length.

A reasonableness test will be applied when the activities of the project company would have a significant development impact but circumstances of the country require adjustment to the Exclusion List.

Annex 2. Screening for potential environmental issues under Component 3.1

(to be filled out based on the results of the environmental review process)

Form 1: Environmental checklist

Part 1

1. **Sub-Project Name:**
2. **Brief description of the subproject**, to include: nature of the project, planned activities, site area, location, property ownership, existence of on-going operations.
3. **Will the project have impacts on the environmental parameters listed below** during the construction or operational phases? Indicate, with a check, during which phase impacts will occur and whether mitigation measures are required.

Environmental component	Construction phase	Operational phase	Mitigation measures
Terrestrial Environment			
Land and soil degradation: will the project include earthworks?			
Generation of solid & construction waste?			
Generation of hazardous waste (PCB, ACM, etc.)?			
Contamination of soil and groundwater			
Air Quality			
Does the project include emissions of pollutants?			
Aquatic Environment			
Water Quality: will the project involve water use?			
Water Quality / Pollution: Will the project contribute to surface water pollution			
Flora and fauna			
Will the project impact terrestrial/avia/aquatic flora and fauna in the project area?			
Socio-economic Environment			
Will the project assure occupational safety and non-disturbance of residents living near project area?			
Will the project assure occupational safety of the personnel involved in subproject works?			
Does the project require public consultation to address environmental concerns and suggestions from local residents?			
Are there archaeological and/or historical sites along the project area?			

Environmental checklist

Part 2

1. Environmental risks of the subproject (high risk, significant risk, moderate risk, or low risk) - ____ (if the project is high risk, the following items do not need to be filled in - the subproject cannot be included in the project)

2. Whether the activities of the project will be implemented:

(a) In or near sensitive and valuable ecosystems - wetlands, wild lands, and habitats of endangered species - ____ (yes or no)

(b) In or near areas with archaeological and/or historical sites or existing cultural and social institutions - ____ (yes or no)

(c) In densely populated areas where relocation may be required or potential pollution and other disturbances may have a significant impact on communities - ____ (yes or no)

(d) In regions subject to intensive development activities or where there are conflicts in the allocation of natural resources; along watercourses, in aquifer recharge areas, or in reservoirs used for drinking water supply; and on lands or waters containing valuable resources (such as fisheries, minerals, medicinal plants, basic agricultural soils) - ____ (yes or no)

If "yes" - the subproject will be excluded from the Program

3 An environmental assessment is required (yes or no) ____ (the following items should be completed only for subprojects with significant or moderate risks)

3. Types of necessary EE documents (circle the necessary ones):

(a) A partial ESIA, including a site assessment and an Environmental and Social Management Plan (ESMP);

(b) ESMP checklists for small subprojects;

(c) Environmental Impact Statement (categories 2-3)

4. What environmental and social issues are raised by the subproject?

10. If an environmental and social impact assessment is required, what specific issues need to be addressed?

11. What is the time frame and approximate cost of the ESIA? _____

Conclusion (whether the subproject can be included in the program and, if so, under what conditions):

Position, Name, Date:

Environmental Checklist

Part 3

Final Environmental Assessment Checklist

(to be completed by PMO based on review of proposed mitigation and environmental impact assessment (if required))

Was the environmental and social impact assessment necessary? (Yes or No) ____ If yes, was it done?

Has an Environmental and Social Management Plan been prepared? (Yes or No) _____

Are the mitigation measures to be included in the project adequate and appropriate? (Yes or No) _____

Will the project meet existing pollution control standards for emissions and waste? (Yes or No) ____ If not, is an exemption needed? _____

Is an environmental monitoring plan necessary? (Yes or No) ____ If so, has it been prepared? (Yes or No)

____ Approved by PMO? _____

Have there been public consultations regarding the potential environmental impact of the proposed subproject? (Yes or No) _____

Were minutes taken? (Yes or No) _____ Date _____ Number of participants _____

Other _____

Position, Name, Date

Environmental checklist

Part 4. Final Environmental Checklist (2)

(to be completed by PMO based on review of proposed mitigation and environmental and social impact assessment (if applicable))

Is the project documentation complete? If not, what is missing?

Are land and resource use permits required? If so, were they obtained?

Are solid waste discharge permits required? If so, have they been obtained?

Are discharge permits required for wastewater? If so, have they been obtained?

Is a health inspection required? Has a permit been issued?

Has an environmental assessment been obtained and approved?

Is there any possibility of soil degradation or contamination? If so, have appropriate prevention or mitigation measures been planned and provided for?

Is there any possibility of water quality degradation or contamination? If so, have appropriate prevention or mitigation measures been planned and provided for?

Is there any possibility of deterioration of air quality or air pollution? If yes, have appropriate prevention or mitigation measures been planned and provided for?

Is there a threat to the biological environment? If yes, have appropriate prevention or mitigation measures been planned and provided for?

Is there likely to be an adverse impact on the social environment? If yes, are the necessary measures to prevent, mitigate or compensate planned and envisaged?

Was the level of public participation in the design, planning, and public consultation adequate? Were public concerns raised during the consultation process?

What is the desired level, frequency and scope of environmental monitoring during the construction phase?

What is the desired level, frequency and volume of environmental monitoring during the operational phase?

Form 2: Checklist of site visits

Project Name:

Date / time of visit:

District:

Visitors:

Current activities and history of the facility

- Contact person of the facility (name, title, contact information)?
- What area of the facility will be used for project activities?
- Who are the current users of the facility?
- What was the previous use of the facility (provide dates if possible)?
- Are there any intruders or illegal users of the facility whose livelihoods or assets will be affected by the project?

Environmental situation

- Are there any sensitive sites nearby (nature reserves, cultural sites, historical sites)?
- Are there any watercourses on the site?
- Is the site sloped?
- Is the site prone to flooding, waterlogging, or landslides? Are there signs of erosion?
- What buildings are nearby (e.g., schools, housing, industrial facilities) and land uses? Estimate the distances.
- Will the proposed facility affect transportation or utilities?

Licenses, permits

- Does the facility require licenses or permits for the proposed activity? Are they available for inspection?
- What environmental or other (e.g., health, forestry) agencies have jurisdiction over the site?

Water quality issues

- Does the planned activity use water for any purpose (give details and estimate quantity). What is the source?
- Will the planned activity produce any discharges? (estimate quantity and identify point of discharge)
- Is there a drainage system in place for surface water or wastewater? Is there a plan for existing drainage or septic systems available?
- How is wastewater managed (surface water courses, dry wells, septic tanks)?

Soils

- What is the surface of the land (farmland, pasture, etc.)?
- Will the project damage soils during construction or operation?
- Will the project have a significant impact on the landscape (drainage of wetlands, changes in water flow)

Biological environment

- Describe the vegetation cover on the site.
- Is there information about rare or threatened flora and fauna on or near the site? If so, will the project have an impact or increase the risk to the species?
- Obtain a list of vertebrate fauna and common plants of the site (if available).
- Note the potential negative impacts on the bio if the project goes forward.

Visual inspection procedures

- Try to get a map of the site or make a sketch to mark the details.
- Take pictures, if allowed.
- Walk as much of the plot as possible, including the boundaries, to mark adjacent activities.
- Pay attention to any smells, smoke or visual dust emissions, standing water, etc.

Annex 3: Outline of Environmental and Social Impact Assessment Report

Where an environmental and social impact assessment is prepared as part of the environmental and social assessment, it will include the following:

(a) *Executive Summary*

- Concisely discusses significant findings and recommended actions.

(b) *Legal and Institutional Framework*

- Analyzes the legal and institutional framework of the project within which the environmental and social assessment is conducted, including the issues outlined in ESS1, paragraph 26.
- Compares the existing environmental and social structure of the Borrower and ESS and identifies gaps between them.
- Identifies and assesses the environmental and social requirements of any co-financing agencies.

(c) *Project Description*

- Concisely describes the proposed project and its geographic, environmental, social, and temporal context, including any offsite investments that may be required (e.g., dedicated pipelines, access roads, power supply, water supply, housing, and raw material and product storage facilities), as well as the project's primary suppliers.
- Through consideration of the details of the project, indicates the need for any plan to meet the requirements of ESS1 through 10.
- Includes a map of sufficient detail, showing the project site and the area that may be affected by the project's direct, indirect, and cumulative impacts

(d) *Baseline Data*

- Sets out in detail the baseline data that is relevant to decisions about project location, design, operation, or mitigation measures. This should include a discussion of the accuracy, reliability, and sources of the data as well as information about dates surrounding project identification, planning and implementation.
- Identifies and estimates the extent and quality of available data, key data gaps, and uncertainties associated with predictions.
- Based on current information, assesses the scope of the area to be studied and describes relevant physical, biological, and socioeconomic conditions, including any changes anticipated before the project commences.
- Takes into account current and proposed development activities within the project area but not directly connected to the project

(e) *Environmental and social risks and impacts*

- Takes into account all relevant environmental and social risks and impacts of the project. This will include the environmental and social risks and impacts specifically identified in ESS2-8, as well as any other environmental and social risks and impacts arising from the specific nature and context of the project, including the risks and impacts identified in ESS1, paragraph 28.

(f) *Mitigation measures*

- Identifies mitigation measures and significant residual negative impacts that cannot be mitigated and, to the extent possible, assesses the acceptability of those residual negative impacts.
- Identifies differentiated measures so that adverse impacts do not fall disproportionately on the disadvantaged or vulnerable.
- Assesses the feasibility of mitigating the environmental and social impacts; the capital and recurrent costs of proposed mitigation measures, and their suitability under local conditions; and the institutional, training, and monitoring requirements for the proposed mitigation measures.
- Specifies issues that do not require further attention, providing the bases for this determination

(g) *Analysis of Alternatives*

- Systematically compares feasible alternatives to the proposed project site, technology, design, and operation—including the “without project” situation—in terms of their potential environmental and social impacts.
- Assesses the alternatives’ feasibility of mitigating the environmental and social impacts; the capital and recurrent costs of alternative mitigation measures, and their suitability under local conditions; and the institutional, training, and monitoring requirements for the alternative mitigation measures.
- For each of the alternatives, quantifies the environmental and social impacts to the extent possible, and attaches economic values where feasible.

(i) *Key Measures and Actions for the Environmental and Social Commitment Plan (ESCP)*

- Summarizes key measures and actions and the timeframe required for the project to meet the requirements of the ESSs. This will be used in developing the Environmental and Social Commitment Plan (ESCP).

(j) *Appendices*

- List of the individuals or organizations that prepared or contributed to the environmental and social assessment.
- References—setting out the written materials both published and unpublished, that have been used
- Record of meetings, consultations and surveys with stakeholders, including those with affected people and other interested parties The record specifies the means of such stakeholder engagement that were used to obtain the views of affected people and other interested parties.
- Tables presenting the relevant data referred to or summarized in the main text.
- A list of related reports or plans.

Annex 4. Information on the sites

Sites Information from the survey (November 2022)

Karakul HPP. The approximate coordinates of the head structure and power station are N41.629 E72.649 and N41.626 E72.636, respectively. The area is developed as anthropogenically as possible. The hydrological regime of the river is disturbed, the waters show signs of contamination with sewage and human and livestock excrement. The river bed is used by the local population to dump sewage and household waste.

Tar HPP. The two main sites for the Tar HPP at coordinates N40.577 E73.685 and N40.573 E73.708, respectively, are intensively used for pasture and dry farming. When viewed, there are signs of depletion of the herbaceous cover and traces of water and wind erosion of the slopes of the «adyrs» (hills) of the river banks, due to the pressure of cattle breeding. Both banks of the river are developed for livestock winter roads, in fact, most of them are permanent places of residence for people. The river shows signs of pollution. Sewage, garbage, human and livestock faeces are dumped into the river.

Bystrovska HPP. Preliminary restoration work: laying of concrete and reinforced concrete, when replacing the rotors of a hydraulic turbine, as well as other restoration work will not cause significant damage to the environment and the technogenic and social environment.

Kambarata HPP. For the construction of a hydroelectric power plant (1.6 GW, dam 160-260 m), most likely, an arch dam, typical for mountainous regions, will be used. Due to its shape (in fact, it is a fragment of a dome curved towards the seething water), such a dam transfers the load to the sides of the canyon. An arch dam is more difficult to build, but more economical in terms of material consumption. However, there is no production of M1000 reinforced concrete required for the construction of HPP in the republic. To ensure construction with imported concrete, it is necessary to build a railway line bypassing Uzbekistan, or to obtain the consent of neighboring republics (under the conditions of the irrigation and economic complex of the entire water and energy system of Central Asia). Given the high seismic hazard inherent in mountain systems, in order for the dam to fulfill its task and not present man-made disasters, a thorough geological study of the sections of the river is required in the place where the construction of the hydroelectric power station is supposed.

*Photos of proposed site
Tar subproject, Kara-Kulzha rayon, Osh oblast*



Flora and Fauna

Design sites on the Tar River have tugai thickets represented by local species of willow, poplar, wild species of pistachio, apple, hawthorn, grasses - sedge, reed. Such floodplain thickets are not at all dense, oppressed by overgrazing of livestock, especially goats, which peel off the bark and eat the apex of green plants. During the construction of the HPP, part of the tugai will go under the water of the reservoir.



*Photo 2. From left to right: hawthorn (*Crataegus turkestanica*), wild pistachio (*Pistacia*) fruit, floodplain tugai on the Tar River*

The main species of woody plant forms identified during research in the Karasuu riverbed are: juniper (*Juniperus sp.*), white poplar (*Populus alba*), wild plum (*Prunus sogdiana*), white willow (*Salix alba*). Most of the tree and shrub vegetation in the riverbed is of artificial origin, or is self-seeding. The river gorge is narrow and rocky. Grassy cover oppressed by overgrazing of small cattle. On the left is the Bishkek-Osh highway, the slopes show signs of rain erosion caused by polluted flows from the asphalt road. In the case of designing a dam at a height of 10 m or more, there are single (up to 5 large) tree-like forms of the juniper species (local name "archa"). Archa is the Turkic name for various types of large tree-like junipers. According to the Law of the Kyrgyz Republic dated February 12, 2007, No. 15 refers to especially valuable tree species in the Kyrgyz Republic, and requires an appropriate action protocol for their cut/removal and compensation.

Given that they grow on sheer stone cliffs, transplanting them would be unlikely. The felling of especially valuable tree species (walnut and juniper) is carried out in accordance with the Rules approved by the Government of the Kyrgyz Republic, upon the conclusion of a specially authorized state forest management body.²⁸

²⁸ [Law of the Kyrgyz Republic dated February 12, 2007 No. 15 "On the prohibition of felling, transportation, acquisition and sale, harvesting and use, export and import of especially valuable \(walnut and juniper\) tree species in the Kyrgyz Republic" \(minjust.gov.kg\).](http://minjust.gov.kg)



Juniper (lat. Juniperus)

Juniper (lat. Juniperus) is a genus of evergreen coniferous shrubs and trees of the Cypress family (Cupressaceae). Has small ranges, confined to certain mountainous countries or mountain systems, and are replaced outside them by other, albeit close, but well distinguishable species. Juniper species are smaller trees or tall shrubs.



Photo 3. From left to right: juniper (Juniperus sp.), wild plum (Prunus sogdiana), juniper (Juniperus sp.), floodplain tugai on the Karasuu River

The construction of the dams at Kambarata - 1 HPP and Tar SHPP will lead to flooding of places, including some areas of land and floodplain forests, the death of all flora and fauna, the disappearance of pastures, territories of historical and geological interest. During the construction of the dam and reservoir of the Kambarata - 1 HPP, the winter quarters of livestock of the villages of Sary-Kamysh, Toluk, Nichke-Sai, Torken and other land holdings will remain under water.

The dam and reservoir take the flooded land out of circulation and affect the quality of the water accumulating in it.

The vegetation of the northern exposure of the site is sparse. Represented by rare islands of sedge, horsetail ephedra, thorns. The slopes of the southern exposure are stony-clay, less steep, covered with undersized sedge. The grass cover is depressed, with signs of erosion due to overgrazing.



Photo 4. From left to right: horsetail ephedra (*Ephédra equisetína*), sedge (*Cárex*).

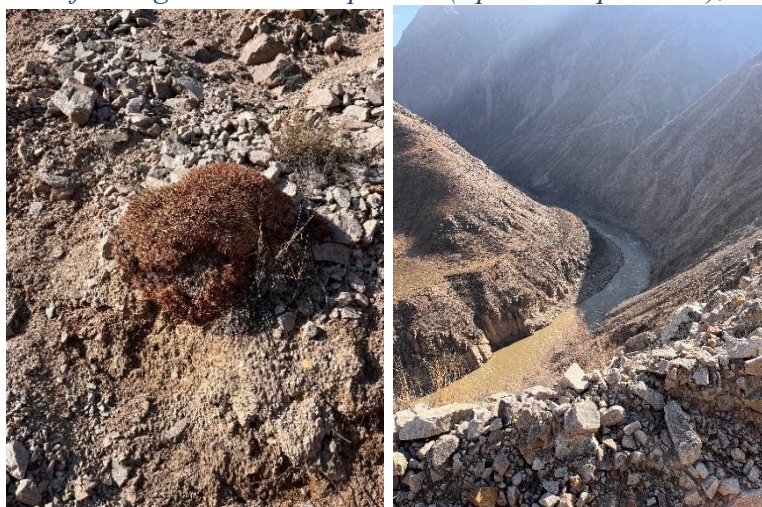


Photo 5. From left to right: Prickly cushion (*Acantholimon*²⁹), bare bed of the Naryn river with a lack of vegetation due to frequent scree and erosion.

Alectoris chukar. Slightly larger than the gray partridge, the body is rounded, dense; body length 32–34 cm, wingspan 47–52 cm, weight 365–770 g. Prefers to move up on foot, and down to fly, alternating frequent strokes with gliding on spread wings. In case of danger, it hides, runs up the slope or flies away. Most of the year it spends in flocks, only in the breeding season it keeps in pairs. The clutch size is from 7 to 20 eggs. The basis of adult bird nutrition from summer to winter is the seeds of herbaceous plants, it also eats underground parts of plants (bulbs, tubers, roots and rhizomes), digging them with its paws or gouging deep holes in the ground with its beak. In spring, the diet is dominated by green parts of plants: leaves and stems of cereals, Asteraceae, legumes, and ephemeral flowers. In summer, it regularly eats insects (Orthoptera, beetles and bedbugs), mollusks and spiders. In accordance with the categories of the International Union for Conservation of Nature (IUCN) its status is Least Concern. Date assessed: 18 December 2020.

²⁹ A species definition is required. *Acantholimon dense* (*Acantholimon compactum* Korov.) - *Nyk tötöman* - Status: VU. A very rare endemic species. Included in the Red Book of the Kyrgyz Republic. Source: [Decree of the Government of the Kyrgyz Republic dated April 28, 2005 No. 170 "On approval of the lists of rare and endangered species of animals and plants for inclusion in the Red Book of the Kyrgyz Republic" \(minjust.gov.kg\).](#)

The nest is located in the grass, at the base of a bush, under a canopy of a stone or rock, usually on open areas of slopes of southern exposure. Settles on the rocky slopes of the mountains, overgrown with rare shrubs. In winter, it migrates to the foothills. The local name is "*keklik*". It is an object of hunting. The systematics is given below.

Order GALLIFORMES – CHICKEN, Genus *Alectoris* - Kekliki - Kekilikter - Chukar partridges

A. chukar (J.E.Gray) - кеклик - кекилик - chukar partridge [54]; шр.

la. *A. ch. falki* Hartert BK [54, 52]; шр.

lb. *A. ch. pallescens* Hume (= *Caccabis pallidus* Hume) BK [54 (как *A. graeca pallida* «Hart. »), 52, 53]; шр.³⁰



Rock partridge (Alectoris chukar)



Marinka (Schizothorax)

Marinka fish (Schizothorax) is a cool-loving member of the *Cyprinidae* family, preferring fast currents, clear water, rocky bottoms. Due to the exterior, physiological and geographical specificity, the unique species stands apart in ichthyological systematics. The basic taxon is the *Common Marinka (Schizothorax intermedius)*, which makes up 55-65% of the total population and is omnivorous (larvae, insects, fish fry, berries). Cannibal. The average size of representatives of this group is standardly 15-30 cm (0.2-0.7 kg). The mass of trophy specimens starts from 1 kg. The maximum weight of an ordinary *Marinka* is 2.5-3.0 kg with growth up to 50 cm. The largest population of the species is concentrated in Kazakhstan, Uzbekistan, Turkmenistan, Kyrgyzstan. In accordance with the categories of the International Union for Conservation of Nature (IUCN) its status is Least Concern. Date assessed: 03 March 2020.

The local name is "*akbalyk*". The fish has excellent gastronomic qualities and is highly valued by gourmets for its delicious tender meat. But *Marinka* is poisonous; if cooked incorrectly, it can poison the body with dangerous toxins. To avoid this, when cutting the carcass, remove and discard the eggs (milk), gills, black film inside the peritoneum. After thorough washing, the fish can be used for culinary purposes. The systematics is given below.

Subfamily Schizothoracinini - GAMBELLI

Genus *Schizothorax* Heckel - Маринки - Жылтырлар - Marinkas

1. *Sch. intermedius* McClelland (*l*=*Sch. curvifrons* Heckel [27: s. syn.], *l*=*Sch. euryostomus* Kessler [27: bona sp.])³¹

³⁰ Source: Cadastre of the Genetic Fund of Kyrgyzstan. Volume 4. BPI NAS KR. Bishkek. 2015. BIB_11272.pdf (lacerta.de).

³¹ Source: Cadastre of the Genetic Fund of Kyrgyzstan. Volume 4. BPI NAS KR. Bishkek. 2015. [BIB_11272.pdf \(lacerta.de\)](#).

It indicates the original trout species that lived in the rivers and lakes of Kyrgyzstan before the introduction of other trout species from the 60s of the last centuries, this is the brook trout³² (*Salmo trutta L.*). Brook trout does not form numerous flocks. Prefers to be in areas where the optimal amount of oxygen and a constant influx of clean, cold water. At the end of spawning, in cold weather, the fish goes downstream to traditional habitats, sticking to areas where springs flow and there are deep-sea places, constantly being almost at the very bottom.

In the conditions of spring floods, fish move closer to high banks, which provides them with food, but with the advent of summer heat, trout tries to go under waterfalls, to a considerable depth and into areas with whirlpools. In such areas, the trout keeps until the onset of cold weather, when the water temperature becomes more comfortable for the trout. Fish do not make global migrations like sea trout, but actively move up or down the river/reservoir, especially during spawning periods, as well as in the process of searching for food and new habitats.



Salmo trutta L. - brook trout

Salmo trutta L. Medium-sized fish (usually 25–35 cm long and 200–500 g in weight, extremely rarely up to 2 kg), very brightly colored on the outside and absolutely white inside. The back of the brook trout is dark, the belly is white or golden yellow, small spots are scattered on the sides and fins - black, orange and red, often surrounded by a light rim (the color of the brook trout largely depends on the color of the water and the soil of the reservoirs). The favorite habitat of this fish is clean mountain rivers with cold water. Feeds on any living objects that it finds in the water column or at the bottom. Starting in spring and all summer, this fish feeds on insects that fall into the water for one reason or another. Cannibal. The local name is "ala balyk". In accordance with the categories of the International Union for Conservation of Nature (IUCN) its status is Least Concern. Date assessed: 05 March 2010. The systematics is given below.

Order SALMONIFORMES - SALMON

Subfamily SALMONINAE - salmon - ala balyktar - salmons and trouts

Genus Salmo Linnaeus - Atlantic salmon - Atlantic trouts

***Salmo trutta L.* - brook trout (lake)³³**

³² Considering many factors in terms of genetics, the brook/lake trout is characterized by the highest heterogeneity among vertebrates. For example, the British wild trout population has such a number of variations that it is much larger than all people living on our planet. Under the common name "trout" various freshwater forms of salmon of the genus *Salmo* are united. Now in the rivers of Kyrgyzstan there are various types of trout (unauthorized launch, escaped from cages, etc.). Researchers believe that lake and brook trout are forms (subspecies) of brown trout.

³³ Source: Cadastre of the Genetic Fund of Kyrgyzstan. Volume 4. BPI NAS KR. Bishkek. 2015. [BIB_11272.pdf \(lacerta.de\)](#).

Annex 5. Social Screening Checklist

Part 1 Instruction

- (i) PMO assigned specialist with help of experts if needed completes the form.
- (ii) The classification of a project is a continuing process. If there is a change in the project components, project design or/and site shall be completed by the PMO assigned specialist and submits a new form. The old form is attached for reference.
- (iii) Screening is filled in for all type of subprojects financed under the project.

Project name:				
Subproject name:				
Location (Province, city, village)				
Kind of activity associated with civil works (all types including access roads, infrastructure etc.):				
Screening is done				
First Time		Time (mention the reason)		
Project/subproject start date				
Project/subproject completion date				
Screening date				
Field visit conducted: No, Yes (add dates and locations in the field)				
<p>Description of the Subproject</p> <p><i>Give a brief introduction to the sub-project and its components, their objectives and benefits. Details about existing conditions of the facilities and proposed civil works with scope</i></p> <p><i>Available design maps earmarking site and proposed activities in order to explain work. Superimpose the map on the Google earth if available.</i></p> <p><i>Whether this is purely rehabilitation of existing facilities or will involve any new works. Is this sub-project closely linked to any other activity not funded under the Project?</i></p> <p><i>Will this sub-project involve any ancillary impact/ activity away from the work site?</i></p>				
Questions	Yes	No	Not Known	Observations, remarks
Impacts Due to Land Acquisition/ Donation of land				
Is the ownership status and current usage of land to be used for the construction known? (provide details in the remarks). Please, add is the site chosen for this work free from encumbrances and is in possession of the subproject implementer?				
Is land for material mobilization or transport for the civil work available within the existing plot (Right of Way)? If not, provide the details on that land location, availability etc.				
Would the Project potentially involve temporary or permanent and full or partial physical displacement? (Specify in the remarks what type of displacement is anticipated)				If yes, subproject will not be funded.
Would the Project potentially involve temporary or permanent and full or partial economical displacement (e.g. loss of assets or access to resources due to land acquisition/ donation or access restrictions – even in the absence of physical relocation)? (Specify in the remarks what type of displacement is anticipated)				If yes, subproject will not be funded.
Is there any impact on illegal land use practices? Are there any non-titled people who are living/doing business on the proposed site/project locations that will be used for civil work? If yes,				

ESMF for Kyrgyz Renewable Energy Development Project (KRED)

provide in the Note Section details on any temporary or permanent impact on them?				
If the site is privately owned, can this land be purchased through negotiated settlement?				
Will the land owners donate the land plot for the project?				If yes, subproject will not be funded.
Will there be loss of shelter and/or residential land due to land acquisition/ donation?				
Will there be loss of any productive assets due to land acquisition/donation?				
Will there be losses of crops, trees, and fixed assets due to land acquisition/donation?				
Will there be loss of businesses or enterprises due to land acquisition/donation?				
Will there be loss of income sources and means of livelihoods due to the subproject land acquisition/donation?				
Will any social or economic activities be affected by land userelated changes?				
Will people lose access to natural resources, communal facilities, services or other assets as a result of land acquisition/donation or project implementation? Provide details in the remarks.				
Will project result in land use restrictions and/or easement rights? Provide details in the remarks.				
Will access to land and resources owned communally or by the state be restricted?				
Are there any previous land acquisitions happened and the identified land has been already acquired? Provide details in the Note section.				
Are there any land acquisition happening in frame of this project but without financing of the World Bank? Provide details in the Note section.				
Data on Impact and Vulnerable Groups				
Is land area needed for the project known? (Provide estimates in the Remarks, including status of ownership, area, type of land use etc.)				
Is there any estimate of the likely number of persons that will be displaced by the Project?				If yes, subproject will not be funded.
Are any of them poor, female-heads of households, or vulnerable to poverty risks? Provide some estimate				
Gender				
Is there a likelihood of impacts on gender equality and/or the situation of women and girls?				
Would the Project potentially reproduce discriminations against women based on gender, especially regarding access to assets, opportunities and benefits?				
Would the Project potentially limit women's ability to use, develop and protect natural resources, taking into account different roles and positions of women and men in accessing environmental goods and services?				
Decision: After reviewing the answers above, it is determined that the subproject: <input type="checkbox"/> LAR impacts, the project is not eligible for financing <input type="checkbox"/> No LAR impact, the project is eligible for financing				
Prepared by _____ Date _____				
Approved by _____ Date _____				

Note: Attach additional information on the project, as necessary. For example, maps, photos, minutes of meeting etc.

Part 2: Screening report form of expected LAR impacts

(The report should be brief)

Sub-project _____

Sub-project implementation location _____

(Indicate location of implementation with the designation on the map-scheme with photos)

Kind of activity: (new construction, reconstruction, rehabilitation, maintenance)

Estimated cost _____

Estimated start date: _____

Technical drawings / specifications discussed: _____

№	Possible impact factor	Availability (Yes/ No)
1.	Does the sub-project fall into private land?	
2.	Is it necessary to physically or economically displace local people or businesses? Will there be involuntary acquisition of land? Will there be impact on assets?	
4.	Is it required to determine the level of assessment of institutional resources necessary for protection measures?	
5.	Are there any third-party assets at the project site?	
6.	Are there any disputed territories?	
7.	Will there be access roads and pedestrian paths to residential buildings and commercial structures during construction?	
8.	Will the construction lead to changes in social environment, will the incomes of commercial structures and the population decrease?	
9.	Will the planned construction affect the health of the population and harm somebody?	
10.	Will the sub-project cause protests and concerns among residents?	
11.	Will activities cause unfavorable impact on the living conditions of the population, its values, and way of life?	
12.	Will the sub-project cause inequality between population groups?	
13.	Is the degree of public interest in the sub-project high?	
14.	Are there any facts of the past impact of involuntary resettlement in a given territory, which require corrective actions for not mitigated past relocations?	
15.	Is this subproject linked with any other infrastructure development project	

Based on the above checklist it will be determined if an activity will be financed by the Project.

Recommendations:

Taking into account responses to monitoring questions, it will be determined whether further actions are required to prepare Due diligence report _____

Completed by (full name and contacts): _____ Signature: _____ Date: _____

Annex 6. Rules for Work Safety at Height

The employer must ensure that technical, technological and organizational measures have been undertaken in accordance with the approved regulations prior to commencement of any work at height:

- a) technical and technological measures, including the development and implementation of work-at-height plan (WaHP) or the development and approval of technological flow charts for the job (job cards); fencing of the work site, displaying warning and prescriptive posters (signs), use of collective and personal protective equipment;
- b) organizational measures, including proper allocation of responsibilities in the field of occupational health and safety among the employer's officers and the appointment of persons responsible for the organization and safe performance of work at height; person responsible for the safe operation of the suspended lifting cradle (hereinafter – the cradle); persons responsible for approving work-at-height plans (WaHP), persons authorized to issue a job order/permit, persons responsible for preparing a response and evacuation plan for cases of emergency, as well as persons responsible for maintenance and regular inspections of PPE.

The work-at height plan or the technological job card for work at height (hereinafter - JC) shall define and specify the following:

- (a) Priority setting up of permanent fencing structures;
- b) temporary fencing devices;
- c) means of support used, including ladders, stepladders, planking, platforms, roundabouts, and scaffolding;
- d) use of lifting devices, cradles of elevators (towers);
- e) systems of work safety at height and the list of devices, equipment and individual and collective protection equipment for protecting from falling from height; description of the uses for each of the items listed;
- f) nomenclature of equipment to protect workers from hazardous and harmful working conditions identified in the assessment of working conditions - noise, vibration, the effects of other hazards, as well as harmful substances in the air of the working area;
- g) places and methods of attaching safety systems for work at height;
- h) ways and means of ascent or descent of workers to workplaces at height;
- i) means of lighting workplaces, ascension/descension paths, as well as signaling and communication devices;
- j) requirements for the equipment of workplaces with labor safety equipment and essential fire extinguishing equipment;
- k) requirements regarding sanitary and support services to be made available for employees.

The WaHP or JC shall contain the requirements for:

- (a) installation and operation procedures for equipment;
- b) reducing the volume and intensity of jobs performed in conditions of elevated safety hazard;
- c) safe placement of machines and mechanisms;
- d) equipment of workplaces with industrial safety systems.

For the purposes of eliminating the risk of collapse of structures, or falling products or materials during their transportation by crane or during their use or storage at height, relevant WaHP or JC shall describe the following:

- a) means of containerization and containers for the transportation of single-piece and loose cargo, concrete and mortar, taking into account the nature of the cargo moved and the ease of its delivery to the place of work;
- b) methods of slinging, ensuring that the elements being transported are in a position that is equivalent or close to its design position;
- c) devices (pyramids, cassettes) for stable storage of structural elements;
- d) manner of storage for products, materials, equipment;
- e) manner of final fixation/retention of structures;

(f) manner of temporary securing of disassembled parts during the dismantling of buildings and structures;

(g) methods of disposal of waste and debris;

h) protective slabs (decks) or canopies when performing work within one vertical dimension.

The WaHP or JC involving the use of machines (mechanisms) shall contain the following:

(a) choosing most suitable types, determining places of installation and safe operation of machines (mechanisms);

b) types and means of protecting the operator and people working nearby from hazards associated with the operation of the machine;

c) range of travel and rotation angles for the machine;

d) means of communication between the machine operator and the people working nearby (sound alarms, radio and telephone communication);

e) special conditions for installing the machine in a hazardous area.

The WaHP or JC should contain the following:

a) description of safety measures to be used when working at height, with indication of specific types and means of scaffolds to be used, with clear indication that no unauthorized/improper alterations to the use or installation of scaffolds are allowed.

b) the requirement to ensure additional stability of scaffolding and towers, including by means of tethering to the load-bearing elements of buildings and structures, by magnetic fasteners and other anchoring fasteners, as prescribed by the manufacturer's recommendations.

To ensure protection against electric shock when working at height, the WaHP or JC shall include the following:

a) instructions on the selection of routes and determining the voltage of temporary power-supply and lighting lines, fencing of live parts and the location of electrical distribution panels;

b) instructions on how to earthen metal parts of electrical equipment and how to construct earthing loops;

c) additional safety measures related to carrying out works with high and very high level of hazard.

The WaHP or JC shall provide for additional safety measures if works are to be performed in an operating facility, without interruption of its principal workflows.

The plan for the evacuation and rescue of workers shall be developed in accordance with the requirements of the Section *Response to Accidents, Accidents and Occupational Diseases*, while taking into account the specific nature of the employer's operations.

When developing an emergency plan, psychophysiological risk factors affecting the worker during evacuation and rescue operations must be taken into account.

The evacuation and rescue plan for employees shall contain the following:

1. The flow-chart of decision-making regarding work stoppage and non-resumption.

2. Methods and means of emergency communication with the responsible manager and emergency services.

3. Emergency assembly point and evacuation routes leading to it for employees, should they decide to leave their workplaces immediately.

4. Systems to ensure the rescue or evacuation of victims of work-at-height accidents, including the nomenclature of devices, tools and means to be used for rescue and evacuation, as well as personal and collective protective equipment to protect workers from falling from height during rescue and evacuation operations, as well as the number of necessary units of each such device or tool.

5. Places and ways of tethering/fixing systems used for rescue and evacuation.

6. Ways and means of lifting and (or) lowering workers to the victim.

7. Methods for safely lowering or lifting the victim into a safe area.

8. Providing first aid to victims of accidents and, if necessary, calling an ambulance (or providing first on-site if the employer has a first aid station).

It shall not be allowed to perform work at heights without obtaining a proper work order/permit; such a work order/permit should list in its para 3 the necessary safety measures for the job

specified. Furthermore, in its para 4 the work order/permit shall list special safety measures, such as those that apply to the following circumstances:

- a) in open places, where the air speed (wind) is 15 meters per second or more;
- b) in thunderstorm or fog that prevents full visibility within area of work, as well as in the case of ice formation on structures, wires, equipment, engineering structures (including poles of power lines), trees;
- c) when assembling (disassembling) structures with a large windage surface (surface exposed to wind) at wind speeds of 10 meters per second or more.

The officer responsible for the organization and safe conduct of work at height shall:

- a) organize the development of safety documentation for work at heights; plan for evacuation and rescue of workers in case of emergency and rescue; organize the development, approval and implementation of technological flow charts for work at height (WaHP); issue and register work order/permits;
- b) organize the storage and issuance of collective and personal protective equipment in accordance with the manufacturer's requirements, as well as ensure their timely maintenance, regular testing, and go/no-go inspection;
- c) organize training of employees in safe methods and techniques of work at heights, organize periodic testing of knowledge of safe methods and techniques of work at heights, organize internships and trainings on occupational safety;
- d) maintain workers' personal logs of work at height with the use of rope access systems.

To ensure the safety of work carried out at height, the employer must organize:

- a) proper selection and use of protective equipment;
- b) compliance with the requirements regarding marking of protective equipment;
- c) maintenance and periodic checks of the protective equipment specified in the manufacturer's operational documentation (instructions).

Annex 7. Minutes of the Public Consultations

Minutes of the Public Consultations held in Karakul city, Jalal-Abad oblast

Minutes of public consultations on raising awareness among the stakeholders and the public on the World Bank “Kyrgyz Republic Renewable Energy Development Project” and Social and Environmental standards applicable to the project

Kara-Kul city

January 28, 2023

Participants:

Tazhimyrzaev E. S. - First Deputy Mayor of the city of Kara-Kul, chairman of the meeting;
Mukhambetov E. - Head of the Department of Perspective Development, OJSC "Chakan HPP";
Orozalieva S.M. - Social Consultant, OJSC "Chakan HPP";
Orozaly uulu Zhanybek – Environmental Protection Consultant, OJSC Chakan HPP.

52 people participated in the public consultations: representatives of the mayor's office of Kara-Kul, heads of ayyl okmotu of nearby villages, representatives of the Kambarata HPP-1, Members of the City Kenesh, the public and other stakeholders (the list is attached). There were 4 women participated in the consultations.

Chairman of the meeting, First Deputy Mayor of Kara-Kul, Tazhimyrzaev Edilbek Sadyrbekovich greeted the attendees. He introduced the representative of the Ministry of Energy of the Kyrgyz Republic represented by Chakan HPP OJSC and consultants on social and environmental issues and gave them the floor.

Mukhambetov E. - presented the project and its components as well as the proposed work. The project is aimed at (i) development and reconstruction of small hydropower plants; (ii) preparation of a pilot project on solar energy, including grid strengthening; and (iii) technical assistance for the preparation of the Kambarata HPP-1 project and consists of the following components:

Component 1: Rehabilitation and Construction of Small and Medium-scale Hydropower Plants;
Component 2: Technical assistance for the Preparation of Kambarata-1 Large Hydropower Plant;
Component 3: Preparation and Grid Integration of Renewable Energy Projects.

Orozalieva S.M., Chakan HPP Social Consultant, informed the participants of public consultations about the main social risks of the project.

The objective of the social risk assessment is to identify the significant impact of the proposed project on the social environment (positive and negative), to determine the appropriate preventive and mitigation measures aimed at preventing, minimizing or eliminating any expected irreversible impact.

The main social risks are:

- (i) land acquisition and involuntary resettlement required for the construction/modernization of small and medium-sized hydropower plants and
- (ii) the risk of social exclusion, i.e. the vulnerable and disadvantaged groups will need to be considered in project design to ensure that they have equal access to project benefits and avoid disproportionate negative project impacts.

These possible impacts will be addressed, to the extent possible, through a range of measures, including its avoidance and minimization in order of priority. Land acquisition and resettlement

issues will be addressed through the implementation of the Resettlement Framework Document (RFP), which provides for replacement cost compensation and other livelihood restoration measures, etc.

The Consultant noted that the following documents were prepared during the appraisal phase of the project:

- (i) Environmental and Social Management Framework (ESMF),
- (ii) Stakeholder Engagement Plan (SEP),
- (iii) Labor Management Procedures (LMP),
- (iv) Resettlement Policy Framework (RPF) and
- (v) Environmental and Social Commitment Plan.

She communicated in detail about the World Bank environmental and social standards applicable to the project, in particular, she pointed on the standards of ESS5: Land Acquisition, Land Use Restrictions and Involuntary Resettlement, and ESS10: Stakeholder Engagement and Information Disclosure.

Thus, ESS5 is considered relevant because of the potential investment under Component 1, which may require some temporary and/or permanent physical and economic relocation, or cause changes in land use or access to land in areas of certain activities. For example, they may include the construction or modernization of small and medium-sized hydropower plants, as well as other types of transformative investments to improve the livelihoods of beneficiaries on the ground.

However, the nature and extent of interventions and their implications are currently unknown and will become clearer when choosing an investment activity. To implement the above impacts, the project has developed a Resettlement Policy Framework. In case sub-projects and investments for sub-projects are identified, Resettlement Action Plans will be prepared through appraisal.

Land Acquisition, Resettlement and Rehabilitation Legislation and Policy, as well as the provisions of ESS5, should be implemented in accordance with the provisions of the RPF. The project does not provide for the forced withdrawal of land.

In accordance with the requirements of World Bank ESS10, the Project will implement and apply the Grievance Redress Mechanism (GRM) for the activities of the entire Project. GRM is a process of obtaining prompt, objective information, evaluation, consideration, satisfaction of complaints (applications, proposals, complaints, requests, positive feedback) related to the implementation of the Project.

Appeals or complaints can be both individual and collective. This mechanism will also allow anonymous complaints to be submitted and dealt with.

Communities and individuals who feel that they are adversely affected by a World Bank (WB) supported project can also file complaints with the World Bank Grievance Redress Service (GRS). The GRS ensures that grievances received are dealt with in a timely manner to resolve issues related to the project.

Affected communities and individuals may file their complaint with the World Bank's Independent Review Panel, which determines whether harm has been or may result from the World Bank's non-compliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the attention of the World Bank and Bank management has been given an opportunity to respond. See <http://www.worldbank.org/en/projectsoperations/products-and-services/grievance-redress-service> for information on how to file grievances with the World Bank Corporate Grievance Redress Service (GRS). Information on how to file complaints with the World Bank Inspection Panel can be found at www.inspectionpanel.org.

Orozaly uulu Zhanybek, OJSC Chakan HPP Environmental Consultant, informed the participants of public consultations about the requirements of the environmental legislation of the

Kyrgyz Republic and the World Bank's policy on environmental protection during the implementation of the project.

The objective of an environmental assessment is to identify the significant impact of a proposed project on the environment, to identify appropriate mitigation measures aimed at preventing, minimizing or eliminating any expected impact.

However, during construction activities, there may be some potentially negative environmental impacts in the project areas that need to be addressed, preventive actions taken and appropriate mitigation measures taken during planning, design, construction, operation and maintenance. Potential negative impacts are relatively minor and the positive economic, social and environmental benefits far outweigh them in the environmental assessment. These impacts are discussed below.

The main impact that can be caused as a result of construction works:

- 1) Soil pollution at the construction site
- 2) Groundwater pollution at construction site
- 3) Deterioration of the landscape, destruction of the natural habitat of the animal world
- 4) Air Pollution and Worker/Public Exposure from Traffic and Heavy Machinery

To prevent or mitigate the negative impact of construction, an ESMP is prepared for each rehabilitation facility.

All risks of the construction phase are easily controlled and eliminated. They can be minimized with proper design of mitigation measures and control over the Contractor during the performance of the work.

Questions - answers:

Mamyrov T. A. - Who will pay compensation for the land acquisition?

Orozalieva S.M. - If there is a need to allocate a land plot for the construction of a hydropower plant, then this procedure will be carried out in accordance with the legislation of the Kyrgyz Republic on land acquisition and the provisions of the RPF. The acquisition of land plots for the construction of the Kara-Kul hydropower plant will be decided by the mayor's office of the city of Kara-Kul. The cost of acquiring land plots, involuntary resettlement will be borne by local authorities, the project does not provide funds for this article.

Turumatov A.K. – How will the 3 states interact on the management of the Kambarata HPP-1. How will funding be provided and managed?

Orozalieva S. M. - Interaction financing the construction of the Kambarata HPP-1 and its management by 3 states (Kyrgyzstan-Uzbekistan-Tajikistan) will be decided at the government level. Within the framework of this project, only the development of the Terms of Reference for updating the Feasibility Study of the Kambarata HPP-1 is financed.

Mukhambetov E. - added that within the framework of the project a feasibility study will be prepared and on the basis of which a decision will be made on the contribution of neighboring states for the construction of the Kambarata HPP-1.

Kadyraliev T.K. - What amounts are related to the grant, and what amounts to the loan?

Orozalieva S. M. – Total amount project is \$54 million, of which \$42 million is IDA loan funds, \$12 million is GCF funds, of which \$10 million is a loan and \$2 million is a grant. For component 1, US\$39 million is provided for the construction of one or two small or medium HPPs, in our case, two potential objects are considered - Karakulskaya HPP and Tarskaya HPP, as well as the reconstruction of Bystrovskaya HPP. For component 2, 2 million US dollars are provided for the development of TOR for updating the feasibility study for Kambarata HPP-1. And 10 million US

dollars for the activities of component 3, which will be implemented by NEGK and 2 million US dollars for component 4.

Bekbolotov A.K. – At what interest rates do IDA and GCF lend?

Mukhambetov E. - Loans are issued for a period of 50 years with a grace period of 10 years, and the rate for the use of credit funds is 0.0%. That is, the Kyrgyz side will take as much money and return it, you can regard this loan as a loan.

Darbishev A. A. - A question about the social package, what amount will be the wages of power engineers during the construction and operation of the HPP?

Orozalieva S.M. - In case of hiring employees of the energy sector, the salary will be negotiated by the Contractor and each employee individually. The project will not interfere in the internal issues of the contractor.

Chynaliev S. B. - Is the feasibility study of the Kambarata HPP-1 ready?

Orozalieva S. M. - At present, the Ministry of Energy is preparing Terms of Reference for updating feasibility study Kambarata HPP-1.

Shamurzaev B. - What is the capacity of the Kara-Kul HPP?

Mukhambetov E. - The Norwegian consulting company Norconsult was hired by the World Bank to develop a preliminary feasibility study for the construction of the Karakul hydropower plant. In December 2022, a preliminary report was submitted, according to which the HPP's capacity will be up to 28 MW. The final pre-feasibility study will be submitted in March 2023.

Darbishev A.A. - I propose to inform the population through the media, namely TV about the topics of energy, ecology, etc. to avoid negative impacts. I also propose to create a specialized institute for power engineers and pay great attention to the professional technical education of power engineers.

Mukhambetov E. - You correctly noted that the work to inform the population about the electric power industry is carried out on television and in social networks, and this work will not be stopped, but will only intensify. The project also provides for institutional development, which involves training and improving the professional skills of HPP personnel. We will inform the leadership of the Ministry of Energy on your proposals.

In conclusion, all the participants supported the implementation of this project.

Chairman of the meeting

Tazhimyrzaev E.S.

**Head of Department of Perspective
Development OJSC "Chakan HPP"**

Mukhambetov E.S.

Environmental Consultant

Orozaly uulu Zhanybek

Social Consultant

Orozaliev S.M.

Протокол общественных слушаний по информированию заинтересованных сторон и общественности о проекте Всемирного банка “Развитие возобновляемых источников энергии в Кыргызской Республике” и о социально-экологических стандартах Всемирного банка применимых к проекту

г. Кара-Куль

28 января 2023 г.

Присутствовали:

Тажимырзаев Э. С.– Первый заместитель мэра города Кара-Куль, председатель собрания;

Мухамбетов Э. – начальник отдела перспективного развития ОАО “Чакан ГЭС”;

Орозалиева С. М. – консультант по социальным вопросам ОАО “Чакан ГЭС”;

Орозалы уулу Жаныбек – консультант по ООС ОАО “Чакан ГЭС”.

В общественных слушаниях приняли участие 52 человека: представители мэрии г. Кара-Куль, главы айыл окмоту близлежащих сел, представители Камбаратинской ГЭС-1, депутаты городского кенеша, общественность и другие заинтересованные участники (список прилагается). В слушаниях приняли участие 4 женщины.

Председатель собрания Первый заместитель мэра города Кара-Куль Тажимырзаев Эдилбек Садырбекович поприветствовал участников слушания. Представил представителя Министерства энергетики Кыргызской Республики в лице ОАО “Чакан ГЭС” и консультантов по социально-экологическим вопросам и передал им слово.

Мухамбетов Э. – выступил с информацией о проекте, в которой рассказал о компонентах проекта и предполагаемых работах. Проект направлен на (i) развитие и реконструкцию малых гидроэлектростанций; (ii) подготовку пилотного проекта по солнечной энергии, включая укрепление сети; и (iii) техническую помощь для подготовки проекта Камбаратинской ГЭС-1 и состоит из следующих компонентов:

Компонент 1: Реконструкция и строительство малых и средних гидроэлектростанций;

Компонент 2: Техническая помощь в подготовке крупной гидроэлектростанции Камбарата-1;

Компонент 3: Подготовка и интеграция в сеть проектов по возобновляемым источникам энергии.

Орозалиева С.М. консультант по социальным вопросам ОАО “Чакан ГЭС” рассказала участникам общественных слушаний об основных социальных рисках проекта. Задача оценки социальных рисков заключается в том, чтобы выявить существенное воздействие предлагаемого проекта на социальную среду (позитивное и негативное), определить соответствующие превентивные меры и меры по смягчению воздействия, направленные на предупреждение, минимизацию или устранение любого ожидаемого необратимого воздействия.

Основными социальными рисками являются:

- (i) отвод земель и вынужденное переселение, необходимое в связи со строительством/модернизацией малых и средних ГЭС и
- (ii) риск социального исключения, то есть необходимо будет учитывать интересы уязвимых и неблагополучных групп населения при разработке проекта, чтобы

обеспечить им равный доступ к выгодам проекта и не допустить непропорционально негативного воздействия проекта.

Эти вероятные воздействия будут решаться с помощью многих мер, включая избежание и минимизацию в порядке приоритетности, насколько это возможно. Вопросы отвода земель и переселения будут решаться путем реализации Рамочного документа по переселению (РДП), который предусматривает компенсацию по стоимости замещения и другие меры по восстановлению средств к существованию и т.д.

Консультант отметила, что на этапе оценки проекта были подготовлены следующие документы:

- (i) Рамочный документ по управлению экологическими и социальными мерами (ESMF),
- (ii) План взаимодействия с заинтересованными сторонами (SEP),
- (iii) Процедуры управления трудовыми ресурсами (LMP),
- (iv) Рамочный документ основам политики переселения (RPF) и
- (v) План экологических и социальных обязательств.

Подробно рассказала о применимых к проекту социально-экологических стандартах Всемирного банка, в частности остановилась на стандартах СЭС5: Приобретение земли, ограничения землепользования и вынужденное переселение, и СЭС10: Взаимодействие с заинтересованными сторонами и раскрытия информации.

Так, СЭС5 считается уместным из-за потенциальных инвестиций по Компоненту 1, которые могут потребовать некоторого временного и/или постоянного физического и экономического перемещения или вызвать изменения в землепользовании или доступе к земле в зонах определенных видов деятельности. Например, они могут включать строительство или модернизацию малых и средних ГЭС, а также другие виды трансформирующих инвестиций в улучшение жизнедеятельности бенефициаров на местах.

Тем не менее, характер и масштабы вмешательств и их последствия в настоящее время неизвестны, и они станут более понятными при выборе инвестиционной деятельности. Для реализации вышеуказанных воздействий, проектом разработан Рамочный документ Основы политики переселения. В случае, если будут определены подпроекты и инвестиции для подпроектов, будет подготовлены Планы действий по переселению путем оценки.

Законодательство и политика в области землеотвода, переселения и реабилитации, а также положения СЭС5 должны быть реализованы в соответствии с положениями РДП. В проекте не предусматривается принудительное изъятие земель.

В соответствии с требованиями СЭС10 Всемирного банка, Проектом будет внедрен и применен Механизм подачи и рассмотрения жалоб (МРЖ) по деятельности всего Проекта. МРЖ является процессом получения оперативной, объективной информации, оценки, рассмотрения, удовлетворения жалоб (заявлений, предложений, жалоб, запросов, позитивных отзывов), связанных с реализацией Проекта.

Обращения или жалобы могут быть как индивидуальными, так и коллективными. Этот механизм также позволит подавать и рассматривать анонимные жалобы.

Сообщества и отдельные лица, которые считают, что на них проект, поддерживаемый Всемирным банком (ВБ) оказывает отрицательное воздействие, могут подавать жалобы также в Службу рассмотрения жалоб Всемирного банка (СРЖ). СРЖ обеспечивает своевременное рассмотрение полученных жалоб с целью решения проблем, связанных с проектом.

Затронутые проектом сообщества и отдельные лица могут подать свою жалобу в независимую инспекционную комиссию Всемирного банка, которая определяет, был ли вред причинен или может возникнуть в результате несоблюдения Всемирным банком его политики и процедур. Жалобы могут подаваться в любое время после того, как проблемы были доведены непосредственно до сведения Всемирного банка, и руководству Банка была предоставлена возможность ответить. Информацию о том, как подавать жалобы в корпоративную службу рассмотрения жалоб Всемирного банка (СРЖ), см. на веб-сайте <http://www.worldbank.org/en/projectsoperations/products-and-services/grievance-redress>

service. Информацию о том, как подавать жалобы в Инспекционную группу Всемирного банка, можно найти на сайте www.inspectionpanel.org.

Орозалы уулу Жаныбек - консультант по охране окружающей среды ОАО "Чакан ГЭС" рассказал участникам общественных слушаний о требованиях природоохранного законодательства Кыргызской Республики и политике Всемирного Банка по охране окружающей среды при реализации проекта.

Задача оценки окружающей среды заключается в том, чтобы выявить существенное воздействие предлагаемого проекта на окружающую среду, определить соответствующие меры по смягчению воздействия, направленные на предупреждение, минимизацию или устранение любого ожидаемого воздействия.

Вместе с тем, при проведении строительных работ, возможны проявления некоторых потенциально негативных воздействий на окружающую среду в проектных площадях, на которые необходимо обратить внимание, принять превентивные действия и соответствующие меры по их смягчению во время планирования, разработки, строительства, эксплуатации и технического обслуживания. Потенциальные негативные воздействия являются относительно незначительными, а позитивные экономические, социальные и экологические выгоды значительно перевешивают их в оценке окружающей среды. Рассмотрение этих воздействий приводится ниже.

Основное воздействие, которое может быть оказано в результате ведения строительных работ:

- 1) Загрязнение почв на строительной площадке
- 2) Загрязнение подземных вод на строительной площадке
- 3) Ухудшение ландшафта, разрушение естественной среды обитания животного мира
- 4) Загрязнение воздуха и воздействие на рабочих/население при движении транспорта и работе тяжелой техники

Для предотвращения или смягчения негативного воздействия строительства для каждого объекта реабилитации составляется ПУОСС.

Все риски фазы строительства легко контролируются и устраняются. Они могут быть сведены к минимуму при должном проектировании смягчающих мер и контроле над Подрядчиком при выполнении работ.

Вопросы – ответы:

Мамыров Т. А. – Кто будет выплачивать компенсацию за изъятый земельный участок?

Орозалнева С. М. – В случае, если будет необходимость в отводе земельного участка под строительства ГЭС, то данная процедура будет осуществлена в соответствии с законодательством Кыргызской Республики по приобретению земли и положений РДП. Вопросы приобретения земельных участков для строительства Кара-Кульской ГЭС будет решаться мэрией г. Кара-Куль. Расходы на приобретение земельных участков, вынужденное переселение будет нести местные органы власти, в рамках проекта не предусмотрены средства на данную статью.

Турдуматов А. К. – Каким образом будут взаимодействовать 3 государства по управлению Камбаратинской ГЭС-1. Каким образом будет осуществляться финансирование и управление им?

Орозалнева С. М. – Взаимодействие финансирование строительства Камбаратинской ГЭС-1 и управление им 3-мя государствами (Кыргызстан-Узбекистан-Таджикистан) будет решаться на правительственном уровне. В рамках настоящего проекта финансируется только разработка Технического задания для обновления Технико-экономического обоснования Камбаратинской ГЭС-1.

Мухамбетов Э. – дополнил, что в рамках проекта будет подготовлен ТЭО и на основании которого будет принято решение о вкладе соседних-государств по строительству Камбаратинской ГЭС-1.

Кадыралнев Т. К. – Какие сумму относятся к гранту, а какие к кредиту?

Орозалнева С. М. – Общая сумма проекта составляет 54 млн долларов США, из которых 42 млн долларов США - кредитные средства МАР, 12 млн долларов США - средства ЗКФ, из которых 10 млн долларов США в виде кредита и 2 млн долларов США в виде гранта. Для компонента 1 предусмотрены 39 млн долларов США на строительство одного или двух малых или средних ГЭС, в нашем случае рассматриваются два потенциальных объекта – Каракульская ГЭС и Тарская ГЭС, а также реконструкция Быстровской ГЭС. По компоненту 2 – предусмотрены 2 млн долларов США на разработку ТЗ для обновления ТЭО Камбаратинской ГЭС-1. И 10 млн долларов США на мероприятия компонента 3, который будет реализован НЭСКом и 2 млн долларов США для компонента 4.

Бекболотов А.К. – Под какие проценты МАР и ЗКФ выдают кредит?

Мухамбетов Э. – Кредиты выдаются сроком на 50 лет с льготным периодом 10 лет, а ставка за пользование кредитными средствами составляет 0,0%. То есть кыргызская сторона сколько денег возьмет столько и вернет. можно рассценивать данный кредит как ссуду.

Дарбишев А. А. – Вопрос по социальному пакету, какую сумму будет составлять заработная плата энергетиков при строительстве и эксплуатации ГЭС?

Орозалнева С. М. – В случае найма сотрудников энергосектора, заработная плата будет оговорено Подрядной организацией и каждым работником отдельно индивидуально. Проект не будет вмешиваться во внутренние вопросы подрядной организации.

Чыналiev С. Б. – ТЭО Камбаратинской ГЭС-1 готово?

Орозалнева С. М. – В настоящее время МЭ готовится Техническое задание для обновления ТЭО Камбаратинской ГЭС-1.

Шамурзаев Б. – Каково мощность Кара-Кульской ГЭС?

Мухамбетов Э. – Со стороны Всемирного банка нанята Норвежская консалтинговая компания Норконсалт для разработки предварительного ТЭО строительства Каракульской ГЭС. В декабре 2022 года предоставлен предварительный отчет, согласно которого мощность ГЭС будет составлять до 28 МВт. Окончательное предварительное ТЭО будет предоставлено в марте 2023 года.

Дарбишев А. А. – предлагаю информировать население через СМИ, а именно ТВ о темах энергетики, экологии и тд. чтобы исключить негативные воздействия. Также предлагаю создать специализированный институт для энергетиков и уделить большое внимание на профессиональное техническое образование энергетиков.

Мухамбетов Э. – Вы очень правильно отметили, работа по информированию населения про электроэнергетику проводится по телевидению и в социальных сетях и эта работа не будет остановлена, а будет только усиливаться. Также в рамках проекта предусмотрено институциональное развитие, которое подразумевает обучение и улучшение профессиональных навыков персонала ГЭС. Мы в обязательном порядке передадим ваши предложения руководству Министерства энергетики.

В заключении, все собранные материалы направлены на реализацию данного проекта.

Председатель собрания



Тажимырзаев Э.С.

Начальник отдела перспективного
развития ОАО "Чакан ГЭС"

Мухамбетов Э. С.

Консультант по охране
окружающей среды

Орозалы уулу Жаныбек

Консультант по социальным
Вопросам

Орозалиева С. М.

Список участников общественных слушаний по информированию заинтересованных сторон и общественности о проекте Всемирного банка Развития возобновляемой энергетики Кыргызстана (KRED)

Дата: 28.01.2013г.

Место проведения: 2 Каракуль

№ п/п	Фамилия, имя, отчество	Подпись
1	Айтишевбаев Ч.Ш.	
2	Тодубаев Р.А.	
3	Кышусаков К.С.	
4	Масиров К.К.	
5	Ташматов Ш.О.	
6	Калибеков Ч.Ч.	
7	Чинчиев С.О.	
8	Дубашбаев В.М.	
9	Байтешалиев Р.К.	
10	Шаймуратов Б.М.	
11	Мамуров Ж.А.	
12	Раимбеков И.В.	
13	Каримов Т.А.	
14	Абдрахманов С.Б.	
15	Муратов Н.И.	
16	Мамитов И.А.	
17	Турмураев А.К.	
18	Розынов К.Ж.	
19	Шамуратов С.Б.	
20	Жапаров А.О.	
21	Кадыралиев Т.К.	
22	Абдураманов Р.	
23	Дураманов Ч.Ш.	
24	Абдураманов Н.Р.	
25	Турмураев А.	
26	Жапаров С.З.	
27	Абдураманов С.	
28	Барбаев А.А.	
29	Асанбаев Ж.Р.	
30	Бейшеналиев А.К.	
31	Чыралиев С.Б.	
32	Кочубаев С.О.	
33	Абдураманов А.Р.	
34	Султанов И.Т.	
35	Мамуров М.И.	
36	Султанов Б.И.	

Photos taken during public consultations in Karakul city



2. Minutes of the Public Consultations held in Ylai-Talaa village in Kara-Kulzha rayon of Osh oblast

Minutes of public consultations on raising awareness among the stakeholders and the public on the World Bank “Kyrgyz Republic Renewable Energy Development Project” and Social and Environmental standards applicable to the project

Ylay-Talaa village, Kara-Kuldzha district, Osh oblast

January 28, 2023

Participants:

Zholdoshev N. Zh. - head of the Yylay-Tala ayil okmotu, chairman of the meeting;

Sadykov N.M. - General Director, OJSC "Chakan HPP";

Mukhambetov E. - Head of the Department of Perspective Development, OJSC "Chakan HPP";

Orozaliev S.M. - Social Consultant, OJSC "Chakan HPP";

Orozaly uulu Zhanybek – Environmental Protection Consultant, OJSC Chakan HPP.

46 people participated in the public consultations: representatives of the ayil okmotu, the public, the local population and other stakeholders (the list is attached). There were 4 women participated in the consultations.

Chairman of the meeting, head of the Ylay-Tala ayil okmotu, Zholdoshev Nurbek greeted the attendees. He introduced the representative of the Ministry of Energy of the Kyrgyz Republic represented by Chakan HPP OJSC and consultants on social and environmental issues and gave them the floor.

Sadykov N. M. General Director of OJSC "Chakan HPP" - presented the project and its components as well as the proposed work. The project is aimed at (i) development and reconstruction of small hydro power plants; (ii) preparation of a pilot project on solar energy, including grid strengthening; and (iii) technical assistance for the preparation of the Kambarata HPP-1 project and consists of the following components:

Component 1: Rehabilitation and Construction of Small and Medium-scale Hydropower Plants;

Component 2: Technical assistance for the Preparation of Kambarata-1 Large Hydropower Plant;

Component 3: Preparation and Grid Integration of Renewable Energy Projects.

Orozaliev S.M., Chakan HPP Social Consultant, informed the participants of public consultations about the main social risks of the project.

The objective of the social risk assessment is to identify the significant impact of the proposed project on the social environment (positive and negative), to determine the appropriate preventive and mitigation measures aimed at preventing, minimizing or eliminating any expected irreversible impact.

The main social risks are:

(i) land acquisition and involuntary resettlement required for the construction/modernization of small and medium-sized hydropower plants and

(ii) the risk of social exclusion, i.e. the vulnerable and disadvantaged groups will need to be considered in project design to ensure that they have equal access to project benefits and avoid disproportionate negative project impacts.

These possible impacts will be addressed, to the extent possible, through a range of measures, including its avoidance and minimization in order of priority. Land acquisition and resettlement

issues will be addressed through the implementation of the Resettlement Framework Document (RFP), which provides for replacement cost compensation and other livelihood restoration measures, etc.

The Consultant noted that the following documents were prepared during the appraisal phase of the project:

- Environmental and Social Management Framework (ESMF),
- Stakeholder Engagement Plan (SEP),
- Labor Management Procedures (LMP),
- Resettlement Policy Framework (RPF) and
- Environmental and Social Commitment Plan.

She communicated in detail about the World Bank environmental and social standards applicable to the project, in particular, she pointed on the standards of ESS5: Land Acquisition, Land Use Restrictions and Involuntary Resettlement, and ESS10: Stakeholder Engagement and Information Disclosure.

Thus, ESS5 is considered relevant because of the potential investment under Component 1, which may require some temporary and/or permanent physical and economic relocation, or cause changes in land use or access to land in areas of certain activities. For example, they may include the construction or modernization of small and medium-sized hydropower plants, as well as other types of transformative investments to improve the livelihoods of beneficiaries on the ground.

However, the nature and extent of interventions and their implications are currently unknown and will become clearer when choosing an investment activity. To implement the above impacts, the project has developed a Resettlement Policy Framework. In case sub-projects and investments for sub-projects are identified, Resettlement Action Plans will be prepared through appraisal.

Land Acquisition, Resettlement and Rehabilitation Legislation and Policy, as well as the provisions of ESS5, should be implemented in accordance with the provisions of the RPF. The project does not provide for the forced withdrawal of land.

In accordance with the requirements of World Bank ESS10, the Project will implement and apply the Grievance Redress Mechanism (GRM) for the activities of the entire Project. GRM is a process of obtaining prompt, objective information, evaluation, consideration, satisfaction of complaints (applications, proposals, complaints, requests, positive feedback) related to the implementation of the Project.

Appeals or complaints can be both individual and collective. This mechanism will also allow anonymous complaints to be submitted and dealt with.

Communities and individuals who feel that they are adversely affected by a World Bank (WB) supported project can also file complaints with the World Bank Grievance Redress Service (GRS). The GRS ensures that grievances received are dealt with in a timely manner to resolve issues related to the project.

Affected communities and individuals may file their complaint with the World Bank's Independent Review Panel, which determines whether harm has been or may result from the World Bank's non-compliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the attention of the World Bank and Bank management has been given an opportunity to respond. See <http://www.worldbank.org/en/projectsoperations/products-and-services/grievance-redress-service> for information on how to file grievances with the World Bank Corporate Grievance Redress Service (GRS). Information on how to file complaints with the World Bank Inspection Panel can be found at www.inspectionpanel.org.

Orozaly uulu Zhanybek, OJSC Chakan HPP Environmental Consultant, informed the participants of public consultations about the requirements of the environmental legislation of the

Kyrgyz Republic and the World Bank's policy on environmental protection during the implementation of the project.

The objective of an environmental assessment is to identify the significant impact of a proposed project on the environment, to identify appropriate mitigation measures aimed at preventing, minimizing or eliminating any expected impact.

However, during construction activities, there may be some potentially negative environmental impacts in the project areas that need to be addressed, preventive actions taken and appropriate mitigation measures taken during planning, design, construction, operation and maintenance. Potential negative impacts are relatively minor and the positive economic, social and environmental benefits far outweigh them in the environmental assessment. These impacts are discussed below.

The main impact that can be caused as a result of construction works:

1. Soil pollution at the construction site
2. Groundwater pollution at construction site
3. Deterioration of the landscape, destruction of the natural habitat of the animal world
4. Air Pollution and Worker/Public Exposure from Traffic and Heavy Machinery

To prevent or mitigate the negative impact of construction, an ESMP is prepared for each rehabilitation facility.

All risks of the construction phase are easily controlled and eliminated. They can be minimized with proper design of mitigation measures and control over the Contractor during the performance of the work.

Questions - answers:

Mamashov B. - Who will build the HPP, how will the contractor be determined? Who will be responsible for the safety of the population?

Sadykov N.M. - In accordance with the rules of the World Bank, an international tender will be announced for the design and construction of HPP, respectively, the company that wins the tender will build. When developing the project, all requirements for the safe operation of the HPP will be taken into account. The operating company will be responsible for the safe operation of the HPP. I would also like to note that this project is planned to be implemented at the expense of the World Bank and this bank is one of the most respected banks in the world and all possible risks associated with the construction of this HPP will be taken into account and resolved during the design process. Also, the World Bank will not finance a project that can ruin its reputation.

Torogeldiev S. – On what section of the river will the HPP be built?

Sadykov N.M. - The HPP will be built on the Tar River, the narrowest section for the dam has been selected, there is a location. This section was offered by the technical consultants of the World Bank on the part of OJSC “Chakan HPP”, which, after their study and evaluation, was included in the project as a potential candidate. But, the exact location will be known only after the development of a feasibility study and detailed design of the HPP.

Kalmamatov K. - Our land plots are located on the site where you plan to build HPP, if HPP is built, then our land plots will remain under water, who will pay us compensation for damage?

Orozaliev S. - If your land plot is affected during the detailed design, then the local authorities, i.e. ayil okmotu will have to compensate you for the market value of the land plot or provide an equivalent plot in any other place. The valuation of the land plot will be carried out by an independent appraiser or appraisal company. All land acquisition issues must be completed prior

to commencement of construction work. The project will consult with the affected person about their rights to compensation for the damage caused.

Alimbekov C . – Our village Say is located almost in the bed of the Tar River and in case of a dam break, our village can be washed away by a stream of water. During the construction of a HPP, what will be the volume of water in the reservoir? During the operation of the HPP, after a certain time, e.g. ten years, is there a risk of the dam breaking?

Sadykov N.M. – The volume of the reservoir will be determined after the detailed development of the project. The design will take into account all the risks for the safe operation of the dam. Also, during the operation of the HPP, all measuring instruments and sensors will be installed, which will transmit information about the state of the dam in real time. In accordance with these data, all necessary measures will be taken for the safe operation of the dam and the risk of a dam break will be eliminated.

Chomoev Zh. - In our ayil okmotu, almost the entire population is employed in agriculture and there are no other places. When constructing a hydroelectric power plant, will labor from among the local population be involved?

Sadykov N.M. – The company that wins the tender for the construction of the hydroelectric power plant will attract labor from among the local population. But what share will be known only at the construction stage. Also, when drafting tender documents, we will oblige the winning company to hire a certain percentage of the workforce from among the local population.

Konurbaev B. - If I understand correctly, if the area under the reservoir is flooded, the existing bridge will also be flooded, will it be possible to build a new bridge instead of the old one?

Sadykov NM - At the design stage, we will consider the issue of building a new bridge. If there is a need to build a new bridge due to the flooding of the existing one, we will definitely include the construction of a new bridge in the project. All measures will also be taken to improve life in the area where the hydroelectric power station is being built.

In conclusion, all the participants supported the implementation of this project.

Chairman of the meeting	Zholdoshov N. Zh.
CEO OJSC "Chakan HPP"	Sadykov N.M.
Head of Department of Perspective Development OJSC "Chakan HPP"	Mukhambetov E.S.
Environmental Consultant	Orozaly uulu Zhanybek
Social Consultant	Orozaliev S.M.

Протокол общественных слушаний по информированию заинтересованных сторон и общественности о проекте Всемирного банка “Развитие возобновляемых источников энергии в Кыргызской Республике” и о социально-экологических стандартах Всемирного банка применимых к проекту

с. Ылай-Талаа, Кара-Кульджинского
района Ошской области

28 января 2023 г.

Присутствовали:

Жолдошов Н. Ж. – глава Ыйлай-Талинского айыл окмоту, председатель собрания;
Садыков Н. М. - генеральный директор ОАО “Чакан ГЭС”;
Мухамбетов Э. – начальник отдела перспективного развития ОАО “Чакан ГЭС”;
Орозалиева С. М. – консультант по социальным вопросам ОАО “Чакан ГЭС”;
Орозалы уулу Жаңыбек – консультант по ООС ОАО “Чакан ГЭС”.

В общественных слушаниях приняли участие 46 человек: представители айыл окмоту, общественность, местное население и другие заинтересованные участники (список прилагается). В слушаниях приняли участие 4 женщины.

Председатель собрания глава Ылай-Талинского айыл окмоту Жолдошев Нурбек поприветствовал участников слушания. Представил представителя Министерства энергетики Кыргызской Республики в лице ОАО “Чакан ГЭС” и консультантов по социально-экологическим вопросам и передал им слово.

Садыков Н. М. генеральный директор ОАО “Чакан ГЭС” – выступил с информацией о проекте, в которой рассказал о компонентах проекта и предполагаемых работах. Проект направлен на (i) развитие и реконструкцию малых гидроэлектростанций; (ii) подготовку пилотного проекта по солнечной энергии, включая укрепление сети; и (iii) техническую помощь для подготовки проекта Камбаратинской ГЭС-1 и состоит из следующих компонентов:

Компонент 1: Реконструкция и строительство малых и средних гидроэлектростанций;

Компонент 2: Техническая помощь в подготовке крупной гидроэлектростанции Камбарата-1;

Компонент 3: Подготовка и интеграция в сеть проектов по возобновляемым источникам энергии.

Орозалиева С.М. консультант по социальным вопросам ОАО “Чакан ГЭС” рассказала участникам общественных слушаний об основных социальных рисках проекта. Задача оценки социальных рисков заключается в том, чтобы выявить существенное воздействие предлагаемого проекта на социальную среду (позитивное и негативное), определить соответствующие превентивные меры и меры по смягчению воздействия, направленные на предупреждение, минимизацию или устранение любого ожидаемого необратимого воздействия.

Основными социальными рисками являются:

- (i) отвод земель и вынужденное переселение, необходимое в связи со строительством/модернизацией малых и средних ГЭС и
- (ii) риск социального исключения, то есть необходимо будет учитывать интересы уязвимых и неблагополучных групп населения при разработке проекта, чтобы

обеспечить им равный доступ к выгодам проекта и не допустить непропорционально негативного воздействия проекта.

Эти вероятные воздействия будут решаться с помощью многих мер, включая избежание и минимизацию в порядке приоритетности, насколько это возможно. Вопросы отвода земель и переселения будут решаться путем реализации Рамочного документа по переселению (РДП), который предусматривает компенсацию по стоимости замещения и другие меры по восстановлению средств к существованию и т.д.

Консультант отметила, что на этапе оценки проекта были подготовлены следующие документы:

- (i) Рамочный документ по управлению экологическими и социальными мерами (ESMF),
- (ii) План взаимодействия с заинтересованными сторонами (SEP),
- (iii) Процедуры управления трудовыми ресурсами (LMP),
- (iv) Рамочный документ основам политики переселения (RPF) и
- (v) План экологических и социальных обязательств.

Подробно рассказала о применимых к проекту социально-экологических стандартах Всемирного банка, в частности остановилась на стандартах СЭС5: Приобретение земли, ограничения землепользования и вынужденное переселение, и СЭС10: Взаимодействие с заинтересованными сторонами и раскрытия информации.

Так, СЭС5 считается уместным из-за потенциальных инвестиций по Компоненту 1, которые могут потребовать некоторого временного и/или постоянного физического и экономического перемещения или вызвать изменения в землепользовании или доступе к земле в зонах определенных видов деятельности. Например, они могут включать строительство или модернизацию малых и средних ГЭС, а также другие виды трансформирующих инвестиций в улучшение жизнедеятельности бенефициаров на местах.

Тем не менее, характер и масштабы вмешательств и их последствия в настоящее время неизвестны, и они станут более понятными при выборе инвестиционной деятельности. Для реализации вышеуказанных воздействий, проектом разработан Рамочный документ Основы политики переселения. В случае, если будут определены подпроекты и инвестиции для подпроектов, будет подготовлены Планы действий по переселению путем оценки.

Законодательство и политика в области землеотвода, переселения и реабилитации, а также положения СЭС5 должны быть реализованы в соответствии с положениями РДП. В проекте не предусматривается принудительное изъятие земель.

В соответствии с требованиями СЭС10 Всемирного банка, Проектом будет внедрен и применен Механизм подачи и рассмотрения жалоб (МРЖ) по деятельности всего Проекта. МРЖ является процессом получения оперативной, объективной информации, оценки, рассмотрения, удовлетворения жалоб (заявлений, предложений, жалоб, запросов, позитивных отзывов), связанных с реализацией Проекта.

Обращения или жалобы могут быть как индивидуальными, так и коллективными. Этот механизм также позволит подавать и рассматривать анонимные жалобы.

Сообщества и отдельные лица, которые считают, что на них проект, поддерживаемый Всемирным банком (ВБ) оказывает отрицательное воздействие, могут подавать жалобы также в Службу рассмотрения жалоб Всемирного банка (СРЖ). СРЖ обеспечивает своевременное рассмотрение полученных жалоб с целью решения проблем, связанных с проектом.

Затронутые проектом сообщества и отдельные лица могут подать свою жалобу в независимую инспекционную комиссию Всемирного банка, которая определяет, был ли вред причинен или может возникнуть в результате несоблюдения Всемирным банком его политики и процедур. Жалобы могут подаваться в любое время после того, как проблемы были доведены непосредственно до сведения Всемирного банка, и руководству Банка была предоставлена возможность ответить. Информацию о том, как подавать жалобы в корпоративную службу рассмотрения жалоб Всемирного банка (СРЖ), см. на веб-сайте

<http://www.worldbank.org/en/projectsoperations/products-and-services/grievance-redress-service>. Информацию о том, как подавать жалобы в Инспекционную группу Всемирного банка, можно найти на сайте www.inspectionpanel.org.

Орозалы уулу Жаныбек - консультант по охране окружающей среды ОАО "Чакан ГЭС" рассказал участникам общественных слушаний о требованиях природоохранного законодательства Кыргызской Республики и политике Всемирного Банка по охране окружающей среды при реализации проекта.

Задача оценки окружающей среды заключается в том, чтобы выявить существенное воздействие предлагаемого проекта на окружающую среду, определить соответствующие меры по смягчению воздействия, направленные на предупреждение, минимизацию или устранение любого ожидаемого воздействия.

Вместе с тем, при проведении строительных работ, возможны проявления некоторых потенциально негативных воздействий на окружающую среду в проектных площадях, на которые необходимо обратить внимание, принять превентивные действия и соответствующие меры по их смягчению во время планирования, разработки, строительства, эксплуатации и технического обслуживания. Потенциальные негативные воздействия являются относительно незначительными, а позитивные экономические, социальные и экологические выгоды значительно перевешивают их в оценке окружающей среды. Рассмотрение этих воздействий приводится ниже.

Основное воздействие, которое может быть оказано в результате ведения строительных работ:

- 1) Загрязнение почв на строительной площадке
- 2) Загрязнение подземных вод на строительной площадке
- 3) Ухудшение ландшафта, разрушение естественной среды обитания животного мира
- 4) Загрязнение воздуха и воздействие на рабочих/население при движении транспорта и работе тяжелой техники

Для предотвращения или смягчения негативного воздействия строительства для каждого объекта реабилитации составляется ПУОСС.

Все риски фазы строительства легко контролируются и устраняются. Они могут быть сведены к минимуму при должном проектировании смягчающих мер и контроле над Подрядчиком при выполнении работ.

Вопросы – ответы:

Маманов Б. – Кто будет строить ГЭС, как будет определен подрядчик? Кто будет ответственен за безопасность население?

Садыков Н.М. – В соответствии с правилами Всемирного банка, будет объявлен международный тендер на проектирование и строительство ГЭС, соответственно будет строить компания, которая выиграет тендер. При разработке проекта будут учтены все требования по безопасной эксплуатации ГЭС. Эксплуатирующая компания будет нести ответственность за безопасную работу ГЭС. Хотелось бы также отметить, что данный проект планируется осуществить за счет средств Всемирного банка и этот банк является одним из самых авторитетных банков в мире и все возможные риски по строительству данной ГЭС в процессе проектирования будут учтены и сняты. Также данный банк не будет финансировать проект который может испортить его репутацию.

Тороголдиев С. – На каком участке реки будет построена ГЭС?

Садыков Н.М. – ГЭС будет построена на реке Тар, выбран самый узкий участок для плотины, имеется локация. Со стороны ОАО "Чакан ГЭС" техническим консультантам

Всемирного банка был предложен этот участок, который после их изучения и оценки был включен проект как потенциальный кандидат. Но, точное местоположение будет известно только после разработки ТЭО и детального проектирования ГЭС.

Калмаматов К. – На том участке, где вы планируете строить ГЭС находятся наши земельные участки, если будет построено ГЭС, то наши земельные участки останутся под водой, кто будет выплачивать нам компенсацию за ущерб?

Орозалиева С. – В случае, если при детальном проектировании ваш земельный участок будет затронут, то местные органы власти, т.е. айыл окмоту должен будет вам возместить компенсация по рыночной стоимости земельного участка или же предоставить равноценный участок в любом другом месте. Оценка стоимости земельного участка будет проведена независимым оценщиком или оценочной компанией. Все вопросы отвода земельного участка должны быть завершены до начала строительных работ. Проектом будут проведены консультации с затронутым лицом о его правах на компенсацию за причиненный ущерб.

Алимбеков С. – Наше село Сай находится почти в русле реки Тар и в случае прорыва дамбы, наше село может быть смыто потоком воды. При строительстве ГЭС какой будет объем воды в водохранилище? В процессе работы ГЭС, через определенное время, скажем через десять лет, есть ли риск прорыва дамбы?

Садыхов Н.М. – Объем водохранилища будет определен после детальной разработки проекта. При проектировании будут учтены все риски по безопасной эксплуатации плотины. Также при эксплуатации ГЭС, будут установлены все измерительные приборы и датчики, которые в режиме реального времени будут передавать информацию о состоянии плотины. В соответствии с этими данными будут проводиться все необходимые мероприятия для безопасной эксплуатации плотины и риск прорыва плотины будет исключен.

Чомоев Ж. – В нашем айыл окмоту почти все население занято в сельском хозяйстве и других мест нет. При строительстве гидроэлектростанции будет ли привлекаться рабочая сила из числа местного населения?

Садыхов Н.М. – Выигравшая тендер компания на строительство ГЭС будет привлекать рабочую силу из числа местного населения. Но, какая доля, будет известна только на этапе строительства. Также при составлении тендерных документов мы обяжем, чтобы выигравшая тендер компания наняла определенный процент рабочей силы из числа местного населения.

Копурбаев Б. – Если я правильно понял, при затоплении территории под водохранилище, существующий мост будет тоже затоплен, можно ли будет построить новый мост вместо старого?

Садыхов Н. М. – На стадии проектирование рассмотрим вопрос строительства нового моста. Если будет необходимость в строительстве нового моста по причине затопления существующего, то мы обязательно включим строительство нового моста в проект. Также будут предприняты все меры чтобы улучшить жизнь в районе строительства ГЭС.

В заключении, все собравшиеся поддержали реализацию данного проекта.

Председатель собрания



Жолдошов Н. Ж.

Генеральный директор
ОАО "Чакан ГЭС"

Садыков Н. М.

Начальник отдела перспективного
развития ОАО "Чакан ГЭС"

Мухамбетов Э. С.

Консультант по охране
окружающей среды

Орозалы уулу Жаныбек

Консультант по социальным
Вопросам

Орозалнева С. М.

Список участников общественных слушаний по информированию заинтересованных сторон и общественности о проекте Всемирного банка Развития возобновляемой энергетики Кыргызстана (KRED)

Дата: 28.01.2023г.

Место проведения: с. Блай-Блае

№ п/п	Фамилия, имя, отчество	Подпись
1	Камматов К.	[Signature]
2	Омурзаев К.	[Signature]
3	Барыбаш К.	[Signature]
4	Торотекуев К.	[Signature]
5	Момашов Т.	[Signature]
6	Асанов М.	[Signature]
7	Исмаилов	[Signature]
8	Туркунов	[Signature]
9	Туркунов	[Signature]
10	Мамасоидов	[Signature]
11	Асанов Манубе	[Signature]
12	Чолайлов	[Signature]
13	Жунусов Ч.	[Signature]
14	Жунусов	[Signature]
15	Алибаев С.С.	[Signature]
16	Момашов	[Signature]
17	Аманжол	[Signature]
18	Сыдыков А.	[Signature]
19	Жунусов	[Signature]
20	Убакиров	[Signature]
21	Алиев М.	[Signature]
22	Алиев М.	[Signature]
23	Окбаев И.	[Signature]
24	Алиев К.	[Signature]
25	Алиев И.	[Signature]
26	Жунусов	[Signature]
27	Исмаилов	[Signature]
28	Исмаилов	[Signature]
29	Чолайлов	[Signature]
30	Капаров Д.	[Signature]
31	Салиев К.	[Signature]
32	Козурбаев А.	[Signature]
33	Морозов И.	[Signature]
34	Козурбаев Б.Ч.	[Signature]
35	Мамасейитов	[Signature]
36	Сейдаметов Б.	[Signature]

- 37. Басааров Ч.А
- 38. Дамбаев Э.С.
- 39. Скумков И.
- 40. Аскарбеков И.
- 41. Саганов Н.М.
- 42. Мухамеджанов Э.
- 43. Моедзаичев А.
- 44. Кривошеина С.
- 45. Орозалиев Гулю Нуралы
- 46. Карыжанов С.







Photos taken during public consultation held in Ylai-Talaa village of Kara-Kulzha rayon, Osh oblast



3. Minutes of the Public consultations held in village Nur, Kemin city of Chui oblast

Minutes of public consultations on raising awareness among the stakeholders and the public on the World Bank “Kyrgyz Republic Renewable Energy Development Project” and Social and Environmental standards applicable to the project

Nur Village, Kemin

January 30, 2023

Participants:

Chushtukov M. - Vice Mayor of Kemin

Uzyurov D.E. - Deputy of the City Kenesh, Chairman of the meeting;

Mukhambetov E. - Head of the Department of Perspective Development, OJSC "Chakan HPP";

Orozaliev S.M. - Social Consultant, OJSC "Chakan HPP";

Orozaly uulu Zhanybek – Environmental Protection Consultant, OJSC Chakan HPP.

35 people participated in the public consultations: representatives of the mayor's office of the city of Kemin, the public, the local population and other stakeholders (the list is attached). There were 5 women participated in the consultations.

Chairman of the meeting Uzyurov E. greeted the attendees. He introduced the representative of the Ministry of Energy of the Kyrgyz Republic represented by Chakan HPP OJSC and consultants on social and environmental issues and gave them the floor.

Mukhambetov E. Head of the Department of Prospective Development of JSC "Chakan HPP" - delivered information about the project and its components as well as the proposed work. The project is aimed at (i) development and reconstruction of small hydro power plants; (ii) preparation of a pilot project on solar energy, including grid strengthening; and (iii) technical assistance for the preparation of the Kambarata HPP-1 project and consists of the following components:

Component 1: Rehabilitation and Construction of Small and Medium-scale Hydropower Plants;

Component 2: Technical assistance for the Preparation of Kambarata-1 Large Hydropower Plant;

Component 3: Preparation and Grid Integration of Renewable Energy Projects.

Orozaliev S.M., Chakan HPP Social Consultant, informed the participants of public consultations about the main social risks of the project.

The objective of the social risk assessment is to identify the significant impact of the proposed project on the social environment (positive and negative), to determine the appropriate preventive and mitigation measures aimed at preventing, minimizing or eliminating any expected irreversible impact.

The main social risks are:

(i) land acquisition and involuntary resettlement required for the construction/modernization of small and medium-sized hydropower plants and

(ii) the risk of social exclusion, i.e. the vulnerable and disadvantaged groups will need to be considered in project design to ensure that they have equal access to project benefits and avoid disproportionate negative project impacts.

These possible impacts will be addressed, to the extent possible, through a range of measures, including its avoidance and minimization in order of priority. Land acquisition and resettlement issues will be addressed through the implementation of the Resettlement Framework Document

(RFP), which provides for replacement cost compensation and other livelihood restoration measures, etc.

The Consultant noted that the following documents were prepared during the appraisal phase of the project:

- Environmental and Social Management Framework (ESMF),
- Stakeholder Engagement Plan (SEP),
- Labor Management Procedures (LMP),
- Resettlement Policy Framework (RPF) and
- Environmental and Social Commitment Plan.

She communicated in detail about the World Bank environmental and social standards applicable to the project, in particular, she pointed on the standards of ESS5: Land Acquisition, Land Use Restrictions and Involuntary Resettlement, and ESS10: Stakeholder Engagement and Information Disclosure.

Thus, ESS5 is considered relevant because of the potential investment under Component 1, which may require some temporary and/or permanent physical and economic relocation, or cause changes in land use or access to land in areas of certain activities. For example, they may include the construction or modernization of small and medium-sized hydropower plants, as well as other types of transformative investments to improve the livelihoods of beneficiaries on the ground.

However, the nature and extent of interventions and their implications are currently unknown and will become clearer when choosing an investment activity. To implement the above impacts, the project has developed a Resettlement Policy Framework. In case sub-projects and investments for sub-projects are identified, Resettlement Action Plans will be prepared through appraisal.

Land Acquisition, Resettlement and Rehabilitation Legislation and Policy, as well as the provisions of ESS5, should be implemented in accordance with the provisions of the RPF. The project does not provide for the forced withdrawal of land.

In accordance with the requirements of World Bank ESS10, the Project will implement and apply the Grievance Redress Mechanism (GRM) for the activities of the entire Project. GRM is a process of obtaining prompt, objective information, evaluation, consideration, satisfaction of complaints (applications, proposals, complaints, requests, positive feedback) related to the implementation of the Project.

Appeals or complaints can be both individual and collective. This mechanism will also allow anonymous complaints to be submitted and dealt with.

Communities and individuals who feel that they are adversely affected by a World Bank (WB) supported project can also file complaints with the World Bank Grievance Redress Service (GRS). The GRS ensures that grievances received are dealt with in a timely manner to resolve issues related to the project.

Affected communities and individuals may file their complaint with the World Bank's Independent Review Panel, which determines whether harm has been or may result from the World Bank's non-compliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the attention of the World Bank and Bank management has been given an opportunity to respond. See <http://www.worldbank.org/en/projectsoperations/products-and-services/grievance-redress-service> for information on how to file grievances with the World Bank Corporate Grievance Redress Service (GRS). Information on how to file complaints with the World Bank Inspection Panel can be found at www.inspectionpanel.org.

Orozaly uulu Zhanybek, OJSC Chakan HPP Environmental Consultant, informed the participants of public consultations about the requirements of the environmental legislation of the

Kyrgyz Republic and the World Bank's policy on environmental protection during the implementation of the project.

The objective of an environmental assessment is to identify the significant impact of a proposed project on the environment, to identify appropriate mitigation measures aimed at preventing, minimizing or eliminating any expected impact.

However, during construction activities, there may be some potentially negative environmental impacts in the project areas that need to be addressed, preventive actions taken and appropriate mitigation measures taken during planning, design, construction, operation and maintenance. Potential negative impacts are relatively minor and the positive economic, social and environmental benefits far outweigh them in the environmental assessment. These impacts are discussed below.

The main impact that can be caused as a result of construction works:

1. Soil pollution at the construction site
2. Groundwater pollution at construction site
3. Deterioration of the landscape, destruction of the natural habitat of the animal world
4. Air Pollution and Worker/Public Exposure from Traffic and Heavy Machinery

To prevent or mitigate the negative impact of construction, an ESMP is prepared for each rehabilitation facility.

All risks of the construction phase are easily controlled and eliminated. They can be minimized with proper design of mitigation measures and control over the Contractor during the performance of the work.

Questions - answers:

Moldobekov S. - What will be the capacity of the HPP?

Mukhambetov E. - The capacity of the HPP will not increase after the reconstruction, some equipment will be updated, which needs to be urgently replaced.

Sultanbaev K. - What is the benefit of the reconstruction of Bystrovskaya HPP?

Mukhambetov E. - After the reconstruction of the Bystrovskaya HPP, its reliable operation will increase.

Elikbaev T. - It will be necessary to build a bridge across the river, since the old bridge is almost deteriorated. In the event of rehabilitation, transporting construction materials and equipment across this bridge would be difficult and unsafe. Please include the construction of the bridge in the list of works.

Mukhambetov E. - This bridge does not belong to the Bystrovskaya HPP, but in view of your proposals, this requirement will be considered and we will try to include the repair of the bridge in the reconstruction project Bystrovskaya HPP.

Sargulov N. - What benefit will the population receive from the reconstruction of the Bystrovskaya HPP?

Orozalieva S. - First of all, the population will be provided with a stable supply of electricity, a certain part of the local population will be provided with work during the reconstruction of the HPP, and a contribution to the development of the regional economy will also be provided.

In conclusion, Vice Mayor Chushtukov I. expressed gratitude to the participants and put the matter to a vote. All the participants supported the implementation of this project.

Chairman of the meeting

Uzyurov D.

Vice Mayor of Kemin

Chushtukov I.

**Head of Department of Perspective
Development OJSC "Chakan HPP"**

Mukhambetov E.S.

Environmental Consultant

Orozaly uulu Zhanybek

Social Consultant

Orozaliev S.M.

Протокол общественных слушаний по информированию заинтересованных сторон и общественности о проекте Всемирного банка “Развитие возобновляемых источников энергии в Кыргызской Республике” и о социально-экологических стандартах Всемирного банка применимых к проекту

с. Нур-г. Кемин

30 января 2023 г.

Присутствовали:

Чуштуков М. – вице-мэр г. Кемин

Узюров Д. Э. депутат городского кенеша, председатель собрания;

Мухамбетов Э. – начальник отдела перспективного развития ОАО “Чакан ГЭС”;

Орозалиева С. М. – консультант по социальным вопросам ОАО “Чакан ГЭС”;

Орозалы уулу Жаныбек – консультант по ООС ОАО “Чакан ГЭС”.

В общественных слушаниях приняли участие 35 человек: представители мэрии города Кемин, общественность, местное население и другие заинтересованные участники (список прилагается). В слушаниях приняли участие 5 женщин.

Председатель собрания Узюров Э. поприветствовал участников слушания. Представил представителя Министерства энергетики Кыргызской Республики в лице ОАО “Чакан ГЭС” и консультантов по социально-экологическим вопросам и передал им слово.

Мухамбетов Э., начальник отдела перспективного развития ОАО “Чакан ГЭС” – выступил с информацией о проекте, в которой рассказал о компонентах проекта и предполагаемых работах. Проект направлен на (i) развитие и реконструкцию малых гидроэлектростанций; (ii) подготовку пилотного проекта по солнечной энергии, включая укрепление сети; и (iii) техническую помощь для подготовки проекта Камбаратинской ГЭС-1 и состоит из следующих компонентов:

Компонент 1: Реконструкция и строительство малых и средних гидроэлектростанций;

Компонент 2: Техническая помощь в подготовке крупной гидроэлектростанции Камбарата-1;

Компонент 3: Подготовка и интеграция в сеть проектов по возобновляемым источникам энергии.

Орозалиева С.М. консультант по социальным вопросам ОАО “Чакан ГЭС” рассказала участникам общественных слушаний об основных социальных рисках проекта.

Задача оценки социальных рисков заключается в том, чтобы выявить существенное воздействие предлагаемого проекта на социальную среду (позитивное и негативное), определить соответствующие превентивные меры и меры по смягчению воздействия, направленные на предупреждение, минимизацию или устранение любого ожидаемого необратимого воздействия.

Основными социальными рисками являются:

- (i) отвод земель и вынужденное переселение, необходимое в связи со строительством/модернизацией малых и средних ГЭС и
- (ii) риск социального исключения, то есть необходимо будет учитывать интересы уязвимых и неблагополучных групп населения при разработке проекта, чтобы обеспечить им равный доступ к выгодам проекта и не допустить непропорционально негативного воздействия проекта.

Эти вероятные воздействия будут решаться с помощью многих мер, включая избежание и минимизацию в порядке приоритетности, насколько это возможно. Вопросы отвода земель и переселения будут решаться путем реализации Рамочного документа по переселению (РДП), который предусматривает компенсацию по стоимости замещения и другие меры по восстановлению средств к существованию и т.д.

Консультант отметила, что на этапе оценки проекта были подготовлены следующие документы:

- (i) Рамочный документ по управлению экологическими и социальными мерами (ESMF),
- (ii) План взаимодействия с заинтересованными сторонами (SEP),
- (iii) Процедуры управления трудовыми ресурсами (LMP),
- (iv) Рамочный документ основам политики переселения (RPF) и
- (v) План экологических и социальных обязательств.

Подробно рассказала о применимых к проекту социально-экологических стандартах Всемирного банка, в частности остановилась на стандартах СЭС5: Приобретение земли, ограничения землепользования и вынужденное переселение, и СЭС10: Взаимодействие с заинтересованными сторонами и раскрытия информации.

Так, СЭС5 считается уместным из-за потенциальных инвестиций по Компоненту 1, которые могут потребовать некоторого временного и/или постоянного физического и экономического перемещения или вызвать изменения в землепользовании или доступе к земле в зонах определенных видов деятельности. Например, они могут включать строительство или модернизацию малых и средних ГЭС, а также другие виды трансформирующих инвестиций в улучшение жизнедеятельности бенефициаров на местах.

Тем не менее, характер и масштабы вмешательства и их последствия в настоящее время неизвестны, и они станут более понятными при выборе инвестиционной деятельности. Для реализации вышеуказанных воздействий, проектом разработан Рамочный документ Основы политики переселения. В случае, если будут определены подпроекты и инвестиции для подпроектов, будет подготовлены Планы действий по переселению путем оценки.

Законодательство и политика в области землеотвода, переселения и реабилитации, а также положения СЭС5 должны быть реализованы в соответствии с положениями РДП. В проекте не предусматривается принудительное изъятие земель.

В соответствии с требованиями СЭС10 Всемирного банка, Проектом будет внедрен и применен Механизм подачи и рассмотрения жалоб (МРЖ) по деятельности всего Проекта. МРЖ является процессом получения оперативной, объективной информации, оценки, рассмотрения, удовлетворения жалоб (заявлений, предложений, жалоб, запросов, позитивных отзывов), связанных с реализацией Проекта.

Обращения или жалобы могут быть как индивидуальными, так и коллективными. Этот механизм также позволит подавать и рассматривать анонимные жалобы.

Сообщества и отдельные лица, которые считают, что на них проект, поддерживаемый Всемирным банком (ВБ) оказывает отрицательное воздействие, могут подавать жалобы также в Службу рассмотрения жалоб Всемирного банка (СРЖ). СРЖ обеспечивает своевременное рассмотрение полученных жалоб с целью решения проблем, связанных с проектом.

Затронутые проектом сообщества и отдельные лица могут подать свою жалобу в независимую инспекционную комиссию Всемирного банка, которая определяет, был ли вред причинен или может возникнуть в результате несоблюдения Всемирным банком его политики и процедур. Жалобы могут подаваться в любое время после того, как проблемы были доведены непосредственно до сведения Всемирного банка, и руководству Банка была предоставлена возможность ответить. Информацию о том, как подавать жалобы в корпоративную службу рассмотрения жалоб Всемирного банка (СРЖ), см. на веб-сайте <http://www.worldbank.org/en/projectsoperations/products-and-services/grievance-redress-service>. Информацию о том, как подавать жалобы в Инспекционную группу Всемирного банка, можно найти на сайте www.inspectionpanel.org.

Орозалы уулу Жаныбек - консультант по охране окружающей среды ОАО "Чакан ГЭС" рассказал участникам общественных слушаний о требованиях природоохранного законодательства Кыргызской Республики и политике Всемирного Банка по охране окружающей среды при реализации проекта.

Задача оценки окружающей среды заключается в том, чтобы выявить существенное воздействие предлагаемого проекта на окружающую среду, определить соответствующие меры по смягчению воздействия, направленные на предупреждение, минимизацию или устранение любого ожидаемого воздействия.

Вместе с тем, при проведении строительных работ, возможны проявления некоторых потенциально негативных воздействий на окружающую среду в проектных площадях, на которые необходимо обратить внимание, принять превентивные действия и соответствующие меры по их смягчению во время планирования, разработки, строительства, эксплуатации и технического обслуживания. Потенциальные негативные воздействия являются относительно незначительными, а позитивные экономические, социальные и экологические выгоды значительно перевешивают их в оценке окружающей среды. Рассмотрение этих воздействий приводится ниже.

Основное воздействие, которое может быть оказано в результате ведения строительных работ:

- 1) Загрязнение почв на строительной площадке
- 2) Загрязнение подземных вод на строительной площадке
- 3) Ухудшение ландшафта, разрушение естественной среды обитания животного мира
- 4) Загрязнение воздуха и воздействие на рабочих/население при движении транспорта и работе тяжелой техники

Для предотвращения или смягчения негативного воздействия строительства для каждого объекта реабилитации составляется ПУОСС.

Все риски фазы строительства легко контролируются и устраняются. Они могут быть сведены к минимуму при должном проектировании смягчающих мер и контроле над Подрядчиком при выполнении работ.

Вопросы – ответы:

Молдобеков С. – Какова будет мощность ГЭС?

Мухамбетов Э. – Мощность ГЭС после реконструкции не увеличится, будет обновлено некоторое оборудование, которое необходимо срочно заменить.

Султанбаев К. - Какова польза от реконструкции Быстровской ГЭС?

Мухамбетов Э. – После реконструкции Быстровской ГЭС, повысится ее надежная работа.

Еликбаев Т. – Необходимо будет построить мост через реку, поскольку старый мост почти изношен. В случае реабилитации, транспортировка строительных материалов и оборудования через этот мост будет сложно и не безопасно. Прошу включить строительство моста в перечень работ.

Мухамбетов Э. – Данный мост не относится к Быстровской ГЭС, но ввиду ваших предложений, данное требование будет рассмотрено и постараемся включить ремонт моста в проект реконструкции Быстровской ГЭС.

Саргулов Н. - Какую пользу получит население от реконструкции Быстровской ГЭС?

Орозалиева С. – Прежде всего население будет обеспечено устойчивой подачей электроэнергии, определенная часть местного населения будет обеспечена работой во время реконструкции ГЭС, а также будет обеспечен вклад в развитие экономики области.

В заключении, Вице-мэр Чуштуков И. поблагодарил присутствующих на слушании и поставил вопрос на голосование. Все собравшиеся поддержали реализацию данного проекта.

Председатель собрания

Узюров Д.

Вице-мэр г. Кемин

Чуштуков И.

Начальник отдела перспективного
развития ОАО "Чакан ГЭС"

Мухамбетов Э. С.

Консультант по охране
окружающей среды

Орозалы уулу Жаңылбек

Консультант по социальным
Вопросам

Орозалиева С. М.



Handwritten signatures in blue ink, including one that appears to read 'Орозалиева С. М.'

Список участников общественных слушаний по информированию заинтересованных сторон и общественности о проекте Всемирного банка Развития возобновляемой энергетики Кыргызстана (KRED)

Дата: 30.01.2023г.

Место проведения: с. Кэдр 2, Кемелек

№ п/п	Фамилия, имя, отчество	Подпись
1.	Жаманов М.Т.	
2.	Жаманов А.Т.	
3.	Слихбаев Т.М.	
4.	Осмоломов Р.Ш.	
5.	Саргушов Н.О.	
6.	Ахмедов Д.С.	
7.	Абраимов А.	
8.	Исмаилов Д.	
9.	Бакиров Н.К.	
10.	Туркешов Д.З.	
11.	Сытанбаев К.К.	
12.	Сагаев Ж.М.	
13.	Пробитиро С.С.	
14.	Бакоров С.К.	
15.	Байышев Д.Б.	
16.	Джаманов У.Ш.	
17.	Закитов И.Т.	
18.	Камбаров С.С.	
19.	Узоров А.З.	
20.	Жаманов Б.М.	
21.	Узоров Д.Э.	
22.	Исмаилов Д.С.	
23.	Ахмедов Г.	
24.	Исмаилов К. Айнура	
25.	Молдобаев С.С.	
26.	Джаманов Б.Б.	
27.	Исмаилов Ж.С.	
28.	Жаманов Р.	
29.	Жаманов У.Ш.	
30.	Исмаилов С.	
31.	Исмаилов М.	
32.	Исмаилов С.М.	
33.	Орозбаев У.Ш. Нават	
34.	Исмаилов Ж.Т.	
35.	Жаманов Нурман	

**Photos taken during public consultation held in Nur village of Kemin city,
Chui oblast**



4. Minutes of the Public Consultations held in Bishkek city

Minutes of public consultations on raising awareness among the stakeholders and the public on the World Bank “Kyrgyz Republic Renewable Energy Development Project” and Social and Environmental standards applicable to the project

Bishkek

January 31, 2023

Participants:

Artykbaev E. E. - Head of the Department of External Relations and Project Implementation, OJSC "NEGK", Chairman of the Meeting;

Kamalova L. - Economist of the 1st category of the Department of External Relations and Project Implementation, OJSC "NEGK";

Orozalieva S.M. - Social Consultant, OJSC "Chakan HPP";

Orozaly uulu Zhanybek – Environmental Protection Consultant, OJSC Chakan HPP.

20 people participated in the public consultations: representatives of OJSC "NEGK" and other stakeholders (the list is attached). There were 6 women participated in the consultations.

Chairman of the meeting Artykbaev E.E. greeted the attendees. He introduced the consultants of OJSC "Chakan HPP" on social and environmental issues and gave them the floor.

He also informed the participants of the meeting about the project and its components as well as the proposed work. The project is aimed at (i) development and reconstruction of small hydro power plants; (ii) preparation of a pilot project on solar energy, including grid strengthening; and (iii) technical assistance for the preparation of the Kambarata HPP-1 project and consists of the following components:

Component 1: Rehabilitation and Construction of Small and Medium-scale Hydropower Plants;

Component 2: Technical assistance for the Preparation of Kambarata-1 Large Hydropower Plant;

Component 3: Preparation and Grid Integration of Renewable Energy Projects.

Orozalieva S.M., Chakan HPP Social Consultant, informed the participants of public consultations about the main social risks of the project.

The objective of the social risk assessment is to identify the significant impact of the proposed project on the social environment (positive and negative), to determine the appropriate preventive and mitigation measures aimed at preventing, minimizing or eliminating any expected irreversible impact.

The main social risks are:

(i) land acquisition and involuntary resettlement required for the construction/modernization of small and medium-sized hydropower plants and

(ii) the risk of social exclusion, i.e. the vulnerable and disadvantaged groups will need to be considered in project design to ensure that they have equal access to project benefits and avoid disproportionate negative project impacts.

These possible impacts will be addressed, to the extent possible, through a range of measures, including its avoidance and minimization in order of priority. Land acquisition and resettlement issues will be addressed through the implementation of the Resettlement Framework Document (RFP), which provides for replacement cost compensation and other livelihood restoration measures, etc.

The Consultant noted that the following documents were prepared during the appraisal phase of the project:

- Environmental and Social Management Framework (ESMF),
- Stakeholder Engagement Plan (SEP),
- Labor Management Procedures (LMP),
- Resettlement Policy Framework (RPF) and
- Environmental and Social Commitment Plan.

She communicated in detail about the World Bank environmental and social standards applicable to the project, in particular, she pointed on the standards of ESS5: Land Acquisition, Land Use Restrictions and Involuntary Resettlement, and ESS10: Stakeholder Engagement and Information Disclosure.

Thus, ESS5 is considered relevant because of the potential investment under Component 1, which may require some temporary and/or permanent physical and economic relocation, or cause changes in land use or access to land in areas of certain activities. For example, they may include the construction or modernization of small and medium-sized hydropower plants, as well as other types of transformative investments to improve the livelihoods of beneficiaries on the ground.

However, the nature and extent of interventions and their implications are currently unknown and will become clearer when choosing an investment activity. To implement the above impacts, the project has developed a Resettlement Policy Framework. In case sub-projects and investments for sub-projects are identified, Resettlement Action Plans will be prepared through appraisal.

Land Acquisition, Resettlement and Rehabilitation Legislation and Policy, as well as the provisions of ESS5, should be implemented in accordance with the provisions of the RPF. The project does not provide for the forced withdrawal of land.

In accordance with the requirements of World Bank ESS10, the Project will implement and apply the Grievance Redress Mechanism (GRM) for the activities of the entire Project. GRM is a process of obtaining prompt, objective information, evaluation, consideration, satisfaction of complaints (applications, proposals, complaints, requests, positive feedback) related to the implementation of the Project.

Appeals or complaints can be both individual and collective. This mechanism will also allow anonymous complaints to be submitted and dealt with.

Communities and individuals who feel that they are adversely affected by a World Bank (WB) supported project can also file complaints with the World Bank Grievance Redress Service (GRS). The GRS ensures that grievances received are dealt with in a timely manner to resolve issues related to the project.

Affected communities and individuals may file their complaint with the World Bank's Independent Review Panel, which determines whether harm has been or may result from the World Bank's non-compliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the attention of the World Bank and Bank management has been given an opportunity to respond. See <http://www.worldbank.org/en/projectsoperations/products-and-services/grievance-redress-service> for information on how to file grievances with the World Bank Corporate Grievance Redress Service (GRS). Information on how to file complaints with the World Bank Inspection Panel can be found at www.inspectionpanel.org.

Orozaly uulu Zhanybek, OJSC Chakan HPP Environmental Consultant, informed the participants of public consultations about the requirements of the environmental legislation of the Kyrgyz Republic and the World Bank's policy on environmental protection during the implementation of the project.

The objective of an environmental assessment is to identify the significant impact of a proposed project on the environment, to identify appropriate mitigation measures aimed at preventing, minimizing or eliminating any expected impact.

However, during construction activities, there may be some potentially negative environmental impacts in the project areas that need to be addressed, preventive actions taken and appropriate mitigation measures taken during planning, design, construction, operation and maintenance. Potential negative impacts are relatively minor and the positive economic, social and environmental benefits far outweigh them in the environmental assessment. These impacts are discussed below.

The main impact that can be caused as a result of construction works:

1. Soil pollution at the construction site
2. Groundwater pollution at construction site
3. Deterioration of the landscape, destruction of the natural habitat of the animal world
4. Air Pollution and Worker/Public Exposure from Traffic and Heavy Machinery

To prevent or mitigate the negative impact of construction, an ESMP is prepared for each rehabilitation facility.

All risks of the construction phase are easily controlled and eliminated. They can be minimized with proper design of mitigation measures and control over the Contractor during the performance of the work.

Questions - answers:

Rakhmatov A. – What is the purpose of creating another PIU and spend money on the maintenance of the PIU, when it is possible to entrust the duties of the PIU specialists to NEGK specialists?

Orozalieva S. - For all projects financed by international donor organizations, Project Implementation Units are created, which will directly deal with the implementation of project activities. The staff of the PIU should be staffed with highly qualified specialists who will directly carry out project activities, and NEGK employees cannot simultaneously perform their main task and tasks for the project. Also, PIU staff should have relevant experience in their field of activity, as well as experience in projects funded by international organizations.

However, in the Project Appraisal Document, it is stated that on the basis of the KEMS PIU it will be possible to additionally recruit staff for the implementation of this project, i.e. one PIU will implement several projects at the same time, respectively, the project funds will be used rationally.

In conclusion, Artykbaev E.E. expressed gratitude to the participants and put the matter to a vote. All those participants supported the implementation of this project.

Chairman of the meeting

Artykbaev E.E.

Environmental Consultant

Orozaly uulu Zhanybek

Social Consultant

Orozaliev S.M.

Протокол слушания по информированию заинтересованных сторон и общественности о проекте Всемирного банка “Развитие возобновляемых источников энергии в Кыргызской Республике” и о социально-экологических стандартах Всемирного банка применимых к проекту

г. Бишкек

31 января 2023 г.

Присутствовали:

Артыкбаев Э. Э. – начальник отдела внешних связей и реализации проектов, ОАО “НЭСК”, председатель собрания;
 Камалова Л. – экономист 1-й категории отдела внешних связей и реализации проектов, ОАО “НЭСК”;
 Орозалиева С. М. – консультант по социальным вопросам ОАО “Чакан ГЭС”;
 Орозалы уулу Жаныбек – консультант по ООС ОАО “Чакан ГЭС”.

В слушании приняли участие 20 человек: представители ОАО “НЭСК и другие заинтересованные участники (список прилагается). В слушаниях приняли участие 6 женщин.

Председатель собрания Артыкбаев Э. Э. поприветствовал участников слушания. Представил консультантов ОАО “Чакан ГЭС” по социально-экологическим вопросам и передал им слово.

Также проинформировал участников собрания о проекте, в которой рассказал о компонентах проекта и предполагаемых работах. Проект направлен на (i) развитие и реконструкцию малых гидроэлектростанций; (ii) подготовку пилотного проекта по солнечной энергии, включая укрепление сети; и (iii) техническую помощь для подготовки проекта Камбаратинской ГЭС-1 и состоит из следующих компонентов:

Компонент 1: Реконструкция и строительство малых и средних гидроэлектростанций;

Компонент 2: Техническая помощь в подготовке крупной гидроэлектростанции Камбарата-1;

Компонент 3: Подготовка и интеграция в сеть проектов по возобновляемым источникам энергии.

Орозалиева С.М. консультант по социальным вопросам ОАО “Чакан ГЭС” рассказала участникам общественных слушаний об основных социальных рисках проекта. Задача оценки социальных рисков заключается в том, чтобы выявить существенное воздействие предлагаемого проекта на социальную среду (позитивное и негативное), определить соответствующие превентивные меры и меры по смягчению воздействия, направленные на предупреждение, минимизацию или устранение любого ожидаемого необратимого воздействия.

Основными социальными рисками являются:

- (i) отвод земель и вынужденное переселение, необходимое в связи со строительством/модернизацией малых и средних ГЭС и
- (ii) риск социального исключения, то есть необходимо будет учитывать интересы уязвимых и неблагоприятных групп населения при разработке проекта, чтобы обеспечить им равный доступ к выгодам проекта и не допустить непропорционально негативного воздействия проекта.

Эти вероятные воздействия будут решаться с помощью многих мер, включая избежание и минимизацию в порядке приоритетности, насколько это возможно. Вопросы отвода земель и переселения будут решаться путем реализации Рамочного документа по переселению (РДП), который предусматривает компенсацию по стоимости замещения и другие меры по восстановлению средств к существованию и т.д.

Консультант отметила, что на этапе оценки проекта были подготовлены следующие документы:

- (i) Рамочный документ по управлению экологическими и социальными мерами (ESMF),
- (ii) План взаимодействия с заинтересованными сторонами (SEP),
- (iii) Процедуры управления трудовыми ресурсами (LMP),
- (iv) Рамочный документ основам политики переселения (RPF) и
- (v) План экологических и социальных обязательств.

Подробно рассказала о применимых к проекту социально-экологических стандартах Всемирного банка, в частности остановилась на стандартах СЭС5: Приобретение земли, ограничения землепользования и вынужденное переселение, и СЭС10: Взаимодействие с заинтересованными сторонами и раскрытия информации.

Так, СЭС5 считается уместным из-за потенциальных инвестиций по Компоненту 1, которые могут потребовать некоторого временного и/или постоянного физического и экономического перемещения или вызвать изменения в землепользовании или доступе к земле в зонах определенных видов деятельности. Например, они могут включать строительство или модернизацию малых и средних ГЭС, а также другие виды трансформирующих инвестиций в улучшение жизнедеятельности бенефициаров на местах.

Тем не менее, характер и масштабы вмешательств и их последствия в настоящее время неизвестны, и они станут более понятными при выборе инвестиционной деятельности. Для реализации вышеуказанных воздействий, проектом разработан Рамочный документ Основы политики переселения. В случае, если будут определены подпроекты и инвестиции для подпроектов, будет подготовлены Планы действий по переселению путем оценки.

Законодательство и политика в области землеотвода, переселения и реабилитации, а также положения СЭС5 должны быть реализованы в соответствии с положениями РДП. В проекте не предусматривается принудительное изъятие земель.

В соответствии с требованиями СЭС10 Всемирного банка, Проектом будет внедрен и применен Механизм подачи и рассмотрения жалоб (МРЖ) по деятельности всего Проекта. МРЖ является процессом получения оперативной, объективной информации, оценки, рассмотрения, удовлетворения жалоб (заявлений, предложений, жалоб, запросов, позитивных отзывов), связанных с реализацией Проекта.

Обращения или жалобы могут быть как индивидуальными, так и коллективными. Этот механизм также позволит подавать и рассматривать анонимные жалобы.

Сообщества и отдельные лица, которые считают, что на них проект, поддерживаемый Всемирным банком (ВБ) оказывает отрицательное воздействие, могут подавать жалобы также в Службу рассмотрения жалоб Всемирного банка (СРЖ). СРЖ обеспечивает своевременное рассмотрение полученных жалоб с целью решения проблем, связанных с проектом.

Затронутые проектом сообщества и отдельные лица могут подать свою жалобу в независимую инспекционную комиссию Всемирного банка, которая определяет, был ли вред причинен или может возникнуть в результате несоблюдения Всемирным банком его политики и процедур. Жалобы могут подаваться в любое время после того, как проблемы были доведены непосредственно до сведения Всемирного банка, и руководству Банка была предоставлена возможность ответить. Информацию о том, как подавать жалобы в корпоративную службу рассмотрения жалоб Всемирного банка (СРЖ), см. на веб-сайте <http://www.worldbank.org/en/projectsoperations/products-and-services/grievance-redress-service>. Информацию о том, как подавать жалобы в Инспекционную группу Всемирного банка, можно найти на сайте www.inspectionpanel.org.

Орозалы уулу Жаныбек - консультант по охране окружающей среды рассказал участникам общественных слушаний о требованиях природоохранного законодательства Кыргызской Республики и политике Всемирного Банка по охране окружающей среды при реализации проекта.

Задача оценки окружающей среды заключается в том, чтобы выявить существенное воздействие предлагаемого проекта на окружающую среду, определить соответствующие меры по смягчению воздействия, направленные на предупреждение, минимизацию или устранение любого ожидаемого воздействия.

Вместе с тем, при проведении строительных работ, возможны проявления некоторых потенциально негативных воздействий на окружающую среду в проектных площадях, на которые необходимо обратить внимание, принять превентивные действия и соответствующие меры по их смягчению во время планирования, разработки, строительства, эксплуатации и технического обслуживания. Потенциальные негативные воздействия являются относительно незначительными, а позитивные экономические, социальные и экологические выгоды значительно перевешивают их в оценке окружающей среды. Рассмотрение этих воздействий приводится ниже.

Основное воздействие, которое может быть оказано в результате ведения строительных работ:

- 1) Загрязнение почв на строительной площадке
- 2) Загрязнение подземных вод на строительной площадке
- 3) Ухудшение ландшафта, разрушение естественной среды обитания животного мира
- 4) Загрязнение воздуха и воздействие на рабочих/население при движении транспорта и работе тяжелой техники

Для предотвращения или смягчения негативного воздействия строительства для каждого объекта реабилитации составляется ПУОСС.

Все риски фазы строительства легко контролируются и устраняются. Они могут быть сведены к минимуму при должном проектировании смягчающих мер и контроле над Подрядчиком при выполнении работ.

Вопросы – ответы:

Рахматов А. – Зачем создавать еще одно ОРП и тратить средства на содержание ОРП, когда можно возложить обязанности специалистов ОРП на специалистов НЭСКа?

Орозалиева С. – Для всех проектов, финансируемые международными донорскими организациями создаются Отделы реализации проектов, которые непосредственно будут заниматься реализацией мероприятий проектов. Штат ОРП должен быть укомплектован высококвалифицированными узкими специалистами, которые непосредственно будут выполнять мероприятия проекта, а сотрудники НЭСКа не могут выполнять одновременно основную задачу и задания по проекту. Также сотрудники ОРП должны обладать соответствующим опытом в своей сфере деятельности, а также опытом в проектах финансируемые международными организациями.

Но, в Документе оценки проекта прописано, что на базе ОРП KEMS можно будет дополнительно набрать штат для реализации настоящего проекта, т.е. одно ОРП будет реализовывать несколько проектов одновременно, соответственно средства проекта будут использованы рационально.

В заключении, Артыкбаев Э. Э. поблагодарил присутствующих на слушании и поставил вопрос на голосование. Все собравшиеся поддержали реализацию данного проекта.

Председатель собрания

**Консультант по охране
окружающей среды**

**Консультант по социальным
Вопросам**



Артыкбаев Э. Э.

Орозалы уулу Жаныбек

Орозалиева С. М.

Список участников общественных слушаний по информированию заинтересованных сторон и общественности о проекте Всемирного банка Развития возобновляемой энергетики Кыргызстана (KRED)

Дата: 31.01.2023г.

Место проведения: г. Бишкек

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Photos taken during public consultation held in Bishkek



Kyrgyzstan Renewable Energy Development Project (KRED)

**TERMS OF REFERENCE for
Completing Environmental & Social Assessment and
Planning the preparation of tender documents of the
New Small HPPs**

(Implementation of Component 1 “Rehabilitation and construction of small and medium-sized hydropower plants”)

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Ошибка! Закладка не определена.

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Acronyms and Abbreviations

CIA	Cumulative Impact Assessment
DPR	Detailed Project Report
EFlows	Environmental flow requirements
ES	Environmental and Social
ESCP	Environmental and Social Commitment Plan
ESF	Environmental and Social Framework
ESIA	Environmental Social Impact Assessment
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
ESS	Environmental and Social Standard
GBV	Gender-based-Violence
HPP	Hydropower Project
LMP	Labor Management Procedure
RAP	Resettlement Action Plan
SOGI	Sexual-Orientation and Gender Identity
TOR	Terms of Reference
WB	World Bank
MoE	Ministry of Energy
MH	Ministry of Health
MLSSM	Ministry of Labor, Social Security and Migration
MNRETS	Ministry of Natural Resources, Ecology and Technical Supervision
NEHC	National Energy Holding Company

Annex 8 Terms of Reference for Completing Environmental & Social Assessment and Planning the preparation of tender documents of the Small HPPs

TERMS OF REFERENCE for

ESIA for Construction of new HPP (Implementation of Component 1 "of KRED")

January, 2023

Context and Background

The ever-increasing growth of electricity consumption in Kyrgyzstan and persistent shortage, a need to develop cost-effective and medium-term projects for development of the energy sector has been felt. Accordingly, Government of the Kyrgyz Republic is planning to develop generation of additional energy through renewable sources including augmentation of small and medium hydropower projects. To achieve the intended objectives a comprehensive project titled “Kyrgyzstan Renewable Energy Development Project (KRED)” has been planned to be implemented by the Ministry of Energy of the Kyrgyz Republic (MoE) in association with their different Open Joint-Stock Companies (OJSC) with financial assistance from International Development Association and administered by the World Bank.

The KRED project is supporting Kyrgyz Republic’s quest for reliable renewable energy, focusing on Hydropower Plants (HPPs) in the first phase of the Multi Phase Approach. Ministry of Energy, Government of Kyrgyz Republic, is in-charge of implementing the project, with one component of the 1st phase providing concessional financing of construction and rehabilitation of select small HPPs identified by the GoK as strategically important. Since World Bank financing is being sought for these HPPs, environmental and social risks and impacts need to be assessed and managed in line with requirements of World Bank’s Environmental and Social Framework (ESF). (Refer to the documents listed in the Annex for guidance)

Description of the proposed HPP

One of the candidate HPPs is a XXXMW power plant on YYYY river. It is proposed to be a run-of-the-river/storage reservoir based generating unit. Specific information pertaining to the HPP is in the table below:

Name of site, Oblast	
Latitude and Longitude of key locations	
Proposed Generation capacity and Material	
Dimensions of the Dam	
Dimensions of the diversion tunnel(s)	
Dimensions of the Head Race tunnel(s)	
Length of the Penstoke	
Dimensions of the Tail Race tunnels	

Purpose and Objectives

The overall purpose of the assignment is to ensure that the preparation process complies with national environmental legislation, as well as with the ESF in the context of the operation. Further, it serves to identify social and environmental impacts (positive and negative) and risks and to design respective measures in line with the mitigation hierarchy that underpins the ESF’s approach to risk and impact mitigation.

Specific Objectives:

- To prepare an Environmental and Social Assessment (ESIA) and its respective Environmental and Social Management Plan (ESMP) for the operation to ensure the socio-environmental sustainability of its different components.
- The consultancy aims to analyze, evaluate, and propose measures to prevent, control, mitigate, restore and/or compensate the potential environmental and social impacts of the project so that the project complies with ESF and in particular ESS1, ESS2, ESS3, ESS4, ESS5, ESS6, ESS8, and ESS10.
- The ESIA must include management plans and other instruments detailing environmental and social requirements, in particular to guide the final design of the project and its components, including recommendations for changes to the project design as well as specific actions to be taken by contractors and subcontractors.
- Carry out public/stakeholders consultations to ascertain feedback of interested and affected parties, on project and also develop a comprehensive plan for future/continued consultations following the principles as laid down in “Stakeholder Engagement Plan (SEP)” already prepared under KRED.

Tasks

Preparation of the Environmental and Social Impact Assessment (ESIA) report of the project will include the following elements and activities:

Initial background work will include:

- Identification of data availability and gaps for conducting the assessment.
- Ensure the availability of data/information from different sources to rely on (previous site visits, secondary data, scientific literature, government-provided information, etc.)
- Determination the extent of data gathering that will be required to ensure the qualitative depth of this study and which steps will be required (site visits, interviews, literature review etc.)

(a) Description of the Project:

- Detailed description of the project, which will clearly identify the specific environmental and social issues related to it, including all risks and health and safety aspects.
- Analysis of the alternatives considered, justification and environmental and social implications of the project location. Consider all types of alternatives related to overall approach and project design, including the “no action” alternative. Alternate design of project facilities, construction scheduling, technological options, are some of the aspects to be considered for robust analysis of alternatives.
- Description of the project location and sensitive environmental and social features. It includes a map of sufficient detail, showing the project site and the area that may be affected by the project’s direct, indirect, and cumulative impacts. (i.e. area of influence)
- Components and sub-components, which consider the main elements or units, support facilities, equipment or technologies to be used, raw materials, labor (construction, operation and maintenance stages), and work schedule. This includes any offsite activities that may be required (e.g., dedicated pipelines, access roads, power supply, water supply, housing, and raw material and storage facilities), as well as the project’s primary supply chain.
- How the principles of green construction practices are incorporated (such as energy efficiency and the use of renewable resources, the environmental impact of the works, resource conservation, internal air quality, and community aspects, such as safety of site users).

- Brief description of mechanisms and instruments for community participation (to be expanded in a separate section), including procedures for consultation and participation of groups affected and beneficiaries by the project, and mechanisms for complaints from the population directly using the services.
- Moreover, a non-technical summary – that can be understood by different stakeholders – should be included to facilitate and encourage engagement and comments.

(b) Diagnosis of the Project's Area of Influence:

Data collection, analysis and interpretation of all data identified from reviewing existing documentation and initial scoping should be gathered to describe the existing environmental and social conditions including for the biophysical and socio-economic and cultural context.

Characterization of the area of direct impacts, describing the current environmental and social conditions in the area where the project is intended to intervene or implement.

Map of sufficient detail showing the project site and the area that may be affected by the project's direct, indirect, and cumulative impacts (i.e. area of influence)

Description of current Environmental conditions: land use, meteorology, air quality, noise, geology, soil, natural disaster risks, water resources, flora and fauna, protected areas, environmental legacies from previous projects, pollution levels, (hazardous and non-hazardous) waste generation. (see requirements of ESS1, 3, 6, 10)

Description of Socio-economic profile: population, social composition, levels of urbanization, income indicators, levels of health and education, social organization systems, sanitation infrastructure (water, sewage, solid waste), energy and transport, media, cultural, historical and archaeological sites or monuments in the vicinity, potential for an influx of workers from other parts of the country and negative social impacts (see requirements of ESS1, 5, 8, 10)

A screening and scoping report will be prepared soon after the identification of project area of influence and key environmental and social aspects that could be at risk of being negatively impacted. This will feed into the detailed investigations, including sampling strategy and approaches to analysis/modeling required.

(c) Institutional and legal framework:

- Description of the regulations, system and requirements for environmental licensing and land ownership, and other authorizations necessary for the implementation of the project components and works; identification of the need to complement the rules governing project implementation.

State applicable international obligations and agreements (e.g. Multilateral Environmental Agreements) that must be complied with.

- Identify any gaps between national legislation and ESSs, while acknowledging that higher standards will be used. Attention should be given to stipulations in national or local law that may impede compliance with WB ESS and respective guidance or vice versa. In these cases, practical solutions need to be found in collaboration with the implementing partner and included in the ESMP.
- Identify the environmental and social studies required according to the level of socio-environmental risk, in order to comply with both national and local environmental legislation.
- Compliance with WB ESSs:
 - State and describe each and compare with applicable national and local regulations.

- Be specific about which of these requirements would be triggered/required in the context of new small HPP construction and operation.
- Describe the environmental management instruments for use by the project, to ensure the incorporation of environmental and social variables throughout the project cycle.
- Identification of the institutions responsible for the execution and environmental and social management of the program, at the respective levels of government; roles and functions of each of the institutions, identifying the needs for institutional strengthening.
- References to international good practices, such as those contained in the World Bank Group Environmental Health and Safety Guidelines or EIB/IFC Performance Standard 2 on labour camp facility.

(d) Significant Environmental and Social Impacts:

- Develop a methodology/grading system for impacts to record severity in a matrix (long vs. short-term, reversible vs. irreversible etc.);
- Identification, analysis and rating of the environmental and social impacts of the project and for each of potential subprojects during the different phases of the project cycle (preparation, operation, maintenance etc.), including those impacts related to health and safety in the construction, operation and maintenance stages;
- Consideration of positive and negative, direct, indirect, cumulative impacts.
- Environmental viability of the program, by weighing the damages against the environmental and social benefits; evaluation of the effectiveness of the measures to control negative impacts; verification of compliance with environmental criteria and standards; and measures to prevent and mitigate environmental and social risks;
- Estimation of environmental flow (EFlow) required for maintaining the ecological function of the river, in line with Kyrgyz regulations and also international good practice (see Attachment which has more detailed guidance for this)
- Areas potentially impacted by cumulative impacts from the incremental adverse impacts of the project when added to other past, existing, planned or reasonably predictable future projects and developments (e.g. reduction in flows due to diversion, forest depletion due flooding). Assessing potential cumulative impacts enlarges the scale and timeframe for assessing combined effects of multiple activities and impacts;
- Areas potentially affected by impacts from unplanned but predictable developments (indirect and induced impacts) caused by the project that may occur later or at a different location
- Transboundary impacts, such as potential for pollution of international waterways or transboundary river basins, and ecosystems; migration of populations; international relations;

Global environmental and social impacts, e.g. greenhouse gas emissions, ozone depletion, loss of biodiversity; loss of cultural diversity and heritage.

The temporal scope of potential impacts will encompass:

- Future anticipated or projected short-term impacts, e.g. increases in consumption, waste, pollution, capacity needs, and health problems resulting from the proposed project;
- Future anticipated or projected long-term impacts, e.g. indirect or secondary effects of induced unplanned development and changes in socio-economic conditions;
- Role and capacity of third-party organizations, e.g. governments, contractors (with whom the proposed project or implementing partner has a substantial involvement), or an operator of an

associated facilities like transmission infrastructure (in line with definition of Associated Facilities in ESF);

- Primary suppliers (as defined in ESS2).

(e) Preparation of the Environmental and Social Management Plans (ESMP) for the project.

The ESMP consists of a set of mitigation, monitoring and institutional measures, including policies, procedures and practices – as well as the actions needed to implement these measures – to achieve the desired social and environmental sustainability outcomes. An ESMP may apply broadly across organizations for project implementation, or it may apply to specific sites, facilities, or activities relating to the proposed project. The ESMP would include a brief description of routine mitigation and monitoring measures (e.g. for Substantial Risk projects with limited, readily identifiable potential impacts) and a number of specific Traffic management Plan, Biodiversity Action Plans, Cultural Heritage Management Plans, Emergency Preparedness and Response Plans. The level of detail and complexity of the ESMP and priority of the identified measures and actions will be commensurate with the proposed project's risks and impacts. All plans will contain specific monitoring measures.

The ESMP will define desired social and environmental management outcomes and specify social and environmental indicators, targets, or acceptance (threshold) criteria to track ESMP implementation and effectiveness. It will also provide estimates of the human and financial resources required for implementation and monitoring and identify organizational structure and processes for implementation.

Recognizing the dynamic nature of the project development and implementation process, the implementation of an ESMP will be responsive to changes in project circumstances, unforeseen events, and the results of monitoring (adaptive management).

Essential components of an ESMP:

Measures to mitigate negative impacts during operations, and evaluation of their effectiveness. Mitigation measures must be identified for each impact/risk that was identified during the ESIA-process;

- Flow chart of the project's actions, identifying the stages and times of execution of the environmental and social management actions;
- Description of the environmental monitoring plan in the construction and operation stages of the project, identifying the parameters to be measured, the places of measurement, the methods used and the periods/frequencies in which the measurements will be made, the costs, and the institutions responsible (see separate section);
- Identification of a set of readily measurable quantitative and qualitative indicators of the mitigation measures proposed for the main impacts and risks that accompany the implementation of the project (see separate section);
- Contingency and Emergency Response Plan, such as for accidents, fires, floods, earthquakes;
- Reporting templates that include aforementioned indicators and provide clear guidance on how to measure them.

(1) Social and environmental impact mitigation.

The ESMP will include environmental and social impact mitigation actions, in accordance with the mitigation hierarchy as envisaged in the ESF:

The ESMP will describe each mitigation measure, including the type of impact and social and environmental parameter(s) to which it relates, the location and frequency, timing or conditions under which the measure is required (e.g., continuously or in the event of contingencies), and

provide technical details on the mitigation technology, process, equipment, design and operating procedures, as appropriate. Potential social and environmental impacts of these measures will be estimated. Linkages with other mitigation plans (e.g., for displacement or cultural heritage) required for the proposed project will be identified.

(2) Social and environmental risk monitoring and reporting.

The ESMP will detail the social and environmental monitoring to be conducted during project implementation to:

- Provide information about actual versus predicted social and environmental impacts;
 - Land requirements and its mode of acquisition and listing likely impacts mitigation measures to address such issues in accordance to ESS-5 like
 - Compensation
 - Livelihood restoration
 - Resettlement etc.
 - Need for detailed RAP
 - Quantities of wastes/pollutants generated and managed in line with ESS3 and ESS4 requirements
 - Slope erosion and related sediment pollution
 - Loss or damage to biodiversity, where relevant, in line with ESS6 requirements

- Measure the effectiveness and evaluate the success of mitigation, remediation and enhancement measures;
- Evaluate compliance with applicable international, national, and local policies laws, regulations, policies and procedures and WB ESSs;
- Allow corrective action to be taken when needed.

Specifically, the ESMP will detail the:

- Mitigation measures being monitored;
- Parameters to be measured; introduction of sensible indicators to measure the implementation of mitigation measures.
- Sampling and analytical or other monitoring methods to be used, including staff, procedures and detection limits (where appropriate);
- Sampling or monitoring locations;
- Frequency or timing of measurements;
- Definition of thresholds that will signal the need for corrective actions.
- Define responsibilities for monitoring and reporting during the life cycle of the project.

In addition to recording information to track performance and establishing relevant operational controls, the monitoring plan will require the use of dynamic mechanisms, such as inspections and audits, where relevant, to verify compliance and progress toward the desired outcomes. Stakeholder complaints or grievances are to be tracked and monitored and any corrective actions are also tracked and monitored.

Monitoring and reporting should include data disaggregated by categories of potential beneficiary and/or affected groups and include specific gender indicators. The monitoring plan should require the retaining of qualified and experienced external experts to verify monitoring information.

Evaluation, reporting and management of monitoring measures will also be specified in the ESMP.

(2) Capacity development.

The ESMP will assess and detail a plan to develop implementation capacity, where needed.

The capacity development section of the ESMP will:

- Recommend management arrangements for the project, including structure, roles, responsibilities, and authorities;
- Designate specific personnel, including management representative(s), with well-defined and clearly communicated lines of responsibility and authority;
- Require sufficient oversight and human and financial resources be provided on an ongoing basis to achieve effective and continuous environmental and social management throughout the life of the proposed project.

Capacity development will also address the methods required to perform the specific actions and measures of the ESMP in a competent and efficient manner. The capacity development plan will have the following components:

- Identification of capacity needs;
- Development of a capacity development plan to address defined needs;
- Monitoring and Evaluation of capacity development plan.

(3) Implementation action plan (schedule and cost estimates).

For above aspects (mitigation, monitoring, capacity development, and stakeholder engagement), the ESMP provides (a) an implementation schedule for measures that must be carried out as part of the project, showing phasing and coordination with overall project implementation plans; and (b) the capital and recurrent cost estimates and sources of funds for implementing the ESMP.

(f) Public Consultation and Disclosure Procedures

The ESMP will be developed in close consultation with project stakeholders and disclosed in draft and final form. The ESMP is to include a section that either (a) provides an overview and link to the project's Stakeholder Engagement Plan (it may be necessary to update the project SEP with new stakeholder information from the ESIA/ESMP process) or (b) outlines a Stakeholder Engagement Plan to promote meaningful, effective consultations during project implementation, including identification of milestones for consultations, information disclosure, and periodic reporting on progress on project implementation and issues of concern to project stakeholders. The plan should also include a description of effective processes for receiving and addressing stakeholder concerns and grievances regarding the project's social and environmental performance.

Actions:

- Conduct a stakeholder analysis to confirm the affected and interested parties, as per the KRED project SEP.
- Provide a consultation plan, informing about planned consultation events, information material, attendance recording measures for encouraging the participation of disadvantaged section of population.
- After the consultation event(s), document and update the consultation section with:
 - o Description of the event.
 - o General atmosphere of the event.
 - o Questions asked and which answers were provided.
 - o Any suggestions for project improvement that were taken into consideration.

O Include scanned attendance lists for project files.

O Photos/Videos of the event(s). consulted with the affected people. Therefore, consultations should take place when the environmental and social documents are ready for sharing, but prior to be finalized.

- The Consultant will coordinate with the institution in charge of implementing the operation and with the corresponding local institutions the most appropriate consultation mechanism, taking into account national regulations, the local context and existing social standards for these cases.
- This consultation will be the opportunity to have a dialogue that will help to improve the design, promote a better understanding of the operation and increase the chances of success and sustainability of the project.
- In addition, the consultation must promote the participation of women, marginalized and disadvantaged groups during the consultation process, and comply with national rules and regulations that apply to the consultation process.
- If ESMP review and evaluation result in material changes in, or additions to, the mitigation, monitoring or capacity development measures or actions described in the ESMP on issues of concern to the stakeholders, the updated measures or actions will also be developed in close consultation with stakeholders and disclosed.
- Periodic reports will be provided to potentially affected communities describing progress with implementation of the ESMP and on issues that the consultation process or grievance mechanism has identified as a concern. The frequency of these reports will be proportional to the concerns of the stakeholders but not less than annually. For projects designated as highly complex and sensitive, quarterly reporting should be required.

1. Timetable and Deliverables

The Consultant will provide the required reports in accordance with a schedule that reflects estimated working hours. The schedule should take into account the current situation with the COVID-19 pandemic, the need for coordination among all parties, including reviewers, and how the team will be mobilized and organized. The overall duration and schedule are subject to planning and negotiation between the potential consultant candidate and the project agency.

The time frame for the development of ESIA documents will take into account the time required for the ESIA consultant to obtain bank approvals and complete the ESIA reports. The ESIA Consultant is expected to contribute environmental and social aspects to the final ESIA report, including detailed environmental and social planning.

Report	Timetable (from contract signing)
Inception Report	1 months
Screening and Scoping Report	3 months
First draft of the ESIA, Plus all Plans	6 months
Second draft of the ESIA, Plus all Plans	8 months
Final ESIA, Plus all Plans	9 months
Incorporation of comments and changes in DPR	12 months

The following outputs and deliverables to the satisfaction of the Client, the E&S Panel, the Technical Panel and the Bank will be provided in English, and if necessary, a summary in the national language.

- 1) Environmental and Social Impact Assessment (ESIA)
- 2) Environmental and Social Management Plan (ESMP)

- 3) Emergency Preparedness and Response Plan based on, among others, Dam Safety Plan for the project
- 4) Biodiversity Monitoring Plan (if needed, to be included as part of the ESMP)
- 5) Cumulative impact assessment if required
- 6) Updated Stakeholder Engagement Plan (SEP)
- 7) Assessment of environmental flows (should be included in the ESIA)
- 8) Environmental Flow Management Plan (should be included in the ESMP)
- 9) Formats for Contractor's Environment health and safety plan with responsibility allocation in accordance with applicable ESS and detailed Grievance Redressal Mechanism for addressing people's concerns.
- 10) Gender and Vulnerability Action Plan, including a plan to combat gender-based violence (should be included in the ESMP)
- 11) Community Health and Safety Plan (should be included in the ESMP)
- 12) Cultural heritage conservation plan (should be included in the ESMP)
- 13) Workforce Influx Management Plan (should be included in the ESMP)
- 14) Waste management plan (should be included in the ESMP)
- 15) Labor camp/camp management plan (should be included in the ESMP)

Expertise Required and Qualifications

For this assignment key members and required experience are:

- 1) **The environmental specialist (international team leader)** will take over the coordination of the ESIA, as well as other plans, integrating the input of each specialist, preparing the ESIA and managing the consultation processes. He/she must have at least 15 years of experience, including extensive international experience, in the management and/or conduct of ESIA's and EIAs, and be familiar with the World Bank Safeguard Policy, ESF and/or IFC Performance Standards.
- 2) **The Social Development Specialist (Second Team Leader, International)** will be responsible for the social aspects of this consultation, including consultation and assessment of the social impact of the EFlows assessment. He/she will organize, advise and coordinate the social team to carry out their respective tasks and will be responsible for the quality and timely execution of the various required social activities. The social specialist is expected to have broad practical experience, including extensive international experience, in such aspects of social development as gender and gender-based violence, in-depth knowledge and practical experience in applying the World Bank and ESF safeguard policies, especially in relation to involuntary resettlement and indigenous peoples. This specialist is expected to have experience leading teams. A minimum of 15 years of relevant professional experience is required.
- 3) **The environmental specialist (national)** will be responsible for measuring and collecting baseline air and water quality indicators, air and water quality modeling, assessing project impacts on air and water quality, and developing management measures to address air and water impacts and pollution. caused by the project. He/she will also need to provide similar experience for the EFlows evaluation. He/she must have at least 10 years of national

experience in conducting an ESIA and/or assessing impacts on air and water quality. The ESIA consultant will work with the technical consultant updating the DPR, use any existing data and decide how to fill in any gaps.

- 4) **Social /Resettlement Specialist (National)** will be responsible data collection/analysis/assessment on identified social issues including short survey, consultation/FGD etc. based on the latest project information and detailed design. Required to have at least 10 years of relevant work experience. He/she should also have a deep understanding of and experience in applying international standards, especially the environmental and social standards of the World Bank and/or IFC.
- 5) **Gender Specialist (National)** will be responsible for the analysis and integration of gender issues into the ESIA and for the preparation of the Gender Action Plan for the project. He/she will also work with a labor expert and an occupational health and safety expert on the preparation of labor management procedures (LMP). Based on the GBV risk rating for the project, the expert will prepare a project-specific GBV management plan. Development of a RAP based on the latest project information and detailed design. Required to have at least 10 years of relevant work experience.
- 6) **Hydrologist (International)**. The specialist must have at least ten years of experience in the field of aquatic ecology, water quality and environmental flow assessment in hydropower projects, including international experience. He/she should also have a deep understanding of and experience in applying international standards, especially the environmental and social standards of the World Bank and/or IFC.
- 7) **Ecohydraulic Modeling Specialist (International)**. The specialist must have at least ten years of experience in environmental flow assessment. He/she should have a thorough understanding of environmental decision-making processes and the use of multi-criteria approaches to holistic (environmental and social) decision making in hydropower projects.
- 8) **Geomorphologist/Sedimentologist (National)**. The specialist should have at least 10 years of experience in fluvial geomorphology/ecology and be familiar with environmental flow assessment. Instead of hiring a separate specialist, the ESIA consultant will consider using a specialist geologist, hired as part of the technical consultant, to provide the necessary knowledge on environmental flow assessment.
- 9) **Fisheries specialist/ichthyologist (national)**. The specialist should analyze and compare the biodiversity impact of different minimum flow scenarios within the framework of EFlows assessments. He/she must have at least five years of experience in fisheries research in hydropower projects.
- 10) **The Occupational Health and Safety Specialist (International)** will assess and develop measures and plans to meet the requirements of ESS2 (Health and Safety) and ESS4 (Community Health and Safety). He/she will work closely with the labor law expert to develop labor management procedures. He/she must have practical national and

international experience in the field of occupational health and safety and the development of an occupational health and safety plan to address or manage occupational health and safety and public health.

- 11) **Biodiversity Specialist (national)**. The specialist should have at least 10 years of experience in ecological assessments for terrestrial and/or aquatic ecology, and preferably be familiar with environmental flow assessment requirements. The specialist should analyze impacts of the project activities on terrestrial flora, fauna (including avifauna). Preference will be given to experience of ecological assessments for HPPs.

Reporting Requirements

The Consultant will need to work closely with the other Project Consultants, including the Technical Consultant, to ensure that projects, feasibility studies including analysis of alternatives, and tender documents take into account E&S measures, results and recommendations. from E&S consultants and vice versa. The ESIA consultants will also work closely with the Technical and Environmental and Social Expert Groups. During the preparation of each deliverable, meetings will be held to present progress made with the World Bank.

The Consultant is expected to report directly to managers from relevant ministries/agencies of the Kyrgyz government and with their consent/request relevant staff of the World Bank.

Relevant Resources

- 1) [The World Bank Environmental and Social Framework \(full pdf file\)](#)
- 2) [The World Bank's Environmental and Social Standards](#)
- 3) [World Bank Group General Environmental Health and Safety Guidelines](#)
- 4) [World Bank Group Industry Sector Guidelines for Construction Materials Extraction](#)
- 5) [World Bank Group Industry Sector Guidelines for Electric Power Transmission and Distribution](#)
- 6) [Guidance Notes for Borrowers](#)
- 7) [World Bank Directive on Addressing Risks on Disadvantaged or Vulnerable Individuals/Groups](#)
- 8) [World Bank Directive on Environmental and Social Directive for Investment Project Financing](#)
- 9) [IFC Performance Standar-2-Labor and working conditions](#)
- 10) World Bank Guideline on managing Project-Induced labor influx and workers' camp issues
- 11) World Bank Group Good Practice Handbook for Environmental Flows for Hydropower Projects ([Link](#))
- 12) Managing Environmental and Social Impacts of Hydropower in Kyrgyzstan ([Regulations on the procedure for conducting environmental impact assessment in the Kyrgyz Republic \(approved by the Decree of the Government of the Kyrgyz Republic dated February 13, 2015 No. 60\) \(minjust.gov.kg\)](#))
- 13) National Technical Regulations on the Environment and Environmental Issues (Effluent, Waste, Emissions, etc.) ([Law of the Kyrgyz Republic dated May 8, 2009 No. 151 "General](#)

[technical regulations for ensuring environmental safety in the Kyrgyz Republic"](#)
[\(minjust.gov.kg\)](#)

ATTACHMENT – Guidance for Conducting an Environmental Flows Assessment

1. Purpose and Objective

The objective of this assignment is to conduct an environmental flow assessment (EFlows) of proposed new XXX HPP to identify potential impacts on terrestrial and aquatic biodiversity, as well as social impacts, and propose mitigation and management measures to address these impacts as part of the ESIA.

The specific objectives of the assignment are to: (1) assess the current structure and functioning of the YYYY River, its tributaries and arms, including upstream of the proposed dam, between the reservoir dam and offshoot, and downstream of the offshoot; (2) conduct an appropriate assessment of EFlows to assess future impacts on the functioning of the river, including the impact of HPPs; and (3) propose minimum EFlows requirements for HPPs, including an EFlows monitoring and management plan.

2. Coordination with other consultancies

In conducting the EFlows assessment, the ESIA consultant will be expected to coordinate with the following teams:

- (i) The ESIA consultant will be responsible for obtaining relevant information on EFlows from the technical consultant including the latest project design aspects, hydrological data, hydrogeological model if required, and sediment analysis. Following the EFlows assessment, the ESIA consultant will provide the technical consultant with the minimum EFlows to be maintained at all times downstream of the dam and any accompanying costs.
- (ii) Social/stakeholder consultants: The ESIA consultant will make use of the Social Development Specialist to conduct stakeholder consultations for the EFlows assessment, as outlined in Section 5 (Stakeholder Engagement).

3. Scope of Work

The consultants will undertake the following as part of this assignment:

Preparation tasks

- (i) Review the feasibility study, latest design aspects of the project, reservoir design and operating rules, including peak power operations. The Consultant will also review other studies conducted since the submission of the DPR, including reservoir sediment assessment, hydrological data, hydrogeological modeling, climate resilience assessment, and other information useful for estimating EFlows. The Consultant will also consider information on other ongoing or planned hydropower projects in the YYYYYY River Basin.
- (ii) Development/selection of an EFlow estimation methodology with an appropriate level of resolution and appropriate for the river. A high-resolution method is preferred, which can take into account: (a) the impact of different HPP scenarios on the river ecosystem, (b) peak power operations, (c) changes in sediment input, (d) breaks in longitudinal biota migration, and (e) forecasts relating to natural or critical habitats. For critical habitats, the consultant will obtain a decision from the aquatic biodiversity consultant on the presence of endemic or any other vulnerable species causing critical habitats. Any species that causes critical habitats to be found along the river sections/sites should be assessed. EFlows will include additional information on the survival of such species. The Consultant justifies the relevance of the chosen EFlows method by pointing to peer-reviewed scientific articles in which this method has been used or described and its river relevance. It is recommended to follow the World Bank Group's Best Practice Guidelines on Environmental Flows for Hydropower Projects (available on line here:

https://www.ifc.org/wps/wcm/connect/b5c4fc9d-8eaf-46da-833b-3dd07c0bc985/GPH_Eflows+for+Hydropower+Projects_Updated_compressed.pdf?MOD=AJPERES&CVID=mhN3tCS) or an equivalent international best practice methodology.

(iii) Identify important sites and reaches for conducting the EFlows assessment. This will include sites upstream of the dam, between the dam and the tailrace outlet, and downstream of the tailrace outlet. The sites selection shall capture different geomorphologies, biological variations, tributaries, non-flow related social uses, and types/levels of potential impacts. In selecting the sites, the EFlows consultant will coordinate with the aquatic and terrestrial biodiversity consultants to determine the locations where aquatic ecosystems are likely to be affected.

(iv) In consultation with key stakeholders, select a range of riverine ecosystem indicators that are expected to respond to changes in the flow or sediment. Indicators may be drawn from hydrology, water quality, riparian vegetation, macroinvertebrates, fish, and relevant social aspects. Initial relationships will be developed between the indicators and flow or sediment change based on existing information and key gaps for additional EFlows data collection will be identified.

(v) Identify the baseline scenario for each of the selected sites. This comprises an assessment of the current ecological and social status of the riverine ecosystems for each indicator and EFlows site/reach. To the extent possible, describe historic trends in conditions and possible causes. The baseline shall consist of the current state as well as the future state without the project.

(vi) Determine the range of operational scenarios for comparison with the baseline scenario. The scenarios will be selected in consultation with the technical consultant and may include location, design, dimension, and barrier effect of the dam; reservoir operating rules; sediment release pattern; and climate change scenarios. Scenarios of project operation with actions to mitigate impacts on aquatic biodiversity or social indicators may also be assessed to determine if No Net Loss or Net Gain is feasible for selected biodiversity values.

(vii) Obtain hydrological timeseries data (at least 30 years and until as recent as possible) for each of the sites/reaches selected. This includes daily data for baseline flow, daily data for baseload operational scenarios, and sub-daily data for peak-power release scenarios. In obtaining this data, the consultant shall coordinate with the technical consultant updating the Kamarata-1 HPP hydrological data.

Field Data Collection

(viii) Work with the aquatic and terrestrial biodiversity consultants and hydraulic teams to determine the data needed for the EFlows assessment that can be collected during the biodiversity field surveys. If biodiversity field sampling has already been conducted, evaluate the data gaps.

(ix) Develop a field sampling plan that identifies appropriate sampling locations and sampling points for the EFlows assessment.

(x) As needed, work with the aquatic and terrestrial biodiversity consultants to collect biodiversity and hydraulic information at EFlows sites following internationally accepted standardized field methods and standardized sampling protocols. Field data may include sampling during the low flow seasons, transition seasons between the low and high flow seasons, and high flow seasons. If possible, assessments should start in the low flow season, when features of the river channel can be seen, along with identifying sites, cross-sectional profiles, and characteristics of sampling.

Data Analysis

(xi) For each EFlows site/reach develop a stage-discharge curve/hydrodynamic model that can be used to provide ecologically relevant hydraulic parameters (e.g., average velocity, average and maximum depth, wetted perimeter, extent and depth of floodplain inundation) as a function of discharge.

- (xii) Use a recognized interactive holistic EFlows Assessment method that satisfies the criteria outlined in bullet (ii) and for each EFlows sites or reach: (1) describe the relationships (e.g. response curves such as time series) between the indicators chosen and the changes in flow, sediment and connectivity associated with the proposed scenarios; and (2) If applicable, describe the social effects of these changes.
- (xiii) For peaking operations, assess the impact of sub-daily flow fluctuations on riverine ecosystems.
- (xiv) Prepare a report detailing the findings. The assessment and report will satisfy both the requirements of the Law of the Kyrgyz Republic dated May 8, 2009 No. 151 "General technical regulations for ensuring environmental safety in the Kyrgyz Republic" and World Bank ESF particularly ESS 1, 3, 4 and 6 and their Guidance Notes (see references section). The report will be subject to a favorable review by the Client and the World Bank.
- (xv) Develop an Environmental Flow Management Plan (EFMP) that will include monitoring actions, implementation arrangements, adaptive management system and funding arrangements, including sources and financial management. The mitigation measures will follow the mitigation hierarchy (avoidance, minimization, mitigation, compensation/offset) as per the World Bank ESF. Where required, the EFMP will integrate with and reference other management plans, such as the biodiversity management plan or environmental and social management plan (ESMP). Depending on the level of detail required for the EFMP, the consultant will either prepare a stand-alone EFMP or integrate it as part of the ESMP to be updated by the ESIA consultant.
- (xvi) Outline the anticipated effects of any ongoing or planned conservation efforts on the EFlows and other potential factors outside of the proposed project that may result in a future change of the baseline conditions.
- (xvii) Ensure integration of the EFlows baseline, impact assessment and management measures into the ESIA.

Stakeholder Engagement

- (xviii) The Social Specialist will be responsible for undertaking meaningful stakeholder engagement as per ESS 10 of the World Bank ESF in all phases of the EFlows Assessment, including but not necessarily limited to the following: (1) definition of the value of the ecosystem and the resources it provides; (2) scenarios to be assessed, if appropriate; (3) selection of indicators for the assessment; (4) consideration of scenario results; and (5) EFlows release commitments and other related mitigation measures.
- (xix) The Environmental Specialist should use the available Scope of Work reports, including the ESIA prepared for the proposed project, World Bank ESF. National Strategy and Action Plan for Biodiversity Conservation in the Kyrgyz Republic, Law of the Kyrgyz Republic dated May 8, 2009 No. 151 "General technical regulations for ensuring environmental safety in the Kyrgyz Republic", scientific studies and publications, as well as available data on the project area and rivers in Kyrgyzstan. The Consultant will be responsible for obtaining the appropriate permits for sampling.

4. Deadlines for completing assignments and expected results

Item	Deliverable	Days
1	Inception report with the selected EFlow assessment method and model, potential sites and reach selected for the assessment, list of potential indicators for the baseline and future scenarios with stakeholder input and a summary of their selection, fieldwork sampling plan, proposed stakeholder engagement outline, proposed schedule, and a budget.	10
2	Carry out EFlows assessment using holistic model, with input from stakeholders and other collaborators. Provide a draft EFlows assessment report.	30

3	Finalize report deliverables incorporating comments from the World Bank and the Ministry of Energy of Kyrgyzstan.	20
	Total	60

5. Required Qualifications

Key experts required to conduct the EFlows assessment are as follows:

- (i) Hydrologist (international) – As described in Expertise Required and Qualifications of the TOR.
- (ii) Ecohydraulic modeler (international) – As described in Expertise Required and Qualifications of the TOR.
- (iii) Water Quality Specialist (national) – The air and water quality specialist to be hired under the ESIA consultancy should fulfil this role. The consultant will include this EFlows assessment task when budgeting the water and air quality specialist’s time.
- (iv) Social Development Specialist (international) – The social development specialist to be hired under the ESIA consultancy should fulfil this role. The ESIA consultant will include this EFlows assessment task when budgeting the social development specialist’s time.
- (v) Geomorphologist/sedimentologist (senior) – As described in Expertise Required and Qualifications of the TOR.
- (vi) Fish Specialist (national) – As described in Expertise Required and Qualifications of the TOR.

6. Sampling environment, required qualification

In order to carry out sampling, the Consultant needs contracts with accredited public or private laboratories that provide such services, as well as send sampling staff who know the methodology of sampling, preservation and delivery of samples that is legitimate in the country.

Annex 9 Terms of Reference for Completing Environmental & Social Assessment and Planning the preparation of tender documents of the Kambar-Ata – 1 HPP

**TERMS OF REFERENCE for
Updating and Completing Environmental Social
Assessment and Planning the preparation of tender
documents of the Kambarata HPP-1**

(Implementation of Component 2 "Technical assistance in the preparation of the Kambarata HPP-1")

January, 2023

Acronyms and Abbreviations

CIA	Cumulative Impact Assessment
DPR	Detailed Project Report
EFlows	Environmental flow requirements
ES	Environmental and Social
ESCP	Environmental and Social Commitment Plan
ESF	Environmental and Social Framework
ESIA	Environmental Social Impact Assessment
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
ESS	Environmental and Social Standard
GBV	Gender-based-Violence
HPP	Hydropower Project
LMP	Labor Management Procedure
RAP	Resettlement Action Plan
SOGI	Sexual-Orientation and Gender Identity
TOR	Terms of Reference
WB	World Bank
MoE	Ministry of Energy
MH	Ministry of Health
MLSSM	Ministry of Labour, Social Security and Migration
MNRETS	Ministry of Natural Resources, Ecology and Technical Supervision
NEHC	National Energy Holding Company

1. Introduction

The ever-increasing growth of electricity consumption in Kyrgyzstan and persistent shortage, a need to develop cost-effective and medium-term projects for development of the energy sector has been felt. Accordingly, Government of the Kyrgyz Republic is planning to develop generation of additional energy through renewable sources including augmentation of small and medium hydropower projects. To achieve the intended objectives a comprehensive project titled “Kyrgyzstan Renewable Energy Development Project (KRED)” has been planned to be implemented by the Ministry of Energy of the Kyrgyz Republic (MoE) in association with their different Open Joint-Stock Companies (OJSC) with financial assistance from International Development Association and administered by the World Bank.

For implementation of proposed KRED project, it is not only mandatory to comply with applicable national legislations/regulatory framework on environment and social issues but to carry out due diligence on such issues as per the provisions of World Bank's Environmental and Social Framework (ESF) to meet the overall requirement of sustainable development. To address these requirements a detailed Environmental and Social Management Framework (ESMF) is prepared.

Technical Assistance to Preparation of Kambarata-1 Large Hydropower Plant (estimated US\$ 2 million IDA financing)

The activities covered under this component include the update of the feasibility study, environmental and social studies and the draft of procurement documents and implementation agreements. Given the large investment needs (approximately US\$2.9 billion according to the feasibility study 2014), this work will be complemented by Bank-executed technical assistance to evaluate potential financing options, including potential phasing, co-financing options and potential role of PPP approach. EPP shall be responsible for implementation of Component 2.

Project Implementation Arrangements

The implementation arrangements of the proposed project will build on the current arrangement under Electricity Sector Modernization and Sustainability Project (KEMS), where a Project Management Office (PMO) is being established. The PMO, MoE is headed by a director and will have dedicated teams of staff to work on environmental and social standards, procurement, financial management, accounting and internal auditing disbursement. The same PMO will implement this proposed project, with enhanced capacity from additional specialists as needed. Meanwhile, MoE has instructed JSC, EPP to support the project preparation including coordination and preparation of required project documents for the development of Kambar Ata 1 HPP.

2. Project Descriptions

Component 2 of the project is expected to have direct and indirect (as well as cumulative) environmental risks and adverse impacts. The environmental risk of the component is assessed as High. Large Kambar-Ata HPP (1.6 GW, dam 160-260 m), for the construction of the structure, most likely, arched dam's characteristic of mountainous areas will be used.

Given the scale of construction envisaged for the proposed dam and its ancillary infrastructure, significant impact on the environment and social features is being anticipated. Potential environmental risks and impacts may lead to permanent flooding of the reservoir area and permanent landscape changes, impacts on river flow, quality and morphology; ecosystems,

ecosystem services and loss of aquatic and terrestrial biodiversity; pollution and waste disposal during construction, vibration impacts from blasting and heavy equipment, changes in the hydrological regime of the Naryn River. Potential social risks include displacement (physical and economic), loss of livelihoods, marginalization of disadvantaged groups, skewing of gender balance in the local work-force, etc.

The TA component will support development of feasibility studies, ESIA with related studies, and tender documents, which can then be used for further project development and implementation.

3. Objective of the Assignment

This assignment is to ~~undertake~~ the environmental and social assessment and planning work as part of the feasibility study update to comply with the World Bank's Environmental and Social Framework (ESF) and applicable national standards requirements.

Project development required during the design phase: Environmental and Social Impact Assessment (ESIA), Environmental and Social Management Plan (ESMP) and Resettlement Action Plan (RAP). These planning documents should contain a description of the socio-economic conditions in the project area, as well as a relatively comprehensive overview of the expected environmental and social impacts and propose measures to mitigate these impacts.

The selected Consultant should review available environmental and social assessment and planning documents of relevant projects, perform data collection, assessment and planning tasks and prepare environmental and social assessments and plans that also meet the requirements of the national standards of the republic.

4. Coordination with other consultants working on the project

Conducting environmental and social assessment and planning will require the involvement of:

1. Technical consultants (engineers, hydrologists, hydro technicians, geologists, meteorologists, etc.), this is necessary to provide reliable data for the analysis of alternatives, and close coordination between the technical consultant and consultant to update and complete environmental and social assessment and planning documents. The ESIA Consultant will be required to provide the Technical Consultant with: (i) an estimate of the environmental flow requirements (EFlows) to be continuously maintained downstream of the dam; (ii) an assessment of the environmental and social costs associated with mitigation measures corresponding to the impacts assessed for each alternative proposed by the technical consultant, including the installation of transmission lines, and the costs of maintaining EFlows requirements; (iii) An Environmental and Social Management Plan (ESMP) for the scope of geotechnical studies and laboratory testing proposed by the technical consultant; and (iv) assessment of the risks and impacts associated with the various sites considered for construction materials, such as quarries and rock heaps.
2. In accordance with the requirements of the ESF (ESS4), an independent technical evaluation panel for dam design and safety projects is required to conduct comprehensive and independent reviews of the update of the feasibility study. The objectives of the reviews are to ensure that the proposed HPP scheme and related studies are safe, modern, economical, environmentally, and socially sound schemes based on international best practice. Thus, the ESIA consultant will have to consider the comments of this group.
3. The Client's Environmental and Social Experts (ESPoE) team, in accordance with these ToRs, will consult with hired independent consultants to advise on environmental and social assessment aspects and project management measures. Independent consultants are

required to assist the Contractor in reviewing the prepared environmental and social documentation for this ToR.

5. Scope of Work

The Consultant will review all existing project documentation to identify any gaps and inconsistencies in accordance with the requirements of the relevant state policy in the field of environmental protection and the design of large energy facilities, as well as the requirements of the ESF of the World Bank. Based on these analyses, the consultant will conduct the necessary additional data collection, assessment and analysis, task planning and consultation to address gaps and shortcomings, as well as to update and complete the necessary environmental and social assessments and plans that meet the requirements of the government, as well as the World Bank ESF. Specific plans that need to be developed are described below.

6. Task 1. Developing the ESIA and ESMP

The following tasks should be completed in line with the requirements of the ESF (ESS1):

All project areas, including ancillary and associated facilities, must be included in the ESIA, including downstream.

Clearly define the zone of influence, including the zone of direct impact, the zone of indirect impact and the zone of cumulative impact

Gather additional baseline data that will document baseline data on other project buffer or contiguous impact areas currently not well covered by the existing ESIA that will be important for risk and impact assessments.

Conduct an overall assessment of potential environmental and social impacts and propose mitigation measures for aspects/components that have not been finalized or covered.

In-depth analysis of impacts, especially on sensitive receptors, to develop site-specific measures in addition to general construction measures and apply a mitigation hierarchy of avoidance, minimization, mitigation and compensation.

Calculation of greenhouse gas (GHG) emissions from the future reservoir and other project components (ESS3), its calculation should reflect the design and operation of the expected HPP.

Establish environmental flow requirements for the flooded area and assess the environmental and social impacts of flow variability, different flow change scenarios and minimum EFlows.

Further collection and updating of inventory and census surveys of land acquisition and other loss of assets and updating the analysis of such impacts.

Conduct a gender and vulnerability analysis in the project area as part of the ESIA, including the risks of gender-based violence, to inform the planning of gender actions and interventions related to vulnerable groups.

Screening for the presence of local communities in the project area (ESS7).

Collection of relevant data and analysis of impacts related to labor and working conditions, health and safety of the population (ESS2, ESS4, ESS10).

Work on identification and analysis of stakeholders, as well as further consultations with stakeholders building on the SEP for KRED project.

Comprehensive impact analysis on cultural heritage.

Undertake cumulative impact assessment for the Naryn River Basin with the ESIA and consider the results and recommended actions in the ESMP.

Integrate baseline data and assessment results from the aquatic and terrestrial biodiversity consultations into the ESIA. In particular, the ESIA will need to summarize the main findings of the assessments and consider impacts when formulating the ESMP (unless a separate Biodiversity Management Plan is developed).

Undertake analysis of alternatives to cover alternatives for project/site location, transmission line routing/alignment, technologies, construction methods, etc. and ensure that they are taken into account in the overall technical consultation alternatives. The site of the dam and the location of

the HPP units, tunnels and access roads were designed earlier from technical considerations linking the projected HPP with Kamarata-2. When developing an ESIA, alternatives need to be considered. The analysis should compare these alternatives on technical, economic, social and environmental merits. The scope of the alternative analysis needs to cover the locations of other components of the activity, e.g. transmission lines, substations, ancillary facilities, energy camps, their infrastructure, bypass sidings, etc

As part of the ESIA, develop an ESMP, in accordance with the relevant standards, additional actions and plans may be required, some of them may be included in the ESMP as sub-plans.

These risks and impacts are further analyzed, and requirements elaborated in other relevant ESF standards (ESS2, ESS3, ESS4, ESS5, ESS6, ESS8, ESS10). Specific areas for updating and improvement are explained below in relation to each of the relevant standards.

ESS1: Assessment and Management of Environmental and Social Risks and Impacts

Specifically, the ESIA needs include data on the following:

Basic environmental and social information. Baseline information on air quality, water quality, and soil, including landslide and seismic vulnerability, as well as flora and fauna, should be collected within the study area of the project, directly in the zone of influence and in the buffer zone of the HPP.

It is necessary to apply various sampling methods to determine the seasonality of both biophysical and chemical initial characteristics of the project area and zone of influence. The number of sampling stations will need to be fixed once the area of influence is clearly defined.

A screening and scoping report will be prepared soon after the identification of project area of influence and key environmental and social aspects that could be at risk of being negatively impacted. This will feed into the detailed investigations, including sampling strategy and approaches to analysis/modeling required.

The ESIA methodology for sampling and data collection, analysis and classification of risks and impacts, delimitation of the study area and zone of influence, analysis of alternatives, and development of management measures based on the mitigation hierarchy should be clearly explained and set out.

A cumulative impact assessment for the Naryn Basin is needed, should be integrated into the ESIA, and the findings and recommendations should be taken into account in the ESMP and basin measures in accordance with the mitigation hierarchy. This should focus on HPPs, existing and already under advanced stages of consideration in the cascade.

The Consultant will conduct an ecosystem and environmental risk assessment of the HPP to determine the potential impacts on terrestrial and aquatic biodiversity, as well as social impacts, and propose mitigation and management measures to address these impacts.

Screening for downstream social impacts needs to be analyzed. Conclusions should be supported by a description of the current state of water use, and then by an analysis of the potential impact of the project on such water use. The usual social impacts in the downstream are related to river water use, fish farming and fishing. Particular attention should be paid to fish farming and its impact on livelihoods. People use the river for fisheries, drinking water supply and field work. Screening should cover baseline, broad consultation, impact assessment and mitigation planning.

A gender and vulnerability analysis should be carried out as part of the ESIA. Vulnerable and disadvantaged households are to be defined by a number of criteria, and the basic demographic data contains gender-related information. Systematic analysis is required, action planning on gender issues is required, the definition of vulnerable populations needs to be revised and broadened. It is important to note that vulnerability and gender issues affect all phases and aspects

of a project and the assessment should use a holistic approach, including baselines, impact analysis, consultations, policy requirements, mitigation planning and beneficiary schemes.

An environmental flows assessment as is the requirement of the Kyrgyzstan National Environmental Commission Guideline on Environmental Flows, should be undertaken. It is also required by the World Bank ESF. The consultant will undertake an environmental flows (EFlows) assessment of the Kambarata-1 HPP to identify potential impacts on terrestrial and aquatic biodiversity as well as social impacts in the project influence area, and propose mitigation and management measures to address these impacts (Annex 2).

An institutional capacity assessment of the Implementing Agency (JSC EPP) in terms of environment, social and health & safety staffing, capacity and performance, environmental and social management system will also be conducted as part of the ESIA (Annex 3).

Conduct an assessment on the environmental and social risks and impact associated with project risks such as landslides and seismic risks.

The downstream social impact need to be elaborated and strengthened. Conventional downstream social impacts are often related to river water use and fishery. Special attention should be paid to fishery activities and such impacts on livelihoods. If people are accessing the river for fishery, the level of field work would need to cover baseline, consultation, impact assessment and mitigation action planning.

An analysis on gender and vulnerability should be conducted as part of the ESIA. Vulnerable and disadvantaged households have been identified against a set of criteria and the demographic baseline has gender-related information. But there is neither systematic analysis nor action planning on gender, and the definition of vulnerable population needs to be revisited and made broader. It is important to note that vulnerability and gender issues cut across all phases and dimensions of the project and the assessment needs to take a holistic approach, including covering baseline, impact analysis, consultation, policy requirement, mitigation planning, and beneficiary schemes.

The socioeconomic baseline information in the ESIA should include information on gender and vulnerable population in the project area. Based on this information, the analysis should plan its engagement strategy with them, share project information with them, carry out consultations with them to bring out their feedback about the project, specific impacts upon them, negative and positive, their views, suggestions, and requests for the project.

One particular risk is related to gender-based-violence (GBV), particularly with the estimated influx of population. This is covered under ESS2 as well as ESS4. This risk needs to be assessed and required mitigation measures need to be planned. All the above should be documented in the ESIA. Based on this analysis, the consultant will develop an action plan on gender and for vulnerable population, including specific actions against GBV. This plan could be included in the ESMP. A GBV and Non-Discrimination: Sexual-Orientation and SOGI Identity (SOGI) good practice note is in **Annex 9**.

In assessing E&S risks and impacts and management measures, reference should be made to the [World Bank Group's General Environmental Health and Safety Guidelines](#) and relevant [Industry Sector Guidelines](#) such as for [Construction Materials Extraction](#) and [Electric Power Transmission and Distribution](#). Other international standards will also be referred to such as US OSHA, New Zealand and Australia, British and ILO standards on occupational health and safety standards.

The ESIA will follow the indicative outline in **Annex 10** and shall specifically address the new and additional requirements under the ESF.

ESS2: Labor and Working Conditions

The ESIA will identify project workers (direct workers, contracted workers, primary supply workers, and community workers) as classified under ESS2. The ESIA will assess labor risks and working conditions of estimated maximum workers anticipated to be employed by the project at peak time. The assessment will include risk from project activities and key labor risks such as hazardous work, child labor and forced labor, migrant or seasonal workers, discrimination due to gender, race or disability, risks of GBV, vulnerable groups, occupational health and safety, possible accidents and emergencies, among others

In assessing risks and impacts and management measures related to ESS2, reference should be made to the [World Bank Group General Environmental Health and Safety Guidelines](#) and Industry Sector Guidelines for [Construction Material Extraction](#) and [Electric Power Transmission and Distribution as Good International Industry Practice \(GIIP\)](#). Other Bank guidance notes can be referred to as well including the Good Practice Note on Labor Influx Management, Environment and Social Incident Response Toolkit (formerly SIRT) and integrating ESHS into procurement process as per the [World Bank Procurement Framework](#). Other OHS standards such as [ILO standards](#) will also need to be looked into and referenced in the Labor Management Procedures and ESMP, including the Occupational Health & Safety Plan.

ESS3: Resource Efficiency and Pollution Prevention and Management

The ESIA will assess risks and impacts from resource use and pollution, including generation and disposal of large volume of spoils/muck, use of explosives for blasting and other hazardous materials and extraction of large quantities of construction materials.

The ESIA will also include a comprehensive greenhouse gas emissions calculation from the future reservoir and other project components as required under ESS3, ensuring its calculation reflects the design and operation of the expected hydropower plant. The analysis and measures will need to ensure that key risks and impacts are addressed and managed in accordance with the requirements of this standard.

The ESIA will assess the environmental flows (EFlows) requirements to meet the requirements of both the World Bank ESF and Government of Kyrgyzstan (**Annex 3**).

ESS4: Community Health and Safety

The ESIA should screen and map out the communities in the project area that are likely to be exposed to project risks, such as health and safety from construction activities, increased traffic in the project area, labor influx, etc. The ESIA should screen and identify such possible project construction and operation impacts on local communities, and then undertake impact analysis. The project areas include the main operating grounds, such as reservoir, dam site, transmission line, but also ancillary facilities such as spoils/muck disposal areas, workers' camps, access routes for transport of material, equipment, and labour, etc.

It should also analyze the impacts of large labor influx into the project on local communities. These impacts could be related to health, safety, resource use and competition, communal relations, and conflicts, GBV, human trafficking, law, and order issues, etc. This analysis should be conducted based on a full understanding of the project design, country and sector experiences and expertise. In assessing risks and impacts and management measures related to ESS4, reference should be made to the World Bank Group General Environmental Health and Safety Guidelines and Industry Sector Guidelines for Construction Material Extraction and Electric Power Transmission and Distribution. Other Bank guidance notes can be referred to as well including the Good Practice Note on Labor Influx Management, Environment and Social Incident Response Toolkit (formerly SIRT) and integrating Environment, Social, Health and Safety into procurement process as per the Bank's Procurement Framework, and the Bank's Good

Practice Note on gender-based violence (Annex 8). Based on this analysis, the consultant will need to update and fully develop required interventions to address these impacts and plan out its implementation responsibilities and arrangements. These could be included in the ESMP.

ESS5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement

- Land requirements and its mode of acquisition and listing likely impacts mitigation measures to address such issues in accordance to ESS-5 like
- Compensation
- Livelihood restoration
- Resettlement etc.
- Need for detailed RAP

ESS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources

The consultant will conduct an Environmental Flows assessment required to meet ESS6 requirements.

The aquatic and terrestrial biodiversity assessment, should be conducted as part of ESIA needs to reflect the biodiversity baseline and key risks and impacts identified as well as mitigation measures in line with requirements of ESS6.

In case the Biodiversity Management Plan will not be a stand-alone document, the ESIA consultant will ensure that these measures are incorporated into the ESIA ESMP.

ESS7: Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities

The World Bank ESS7 is not relevant in the Kyrgyz Republic, due to the absence of such groups in the country.

ESS8: Cultural Heritage

These Standard covers both tangible and intangible cultural heritage. The project ESIA briefly reviews potential impacts on cultural heritage and concludes that there will be no tangible cultural heritage assets that will be affected or lost by the project. The ESIA should evaluate and confirm this conclusion with a final draft for the entire project area. Consideration should also be given to the possible impacts on intangible cultural heritage, as well as long-term and cumulative impacts on cultural heritage assets and practices in the project area. Based on this assessment, the consultant should propose mitigation measures for any potential impacts and include them in the ESMP, including the Chance Find Procedures.

Task 2. Developing a Labor Management Procedure for Kambara Ata 1

Based on the review of the existing LMP for KRED and the technical studies being undertaken in parallel (Feasibility, design options, etc.), the consultant will propose modification/augmentation of the LMP, if any are required, to make it more suitable for large Hydropower Projects.

The KRED Labor Management Procedures is attached in **Annex 4**.

At the same time, the project will also need to come up with actions to manage issues related to the other influx of in-migrants, including workers' family members, and the "camp-followers" who come in for business opportunities. This is probably beyond the contractors' obligation and

would need close involvement of local administrations and the project office in their planning and implementation

Task 4. Augmentation of the Stakeholder Engagement Plan (ESS10)

The consultant will review the KRED SEP (Annex 6) in light of their own study and confirm its adequacy for the context of Kamar Ata interventions. If and where required, additional measures will be proposed, for example to cover consultations required for

the EFlows Assessment (Annex 3). This would need stakeholder inputs, including but not necessarily limited to the following: (1) definition of the value of the ecosystem and the resources it provides; (2) scenarios to be assessed, if appropriate; (3) selection of indicators for the assessment; (4) consideration of scenario results; and (5) EFlows release commitments and other related mitigation measures. The ESIA consultant will ensure that the EFlows assessment reflects stakeholder engagement that meets the requirements of ESS10.

Task 5. Environmental and Social Planning for HPP

Construction work within the framework of the HPP project should be considered in detail. It is necessary to propose alternative routes, and solutions with additional technical design work. This consultation will perform the following two tasks:

1. Considering the current status of the project, the consultant will develop an Environmental and Social Management Framework (ESMF) in accordance with relevant state laws and the World Bank's ESF. This ESMF should cover all of the above environmental and social aspects mentioned above for HPP power generation activities, including environmental impact assessment, alternative analysis, environmental and social management, as well as social policy frameworks covering resettlement, labour, gender, etc. e. The ESMF provides overall guidance for detailed post-construction environmental and social planning.
2. Carry out detailed environmental and social planning in accordance with the developed ESMF after completion of the facility. This task should be postponed until a decision on the final design of the HPP is made. This may be the second stage of this counseling. Similarly, at this stage it is difficult to assess the scope of environmental and social planning work, as well as the human and financial resources required. The input of consultants for this activity may need to be discussed and agreed later along with the engineering design decisions.
3. The ESIA should also include an analysis of the alternatives being considered for HPPs and evaluate the environmental and social pros and cons of each alternative.

7. Responsibilities of the Consultant

The Consultant shall be responsible for and budget costs for all facilities required for this consultancy including international travel to and from Kyrgyzstan, accommodation, per diem, and costs for visas and work permits for the duration of the consultancy.

8. Timetable and Deliverables

The Consultant will provide the required reports in accordance with a schedule that reflects estimated working hours. The schedule should take into account the current situation with the COVID-19 pandemic, the need for coordination among all parties, including reviewers, and how the team will be mobilized and organized. The overall duration and schedule are subject to planning and negotiation between the potential consultant candidate and the project agency.

The time frame for the development of ESIA documents will take into account the time required for the ESIA consultant to obtain bank approvals and complete the ESIA reports. The ESIA

Consultant is expected to contribute environmental and social aspects to the final ESIA report, including detailed environmental and social planning.

Report	Timetable (from contract signing)
Inception Report	1 months
Screening and Scoping Report	3 months
First draft of the ESIA, RAP Plus all Plans	6 months
Second draft of the ESIA, RAP Plus all Plans	8 months
Final ESIA, RAP Plus all Plans	12 months
Incorporation of comments and changes in DPR	16 months

The following outputs and deliverables to the satisfaction of the Client, the E&S Panel, the Technical Panel and the Bank will be provided in English, and if necessary, a summary in the national language.

1. Screening and Scoping Report
2. Environmental and Social Impact Assessment (ESIA)
3. Environmental and Social Management Plan (ESMP)
4. Cumulative impact assessment
5. Augmented Stakeholder Engagement Plan (SEP)
6. Assessment of environmental flows (should be included in the ESIA)
7. Environmental Flow Management Plan (should be included in the ESMP)
8. Modifications to Human Resources Management (LMP) procedures, if required to the KRED LMP, including health and safety measures in accordance with ESS standards, and dealing with employee complaints.
9. Gender and Vulnerability Action Plan, including a plan to combat gender-based violence (should be included in the ESMP)
10. Community Health and Safety Plan (should be included in the ESMP)
11. Cultural heritage conservation plan (should be included in the ESMP)
12. Workforce Influx Management Plan (should be included in the ESMP)
13. Waste management plan (should be included in the ESMP)
14. Labor camp/camp management plan (should be included in the ESMP)
15. Grievance redress mechanism (should be included in the SEP)

9. ESMF for HPPs Expertise Required and Qualifications

For this assignment-key members and required experience are:

1. **The environmental specialist (international team leader)** will take over the coordination of the ESIA and RAP, as well as other plans, integrating the input of each specialist, preparing the ESIA and managing the consultation processes. He/she must have at least 15 years of experience, including extensive international experience, in the management and/or conduct of ESIA and EIAs, and be familiar with the World Bank Safeguard Policy, ESF and/or IFC Performance Standards.
2. **The Social Development Specialist (Second Team Leader, International)** will be responsible for the social aspects of this consultation, including consultation and assessment of the social impact of the EFlows assessment. He/she will organize, advise and coordinate the social team to carry out their respective tasks and will be responsible for the quality and timely execution of the various required social activities. The social specialist is expected to have broad practical experience, including extensive international

experience, in such aspects of social development as gender and gender-based violence, in-depth knowledge and practical experience in applying the World Bank and ESF safeguard policies, especially in relation to involuntary resettlement and indigenous peoples. This specialist is expected to have experience leading teams. A minimum of 15 years of relevant professional experience is required.

3. **The environmental specialist (national)** will be responsible for measuring and collecting baseline air and water quality indicators, air and water quality modeling, assessing project impacts on air and water quality, and developing management measures to address air and water impacts and pollution. caused by the project. He/she will also need to provide similar experience for the EFlows evaluation. He/she must have at least 10 years of national experience in conducting an ESIA and/or assessing impacts on air and water quality. The ESIA consultant will work with the technical consultant updating the DPR, use any existing data and decide how to fill in any gaps.
4. **Social /Resettlement Specialist (National)** will be responsible data collection/analysis/assessment on identified social issues including short survey, consultation/FGD etc. based on the latest project information and detailed design. Required to have at least 10 years of relevant work experience. He/she should also have a deep understanding of and experience in applying international standards, especially the environmental and social standards of the World Bank and/or IFC.
5. **Gender Specialist (National)** will be responsible for the analysis and integration of gender issues into the ESIA and for the preparation of the Gender Action Plan for the project. He/she will also work with a labor expert and an occupational health and safety expert on the preparation of labor management procedures (LMP). Based on the GBV risk rating for the project, the expert will prepare a project-specific GBV management plan. Development of a RAP based on the latest project information and detailed design. Required to have at least 10 years of relevant work experience.
6. **Hydrologist (International)**. The specialist must have at least ten years of experience in the field of aquatic ecology, water quality and environmental flow assessment in hydropower projects, including international experience. He/she should also have a deep understanding of and experience in applying international standards, especially the environmental and social standards of the World Bank and/or IFC.
7. **Ecohydraulic Modeling Specialist (International)**. The specialist must have at least ten years of experience in environmental flow assessment. He/she should have a thorough understanding of environmental decision-making processes and the use of multi-criteria approaches to holistic (environmental and social) decision making in hydropower projects.
8. **Geomorphologist/Sedimentologist (National)**. The specialist should have at least 10 years of experience in fluvial geomorphology/ecology and be familiar with environmental flow assessment. Instead of hiring a separate specialist, the ESIA consultant will consider using a specialist geologist, hired as part of the technical consultant, to provide the necessary knowledge on environmental flow assessment.

9. **Aquatic Biodiversity Specialist (International)** – The Specialist should have a minimum of ten years’ experience in conducting aquatic ecosystems assessments in hydropower projects. He/She should also have deep understanding of and experience in applying international standards especially World Bank ESS6 and/or IFC PS6.
10. **Terrestrial Biodiversity Specialist (International)** – The Specialist should have a minimum of ten years’ experience in conducting terrestrial biodiversity impact assessments including in hydropower projects. He/She should also have an understanding of and experience in applying international standards on natural and critical habitat assessments especially World Bank ESS6 and/or IFC PS6.
11. **Biodiversity Specialist (National)** – The Specialist will support the Sr. Biodiversity Specialists and should have an expertise on either mammalian wildlife, ornithology and/or herpetology.
12. **Fisheries specialist/ichthyologist (national)**. The specialist should analyze and compare the biodiversity impact of different minimum flow scenarios within the framework of EFlows assessments. He/she must have at least five years of experience in fisheries research in hydropower projects and be familiar with methods and models to obtain the results of the field surveys and any other relevant analysis.
13. **The Occupational Health and Safety Specialist (International)** will assess and develop measures and plans to meet the requirements of ESS2 (Health and Safety) and ESS4 (Community Health and Safety). He/she will work closely with the labor law expert to develop labor management procedures. He/she must have practical national and international experience in the field of occupational health and safety and the development of an occupational health and safety plan to address or manage occupational health and safety and public health.

10. Reporting Requirements

The Consultant will need to work closely with the other Project Consultants, including the Technical Consultant, the Aquatic Biodiversity Consultant, and the Terrestrial Biodiversity Consultant, to ensure that projects, feasibility studies including analysis of alternatives, and tender documents take into account E&S measures, results and recommendations. from E&S consultants and vice versa. The ESIA consultants will also work closely with the Technical and Environmental and Social Expert Groups. During the preparation of each deliverable, meetings will be held to present progress made with the World Bank and DGPC.

The Consultant is expected to report directly to managers from the World Bank and relevant ministries/agencies of the Kyrgyz government.

11. Relevant Resources

13. [The World Bank Environmental and Social Framework \(full pdf file\)](#)
14. [The World Bank’s Environmental and Social Standards](#)
15. [World Bank Group General Environmental Health and Safety Guidelines](#)

16. [World Bank Group Industry Sector Guidelines for Construction Materials Extraction](#)
17. [World Bank Group Industry Sector Guidelines for Electric Power Transmission and Distribution](#)
18. [Guidance Notes for Borrowers](#)
19. [World Bank Directive on Addressing Risks on Disadvantaged or Vulnerable Individuals/Groups](#)
20. [World Bank Directive on Environmental and Social Directive for Investment Project Financing](#)
21. World Bank Guideline on managing Project-Induced labor influx and workers' camp issues
22. World Bank Group Good Practice Handbook for Environmental Flows for Hydropower Projects ([Link](#))
23. Managing Environmental and Social Impacts of Hydropower in Kyrgyzstan ([Regulations on the procedure for conducting environmental impact assessment in the Kyrgyz Republic \(approved by the Decree of the Government of the Kyrgyz Republic dated February 13, 2015 No. 60\) \(minjust.gov.kg\)](#))
24. National Technical Regulations on the Environment and Environmental Issues (Effluent, Waste, Emissions, etc.) ([Law of the Kyrgyz Republic dated May 8, 2009 No. 151 "General technical regulations for ensuring environmental safety in the Kyrgyz Republic" \(minjust.gov.kg\)](#))

12. Annexes

Annex 1. Map of the Project Area

Annex 2. Guidance for Conducting an Environmental Flows Assessment

1. Purpose and Objective

The objective of this assignment is to conduct an environmental flow assessment (EFlows) of a HPP to identify potential impacts on terrestrial and aquatic biodiversity, as well as social impacts, and propose mitigation and management measures to address these impacts.

The specific objectives of the assignment are to: (1) assess the current structure and functioning of the Naryn River, its tributaries and arms, including upstream of the proposed dam, between the reservoir dam and offshoot, and downstream of the offshoot; (2) conduct an appropriate assessment of EFlows to assess future impacts on the functioning of the river, including the impact of HPPs; and (3) propose minimum EFlows requirements for HPPs, including an EFlows monitoring and management plan.

2. Coordination with other consultancies

In conducting the EFlows assessment, the ESIA consultant will be expected to coordinate with the following teams:

- iv. The ESIA consultant will be responsible for obtaining relevant information on EFlows from the technical consultant including the latest project design aspects, hydrological data, hydrogeological model if required, and sediment analysis. Following the EFlows assessment, the ESIA consultant will provide the technical consultant with the minimum EFlows to be maintained at all times downstream of the dam and any accompanying costs.

- v. Aquatic and terrestrial biodiversity consultants: If timing permits, the ESIA consultant will coordinate with the aquatic and terrestrial biodiversity consultants to design the biodiversity field surveys to collect data that can be used in the EFlows assessment. Coordination will also be needed to ensure that the recommended EFlows management plan is in line with the biodiversity management plan.
- vi. Social/stakeholder consultants: The ESIA consultant will make use of the Social Development Specialist to conduct stakeholder consultations for the EFlows assessment.

3. Scope of Work

The consultants will undertake the following as part of this assignment:

Preparation tasks

- xx. Review the feasibility study, latest design aspects of the project, reservoir design and operating rules, including peak power operations. The Consultant will also review other studies conducted since the submission of the DPR, including reservoir sediment assessment, hydrological data, hydrogeological modeling, climate resilience assessment, and other information useful for estimating EFlows. The Consultant will also consider information on other ongoing or planned hydropower projects in the Naryn River Basin.
- xxi. Development/selection of an EFlow estimation methodology with an appropriate level of resolution and appropriate for the river. A high-resolution method is preferred, which can take into account: (a) the impact of different HPP scenarios on the river ecosystem, (b) peak power operations, (c) changes in sediment input, (d) breaks in longitudinal biota migration, and (e) forecasts relating to natural or critical habitats. For critical habitats, the consultant will obtain a decision from the aquatic biodiversity consultant on the presence of endemic or any other vulnerable species causing critical habitats. Any species that causes critical habitats to be found along the river sections/sites should be assessed. EFlows will include additional information on the survival of such species. The Consultant justifies the relevance of the chosen EFlows method by pointing to peer-reviewed scientific articles in which this method has been used or described and its river relevance. It is recommended to follow the World Bank Group's Best Practice Guidelines on Environmental Flows for Hydropower Projects (see the References section) or an equivalent international best practice methodology.
- xxii. Identify important sites and reaches for conducting the EFlows assessment. This will include sites upstream of the dam, between the dam and the tailrace outlet, and downstream of the tailrace outlet. The sites selection shall capture different geomorphologies, biological variations, tributaries, non-flow related social uses, and types/levels of potential impacts. In selecting the sites, the EFlows consultant will coordinate with the aquatic and terrestrial biodiversity consultants to determine the locations where aquatic ecosystems are likely to be affected.
- xxiii. In consultation with key stakeholders, select a range of riverine ecosystem indicators that are expected to respond to changes in the flow or sediment. Indicators may be drawn from hydrology, water quality, riparian vegetation, macroinvertebrates, fish, and relevant social aspects. Initial relationships will be developed between the indicators and flow or sediment change based on existing information and key gaps for additional EFlows data collection will be identified.
- xxiv. Identify the baseline scenario for each of the selected sites. This comprises an assessment of the current ecological and social status of the riverine ecosystems for each indicator and EFlows site/reach. To the extent possible, describe historic trends in conditions and possible causes. The baseline shall consist of the current state as well as the future state without the project.

- xxv. Determine the range of operational scenarios for comparison with the baseline scenario. The scenarios will be selected in consultation with the technical consultant and may include location, design, dimension, and barrier effect of the dam; reservoir operating rules; sediment release pattern; and climate change scenarios. Scenarios of project operation with actions to mitigate impacts on aquatic biodiversity or social indicators may also be assessed to determine if No Net Loss or Net Gain is feasible for selected biodiversity values.
- xxvi. Obtain hydrological timeseries data (at least 30 years and until as recent as possible) for each of the sites/reaches selected. This includes daily data for baseline flow, daily data for baseload operational scenarios, and sub-daily data for peak-power release scenarios. In obtaining this data, the consultant shall coordinate with the technical consultant updating the Kambarata-1 HPP hydrological data.

Field Data Collection

- xxvii. Work with the aquatic and terrestrial biodiversity consultants and hydraulic teams to determine the data needed for the EFlows assessment that can be collected during the biodiversity field surveys. If biodiversity field sampling has already been conducted, evaluate the data gaps.
- xxviii. Develop a field sampling plan that identifies appropriate sampling locations and sampling points for the EFlows assessment.
- xxix. As needed, work with the aquatic and terrestrial biodiversity consultants to collect biodiversity and hydraulic information at EFlows sites following internationally accepted standardized field methods and standardized sampling protocols. Field data may include sampling during the low flow seasons, transition seasons between the low and high flow seasons, and high flow seasons. If possible, assessments should start in the low flow season, when features of the river channel can be seen, along with identifying sites, cross-sectional profiles, and characteristics of sampling.

Data Analysis

- xxx. For each EFlows site/reach develop a stage-discharge curve/hydrodynamic model that can be used to provide ecologically relevant hydraulic parameters (e.g., average velocity, average and maximum depth, wetted perimeter, extent and depth of floodplain inundation) as a function of discharge.
- xxxi. Use a recognized interactive holistic EFlows Assessment method that satisfies the criteria outlined in bullet (ii) and for each EFlows sites or reach: (1) describe the relationships (e.g. response curves such as time series) between the indicators chosen and the changes in flow, sediment and connectivity associated with the proposed Kambarata-1 HPP scenarios; and (2) If applicable, describe the social effects of these changes.
- xxxii. For peaking operations, assess the impact of sub-daily flow fluctuations on riverine ecosystems.
- xxxiii. Prepare a report detailing the findings. The assessment and report will satisfy both the requirements of the Law of the Kyrgyz Republic dated May 8, 2009 No. 151 "General technical regulations for ensuring environmental safety in the Kyrgyz Republic" and World Bank ESF particularly ESS 1, 3, 4 and 6 and their Guidance Notes (see references section). The report will be subject to a favorable review by the Environmental and Social Panel of Experts and the World Bank.
- xxxiv. Develop an Environmental Flow Management Plan (EFMP) that will include monitoring actions, implementation arrangements, adaptive management system and funding arrangements, including sources and financial management. The mitigation measures will follow the mitigation hierarchy (avoidance, minimization, mitigation, compensation/offset) as per the World Bank ESF. Where required, the EFMP will integrate with and reference other management plans, such as the biodiversity

management plan or environmental and social management plan (ESMP). Depending on the level of detail required for the EFMP, the consultant will either prepare a stand-alone EFMP or integrate it as part of the ESMP ~~to be updated by the ESIA consultant~~.

- xxxv. Outline the anticipated effects of any ongoing or planned conservation efforts on the EFlows and other potential factors outside of the proposed project that may result in a future change of the baseline conditions.
- xxxvi. Work ~~with ESIA, aquatic and terrestrial biodiversity consultants~~ to ensure integration of the EFlows baseline, impact assessment and management measures into the ~~updated~~ ESIA.

Stakeholder Engagement

- xxxvii. The Social Specialist hired as part of the ESIA consultancy will be responsible for undertaking meaningful stakeholder engagement as per ESS 10 of the World Bank ESF in all phases of the EFlows Assessment, including but not necessarily limited to the following: (1) definition of the value of the ecosystem and the resources it provides; (2) scenarios to be assessed, if appropriate; (3) selection of indicators for the assessment; (4) consideration of scenario results; and (5) EFlows release commitments and other related mitigation measures.
- xxxviii. The Environmental Specialist should use the available Scope of Work reports, including the ESIA prepared for the proposed project, World Bank ESF. National Strategy and Action Plan for Biodiversity Conservation in the Kyrgyz Republic, Law of the Kyrgyz Republic dated May 8, 2009 No. 151 "General technical regulations for ensuring environmental safety in the Kyrgyz Republic", scientific studies and publications, as well as available data on the project area and rivers in Kyrgyzstan. The Consultant will be responsible for obtaining the appropriate permits for sampling.

4. Deadlines for completing assignments and expected results

Item	Deliverable	Days
1	Inception report with the selected EFlow assessment method and model, potential sites and reach selected for the assessment, list of potential indicators for the baseline and future scenarios with stakeholder input and a summary of their selection, fieldwork sampling plan, proposed stakeholder engagement outline, proposed schedule, and a budget.	10
2	Collaborate with aquatic and terrestrial biodiversity consultants, and hydraulic team to collect field data needed for the EFlows assessment. Present a field report.	10
3	Carry out EFlows assessment using holistic model, with input from stakeholders and other collaborators. Provide a draft EFlows assessment report.	30
4	Finalize report deliverables incorporating comments from the World Bank and the Ministry of Energy of Kyrgyzstan.	20
Total		70

5. Required Qualifications

Key members and expertise required to conduct the EFlows assessment are as follows:

- vii. Hydrologist (international) – As described in Section 12 (Expertise Required and Qualifications) of the ESIA TOR.
- viii. Ecohydraulic modeler (international) – As described in Section 12 (Expertise Required and Qualifications) of the ESIA TOR.
- ix. Water Quality Specialist (national) – The air and water quality specialist to be hired under the ESIA consultancy should fulfil this role. The ESIA consultant will include this EFlows assessment task when budgeting the water and air quality specialist’s time.
- x. Social Development Specialist (international) – The social development specialist to be hired under the ESIA consultancy should fulfil this role. The ESIA consultant

will include this EFlows assessment task when budgeting the social development specialist’s time.

- xi. Geomorphologist/sedimentologist (senior) – As described in Section 12 (Expertise Required and Qualifications) of the ESIA TOR.
- xii. Fish Specialist (national) – As described in Section 12 (Expertise Required and Qualifications) of the ESIA TOR.

6. Sampling environment, required qualification

In order to carry out sampling, the Consultant needs contracts with accredited public or private laboratories that provide such services, as well as send sampling staff who know the methodology of sampling, preservation and delivery of samples that is legitimate in the country.

Annex 3. Structured Process for the Borrower Capacity Assessment

STEP 1: Identify key E&S tasks

Based on the project objectives, activities and location, identify the key tasks that are required to avoid, mitigate, or manage significant potential E&S risks and impacts. While the environmental and social assessment of the project will consider capacity in relation to a range of potential risks and impacts of the project, the assessment will focus specifically on labor and working conditions (ESS2), community health and safety (ESS4) and stakeholder engagement (ESS10). As noted above, this is because these are three areas where it is anticipated that Borrowers’ capacity may need to be strengthened. It is important to prioritize and focus on assessment and management of risks or impacts identified as significant in order to keep the scope of the assessment manageable and appropriate to the needs of the project. In addition, it is important to recognize that the nature and significance of various risks and impacts may need to be revisited as further information becomes available during project preparation.

The relevant ESS and associated Guidance Notes for Borrowers help in identifying the types of risks and impacts and the key tasks required to address them. Table 1 below identifies different tasks which may be relevant in applying ESS1, ESS3, ESS5, ESS6, ESS7 and ESS8, while Table 2 identifies different tasks which may be relevant in applying the three standards (ESS2, ESS4 and ESS10) which would be subject to an in- depth assessment. The list is illustrative and should be adjusted or augmented as appropriate, based on the project-specific activities and associated potential E&S risks and impacts. Where it is known that several related tasks will be carried out by the same institution, these can be consolidated into a single task. If the list of tasks is too long the assessments and analyses outlined in Steps 2-5 may become impractical or impossible to complete within a reasonable budget and timeframe.

Table 1. Typical tasks for project-level E&S risk management.

Task	Specific responsibilities
ESA	Scope and preparation of TORs
	Carry out assessment process (including specialized assessments as appropriate - e.g., biodiversity assessment, social conflict analysis, cumulative impact assessment, etc.)
	Public disclosure and consultation
	Clearance or approval of ESA documents
	License or permits for construction and operation
E&S mitigation planning (such as ESMP, biodiversity plan, etc.)	Preparation and/or adaptation of mitigation and management plans based on results of E&S assessment process
	Public disclosure and consultation
	Allocation of institutional responsibilities for mitigation and monitoring measures

ESMF for Kyrgyz Renewable Energy Development Project (KRED)

	Identification of organizational, financial and human resource arrangements for implementing every mitigation and monitoring measure
Ensure implementation of E&S management measures	Supervision
	Enforcement
	Contractor management
	Monitoring and reporting
	Training and other capacity development activities
	Adaptive management (adjusting project design and/or mitigation measures based on changing circumstances and/or results of monitoring progress of indicators)
Land acquisition and resettlement planning (preparation of Resettlement Policy Framework [RPF] and/or Resettlement Action Plan [RAP])	Carry out baseline survey
	Carry out detailed survey, including property valuation
	Definition of eligible parties and their respective entitlements
	Identification of resettlement site
	Identification or development of livelihood restoration support plan
	Design of grievance mechanism or dispute resolution for land acquisition or resettlement
	Public disclosure and consultation
Land acquisition and resettlement implementation (including financing)	Disbursement of compensation
	Physical resettlement, including development of resettlement site
	Implementation of livelihood restoration plan
	Title transfer and/or mutation (for land and/or physical assets)
	Monitoring of resettlement process
	Grievance management for land acquisition/resettlement
	Adaptive management (revising plans as needed based on monitoring, grievances, etc.)
	Public disclosure and consultation
Post resettlement review or audit	

Table 2. Typical tasks for project-level E&S risk management with focused on ESS2, ESS4 and ESS10.

Issue	Specific tasks
Labor and Working Conditions (ESS 2)	Identify different types of project workers
	Identify key labor risks
	Prepare Labor Management Procedures
	Prepare and implement Labor Management Plans
	Monitor compliance with Labor Management Plans/Procedures
	Identify OHS measures
	Establish and maintain grievance mechanism(s) for workers
	Prepare procedures for managing third parties
	Identify primary suppliers and assess risks related to primary supply workers
Community health and safety (ESS 4)	Identify infrastructure or other elements of a project which could present safety risks to affected communities or other parties, including exposure to operational accidents or natural hazards such as extreme weather events
	Establish and enforce design and construction standards to minimize the above safety risks
	Review design and construction of structural elements of the project which have been identified as potentially presenting safety risks to communities (e.g. dams)
	Conduct road safety assessments, and preparation, implementation and enforcement of traffic and road safety plans
	Plan and carry out measures to protect provisioning and regulating ecosystem services identified as important to communities and potentially adversely affected by the project
	Monitor incidences, implement measures to minimize exposure, and (where needed) provide treatment for communicable and non-communicable, water-related and vector-borne diseases.
	Identification/analysis, safe removal, storage and/or destruction of hazardous materials
	Prepare risk/hazard assessments and development and implementation of emergency response plans

	Identify and incorporate climate change considerations in project designs
	Establish and enforce quality standards, and advise on incorporation of health and safety considerations (and universal access, where feasible) in provision of services to communities
	Establish and enforce standards of conduct for security personnel, including providing training, verification of past records, reporting unlawful or abusive acts and punishing perpetrators
Stakeholder engagement planning and implementation (ESS10)	Identify and map stakeholders
	Develop stakeholder engagement plans
	Implement stakeholder engagement activities
	Establish and operate grievance mechanisms
	Conduct Information disclosure for stakeholder engagement and project as a whole
	Conduct ongoing stakeholder engagement
	Practice adaptive management, revising project design or implementation as appropriate, based on ongoing stakeholder engagement

STEP 2: Mapping the Institutions and other Actors

Step 2 involves identifying the institutions and major actors that will be involved in project preparation and implementation and clarifying their respective roles and responsibilities in implementing each of the tasks identified in Step 1. The information on which this institutional mapping is based is likely to come from legal documents, consultations and interviews as well as secondary sources such as previous environmental and social assessment reports.

While the specific institutions and actors responsible for project development and implementation will vary, the ones most commonly involved are set out in Box 1. For some projects, some of the entities may have multiple or overlapping roles.

It is useful at this stage to carry out a general mapping of the institutions and other actors involved. Table 3 illustrates such a mapping for the stakeholder engagement tasks identified in Step 1. By identifying different responsibilities, the mapping helps to clarify the institutional structure for project preparation and implementation. This includes identifying potential areas of overlapping responsibilities or possible gaps in responsibility. This mapping provides the basis for a more thorough analysis of the institutional arrangements, responsibilities and links in Step 3. A second example of institutional mapping is provided in Table 3.



Table 3: Example of a mapping for the stakeholder engagement tasks

Key Task	Institution/Party Responsible for Task						
	Ministry of Finance	Sector ministry, authority	Local government unit	Regulator	Project Implementing Unit	Supervising engineer	Contractor
Stakeholder identification & mapping							
Develop Stakeholder Engagement Plan							
Implement stakeholder engagement activities							
Establish grievance mechanism							
Operate grievance mechanism							
Disclose information for stakeholder engagement							
Conduct ongoing stakeholder engagement							

Mapping Example

The following Table (Table 4) provides another example of mapping the roles and responsibilities of various institutions and actors, with respect to implementing specific tasks identified in Step 1 for a component of a hypothetical sanitation project. This matrix helps to clarify the institutional structure for project implementation, including identifying potential areas of overlapping responsibilities, gaps, etc. In this example, the significant role of the PMO is clear, as its responsibilities extend across all project tasks. At the same time, there are multiple and potentially overlapping responsibilities for some aspects such as supervision and information disclosure which are spread among almost all project institutions.

Table 4. Example of a matrix for analyzing the roles of institutions and actors for project-level tasks

Project: Supporting construction of a wastewater treatment plant							
Key Task	Institution Responsible for Task						
	PMO	Environmental regulator	Water authority	Local government unit	Water company	Supervising engineer	Contractor
Supervision							
Enforcement							
Contractor management							
Monitoring and reporting							
Training and other capacity development							
Adaptive management							
Information disclosure							

STEP 3: Analyse institutional arrangements and linkages

Step 3 takes a broader view of the overall institutional structure for project implementation. It focuses on:

- i. clarifying the specific roles and accountabilities of the institutions and other actors identified in Step 2 in implementing the tasks identified in Steps 1.
- ii. identifying any gaps, areas of overlap, excessive fragmentation of responsibilities, potential redundancies or conflicts, etc.
- iii. evaluating the effectiveness of lines of communication and coordination mechanisms among the institutions, with emphasis on those with overlapping or complimentary roles.

This analysis is important for identifying potential issues that could undermine project development and implementation. It provides the basis for designing measures and providing recommendations aimed at ensuring that the project's institutional structure is as clear, effective and efficient as possible. Box 2 provides suggested questions that would be asked for each of the tasks identified in Step 1.



STEP 4: Assess the capacity of individual institutions

It is important to go through Steps 1 – 3 to provide the operational context for assessing the capacity of the individual institutions or actors responsible for implementation of different aspects of the project. Step 4 involves evaluating the capacity of each of the identified institutions or actors to undertake the tasks identified in Step 1. This will require examining existing systems and the resources available to carry out the tasks for which the institution or actor will be responsible, and, where possible, reviewing its track record in carrying out similar tasks in the past. This includes, for example, its ability and commitment in practice to implement its enabling legislation and its own institutional policies, the effectiveness of institutional and individual incentives for performance, and its ability to adapt to changing circumstances. For a recently or newly created institution, which will have little or no track record, it may be useful to review the performance of institutions that had the same or similar responsibilities previously (while recognizing that the new institution might have been created specifically to achieve better outcomes).

STEP 4 (a): Track Record

An institution's past performance should be evaluated both in the context of implementing previous or current projects financed by the Bank (or by other development partners with similar E&S policies and standards), and when implementing activities under national laws and systems. This is particularly important for tasks where national requirements differ significantly from Bank requirements. Key aspects to consider are compliance and enforcement, monitoring, stakeholder engagement, and documentation and recordkeeping. Box 3 provides questions for evaluating an institution's likely capacity and commitment to implement tasks for which it will be responsible, based on its track record.



Step 4 (b): Assess current capacity

The assessment considers four elements of institutional capacity that are relevant for E&S risk management: external enabling environment; organizational arrangements; human resources; and financial and other resources. Because national and local institutions will have been established and designed to implement existing laws and regulations, their internal administrative structures, procedures, staffing and skills, and previous operational experience will reflect those laws and regulations. If the project requires them to carry out other tasks, or to operate in another way this

could have implications for the nature or extent of capacity-building that may be required. Step 4 therefore looks at different aspects of institutional performance that will be relevant for delivery of the tasks identified in Step 1. Table 5 lists questions and aspects to review in evaluating current capacity of an institution/actor.

Table 5. Aspects of individual institutional capacity.

Question	Aspects
Does the external enabling environment support completion of the task?	This focuses on Government policies, laws and regulations, the mandates of the institution/actor, institutional incentives or pressures, political commitment to E&S issues
Does the institution have appropriate internal policies and operating procedures?	This focuses on the institution's own policies and procedures including vision statements, quality assurance and accountability systems, outreach and communications, as well as overall institutional culture
Does the institution have adequate and appropriate human resources?	This focuses on technical and managerial skills; appropriate job descriptions and performance management, appropriate allocation of tasks to staff; training programs and opportunities, staff retention; ability/timing to recruit additional staff or consultants; human resources policies
Does the institution have appropriate financial and other resources?	This focuses on the level of financial and other resources available for the task, and systems for allocation of such resources, including budget processes; cash flows to deliver funds when needed; financial planning; transportation, equipment and supplies; information technology infrastructure and databases

STEP 5: Recommend actions to strengthen institutional capacity

Where the process set out in Steps 1 to 4 indicates that capacity to carry out a specific task needs to be strengthened, Step 5 involves identifying specific measures to help address those needs. These actions may target individual institutions or actors (or elements of them) or be aimed at improving the overall institutional framework including linkages.

Recommendations should be for concrete and feasible operational actions. Specific recommended actions should be designed to address the need for strengthened capacity in an efficient manner and within a timeframe that is meaningful to support project preparation and/or implementation. The description of actions should include assignment of responsibility, timelines for completion and budgets, and where possible targets and indicators for tracking progress and successful completion. Where training is called for, the target audience, approximate time commitment and source of training materials/ and trainers should be indicated.

As part of this step, indicators and targets should be identified for implementation of the actions and for effectiveness and achievement of their goals. For example, indicators for a training activity could include numbers of individuals trained or numbers of training courses delivered (implementation indicators) as well as a measure of the effectiveness of the training and indication that those who received it are putting their improved knowledge and skills to use (effectiveness/achievement indicators). Actual implementation and monitoring of the capacity strengthening measures would take place during the implementation phase of the project and are therefore beyond the scope of these TOR.

Box 4 provides examples of the types of capacity strengthening actions that may be considered. If underlying problems are noted in this process, they can be identified for discussion and possible action in other contexts.



STEP 6: Monitor capacity development indicators and adapt activities as needed

Step 6 embeds precise capacity development measures and results monitoring in the capacity development activity, to evaluate progress and make timely adjustments as needed. Further, tracking and documenting outputs and outcomes will contribute to knowledge for developing project-level borrower capacity in the future.

Successful capacity development activities are characterized by continued engagement, regular consultations, and demonstrated evidence of changes in capacity. Situating activities within a series of other relevant capacity development activities at different levels will assure better impact toward sustainability.

Table 7 provides an example of a framework to evaluate the progress made in developing capacity in the four elements described in Step 4. A more complete list of potential indicators is provided in Annex 1. A template for linking analysis to actions and follow up is also provided (both will be finalized after endorsement of the draft concept).

Table 7. Examples of indicators to evaluate progress toward changes in capacity

Capacity Element	Activity/Tasks	Indicator	Data type and source	Timing of data collection	Responsibility
Enabling Environment	Issue new national decree on resettlement compensation entitlements	Decree drafted	Endorsement of document by technical drafting committee	Condition of effectiveness	PMO Drafting committee
		Decree approved	Decree issued and published by relevant legislative body	Condition of disbursement	Minister of State Legislature as relevant or required by law
Organizational, procedural or cultural change	Prepare and adapt resettlement management manual by road agency	Draft manual prepared and endorsed	Confirmation of endorsement by drafting committee	Condition of negotiation	PMO Drafting committee Minister of Transport or delegated authority
		Ministerial decree or sub-decree issued	Decree published and communicated to project staff		
Human Resources	Recruit and train 6 additional resettlement specialists in PMO field offices	TOR and recruitment notices published Interviews completed and offers made New staff mobilized	Confirmed through direct communication with PMO HR team Arrangement confirmed in writing (letter or email)	Condition of effectiveness	PMO HR staff at Ministerial level
Budget, equipment, means	Secure annual budget allocations for resettlement field operations	Annual budget authorized and included in project budget plan	Annual budget plan Annual or quarterly project progress reports	Annual Quarterly progress reports	PMO budget office Resettlement Field office
	Construct and equip resettlement field offices with furniture,	Offices construction completed and			

	computers, and logistical support	equipment procured Confirmation that equipment is in place and functional		Annual or quarterly progress reports	
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Annex: Potential indicators to assess E & S capacity development

The Capacity Development Results Framework (CDRF) developed by the World Bank Institute for example provides lists of questions and indicators to assess the capacity to achieve a given Development Goal (WBI, CDRF, 2009, p.74-82). In practice the indicators could be assessed at the level of the borrower system as a whole or for specific ESS. The following list of potential indicators is based on the CDRF model but the indicators and their possible measures are grouped according to the four analytical elements proposed in the operational methodology recommend in this GN. This includes: the conduciveness of the enabling environment; Organizational policy, procedures and culture; Human Resources; and Budget, equipment and means.

The indicators are offered as suggestions only. It is not expected that every project would use all of these indicators as specific indicators may not be relevant in a particular project context or may be difficult to measure. It is also likely that other context-specific indicators could be developed.

Possible indicators and measures

I. Conduciveness of the Enabling Environment

Commitment of political and sectoral leaders to the ESS development objectives.

Political and sectoral (e.g. Minister of Natural Resources, Minister of water, Minister of Energy, Director of HPPs, etc.) leaders consistently and frequently make statements or take leadership actions and decisions supporting the principles and objectives of the relevant ESS.

Possible measures include:

- Share of statements supporting the ESS relative to all statements related to the ESS by the borrower or counterpart leadership or decision-makers
- Adoption of improved legislation or supporting regulations, decrees, or other legal directives adopted by national, sub-national or local level government or sectoral authorities
- Public statements and official decisions of political and sectoral leaders in support of the ESS objectives or desired outcomes
- Public actions of political or sectoral leaders in support of the ESS objectives
- Public actions of political leaders in support of the ESS objectives
- Proportion of political or sectoral leadership who commit significant time or funds to achieve the ESS objectives

Clarity of the policy instruments relating to ESS objectives and the related rights and responsibilities of stakeholders

The rights and responsibilities of stakeholders related to policy instrument relevant to ESS are clearly defined and communicated. Stakeholders have a common understanding of the policy goal and the targets of any specified regulations. The authorities and processes concerning the policy instrument are clear. Policy instruments related to the ESS are consistent with each other.

Possible measures include:

- Share of stakeholders who find that objectives and goals of policy instruments related to ESS are clearly specified
- Formulation, application, revision, appeal, monitoring and enforcement authorities and processes concerning the policy instrument are specified
- Number of public announcements, articles, documents, etc. in which the policy instrument is described for stakeholders
- Development and execution of a communication plan for the policy instrument and proactive assessment of outcomes of communication efforts
- Share of stakeholders who report that information about the policy instrument was communicated to them
- Share of surveyed stakeholders who responded accurately to questions about their rights and responsibilities with respect to the policy instrument
- Policy instruments related to the ESS are consistent with each other
- Adherence of policy instrument to internationally recognized standards

Consistency of policy instrument relating to ESS with policy instruments for other ESS

Policy instruments related to the ESS are consistent with policy instruments for other ESS. Stakeholders have a common understanding of the policy goal and the targets of any specified regulations.

Possible measures include:

- Share of surveyed stakeholders who report that the development policy relating to various ESS is coherent, consistent, and predictable
- Number of instances of rights and responsibilities conferred by different policies conflicting with each other (target is zero)
- Independent review by experts familiar with the country situation finds that policy instruments relating to ESS are mutually reinforcing

Perceived legitimacy of policy instrument in relation to the ESS

Processes for decisions about policy instrument are informed, transparent, participatory, and deliberate. Policy instrument is perceived as desirable and appropriate within the local system of norms, values, beliefs, and definitions. The actions and sanctions prescribed by the policy are perceived as fair by stakeholders. Rights to appeal are assured.

Possible measures include:

- Share of stakeholder survey respondents who feel that the policy instrument related to the ESS is desirable and appropriate within local system of norms and values
- Share of stakeholder survey respondents who believe that the sanctions and incentives specified by policy instrument related to ESS are consistent with its declared goal
- Stakeholders' rights to voice concern, grievance, appeals or seek resolution of disputes are assured by the policy instrument
- Share of regulated stakeholders responding in surveys that the policy instrument is fair

Compatibility of social norms and values with the ESS Development Objectives.

Social norms and beliefs that underpin the behaviour of stakeholders are compatible with the objectives of ESS.

Possible measures include:

- Extent of public debate, advocacy and expression of public concern when the political or sectoral leadership violates expected norms and values related to ESS
- Values and norms espoused by stakeholders are compatible with the ESS objectives

- Behavior of stakeholders is compatible with the objectives of the ESS
- Proportion of stakeholders who express support for the objectives of the ESS

II. Organization procedures, culture

Clarity of borrower mission about the development objectives of ESS

The vision and mission of the organization are strongly aligned with the ESS and clearly articulated, and provide its members with clear points of reference for formulating strategy, making decisions and gaining commitment from management, staff, and other stakeholders to work toward the objectives and expected outcomes of an ESS. The mandate of the organization is recognized by relevant stakeholders.

Possible measures include:

- Explicit statement of the organization's vision and mission with respect to the ESS
- Internal stakeholders surveyed accurately describe the organizational goals with respect to the ESS that have been communicated to them.
- External stakeholders surveyed accurately describe the organizational goals with respect to the ESS that have been communicated to them.

Stakeholder participation in decisions about the ESS

Decision-making processes relating to the ESS considers all stakeholder opinions, and government and other organs of the state are responsive to the views of civil society and the private sector.

Possible measures include:

- Existence of a formal consultative process for decisions about issues related to ESS
- Number of stakeholder groups claiming not to have been included in the decision-making process relating to ESS (target is none)
- Number of stakeholder groups who boycott or express significant concerns over the decision-making process by the end of the engagement process (target is none)
- Number of stakeholder groups whose views were partially or totally reflected in final decision relating to ESS risk management
- Number of people represented by the stakeholder groups who have seen some of their views included in final decisions relating to ESS
- Extent to which government engages in dialogue with stakeholders about the ESS risks and management options
- Extent to which borrower decisions on ESS risk assessment and management can be traced to consultation with stakeholders
- Extent of borrower responses to stakeholders' communications about the ESS
- Quality of borrower responses to stakeholders' communications about the ESS

Stakeholder voice in decisions about the ESS

Stakeholders understand the borrower obligations and commitments related to an ESS and communicate their support for project initiatives or express grievances and proposals for change to the project's political and sectoral leadership.

Possible measures include:

- Share of stakeholder survey respondents who accurately responded to questions on their understanding of commitments and obligations with respect to an ESS
- Share of stakeholder respondents to a confidential survey, who report being free to express their views with respect to the ESS issues in a project context
- Number of public gatherings related to the ESS issues per year
- Number of people attending public gatherings related to the ESS per year
- Number of signatories to petitions or other expressions of concern related to the ESS

- Extent to which stakeholders understand the borrower obligations and commitments with respect to the applicable ESS in a given project
- Existence of a formal grievance, appeals and dispute resolution processes relating to an ESS
- Extent of communication from stakeholders about their experiences concerning the ESS
- Quality of communication from stakeholders about their experiences concerning the ESS

Accountability of borrower and project implementing entities for achieving objectives of ESS

Government and other public service entities take account of and responsibility for the appropriateness of their policies and actions in relation to an ESS. If public officials and other public service providers fail to meet expectations about achievement of the ESS, stakeholders hold them accountable for their conduct and performance.

Possible measures include:

- Existence of functioning instruments of accountability, e.g. government or borrower scorecard information is available to the public
- Number of instances of stakeholders holding government officials and other service providers accountable for the ESS-related policies and actions, either through use of the defined accountability instruments or in other ways
- Share of stakeholder respondents to a confidential survey, who believed that public officials and other public service providers would be held accountable for meeting obligations related to achievement of the ESS
- Frequency of examples of stakeholders holding government officials and other service providers accountable for the ESS-related policies and actions
- Stakeholders' perception about likelihood that public officials and other public service providers will experience negative consequences if they fail to meet obligations related to achievement of the objectives of ESS

Transparency of project information dissemination regarding the ESS

Government and borrower project entities provide accurate, relevant, verifiable, and timely information about the ESS and explain actions concerning the ESS in terms that stakeholders and other stakeholders can use to make decisions.

Possible measures include:

- Frequency of borrower communications related to the project related ESS
- Extent to which borrower communications content related to the ESS whose aligns with information provided by independent sources
- Share of stakeholder survey respondents who reported receiving borrower communications related to the ESS
- Share of stakeholder survey respondents who were satisfied with the information provided by the borrower about the ESS
- Frequency of borrower communications related to the ESS
- Existence of an information sources related to the ESS that stakeholders can consult on an open, transparent and timely basis
- Extent to which stakeholders are aware of borrower communications related to the ESS
- Extent to which stakeholders find that information provided by the borrower about the ESS is satisfactory

Organizational incentives for project compliance provided by the policy, regulatory and procedural instruments

The policy instrument imposes low transaction costs for compliance, facilitates desired economic and social exchange activities related to the ESS by reducing uncertainty and other costs to the participants in these transactions, and provides sanctions for non-compliance.

Possible measures include:

- Time and information costs of compliance with the policy instrument and/or ESS (target is low or zero)
- Time and information costs associated with ESS related transactions (target is low or zero)
- Credible individual incentives for compliance and sanctions for non-compliance with policy instrument and ESS as determined through stakeholder consultations

Administrative ease of policy, regulator or procedural instrument implementation

Possible measures include:

- Cost to borrower of implementing the policy instrument (target is low)
- Cost to borrower of monitoring and evaluating effectiveness of the policy instrument
- Extent to which borrower can easily administer the policy instrument within the existing or expected socio-political, policy and organizational context

Freedom of policy, regulatory or procedural instrument from unintended negative consequences

The policy, regulatory or procedural instruments minimize unintended negative impacts in project level ESS related transactions.

Possible measures include:

- Incidence of unintended negative externalities on targeted beneficiaries
- Number and scope of unintended negative externalities on non-beneficiaries
- Number and scope of unintended negative externalities on non-regulated stakeholders

Flexibility of the policy, regulatory or procedural instrument in addressing varying project situations

Policy instruments are predictably flexible in addressing varying situations. Policy instruments allow for timely revision when the underlying social and political circumstances have changed.

Possible measures include:

- Share of surveyed stakeholders affected by the policy instrument that express confidence that policy covers relevant contingencies in a predictable manner and is suitably flexible in addressing changes in DG context
- Number of instances in which policies are revised in a timely manner when there are changes in social and political circumstances underlying the DG

Resistance of policy, regulatory or policy instrument to project level corruption, rent seeking, and regulatory capture

Policy instruments minimize opportunities for corruption, include mechanisms to monitor and report corruption, and provide credible and enforceable penalties for corrupt behavior. Policy instruments do not reflect the efforts of vested interests to manipulate the economic and/or legal environment to secure undue privileges or compensation at the expense of the greater public good.

Possible measures include:

- Number of instances of rent-seeking, elite or state capture, or corruption in ESS-related transactions (target is zero)
- Policy instrument contains provisions for effective monitoring and reporting on corruption in ESS related transactions

- In a confidential survey, officials whose position might allow opportunities for corrupt behavior indicate that one reason for refraining is that the policy instrument provides for credible and enforceable punishment/penalty for corrupt behavior related to the ESS

Achievement of outcomes that lead directly to ESS objective and goal attainment

The organization consistently achieves outcomes that lead directly to the ESS expressed in its mission statement.

Possible measures include:

- Organization's self-assessments of its achievement of the ESS objectives and goals
- Stakeholder assessment of organization's contribution to the achievement of the ESS objectives and goals
- Independent external assessment of the organization's contribution to the achievement of the ESS goals and objectives

Adaptability in anticipating and responding to change

The organization regularly monitors its internal and external environment for information relevant to the ESS and is proactive in adapting its strategy accordingly. The organization encourages innovation, manages knowledge, and creates and/or adapts to new technologies.

Possible measures include:

- Organization proactively scans its internal and external environments for relevant innovations to improve its processes, products and strategies
- Organization periodically revisits its strategy, processes and results related to achievement of the DG
- Existence of formal structures and processes that support organizational learning
- Use of organizational knowledge repositories
- Instances of collaboration between teams
- Instances of participation in communities of practices

III. Human resources

Borrower implementing entities mobilize, retain, and provide adequate incentives for appropriately qualified staff to carry out identified ESS tasks

Possible measures include:

- Existence of organizational units dedicated to ESS tasks
- Staff have appropriate credentials, training and experience to carry out tasks
- Existence of work plans, Terms of reference for key positions
- Sufficient budgets are available and approved to support project ESS tasks
- Existence of human resources policies to efficiently recruit and retain staff
- Staff understand their roles and have adequate resources to complete tasks
- Policy, regulatory and procedural instruments are understood by all staff

IV. Budget, Equipment and Means

Operational efficiency in producing goal-related outputs

The strategies, inputs, processes, and technology of the organization are managed to optimize the quantity and quality of output relative to the cost of accomplishing its ESS-related goals.

Possible measures include:

- Quantity of output
- Quality of output
- Timeliness of product/service delivery

- Unit cost

Sub-measures for each of the above:

- Quantity of output
 - o Review of records of the organization (e.g., output volumes compared with performance benchmarks)
- Quality of output
 - o Review of documents of the organization (e.g., decision rules meet certain performance benchmarks or criteria)
 - o Analysis of records of the organization (e.g., calculate average score on the exam)
 - o Internal or external random testing (e.g., compute estimates for error rates)
 - o Customer satisfaction surveys (ones that ask for the quality of, e.g., the service delivered)
 - o Publicly available indices (e.g., index on the quality of products)
 - Timeliness
 - o Review of records of the organization (e.g., toolkit delivered at the specified date)
 - o Analysis of records of the organization (e.g., calculate average delivery time)
 - o Customer surveys/interviews (ones that ask how long, e.g., the product took to be delivered)
 - Unit cost
 - o Review of records of the organization (e.g., total expenses for developing a toolkit)
 - o Analysis of records of the organization (e.g., calculation of cost per student)

Financial viability and probity

The organization sustainably secures the funds needed to cover its operating costs. Sound financial management, including reporting of externally verified accounts, helps to ensure that the resources of the organization are allocated effectively to achieve its ESS goals.

Possible measures include:

- Adequacy of financial resources to implement ESS tasks
- Transparent allocation of funds for ESS tasks
- Funds are allocated only in accordance with identified business needs
- Internal and external auditing of the financial management process

Supportiveness of stakeholders on goal-related activities

The organization seeks the support of stakeholders for its ESS-related work. Organizational decision-making and operational processes involve consultations with appropriate stakeholders.

Possible measures include:

- Frequency with which the organization provides stakeholders with relevant and timely information concerning its ESS-related performance (target is quarterly)
- Existence of a mechanism for stakeholder involvement in organizational decisions and frequency of its use
- Accounts that feedback from stakeholders was included in operational processes
- Actions taken by stakeholders support organizational activities that contribute to achievement of the ESS

Annex: Indicative Table of Contents for Borrower Capacity Assessment Report

Executive Summary

Introduction

- Background and Context of the Assessment

Program Descriptions

- Components
- Implementing Agencies

Objectives, Scope and Methodology of the Assessment

Key Tasks for E&S Risk Management

Institutions and Roles in Program Implementation

- Primary role (implementation of the program and ESHS commitment)
- Secondary role (regulatory, oversight)
- Indirect role (with involvement of some of the ESHS commitment one way or another)

Assessment of E & S Staffing, Capacity, Systems, Track Record/Performance

- MoE
- Office/agencies and other related offices involved in land acquisition and resettlement
- Ministry of Labour, Social Security and Migration Others (MNRETS, etc.)

Action Plan to Strengthen Staffing, Capacity, Systems and Implementation (with indicative budget)

- MoE
- Recommendations to strengthen regulatory and monitoring functions of MoE
- Others

Annex 4. KRED Labor Management Procedures

Annex 5. KRED Stakeholder Engagement Plan Template

Stakeholder Engagement Plan ([Website Link](#), [Word Document Template Link](#))

Annex 6. Resettlement Action Plan Template

Resettlement Action Plan ([Website Link](#), [Word Document Template Link](#))

Annex 7. Good Practice Note on Addressing Sexual Exploitation and Abuse and Sexual Harassment

Good Practice Note: Addressing Sexual Exploitation and Abuse and Sexual Harassment (SEA/SH) in Investment Project Financing involving Major Civil Works ([Document Link](#)).

Annex 8. Gender Good Practice Note

Gender Good Practice Note ([Website Link](#), [Document Link](#))

Annex 9. Sexual Orientation and Gender Identity Good Practice Note

Good Practice Note Non-Discrimination: Sexual Orientation and Gender Identity (SOGI) ([Website Link](#), [Document Link](#))

Annex 10. Indicative Outline of the ESIA

Executive Summary

This should stand alone and concisely provides a good summary of the project, the policy and regulatory frameworks, summary of consultations with key stakeholders, summary key baseline information relevant to analysis of key impacts, summary of key and site-specific impacts, summary of key measures to address site-specific impacts, implementation arrangements for the ESMP with estimated budget. The ES should be accompanied by a good and readable map showing the main corridor and project components, including locations of ancillary facilities.

Chapter 1: Project Description

The chapter should describe the Project, its components and any ancillary facilities and associated facilities in full details, including its geographic, environmental, social and temporal context, including any offsite investments that maybe required (e.g., raw materials, access roads, borrow pits, quarry areas, disposal areas, hauling and transport routes, etc.). It should clearly describe the location, lengths, widths, design elements, components, ancillary facilities such as borrow pits, quarry sites, workers camps, disposal areas, hauling & transport routes, etc. Maps of sufficient detail, showing the project site and the area that maybe affected by the project's direct, indirect and cumulative impacts. Photos and design details should also be included.

Chapter 2: Legal and Institutional Framework

This Chapter should present and analyze the legal and institutional frameworks for the project, within which the environmental and social assessment is carried out, including the issues set out in [ESS1](#), paragraph 26 (states that the environmental and social assessment takes into account in an appropriate manner all issues relevant to the project, including: (a) the country's applicable policy framework, national laws and regulations, and institutional capabilities (including implementation) relating to environmental and social issues; variations in country conditions and project context; country environmental or social studies; national environmental or social action plans; and obligations of the country directly applicable to the project under relevant international treaties and agreements; and (b) applicable requirements under the ESSs.).

It should compare the Borrower's existing environmental and social framework and the ESSs and identifies the gaps between them.

It should also identify and assess the environmental and social requirements of any co-financiers, where relevant.

The Chapter should also make reference to World Bank Group EHS Guidelines and Industry Sector Guidelines for Construction Material Extraction and Electric Power Transmission and Distribution and relevant international treaties and protocols. It should also include relevant laws, regulations and institutions on labor & working conditions and health & safety.

Chapter 3: Description of Environment (Baseline Data)

- sets out in detail the baseline data that is relevant to decisions about project location, design, operation, or mitigation measures. This should include a discussion of the accuracy, reliability and sources of the data as well as information about dates surrounding project identification, planning and implementation.

- Identifies and estimates the extent and quality of available data, key data gaps, and uncertainties associated with predictions.

- Based on current information, assesses the scope of the area to be studied and describes the relevant physical, chemical, biological, and socio-economic conditions, including any changes anticipated before the project commences.

- Takes into account current and proposed development activities within the project area but not directly connected to the project.

Chapter 4: Stakeholder Engagement and Public Consultations

This needs to document the consultation processes, dates of consultations, who were consulted, issues raised and how issues are and will be addressed by the project as per ESS10 and other requirements for consultations in the ESSs.

Chapter 5: Environmental and Social Risks and Impacts

- Takes into account all relevant environmental and social risks and impacts of the project specifically identified in ESS2 to ESS8, and any other risks and impacts arising as a consequence of the specific nature and context of the project, including environmental risks and impacts (i) defined by the World Bank Group Environmental Health and Safety Guidelines; (ii) those related to community safety; (iii) those related to climate change and other trans-boundary or global risks and impacts; (iv) any material threat to the protection, conservation, maintenance and restoration of natural habitats, critical habitats, protected areas and biodiversity; and (v) those related to ecosystem services⁴² and the use of living natural resources, such as fisheries and forests; and social risks and impacts (i) threats to human security through the escalation of personal, communal or inter-state conflict, crime or violence; (ii) risks that project impacts fall disproportionately on individuals and groups who, because of their particular circumstances, may be disadvantaged or vulnerable;⁴³ (iii) any prejudice or discrimination toward individuals or groups in providing access to development resources and project benefits, particularly in the case of those who may be disadvantaged or vulnerable; (iv) negative economic and social impacts relating to the involuntary taking of land or restrictions on land use; (v) risks or impacts associated with land and natural resource tenure and use, including, as relevant, potential project impacts on local land use patterns and tenurial arrangements, land access and availability, food security and land values, and any corresponding risks related to conflict or contestation over land and natural resources; (vi) impacts on the health, safety and well-being of workers and project-affected communities; and (vii) risks to cultural heritage.

In addition, this chapter also needs to include the findings and recommendations of the cumulative impact assessment.

Each risk and impact relevant for each standard should be assessed in terms of Low, Moderate, Substantial, or High based on the ESS1 criteria and in accordance with the World Bank Directive for Investment Project Financing.

Chapter 6: Mitigation Measures

- Demonstrates the application of mitigation hierarchy to develop measure for each key risk and impact deemed substantial and significant.
- Identifies mitigation measures and significant residual negative impacts that cannot be mitigated and, to the extent possible, assesses the acceptability of those residual negative impacts.
- Identifies differentiated measures so that adverse impacts do not fall disproportionately on the disadvantaged or vulnerable.
- Assesses the feasibility of mitigating the environmental and social impacts; the capital and recurrent costs of proposed mitigation measures, and their suitability under local conditions; and the institutional, training, and monitoring requirements for the proposed mitigation measures.
- Specifies issues that do not require further attention, providing the basis for this determination.

The mitigation measures should demonstrate the application of mitigation hierarchy (i.e., avoidance, minimization, mitigation, compensation) and should cover both generic construction

measures for noise, dust, pollution, health & safety, etc. and site-specific measures for sensitive receptors, monitoring & audit, including grievance redress.

Where possible, technical specifications should be provided for both generic and site-specific measures that can be readily adopted for the bidding documents.

A table summarizing the project phase, project activities, risks & impacts, management measures that apply the mitigation hierarchy, responsible party and indicative budget should accompany this chapter.

It should specify specific plans that will be prepared and implemented by the contractor prior to site mobilization, including but not limited to the Construction-ESMP, Traffic Management Plan, Health and Safety Plan, Labor Influx Management Plan, Workers' Camp Management Plan, Spoils Disposal Management Plan, Site Rehabilitation and Restoration Plan, Waste Management Plan, Material Extraction Plan, etc.

The detailed specifications for environmental, social, health and safety (ESHS) requirements for the bidding documents will be followed consistent with standard requirements in the Bank's 2017 SBD documents for ICB.

Chapter 7: Analysis of Alternatives

- Assesses the alternatives' feasibility of mitigating the environmental and social impacts; the capital and recurrent costs of alternative mitigation measures, and their suitability under local conditions; and the institutional, training and monitoring requirements for the alternative mitigation measures.
- For each of the alternatives, quantifies the environmental and social impacts to the extent possible, and attaches economic values where feasible.

Chapter 9: Institutional Arrangements

- Spells out the Implementation Arrangements for the ESMP and should include recommendations based on safeguard capacity assessment and staffing of among the project owner and contractors.
- Describes the minimum EHS staffing of the project owner, Contractor and Supervising Consultant.
- Also needs to spell out the capacity building program in light of the capacity development assessment.

Includes budget for activities not included in Works Contracts and process of appropriation of funds during the lifetime of the project

Annex 10. PMO ESF Staff

Environmental Specialist in the PMO

A full-time professional staff to be hired in the PMO for the duration of the project

Responsibilities

- Coordinate the preparation of ESIA/ESMP for KRED project activities
- Review the documentation produced for each activity to confirm extent to which it conforms with ESS requirements; provide comments to ensure that those requirements are met; confirm addressal of comments
- Confirm integration of requirements of ESS's with relevant bidding/contract documents
- Undertake field visits to supervise site work by consultants and, where needed, works contractors
- Review and report progress on implementation of environmental management actions agreed during project review by authorities – Kyrgyz, World Bank, etc.
- Facilitate/conduct training of incoming environmental specialists of contractors

Qualifications

- A Post graduate degree in Environmental Engineering/Planning/Science or relevant field
- At least 15 years of experience of working on ESIA preparation and ESMP implementation in Energy Sector preferably with substantial HPP experience
- Fluency in local language and English
- Familiarity with World Bank ESF/ IFC PS will be an advantage

OHS Specialist in the PMO

A full-time professional staff to be hired in the PMO for the duration of the project

Responsibilities

- Act as point person for all Occupational Health and Safety issues in KRED project
- Review contract documentation to confirm integration of requirements of national standards and ESF requirements for OHS into the bidding documents/draft contracts
- Undertake site visits to monitor implementation of agreed stipulations for OHS
- Coordinate reporting accidents/incidents involving safety of project workers

Qualifications

- A degree in Engineering with post graduate qualification in Construction Safety
- At least 15 years of experience in Safety management in Energy Sector, preferably substantial experience in HPP and transmission lines
- Familiarity with World Bank ESF/ IFC PS (ESS2/PS2) will be an advantage
- Fluency in local language and English

Social Specialist

A full-time professional staff to be hired in the PMO for the duration of the project

Responsibilities

The Social Specialist shall provide full professional support to PMO in conducting the following tasks:

- Together with the Environment Specialist, organize/conduct public consultations, training and other outreach programs related to social standards and disclose all safeguards instruments (ESIA, ESMPs, RAPs and other documents) on MoE websites;
- Supervise, provide oversight for and support contractors in achieving their social safeguards responsibilities as outlined in the ESMP and RAP

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- Undertake field visits as required to the project sites to supervise the implementation of subproject activities, ensure alignment with project objectives, and identify social risks and opportunities prior to, during and upon completion of rehabilitation/construction activities to ensure full compliance with contractual conditions and the ESMP, and to verify that appropriate preventive actions and/or mitigation measures have been implemented in full compliance of the Bank policies;
- Ensure that a Grievance Redress Mechanism (GRM) is established and functioning to receive, resolve and record all types of complaints, grievance and concerns of the public on the project related activities including GRM for workers;
- Help the PMO to implement a robust Gender Action Plan and Citizen Engagement strategy for the project;
- Together with the Environment Specialist, prepare Quarterly Progress Reports on safeguards management and issues during the project implementation;
- Participate in the Implementation Review/support mission with World Bank staff and provide necessary support by organizing meetings, discussions and field trips as when necessary;
- Verify and ensure that all agreed entitlements have been delivered in full to the affected people in accordance to what has been set up in the RAP;
- Review and summarize received grievances from PAPs and stakeholders and recommend any follow up actions, if needed.

Qualification:

- University/ Masters degree in a social sciences field (sociology, anthropology, land management, rural and/or urban development planning or other related subjects), or in the field of economic sciences (economics, finance, or other related fields);
- Minimum of 3 years of professional experience in working on social development/ safeguards, resettlement planning, stakeholder consultations with donor funded projects in Kyrgyz Republic;
- Professional experience of working on Gender and GBV issues in the donor funded projects in Kyrgyz Republic;
- Knowledge of national laws and regulations pertaining to land ownership acquisition, expropriation procedures affecting constructions, as well as knowledge overall political economy of the country;
- A demonstrable knowledge of applying the World Bank's environmental and social polices/framework and working with local communities;
- Knowledge of the socio-economic and environmental context of Kyrgyz Republic in relation to energy sector projects would be an advantage;
- Previous experience in similar assignments will be an advantage.