**THE KYRGYZ REPUBLIC**

**“POWER PLANTS” JSC**

**Heat supply improvement project**

**FIRST START-UP FACILITY (from СК-В-3a to CK-B-4)**

**Environmental and Social Management Plan for**

**first start-up facility (ESMP-1)**

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**Bishkek**

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# **Abbreviations and definitions**

BTS “Bishkekteploset” OJSC

СК-В Viewing camera – Vostok

ChuPVES Chuy power networks utility

DED Design and estimate documentation

DHS District heat supply

Dn Nominal diameter

DTN Distribution thermal networks

EA Environmental assessment

EIA Environmental impact assessment

EIR Environmental Impact Report

EP Environment protection

EPP “Electric Power Plants” OJSC

ESMP Environmental and Social Management Plan

ESMP -3 Environmental and Social Management Plan for third start-up complex

ESMF Environmental and social management framework

FLM Fuel and lubricating materials

FS Feasibility study

Gc Giga Calories

GRM Grievance redress mechanism

HSIP Heat Supply Improvement Project

KR The Kyrgyz Republic

KRDF Kyrgyz-Russian Development Fund

LA Local administration

MA Monitoring and assessment

MPC Max. permissible concentration

NGO Non-governmental organization

OJSC Open joint-stock company

OP Operational policy

PB Polychlorinated Biphenyls

PIU EPP Project Implementation Unit “Electric Power Plants” OJSC

PSC Project steering committee

RAP Resettlement Action Plan

RN Return network

RPF Resettlement Policy Framework

SAEPF State Agency on Environment Protection and Forestry

SanPiN Sanitary norms and rules

SEE State Ecological Expertise

SDD Social due diligence

SN Supply network

SNiP Social norms and rules

SR Safety rules

SW Solid waste

ToR Terms of reference

TPP Thermal power plant

WB World Bank

# **Executive Summary**

Heat Supply Improvement Project (HSIP) in the Kyrgyz Republic (KR) aims to improve effectiveness and quality of heat supply in the project target areas. Direct Executors of the HSIP are OJSC “Electric Power Plants” (EPP[[1]](#footnote-2))) and the Community Development and Investment Agency (ARIS). HSIP aims to improve the efficiency and quality of heat supply in the project target areas:

(1) improving the reliability and efficiency of the district heating system (DHS) in Bishkek;

(2) improving energy efficiency of public buildings.

For project components which will be financed by the World Bank (WB) and executed by “EPP” and ARIS, in accordance with WB procedures the Environmental and Social Management Framework (ESMF) and Resettlement Policy Framework (RPF)[[2]](#footnote-3) were prepared which define procedures and measures for prevention/mitigation of negative consequences for the natural and social environment. ESMF and RPF passed public consultations and were approved by WB, EPP and ARIS. Their execution is obligatory for all Project participants.

In accordance with ESMF requirements, the Environmental and Social Management Plan (ESMP) is to be developed for each project component which takes into account specific types of work and location of the component. ESMP is a mandatory document that must be followed during the implementation of the project. ESMP consists of a set of mitigation, monitoring and institutional responsibility measures that will be taken during implementation and operation of facilities to eliminate negative environmental and social impacts, their compensation, or reduction to an acceptable level.

This Environmental and Social Management Plan (ESMP-1) was developed for first start-up facility of HSIP within the subproject “Replacement and reconstruction of Vostok main heat network, start-up facilities I, III and IV” which is to be executed by “EPP”.

ESMP-1 includes procedures and mechanisms, which will be involved by the Project in order to provide the safeguards policy of the WB 4.01 “Environmental assessment” and OP 4.12 policy “Involuntary resettlement” and also legislation and regulatory acts of the KR, regulating preparation and execution of environmental requirements and requirements for health protection and safety of workers at the Site and population during execution of works for “Replacement and reconstruction of Vostok main heat network, start-up facilities I, III and IV” on the first start-up facility. The Site is located in eastern part of Bishkek on Dostoevskiy street from CK-B-3a to СК-В-4. The length of the route - 326 m. The general layout of first start-up facility is given in Appendix 1.

Implementation of HSIP, in general, will have a positive environmental and social impact and favorably affect the proposed project sites as an effectiveness and quality of thermal power supply for heating and hot water supply will be increased. It is expected that HSIP will have a positive social impact on a wide range of stakeholders and beneficiaries, including residential, social and commercial consumers of “EPP”, who will directly benefit from the modernization of sections of the main heating network.

The following environmental impacts are expected: noise, impact on soil and water as a result of construction work, restriction of traffic during construction and restoration work, construction dust and waste, as well as the health & safety of workers. However, these negative impacts will be temporary and depend on the construction site, and at the same time, they can be easily prevented and mitigated by taking appropriate measures. Negative impacts on the natural environment, protected wildlife habitat areas, objects of historical and cultural heritage are not expected, as the project will be implemented in urban areas. However, there could be e safety and health risks for workers and the population as well during construction works and during the operation phase of the pipelines. But it should be noted that these risks will be reduced by appropriate management and implementation measures. According to the results of initial environmental assessment (screening) and taking into account the requirements of the WB OP 4.01 “Environmental Assessment” regarding the type, location, sensitivity and scope of the project, the nature and extent of potential negative environmental impacts, according to the WB classification, HSIP belongs to the projects of “Category B”.

Rescreening of social impacts conducted on November 11, 2022 with establishment of a cut-off date and further social due diligence accompanied by individual consultations at the site confirmed that no land acquisition, physical or economic resettlement impacts are expected[[3]](#footnote-4). However, temporary impacts as destruction of fences, removal of trees, road damage, limited access and road restrictions will be mitigated as described in the relevant ESMP depending on Site.

The measures to mitigate the negative environmental and social impacts resulting from the reconstruction of Vostok main heating network are described in the chapter 6.3 "Measures for mitigation of impacts" and Appendix 2 of this ESMP. “EPP” OJSC, through the PIU, will be responsible for monitoring the compliance of all measures with the WB environmental and social safeguards policies (Appendix 3), applicable to the HSIP, as well as with the requirements of the national legislation of the KR.

The PIU will carry out this task on its own, as well as with the help of an environmental and social consultant. Environmental and social monitoring involves regular inspection of all physical activities sites under the Project and monitoring the implementation of ESMP.

Contractors of the Project are required to comply with the developed ESMP of the Project. The contracting company should have specialized personnel responsible for the implementation of ESMP. The PIU will monitor the implementation of mitigation measures and the observance of good practice prescribed by these documents, and if deficiencies are identified, it will notify the project contractors of the problems identified and will require corrective actions. In case of non-elimination of violations and serious violation of the requirements of ESMP, PIU will impose the prescribed sanctions for violation of the contract. ESMP will be included in the tender documentation for the work and contractors will be required to comply with the requirements of this documentation. The PIU is responsible for documenting environmental and social impact, monitoring by filling in forms of supervision at sites, keeping them, and preparing regular reports describing the results of monitoring. These reports summarize the findings of the work done in the field, consequences of works, analyze the common problems identified, explain the nature of the developed corrective measures to solve the problems, and assess the status of the corrective measures taken, taking into account the recommendations proposed in the previous reporting period. These reports will cover not only environmental and social safeguards provisions, but also environmental and social issues of a broader nature (for example, gender issues, consideration and redress of grievances, etc.).

Consultations with project stakeholders, especially with the local community, which will be directly affected by the Project, are a mandatory requirement for the development of ESMP. Public comments will be considered in this document until they are finalized. After the development and approval of the WB, ESMP will be published in Russian and English on the BTS website ([www.teploseti.kg](http://www.teploseti.kg)), in the infoshop of the WB ([www.worldbank.org](http://www.worldbank.org)), other relevant media and will be discussed with all interested parties of the HSIP. The consultation process will be carried out before any work on this section of the project begins and will be continued throughout the project, the public and stakeholders can comment on environmental and social aspects.

Public consultations on ESMP were held on November 19, 2020. Public consultations were conducted remotely, online via Whats App due to imposed COVID-19 coronavirus pandemic restrictions. Participants included representatives of local authorities, business facilities located along the transmission line, management and employees of BTS and specialists of BTS PIU.

Due to the fact that the ESMP for each Site (I, III and IV) has been prepared in 2020, this ESMP-1 was updated with the results of rescreening and social due diligence conducted in late 2022, and public consultations on the ESMP updates were held on April 25, 2023 (Appendix 4). The total number of participants was 32 people. Full and detailed information on the project, approximate commencement and completion dates for construction works, potential impacts and measures to minimize and/or mitigate impacts, OP 4.12 requirements and GRM was provided.

# **1.** **Project background**

Access to an uninterrupted and satisfactory heat supply has a decisive role in the well-being of the population and the provision of public services in the KR. Due to the cold climatic conditions and the long heating period, access to a reliable and acceptable source of heat supply is vital.

To solve this problem, the Government of the KR has prepared and is implementing a HSIP, financed by the WB and the Kyrgyz-Russian Development Fund (KRDF).

The largest district heating system (DHS) in the country is located in Bishkek. Thermal power plant (TPP) generates thermal power for more than 103,000 end-users (70% of households with access to DHS). The TPP is on the balance sheet open joint-stock company “EPP”, which also owns all major electric and heat power generation facilities in the KR, including the TPPs of Bishkek and Osh. Meanwhile, branch of “EPP’” – “Bishkekteploset” (BTS) is engaged in the operation of a heat distribution network supplied from TPP.

The key reason of reduced reliability of heat supply is “aging” and depreciation of infrastructure; more than 70% of heating and hot water systems in Bishkek were put into operation over 25 years ago and, therefore, their operational life has ended. The proposed HSIP supports the tasks of the Government of the KR in the heat supply sector and helps to solve the repeated energy shortage in winter. In particular, measures to improve the efficiency and quality of heat supply to consumers connected to the largest DH system in the KR support the Government’s long-term strategy for the heat supply sector as follows:

1. help to prevent a further increase of electricity consumption for heating by improving the quality of the DH system in Bishkek;
2. complement the current modernization of the TPP with an optimized network, which will bring end-users favorable investment results;
3. guarantee that the current and planned increase in tariffs for heating and hot water supply is accompanied by an increase in the quality of heat supply and its uninterrupted operation.

# **2.** **Description of the Project activities**

HSIP in the KR aims to improve the efficiency and quality of heat supply in the project target areas. The direct executors of the HSIP will be EPP and ARIS. For those components of the project that will be financed by the WB and implemented by EPP and ARIS, in accordance with WB procedures, ESMF has been prepared that defines procedures and measures to prevent negative consequences for the natural and social environment. ESMF passed public discussions and was approved by the EPP, ARIS and the WB. Its implementation is mandatory for all project participants.

In accordance with the requirements of ESMF, for each component of the project, an ESMP shall be developed, which takes into account the specific types of work and the location of the component.

Within the framework of the HSIP project, EPP will carry out the following components:

**Component 1: Improvement of reliability of heat supply and productivity of the DH system (estimated World Bank funding is in the amount of $ 31 million).** The component will support priority investments and capacity-building measures to help to improve the productivity and reliability of the DHS in Bishkek. The component will be implemented by EPP, which is responsible for the operation of the main distribution heat network and the provision of hot water services for residential, social and commercial consumers in Bishkek. On the balance sheet of EPP are the citywide distribution heating network, 19 booster pumping stations and heat-consuming installations of consumers. The service life of about 70% of heating networks has already exceeded 25 years, and the principle of designing pipeline networks, which was in effect at that time, is the dominant method for the gradual expansion of networks, replacement and repair of sections.

**Subcomponent 1.1: Priority Investment Program for the Reconstruction of the DHS (estimated WB financing in amount of $ 30 million).** Within the framework of this subcomponent, two priority investment packages will be implemented and related advisory services (for example, design and supervision) will be provided. Package 1 is aimed for the reconstruction of individual heating stations in buildings and is not considered in this document.

The activities described in this document will be implemented as part of Package 2:

**Package 2: Replacement and reconstruction of a section of the “Vostok” heating network, I. III. IV Start-up facilities**

Within the framework of this investment package, the most critical sections of one of the five main heating networks (Vostok, going from the TPP) will be replaced by pre-insulated pipelines (with a diameter of 200-900 mm), and the route will be partially changed (about 2.3 km of trenches and over-ground installation). The areas selected for replacement are outdated (service life from 30 to 50 years) and worn out due to aging of the metal, deep corrosion and loss of insulation.

To implement the whole Package 2, the part of the heat network to be reconstructed is divided into four sections (start-up facilities). Works on II start-up facility are completed. The works on each of 3 remained facilities will be organized separately. This document describes first start-up facility of Package 2 with the length of 326 m, which is located in the Eastern part of Bishkek city on Dostoevskiy st. from СК-В-3а to СК-В-4.

Work on the reconstruction of the section of "Vostok" main heating network will be carried out from CK-B-3a to CK-B-4 (Dostoevsky St.), according to the design and estimate documentation.

The planned construction commencement date is March 2023, planned construction completion date is October 2023.

The Contractor, based on its capabilities, will development the Site fully simultaneously or partially.

On the section from CK-B-3a to CK-B-3, it is planned to replace the over-ground laying, on the section from CK-B-3 to CK-B-4 it is planned to dismantle all existing pipelines and to install new 2 DN900 mm pipelines, as well as to carry out the reconstruction of CK-B-4.

On the section from CK-B-3a to CK-B-3 with a length of 180 m, an overground laying of a heating network is foreseen in polyurethane foam insulation with a galvanized sheath and leakage detection system. Heat pipelines are laid on sliding supports. Pre-insulated pipes - steel pipes GOST 30732-2006 with thermal insulation made of polyurethane foam and with a protective galvanized sheath. Dismantling and installation of 1 DN 200mm steam line shall be done.

On the section from CK-B-3 to CK-B-4 with the length of 146 m heat pipelines 2 DN920x10 are foreseen and laid on the designed sliding supports instead of the dismantled 2 DN 700 mm pipelines of the heating network, which are laid separately in the existing passage channel, under the railway tracks. All existing DN500, PP-5 DN 500, KP DN200, VPZ PS DN700, VPZ OS DN700 pipelines in the passage channel are subject to dismantling.

On the southern side of the CK-B-3a, at the nearest fixed support, the installation of 2 DN 900 mm sectional valves is designed, then on the south side of 2 DN 900 mm designed valves, 2 DN 500 m jumpers are installed with the installation of shut-off valves between the designed 2 DN 900 mm heating networks in polyurethane foam insulation and the existing pipelines. The designed heat pipelines are laid on sliding supports. To empty the pipelines of the designed heating network, the drainage devices are provided at the lowest points along the profile with output to collecting wells. Air valves are provided for air discharge of the heating network.

# **3. Environmental and social assessment**

## **3.1 Expected positive and negative environmental impacts of the Project**

The implementation of HSIP will have a positive environmental impact and will have a beneficial effect on the proposed project sites:

1. Increased efficiency and quality of thermal energy supply for heating and hot water supply;
2. reduced consumption of fuel (coal, firewood, electricity, etc.) used by households for heating, reduced heat losses and improved energy efficiency in public buildings;
3. reduced threat to public health due to reduced air pollution in residential premises.

Possible negative impacts:

It is expected that the Project, especially during construction work, will cause certain short-term negative impacts on air, soil, water and noise levels. The following environmental issues are likely to be related to the activities under Component 1: noise, impact on soil and water resulting from construction works, traffic restrictions during construction and restoration works, construction dust and garbage, and workers safety. However, these negative impacts will be temporary in nature and associated with the construction site, and they can be easily mitigated by the implementation of appropriate measures to prevent and (or) mitigate.

Negative impacts on the natural environment, protected areas, objects of historical and cultural heritage are not expected, since the project will be implemented in the industrial zone.

Taking into account the location of construction sites in the capital, the available local potential and the scope of construction works, the organization of temporary camps for workers is not planned.

According to the results of initial environmental assessment (screening) and taking into account the requirements of the WB OP 4.01 “Environmental Assessment” regarding the type, location, sensitivity and scope of the project, the nature and degree of potential negative environmental impact, the project belongs to Category B. According to the legislation of the KR, the Environmental Impact Assessment (EIA) for the Vostok heating network, I, III and IV start-up facilities reconstruction project shall be carried out.

EIA was carried out as part of the design documentation, which passed the environmental due-diligence in 2018, decision № 702 / P192B from 21.11.2018. This EIA (see Appendix 5) describes the reconstruction work carried out as part of the Project and measures to minimize the possible impact on the environment.

EIA promotes environmentally-oriented management decisions by assessing possible adverse effects, determining environmental consequences, considering public opinion, and developing measures aimed at minimizing negative impacts.

## **3.2 Social aspects**

The main beneficiaries of the HSIP will be women, since improved heat supply services will directly affect women in the first place. The PIU will provide convenience to the timing and places of public consultations for women, especially for daytime workers and women with children, as well as for women caring for older people and (or) people with disabilities. And also, at the request of women, if necessary, separate consultations will be held for women and men to ensure free discussion of issues.

The analysis revealed a number of stress-generating factors of the conflict. These stress-generating factors include: low public confidence in energy sector reforms, social explosions due to past energy tariff increases, a sense of unequal distribution of the Project's benefits and unresolved regional and ethnic tensions, as well as awareness of the socioeconomic and political ties between the energy sector and decision-makers of the country. Demographic changes and migration from rural to urban areas lead to an increase in the population in urban centers, which, in turn, puts additional pressure on utilities, including heating services. To mitigate these stress-generating factors, the project will ensure that no particular ethnic group or region is paid attention to. In addition, information about the Project will be made available for public awareness of the communities.

In order to effectively involve direct and indirect beneficiaries of the HSIP, a Grievance and Redress mechanism (GRM)[[4]](#footnote-5) was developed. GRM is based on the policy of OP 4.12 “Involuntary Resettlement” in order to resolve complaints related to the resettlement process and will cover various issues related to the overall implementation of the HSIP.

# **4.** **Description of basic environmental and social conditions**

The location of Bishkek is in the central part of the Chui valley, formed by the Kyrgyz mountain range (in the south) and the Chui-Ili mountains (in the north), mainly determines the characteristic of the wind regime in the city. Due to the high errors of the underlying surface, weak winds are observed in Bishkek city.

The wind regime of the city is characterized by a predominance of winds in the direction from the mountains to the valley; the average wind speed is not higher than 2-3 m/s, and the frequency of calm periods is 20%. During the year, on average, there are about 30 cases of wind amplification (speed up to 15 m/s and higher), mainly from the west. On average, every 5-7 years there can be strong winds with a speed of 25 m / s.

The prevailing wind direction in Bishkek is from the southeast to the southwest (50% of the time), while periods of calm are observed about 20% of the time.

The temperature regime of the region is due to a complex combination of solar radiation and atmospheric air circulation, which is more evident when alternating incoming warm air from the south and cold air from the north. The combination of these factors leads to a wide variety of daily, seasonal and annual temperature conditions. The average annual air temperature is 10.2°С.

A thaw in the daytime is a common occurrence in winter; an average of 18 days of thaw per month. Daytime temperature reaches up to 20°C. Meanwhile, there are periods of up to 30 days without a thaw, when the daily temperature is below 0°C.

The average monthly relative humidity ranges from 44% in June and July to 74% in March, and the average annual relative humidity is 60%.

During the year, precipitation level is 409 mm on average, usually from March to June.

The average annual atmospheric pressure is 929 mbar. The lowest average atmospheric pressure is recorded in July (922 mbar) and the highest - in November (936 mbar).

## **4.1 Location and description of the Site**

The heating network is laid in the eastern part of Bishkek on Dostoevskiy street from CK-B-3a to CK-B-4. The length of the construction site is 326 m. The construction area belongs to the 3B climatic sub-area. The relief of the area is flat. The basis of the heating network are gravel soils. Seismicity of the construction site is 8 points. Groundwater level is more than 10 m deep. Frost depth is 1.05 m.

The route of the proposed HS pipeline is located in an area with no sensitive areas or natural habitat. In addition, there are no objects of cultural and historical heritage or resources of local or national interest near the proposed pipeline route. The route passes under the railroad tracks. There is a residential area and road not far from CK-B-4. There is also shrub vegetation along the route.

If cutting of trees and bushes and pruning of crowns is required, then the cutting should be carried out strictly along the route of the pipelines and only after obtaining permits from the territorial nature authorities.

In the event of cutting down municipal trees, compensation will be made in the form of planting seedlings 3 to 1.

Reconstruction works will be carried out in such a way as to minimize deforestation of shrubs and the impact on the population living near the construction site.

## **4.2 Social and economic situation around the construction site**

The construction site is located in Bishkek city, Sverdlovsk district in the industrial zone.

There is a road, CHP Bishkek, the railroad, a residential area. There is a school, kindergarten and stores in the residential area. The distance from the SK-B-4 (the closest point to the residential area of the site) to the school and kindergarten is about 800 m. Also, there are warehouses nearby that are used for stocking and storing coal.

There are no social and recreational facilities, cultural and historical heritage sites near the construction site.

# **5.** **Legislative and institutional framework**

The legal framework, including KR legislation on land acquisition and resettlement, as well as OP WB 4.12 "Involuntary Resettlement" with a comparison of requirements, are given in the RPF[[5]](#footnote-6) approved for the HSIP.

As for the national legislation on access to information, in accordance with the Constitution of the KR dated May 5, 2021 everyone has the right to freely seek, receive, store, use and disseminate information verbally, in writing or by other means. Everyone shall have the right to receive information about the activities of state bodies, local self-government bodies and other state-owned enterprises, legal entities with the participation of state bodies and local self-government bodies, as well as organizations financed from the national and local budgets.

Law "On Access to Information Held by State Bodies and Bodies of Local Self-Government of the KR " (December 28, 2006 № 213) ensures implementation and protection of the right of access to information held by state bodies and bodies of local self-government, as well as achieving maximum information openness, publicity and transparency of activities of state bodies and bodies of local self-government.

The main ways of providing information by state bodies and local self-government bodies are:

- Publication and distribution of corresponding materials, including official and special web-sites;

- Conducting informational and educational activities in the media about the socially significant decisions taken;

- Providing information to individuals and legal entities on the basis of their request;

- Publication of information about the activities of state and local authorities, etc.

State bodies and local self-government bodies have the right to use any other methods not prohibited by the legislation of the KR to inform the public about their activities.

The Law "On Guarantees and Freedom of Access to Information" (December 5, 1997 № 89) regulates the relations arising in the process of implementing the right of everyone to freely and without hindrance seek, receive, research, produce, transmit and disseminate information. State, public, and private media ensure their full openness to all citizens and organizations, without singling out any special categories of users of this information. Openness of information includes free access to periodicals, informational television and radio programs, the possibility of familiarization with the sources of information in cases provided by law. If an international agreement of the KR establishes rules other than those provided for in this Law, the rules of the international agreement shall apply.

The Law "On normative legal acts" (No. 24 of July 20, 2009) requires that draft normative legal acts directly affecting the interests of citizens and legal entities, as well as those regulating entrepreneurial activity, be subject to public discussion by posting on the official website of the law-making body. Draft normative legal acts of representative bodies of local self-government may be placed in special places (boards, stands) determined by the representative body of local self-government.

In accordance with the Law on Local Self-Government (July 15, 2011 No. 101), local self-government is carried out in the form of representative and direct participation of the local community in local self-governance. One of the forms of participation of the local community in the implementation of local self-governance is the discussion of all important public and local issues at meetings (gatherings) of members of the local community. In order to take into account the views of members of the local community on important issues, meetings (gatherings) and public hearings are held with the participation of members of the local community with the adoption of recommendations on them. Recommendations of meetings (gatherings) are considered with the participation of representatives (delegates) from the relevant meetings (gatherings).In accordance with the Law on the procedure to consider appeals of citizens (May 4, 2007 № 67), the appeal of citizens shall be registered, considered properly and resolved fairly, timely and responsibly.

The Regulation on the procedure for considering electronic appeals received through the Internet portal of electronic appeals (Resolution No. 463 of the Government of the KR of August 11, 2014) regulates the relations associated with the consideration of electronic appeals of citizens.

The main regulatory legal acts regulating environmental protection, labor and safety, access to information, consideration of citizen’s appeals are described in ESMF, RPF and SDDR in detail.

## **5.1 World Bank safeguard policies**

According to WB safeguard policies, an Environmental Assessment (EA) is a process prior to the implementation phase of a project that assesses the potential environmental risks of the project and its impact; alternatives to the project are being studied; ways to improve the selection, location, planning, design and implementation of the project are identified by preventing, minimizing, mitigating or compensating for damage caused by negative environmental impacts, and by improving the positive impact. EA includes processes for mitigating and managing negative environmental impacts during project implementation. An EA is required for projects that may have a potentially negative impact. Moreover, public consultation is mandatory at all stages of the process.

There are 10 + 1 WB environmental and social safeguard policies which are intended to ensure that the potential negative environmental and social impacts of WB-funded projects are identified, minimized, and mitigated. The WB's safeguard policies related to the project and their applicability to the project are presented in Table 1 below.

***Table 1.* World Bank safeguard policy and their applicability to HSIP**

|  |  |
| --- | --- |
| **Safeguard policies** | **Applicability** |
| Environmental assessment (OP/ВP 4.01) | This OP is applied if the project can have a negative environmental and social impact associated with the project activity, including soil degradation, water and air pollution, labor protection and health effects, etc. It is also expected that such potential impacts will, for the most part, be temporary by nature and site specific. In order to prevent such an impact, an ESMP document was prepared, which defines the rules and procedures of the EA for the project. |
| Involuntary Resettlement (OP/BP 4.12) | This OP is applicable as activities under subcomponent 1.1, in particular, the construction of a bypass and the replacement of the most depreciated and critical sections of the transmission network may result in economic relocation. |
| Disclosure policy (ОP/BP 17.50) | Prepared ESMP after Bank approval will follow the principle of information distribution and allocated on the site of PIU and on Infoshop of the WB. |

The Bank conducts an environmental study of each proposed project in order to determine an acceptable degree and type of EA. The Bank classifies the proposed project into one of three categories, depending on the type, location, degree of vulnerability and scope of the project, as well as the nature and magnitude of potential environmental impacts.

For all Category A and B projects proposed for financing by the WB, during the EA process, the borrower consults with all parties involved, including affected groups and non-profit organizations (NGOs) on the environmental aspects of the projects, and takes into account their views. For meaningful consultations between the borrower, project affected groups and local NGOs, the borrower provides relevant materials in a timely manner prior to consultations and in a form and language that are understandable and accessible to the groups being consulted. Any Category B EA report on a project proposed for WB financing is made available to project affected groups and NGOs. Availability of such groups in the borrowing country and the Category B EA report on projects proposed for WB financing are prerequisites for the WB appraisal of these projects.

When planning and implementing measures to protect the health and safety of the local population (fencing of the construction site and trenches, bridges over trenches and bypass paths, fencing of passageways for citizens to access enterprises adjacent to the construction site, lighting in the dark), the same activities will be applied as during ensuring safety at the construction site.

# **6.** **Project scope of works**

Reconstruction of the section of Vostok main network will be carried out from СК-В-3а to СК-В-4 (Dostoevskiy st.) in accordance with the design documentation.

Design and estimate documentation (DED) for subproject was prepared by “Seureca” company. DED was approved by the Chui-Bishkek Territorial Department of the State Agency for Environmental Protection and Forestry under the Government of the KR on November 21, 2018 and by the Department of State Expertise under the State Agency for Architecture, Construction, Housing and Communal Services under the Government of the KR on July 23, 2020. DED was revised and approved in 2022 due to rising prices for building materials which was approved by the extended meeting of the General Directorate of branch of “EPP” OJSC - "Bishkekteploset" on April 22, 2022. No technical changes related to location, length and right of way of the network planned have been made.

The planned construction commencement date is April 2023, the planned completion date is October 2023.

The replacement of over ground laying is foreseen on the site from CK-B-3a to CK-B-3, dismantling of all existing pipelines and installation of new pipelines 2 Dn 900 mm is provided for on the site from CK-B-3 to CK-B-4 and perform reconstruction of CK-B-4.

Over ground laying of the heat network in the PUF insulation with a galvanized shell is foreseen for the site from CK-B-3a to CK-B-3 with the length of 180 m. Heat pipes are laid on sliding supports. Pre-insulated pipes – steel GOST 30732-2006 with PUF insulation with protective galvanized shell and leakage detection system. Dismantling and installation of the steam pipeline 1 Dn 200 mm.

The site from СК-В-3 to СК-В-4 has length of 146 m. 2 Dn 920x10 heat pipelines are laid on the designed sliding supports to replace the dismantled heat network 2 Dn 700 mm pipelines, which are laid separately in the existing channel, under the railroad tracks. All existing pipelines in passage channel of steam pipeline-4 Dn 500, steam pipeline-5 Dn 500, condensate pipeline Dn 200, East industrial zone supply system Dn 700, East industrial zone return system Dn 700 are subject to dismantling.

On the southern side of the CK-B-3a, at the nearest fixed support, the installation of 2 Dn 900 mm sectional valves is designed, then on the south side of 2 Dn 900 mm designed valves, 2 Dn 500 m jumpers are installed with the installation of shut-off valves between the designed 2 Dn 900 mm heating networks in polyurethane foam insulation and the existing pipelines. The designed heat pipelines are laid on sliding supports. The drainage devices are provided at the lowest points along the profile with output to collecting wells to empty the pipelines of the designed heating network. Air valves are provided for discharging air from the heating network.

Work performance will be guided by SNiP 3.02.01-87 "Civil works, basis and foundations".

Prior to the commencement of civil works, representatives of the construction company together with representatives of the Client shall verify the correctness of the breakdown of the heating pipeline in kind and draw up a corresponding act with the enclosed breakdown diagrams.

Trenching for laying pipelines is made on the basis of the geodetic layout, longitudinal and transverse profiles.

Anchoring the axis of the route is carried out with milestones driven into the ground after 10 m on straight lines and 5 m on curved sections, as well as at the turning angles of the route.

Prior to the commencement of civil works at the locations of existing underground lines, measures for safe working conditions must be developed and agreed with the organizations operating these lines, and the location of underground lines on the ground is indicated by appropriate signs or inscriptions.

Before starting work, layout of underground lines is to be available.

When carrying out construction and installation work in the security zone of the power transmission line, it is necessary to obtain a written permission from ChuPES (Chuy enterprise of power grids), which should indicate: the section of the operating electrical installation where the work will be carried out, the timing of the work (start and end), responsible person of the operating enterprise, who is to be informed about the completion of work, the presence of hazardous and harmful factors near the operating power line, if any.

***Table 2.* Length of start-up facility to be reconstructed**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **№** | **Name of start-up facility** | **Location** | **Length** | **Diameter of pipelines, mm** | |
| **Existing** | **To be installed** |
| 1 | Ist start-up facility | СК-В-3а до СК-В-4 | 326 m | 2 Dn 700 mm | 2 Dn 900 mm |
|  | **TOTAL** | | **326 m** |  |  |

Before starting work, it is necessary to provide ChuPES with a list of responsible work managers. The personnel carrying out the reconstruction of the heating system shall pass electrical safety training, taking into account the characteristics of the sites.

During work implementation, all works will be organized in such a way as not to impede pedestrian access and traffic, or temporary alternative access roads will be organized.

Work sites should be fenced, fences and warning signs installed to prevent accidents.

Banners should be hung with the inscription that construction works are under way to make the local population more careful.

Night lighting is to be arranged, if necessary. After the completion of construction work, all plantings will be restored in full, at a rate of 3 to 1.

## **6.1 Environmental and social benefits**

The project will have generally positive environmental and social impacts in the proposed project sites. The expected benefits of investing in Component 1 include: (i) reduction of thermal power losses and hot water leaks due to the installation of modernized heat stations, heat and hot water meters at the building level, as well as pre-insulated pipes, (ii) improvement of reliability and quality of heat supply through priority measures aimed at the most worn sections of the main distribution pipelines, and improvement of temperature regulation and consumption of thermal power at the building level, (iii) increasing the capacity of distribution networks for end users.

## **6.2 Negative environmental and social impacts**

***Environmental impacts***

It is expected that the project will cause certain short-term negative impacts on air, soil, water and noise levels, especially during construction works: noise, impact on soil and water resulting from construction work, restriction of traffic during construction and restoration works, construction dust and garbage, as well as worker safety. However, these negative impacts will be temporary and associated with the construction site, and they can be easily mitigated by the implementation of appropriate measures to prevent and (or) mitigate. Negative impacts on the natural environment, protected areas, objects of historical and cultural heritage are not expected, since the project will be implemented in urban area.

**Noise, vibration and temporary pollution of the air.** During underground, various construction works and transportation, a significant noise increase is expected. Construction facilities and equipment include excavators, stabilizers, concrete mixers, drills, car distributors, depth vibrators, concrete pumps, loading machines and other heavy machineries.

It is recommended to avoid temporary construction of barracks for housing near construction sites, because all work will be carried out in Bishkek and in the vicinity of residential areas. Workers involved in construction can be accommodated in residential areas.

Dust will be generated as a result of excavation, transportation of construction materials/waste, and freight traffic. Dust and smoke from bitumen due to road construction work will have local and temporary negative effects on air quality. A significant increase of noise levels is expected during demolition, construction and transportation, in particular during excavation, pneumatic drilling, construction cranes, dismantling or installation of equipment. Noise and vibration will cause concern of local residents if the works are carried out in the vicinity of residential areas.

During the construction period, during 8-10 hours of the working day, a large amount of construction waste will be transported to and from construction sites. Therefore, it is important to ensure that freight transport and other transport machineries do not exceed noise standards during construction work, observing noise criteria and safeguarding the local population.

Expected sources of air pollution due to construction works in this area include dust, generated as a result of: a) civil works, loading, transportation and unloading; the movement of vehicles and heavy machinery on unpaved access roads and driveways; b) preparation of construction mixtures, mixing concrete and their transportation; c) exhaust gases of vehicles and equipment.

Dust emissions are also due to site conditions, mechanization and construction management.

**Soil quality.** Rainwater from construction sites can contaminate the soil. Therefore, one of the most important tasks is to protect the rainwater sewage system so that the soil leached from the construction site does not fall into them.

**Impacts on biodiversity.** During construction works, the necessary excavation works for the construction of pipeline trenches can damage the vegetation cover and lead to the cutting of trees. In this case, 2-3 years old seedlings will be planted at a rate of 3 to 1. Pits for construction materials, disposal of excess material and waste can disturb wildlife, including affecting the natural habitat. However, since all works will be carried out mainly on the developed territory, significant damage is unlikely, as well as impacts on cultural heritage sites or the natural habitat.

**Gutter pollution.** During replacement of pipes, pumping stations and maintenance of other equipment, the water from the pipes and the heating system will turn into wastewater. Surface and ground water pollution during construction is possible due to: a) discharge of household wastewater and wastewater in the areas of construction works; b) water after washing vehicles and equipment maintenance; c) runoff of mud waters together with particles on rainy days. All measures will be taken to maximize the prevention of water leakage from the system, and washing vehicles will be carried out only on specially equipped sites.

**Seismic zone.** According to the Institute of Seismology of the National Academy of Sciences of the KR, the city of Bishkek is located in a zone of seismic activity with a magnitude of 8 and higher (8, 9 and> 9). When designing and constructing the pipeline and foundation in this area, it is necessary to study the potential seismic factors carefully.

**Formation of recovered material and construction waste.** Solid waste generated during construction is abandoned construction materials, scattered sand, stones, pieces of concrete and household waste. This solid waste is harmless, but it can affect the sanitary condition of the environment at the construction site, make it difficult to move and transport, damage the surface of roads, further increase vehicle exhaust emissions and pollute the surrounding air.

Mineral wool and asbestos wastes are also possible. These are hazardous wastes.

**Hazardous production factors due to construction works.** A direct impact on the safety and health of people during the construction of the planned heating network can be caused by various factors, for example, high-altitude work, the operation of cranes and bulldozers, welding, and sanitary conditions, work in a limited space (passage channel), etc. The potential impact on the safety and health of workers is also associated with possible work-related injuries during construction (falling pipes, structures) or contaminated drinking water or food.

**Objects of cultural and historical heritage.** There are no cultural heritage objects or resources of local or national importance near the proposed route. Provisions governing actions in case of accidental finds are included in this ESMP.

**Traffic.** Construction works and traffic can lead to traffic jams and inconvenience to the public due to: (a) increased number of vehicles for the transport of materials and construction waste; and 2) deteriorated condition of the roads after removal of pavement, civil works and leveling of the surface. This can lead to negative consequences on narrower roads and increase the flow of vehicles.

Any efforts will be taken to minimize the time construction machineries and trucks are on the road in order to prevent any incidents or damage to property. Special staff of the construction company will temporarily stop traffic, if necessary, and drivers will be warned that they should be careful. This staff will also regulate traffic when passing heavy machinery.

**Personnel Safety and health during flame and electric welding works near gas stations.** In the process of flame and electric welding works, smoke and gas are emitted, which are dangerous, therefore, their inhalation is extremely undesirable. If the work is done indoors, then there must be very good ventilation. Works should be carried out using personal protective equipment, namely a mask or goggles, in order to exclude the harmful effect of the welding arc on the cornea of the eyes. It is advisable to wear coverall suits to protect skin and protective shoes. It should be made of non-combustible material.

**Safety and health of the community.** During construction and operation the public health and safety are critical issues. Work areas will be fenced, warning signs will be displayed. In this regard, sanitary and hygienic control will be carried out, including over air quality, food quality and water supply. In addition, first-aid kits and medical services will be provided.

***Social impacts***

No land acquisition, physical or economic resettlement impacts are expected[[6]](#footnote-7).

Minimal negative social impacts are anticipated at the construction stage, and they will be limited by anxiety from noise, vibration and, possibly, some traffic disturbance in these sections of the pipeline route located near residential areas. Local residents should be notified in advance of upcoming work and a temporary break in the provision of municipal or communication services due to road works.

There is a possibility that local residents will experience anxiety caused by improper behavior of contractors, or observing the negative impacts of ongoing work, while they will not know how to voice their concerns and express their weighty word. In order to avoid the situations described above, the contracting company should prepare a Code of Conduct, including sexual exploitation and abuse/sexual harassment (SEA/SH) prevention measures, and make its employees aware of it and sign and enforce it during the implementation of the subproject.

Also, for grievances, claims and appeals of citizens, the GRM has been developed to address all the project related concerns

The Contractor shall maintain a safe buffer zone so that communities living and using the surrounding area do not have access to the construction site and are not exposed to hazardous conditions caused by construction activities.

## **6.3. Measures for mitigation of impacts**

***Environmental measures***

**Organizational measures.** All works should be performed only after obtaining the necessary permits and approvals.

Prior to the commencement of construction work, the public, local inspectorates for construction supervision and environmental protection will be provided with full information about upcoming activities through the media, social messengers or in areas accessible to the public (including work sites), as well as through public consultations on ESMP. All measures required for the implementation of environmental and social protective measures should be planned and foreseen in the budget of the work plans of the Customer, contractors and subcontractors. All works should be carried out in a safe and disciplined manner, with minimal impact on the population and the environment.

**Safety and health of the community.** During construction works the contractors will need to take safety measures at the construction site to protect workers and the public, including providing appropriate individual protective means and installing signs warning the public about potential safety risks at and around construction sites. Signs will include GRM phone numbers and contact details. Before starting construction work, workers must be informed and sign the developed and prepared Code of conduct, including SEA/SH prevention measures, and implemented during construction works. During operation stage the BTS to ensure that pipelines and equipment is maintained in a good condition, checked and repaired in a timely manner, an admission of unauthorized persons is prohibited to avoid accidents.

**Readiness to emergency situations and liquidation of consequences.** An effective plan for readiness to emergency situations and liquidation of consequences should be developed to solve dangerous situations associated with an emergency failure of the heating network pipeline during the operation phase.

**Combating air pollution, minimization of dust and noise.** Vehicles delivering small and / or bulk materials to construction sites will be covered with protective sheets. Overloading vehicles should be avoided. Vehicle speed at construction sites will be monitored.

To moisten the roads leading to the construction site, water carriers will be used twice a day in case of dry weather in accordance with the daily schedule and taking into account weather conditions. The streets will be kept clean without disturbing their durable and even surface. They will be cleaned of dust, dirt and foreign materials that have fallen from vehicles.

During construction (restoration) measures, it is necessary to store demolition waste in a controlled area, spray it with water to reduce dust formation. During the operation of pneumatic equipment / destruction of walls, supports, the occurrence of dust should be suppressed by the constant spraying of water and / or the installation of anti-dust barrier screens at the Site. Open burning of construction / waste materials at the Site is not allowed. When transporting any dust-forming materials to the recovery site, the cargo should be sprayed or covered. The formation of dust at the restoration site in the dry season can be minimized by irrigating the land.

Construction machineries will be properly maintained to minimize noise. In order to close the noise sources during the operation of the stacker, devices or methods for noise reduction (temporary fences or noise barriers) will be used.

Operation of equipment that generates high noise levels will be limited near sensitive areas (hospitals, schools, administrative buildings, etc.) and will end from 10:00 p.m. to 6:00 a.m. in accordance with national requirements. The movement of heavy vehicles on adjacent roads will also be limited from 10:00 p.m. to 6:00 a.m. For large trucks, an appropriate route will be chosen in order to avoid residential areas.

**Reducing the impact on the soil-plant layer.** On rainy days, excavation should be avoided. The removed soil top layer will be stacked. The soil from the tires of construction machineries will be regularly cleaned. After construction, the withdrawn soil will be backfilled at the same construction site. After backfilling the soil and leveling the ground, trees and grasses will be planted there. Construction workers should work in such a way as to minimize the "ecological footprint" on the site. The movement of vehicles and construction machineries is permitted only along designated access roads to prevent damage to grass and other vegetation along the site. If tree cutting is necessary within the right-of-way to provide space for leveling the line of the road, establishing roadsides or ensuring the operation of construction machineries, then strict control measures should be taken to prevent the cutting of an excessive number of trees and damage to others trees growing near. In the event that cutting of trees and bushes is inevitable, the damage will be compensated by planting trees/bushes in places agreed with the authorities.

**Prevention of soil erosion**. Civil works can be carried out for a long time along the Site and in pits. Soil compaction, improvement and restoration of excavated soil areas should be carried out immediately after completion of work in certain areas of the affected area, rather than postponing such work until the work is completed. Sawing or planting of vegetation should be undertaken as necessary to prevent erosion. The soil and plant layer must be removed from the sites and stored separately during excavation, so that it can then be used to restore the site and restore the natural vegetation as much as possible. The use of existing pits to prevent massive environmental trace should be encouraged.

**Prevention of soil and water pollution.** Maintenance and fueling of construction vehicles and machinery should be carried out in service centers located as far as possible from the site of work. In the case of performing these works at the Site, an impenetrable surface for refueling should be provided and a supply of absorbent substances should be available in case of an emergency spill. Vehicle washing should be prohibited near surface of water sources. Storage of construction materials should not be allowed, if possible. Otherwise, the construction material should be stored at the construction site, and protected from atmospheric conditions. Used motor oil, reserves of fuels and lubricants and other hazardous substances must also be stored on an impermeable surface, under a canopy, and must be protected from fire. Storage areas for such materials should be equipped in such a way as to prevent spills from being washed off to the surrounding surface.

Environmentally friendly mobile toilets and storage tanks for fuels and lubricants will be installed in the builder camp. Sewage from reservoirs of waste fuels and lubricants will be removed by a specially authorized company. Similarly, wastewater will be collected from mobile toilets, treated in septic tanks and discharged into an existing sewing system by a specially authorized local company. Unauthorized wastewater discharge is prohibited.

To prevent pollution of soil and surface ground water, an operational instruction for handling chemicals will be developed and implemented (providing, for example, storing chemicals away from water flows and allocating special places to prevent accidental pouring of toxic and harmful construction materials such as caustic and acid substances, oil and oil products). An emergency situation prevention and response plan will be developed and implemented to educate workers on the safe and proper handling of chemicals to avoid accidental spills and to respond to emergencies in the event of a spill.

In the event that residential buildings for workers are located in construction camps, they must be provided with toilets with a dry earth system (vessels), which must be cleaned and stored in strict sanitary conditions.

**Waste collection and disposal.** Waste formation will be minimized. Outdoor burning and illegal dumping of any waste is strictly prohibited.

Non-hazardous waste - demolition waste and other, as well as waste containing asbestos, will be disposed of at specially designated landfills in Bishkek. Excess excavated soil will be returned to officially designated areas. The construction contractor will need to obtain permission from the authorized bodies for waste collection.

Construction waste containing asbestos plaster, mineral wool and ruberoid will be disposed of at an officially designated solid waste landfill. The construction contractor will need to obtain permission from the authorized bodies for the disposal of construction waste.

Obsolete equipment and materials will be stored in the premises of BTS before they are sold or reused by the BTS.

Maintenance of construction machineries and vehicles will be carried out only in specialized service centers, which also accept worn tires, filters and used oil. Maintenance and repair of construction machineries at the place of work is not allowed.

Waste containers will be placed to collect household waste from the construction site and construction base. The issue of regular collection of household waste should be agreed with the Bishkek city council.

**Handling asbestos, ruberoid and mineral wool.** The general approach when handling these materials is that construction companies should not allow crushing (or) destruction of waste; ensure their burial in a closed area in order to prevent their unauthorized removal by any persons. In addition, construction companies should also not allow the release of asbestos fiber into the air as a result of crushing. Workers should wear special clothing, gloves and respirators when working with asbestos plaster, ruberoid and mineral wool. The use of asbestos-containing materials is not allowed within the project.

**The procedure for discovery of accidental finds of cultural value.** In the event of “accidental find” is discovered during excavation, the contractor must immediately stop all physical work at the Site and inform PIU. PIU shall transmit information to the Ministry of Culture, Information and Tourism, and suspend work until a written notice is received from the Ministry with permission to resume work.

***Social measures***

**Traffic and pedestrian’s safety.** Work sites, storage of waste and materials, work camps should be fenced and marked with warning signs. Access roads must be clearly marked. Work on the distribution pipeline should be planned and undertaken in such a way as to minimize traffic disturbance and risk to local residents. Personnel operating construction machineries and heavy vehicles must have the appropriate licenses and be trained; contractors and subcontractors are responsible for this.

If necessary, before the start of construction works, plans will be developed for regulating traffic flow together with local traffic control authorities. To avoid rush hours and reduce jams, the appropriate transportation hours and routes will be defined.

Pedestrians will not be allowed into the Site.

**Resolution of issue related to disturbance of local communities.** Local communities should be notified of the timing and extent of planned work. Contact details and GRM procedures will be included in the information provided to the local stakeholders. In the event that construction and restoration works cause temporary interruptions in the provision of communal or communication services, then service users must also be notified of them in advance. If work is carried out near or in the vicinity of residential areas, then working hours should be strictly limited to daytime and the area should be sprayed with water to prevent dust formation. Special signs and, possibly, a fence should be used to provide an access only for the authorized people. Speed of vehicles in residential areas should be limited. Temporary storage of construction materials and garbage, as well as parking of construction machineries should not block or restrict the access of local residents to their property and public places or, if this is inevitable, alternative temporary access roads should be arranged.

**Notification about commencement of works**. Before commencement of construction work, it is required to notify the local authorities, facilities located on the construction sites, entrepreneurs and local population via the existing channels of communication (project website, social networks, official letters etc.) about commencement of works.

**Uninterrupted traffic and free movement of people**. The work will be organized in such a way as to ensure smooth traffic and free movement of people. To minimize the impact, population, including entrepreneurs and people living in close proximity to the work sites, also drivers, will be informed 2-3 days in advance (through the project website, social networks, information stands at sites, through the media, etc.) for temporary traffic closures. Appropriate visual traffic safety signs will be installed and always displayed, especially when a temporary alternate route change is necessary. These include temporary pedestrian bridges, walkways, speed limits, parking spaces, and etc.

**Informing the local population about the interruption of network services.** Water supply, electricity, telecommunications and internet services may be disrupted for a short time during the relocation of networks. Entrepreneurs and people living in the vicinity of the work sites are informed about a date and time for interruption of communications work 2-3 days in advance (via project site, social networks, information stands at the sites, through the media, etc.) in order to minimize the impact.

Also, local administrations and related utilities will be informed.

**Restoration of land, asphalt road, fences and other facilities (if any) impacted by construction works.** All facilities dismantled by the Contractor due to construction works under this subproject will be restored by the Contractor to their original condition. All costs related to restoration of the facilities affected by the subproject will be financed by the project funds as per agreement reached between the BTS and Contractor.

**Tree planting.** Seedlings will be planted in place of uprooted trees (if any) at a rate of 3 to 1 after construction work has been completed.

**Transfer of service networks**. The Contractor is responsible for the restoration and regular dissemination of information related to the transfer of relevant communications, both municipal and private.

Preparation and development of ESMP is a mandatory document that must be followed during the implementation of the project. ESMP consists of a set of mitigation, monitoring and institutional responsibility measures that will be taken during implementation and operation to eliminate negative environmental and social impacts, their compensation, reduction to an acceptable level.

## **6.4 Grievance Redress Mechanism**

In accordance with the Law of KR "On the procedure for consideration of citizens' appeals", as well as according to the requirements of the WB policies, the GRM for Component 1 "Improving the reliability of heat supply and productivity of the district heating system" for the HSIP was developed.

The purpose of GRM is to register and address any grievances that may arise during the project implementation stage and/or any future operational issues that may potentially be resolved during the implementation phase. GRM is designed to resolve concerns and grievances quickly and transparently, without any repercussions (cost, discrimination) based on any messages sent by the project affected parties.

The GRM works within the existing legal and cultural framework, providing an additional opportunity to resolve grievances at the local - Project level.

Project beneficiaries and project affected parties (directly or indirectly, positively or negatively), as well as other citizens, can use the GRM to submit grievances and appeals.

The GRM for HSIP is managed by the PIU. Grievances and appeals can be expressed at any time during the implementation of the project.

There is no fee for submitting a grievance, appeal, comment or suggestion.

Citizens/beneficiaries/project affected parties can submit grievances and appeals related to the project-financed activities through following channels:

1) Appeals of citizens can be transferred during receptions of citizens by the management of BTS according to the reception schedule.

2) Oral or written grievances against project personnel (directly or through project meetings). If project stakeholders submit verbal feedback/grievance, project staff will submit a complaint on their behalf and will be handled through the same channels.

3) Mil boxes, located in “Bishkekteploset”, address: 2/1 Zhukeeva-Pudovkina st., Bishkek

4) Letters are to be sent to the address: /1 Zhukeeva-Pudovkina st., Bishkek, PIU/WB

5) E-mail: piu@teploseti.kg

6) Tel.: (0312) 61-11-69, (0557) 61-11-66, (0777) 61-11-66, (0701) 61-11-66

7) Web-site BTS PIU: www.teploseti.kg

The project should provide flexibility in the channels available, make sure that the addressee has different contacts to submit a verbal grievance, and grievances addressed to the wrong person or organization will be forwarded to the GRM responsible.

If the applicant is satisfied with the answer, discussions will be held in a group or individually to further clarify the positions. These meetings will be attended by senior management and the final decision on the action(s) will be made.

Grievances Redress Process consists of the following steps:

1. The first step in the grievance process will be to verbally contact a representative of the EPP/BTS or appeal by phone (BTS hotline telephone number will be also provided on the information boards of local municipalities or indicated in the announcement placed on popular public places). The EPP/BTS representative or the hotline operator will record the grievance in the special registry and notify the applicant about the receipt of the grievance. The applicant will also be informed about the duration for the consideration of the grievance and the next steps. If the grievance cannot be resolved within 5 days, then it will be reviewed at the next level.

2. The affected person should file his/ her grievance, related to any issue associated with the involuntary resettlement impacts, if any, in writing to HSIP Safeguards specialist. The grievance note should be signed and dated by the aggrieved person. Anonymous and confidential complaints will be considered too. HSIP Safeguards specialist will be the direct liaison with the complainant and define validity of grievance and notify the aggrieved person on forthcoming assistance. The answer will be provided within 14 working days, within which meetings and discussions with the aggrieved person will be conducted. The EPP/BTS will assist to the aggrieved person throughout all stages of grievance redress to ensure that the grievance is being redressed properly.

3. Depending on the nature and seriousness of the grievance, an investigation may be conducted by a special commission formed by the director of the EPP/BTS, which will include the director, the Safeguards specialist and other staffers. The information provided by the complainant will be verified by site visits, meeting with people involved in the issue, meetings with the complainant

himself/herself, review of documents, etc. The commission will then prepare a report containing recommendations and submits it to the EPP/BTS director who then makes the final decision on the grievance. The applicant is not prevented from submission a grievance outside the Project GRM if he/she is not satisfied with the proposed response.

Information about the grievances and their status will be shared with the WB on regular basis.

**Handling the sensitive grievances**

Given the standards for the prevention of sexual exploitation and abuse/sexual harassment (SEA/SH), which in accordance with the requirements of the WB, at all stages of the Project implementation, all project staff will be informed about the understanding of the principles for controlling and preventing the risks of SEA/SH. The GRM will ensure the access and confidentiality of the grievance redress mechanism and will also allow the complainant not to fear retribution. SEA/SH issues require some additional measures:

* A grievance redress mechanism will be available and will ensure the confidentiality of personal information;
* Outreach activities will be held to inform about the GRM, including sensitive grievances;
* GRM focal point for SEA/SH related concerns, if any, will be appointed by BTS PIU and communicated to locals in the project area as well as Contractor’s workers;

The principle of confidentiality of the GRM will be included in the subprojects’ ESMP and repeated in all information materials.

# **7.** **Responsibilities and institutional arrangements**

PIU will be responsible for the daily implementation of all activities under Component 1, including preparation and implementation of protection tools. As the PIU is responsible for the preparation and implementation of ESMP, the PIU will ensure that the requirements of ESMP are appropriately included in the tender documentation, and bidders properly prepared plans for the implementation of the required mitigation measures and allocate a budget to implement these measures.

Despite the fact that PIU has technical expertise, experience in implementing projects financed by the WB, including knowledge of WB safeguards and reporting requirements, is limited. In order to ensure adequate potential for the implementation of the project, the PIU will involve an environmental and social Consultant according to ToR acceptable to the WB. The environmental and social Consultant will work on the environmental and social aspects of Component 1 of the project, namely, update prepared and developed ESMP, as well as monitor the implementation of ESMP requirements and participate in the GRM.

PIU will use the GRM and coordinate its activities with a view to properly redress the various grievances and appeals received. GRM will be comprehensive and include all issues related to the implementation of the project. Also, PIU will appoint a specialist who will bear responsibility for the work on GRM.

Despite considerable efforts to manage the environmental and social risks associated with the activities of the HSIP, incidents can sometimes occur. An incident in this context is an accident or a negative event as a result of non-compliance with the requirements of national legislation and the requirements of the Bank’s safeguard policies or conditions arising from unforeseen events during implementation of the project. Examples of incidents include: deaths, serious accidents and injuries; social consequences caused by the influx of labor; sexual exploitation and abuse or other forms of gender-based violence; severe environmental pollution; loss of biodiversity or critical habitats; loss of physical cultural resources and loss of access to public resources. All such incidents should be reported immediately to PIU, and PIU should report this to the WB.

**7.1 Monitoring of compliance with safeguards measures**

The PIU will be responsible for monitoring the compliance of all project-financed activities with the social and environmental safeguard provisions of the WB applicable to the HSIP, as well as the requirements of national legislation. Environmental monitoring of the works will be carried out according to the ESMP presented in this document. The PIU will carry out this task using its own internal forces and with the help of a technical supervision consultant. Environmental and social monitoring entails regular supervision of the implementation of all physical activities carried out by contractors, impacts caused both in the work area and surrounding communities and tracking the implementation of the ESMP. An environmental monitoring form for construction supervision has been developed to help conduct environmental and social monitoring.

Compliance with the ESMP is mandatory for contractors. The contracting company must have special employees responsible for the implementation of the ESMP during the construction phase. The PIU will monitor the implementation of the mitigation measures and best practices provided for in these documents and, if any deficiencies are identified, will notify the contractors and request them to take corrective action. In the case of continuous non-compliance and violation of the requirements of the ESMP, the PIU can charge a penalty for breach of contract. The ESMPs will be included in the bidding documents for the works, which will oblige contractors to comply with the above documentation.

Monitoring of compliance with environmental and social safeguards measures, including GRM, which implies regular supervision of the implementation of all physical activities performed by contractors, impacts caused both in the work area and in the surrounding area, will be carried out by a selected and employed technical supervision consultant.

The GRM is the responsibility of the PIU, but the Technical supervision Consultant may participate in and support the PIU of the BTS in monitoring the work of the GRM.

## **7.2 Reporting and compliance with safeguards measures**

The PIU is responsible for documenting the results of environmental and social monitoring by completing and storing forms for supervising reconstruction work and preparing regular descriptive reports on the results of monitoring. These reports will summarize the conclusions of the work on the fields, analyze the general problems, explain the nature of the corrective actions developed to solve the problems, and assess the status of such actions in relation to the recommendations given in the previous reporting period. This reporting will include not only environmental and social protection provisions, but also broader environmental and social issues (for example, gender issues, the grievance redress procedure, etc.).

The PIU will submit quarterly reports to the WB on the status of compliance with the requirements of ESMP and national legislation. Analytical information on compliance with safeguards measures will become part of the annual progress reports of implementation of the HSIP. Reports will be supplemented with current photos. All field monitoring checklists and descriptive reports will be kept in soft and / or hardcopy in PIU and will be submitted to the WB upon request.

WB staff will also be visiting the site to monitor compliance with ESMP requirements.

## **7.3 Public consultations and disclosure of documents**

The PIU will be responsible for the publication of a document on environmental and social issues developed for HSIP - ESMP. Consultations with stakeholders of the project, in particular with local communities, on which the project will have a direct impact, is a prerequisite for the development of ESMP. Public comments and suggestions should be included in the above document before final development. The draft version of ESMP will be published in Russian and English on the BTS website, in the WB infoshop, the announcement of the publication and the invitation to public consultations will also be posted in the media. Not earlier than one week after the publication of ESMP, the PIU will conduct public consultations where updated ESMP will be presented, as well as answer the participants' questions and listen to their suggestions. Questions and suggestions received during the consultations will be taken into account when preparing the final version of ESMP. The final version will be posted on the BTS website and the WB infoshop. Information on public consultations held (minutes and photos of the event) will be attached to the developed and prepared ESMP.

Public consultations on ESMP were held on November 19, 2020. Public consultations were conducted remotely, online via Whats App due to imposed COVID-19 coronavirus pandemic restrictions. Participants included representatives of local authorities, business facilities located along the transmission line, management and employees of BTS and specialists of BTS PIU.

Due to the fact that the ESMP for each Site (I, III and IV) has been prepared in 2020, this ESMP-1 was updated with the results of rescreening and social due diligence conducted in late 2022, and public consultations on the ESMP updates were held on April 25, 2023. The total number of participants was 32 people. Full and detailed information on the project, approximate commencement and completion dates for construction works, potential impacts and measures to minimize and/or mitigate impacts, OP 4.12 requirements and GRM was provided.

# ***Appendix 1. General layout***

# ***Appendix 2******.* Measures to mitigate the negative environmental and social impacts**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Activity** | **Potential impact** | **Impact mitigation measures** | **Mitigation indicator** | **Costs for mitigation measures** | **Person responsible for mitigation measures** |
| **Construction/Installation stage** | | | | | |
| 1. Labor safety | Injuries and accidents on the Site during operation of cranes/excavators/bulldozers | - Provision of workers with special clothing and individual protective means;  - Strict observance of national regulations on safe operation of cranes/excavators/bulldozers; - Works, executed close to overhead lines under voltage, are to be performed under electrician control; - Installation and securing cranes and the crane motor in a stable position to prevent them from tipping over or being arbitrarily moved under their own gravity; - Inspection of operational reliability of machineries, availability of fence and protective facilities for mechanized control by civil works. Prohibition of work with failed machineries; - Instruction of workers, maintaining machineries: (a) instructions on machinery operation and maintenance of working place; (b) requirements for safety; (c) principles of signaling system; (d) maximum load and speed of machinery operation; (e) required measures, which the worker undertakes during accident or machinery failure;  - Strict observance of rules for safe operation of corresponding machinery;  - Permission to operate machines is granted only to specially trained personnel who have the necessary qualifications;  - Strict observance of following main requirements to operation of cranes and bulldozers: (a) all rotating parts of machines (gears, chains, moving parts, fans, flywheels, etc.) should be in case. Start of machinery with open case is prohibited; (b) inspection, adjustment, bolts tightening, lubrications and preventive maintenance of equipment during its operation is prohibited; and (c) it is not allowed to execute any other works and availability of people on the Site where these machineries are working. If large stones, stumps and other objects are found in the dug ground, the machine must be stopped and objects that can lead to an accident must be removed. | - Construction workers wear special clothing and adequate individual protective means during inspections; - Violations of equipment operation rules and work instructions and rules are not found out during inspection; - Machines are driven only by specially trained personnel who have the necessary qualifications. | Without additional costs: total responsibility of the contractor for execution of works | Construction company |
|  | Injures and accidents during welding works | - Strict observance of national regulations on execution of welding works;  - Provision of welders with protective equipment, rubber gloves, special boots and helmets; - Safety training for all workers prior to welding; - Strict observance of the rules for the use of protective equipment, which, at a minimum, includes: (a) respirator / welding protective masks; (b) protective clothing: the entire surface of the skin must be protected from ingress of molten metal and sparks. Protective clothes include: long-sleeved shirts; trousers that cover the upper parts of the shoe; gloves shoes or boots; (c) devices to protect the eyes from debris and from exposure to ultraviolet radiation; (d) helmets;  - Strict observance of fire safety requirements: preparation and use of fire extinguishers, as well as sand and water. | - Welders wear special clothing and adequate individual protective means during inspection; - During inspections, no violations of the welding regulations were recorded;  - Safety training records are available at the site; - there are basic firefighting equipment on the site. | Without additional costs: total responsibility of the contractor for execution of works | Construction company |
| 2. Demolition and construction | Air pollution by dust and emission | - Demolition waste should be stored in a controlled area with water spray to reduce dust formation;  - During the operation of pneumatic equipment / demolition of walls, the occurrence of dust should be suppressed by the constant spraying of water and / or the installation of anti-dust barrier screens at the Site; Adjacent sections (sidewalks, roads) should be free of construction debris to minimize dust formation; - No open burning of construction/waste materials at the Site;  - Construction machinery and machines must be in good condition to prevent excess emissions; - Excessive concentration of non-working construction equipment at the Site is not allowed. | - Demolition waste not found in uncontrolled areas and not sprayed by water;  - During the operation of pneumatic equipment / demolition of walls, the occurrence of dust is suppressed by the constant spraying of water and / or the installation of anti-dust barrier screens at the Site;  - Adjacent sections (sidewalks, roads) are free of construction debris during inspections; - No open burning of construction/waste materials at the Site is found during inspections;  - Construction machinery and machines are in good condition without excess emissions during inspections; - No complaints from people living close to the Site. | Without additional costs: total responsibility of the contractor for execution of works | Construction company |
|  | Noise | - Observe the set hours of operation; - During execution of works, the covers of generators engines, air compressors and other power mechanical equipment should be closed, and the equipment should be placed as far as possible from residential areas; - Noise-killers on mobile machines and equipment are to be used; - Preventive maintenance of equipment to reduce the noise; - Turn off unnecessary or unused equipment. | - Construction machinery does not operate in non-working hours; - construction machinery is in a good technical condition during inspections; - Unnecessary or unused equipment is not found out during inspections;  - No complaints from people living close to the Site. | Without additional costs: total responsibility of the contractor for execution of works | Construction company |
| 3. Supply of construction materials | Deliveries of poor quality materials may endanger the safety of structures and human health. | Procurement of construction materials from registered suppliers. | Supplies of high-quality construction materials with appropriate product certificates of origin. | None | Construction company |
| 4. Transportation of construction materials and garbage  Relocation of construction machinery | - Pollution due to unsatisfactory technical condition of vehicles and movement of uncovered trucks; - Disturbance of local residents due to noise and dust. | - Good technical condition of vehicles and machinery;  - Fencing and covering of cargos by special cover;  - Compliance with established working hours and transportation routes. | - Good technical condition of machines and machineries is recorded during inspections;  - No uncovered cargo was found during inspections; - Work that could disturb the population living close to the Site is not executed during non-working hours; - No complaints from people living close to the Site. | Without additional costs: total responsibility of the contractor for execution of works | Construction company |
| 5. Operation of construction machineries on the Site | - Environment pollution by emissions and leakages;  - Disturbance of local residents | - Good technical condition of construction machineries; - No excessive emissions; - No oil and lubricants leakages; - Observance of set working hours. | - Good technical condition of vehicles and machineries is recorded during inspections; - Heavy machinery and vehicles do not operate after working hours;  - No complaints from people living close to the Site. | Without additional costs: total responsibility of the contractor for execution of works | Construction company |
| 6. Construction machineries maintenance | Groundwater and soil pollution by oil products caused by equipment operation; - Fire damage. | - Washing machines and construction machineries outside the construction site or at the maximum distance from natural springs;  - Refueling or lubrication of construction machineries at pre-selected gas stations / centers | - Car wash water does not drain into water sources; - Fuel leakages are not detected at and near the construction site; - There is a basic firefighting equipment at the Site. | Without additional costs: total responsibility of the contractor for execution of works | Construction company |
| 7. Civil works | - Loss of soil-plant layer due to soil removal and particle pollution of surface water sources;  - Trees cutting. | - Separation of the plant soil layer and temporary storage for soil restoration;  - Temporary storage of soil in designated areas;  - Backfilling of the excavated soil, if necessary, and disposal of excess mass in the places indicated in the written permission;  - Limit tree cutting, where possible; - Municipal body is paid compensation for cut trees; - Determination of the necessary storage sites together with the environmental manager to prevent tree cutting;  - An inventory of large trees near the construction site should be made; it is required to put indicators, build a fence, protect the root system and prevent any damage to the trees. | - Excessive materials are disposed at agreed safe areas for long-term storage, that do not threaten the erosion of the soil and not blocking waterways;  - No residue of excess materials at the construction site after completion of work. | The Contractor should include in BOQ the cost of transportation of excess materials to the final disposal place. Compensation of cut trees should be included in the project costs. | Construction company  PIU |
| 8. Removal of aggregates | - Erosion of slopes and disturbance of the landscape;  - Erosion of coastal slopes, water pollution by heavy particles and disturbance of aquatic flora and fauna. | - Procurement of aggregates from existing suppliers, if possible;  - Obtaining a license for the production of aggregates and strict observance of the license;  - Terracing of pits, filling of used plots and planning and restoration works;  - The extraction of gravel out of the territory of water flows, the construction of watersheds between water flows and mining sites, prohibition of entry of vehicles and machinery into water flows. | - The construction contractor (in the case of mining) or an external supplier of aggregates must provide an appropriate mining license at the time of inspection;  - Mining works of a construction company (if performed) are technically feasible and comply with licensing conditions. | Total responsibility of the Contractor for execution of works | Construction company |
| 9. Household waste | - Soil and water pollution by household waste | - Placement of containers for garbage collection at the construction site and construction base (if any);  - Coordination with the Bishkek council regarding issues related to regular removal of household waste. | - Containers for garbage collection are available at the construction site of the construction base;  - Contamination of the construction site and the construction base with household waste has not been recorded. | No additional costs: total responsibility of Contractor for execution of works | Bishkek council  Construction company |
| 10. Non-hazardous construction waste | - Soil, surface water and groundwater pollution; - Incidents at the construction site due to scattered fragments of construction materials and debris;  - Deterioration of the aesthetic view of the construction site and the surrounding area. | - Temporary storage of construction waste in designated areas;  - Written agreement for the removal of excess material and construction waste was received from the Bishkek council; - Timely garbage removal to designated areas. | - Construction waste at the work site is stored in a designated place;  - There is no excess debris at the Site. | The Contractor in to include costs for garbage transportation/disposal in BOQ. | Bishkek council  Construction company |
| 11. Non-hazardous liquid waste | - Surface water and groundwater pollution; - Deterioration of sanitary conditions at the Site. | Installation and operation of toilets in accordance with sanitary standards at the construction site. | Toilets are located on the construction site and are in good sanitary condition. | No additional costs: total responsibility of the Contractor for execution of works | Construction company |
| 12. The formation of metal waste as a result of dismantling of obsolete equipment of heating stations and pipelines of heating networks | - Soil, surface water and groundwater pollution; - Incidents at the construction site due to scattered dismantled materials and equipment;  - Deterioration of the aesthetic view of the construction site and the surrounding area.. | - Temporary storage of dismantled equipment and pipes in specially designated areas;  -  - Hand over of the dismantled equipment to the operational district of BTS JSC | - Dismantled equipment and materials are collected and stored in designated areas; - Scrap metal is accepted for recycling. | To be included in project costs. | Construction company  PIU |
| 13. Formation of debris due to replacement of pipes containing asbestos (asbestos plaster), Ruberoid and mineral wool. | - Soil, surface water and groundwater pollution; - Health hazard to construction workers and others who may be at the construction site; - Health hazard for waste disposal workers and others who may be in a landfill. | - Removal of materials containing asbestos, ruberoid and mineral wool with minimal fragmentation to prevent dust formation.  - Moisturizing asbestos plaster upon removal to minimize dust formation.  - Temporary storage of disposed waste under a canopy in a specially designated place; - Timely waste removal to a specialized landfill by a closed truck;  - Filling waste with a layer of soil at the final disposal site - When working with materials containing asbestos, ruberoid and mineral wool, workers should wear protective equipment (goggles and respirators). | - Construction waste containing asbestos, ruberoid and mineral wool, is stored in specialized places at the site of work; - Construction waste containing asbestos, ruberoid and mineral wool is separated from another type of waste at the work site; - Excess construction debris containing asbestos, ruberoid and mineral wool is not stored at the Site, - During inspections, it was found that when working with materials containing asbestos, Ruberoid and mineral wool, workers wear protective means (glasses and respirators). | The Contractor is to include the cost of transportation/disposal of construction garbage, containing asbestos, ruberoid and mineral wool in BOQ. | Bishkek council  Construction company |
| 14. Planning and restoration work on the construction site | Loss of aesthetic value of the landscape due to replacement and reconstruction of the heating network. | - Elimination of the construction base and temporary access roads to construction sites (if any) and planning and restoration work  - Final cleaning of the construction site and permanent access works and landscaping. | - After demobilization of the contractor, there are no residues of the work camp at the site;  - Temporary access roads have been restored taking into account the landscape and created opportunities for the natural restoration of vegetation;  – Leveling and restoration work at the construction site has been completed, the territory has been landscaped. | Included in project costs. | Construction Company |
| 15. Cutting and planting of green spaces | Cutting trees | Planting 2-3 years old seedlings at a rate of 3 to 1 | Seedlings planted and managed | The contractor shall include the cost of the seedlings | Construction Company |
| 16. Traffic and pedestrian safety | Direct or indirect threat to the safety of traffic and pedestrians in connection with the implementation of construction activities | - The arrangement of industrial areas, their technical operation must comply with the requirements of construction codes and regulations, state standards, sanitary, fire-prevention, environmental and other applicable regulatory documents;  - Pointers, warning signs, barriers and detour;  - Internal roads of industrial territories must comply with building codes and are equipped with appropriate road signs regulating the order of movement of vehicles and construction machinaries in accordance with the Road Traffic Rules of the KR, approved by the Government of the KR dated March 3, 2009 No. 136;  - Traffic management system and employee training, especially regarding entrance to the site and heavy traffic near the city. Provision of safe passages for passengers in places of traffic obstruction.  - Adjusting hours of operation taking into account the local traffic, for example, avoiding serious transportation activity during peak hours;  - Active participation in the regulation of traffic by trained employees in clearly visible clothing on the construction site to ensure safe and convenient passage of the population.  - Industrial and work areas in settlements or on the territory of the organization should be fenced in order to avoid access by unauthorized persons. The design of protective barriers must meet the following requirements:  - the height of the fencing of industrial areas must be at least 1.6 m, and work areas - at least 1.2 m;  - fences adjacent to places of mass passage of people must have a height of at least 2m and equipped with a solid, protective visor;  - the visor must withstand the effect of the snow load, as well as the load from the fall of single small objects;  - fences should not have openings, except for gates and wickets, controlled during working hours and locked after it ends;  - the pits, holes, trenches and ditches, in places where people and vehicles move, must be fenced in accordance with the requirements of clause 6.2.2 (GOST 12.4.059-89) when carrying out earthworks on the territory of settlements or in industrial areas  - In places of transition through trenches, pits, ditches, walkways must be installed with a width of at least 1 m., fenced on both sides by handrails with a height of at least 1.1 m. with continuous sheathing at the bottom to a height of 0.15 m and with an additional guard rail at a height of 0.5 m from the deck;  - Construction sites, work areas and workplaces, driveways and approaches to them in the dark must be illuminated in accordance with the requirements of state standards. Indoor lighting must comply with construction codes.  Illumination should be uniform, without the glare of lighting devices on workers. Work in unlit areas is not allowed;  - Wells, pits and other recesses should be covered with covers, shields or fenced. In the dark, these fences must be illuminated with electric signal lamps with a voltage not exceeding 42 V. | - Proper Site security; - The site should be clearly visible and the public should be aware of all potential dangers; - Construction-related traffic regulation. | Included in the project costs. | Construction company |
| 17. All types of construction works | Lack of Public Awareness and Public Complaints | - Develop and implement, immediately after the start of the Project, a GRM to receive feedback and complaints at the local level ; - Conduct awareness campaigns through public meetings and distribution of documents related to planned activities, as well as planned measures to avoid and mitigate the potential impacts of construction work, including safety measures in the vicinity to the construction site, interruptions in heat supply, traffic regulation, employment opportunities, grievance redress mechanisms and other measures. | - GRM is in place;  - Awareness campaigns were conducted through public meetings and the distribution of documents.  - Placement of information banners at the reconstruction sites. | Included in the project costs. | PIU |
|  | Use of child labor | - Child labor is prohibited (prohibition of any form of forced labor, debt and bonded labor) | - Child labor is not used | No additional costs: the contractor's overall responsibility to perform the work | PIU |
|  | Injuries and accidents on the site of work, during the operation of tools | - Compliance with SNiP KR 12-01:2018 " Labor Safety in Construction;  - Equipping welders with protective equipment, rubber gloves, special boots and helmets;  - Conducting a briefing before the start of welding work;  - Strict adherence to the rules for the use of protective equipment, which, at a minimum, includes: (а) respirator/insulating gloves, clothing; (b) protective clothing: the entire surface of the skin shall be protected. Protective clothing includes: long-sleeved shirts; pants that cover shoe tops; gloves; shoes or boots; (c) devices to protect eyes from debris and from exposure to ultraviolet radiation; (d) helmets;  - Strict compliance with fire safety requirements: availability of fire extinguishing equipment at the work site;  - Availability of a list and phone numbers of nearby emergency services;  - Coordinate with the administration of the kindergarten/school for the hours of operation of noise and vibration tools;  - All issues are agreed with the administration and the head of the JSC. |  | No additional costs: the contractor's overall responsibility to perform the work | PIU |
|  | Gender Impact | - Sexual harassment, exploitation and abuse. | - Compliance with the Code of Conduct;  - Interaction with community residents (e.g., expressing respect and without discrimination); | Included in the project costs. | PIU |
|  | Labor inflow | - Employment of workers. | - Conclusion of employment contracts with employees;  - Signing the Code of Conduct;  - Carrying out instructions on occupational safety and health;  - Conducting a safety instruction on the precautions to prevent the spread of the Covid 19 virus. | No additional costs: total responsibility of the Contractor for execution of works | PIU |
| **Operation stage** | | | | | |
| 1. Readiness to emergency situations in case of failure of the main network | - Maintenance;  - Scheduled repairs (current and capital);  - Emergency and restoration work;  - Putting equipment into reserve or conservation and putting it into operation from reserve, repair or conservation;  - Interruption of heat and hot water supply is a concern of the consumers; - Danger to public and personnel health due to hot water leakage. | - Regular preventive maintenance of the main network;  - Emergency Readiness and liquidation Plan; - Equipment and materials, necessary for application of Emergency readiness plan are available at the sites; - Personnel is trained on measures for liquidation of emergency situations. | - Uninterruptable operation of main network and reduction of water leakages; - Security along the heating main network. | Will be included in the budget for operation and maintenance | EPP |
| 2. Health and safety of workers | Injures and accidents on pipelines | - Provision of workers with special clothing and individual protective means;  - Prohibition of work with faulty equipment;  - Instruction of workers;  - Safety compliance. | - Workers wear special clothing and adequate;  - Works are carried out with proper equipment;  - Conducted training for workers;  - Safety precautions are observed during work. |  | EPP |
| 3. Health and safety of the population | Injures and accidents on pipelines | -Maintain pipelines and equipment in a good condition, checking and repairing them in a timely manner;  - Prohibit the admission of unauthorized persons in order to avoid accidents. | -  All measures are implemented to ensure health and safety of population |  | EPP |
| 4. Cleanliness in chambers and channels | Pollution in chambers and channels | - Constantly monitor the cleanliness in the chambers and channels | - There is no contamination in chambers and channels |  | EPP |

# ***Appendix 3.* Environment and social monitoring plan**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Measure / Action** | **Parameter to be monitored?** | **Where will the parameter be monitored?** | **How will the parameter be monitored?** | **(determine frequency / or on an ongoing basis)** | **Why is the parameter monitored?** | **Who is responsible for monitoring?** |
| **During preparation for construction** | | | | | | |
| 1. General conditions | - All permits required by law; parameters are prescribed in the construction permit  – all special construction conditions imposed by various authorities | Design documentation; Permission for construction  Conclusion of the State expertise of the KR under Gosstroy of the KR and order on the right to perform civil works of the Capital Construction administration of the Bishkek council | Part of regular inspections, carried out by PIU and CDBTS | During construction/installation and till issue of Operational Acceptance certificate | Regular inspections are prescribed in the construction permit to ensure compliance with environmental requirements in accordance with laws and regulations of the KR and ESMP | PIU, Technical Supervision Consultant |
| 2. Provision of construction materials | Procurement construction materials from registered suppliers | In the storage of supplier company | Check of labels on materials and(or) certificates, if any | During signing of the contract for supply | Provide good quality construction materials and their safety for human health | PIU, Technical Supervision Consultant |
| 3. Transportation of construction materials and garbage  Reallocation of construction machineries | - Technical conditions of vehicles and machineries; - Cargo protection in the vehicle with special upholstery;  - Observance of set timing and transportation routes | Construction site; - Construction materials and garbage transportation routes | Checking the quality of roads adjacent to heat stations and the heat network in the direction of traffic according to the route | Spot checks during business hours | - Limit soil and air pollution by exhaust emissions;  - Limit the disturbance of the local population caused by noise and vibration;  - Minimize traffic stops | PIU, Technical Supervision Consultant, Main Directorate of Patrol Police of the Ministry of Internal Affairs of the KR |
| 4. Dust | Air ventilation on the Site | Construction site and access road | Visual inspection | On a recurring basis | Reduce risks for workers and people living near the construction site | PIU, Technical Supervision Consultant |
| 5. Noise | - Compliance with the schedule of working hours; - The technical condition of vehicles and equipment;  - Noise levels (in case of complaints) | Construction site | - Visual inspection;  - Measurement of noise levels by devices (in case of complaints) | - On a recurring basis - During 2 weeks after complaint | Reduce negative impact on workers and population, living near construction site | PIU, Technical Supervision Consultant |
| 6. Repair and care about construction machineries | - Washing machines and construction equipment outside the construction site or at the maximum distance from natural water flows;  - Refueling or lubrication of construction equipment at pre-approved gas stations / service centers | Construction sites | Inspection of works | Spot checks during business hours | - Prevent pollution of water and soil with oil products as a result of equipment operation;  - Locate a fire in a timely manner and reduce potential damage | PIU, Technical Supervision Consultant |
| 7. Civil works | - Removing the soil and plant layer and temporary storage for land reclamation;    - Temporary storage of dug soil in special places;  - Backfilling of dug up soil, as necessary, and transfer of excess residue to places approved in writing;  - Inventory of large trees in the vicinity of construction work, marking and fencing of large trees, protection of their root systems;  - Limit tree pruning where possible | Construction site | Inspection of works | During civil works | Limit the loss of vegetation as a result of removal of the plant layer and minimization of particle pollution of surface water sources;  - Limit contaminated soil to surface and groundwater | PIU, Technical Supervision Consultant |
| 8. Removal of aggregates | - Procurement of aggregates from existing suppliers, if possible;  - Obtaining a license for the production of aggregates and strict compliance with the license;  - Terracing of pits, backfilling of used plots and leveling and restoration works;  - The extraction of gravel out of the territory of water sources, arrangement of water lines between water sources and mining sites, the prohibition of vehicles and cars entering the water sources. | Aggregate pits | Inspection of documents Inspection of works | During civil works and recovery of pits | - Limit slope erosion and landscape damage;  - To limit the erosion of coastal slopes, the pollution of water flows by suspended particles and the negative impact on the aquatic flora and fauna | PIU, Technical Supervision Consultant, |
| 9. Household waste | - Placement of containers for garbage collection at the construction site and construction base (if any);  - A contract with the Bishkek council for regular removal of household waste | Construction site and construction base (if any) | Visual observation | Whole construction period | Prevent soil and water pollution by household waste | PIU, Technical Supervision Consultant, Bishkek council |
| 10. Non-hazardous construction waste | - Temporary storage of construction waste in designated areas;  - Timely garbage removal to officially authorized places | Construction site; Landfill | Inspection of works | Periodically during construction and after its completion | - To prevent pollution of soil, surface and groundwater;  - Prevent incidents at the ITP construction site due to scattered fragments of construction materials and debris;  - Preserve the aesthetic view of the site and surrounding area | PIU, Technical Supervision Consultant, Bishkek council |
| 11. Liquid waste formation | - Arrangement and maintenance of toilets in accordance with sanitary standards at the construction site | Construction site | Inspection of works | Whole construction period | Reduce surface and groundwater pollution | Construction contractor |
| 12. The formation of metal waste as a result of the dismantling of obsolete equipment of heating stations and pipelines of heating networks | - Temporary storage of dismantled equipment and pipes in specially designated areas;  - Transportation of dismantled equipment and pipes to warehouse of the operational district of BTS OJSC | Heat network and adjacent territory | Inspection of works | Periodically during construction and after its completion | - To prevent pollution of soil, surface and groundwater;  - Prevent accidents on the construction site due to scattered written-off materials and equipment;  - Preserve the aesthetic view of substations and the territory attached to the heating main | PIU, Technical Supervision Consultant |
| 13. Formation of debris from replacing pipes containing asbestos (asbestos plaster), Ruberoid and mineral wool | - The removal of materials containing asbestos, ruberoid and mineral wool with minimal fragmentation to prevent dust formation;  - Moisturize asbestos plaster upon removal to minimize dust formation; - Temporary storage of disposed waste under a canopy in a specially designated place; - Timely removal of waste containing asbestos, Ruberoid and mineral wool to a specialized landfill in a closed truck;  - Backfilling of asbestos, ruberoid and mineral wool containing by layer of soil at the dedicated final disposal site;  - The use of special clothing and individual protective means (PPE) (goggles and respirators) by workers and employees responsible for work with waste containing asbestos, ruberoid and mineral wool at each stage; | Construction site; Landfill | Inspection of works | Periodically during construction and after its completion | Prevention of harm to the health of construction workers and other people who may get on the construction site; - Prevention of harm to the health of workers disposing of waste and other people who might end up in the landfill | PIU, Technical Supervision Consultant, Bishkek council |
| 14. Restoration works at the construction site | - Liquidation of the construction base and temporary access roads to construction sites (if any) and leveling and restoration work;  - Final cleaning of the construction site and permanent access roads and landscaping. | Construction site, access roads | Inspection of works | Last stage of the construction | To reduce the loss of aesthetic value of the landscape as a result of the rerouting and reconstruction of the heating line | PIU, Technical Supervision Consultant, Bishkek council |
| Planting green spaces | Monitor the survival rate of greenery (care and watering of plantings) |  |  |  |  |  |
| 15. Health and safety of workers | - Construction workers using special clothing and individual protective means;  - Strict observance of the rules for the operation of construction equipment and the use of individual protective means;  - Strict adherence to laws and regulations of the KR governing construction work;    - Availability of basic firefighting equipment;  - The availability of records on attendance of training and the receipt of safety instructions | Construction site | Visual observance and analysis of submitted documentation | Whole period of works | Reduce probability of injures and accidents for builders | PIU, Technical Supervision Consultant |
| 16. Safety of population | The local population should be properly informed about the upcoming design work.  Contractor must:  - organize parking of equipment at a safe distance from social facilities;  - fence the dug trenches with warning tapes;  - install road signs, safety signs;  - provide residents with a sufficient number of safe crossing bridges. | Construction site and surrounding area | Compliance with the Code of Conduct  Visual inspection and analysis of the provided documentation | Whole period of works | In order to avoid injures and accidents | PIU, Technical supervision Consultant,  Representative of the Contractor is responsible for the implementation of measures to reduce the negative impact on the environment |
| 17. All types of construction works | - Using the mechanism for handling complaints from Project Affected Persons in order to receive feedback and facts of discontent at the local level;  - Informing the local population about planned and ongoing actions and activities undertaken to correct the negative impact;  - Clear administration of gender issues (for example, receiving complaints from women);  - Temporary job vacancies related to design work and taking into gender issues | Along the pipeline route and in adjacent territories | Study of complaint registration and feedback for complaints solution book;  - Interview with local people | During all types of physical works | - Support cooperation with project affected people and reduce their dissatisfaction with temporary inconveniencies;  - Reduce gender inequality | PIU, CDBTS, Technical Supervision Consultant |
| **Operation stage** | | | | | | |
| 1. Operation and maintenance of IHS | Regular maintenance of heating stations is conducted | HIS site | Periodical inspections | Whole operation period of the facility | - Reduce the risk for the people living near heat stations;  - Prevent failures of heat stations operation | EPP  Ministry of Natural Resources, Environment and Technical Supervision; |
| 2. Emergency readiness for accidents in the heating network | - Regular preventive maintenance of the heating network;  - - Availability of an Emergency readiness and liquidation Plan;  - Availability of equipment and materials necessary for the implementation of the Emergency readiness and liquidation Plan at the Site  - Workers trained in emergency situation liquidation | Heating networks, EPP office | - Study of readiness and liquidation plan, visual inspection of the Site | Whole lifetime of heating network operation | - To prevent failures in the operation of the heating network;  - To protect the health and safety of workers and people living near heating network. | EPP  Ministry of Natural Resources, Environment and Technical Supervision; |

# ***Appendix 4.* Minutes of public consultations**

# 

**“Heat Supply Improvement” Project, financed by the World Bank**

**Place:** Bishkek (online by Whats App)

**Date:** 25.04.2023 at 10:00 o’clock - 26.04.2023 at 10:00 o’clock

**Total participants:** 32 persons

Public consultations were held in order to comply with the requirements of environmental and social standards of the World Bank and national legislation of the Kyrgyz Republic, as well as to inform stakeholders about the main objectives of the "Heat Supply Improvement" Project.

Heat supply Improvement Project is financed by the World Bank.

**Project budget:** 31 million USD.

**Project implementation period:** 2019-2023.

Heat supply improvement Project (HSIP) in the Kyrgyz Republic (KR) aims to improve effectiveness and quality of heat supply in the project target areas. Direct Executors of the HSIP are OJSC “Electric Power Plants” (EPP[[7]](#footnote-8))) and the Community Development and Investment Agency (ARIS). For project components which will be financed by the World Bank (WB) and executed by “EPP” and ARIS in accordance with WB procedures the Environmental and Social Management Framework (ESMF) was prepared which defines procedures and measures for prevention of negative consequences for the natural and social environment. ESMF passed public consultations and was approved by WB, EPP and ARIS. Its execution is obligatory for all Project participants.

In accordance with ESMF requirements, the Environmental and Social Management Plan (ESMP) is to be developed for each project component which takes into account specific types of work and location of the component.

ESMP includes procedures and mechanisms, which will be involved by the Project in order to provide the safeguards policy of the WB 4.01 “Environmental assessment” and OP 4.12 policy “Involuntary resettlement” and also legislation and regulatory acts of the KR, regulating preparation and execution of environmental requirements and requirements for health protection and safety of workers at the Site and population during execution of works.

ESMP will ensure the environmental and social sustainability of the Project throughout the implementation cycle, as well as provide engineers and consultants with the appropriate institutional and regulatory framework for future processes and procedures that must be followed during:

* identification of mechanisms for ESMP implementation, including assessment of conflict factors;
* development of working documentation with integration of measures to mitigate social and environmental impacts, environmental monitoring and institutional responsibility in the overall project implementation plan by inclusion of ESMP in the tender documents to ensure financing and supervision with other project components;
* identification of environmental monitoring requirements and institutional strengthening measures that contribute to the safe execution of work, as well as obtaining beneficial effects of this project.

Heat Supply Improvement Project (HSIP) in the Kyrgyz Republic (KR) aims to improve the efficiency and quality of heat supply in the project target areas:

(1) improving the reliability and efficiency of the district heating system (DHS) in Bishkek,

(2) improving energy efficiency of public buildings.

Implementation of HSIP will have a positive environmental and social impact and favorably affect the proposed project sites:

1. effectiveness and quality of thermal power supply for heating and hot water supply will be increased.

ESMP is a mandatory document that must be followed during the implementation of the project.

ESMP consists of a set of mitigation, monitoring and institutional responsibility measures that will be taken during implementation and operation of facilities to eliminate negative environmental and social impacts, their compensation, or reduction to an acceptable level.

Environmental monitoring will be carried out in accordance with ESMP.

Environmental and social monitoring involves regular inspection of all physical activities sites under the Project and monitoring the implementation of ESMP. Contractors are required to comply with the developed ESMP of the Project.

Consultations with project stakeholders, especially with the local community, which will be directly affected by the Project, are a mandatory requirement for the development of ESMP.

Public comments will be considered in this document until they are finalized. After the development and approval of the WB, ESMP will be published in Russian and English on the BTS website ([www.teploseti.kg](http://www.teploseti.kg)), in the infoshop of the WB ([www.worldbank.org](http://www.worldbank.org)),

**Agenda:**

Environmental and Social Management Plans (ESMPs), Grievance Redress Mechanism (GRM), developed for Heat Supply Improvement Project.

*The public consultations were attended by representatives of:*

“Gazprom” gas station, “SHNOS” gas station, “Ekdan” LLC, IUK, OJSC “BishkekNAN” OJSC, “Media Forum” OJSC, “Dubrovskiy” café, “Dasmiya” café.

*Specialists of the branch of OJSC “PP” – “BTS”:*

Manager of the Capital Construction Dpt. – Рryspaev K.K.

Manager of the Legal Dpt. – Sayfudinov A.B.

Dty. Chief of the Central district, 1st site – Fyonov P.V.

Leading Engineer of the Capital Construction Dpt. – Rybalkin P.V.

PIU Manager – Kurumshiev N. Dzh.

Procurement specialist – Sharshekeev N.

Environment and Social consultant of PIU – Jumaliev K.

A total of 32 people took part. The registration list is attached.

Jumaliev K. welcomed each of the participants of the public consultations. After that, he familiarized all the participants with the "Heat Supply Improvement" project financed by the WB. He introduced the objectives of the project, components, planned activities, project budget and implementation mechanisms.

He also informed the participants about the purpose of the public consultations. All participants may ask relevant questions and leave their comments and suggestions.

He acquainted the participants of the consultations with the prepared and approved documents for this project. Environmental and Social Management Framework Document (ESMF) which can be found on the website by the following link <http://www.teploseti.kg/content/articles_view/895>. Resettlement Policy Framework (RPF) - <https://teploseti.kg/content/articles_view/895>, Environmental and Social Management Plans (ESMP) which are prepared separately for each Site and can be found on the website <http://www.teploseti.kg/content/articles_view/1389>, Grievance Redress Mechanism (GRM) which is approved and allocated on the website <https://teploseti.kg/uploads/download/34a8569a825e8909d15b67f6bf57e021.pdf>, the objective of which is registration and consideration of any grievances which can occur during project implementation stage, and/or any future operational problems, which can be solved during implementation. The WB's environmental and social standards, the possible environmental and social impacts of project activities, and the measures being taken to prevent and/or minimize the expected negative impacts were covered in detail. He noted that the WB pays great attention to compliance with environmental and social standards, which detail environmental and social risks, the effects of involuntary resettlement and access restrictions, gender-based violence, child labor, health, safety and security in construction work, and accessibility and disclosure to all stakeholders.

Participants then moved on to questions and active discussion:

*Question 1.* Baykulov R.S. (Dty. Director of “Global Asia Properties” LLC)

I would like to know when will works be completed on the first site?

*Answer 1.* Ignatenko V.G. (Contractor)

Planned completion date is October, 2023.

*Question 2.* Mansurov L. (Director, TC "Energiya")

Good morning. Armeyskaya 150/1. When will works be started on the third site?

*Answer 2.* Ignatenko V.G. (Contractor)

Works on third site are already in progress.

*Question 3.* Nadyrbekov Sh. (Director, “Ekdan” LLC)

The commencement and completion of construction work, i.e., the timing of the construction of the 3rd section? How will heavy vehicles enter our area? Will everything be restored when construction is complete?

*Answer 3.* Jumaliev K. (Environment and social consultant)

The terms of construction work - March 2023-October 2023 During the construction work unimpeded access for the passage of heavy vehicles will be provided, as the entrance to your company can be done from two sides. After the construction work is completed, the entire area will be restored and brought to its original condition.

*Question 4.* Nadyrbekov Sh. (Director, “Ekdan” LLC)

Are these ESMP documents, which have been sent to our Whats App group for review, final?

*Answer 4.* Jumaliev К. (Environment and social consultant)

No, these are preliminary documents. The final documents will be published on the BTS website and in the World Bank infoshop after public consultations.

*Question 5.* Sherimkulov B.S. (Dty. General Director, “Bishkek NAN” OJSC)

A high-voltage cable was damaged during excavation. Who is responsible for this?

*Answer 5.* Ignatenko V.G. (Contractor)

The high-voltage cable has been restored.

*Question 6.* Turusbekov M. (Director, “Boston” LLC)

Who will monitor the quality of ongoing work?

*Answer 6.* Rybalkin P.V.

A company for technical supervision was selected in order to ensure that the work was carried out qualitatively. Also, the DED company will carry out the design supervision. The BTS Capital construction Dpt. will also conduct regular monitoring.

*Question 7.* Aytmatov K.T. (“Gazprom” gas station Manager)

When do you plan to start works on 4th section?

*Answer 7.* Ignatenko V.G. (Contractor)

Planned commencement date is March 2024.

*Question 8.* Mansurov L. (Director, TC "Energiya")

In case of any questions or disagreements on the work in progress, will a representative be appointed to whom we can report, contact? For example, a pile of gravel unloaded on the way, or do not allow to pass due to ongoing work or special machineries?

*Answer 8.* Jumaliev К. (Environment and social consultant)

The GRM has been developed and is in operation as part of the project. This document is published on the BTS website. There are information boards with contact details at the construction sites. In addition, the GRM document is published in this Whats App group.

Citizens/beneficiaries/affected parties may submit complaints and appeals about project-financed activities through the following channels:

1) Appeals of citizens may be transferred during receptions of citizens by the management of BTS according to the reception schedule.

2) Oral or written grievances against project personnel (directly or through project meetings). If project stakeholders submit verbal feedback/grievance, project staff will submit a complaint on their behalf and will be handled through the same channels.

3) Mail boxes, located in “Bishkekteploset”, address: 2/1 Zhukeeva-Pudovkina st., Bishkek

4) Letters are to be sent to the address: /1 Zhukeeva-Pudovkina st., Bishkek, PIU/WB

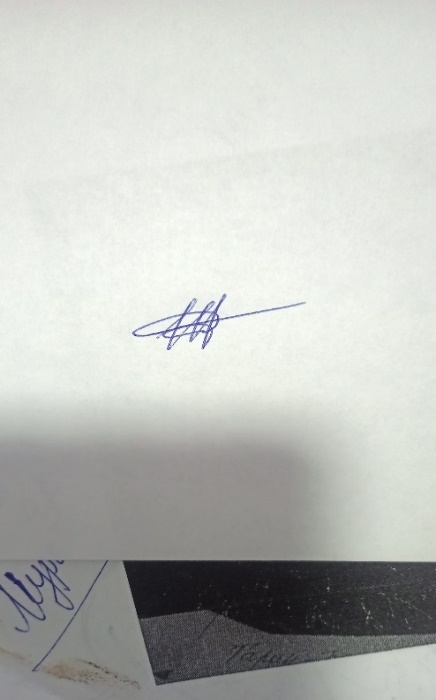
5) E-mail: [piu@teploseti.kg](mailto:piu@teploseti.kg)

6) Tel.: (0312) 61-11-69, (0557) 61-11-66, (0777) 61-11-66, (0701) 61-11-66

7) Web-site BTS PIU: [www.teploseti.kg](http://www.teploseti.kg)

Jumaliev K.B.

Environmental and Social Consultant

Signature: 

Date: 26.04. 2023.

**Public Consultation registration list**

**Heat Supply Improvement Project financed by the World Bank**

**Place:** Bishkek (online by Whats app)

**Date:** 25.04.2023 at 10.00 o’clock – 26.04.2023 at 10.00 o’clock

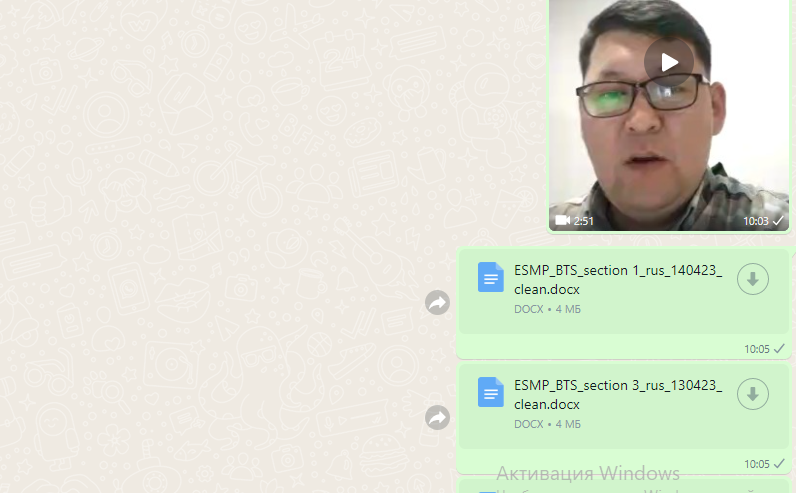
**Participants:** 32 persons

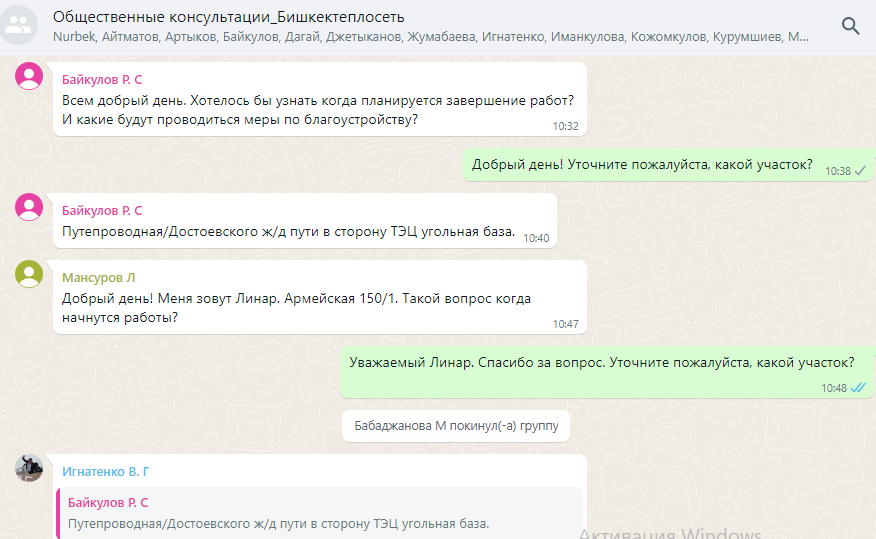
|  |  |  |  |
| --- | --- | --- | --- |
| **No.** | **Name** | **Position** | **Phone No.** |
| **1** | Semenyak P.A. | Leading operation specialist, “Gazprom” gas station | 0550 04 11 55 |
| **2** | Aytmatov K.T. | “Gazprom” gas station Manager | 0770 962 106 |
| **3** | Sherimkulov Z.K. | “BishkekNAN” OJSC Chairman of BD | 0552 62 77 35 |
| **4** | Sherimkulov B.S. | “BishkekNAN” OJSC Dty. General director | 0552 62 77 35 |
| **5** | Nadyrbekov Sh. | Director, “Ekdan” LLC | 0508 78 18 11 |
| **6** | Turusbekov M. | “Boston” LLC, Director | 0507 50 80 08 |
| **7** | Tazhimyrzaev E. | “Novaya gruppa” LLC, Director | 0557 22 14 29 |
| **8** | Mansurov L. | TC “Energiya”, Director | 0709 67 00 55 |
| **9** | Babadzhanova M. | Commandant, IUK | 0700 46 16 24 |
| **10** | Tologonova B. | “SHNOS” gas station, Sales Dpt. Manager | 0555 15 15 45 |
| **11** | Kozhomkulov D.N. | “Media Forum” OJSC, General Director | 0502 52 52 03 |
| **12** | Shabanov V.A. | “Media Forum” OJSC, Engineer | 0550 30 40 81 |
| **13** | Imankulova B. | Commandant, VK | 0500 62 02 94 |
| **14** | Topilskiy R.Sh. | “Dubrovskiy” café, Manager | 0557 74 42 11 |
| **15** | Dzhyldysbek I. | “Dubrovskiy” café, Administrator | 0502 910 000 |
| **16** | Mamashov T.Ch. | “Dasmiya” café, General Director | 0555 52 10 50 |
| **17** | Bakyt Zholdoshbay uulu | “Dasmiya” café, Vice-president | 0555 92 99 93 |
| **18** | Zhumabaeva V.M. | “Dasmiya” café, Technical director | 0778 55 77 44 |
| **19** | Raenko A.A. | “Global Asia Properties” LLC, Site director | 0555 188 779 |
| **20** | Baykulov R.S. | “Global Asia Properties” LLC, Dty. Site director | 0557 970 707 |
| **21** | Dzhetygaziev B.Dzh. | Housing and Communal services, MTU 6, Chief specialist | 0502 291 992 |
| **22** | Artykov Z.K. | MTU 6, Dty. Manager | 0500 157 770 |
| **23** | Ignatenko V.G. | Contractor | 0770 837 008 |
| **24** | Dagay Yan V. | Dty. Chief Engineer for heat supply, branch of OJSC “PP”-“BTS” | 0500 553 553 |
| **25** | Soodonbekov M.M. | Chief of Central district, branch of OJSC “PP”-“BTS” | 0554 766 878 |
| **26** | Fyonov P.V. | Dty. Chief of the Central district, 1st site, branch of OJSC “PP”-“BTS” | 0555 996 471 |
| **27** | Sayfudinov A.B. | Legal Dpt., branch of OJSC “PP”-“BTS” | 0551 777 088 |
| **28** | Ryspaev K.K. | Capital Construction Dpt., branch of OJSC “PP”-“BTS” | 0555 440 804 |
| **29** | Kurumshiev N. Dzh. | PIU Manager, branch of OJSC “PP”-“BTS” | 0772 529 321 |
| **30** | Rybalkin P.V. | Leading Engineer of Capital Construction Dpt., branch of OJSC “PP”-“BTS” | 0555 789 031 |
| **31** | Sharshekeev N.Zh. | PIU procurement specialist, branch of OJSC “PP”-“BTS” | 0700 209 341 |
| **32** | Jumaliev K. | Environment and social consultant, branch of OJSC “PP”-“BTS” | 0505 981 066 |

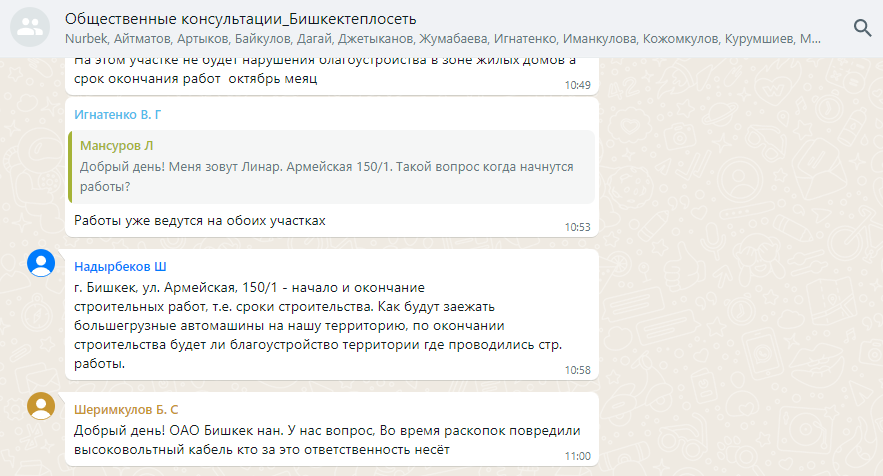
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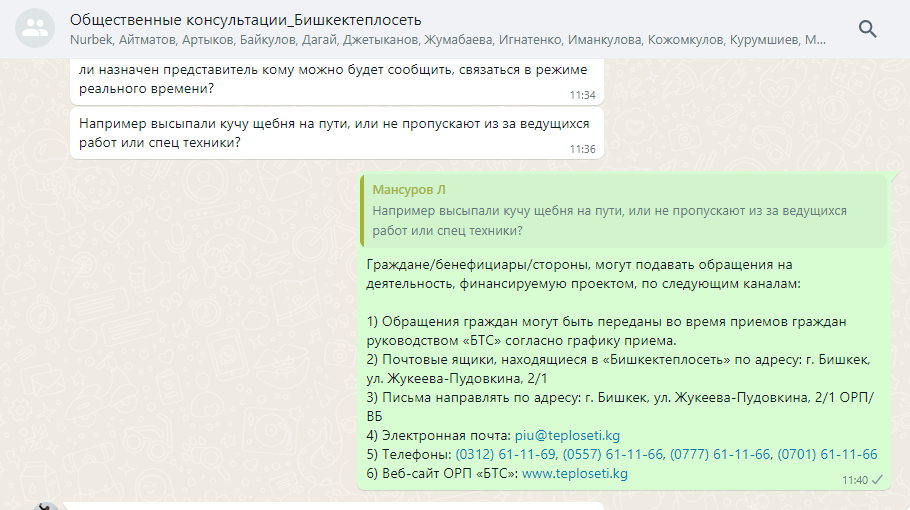
Jumaliev K., Environment and social Consultant 26.04.2023

**Screenshot of public consultations**









# ***Appendix 5.* Conclusion of the State Ecological Expertise**

Kyrgyz Agency for environment protection

and forestry under the Government of the Kyrgyz Republic

Chuy-Bishkek territorial Agency

42 Mederova, Bishkek,

720031 Kyrgyz Republic

Approved by Manager of Chuy-Bishkek territorial Agency of the State Agency for environment protection and forestry under the Government of the Kyrgyz Republic

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Kydyrgychev A.A

21.11.2018

Conclusion of the state environmental expertise of the Project

“Reconstruction of section of “Vostok” main heating network from CK-B-3a to HC No. 4

(I, III, IV start-up facilities)

No. 502/P192B dtd. 21.11.2018

OJSC “Bishkekteploset”

Chuy-Bishkek Agency of the State Agency for environment protection and forestry under the Government of the Kyrgyz Republic received a following project for environment expertise:

**“Reconstruction of section of “Vostok” main heating network from CK-B-3a to HC No. 4**

**(I, III, IV start-up facilities),** developed by “Gorproject” LLC in 2018.

The following documents are submitted for review:

1. Design. Drawings
2. Environmental impacts report

Design for “Reconstruction of section of “Vostok” main heating network from CK-B-3a to HC No. 4 (I, III, IV start-up facilities) is developed in accordance with the assignment, issued by OJSC “Bishkekteploset”.

The heating network is laid in the eastern part of Bishkek. Reconstruction of section of “Vostok” main heating network from CK-B-3a to HC No. 4 (I, III, IV start-up facilities)

The seismicity of the construction site is 9 points. Soils - gravel with sand filling. There is no groundwater in the construction area.

Design for “Reconstruction of section of “Vostok” main heating network from CK-B-3a to HC No. 4 (I, III, IV start-up facilities – sites on Dostoevskiy st from CK-B-3a to CK-B-4 and on Shabdan Baatyr from TK “Radiozavod” to HC No. 4) is developedin accordance with engineering assignment, issued by “Bishkekglavarchitectura” and assignment of OJSC “Bishkekteploset”. fl

The relief of the site is flat. The soils are gravel. Groundwater level - low standing, more than 10 m.

Construction work is divided into periods: preparatory, surveying work, the main period.

The following is proposed to execute during preparatory period:

- the soil and vegetation layer, up to 200 mm thick, is excavated, removed and stored separately;

- existing irrigation network along sidewalks is dismantled;

- asphalt cover is dismantled;

This phase of the work will generate construction and solid waste, with the demolition of structures and the dismantling of the asphalt sidewalk and road. Topsoil will be removed during excavation and grading work. Emission of pollutants into the atmosphere will occur during the operation of technological equipment and road transportation.

At the stage of construction of the geodesic partitioning basis the impact on the environment will be minimal.

At the stage of the main period of construction it is planned to perform: excavation work, installation of bases of heating mains, installation of prefabricated structures of heating mains, installation of pipelines, hydraulic testing of pipelines, laying trays and heating pipes, backfill trench with optimal gravel mixture (a thickness of 20-25 cm), compacting by pneumatic compactors and the upper layers with light self-propelled rollers, in summer with watering, along the restored sidewalk mounted new irrigation network, a new sidewalk surface arrangement, the pavement of the roadway of the streets is being arranged, and the topsoil is being delivered and placed.

At this stage, the impact on the environment will be maximum. During the works, pollutants will be emitted during welding works, excavation and transportation of soil, sand, installation of pipeline bases and installation works using process equipment, operation of internal combustion engines of vehicles and machineries, painting and insulation of pipelines, delivery and storage of bulk materials.

The formation of solid waste is envisaged during construction. Installation of all pipes is carried out by welding. Heating chambers are installed at the junctions and tapping of pipelines. The heating network pipelines will be insulated in accordance with SNiP 2.04.14.88. The surface of the pipes is cleaned from rust to a shine and covered when laying in impassable channels with four layers of AS-8a organosilicate paint with TBT hardener before applying insulation. Pipelines laid within the chambers are painted with oil paint twice.

To prevent pollution and minimize the harmful impact on the environment, it is necessary to implement the following environmental measures:

* irrigation with a sprinkler is necessary to suppress dust on the roads and construction site;
* it is necessary to provide a storage area with shelters for storage of bulk materials, loading and unloading should be carried out in calm weather;
* transportation of inert materials shall be carried out closed;
* it is necessary to carry out technical inspection and adjustment of transport and construction machineries;
* repair and adjustment of transport mechanisms to be carried out on the territory of car parks;
* refueling machineries shall be done at gas stations;
* spills on the ground shall be prevented when painting and waterproofing pipelines;
* observe the maximum noise limit of up to 70 dB at a distance of 7 m when operating technological equipment;
* store production waste at a specially designated site in compliance with storage standards and, if possible, send it to workshops for processing and recycling;

The following equipment and vehicles running on diesel fuel will be used in the construction work: 2 cranes KS-3575A, a wheeled excavator EO-3322, a bulldozer DT-42, a vibratory roller, a watering machine, 5 KAMAZ dump trucks, as well as 2 manual pneumatic rammers.

Imported water supply. Water is delivered by a watering machine with a tank capacity of 6 m3. Drinking water is used for household and industrial needs.

Drinking water from the city water supply system will be used to carry out pipelines hydraulic test, the water will be discharged into the city sewer after tests.

It is planned to use a watering machine for dust suppression on roads and construction sites.

Solid domestic waste is stored in metal containers installed on a hard-surface site.

Waste oils should be stored in metal or plastic drums or cans placed on metal pallets.

Batteries shall be stored indoors, not accessible to strangers, on racks.

The results of the inventory of sources of emissions of harmful substances into the atmosphere were used as the initial data for the calculation of emissions of harmful substances into the atmosphere.

Having considered the submitted materials, the expert commission of the Chui-Bishkek Territorial Department of the State Agency for Environmental Protection and Forestry under the Government of the Kyrgyz Republic approves the project "Reconstruction of the section of “Vostok” main heating network from CK-B-3a to HC No. 4 (I, III and IV start-up facilities)”.

Chairman of the Expert Committee Mambetzhanov B.M.

Members of the Expert Committee:

Leading specialist Kasymova B.T.

Head specialist Kulumbaev M.T.

1. In July 2022, OJSC "Bishkekteploset" (BTS) was merged with JSC "Electric Power Plants" (EPP), with “EPP” becoming the successor of all obligations of BTS under the "Financing Agreement", "Subsidiary Agreement" and "Project Agreement" for the Heat Supply Improvement Project. [↑](#footnote-ref-2)
2. <http://teploseti.kg/content/articles_view/895> [↑](#footnote-ref-3)
3. <http://teploseti.kg/content/page/76> [↑](#footnote-ref-4)
4. <http://teploseti.kg/content/page/76> [↑](#footnote-ref-5)
5. <http://teploseti.kg/content/page/76> [↑](#footnote-ref-6)
6. <http://teploseti.kg/content/page/76> [↑](#footnote-ref-7)
7. In July 2022, OJSC "Bishkekteploset" (BTS) was merged with JSC "Electric Power Plants" (EPP), with “EPP” becoming the successor of all obligations of BTS under the "Financing Agreement", "Subsidiary Agreement" and "Project Agreement" for the Heat Supply Improvement Project. [↑](#footnote-ref-8)