

UKRAINE DISTRICT HEATING ENERGY EFFICIENCY PROJECT

**Municipal Public Utility
“KHERSONTEPLOENERGO”**

Environmental and Social Management Plan
Kherson
(for the projects of B category)



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Abbreviation

AbRAP ASC (SCADA)	Abbreviated Resettlement Action Plan Automated system of communication and control Supervisory Control And Data Acquisition
CTF CH CPMU CHS DH	Fund of Clean Technologies Centralized Heating Central Project Management unit Central Heating Substations District Heating
Derzhprodspozhyvsluzhba	State Service of Ukraine for Food Safety and Consumer Protection
EA EIA EHS ESMP	Environmental Assessment Environmental Impact Assessment Environmental, Health, and Safety Guidelines (IFC World Bank) Environmental and Social Management Plan
FM FAT GHG GoU	Financial Management Fund of appropriate technologies Green House Gases Government of Ukraine
GRM IFC IHS Minprirody	Grievance Redress Mechanism International Financial Corporation Individual Heating Substations Ministry of Ecology and Natural Resources of Ukraine
Minregion MM MPU	Ministry of Regional Development and Utilities Sector of Ukraine Mass Media Municipal Public Utility
NGPA NPA NAP	Non-governmental public association Notice on Planned Activity National Association on planning
OP 4.01 OP 4.12 PAP PLESA POM PIU PA PAS Project/ UDHEEP	World Bank Policy on Environmental Assessment World Bank Policy on Involuntary Resettlement Project Affected Person Program Level Environmental and Social Assessment Project Operation Manual Project Implementation Unit Planned Activity Public Association Ukraine District Heating Energy Efficiency Project
REIA RPA RPIU	Report on Environmental Impact Analysis Report on Planned Activity Regional Project Implementation Unit
SEP SEA	Stakeholders Engagement Plan Strategic Environmental Assessment
VRU	Verkhovna Rada of Ukraine (Parliament)
WB WHP	World Bank Worldwide Healthcare Organization

INTRODUCTION

The project " **Ukraine District Heating Energy Efficiency Project** " (hereinafter referred to as the "**Project**") aims to increase energy efficiency and quality of servicing selected selected heat supply companies, increase their financial viability and improve the environment. The global goal is to reduce greenhouse gas emissions by preventing heat generation by increasing the efficiency of heat production, reducing heat losses in heat transfer and distribution systems, and reducing the consumption of heat in the residential sector.

The main beneficiaries are the heat supply company. Additional beneficiaries are residential customers who will benefit from more reliable, high-quality services provided by participating companies.

For the consumers of Kherson city, implementation of the Project will ensure a stable supply of heating and hot water throughout the year. The implementation of the Project will allow the Khersonteploenergo to modernize the heat supply system as a whole, introduce energy and resource saving materials and technologies, implement dispatching and automated control systems for the entire company, and improve the system of measuring consumption. The project implementation should become a gradual step in the supply of heat and hot water in Kherson.

Institutional Arrangements the Minregion is the line ministry responsible for implementation of projects in the municipal sector, including project preparation, supervision, and monitoring and evaluation as well as for review of projects' evaluation results. Accordingly, Minregion carries out such functions for this project. A *Central Project Management unit* (CPMU) was created around an existing PIU in Minregion implementing the CTF Project Preparation Grant. The responsibilities of the CP"MU includes: reporting to the Bank; providing procurement and FM support to the local PIUs; aggregating data and reports; checking invoices and delivering them to the Ministry of Finance; supervising quality of service surveys; and monitoring and evaluation. The existing CPIMU's capacity was increased by adding procurement, FM, engineering, safeguards, and accounting specialists.

DH regional company –MPU Khersonteploenergo – is a sub-borrower for the project and shall be responsible for implementing its Energy Efficiency Investments in accordance with POM, PLESA and shall maintain its *Regional Project Implementation unit* (RPIU) throughout duration of the Project. *MPU Khersonteploenergo* has established a RPIU, using its existing staff, comprised of a: Director, Procurement Specialist, Financial Management Specialist, Technical Supervisor (engineer), and Safeguards Specialist, accountant. The responsibilities of the RPIU within the DH companies will include: preparing tender documents, preparing technical specifications, leading procurement and FM processes according to World Bank guidelines, supervising physical works, conducting environmental and social assessments, monitoring and evaluation, and preparing progress reports. The RPIU is supervised by Minregion.

Contractor is an independent entity that agrees to render services that meet or exceed stated requirements or specifications, at a mutually agreed upon price and within a specified timeframe to another independent entity called contractee, principal, or project owner. The contractor will be selected by the RPIU according to the procurement procedures of WB.

Subcontractor is a junior or secondary contractor who contracts with a prime contractor (and not the principal or owner of the project) to perform some or all the prime contractor's contractual-obligations under the prime contract.

Construction Supervision Consultant is the entity assigned by the RPIU to represent them onsite and to conduct Inspections for Quality Control, Construction Methods, Cost Saving, etc. and to ensure that the Construction is being performed in accordance with the design and contract documents.

Project objective and activities. The main objective of the project is to improve the quality, reliability and availability of heat and hot water supply service from existing resources. The implementation of the components of the investment program will reduce emissions of greenhouse gases (carbon dioxide) and nitrogen oxides due to increased efficiency of the technological process and reduced heat losses in district heating networks.

The project envisages:

- execution of reconstruction of 6 boiler houses and heating networks with installation of energy efficient boilers equipped with modulated burners with oxygen and frequency regulation (allows to smoothly regulate flaming flames and reduce natural gas consumption up to 15%);
- reconstruction of 1 central heating substation
- reconstruction of heating networks
- technical modernization of 15 boiler houses with installation of automatic working system for the equipment with temperature regulation of source depending on outside weather conditions;
- technical reconstruction of 140 engineering inputs of multi-apartment houses with installation thermal energy meters;
- installation in basements of 13 houses of individual heat points with the transfer of heating systems of houses on an independent circuit with the replacement of in the distribution of heating networks.

The works will be carried out in two districts of Kherson.

It is expected that the rehabilitation works would start in third quarter of 2018 and are scheduled to be finished by third quarter of 2020. The works shall not be performed during heating season.

For obtaining environmental and financial benefits, the enterprises involved in this investment project plan optimize heat production processes and rehabilitate the district heating systems..

Anticipated Impacts. Project is expected to have positive social impacts on a broad range of stakeholders and beneficiaries, including the following: residential, public and commercial customers served by MPE “Khersonteploenergo”, who will directly benefit from upgraded heating system, installed heat and hot water meters and the modernized transmission pipeline section чікується.

Negative social impacts are minimal. Although, there is a deep-seated mistrust on the part of the population that do not believe that any reforms will improve services delivery and resources will be used as intended. Social tensions in the country due to constantly increasing utilities bills, coupled with a lack of accountability in the sector, and limited information about government priority investments in the sector can pose risks for the project. These risks will be mitigated by the careful targeting of beneficiaries, broad information campaigns and citizen engagement activities to improve transparency and accountability of the sector, client-customer relations and community engagement. A beneficiary satisfaction survey is being developed and this will provide baseline information on current perception on the public regarding existing service provisions and their suggestions a for improvements.

World Bank (WB) Safeguard Policies and project's environmental category. WB Safeguard policies reflect principles and procedure to be followed by the Borrower and the Bank in order to:

i) ensure mitigation and oversight to level of risk and impacts of project; ii) inform the public and enable people to participate in decisions which affect them; iii) integrate environmental and social issues into project identification, design and implementation; iv) strengthen capacity of Government Agencies.

WB Safeguard Policies require Environmental and Social Screening for the projects for potential adverse environmental and social impacts. Although, major construction works will not be part of these project, part of the civil works will be performed in the territory of on sites owned by the MPE "Khersonteploenergo", replacing the heating networks in many areas will be in the vicinity of residential buildings. So, for the reasons of high social significance the project has been assigned Category B. For Category B Project Environmental and Social Plan should be developed and implemented throughout the project.

Environmental and Social Management Plan. ESMP is considered as a mandatory document which should be followed during the project implementation. An ESMP is developed on the basis provided by Program Level Environmental and Social Assessment (PLESA) and consists of the set of mitigation, monitoring, and institutional responsibility measures to be taken during implementation and operation to eliminate adverse environmental and social impacts, offset them, or reduce them to acceptable levels.

The project ESMP includes a description of the policies, legal, and administrative framework in place in Ukraine regarding ESA, environmental management and the technical norms for centralized heating sector.

This ESMP provides mitigation measures to cover typical impacts from rehabilitation / construction of heating networks, upgrading equipment at substations, including workers' health and safety, earthworks, and solid

and hazardous waste management, welding works, activity with power tools, lifting works, and construction related social issues. It contains ESMP arrangements implementation and monitoring plan for it, as well as a short analysis of project beneficiary (MPU “Khersonteploenergo”), EA capacity and ESMP financing sources.

The measures and procedures outlined in this ESMP are commitments made by the Borrower, therefore the Borrower remains responsible for their implementation. It is recognized that practical implementation of many of the measures may rest with contractors and subcontractors and consequently, RPIU will require the implementation of a robust review programme, as described in this ESMP, to measure and control that it is executed on their behalf. All contractors and subcontractors shall comply with the ESMP requirements as applicable to the tasks they are employed to undertake.

Environmental and Social Mitigation Measures. The ESMP stipulates all adverse social and environmental impacts associated with the project will be prevented, eliminated, or minimized to an acceptable level. This can be achieved through continuous refinement and effective implementation of the environmental mitigation measures that would avoid or minimize potential adverse impacts on the environment of surrounding urban areas; replacing of old pipes and pumps and conducting rehabilitation works in a way that would prevent as much as possible cutting of trees, destroying of landscape, pollution of air and soil; ensuring labor safety and health impacts during welding operations, avoiding /minimizing land acquisitions and resettlement impacts, inconvenience to the public during the constructions etc.

Environmental and social monitoring. Environmental monitoring during project implementation provides information about the project environmental and social impacts and the effectiveness of mitigation measures. Such information enables the client and the Bank to evaluate the success of mitigation as part of project supervision and allows corrective action to be taken when needed. The monitoring section of the ESMP provides: (a) details, of monitoring measures, including the parameters to be measured, methods to be used, sampling locations, frequency of measurements; and, (b) monitoring and reporting procedures to (i) ensure early detection of conditions that necessitate mitigation measures, and (ii) furnish information on the progress and results of mitigation. This should also include the records of grievances received and resolved through the Grievance Redress Mechanism (GRM) established under the project

Environmental supervision and reporting. The ESMP implementation will be supervised by Minregion and CPMU staff periodically (as per monitoring schedule), as well as by the WB (during its supervision missions) and by the local ecological inspectors. Furthermore, MPU “Khersonteploenergo”, annually will present short information about the ESMP implementation as part of the Progress Reports to the WB by the Borrower.

Integration of the ESMP into project documents. The ESMP provisions will form part of the design documents for the project and will be included in construction contracts for proposed activities, both into specifications and bills of quantities. Furthermore, the Contractors will be required to include the associated to ESMP mitigation and monitoring costs in their financial bids and required to comply with the ESMP provisions while implementing the project activities. In addition. Contractors should follow a code of conduct to ensure no undue harm or conflict between workers and the public including host/residential communities in the surrounding locations.

Feedback: RPIU will be responsible for the disclosure of environmental and social documents developed for the purposes of the Project. These include the present Environmental and Social Management Plan, as well as all site-specific ESMPs and RAPs developed.

The Grievance mechanism (GRM) established by the utilities and described this ESMP to be used to register and address grievances that may arise as the result of project works.

Local communities, especially those which will be directly affected by the Project, could provide their feedback and proposals for the development of the safeguards instruments. Public feedback shall be incorporated in the drafts of these documents prior to their finalization. Address for providing feedback is MPE “Khersonteploenergo”.

MPU ‘Khersonteploenergo’

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1. Legislative Framework

Environmental issues arising from this project are regulated by numerous laws, legal acts and norms. The major laws and legal acts which regulate environmental issues are listed in Annex 4 to this document.

Business activity in the field of heat supply is regulated by the Laws of Ukraine "On the Heat supply».

Key directions for heat systems development

The law of Ukraine on the heat supply among other indicates the following key directions for heating systems development:

- heat supply planning, DH systems optimization master plans development and implementation; the master plans are to be actual for at least 5 to 7 years and should consider the optimal combination of centralized and autonomous heating;
- cogeneration units implementation, including in the existing heating plants;
- use of alternative and renewable energy sources, incl. solar and wind energy, biogas, geothermal heat, industrial wastes;
- use of highly efficient heating equipment and materials in the newly created and existing heating systems. This includes boilers with a high efficiency, exhaust gases heat utilizers, small-size heat exchangers, unified modular burners with automatic regulation, automated dispatching and control units;
- heat energy transportation in long-distance and local (distributional) networks' losses reduction by modern insulation implementation;
- increase the operation period of the networks through introduction of the modern anticorrosion coatings and electrochemical protection means, use of non-metal pipelines;
- introduction the network diagnostics into the operational process.

The Environmental Impact Assessment (EIA) procedure, which is regulated by the Law of Ukraine "On Environmental Impact Assessment", is applied for projects with power generation capacity, steam and hot water with a heat capacity of 50 MW or more with the use of organic fuels in Ukraine.

However, the scope of law is not being applied to all types of reconstruction activities. Decree of the Cabinet of Ministers of Ukraine dated 13 December 2017 ref.: 1010 defines as criteria for determining the planned activity that is not subject to environmental impact assessment, and criteria for defining extensions and changes in activities and objects that are not subject to an assessment of the environmental impact. The Project is not subject to Environmental Impact Assessment Report as per this law.

Only one component of the project is subject to the Law "On EIA", namely the reconstruction of the boiler-house at the street. Bohun, 95.

In accordance with building normatives, the EIA (OVNS) section should be developed as part of the project documentation.

Requirements in relation to public disclosure, participation and access to information kept by state bodies and organizations, as well as the right to petition state authorities and the right to a healthy environment in Ukraine are prescribed by the Constitution of Ukraine.

Ukraine ratified the Aarhus Convention in 1999, by adopting the Law on Confirming the Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental

Matters. These regulations require the public to be informed about and involved in all matters concerning the environment. Depending on several factors, including the size / scale of the project, municipal or state level authorities in charge of environmental protection determine whether an EIA for a project is required. Ukrainian citizens have the right to participate in public consultation, have access to the information and the right to appeal against authority decisions.

Within this project stakeholders' mechanism will be implemented the procedures for it are described in stakeholders' engagement plan. This Stakeholder Engagement Plan (SEP) will assist with managing and facilitating future engagement through the various stages of the Project's life cycle from exploration through to construction, operations, closure and rehabilitation.

This SEP adopts an inclusive life-of-mine perspective. It details engagement undertaken with stakeholders during different sates of the Project and serves as a guide the stakeholders at different levels. The SEP seeks to define a technically and culturally appropriate approach to consultation and disclosure. The goal of this SEP is to improve and facilitate decision making and create an atmosphere of understanding that actively involves project-affected people and other stakeholders in a timely manner, and that these groups are provided sufficient opportunity to voice their opinions and concerns that may influence Project decisions. The SEP is included in Section 9 of this document¹.

1.1 EIA procedure

On 18 December 2017 the Law of Ukraine "On Environmental Impact Assessment" (hereinafter referred to as the Law) entered into force, introducing the permits - the conclusion on the assessment of the environmental impact (hereinafter - the Conclusion. According to the Law, an environmental impact assessment is required when deciding on "planned activities", namely: construction, reconstruction, technical re-equipment, expansion, re-engineering, liquidation (disassembly) of objects, other interference with the natural environment. The list of objects requiring a conclusion is defined by parts 2 and 3 of Article 3 of the Law.

The procedure for obtaining the conclusion of the EIA consists of several stages:

- submission of notice related to planned activities to the local state administration (or directly to the Ministry of Environment) on the planned activity, which is subject to an environmental impact assessment, containing the information specified in part 2 of Article 5 of the Law. Next, the local state administration or the Ministry of Environment publish a notice and enter the data into the Unified Register of Environmental Impact Assessment. The public may comment on the planned activity within 20 working days from the date of its promulgation. In the preparation of the Environmental Impact Assessment report the entity considers fully, takes into account partially or substantially rejects the comments and suggestions of the public. In this case, the law does not provide for the possibility of administrative or judicial appeal against the refusal to take into account comments.
- Preparation of the Report, which contains a description of the planned activities, justifiable alternatives, the current state of the environment, environmental factors that are likely to be affected, the description and assessment of possible environmental impacts, a description of the methods of forecasting, description of the measures aimed at preventing negative effects, description of the expected significant negative impact , identification of all difficulties, all comments and suggestions received, summary of the monitoring program.
- Conducting a public discussion of the planned activities after submission of the report on environmental impact assessment in the form of public hearings and in the form of submitting written comments and proposals (including in electronic form). The procedure for conducting public hearings in the process of environmental impact assessment is established by the Cabinet of Ministers of Ukraine. At the moment, this order is not set. As a result, the local state administration (or the Ministry of Environmental Protection) is preparing a public discussion report, which includes information on "full consideration, partial accounting or substantiated deviation" of comments and suggestions from the public.

"Unreasonable and unreasonable non-consideration or incorrect consideration" may further serve as a basis for the Cancellation of the Opinion in court. Any individual may challenge the conclusion on the grounds that his remarks were not taken into account.

- Obtaining of Conclusion on the assessment of the environmental impact of the relevant body. The conclusion is mandatory for implementation, is taken into account when deciding on the implementation of planned activities and may be the reason for refusal to issue a decision on the implementation of planning activities. The conclusion determines the requirements for the work of the planned object, in particular, the requirements for the use of territory and natural resources, requirements for environmental protection and measures for the prevention of emergencies are established. In addition, an undertaking may be required to carry out compensatory measures, to carry out an additional assessment of the environmental impact, to organize post-project monitoring. The Conclusion is issued within 25 working days from the day the public discussion is completed. The decision on the implementation of the planned activity must be taken by the relevant body within 5 years from the date of issue of the Opinion, otherwise it will expire.

An environmental impact assessment report, a public discussion report, and an opinion on the environmental impact assessment are submitted by the entity to obtain a decision by a public authority or local authority on the implementation of the planned activity, which is the basis for initiating this activity.

The Conclusion shall contain the environmental conditions that shall be observed throughout the activity. In the opposite case, the operation of the enterprise may be stopped by a court decision.

The Law does not apply to business entities that have received a Decision on the implementation of planned activities. Thus, the exclusion does not apply to cases where reconstruction, technical re-equipment, overhaul or conversion of existing objects is planned, if such actions will have a significant effect on the environment.

Regulation in consultation and disclosure

- Citizens of Ukraine have the right to participate in public consultations, have access to information and have the right to appeal the decisions of the authorities. This right is fundamental and is part of the Constitution of Ukraine, adopted in 1996. The list of key subsidiary regulations and instructions is provided at the end of this section.
- The Constitution is the foundation of auxiliary laws governing public participation in decision-making and access to information and justice in environmental matters. The most important laws: the right of citizens of Ukraine to receive information and principles of information provision to society is guaranteed by the Law on Information, dated October 2, 1992.
- The right of citizens of Ukraine to receive information and principles making the information available to the society is guaranteed by the Act on information issued at 2nd October 1992.
- Rules of submitting complaints on social matters by citizens of Ukraine are regulated by the Act on citizen right to appeal, issued at 2nd of October 1996;
- Decree of Cabinet of Ministers of Ukraine dated 03 November 2010 No. 996 - specifies the form and methods of public consultation and distinguishes direct and indirect forms for providing the public consultation. Direct consultations indicated are: conference meetings, seminars, public discussions, web conferences and "hot phone" lines. Indirect forms are focusing on public survey.
- Decree No 976 of the Cabinet of Ministers of Ukraine, dated at 5th of November 2008 (ecree of the Cabinet of Ministers of Ukraine dated November 5, 2008 N 976) regulates the obligations of competent authorities for carrying out the Public Expertise on request of the NGOs, other associations, social organizations, trade unions, employers and representatives of local administrative bodies.

In accordance to the above listed legislative acts the authorities / public administration are responsible for Public Consultation and Public Expertise

According to the Law of Ukraine "On Environmental Impact Assessment", for the boiler-house on the street. Ivan Bogun, 95 necessary to establish additional procedures.

Stage I. Report on planned activities (Articles 4, 5 of the Law).

The intention of the company MPU "Khersonteploenergo" is to carry out reconstruction works by announcing the planned activity (NPA) - an announcement containing information on the subject of business, general characteristics of the planned activity, location of its conduct, socio-economic impact of the PA, scope of activities, sources and types of possible impacts on the environment, socio-economic impact of PA.

Who is preparing and organizing? - an entity that intends to carry out the planned activities. How is it organized? - in writing and in electronic form.

Where is he released? - in the first place (official publication) - on the official web-site of the Ministry of Environmental Protection or on the site of the relevant regional state administration;

Second, that is, not later than three working days from the day they are submitted to the Ministry of Environmental Protection or the regional state administration) - at least in print media, the distribution area covers the administrative district where the PA takes place. Media is chosen by the subject;

At the same time it is issued: - on boards of announcements of bodies of local self-government, as well as in other public places, where the PD will take place;

Stage II. Public reaction to NPA

Within 20 working days from the date of the official publication of the NPA, the public may submit its comments and proposals to the PA, the scope of the study and the level of detail of the information to be included in the report on the impact assessment to the regional state administration or the Ministry of the Environment (depending on the group of planned activities) and the information that should be included in the environmental report.

Actions of the authorized body: - Within three working days from the date of receipt of the proposal, the Regional State Administration or the Ministry of Environmental Protection shall send copies of comments and proposals to the responsible person for the project.

Stage III. Actions of the subject responsible for the comments received.

Business entities need to consider received comments and suggestions. In addition, when preparing an environmental impact assessment report, take one of the following:

- a) fully take into account
- b) partly take into account
- c) justified to decline

Stage IV of the Environmental Impact Assessment (EIAR) report

In addition to the information identified in the NAP, this document also includes a description of justifiable alternatives, a description of the current state of the environment, a description of its likely change after the implementation of the FT, a description of the environmental factors that undergo changes in the FT, a description and assessment of the health effects, I am a person, people, emissions and discharges of pollutants, a description of measures aimed at preventing, preventing, avoiding, reducing, eliminating significant negative impact on the environment, etc.

Who is developing EIAR? - develops the document by the entity that is fully responsible for the accuracy of the information contained in the report. EIAR is signed by developers, in particular those who indicate their qualifications.

How is it released? - in writing and in electronic form.

Who is the public at what time? - The Ministry of Environmental Protection or the Department of State Administration of Ukraine within 3 working days after the receipt of the UREI publish the Unified Register of Environmental Impact Assessments, which must be kept for at least 5 years.

V. Announcement of the beginning of a public discussion (Article 8 of the Law)

The document should contain a brief description of the PA, the subject, the public consultation body, the decision procedure, and the body that will consider the environmental impact assessment, the authority to be submitted, the environmental information available, and the location of the EIAR.

Who and when is it published? - The Ministry of Ecology or the Department of Ecology of the Oblast State Administration within 3 working days after receipt of the EIAAR.

How is it released? - official publication - on the official web-site of the Ministry of Environmental Protection or on the site of the relevant regional state administration;

Secondly: - (not later than three working days from the day they are submitted to the Ministry of Environmental Protection or the regional state administration) - at least in the print media, the distribution area of which covers the administrative district, where the PA will take place. Media is chosen by the subject;

At the same time, the announcement is published: - on boards of announcements of local self-government bodies, as well as in other public places, where PA will take place.

VI public consultations

In what form is it implemented? - in the form of public hearings and consultations and written comments.

The procedure for holding public hearings must still be approved by the government on its own decision.

Who should provide? - Department of Ecology of Regional State Administration

Who covers the costs? - the entity responsible for EIAR training.

How is the comment made? - in writing, including in electronic form (by e-mail) and orally, during public hearings. The recording of oral discussions should be a written record of public hearings.

What is the duration of public consultations? - not less than 25 working days and no more than 35 working days. The public must submit comments within this time limit. This term begins on the day of the official announcement of the opening of EIAR public consultation and public access to the EIAR (in terms of the exact deadline - the law does not specify).

What is the documentary result of public consultations? - Report on public discussion conducted by the authorized body (Department of State Administration). An integral part of the report is information on disclosure, confirmation of such disclosure, minutes of public hearings, all received comments and suggestions in tabular form, with indication of full or partial calculation or a reasonable deviation.

Report on public information - disclosed by the public authority of the Single Register of EIA within three working days from the date of preparation.

VII Conclusion on the impact on the environment

The conclusion of the EIA is issued by an authorized state body that determines the eligibility or justifies the inadmissibility of the planned activity and defines the environmental conditions for its implementation.

Who gives? - Department of Ecology of Regional State Administration.

Who and when does it publish? - The Department of Ecology of the Regional State Administration within three working days from the date of its adoption.

VIII Decision on the implementation of PA

The conclusion of the EIA is taken into account when deciding on the implementation of the planned activity and is the reason for its release. It is prohibited to start a planned activity without obtaining an opinion on EIA. An order is issued about the planned activity.

1.2. World Bank rules and procedures/ IFC' EHS Guidance

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

EA is mandatory for projects, which may potentially have negative impacts. Furthermore, a well-organized public participation is mandatory in all the stages of the process. Depending on the project, a range of instruments can be used to satisfy the Bank's EA requirements: Strategic Environmental Assessment (SEA), Environmental Impact Assessment (EIA), regional or sectorial EA, environmental audit, hazard or risk assessment and/or Environmental and Social Management Plan (ESMP).

Environmental screening. The Bank undertakes environmental screening of each proposed project to determine the appropriate extent and type of EA. The Bank classifies the proposed project into one of four categories, depending on the type, location, sensitivity, and scale of the project and the nature and magnitude of its potential environmental impacts. The Bank's OP/BP/GP 4.01 provides for the following environmental categories of projects:

Category A: A proposed project is classified as Category A if it is likely to have significant adverse environmental impacts that are sensitive, diverse, or unprecedented. EA for a Category A project requires a full EIA Assessment.

Category B: A proposed project is classified as Category B if its potential adverse environmental impacts on human populations or environmentally key areas - including wetlands, forests, grasslands, and other natural habitats – are less adverse than those of Category A projects. These impacts are site-specific; few if any of them are irreversible; and in most cases mitigatory measures can be designed more readily than for Category A projects. The EA for a Category B projects examines the project's potential negative and positive environmental impacts and recommends specific measures needed to prevent, minimize, mitigate, or compensate for adverse impacts and improve environmental performance. The findings and results of Category B EA are described in the project documentation (Project Appraisal Document and Project Information Document).

Category C: A proposed project is classified as Category C if it is likely to have minimal or no adverse environmental impacts. Beyond screening, no further EA action is required for a Category C project.

The Project UDHEEP was defined as category *B*

Based on the results of the study the following WB OPs will be triggered by the projects (see Table 1.2.1 below):

[Table 1. World Bank's Safeguard Policies and their relevance to the project](#)

Safeguard Policies	Relevance
<p>Environmental Assessment (OP/BP 4.01) This Policy aims to ensure that projects proposed for Bank financing are environmentally and socially sound and sustainable; to inform decision makers of the nature of environmental and social risks; to increase transparency and participation of stakeholders in the decision-making process</p>	<p>Yes - the Project will influence on air, land; a waste disposal will present, Social impact is possible as limitation of access, noise, etc.</p>
<p>Natural Habitats (OP/BP 4.04) This Policy aims to safeguard natural habitats and their biodiversity; avoid significant conversion or degradation of critical natural habitats, and to ensure sustainability of services and products which natural habitats provide to human society</p>	<p>No – The project will be implemented in urban areas where there are no Natural Habitats</p>
<p>Forestry (OP/BP 4.36) This Policy is to ensure that forests are managed in a sustainable manner; significant areas of forest are not encroached upon; the rights of communities to use them traditional forest areas in a sustainable manner are not compromised</p>	<p>No – the project will be implemented in urban areas</p>
<p>Pest Management (OP 4.09). This policy is to ensure pest management activities follow an Integrated Pest Management (IPM) approach, to minimize environmental and health hazards due to pesticide use, and to contribute to developing national capacity to implement IPM, and to regulate and monitor the distribution and use of pesticides</p>	<p>N/A</p>
<p>Physical Cultural Resources (OP/BP 4.11) This policy is to ensure that: Physical Cultural Resources (PCR) are identified and protected in World Bank financed projects; national laws governing the protection of physical cultural property are complied with; PCR includes archaeological and historical sites, historic urban areas, sacred sites, graveyards, burial sites, unique natural values; implemented as an element of the Environmental Assessment</p>	<p>No – the EA work confirmed all activities will not involve any such resources and/or will have impacts on them. But a chance find measure shall be stipulated.</p>
<p>Indigenous Peoples (OP/BP 4.10) IP – distinct, vulnerable, social and cultural group attached to geographically distinct habitats or historical territories, with separate culture than the project area, and usually different language. The Policy aims to foster full respect for human rights, economies, and cultures of IP, and to avoid adverse effects on IP during the project development.</p>	<p>No. This Policy is not applicable for Ukraine</p>

Safeguard Policies	Relevance
<p>Involuntary Resettlement (OP/BP 4.12) This policy aims to minimize displacement; treat resettlement as a development program; provide affected people with opportunities for participation; assist displaced persons in their efforts to improve their incomes and standards of living, or at least to restore them; assist displaced people regardless of legality of tenure; pay compensation for affected assets at replacement cost; the OP Annexes include descriptions of Resettlement Plans and Resettlement Policy Frameworks</p>	Proposed project activities will not result in any physical displacement of persons or properties. The works will be conducted on public lands and will be temporary in their nature. But some construction induced impacts are possible. In case the situation will arise, and temporary economic displacement is required, specific Ab-RAP or RAP will be developed/disclosed/consulted.
<p>Safety of Dams (OP/BP 4.37) This Policy is to ensure due consideration is given to the safety of dams in projects involving construction of new dams, or that may be affected by the safety or performance of an existing dam or dams under construction; important considerations are dam height & reservoir capacity</p>	N/A
<p>Projects on International Waterways (OP/BP 7.50) The Policy aims to ensure that projects will neither affect the efficient utilization and protection of international waterways, nor adversely affect relations between the Bank and its Borrowers and between riparian states</p>	N/A
<p>Disputed Areas (OP/BP 7.60) The Bank may support a project in a disputed area if governments concerned agree that, pending the settlement of the dispute, the project proposed for one country should go forward without prejudice to the claims of the other country</p>	N/A
<p>Disclosure Policy (BP 17.50) supports decision making by the borrower and Bank by allowing the public access to information on the environmental and social aspects of projects and has specific requirements for disclosure</p>	Yes. ESMP will be also disclosed in the WB Infoshop and in the informational resources of the MPE "Khersonteploenergo" https://www.teploenergo.ks.ua/

IFC Environmental, Health, and Safety Guidelines "Thermal Power Plants" (https://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/sustainability-at-ifc/policies-standards/ehs-guidelines) stipulates measures to be met during heating projects implementation.

During the development of thermal power projects, proponents should consider alternative solutions including technical suitability and trade-offs between capital and operating costs involved in the use of different technologies with documented reasoning of why the selected option is the most feasible.

New facilities should be aimed to be in the top quartile of energy efficiency Rehabilitation of existing facilities must achieve significant improvements in efficiency. Plants should use high performance monitoring and process control techniques, good design, and maintenance of the combustion system, so that initially designed efficiency, and GHG emission performance can be maintained..

IFC Performance Standards

The following IFC Performance Standards apply to emissions into the atmosphere and the quality of the surrounding air during construction:

- IFC Performance Standard 1: *Assessment and Management of Environmental and Social Risks and Impacts* (2012) which establishes requirements for assessment, management, organizational capability, training, community engagement,
- IFC Performance Standard 3: *Resource Efficiency and Pollution Prevention* (2012), and includes provisions.
- IFC EHS General Guidelines (April 2007), incorporating WHO Ambient Air Quality Guidelines (1987, 1999 and 2006); Section 1.1 and 4. Relevant provisions include that: emissions do not lead to concentrations of pollutants that reach or exceed relevant environmental standards⁹ by applying national legal standards or, in their absence, the current WHO air quality regulations or other internationally recognized sources;

Table 2. WHO Ambient Air Quality Guidelines

Table 1.2.2: WHO Ambient Air Quality Guidelines ^{7,8}		
	Averaging Period	Guideline value in µg/m ³
Sulfur dioxide (SO ₂)	24-hour	125 (Interim target-1)
	10	50 (Interim target-2)
	minute	20 (guideline)
		500 (guideline)
Nitrogen dioxide (NO ₂)	1-year	40 (guideline)
	1-hour	200 (guideline)
Particulate Matter PM ₁₀	1-year	70 (Interim target-1)
		50 (Interim target-2)
		30 (Interim target-3)
		20 (guideline)
	24-hour	150 (Interim target-1)
		100 (Interim target-2)
	75 (Interim target-3)	
	50 (guideline)	

Particulate Matter PM2.5	1-year	35 (Interim target-1) 25 (Interim target-2) 15 (Interim target-3) 10 (guideline)
	24-hour	75 (Interim target-1) 50 (Interim target-2) 37.5 (Interim target-3) 25 (guideline) Ozone 8-hour daily maximum 160 (Interim target-1)
Ozone	8-hour daily Maximum	160 (Interim target-1) 100 (guideline)

For noise and vibration issues during construction, IFC's Standards apply:

- IFC Standard 1: Assessment and Management of Environmental and Social Risks and Implications (2012) that sets requirements for assessment, management, organizational capacity, training, community involvement, monitoring and reporting.
- IFC Standard 3: Resource Efficiency and Pollution Prevention (2012), in particular, the following provisions.
- The EHS General Guidelines of the IFC (April 2007), which include guidance in the relevant provisions of WHO on community noise (1999); Section 1.7 and Section 4.1: Noise effects shall not exceed the levels given in the Table below or may result in the maximum increase of the background level by 3 dB at the closest location of the vulnerable objects outside the site

Table 3. Noise level guidelines

Noise Level Guidelines		
Receptor	One Hour LAeq (dBA)	
	Daytime 07:00 – 22:00	Nighttime 22:00 - 07:00
Residential; Institutional; Educational ⁵⁵	55	45
Industrial; Commercial	70	70

The recommended noise level values are those that are measured outdoors. Source: WHO Recommendations on Noise in the Community, 1999.

Contact the WHO (1999) for an acceptable level of internal noise of residential, institutional and educational institutions.)

The following IFC recommendations apply to the treatment of construction waste. The contractor must meet the objectives of these guidelines:

- EHS IFC General Principles (April 2007), Section 1.6 and Section 6.
- For the handling of hazardous materials during construction, the following IFC's Standards apply:

- IFC Standard 1: Assessment and Management of Environmental and Social Risks and Implications (2012), which sets requirements for assessment, management, organizational capacity, training, community involvement, monitoring and reporting.
- IFC Standard 4 and Instruction 4: Community Health and Safety Plan (2012), which include the following provisions that relate to community security and transportation, including the transport of hazardous materials.

General guidelines EHS IFC (April 2007), Section 1.5 briefly recommends the following: Hazard assessment.

IFC IFC Standard 3: Resource Efficiency and Prevention of Pollution (2012), in particular, the following provisions:

- Avoid or minimize adverse effects on human health and the environment by avoiding or minimizing contamination through project activities.
- IFC IFC Standard 4: Community Health and Safety Plan (2012), which includes tasks:
- To anticipate and avoid adverse consequences for the health and safety of the victim community during the duration of the project, both from ordinary and non-standard circumstances;
- Ensure the protection of personnel and property in accordance with the relevant human rights principles and in such a way as to avoid or minimize the risks to affected communities.

IFC IFC Standard 5: Land Acquisition and Forced Relocation (2012) includes the following tasks:

- Avoiding or where it is impossible to avoid, minimizing displacement by exploring alternative ways of project planning;
- Avoid forced relocation;
- To anticipate and avoid or where it is impossible to avoid dismissal, to minimize the adverse social and economic consequences associated with acquiring land or restrictions on land use;
- Improve or restore livelihood and livelihoods of displaced persons;
Improve living conditions among physically displaced people by providing adequate accommodation and safe stay in the resettlement area.

1.3 Comparison of national legislation and World Bank Safeguards requirements

There are 10 + 1 environmental and social policies of the World Bank, aimed at ensuring the identification, minimization and mitigation of potential adverse environmental and social impacts of projects funded by the World Bank.

While the basic provisions of the National EA rules and procedures are to some extent similar to the WB requirements, there are several significant differences. These differences are related primarily to the following: (a) project environmental screening categories; (b) Environmental and Social Management Plan; (c) EA disclosure and public consultation; and (d) EA reviewing process, e) grievance redress mechanism.

Differences concerning ESMP. Despite the fact that national legislation requires that all appropriate environmental impact mitigation measures be applied to all projects, it does not require the development of a specific SPS, which should be specified along with the proposed mitigation measures, the plan monitoring and reporting requirements, institutional mechanisms for the implementation of the SES. National legislation also does not require the necessary steps to be taken to strengthen the capacity and the necessary costs in this regard.

An evaluation of the national environmental protection and social impacts mitigation legislation of Ukraine and WB procedures and its meaning for the Project is presented in this chapter. The environmental legislation of Ukraine mainly has been developed to provide control of activities and to control adverse impacts on the environment and human health. The development of EIA does not comply with the best international practice at all times, which includes a significant component of ongoing evaluation in an iterative process. The preparation of EIA in Ukraine is more statistical process, which more focusing in the calculation of emissions,

which charges for emissions are paid and less focusing on the analysis and conclusions with the understanding of adverse impact and measurements on their avoidance and mitigation. Data collection process for report is not always related with the goal of EIA and with the project framework.

Public procedures in Ukraine are not always adapted for monitoring during the project construction. The content of environmental plans includes only the description of the overall mitigation and monitoring of impacts, without information on the place and the responsible entities, focusing on references on regulations and standards, and has little value for the contractors.

Standards are used as limits beyond which pollution is permitted with compensation payment.

The comparison in the legislation is presented in the Table 1.3.1

Table 4. Differences between Ukrainian legislation and the requirements of the World Bank's Operational Policy on Resettlement (OP 4.12)

Ukraine Laws and Regulations	WB Standards
There does not appear to be a 'most sensitive' rule. The sensitivity of project is measured by the criteria included in the Decree of the Cabinet of Ministers of Ukraine dated 13 December 2017 ref.: 1010 as per Law of Ukraine "On Environmental Impact Assessment"	Projects are categorized according to the most sensitive component, e.g. if 6 of 7 components are not sensitive and one is sensitive, then the entire project becomes a Category A or B.
Ukraine has a procedure of public consultation but mainly participate state sector and rarely involves a common citizen.	Public consultation is a requirement for WB. The World Bank requires 2 hearings for full ESIA and 1 hearing for the projects of the category B. For full EIA reports, public hearings must be conducted at the earlier stage of EIA preparation and EAP or at the stage of the possible impact research. For the projects of the B category the public hearings on the stage of impact determination is more useful, although the exact time depends from the main ecological problems and the proponent's wishes. Public hearings must be announcing and for full EIA preliminary notices about hearings and contact data must be published in the media for several weeks in advance before the hearings.
Only registered structures/buildings are compensated for damages/ demolition caused by a project	All affected structures/buildings are compensated for damages/ demolition caused by a project at replacement cost
Only official land users are compensated for loss of income/business	Lease tenants whether legal (registered) or illegal (informal) are compensated for income/business losses regardless of the registration.
No specific provisions for the process of resettlement planning and its specific tools including preparation of any plan related to land acquisition and resettlement	Time bound implementable Resettlement Action Plan needs to be prepared before the disbursement of compensation
No provisions for <ul style="list-style-type: none"> - income/livelihood rehabilitation, - allowances for severely affected or vulnerable landowners/tenants 	WB policy requires rehabilitation for income/livelihood, severe losses, and for expenses incurred by the landowners/tenants during the relocation process.

No compensation or assistance in respect of movable property is stipulated	The compensation should include: <ul style="list-style-type: none"> - The cost of replacement improvements - Relocation expenses - Compensation for materials ruined during transportation - Other transaction costs
Decisions regarding land acquisition and resettlement are discussed only between the titled landowners/official tenants and the Land Acquisition Authorities.	Information on quantification of affected items, value of assets, entitlements, and compensation/financial assistance amounts are to be disclosed to the landowners and tenants as prior to project appraisal. The general provisions of the RAP (including Entitlement Matrix) are made public, while individual data on losses/compensation are available only to the individuals /household affected by the project.
No specific plan for public consultation is provided under the Ukrainian laws.	Public consultation and participation is the integral part of WB's policy which is a continuous process at concept, preparation, implementation and finally at post implementation stage
No specific requirements to the grievance mechanism for out of court addressing of the concerns raised by the landowners/tenants	Transparent and easily accessible to the landowners/tenants mechanism with multiple information uptake channels and tracking system for the complaints received needs to be established and communicated to the landowners/tenants and the affected communities.

In case the gaps identified above are affecting the processes described in the RPF the WB OP 4.12 provisions will prevail.¹

2. Project Background. Description of current condition of heating system

The MPU "Khersonteploenergo" is a municipal utility that produces, transports and sells heat in Kherson. The company provides about 50 percent of centralized heat supply in the city. Kherson CHP is another great producer of heat, which accounts for about 47 percent of the total. The remaining 3% is supplied by a small privately owned company "Teplogeneratsiya".

Household consumers are the main subscribers of "Khersonteploenergo", which account for 82% of the heat energy used, then budget institutions (14%) and commercial enterprises (4%).

The MPU "Khersonteploenergo" was established in 2001 as a result of the merger of the existing district heating company with some smaller producers of thermal energy. The company belongs to the municipality of Kherson and has full asset management rights. Assets and their depreciation are included in the balance sheet of the company. The company employs 466 employees. Construction of the Kherson centralized district heating system began more than 40 years ago. The main technologies and solutions for building boiler houses, pipelines and heating and water supply networks in buildings are based on the technical

¹ WB OP 4.12 is more explicit as compared to Ukrainian legislation regarding such issues as: resettlement planning and procedural requirements; public hearings and local participation in the project affected areas; types of compensation offered and, if necessary, other assistance to affected persons; compensation payment to all categories of affected persons; property assessment of eligible persons; livelihood restoration; compensation for informal users of the property or the property rights; compensation for informal businesses; and protection of vulnerable groups (poor and landless persons, women, elderly, minorities etc.)

standards of the former Soviet Union. The average age of equipment and boiler houses is about 20 years, the main blocks are 1978-1997. Since the collapse of the Soviet Union, no new large boiler houses have been created. Only a few small boilers (<0.3 Gcal / h) were recently installed.

Technical information, boiler house:

The demand for heat supply is fulfilled by 38 gas boiler houses with a total installed capacity of 563 Gcal / h. Most of the boiler-houses operated by "Khersonsteploenergo" - small size, with a capacity of 5 Kcal / g or less; however, there are several boiler houses with a capacity of 25 Gcal / h or more

The largest boiler house (Ivana Bohuna, 95) is designed for production of 74.852 Gcal / h. The years of operation of boilers vary considerably from about 25 years old and older.

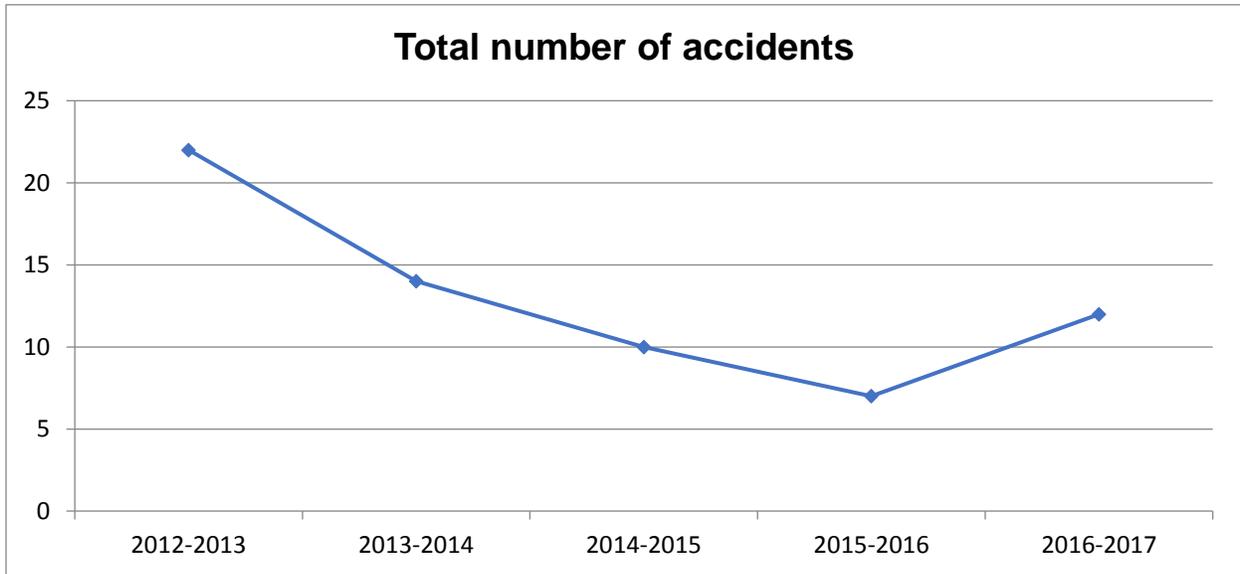
Networks of district heating and heat substations:

the length of the centralized heating network is 97 km in two-pipe equivalents; the linear density of the thermal load of MPU "Khersonteploenergo" is about 1.75 Gcal / hour per kilometer, which is considered acceptable for the district heating system to be competitive. The heat distribution technology currently used by MPU "Khersonteploenergo" is based on a centralized heating system (CHU), without any modern IHS. The company has 46 CHSs. The load connected to the CHS is 116 Gcal / hour, 68 per cent of the total connected load (170 Gcal / hour); direct bonds make up another 32 percent. "Khersonsteploenergo" repaired five CHSs with modern central units (modern lamellar heat exchangers, automation, etc.).

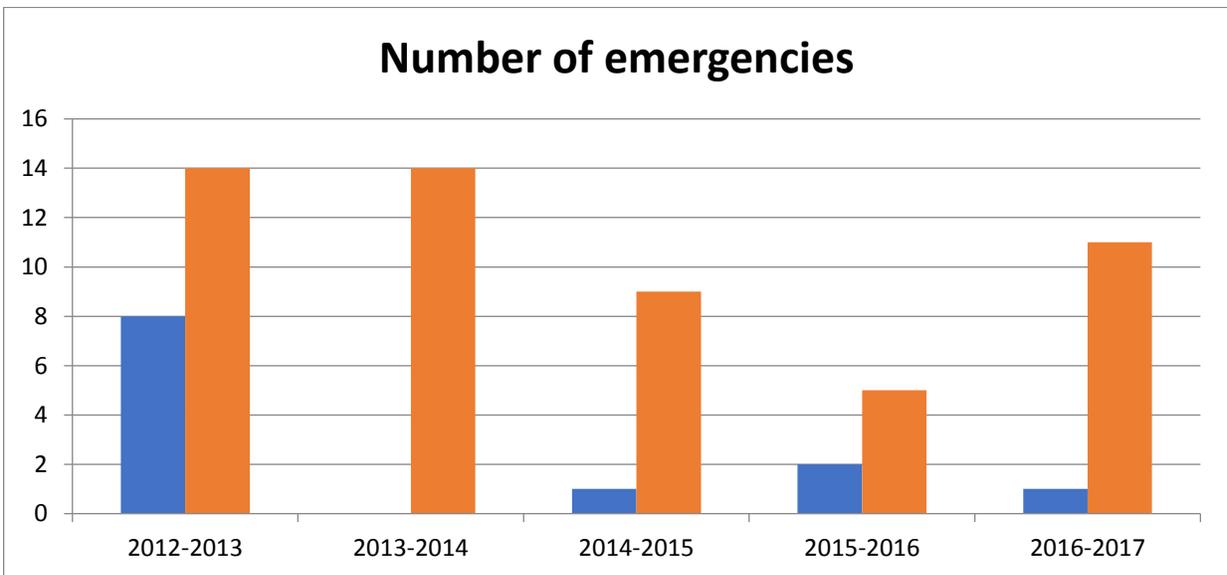
The four-pipe system is used only in one CHS, where MPU "Khersonteploenergo" supplies hot water. A two-pipe system providing heat only is used elsewhere. The pre-insulated pipe has not been applied on a substantial scale yet, most of the network uses underground pipes in concrete channels or overhead pipes, which are insulated with mineral wool. 95 percent of the pipelines are Isotermic pipes of the Soviet type, of which 65 percent are underground pipes in concrete channels, and 35 percent - above ground, mineral wool, insulated pipes, covered with metal plates. The company began using a pre-insulated polyurethane pipe in new networks. The current proportion of pre-insulated pipes is 4.6% of the total length. Estimated heat losses on the network amount to 45000 Gcal per year.

Table 5 Analysis of emergency situations on the heating networks MPU "Khersonteploenergo" from 2012 to 2017 years

<i>Heating Period</i>	<i>Number of accidents on main grids</i>	<i>Number of accidents on intra-district heating networks</i>	<i>Total number of accidents</i>
2012-2013	8	14	22
2013-2014	0	14	14
2014-2015	1	9	10
2015-2016	2	5	7
2016-2017	1	11	12



Scheme 1. Total number of accidents at MPE "Khersonteploenergo"



Blue - quantity of emergencies at heating network.
Orange - quantity of emergencies at internal heating network

Scheme 2. Number of emergencies at MPU "Khersonteploenergo" networks.

An example of the current state of boiler houses:



Picture 1. Boiler house at 95, Bohuna str.



Picture 2. Boiler room at 3, Nebesna Sotnia str.

3. Description of the activities. Description of planned activity

Priority investment program funded by the Project. The proposed investment program is aimed at modernizing the heat supply system, increasing the efficiency of the heat supply system and reducing losses during the transportation of heat. The largest component is the boiler-house reconstruction. The company will install 13 IHSs and 200 heat meters, as well as launch the SCADA system.

Reconstruction of boiler houses will allow to achieve significant savings in costs, reduce emissions and waste, as well as non-rational consumption of fuel and electricity.

The proposed investment program is aimed at the reconstruction of six boiler houses and CHS, including the largest boiler-house in the Shumen district of the city, and the closure of inefficient boiler houses. This will be accompanied by the construction of new pipelines to redirect the heat supply to the newly renovated thermal power, as well as the restoration of old networks connected to renovated boiler houses. The existing pipeline will be replaced by new pre-insulated pipes; this will save fuel costs by reducing network losses. Boiler equipment with SCADA will significantly save operating costs. Installing IHU in residential buildings will reduce their heat consumption; the installation of heat meters will increase the share of consumption on the basis of the payment for residential consumption.

Works Type 1 - the reconstruction of 6 boiler houses and 1 central heating station - the installation of energy efficient boilers equipped with modulated burners with oxygen and frequency regulation (allows for the smooth adjustment of the flaming flame and reduce the consumption of natural gas to 15%).

Table 6. Objects to be reconstructed

№ objects	Type of object	Address
1	Existing boiler house	161, Admiral Makarov str., Kherson
2	Existing boiler house	3, Kupetska str., Kherson
3	Existing boiler house	3, Nebesna Sotnia str., Kherson
4	Existing boiler house	17 Nebesna Sotnia str., Kherson
5	Existing boiler house	25 Nebesna Sotnia str, Kherson
6	Central heating station	15 B Kulisha str, Kherson

The scope of facility reconstruction includes dismantling and removing in whole the existing thermal and mechanical equipment, process piping and valves, network pumpsets, feeding system, gas supply and distribution system, electrical equipment, cabling and wiring, auxiliary utilities and structures, window and door units, and existing fume stack, including salvaging, cleaning, handling and storing of all usable or valuable parts and materials, and disposing of non-salvageable materials and debris.

A new gas water boilers will be installed each fitted with automatic forced draft burners, economizer and related thermal and mechanical equipment, process piping, valves, water and sewage system, heat metering unit and automated process control and telemetry system (SCADA), including arrangement of process connections, construction of triple fume stack unit, repair of floor, walls and roofing, construction of equipment foundations, installation of fire, intrusion and combustion gas detection systems, training of personnel and provision of operating and maintenance manuals.

All objects are located within the administrative boundaries of the city of Kherson. All work will be carried out within the existing territory of boiler houses.

A detailed description of the scope of work for each facility is given in [Annex 1](#) below.

Works TYPE 2 – reconstruction and technical re-equipment of the boiler house on 95 Bogun str.

The volume of reconstruction of the facility includes the dismantling and removal of two existing boilers PTVM-50 with the necessary technological pipelines and valves, network pumping units, supply system, gas supply and distribution system, electrical equipment, cables and wiring, auxiliary communications and facilities.

Instead of dismantled boilers three new gas-fired water-heating boilers will be put into operation, two of which have a capacity of 38.0 MW each, and another with a capacity of 19.2 MW. Each boiler will be equipped with automatic low-emission burners, economizer and appropriate thermal and mechanical equipment, technological pipelines, valves, water and sewage, heat accounting and automated process control systems (SCADA)

All works are to be carried out within existing enterprise.

Works TYPE 3 – Technical re-equipment of 15 boiler houses with the installation of automatic control systems in Kherson, reconstruction of 140 engineering inputs of multi-apartment houses with the installation of thermal energy meters

Table 7 Addresses of boiler houses which are subject to technical reconstruction

№ п/п	Address
1.	2, Vorontsovs'ka (Kommunarov) str.
2.	32, Teatralna (Gorky) str.
3.	186-a, Boyka str.
4.	6 a, Richelievskya (October Revolution) str.
5.	23, Bogorodytska (Chervonoflotska) str.
6.	29, Shidna 21 str.
7.	31 a, Shidna 20 str.
8.	31 a, Shidna 31 str.
9.	5, Yantarnyi Provulok
10.	12, Potemkinska (K. Marx) str.
11.	12, Lutheranska (Kirov) str.
12.	17 Viacheslav Chornovil Highway (Kindiyske Highway)
13.	7 a, Ivan Bohun (Ilyich)
14.	12, Molodizhna str.
15.	5a, Naftohavan str.

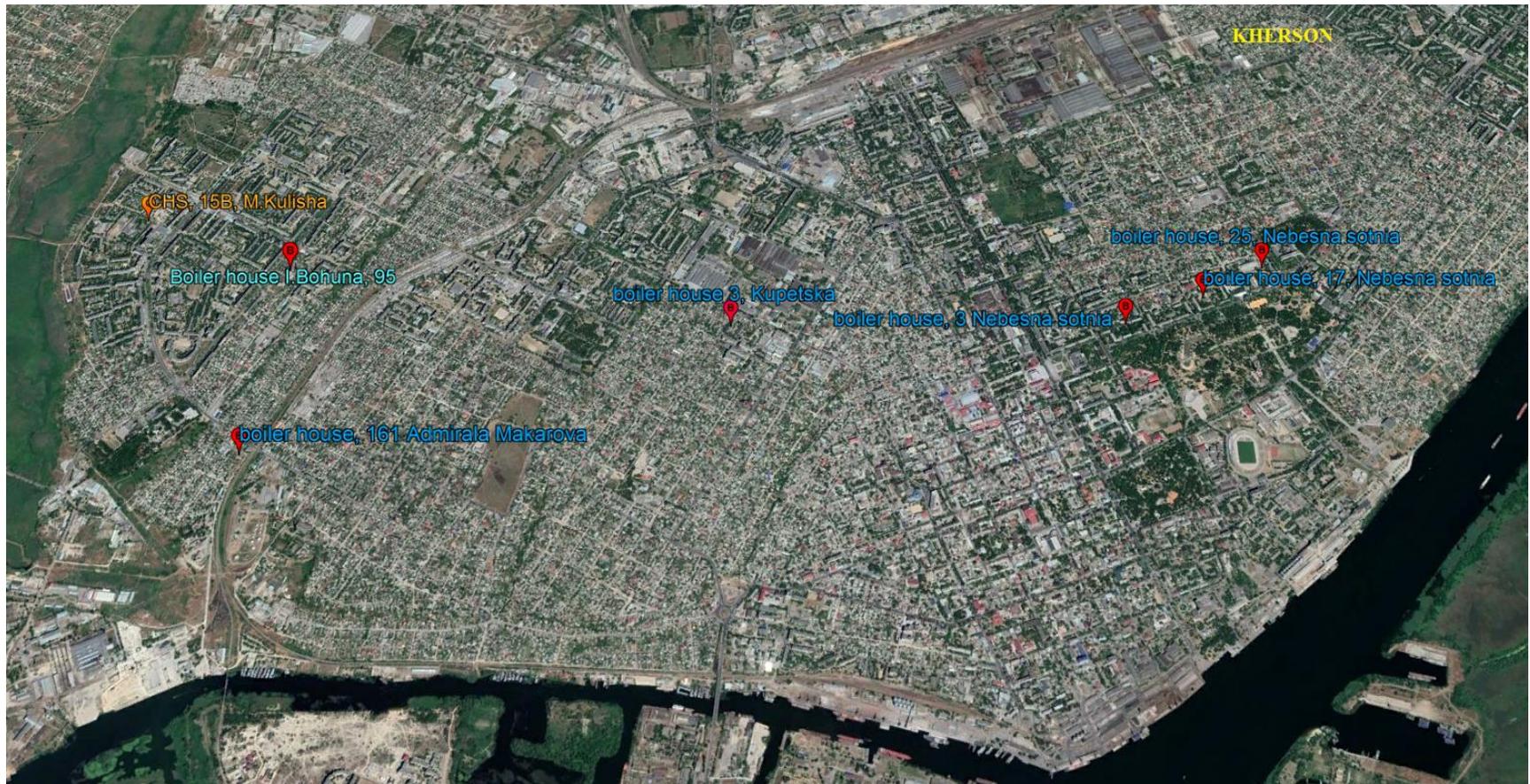
Works TYPE 4 – replacement of pipes in heat supply networks - 13.28 km (2 districts of the city, territory adjacent to boiler-houses of works TYPE 1)

Works TYPE 5 – heating networks and installation of IHS - installation in cellars of 13 houses individual heat units with the transfer of heating systems of these buildings to an independent circuit with the replacement of distributive in-quarter thermal networks of these buildings on an independent circuit with the replacement of distributive intra-district heating networks.

Table 8. Types of works foreseen at the objects

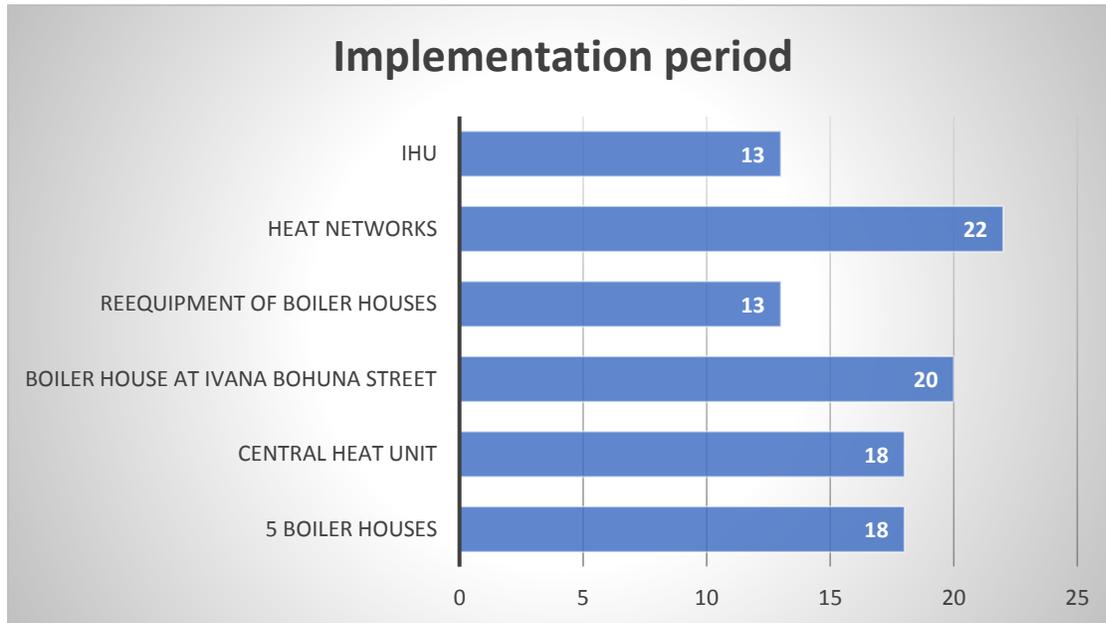
NO.	Address of a residential house	Types of works
1	88, Ivan Bohun (Illich) str.	<ul style="list-style-type: none"> - the installation of an IHS within the existing residential buildings or adjacent territory; - carrying out the transfer of heating systems for dwelling houses to an independent heat supply scheme with installation of individual heat units; - plate heat exchangers must be collapsible; - plate heat exchangers should be made of stainless steel; - upper and lower bearing beams should be made of galvanized steel; - - introduction of weather-dependent temperature control of the coolant;
2	86, Ivan Bohun (Illich) str.	
3	26, Saints Cyril and Methodius (Dymytrova) str.	
4	26 a, Saints Cyril and Methodius (Dymytrova) str	
5	14, Budivelnykiv str.	
6	14a, Budivelnykiv str.	
7	28, Saints Cyril and Methodius (Dymytrova) str.	
8	209, Robocha str.	

9	211, Robocha str.	<p>Installation of an IHS control cabinet with output of the signal about the operation of equipment and accidents on the dispatch service of the enterprise;</p> <ul style="list-style-type: none"> - installation of heat, water and electricity metering units with connection of remote polling and data output to the server; - installation of pumping equipment and pumping stations with shut-off and control valves and control cabinets (according to the design decision). The pumps must be equipped with three-phase asynchronous motors with frequency converters or electronically switched synchronous three-phase motors with variable rotational speed (according to DINENISO 60034). The minimum efficiency index (MEI) of pumps should be greater than 0.4 according to ErP directives; - installation of frequency converters or devices of smooth start-up with the ability to control them from the control cabinet; - installation of separators of air and sludge on pipelines IHS.
10	207, Robocha str.	
11	16, Budivelnykiv str.	
12	26, Budivelnykiv str.	
13	86 a, Ivan Bohun (Illich)	



Picture 3. Boiler houses and CHS for reconstruction

Time of construction and repair works:



Scheme 3. Implementation period.

A detailed description of the work is given in annex 1 to this document.

It should be emphasized separately that during the survey of existing heating networks to be reconstructed, according to the specifications, approved by the Customer, the location of small architectural forms, trade pavilions and planting of plants (cultural and self-elevating) was identified on the heating networks.

In most cases, the heating networks (according to the specified diameters) will be laid in existing directions, with some exceptions, namely:

1. The heating network from TK120 to TK130, partly, in the area of the spontaneous market is proposed to be laid on the passage of the street Lavrenev (Scheme 1 – shemes are provided in [Annex 2](#)).
2. The heating network from TK131 to TK139 along the Dimitrov avenue is to be disconnected, and a residential building at 19, Budivelnkyiv, should be switched over to the heating networks from the CHU-20 in the TK20\5 district. (Scheme 3).
3. The heating network from TK-125 to CHS-8, taking into account the fact that the CHS does not work, lay in the direction of the heating system from TK8-4, TK8-3, TK8-2, TK8-1 with the re-connection of existing customers. (Scheme 4).
4. A residential house on 58 Illycha street, switching to the heating networks from TK8-14 at the branch of CHS -8. (Scheme 5).
5. A dwelling house on the 103 Illych streets shall be connected to the heating networks directly in TC112 bypassing the CHS -18. (Scheme 6).

6. Disconnect the heating network from TK123 to TK227. Existing consumers on the branch from TK301 and TK302 switch over to the backbone network in the area TK206 (Scheme 7).
7. The heating network from TK213 to CHS -21 is laid along the boulevard part of the Komkova street to the input to the collector, without entering the territory of the market (Scheme 8).
8. The site of the heating system from TK220\4 to TK220\10 to the house on the 21 Luxemburg street shall be disconnected, since the house is re-connected from TK220\11a (Scheme 9).
9. Residential buildings at 32, Filatov, str., and 7 R. Liuxemburg str, shall be switched to the thermal networks of the branch from TK226\1 (Scheme 11).
10. Areal from TK414\1 to TK414\2 turn off, the branch from TK414\2 switch from TK411\5 (Scheme 12).

Drawings of heating networks from the boiler house at 95, I. Bohun str. after reconstruction, taking into account the proposed changes (sections of the changed thermal networks are indicated by numbers corresponding to the serial numbers (in brackets) of this page) are added. Schemes are in the Annex 2.

Equipment required for standard laying of underground communications:

1. Organization of underground location.
2. Excavator with a bucket and a hydraulic hammer, if available (in the presence of hard coating).
3. In the absence of a hydraulic hammer, the hard coating will be exposed by punching hammers.
4. Truck crane.
5. Asphalt roller or portable vibroplate, if there is a need to restore asphalt.

Equipment required for laying underground communications by puncture method

1. The device for underground location
2. Excavator with a bucket and a hydraulic hammer, if it is possible (in case of hard cover).
3. If there is no hydraulic hammer, the hard cover will be exposed by a punching hammer
4. Hydraulic drilling station.
5. Asphalt roller or portable vibroplate, if it is necessary to restore asphalt.

4. Envisaged Impacts of the Design Activities on Environmental and Social Fields

4.1 Summary for the Potential Project Impacts

The activities of the proposed district heating rehabilitation program do not include any greenfield activities, all construction takes place within existing urban areas (see Table 6, 7, 8 for details). Most activities are confined within existing boiler house sites and buildings. The closure of some of the existing boiler houses with concurrent connection of existing separate heating networks requires building new heat transmission pipelines. The pipelines are usually placed along streets. In urban areas, most of the lines are placed underground and no permanent land acquisition is caused.

The main activities of the proposed program/project causing disturbance in everyday life are:

- Construction vehicles movements;

- Demolition works;
- Delivery of construction materials;
- Operation of heavy machinery in the vicinity of schools and hospitals;
- Vehicles transporting domestic/ construction/ hazardous waste;
- Presence of workers on the territory of medical institutions and schools;
- Sanitation issue on the territory of hospitals and schools

Besides environmental impacts, any construction works may result in disturbance of everyday life, such as temporary or permanent land acquisition ([Annex 3](#)), traffic disturbances or access restrictions. The large-scale activities are not envisaged currently. In case the situation arises, and unplanned permanent resettlement would be subject to discussion. The Borrower will develop AbRAP or RAP, consult it and disclose. No civil works to be conducted before land plots are being legally allocated to the ownership of MPU "Khersonteploenergo". The representatives of RPIU has made careful screening of the objects as well as of the adjacent zones. No business or residential houses to be influenced directly were detected.

The activities of the proposed district heating rehabilitation program do not include any greenfield activities, all construction takes place within existing urban areas. Most activities are confined within existing boiler house sites and buildings. The closure of some of the existing boiler houses with concurrent connection of existing separate heating networks requires building new heat transmission pipelines. The pipelines are typically placed along streets. In urban areas, most of the lines are placed over ground, because of the project implementation it is expected that the pipelines will go underground, so no permanent land occupation is needed to be acquired from the private or public owners.

Table 9. Types of impacts from activities

Sector	Impacts	Magnitude	
		Duration	Significance
Construction phase			
a. <i>Water Quality</i>	Unauthorized dumping of wastewater. Handling chemical materials surface/ground water pollution. Ground and surface water can be polluted by accidental spillages and leakages from temporary oil and fuel storage and leakages from machinery. Improper storage of construction and demolition waste, including hazardous materials, at the sites	Short-term	Regional moderate
b. <i>Air Quality</i>	Dust generated from asphalt removals, earth excavation, loading, hauling, and unloading, Dust generated by the movement of vehicles and heavy machinery on unpaved access and haul roads, Exhaust discharged from vehicles and equipment. Dust emission associated with site conditions (soil, weather, or seasons) Dust generated by the vehicles delivering granular and/or fine materials to the sites Main pollutants are dust, NOx and CO, welding works and products of chemical activities, which are created by ultraviolet emission during welding.	Short-term	Local (city), moderate

Sector	Impacts	Magnitude	
		Duration	Significance
	Negative impacts on ambient air quality take place mainly in the vicinity of the construction and demolition sites and along the roads leading to these sites.		
c. <i>Noise</i>	<p>Significant increase in noise is expected during works, due to various construction and transport activities.</p> <p>The main sources of noise during construction and demolition work are traffic, use of machinery, handling of materials, assembling of new boilers, pipelines etc. and demolishing of old infrastructure (i.e. boiler houses and other facilities). Noise may affect construction workers if they are not using proper individual protective gear thus causing occupational health risks.</p> <p>Noise may also disturb people living and working near the sites. Especially hospitals, schools and other sensitive objects are of particular concern.</p>	Short-term	Local, high
d. <i>Soil Quality</i>	<p>Rainfall runoff from the construction sites may pollute the soil in the parks whereby the mainline heating pipe will be rehabilitated.</p> <p>Welding or cutting pipes will get splinters of iron that will impact on ground. The same soil pollution can be from oil spills from transport equipment and machinery used in the work that contain oils.</p> <p>Small particles of mineral wool, asbestos and polyurethane can remain on the ground.</p> <p>In case construction and demolition waste is stored improperly at the work sites, it may cause contamination of soil,</p>	Short-term	Local, moderate
e. <i>Ecosystem</i>	Air pollution caused by emissions from vehicle and machinery might affect the vegetation along the transportation road and around the site. These impacts are short-term and are considered as on the eco-environment.	Short-term	Local, minor

Sector	Impacts	Magnitude	
		Duration	Significance
f. <i>Solid Wastes</i>	<p>The solid wastes generated from the construction are old pipes, abandoned construction materials, scattered sands/stones, concretes and domestic wastes.</p> <p>Emissions from equipment / machinery for welding, gas metal cutting, drilling;</p> <p>When carrying out welding or cutting pipes will get splinters of iron that will impact on the ground. The same soil pollution can be from oil spills from transport equipment and machinery used in the work that contain oils.</p> <p>Small particles of mineral wool and polyurethane can remain on the ground.</p> <p>Improper supporting structures of deep excavations may lead to landslips thus causing risks to workers and nearby structures. Bare ground is prone to soil erosion in case of heavy rainfalls occur during the works.</p> <p>Pollution caused by poor transport and disposal of waste materials</p>	Short-term	Local, moderate
g. <i>Construction Traffic</i>	<p>Construction activities and traffic could lead to traffic congestion and inconvenience to the public due to: (i) increased vehicles for materials and solid wastes transportation, and (ii) deterioration of the roads condition after excavation and leveling. It might bring negative effects to the narrower road and cause larger vehicle flux.</p>	Short-term	Local, moderate
h. <i>Social impact and safety</i>	<p>- Due to fact that the all the project activities will be in Kherson area there is a risk of accidents and injures for public may occur.</p> <ul style="list-style-type: none"> - - During works inside the buildings risk of explosions, pollution and inhalation of gases is high especially during welding works. Damage to human health due to exposure to asbestos containing materials - Temporarily land occupation - Temporary traffic disruption 	Short-term	Local, low
i. <i>Cultural Properties</i>	<p>Archaeological findings during the excavation works.</p>	Short-term	Local, minor, low probability
Operation phase			
j. <i>Water Quality</i>	<p>Handling chemical materials surface/ground water pollution.</p>	Short-term	Regional moderate
k. <i>Air Quality</i>	<p>It is not expected that local air pollution will increase or exceed established standards. The total amount of air</p>	Short-term	Local,

Sector	Impacts	Magnitude	
		Duration	Significance
	<p>pollution caused by heat generation facilities in programme is expected to be lower than current level due to better pollution control equipment of new installations and improved energy efficiency.</p> <p>Dust emission associated with site conditions (soil, weather, or seasons) during small repairs and maintenance.</p>		minor
<i>m. Soil Quality</i>	Accidental spills and leakages of fuels and transformer oil during transport, storage and use can cause risks to environment and human health.	Short-term	Local, minor
<i>n. Ecosystem</i>	Air pollution caused by emissions from vehicle and machinery might affect the vegetation along the transportation road and around the site. These impacts are short-term and are considered as on the eco-environment.	Short-term	Local, minor
<i>p. Public and Safety</i>	New equipment and pipes will improve current situation and minimize risk of explosions, pollution and inhalation of gases	Short-term	Local, high

4.2 Social Impacts

The main activities of the proposed program causing disturbance in everyday life are:

Disturbance for traffic

Traffic disturbances are expected to be temporary and limited to short periods of time only at any one construction site. Where the construction works require excavating across streets, temporary alternate routes need to be arranged or temporary bridges constructed.

When the works will affect routes of the public transport, the utility must coordinate with the municipality and the traffic operator the alternative route of transport and inform the population in advance, for example in buses, bus stops, on the route affected, on company website and in public media.

Access restrictions

As the works will mostly be conducted at utility-owned sites, access restrictions to public services and institutions will be limited. Minor temporary restrictions may be caused where the construction

works require excavating across streets. In such cases the temporary routes must be arranged and the safety of the public be ensured by protective fences and other guidance as needed.

The construction/ rehabilitation works will bring to limited access to some of the area owned/ used by the public utility companies. However, the reconstruction works will not affect private houses and will not bring to any restricted or limited access to their courtyards and use of public roads. Proper screening will be done prior to the start of civil works to make sure no private households are being affected by construction.

However, the social impact needs to be mitigated and a site-specific ESMP (or AbRAP if necessary), included a mobility and access facilitation measures, developed and implemented by the Construction Company during rehabilitation works. The requirement for preparation of the plan shall be required in the bidding documents and under the terms of contract.

Disturbance of business

The works may cause disturbance to normal business or other services operations by causing temporary traffic or access restrictions or requiring utilization of alternative routes. As the works will mainly be conducted on utility sites, no major disturbance is expected.

The utility must coordinate with the affected business and service operators to limit the disturbance by, where possible, choosing most suitable time for conducting works to minimize losses.

Where the alternative routes are required, information needs to be given on websites of the utility and affected companies and in public media.

Resettlement

None of the proposed activities of the proposed program require or cause temporary or permanent physical resettlement of people. Moreover, the works will be mainly conducted off the heating season and thus will cause only limited nuisance for living conditions. Construction works will take place mainly within existing boiler house sites and thus will minimize economic displacement. Construction of new district heat pipelines transmission lines do not require dismantling apartment buildings.

The Project is not expected to have any adverse economic or social impacts. The project may require permanent acquisition of the municipal land area rented out for business activities. In such cases relevant substitute land or monetary compensation for the losses will be provided to tenants and Ab-RAP with detailed impact and compensation measures prepared/disclosed. Only temporary effects are expected, and they will be easily mitigated by either providing the compensation for the period of disturbance or alternative place for trade or parking. All land plots on which works will be carried out at the disposal of MPU "Khersonteploenergo".

The Gender Dimension

The stakeholder and PAPs analysis has identified that there is no direct gender dimension impact. Meanwhile, the objects under rehabilitation provide heating to the institutions where most employees are women. This will have major impact on the working conditions of women.

Women are expected to be the key beneficiaries of the Project, as improved heating services will impact them directly. During implementation the Project will disaggregate customer satisfaction data collected by gender to ensure the voices of women are reflected and help to inform the company's strategy to improve service provision. Women will also be engaged in community monitoring activities. Information campaigns will formulate gender-targeted messages and utilize varying tools to reach out to both men and women.

The implementing agency will adopt a number of measures to ensure that community consultations will involve women that will be included in the Operational Manual

The categories of people affected by the project are: residents of Kherson (both employees and end users), especially inhabitants of houses adjacent to the sites of work, patients and staff of the Center for the Rehabilitation of Children with Disabilities.

4.2.1 Information about connected customers

Among the connected consumers are hospitals, schools and residential buildings. MPE "Khersonteploenergo", in cooperation with the Contractor, will prepare a schedule of work that will not affect the heating season. If necessary, during the heating season, current customers will be switched over to other suppliers of heat energy. The customers will be notified in advance about this.

Connected customers

Boiler house at 161, Makarov str.

- 9 (nine) two-storeyed and five-story buildings;
- 2 (two) administrative buildings.

Boiler house at 37, Kupetska str.

- 7 (seven) multistory dwelling houses;
- 1 (one) kindergartens.

Boiler house on the 95, Bohun str.

- 221 (two hundred and twenty one) dwelling house;
- 7 (seven) student mitories;
- 17 (seventeen) administrative buildings;
- 12 (twelve) kindergartens;
- 11 (eleven) schools;
- 4 (four) educational institutions;
- (two) hospitals;
- 1 (one) specialized children's home.

Boiler house on 3, Nebesna Sotnia str

- 10 (ten) two-storeyed and five-story houses;
- 1 (one) administrative building.

Boiler house on 17, Nebesna Sotnia str

- 10 (ten) two-storeyed and five-story houses;
- 1 (one) center for the rehabilitation of disabled children;
- 1 (one) kindergarten;
- 13 (thirteen) multistory dwelling houses.

Boiler house on 25, Nebesna Sotnia str

- 1 (one) Kherson Naval School;
- 5 (five) dwelling houses.

4.2.2 Socially sensitive objects of the project and Specific mitigation measures

Vulnerable and sensitive categories of people

- 1) Social screening revealed that the Rehabilitation Center for Disabled Children (address: 4, Stepan Razin str.,) falls under the influence of the project.

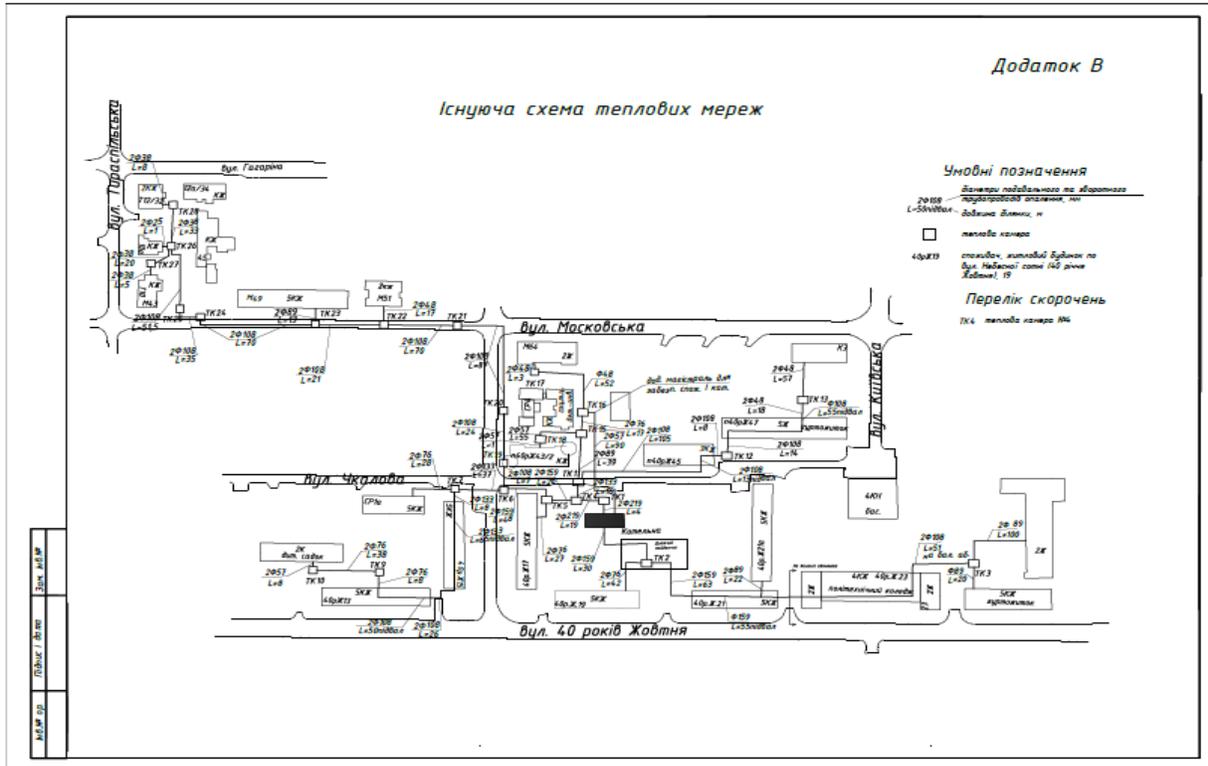
During the site survey, it was discovered that the pipes of the heating system that are to be replaced are under the flower bed and the trees grown by the workers of the given rehabilitation center.



Picture 4. Green plantations in front of the entrance to the center for the rehabilitation of disabled children on 4, Stepan Razin str.

The centre for the rehabilitation of disabled children is functional all year. After dialogue with the representatives of the Center it was decided that in this case, the work on replacing the pipes should be carried out by puncture method.

In addition, the Contractor will agree with the management of the Rehabilitation Center a schedule of work in advance.



Scheme 4. Location of heat network along the Rehabilitation center

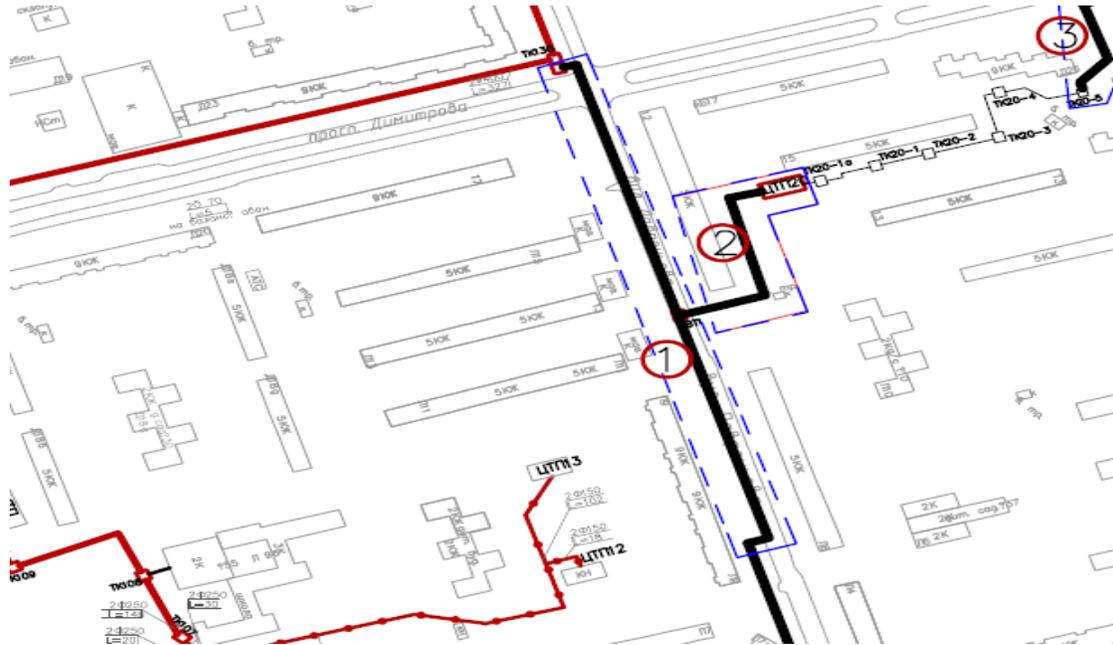
- 2) Particular attention should be paid to work on the replacement of heat pipes on the street. Lavrenev Current pipelines are under the territory of the Shumen market. So, analyzing alternatives and reducing social pressures, it was decided to redirect part of the network to a street that runs along the market (see chart below).



Picture 5. Pre-approved variant of placement of new heat network

Taking into account that the Lavrenev street is a public transport route, so during the construction work it is necessary to provide detour routes by arranging additional routes. MPE "Khersonteploenergo" should

pay attention to the fact that public transport is free of charge for the elderly, and most passengers are actually such citizens, therefore alternative routes of public transport should be provided.



Scheme 5. Location of heat network along Lavreniova str.

- 3) Children's playground is located on the land plot next to the boiler house on 3, Merchant str. It shall be dismantled during the works.



Picture 5. Children's playground which shall be temporary dismantled.

After replacing the pipelines, the MPU "Khersonteploenergo" will restore the children's playground and install new children's swings.

The Contractor will be required to provide standard negative impact minimization measures specified in this ESMP, except for the following sections, where further steps should be implemented. A specific AbARAP for heating networks reconstruction will be prepared.

Public safety and traffic issues:

- Install fences in the construction sites to prevent access by unauthorized persons
- Use caution tape and warning signs at the construction sites around trenches and excavations
- Deliver construction equipment and materials to the construction sites outside schools' sessions such as in the evening or weekends
- Speed limit for all vehicles should be less than 10 km/h
- Do not park at unauthorized places to reduce the risk of accidents
- Install temporary road signs at junctions to the beneficiary institutions during the delivery of construction equipment and materials
- Ensure delivery trucks are in good condition to prevent breakdowns on roads
- Remove all construction equipment from the site completion of works
- Observe the safety precautions for handling cranes (Order of the Cabinet of Ministers of Ukraine dated January 19, 2018, No. 92 "On Approval of Labor Protection Rules for the Operation of Lifting Cranes, Lifting Devices and Related Equipment")
- Ensure constant compliance with fire regulations
- Allow permanent alternative shipping routes
- Thermal supply is provided without interruption.
- Develop a plan for emergency water supply in the event of disconnection of water through construction work.

5. Health and Safety Protection Measures on Site

The appointed contractor will identify potential hazards and develop responses (including design, testing, choice, substitution, installation, arrangement, organization, use and maintenance of workplaces, working environment and work processes) to eliminate sources of risk or minimize workers' exposure to hazards.

Where hazards are inherent to the project activity, or it is otherwise not feasible to eliminate the hazard, residual risks shall be managed through appropriate protective measures, such as controlling the hazard at source through protective solutions and by providing adequate personal protective equipment at no cost to the worker.

Training must be provided to all workers on all relevant aspects of occupational health and safety associated with their daily work, including emergency arrangements. Third parties (visitors and external service providers) must be briefed on the relevant aspects of health and safety and emergency response when accessing the premises.

The appointed contractor must document and report occupational injuries, illnesses and fatalities. It is recommended that a process for reporting near misses and unsafe behaviors be developed as a proactive approach to occupational health and safety risk management. Adequate access to first aid and medical assistance in cases of work related accidents or injuries must be provided.

The overall site management system must be designed with adequate capacity for oversight of occupational health and safety matters. Physical hazard to workers must be adequately assessed in may include (but not limited to the aspects included in Table Physical Hazards to Workers

Table 10. Physical factors of danger to the employees

Aspect	Considerations
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Rotating and moving equipment	<ul style="list-style-type: none"> ■ <i>Machine design is to eliminate trap hazards and to ensure that extremities are kept out of harm's way under normal operating conditions (for example emergency stops, machine guards, etc. must be installed).</i> ■ <i>Turn off, disconnect, isolate, and de-energize (Locked Out and Tagged Out) machinery with exposed or guarded moving parts, to prevent injury.</i> ■ <i>Design and install equipment, where feasible, to enable routine service, such as lubrication, without removal of the guarding devices or mechanisms.</i>
Noise	<ul style="list-style-type: none"> ■ <i>No employee shall be exposed to a noise level greater than 85 dB(A) for a duration of more than 8 hours per day without hearing protection. No unprotected ear shall be exposed to a peak sound pressure level (instantaneous) of more than 140 dB(C).</i> ■ <i>The use of hearing protection must be enforced actively when the equivalent sound level over 8 hours reaches 85 dB(A), the peak sound levels reach 140 dB(C), or the average maximum sound level reaches 110 dB(A). Hearing protective devices provided should can reduce sound levels at the ear to at least 85 dB(A).</i>
Vibration	<ul style="list-style-type: none"> ■ <i>Exposure to hand-arm vibration from equipment such as hand and power tools, or vibrations from surfaces shall be controlled through choice of equipment, installation of vibration dampening pads or devices.</i>
Electrical	<ul style="list-style-type: none"> ■ <i>Mark all energized electrical devices and lines with warning signs.</i> ■ <i>Use a system to prevent unauthorized equipment inclusion by installing locking and warning signs during service</i> ■ <i>Check all electrical cords, cables, and hand power tools for frayed or exposed cords and following manufacturer recommendations for maximum permitted operating</i> ■ <i>Double isolation / grounding of all electrical devices used in wet rooms.</i> ■ <i>Installation of the "Keep away" sign around or under the high-voltage transmission lines.</i>

Aspect	Considerations
	<ul style="list-style-type: none"> ■ <i>Vehicles that come into direct contact with, or arcing between, high voltage wires may need to be taken out of service for periods of 48 hours.</i> ■ <i>Identify and mark of all buried electrical wiring prior to any excavation work.</i>
Eye hazards	<ul style="list-style-type: none"> ■ <i>Ensure the appropriate use of machine guards or splash shields and/or face and eye protection devices, such as safety glasses with side shields, goggles, and/or a full-face shield.</i> ■ <i>Move areas where the discharge of solid fragments, liquid, or gaseous emissions can reasonably be predicted away from places expected to be occupied or transited by workers or visitors.</i>

Welding/ hot work	<ul style="list-style-type: none"> ■ Provide adequate eye protection such as welder goggles and/ or a full-face eye shield for all personnel involved in, or assisting, welding operations. ■ Special hot work and fire prevention precautions and Standard Operating Procedures (SOPs) must be developed and implemented if welding or hot cutting is undertaken outside established welding workstations.
Industrial vehicle driving and site traffic	<ul style="list-style-type: none"> ■ Train and license industrial vehicle operators in the safe operation of specialized vehicles. ■ Ensure drivers undergo medical surveillance. ■ Ensure moving equipment with restricted rear visibility is outfitted with audible back-up alarms. ■ Establish rights-of-way, site speed limits, vehicle inspection requirements, operating rules and procedures. ■ Restrict the circulation of delivery and private vehicles to defined routes and areas, giving preference to 'one-way' circulation, where appropriate.
Working environment temperature	<ul style="list-style-type: none"> ■ Monitor weather forecasts for outdoor work and provide warning of extreme weather and schedule work accordingly (adjust work hours, provide temporary shelters (if required), provide protective clothing and ensure adequate hydration).
Ergonomics, repetitive motion, manual handling	<ul style="list-style-type: none"> ■ Ensure appropriate facility and workstation design, consider the appropriate use of mechanical assistance to eliminate or reduce exertions, select and design tools that reduce force requirements and holding times, provide user adjustable work stations (including left handed persons), incorporate rest and stretch breaks into work processes and conduct job rotation.
Work at heights	<ul style="list-style-type: none"> ■ Install of guardrails with mid-rails and toe boards at the edge of any fall hazard area, ensure the proper use of ladders and scaffolds, ensure the use of fall prevention devices, provide appropriate training , develop rescue and/or recovery plans, and equipment to respond to workers after an arrested fall.
Illumination	<ul style="list-style-type: none"> ■ Use energy efficient light sources with minimum heat emission, undertake measures to eliminate glare/ reflections and flickering of lights, take precautions to minimize and control optical radiation, control laser hazards.
Hazardous materials	<ul style="list-style-type: none"> ■ Identify potential risk of a spill of uncontrolled hazardous materials and prepare a spill control, prevention, and countermeasure plan. ■ Make available all personal protective equipment needed to respond to an emergency.

Emergency accidents

RPIU will, thought-out the life of the project, continue to assess possible risks to the communities as it relates to emergency incidents (such as the uncontrolled/fugitive emission and fire). Specific and timely information on appropriate behavior and safety measures must be adopted in the event of an accident.

Communities and other stakeholders will have access to information necessary to understand the nature of the possible effect of an accident and an opportunity to contribute effectively, as appropriate, to decisions concerning hazardous installations and the development of community emergency preparedness and response plans.

Specific attention must be given to the transportation of any hazardous materials. A procedure must be developed to ensure compliance with local laws and international requirements relating to the transport of hazardous materials, including waste classification and hazard analysis, labelling, emergency response approach, vehicle and container specifications, training of the drivers, risks associated with the transportation route etc.

Where the consequences of emergency events are likely to extend beyond the project boundary (e.g. hazardous material spill during transportation on public roads), emergency response plans must be developed based on the risks to the health and safety of the affected community and other potentially affected stakeholders.

Emergency plans must address the following aspects of emergency response and preparedness:

- Specific emergency response procedures.
- Communication strategy.
- Trained emergency response teams.
- Emergency contacts and communication systems/protocols.

6. Environmental and Social Mitigation Plan

The Environmental and Social Management Plan (ESMP) contains: (a) mitigation measure to address potential adverse environmental and social impacts under Components; (b) civil works supervision methods and monitoring actions; and (c) implementing arrangements.

The proposed mitigation measures are summarized and presented in the table below:

Table 11. Mitigation Measures

Impact	Mitigation Measures	Frequency of mitigation measures	Responsibility for the mounting	Responsibility for the operation
1. STAGE -CURRENT STATE				
Waste management	<ol style="list-style-type: none"> 1. Determine the list and volume of waste generation 2. Determine and prepare places for temporary storage of waste. Places for temporary storage of waste should have impervious bottoms. 3. Prepare hermetically sealed containers for waste collection. 4. Prepare places for storage of asbestos materials. 5. Prepare places for temporary storage of asbestos waste that have impervious bottom, fences and access roads. 6. Prepare marked hermetically sealed containers for asbestos waste collection. 7. Conclude agreements with enterprises for waste disposal. 	single-action, before the start of works	MPU "Khersonteploenergo" Contractor	Contractor
Impact during the transportation	<ol style="list-style-type: none"> 1. Enclose the construction site from the public area. 2. Prepare Traffic Management Plan for the construction site. 3. Provide safe paths for pedestrians. 	Constantly	Contractor	Contractor
Impact on human health	Provide staff with personal equipment	Constantly	Contractor -	Contractor
Impact on social environment	To conduct a consultations on the performance of works and relocation of trees, playgrounds, waste collection sites, fences, garden-houses for rest, flower beds with communities (school, etc.)	Before the start of works	MPU "Khersonteploenergo" Contractor	Contractor
2 STAGE - BUILDING				
Impact on the atmosphere	<ol style="list-style-type: none"> 1. Priority should be given to new equipment and modern technologies with a low level of pollutant emissions. New equipment should meet emission standards established in Ukraine. This requirement will be included in the tender documentation. 2. Ensure minimization of dust emissions during construction (water spraying). 3. Ensure regular cleaning of open surfaces at the work site and adjacent areas from dust, the moisture of access roads and excavation areas, site cleaning after completion of works. 4. Ensure proper technical condition of all vehicles, mechanisms, equipment. 5. Ensure minimization of emissions. 6. Carry out regular vehicle inspection. 7. Carry out control of flue gases 8. Prohibit burning of garbage on the site. 9. Carry out dust suppression during demolition or construction works 	Constantly	Contractor	Contractor MPU "Kherson- teploenergo" RPIU

Table 11. Mitigation Measures

Impact	Mitigation Measures	Frequency of mitigation measures	Responsibility for the mounting	Responsibility for the operation
	10. Reduce the distance of fall to minimum (unloading the soil from trucks or any other material that produces dust during operation) 11. Do not allow an idle run of construction vehicles at sites.			
Noise impact	1. Ensure performance of works during working hours. 2. Ensure timely notification of residents (in 10 days before) about the need to carry out works with a high level of noise at night time. 3. Provide workers with personal hearing protection equipment (headphones, anti-noise inserts) 4. If necessary, install noise screens 5. Closing of engine covers, generators, air compressors and other mechanical equipment during operation, and placing equipment as far away from residential premises as possible 6. Switching off unnecessary or unused equipment	Constantly	Contractor	Contractor MPU “Kherson-teploenergo” RPIU
Impact on a soil	1. Carrying out regular inspections and proper maintenance of vehicles for leakage of oil/fuel. 2. Prohibit washing of vehicles and machinery at the construction site. 3. Ensure carrying out maintenance of vehicles and machinery in a specially designated area 4. Ensure the collection of spilled oils or fuel and the removal of the topsoil, the temporary storage of contaminated soil in hermetically sealed containers and disposal to a special enterprise. 5. Ensure recovery of damaged road pavement. 6. Limit construction activities to minimize topsoil devastation and optimize the use of soil. 7. Separate the upper and lower layer of soil during the performance of earthworks with a thorough replacement of the topsoil after the laying of pipes. 8. Avoid soil erosion in temporary storage areas in order to ensure that measures for avoidance of overflows in case of heavy rain are taken.	Constantly	Contractor	Contractor MPU “Kherson-teploenergo” RPIU
Waste management	1. Ensure waste collection (metal scrap, heat insulation, solid domestic waste, construction waste, etc.) 2. Ensure the removal of waste for disposal. 3. Limit the access of people who have no relation to the performance of these works to the work site and places of temporary storage of wastes.	Constantly. Waste removal is carried out at least once 2 days	Contractor	Contractor MPU “Kherson-teploenergo”

Table 11. Mitigation Measures

Impact	Mitigation Measures	Frequency of mitigation measures	Responsibility for the mounting	Responsibility for the operation
	<ol style="list-style-type: none"> 4. Ensure collection of asbestos-containing waste to special hermetically sealed single time use synthetic bags. Removal of waste containing asbestos, rubberoid and rock wool with minimal fragmentation to avoid dust generation; regardless of the marking of hazardous materials, materials that produce asbestos dust should be packed in durable, closed packaging (synthetic bags). Plastic materials used should be resistant to ultraviolet radiation. The packaging should be sewn with threads or fastened with any type of welding 5. Ensure that works with asbestos-containing materials are performed in isolation from the adjacent area using fabric or plastic coatings. 6. Ensure regular removal of asbestos-containing waste for the disposal and conduct regular wet cleaning of work sites and adjacent area. 7. Transportation of hazardous materials should be carried out by licensed organizations to the licensed landfills. 8. Placement of containers for garbage collection at the construction site and construction camp. 9. The separation of waste into two separate streams - those that can be and cannot be recycled. 10. Training of staff on waste management. 			RPIU
Prevention of emergency accidents.	<ol style="list-style-type: none"> 1. Ensure compliance with fire safety requirements. 2. Ensure the development of an emergency plan in case of fire break-out. 3. Ensure carrying out regular fire and emergency response drills. 4. Provision of workers involved in maintenance of machinery with instructions that include the following: (a) manual for machine and caring for the workplace; (b) technical requirements for machinery; (c) signal system management; d) maximum load and speed of machines; e) measures that should be taken by a worker in the event of an accident or malfunction of the machinery. 5. Strict adherence to the rules of operation of the respective machines 6. Performance of works with approaching power lines under voltage under the supervision of electricians 7. Installing and fastening cranes in a stable position to prevent them from turning-over or spontaneous move under gravity and engines. 	Constantly.	Contractor	Contractor MPU "Kherson-teploenergo" RPIU

Table 11. Mitigation Measures

Impact	Mitigation Measures	Frequency of mitigation measures	Responsibility for the mounting	Responsibility for the operation
	<ol style="list-style-type: none"> 8. Checking the working capacity of mechanisms, the presence of fences and preventing safety facilities for mechanized management of earthworks. 9. Prohibition against work on defective machines 			
Impact on flora species	<ol style="list-style-type: none"> 1. Carry out the cutting of the topsoil and removal for urban improvement. 2. Ensure filling of pits, leveling of a surface, soil layer remediation, greening of adjacent territory, placement of lawns and sowing of fast-growing plantations after completion of works. 3. It is necessary to carry out an inventory of large trees located near the construction site, large trees should be marked and fenced, their root system should be protected, and any damage to the trees should be avoided. 	Quarterly	<p>The contractor must include the cost of transporting surplus materials to the final disposal sites in the quantitative works.</p> <p>The cost of the project should include compensation for the cut trees (or the planting of new trees)</p>	<p>Contractor</p> <p>MPU "Kherson-teploenergo"</p> <p>RPIU</p>
Impact during the transportation	<ol style="list-style-type: none"> 1. Develop Traffic Management Plan for the construction site. 1. 2. Establish safe speed limits during the performance of works. 	Quarterly		
Impact on human health	<ol style="list-style-type: none"> 1. Ensure compliance with safety regulations. 2. Provide workers with PPE (glasses, gloves, respirators) and overalls when performing works with asbestos-containing materials and other works if needed. 3. Installation of protective shields and screens in places where welding works are carried out. Provide workers with welding masks. 4. Ensure that workers have "sanitary facilities". 1. 5. Restrictions on passage of delivery vehicles transporting construction materials within residential areas/schools/hospitals 	Constantly	Contractor	<p>Contractor</p> <p>MPU "Kherson-teploenergo"</p> <p>RPIU</p>
Cultural heritage	The procedure for accidental findings should be included to the Contract in order to minimize and manage the heritage resources properly	annually	Contractor	Contractor
Road traffic and pedestrian safety	<ol style="list-style-type: none"> 1. Installation of warning signs and barriers, and redirection of traffic flows. 2. Transport management system and informing of staff regarding approved traffic schemes. 3. Implementation of safe passages and pedestrian crossings in areas where construction impedes. 4. Adjust working time according to local traffic models, for example avoiding large transport operations at peak hours 	Quarterly	Contractor	<p>Contractor</p> <p>MPE "Kherson-teploenergo"</p> <p>RPIU</p>

Table 11. Mitigation Measures

Impact	Mitigation Measures	Frequency of mitigation measures	Responsibility for the mounting	Responsibility for the operation
	<ol style="list-style-type: none"> 5. Organization of construction machinery traffic 6. Organize detour of stadiums and other socially important facilities during the construction works if needed. 			
Social impact	<ol style="list-style-type: none"> 1. Development of grievance mechanism and support of their registration on the website, processing of GRM log. 2. Conduction of awareness campaigns - holding public meetings and distributing documents on planned activities, as well as activities planned to prevent and reduce potential impacts from construction works. 3. Separate management on gender issues (for example, to receive grievances from women) 4. Encourage gender-sensitive opportunities for temporary employment within projects as possible 5. Arrange gender issues in correct order including consultations 6. Hire employees among local residents 7. Make a detailed schedule with a description of the dismantling of playgrounds, flower beds for the performance of work with their subsequent restoration after the completion of construction or reconstruction. 8. To develop a mechanism for the dismantling of the playground and its restoration in the shortest possible time. taking into account safety requirements during dismantling. making it impossible to place dismantling equipment without proper warning signs and fences. 9. Get an agreement on the supplies equipment / swings for playgrounds, as well as installs it in accordance with the Order of 01.03.2006 N 110 "On approval of the Rules of construction and safe operation of attraction equipment" 10. Ensure cautious handling of flower beds that are affected to work under the current project. 11. Get an agreement on the restoration of the flower beds after the completion of construction work 	Constantly	Contractor RPIU	Contractor RPIU
3. STAGE – MAINTENANCE				
Impact on the atmosphere	<ol style="list-style-type: none"> 1. Organize monitoring of emission standards 2. Develop, establish norms of maximum acceptable concentrations of emissions into the atmosphere. Get permission to emit pollutants into the atmosphere by stationary sources. 3. Control the level of pollutants in the area of influence of emissions sources. 	<p>annually 1 time a 5 years</p> <p>annually</p> <p>annually</p> <p>Constantly</p>	MPU "Khersonteploenergo"	MPU "Khersonteploenergo"

Table 11. Mitigation Measures

Impact	Mitigation Measures	Frequency of mitigation measures	Responsibility for the mounting	Responsibility for the operation
	<ol style="list-style-type: none"> 4. Routes for transportation of fuel materials and ash must be agreed with the local community 5. Limitation of speed of vehicles for delivery of fuel should be up to 5 km/h for passage within the residential area 6. Conduct control in compliance with normatives. 	Constantly		
Noise impact	<ol style="list-style-type: none"> 1. Provide workers with personal protective equipment against noise impact. 2. Prevent the noise propagation to the maximum possible level - using special structures, noise proofing mats, and fabrics near sources of noise generation. 	Constantly	MPU "Khersonteploenergo"	MPU "Khersonteploenergo"
Waste management	<ol style="list-style-type: none"> 1. Ensure regular updates of waste disposal plans. 2. Ensure waste sorting based on the maximum expediency. 3. Ensure regular removal and disposal of waste, including ash 	Quarterly	MPU "Khersonteploenergo"	MPU "Khersonteploenergo"
Prevention of emergency accidents.	<ol style="list-style-type: none"> 1. Ensure compliance with relevant fire safety rules and regulations, instructions. 2. Develop an emergency plan in case of fire break-out. 3. Ensure conducting trainings on simulation of emergency situations. 	Constantly	MPU "Khersonteploenergo"	MPU "Khersonteploenergo"
Impact on human health	Ensure compliance with safety regulations	Constantly	MPU "Khersonteploenergo"	MPU "Khersonteploenergo"
STAGE 4 – REMOVAL FROM OPERATION				
Waste management	1. Dismantling of site and removal of waste	annually	MPU "Khersonteploenergo"	MPU "Khersonteploenergo"
Impact on a soil	1. Conduction of reclamation activities (cleaning up of the territory from the remnants of buildings and equipment, structures, construction waste, refilling of excavation pits, sanitary felling of shrub vegetation with subsequent plantation of local species and remediation of the soil layer)	annually	MPU "Khersonteploenergo"	MPU "Khersonteploenergo"

7. Social and Environmental Monitoring Plan

The purpose of monitoring is to conduct environmental and social monitoring and to implement measures to reduce the potentially negative impact on the environmental and the social spheres.

The main tasks of monitoring are:

- fulfillment of the requirements of the current legislation in the field of environmental monitoring and social field;
- receiving and accumulation of information on sources of pollution and the state of components of the environment in the zone of the objects' impact;
- analysis and comprehensive assessment of the current state of various components of environment;
- gathering information for management of the object in order to make planned and emergency management decisions;
- preparation, maintenance and registration of reporting documents on the results of environmental and social monitoring;
- obtaining data on the effectiveness of environmental measures, developing of the recommendations and proposals for the elimination and prevention of negative environmental and social impacts.

Monitoring is carried out in order to prevent violations of requirements in the field of environmental and labor protection to reduce the negative impacts during the works on the objects of the Project, as well as to timely remove of violations detected.

The monitoring task includes:

- detection of violations of environmental legislation and labor protection requirements during field work, assessment of their scale, as well as prevention of violations;
- ensuring the proper implementation of measures to mitigate the negative impact on environment and social sphere;
- ensure that the Contractor(s) fulfill the requirements of the current legislation of Ukraine;
- ensuring that the Contractor(s) follows the design solutions in environmental protection field;
- control over work on environmental protection after the completion of the construction phase.
- The control is carried out in the form of inspections, in accordance with the Monitoring Plan, which is given in Table 7.1.

Table 12. Social and Environmental Monitoring Plan

Monitoring Parameter	Place for monitoring	Approach for monitoring	Monitoring Frequency	Reason for monitoring	Responsible for implementation	Responsible for monitoring
Percentage of the population who indicated the increased quality of heating supply service provided	The whole city	Population interview	Defining basis parameter before construction	Definition of service quality improvement	RPIU	MPU "Kherson-teploenergo"
Areas for temporary waste storage	Near construction site	Visual inspection	Before construction	Prevention of negative effects on soils	Contractor	MPU "Kherson-teploenergo"
Traffic routes organization	Construction site	Visual inspection	Before construction	Staff safety	Contractor	MPU "Kherson-teploenergo"
Places for temporary storage of asbestos materials and waste	Construction camp. Construction site	Visual inspection	Before construction	Staff safety	Contractor	MPU "Kherson-teploenergo"
Workers wearing uniforms and individual protection gear for respiratory system	Construction site	Visual inspection	Constantly	Staff safety	Contractor	MPU "Kherson-teploenergo"
Workers wearing uniforms individual protection gear for hearing organs	Construction site	Visual inspection	Constantly	Staff safety	Contractor	MPU "Kherson-teploenergo"
Spillage of oil / fuel on soil	Construction site	Visual inspection	Constantly	To avoid negative impact on soil	Contractor	MPU "Kherson-teploenergo"

Monitoring Parameter	Place for monitoring	Approach for monitoring	Monitoring Frequency	Reason for monitoring	Responsible for implementation	Responsible for monitoring
1. Areas for temporary waste storage	Construction site	Visual inspection	Constantly	To avoid negative impact on soil	Contractor	MPU "Kherson-teploenergo"
2. Documents for transportation and disposal of waste.		Visual inspection	Monthly			
Air condition in the construction camp and construction site	Construction site	Visual inspection	Constantly	To avoid negative impact on air	Contractor	MPU "Kherson-teploenergo"
Observance of working time; Technical condition of vehicles and machinery; Noise levels (in case of complaints).	Construction site	Visual inspection	Constantly	To avoid acoustic pollution	Contractor	MPU "Kherson-teploenergo"
Vehicles and machinery washed outside of the construction site and at maximum distance from natural reservoirs; Fueling and technical maintenance of the construction machinery at	Construction site	Visual inspection	Constantly	To avoid environmental pollution	Contractor	MPU "Kherson-teploenergo"

Monitoring Parameter	Place for monitoring	Approach for monitoring	Monitoring Frequency	Reason for monitoring	Responsible for implementation	Responsible for monitoring
approved in advance fueling stations						
Following fire safety rules and documents check	Construction site	As per fire safety rules	Constantly	Staff safety	Contractor	MPU "Kherson-teploenergo"
1. Topsoil removal and temporary stockpiling for re-cultivation of the land; 2. Final cleaning of the construction sites and permanent access roads and landscaping-greening of the area.	Construction site	Visual inspection Visual inspection	Before construction works start Upon completion of civil works	To avoid negative impact on soil	Contractor	MPU "Kherson-teploenergo"
Organization of traffic flows: -Hoard off the construction sites to prevent access by unauthorized persons -Use caution tape and warning signs at the construction sites around trenches and excavations	Construction site	As per approved routes for vehicles and heavy machinery	Constantly	Health safety	Contractor	MPU "Kherson-teploenergo"
Placement of waste collection containers at the construction site and construction base (if any);	Construction site and construction camp (if any)	Visual inspection		To avoid water and soil pollution with domestic waste	Contractor	MPU "Kherson-teploenergo"

Monitoring Parameter	Place for monitoring	Approach for monitoring	Monitoring Frequency	Reason for monitoring	Responsible for implementation	Responsible for monitoring
Agreement with city municipality on regular disposal of domestic waste						
Temporary storage of construction waste in especially allocated areas; Timely disposal of wastes to the formally designated locations.	Construction site; Landfill	Visual inspection		To avoid water and soil pollution with domestic waste	Contractor	MPU "Kherson-teploenergo"
Arrangement and maintenance of toilets in compliance with sanitation norms at the construction site	Construction site	Visual inspection		To avoid water and soil pollution with domestic waste	Contractor	MPU "Kherson-teploenergo"
Grievance redress mechanism is operational at the local level: Distinct administration on gender issues (e.g. receive complaints by women); Gender-sensitive temporary employment opportunities around project works.	Construction zone area	Review of complaints log book and the response and handling of the complaints; Interviews with residents.	During the project	Maintain cooperative relations with affected persons and reduce their dissatisfaction with temporary nuisance; Reduce gender imparity	RPIU	RPIU

Monitoring Parameter	Place for monitoring	Approach for monitoring	Monitoring Frequency	Reason for monitoring	Responsible for implementation	Responsible for monitoring
1. Health and Safety Policy requirements	Construction site	As per health and safety policy requirements	Constantly	Health safety	Contractor	MPU "Kherson-teploenergo"
2. Handling toxic waste and materials (asbestos)	Area for asbestos waste storage/ hazardous materials	Visual inspection	Once a month			
Percentage of the population, that noticed improvement of the quality of heat supply services	City of the project	Population interview	2 times a year	To define the improvement level of the services provided	MPU "Kherson-teploenergo"	MPU "Kherson-teploenergo"
Control over emissions from stationary sources	Chimney of boiler house	Equipment and respective methodology	Once a year	Following Law of Ukraine "On Air protection"	MPU "Kherson-teploenergo"	MPU "Kherson-teploenergo"
Control for NO ₂ , CO in the surface layer of the atmosphere	One sampling point at the border with a residential area	Equipment and respective methodology	Once a year	Compliance with the requirements of sanitary welfare of the population	MPU "Kherson-teploenergo"	MPU "Kherson-teploenergo"
1. Use of individual protective gear for hearing organs	Working operation stations	1 Visual inspection	Constantly	Compliance with labor protection requirements	MPU "Kherson-teploenergo"	MPU "Kherson-teploenergo"
2. Noise level		2. Audio Noise Meter	Once a year			

Monitoring Parameter	Place for monitoring	Approach for monitoring	Monitoring Frequency	Reason for monitoring	Responsible for implementation	Responsible for monitoring
1.Sites of temporary storage of waste 2. Documentation on the disposal and disposal of waste.	Territory of boiler house	1.Visual inspection 2.Following environment protection requirements	Quarterly Quarterly	Meeting environment protection requirements	MPU "Kherson-teploenergo"	MPU "Kherson-teploenergo"
Compliance with fire safety requirements audit documentation	Boiler house	As per fire safety policy	Constantly	Workers' safety	MPU "Kherson-teploenergo"	MPU "Kherson-teploenergo"
Observance of safety rules and inspection of documentation	Working stations of staff	As per health and safety policy	Constantly	Health safety	MPU "Kherson-teploenergo"	MPU "Kherson-teploenergo"
Handling of asbestos-containing waste materials and checking documentation	Asbestos waste location	Meeting environment protection requirements	Quarterly	Health safety	MPU "Kherson-teploenergo"	MPU "Kherson-teploenergo"
1 Waste on site. 2. Documents for handling the waste 3. Re-Cultivation works	Object decommissioning	Meeting environment protection requirements	Upon decommissioning	Meeting environment protection requirements	MPU "Kherson-teploenergo"	MPU "Kherson-teploenergo"



Control list

Field environmental monitoring checklist for supervision of civil works

The Construction Supervision Consultant will fill in the checklist below and submit to RPIU monthly to monitor proper implementation of environmental protection and mitigation measures prescribed by this ESMP. Another purpose of this monitoring checklist is to monitor prompt liquidation or mitigation of unexpected adverse environmental impacts.

This form is designed for routine use and may not be exhaustive. Modifications and additions may be necessary to suit specific sites and to address specific environmental and social issues and associated mitigation measures.

Table 13. Field environmental monitoring checklist for supervision of civil works

Site location					
Name of contractor					
Name of supervisor					
Date of site visit					
Status of civil works					
Documents and activities to be examined	Status				Comments
	Yes	Partially	No	N/A	
Contractor holds license for extraction of natural Resources					
Contractor holds permit for operating concrete/asphalt Plant					
Contractor holds agreement for final disposal of waste					
Contractor holds agreement with service provider for removal of household waste from site					
Work site is fenced, and warning signs installed					
Works do not impede pedestrian access and motor traffic, or temporary alternative access is provided					
Working hours are observed					
Construction machinery and equipment is in standard technical condition (no excessive exhaust and noise, no leakage of fuels and lubricants)					
Construction materials and waste are transported under the covered hood					
Construction site is watered in case of excessively dusty Works					
Contractor's camp or work base is fenced; sites for temporary storage of waste and for vehicle/equipment servicing are designated					

Contractor's camp is supplied with water and sanitation is Provided					
Contractor's camp or work base is equipped with first medical aid and fire-fighting kits					
Workers wear uniforms and protective gear adequate for technological processes (gloves, helmets, respirators, eye-glasses, etc.)					
Servicing and fueling of vehicles and machinery is undertaken on an impermeable surface in a confined space which can contain operational and emergency spills					
Vehicles and machinery are washed away from natural water bodies in the way preventing direct discharge of runoff into the water bodies					
construction waste is being disposed exclusively in the designated locations					
Extraction of natural construction material takes place strictly under conditions specified in the license					
Excess material and topsoil generated from soil excavation are stored separately and used for backfilling / site reinstatement as required					
Works taken on hold if chance find encountered and communication made to the State agencies responsible for cultural heritage preservation					
Upon completion of physical activity on site, the site and contractor's camp/base cleared of any remaining left- over from works and harmonized with surrounding Landscape					

8. Responsibilities and Institutional Arrangements

Ministry of Regional Development, Construction, Housing and Communal Services of Ukraine (Minregion) is the head central public authority in implementation of the state regional policy and the policy in the field of building, architecture and city planning, improvement of administrative and territory system of Ukraine. One of the main tasks of Minregion is to provide state policy and regulation in the field of building, city planning, construction, preservation of historical areas and architectural monuments as well as housing and communal services.

Ministry of Ecology and Natural Resources of Ukraine (Minpryrody) oversees implementation of state policy in rational use and protection of natural resources (land, surface water, atmospheric air, forests, flora and fauna, resources of territorial waters, continental shelf and exclusive economic zone of Ukraine), waste management, environmental safety and environmental monitoring.

Within the limits of its authority, Minpryrody prepares proposals on setting out the standard fee for pollutants emission to the atmosphere and effluent discharge to the water and submits them for approval to the Cabinet of Ministers of Ukraine. Minpryrody is also responsible for preparation of proposals on the Procedure for establishment of use limits for natural resources, which is approved by the Cabinet of Ministers of Ukraine. In addition, Minpryrody prepares a list of hazardous facilities/installations (this list includes heat-generating facilities) which are subject to mandatory state environmental expertise.

The state control authorities in the field of ecology and sanitary and hygienic safety will monitor the environmental status at all stages of the implementation of the Project. The list of state environmental control authorities is provided in Table 14.

Table 14. List of State authorities of environmental control

State Authority Name	Area of responsibility	Monitoring frequency
Department of Ecology and Natural Resources of the Regional State Administration	Grant permission for emissions into the atmosphere, special water use, wastewater discharge.	-
City Department of the Main Department of the State Sanitary and Epidemiological Service in the region	Granting permission to produce solid waste (including fuel ash)	-
State Ecology Inspection in Kherson oblast	Conducting inspections to comply with the environmental legislation of Ukraine.	Annually
State Ecology Inspection	Conducting inspections to comply with the environmental legislation of Ukraine.	

State sanitary and epidemiological services within the respective administrative territories are responsible for the following measures:

- development (review), examination, approval and publishing of sanitary norms;
- implementation of hygienic regulation and state registration of factors harmful to human life and health;
- implementation of sanitary and epidemiological expertise;
- approval of projects, land allocation documents for the location and construction of water supply and wastewater treatment facilities, and the location of industrial and production facilities;
- coordination of design and technical documentation for the construction, reconstruction, commissioning of new and restoration of existing industrial facilities, sanitary protection zones;
- Inspection of construction sites and issuance of conclusions regarding their compliance with sanitary norms when commissioned;
- issuance of permits for special water use.

RPIU will oversee general control over mitigations measures implementation. Specifically, designated expert – Safeguards Consultant has been appointed within MPE “Kherson-teploenergo” to supervise Monitoring Plan implementation and report World Bank on its status.

The Contractor(s) will appoint specifically designated expert who will introduce health and safety measures, as well as mitigation measures included in the ESMP.

Reporting on safeguards compliance

RPIU is responsible for documenting environmental and social monitoring work by completing and storing of field supervision forms and producing regular narrative reports on the outcomes of monitoring. These reports will summarize findings of field work, analyze common issues encountered, explain the nature of remedial actions worked out for addressing issues, and assess status of remedial actions undertaken upon recommendation issues under a previous report period. This reporting will include not only environmental and social safeguards issues, but also wider environmental and social issues (e.g. gender, grievance redress etc.).

RPIU will produce reports on the status of environmental and social compliance during the Project implementation. All field monitoring checklists and narrative reports will be stored in the electronic and/or hard format at CPMU and RPIU in a systemic manner and shall be made available to the World Bank upon request.

In order to implement the Project at MPU “Khersonteploenergo” there was RPIU in accordance with the Operational Manual. The RPIU is responsible for the day-to-day management and implementation of the Project at the local level and coordinates its activities with the CPMU.

RPIU consists of the following experts:

1) head of RPIU; 2) FM specialist; 3) accountant; 4) procurement expert; 5) technical expert (engineer); 6) safeguards expert.

The duties of safeguards expert include the following:

- identification and analysis of potential impacts from civil works within the relevant part of the Project;
- ensuring the availability of necessary documentation (EIA, ESMP and others) for the works being carried out within the relevant part of the Project;
- verification of compliance by contractors of environmental/social requirements and identifying gaps that are not covered or not included in budget as mitigation measures;
- checking (if necessary amending) environmental/social provisions that will be included in civil works contracts;
- ensuring the implementation of a monitoring plan for each of the contracts within the Project, including establishment of baseline indicators and the effectiveness of mitigation measures;
- Preparation of environmental and social reports as per standards introduced by the World Bank and CPMU.

9. PARTICIPATION OF COMMUNITY, INFORMATION DISCLOSURE AND CONSULTATION

In accordance with the requirements of the World Bank and Ukrainian legislation, the necessary consultations with the groups of persons under the influence of this project and other stakeholders of the project on the environmental and social impacts of the project should be conducted and taken into account when preparing an environmental and social impact assessment.

The main purpose of conducting public consultations is:

- presentation of the planned project,
- the results of work on the assessment of the impact on the environment and the social sphere,
- discussing the positive and negative impacts associated with the implementation of the planned project;

Disclosure of relevant project information helps stakeholders to understand the Project environmental and social risks, impacts and opportunities. Target of the information disclosure and communication will be:

- to provide a schedule and information on activities that will be arranged to local communities, together with the mechanisms for gathering the feedback.
- to improve the knowledge about heating modernization and development,
- to ensure the best practices in terms of environmental protection and health and safety for workers and contractors,
- to make available to the public a grievance procedure, in order to collect the feedback and to undertake corrective actions in cases that may lead to unnecessary risks or a negative opinion about project implementation.

The main tasks of consulting with the public are:

- ensuring openness of environmental documentation (EIA, ESMP reports) to the public. The EIA sections are being developed in the design documentation, and for the boilers of over 50 MW capacity, the EIA procedure is being implemented;
- discussing various issues and problems with the groups affected by this project, raising public awareness of the potential negative impacts and problems that may arise during the implementation of investment projects;
- ensuring feedback from the competent authorities and local groups affected by this project in the process of assessing environmental and social impacts and identifying potential positive and negative impacts and proposed measures to minimize such impacts.

To invite (representatives) of local stakeholders in local / regional newspapers, using television and radio, as well as telephone and facsimile communications, the place and date of public consultations should be made public.

The main participants in public consultations are:

- Recipients of a loan (municipal energy companies);
- Local residents;

- Main research organizations and organizations assessing the impact on the environment and the social sphere;
- Local State Administration;
- State authorities (environmental authorities and sanitary and epidemiological service);
- Non-governmental organizations (NGOs)

MPU "Khersonteploenergo" is responsible for the disclosure of environmental and social documents developed for the project objectives, including the current ESMP as well as all site-specific ESMP and AbRAP specifications developed for individual subprojects. Consultation with project stakeholders, Particularly local communities directly influencing the project are required to develop the ESMP. Public feedback should be included in the drafting of these documents before their completion. The present ESMP will be published in Ukrainian and a in English in the web pages of the MPU "Khersonteploenergo", Kherson Regional Council and other relevant media, and will be discussed with all stakeholders in the Project. The inputs received during the disclosure / consultation of ESMP and AbRAP will be considered when the final version of the prepared documents.

MPU "Khersonoblenergo" has establish in their organizational structure the special business unit dedicated only to the Project. Moreover, the Project Coordinator is nominated, who be responsible and deal with all issues and problems concerning project implementation, including consultation with project parties and stakeholders.

The utility enterprise "Kherson" accepts written comments and suggestions to the postal and e-mail address. All written comments and questions raised in the process of consulting with the public should be considered, summarized and integrated into the appraisal of environmental and social impacts. Only after this assessment of the impact on the environment and the social sphere can be considered accomplished. The information on the assessment of the impact on the environment and the social sphere should be proclaimed by post in electronic format on the website of the company and the city administration and in paper form at an accessible location (office of the enterprise).

Consultations with stakeholders be conducted according to standard procedures and will be repeated systematically in accordance with the information policy of the MPU "Khersonteploenergo" in order to meet the requirements of the World Bank policy.

Information about the project will be placed on the ad boards on the main construction site and on the internal website.

The information about the main stages of the project was published in advance on the website of the Project, created by the MPU "Khersonteploenergo", in order to be accessible to the public and public organizations, as well as for the possibility to get acquainted with the opinion of interested parties outside the enterprise. In addition, the company will regularly publish information about the project in one of the local newspapers.

Within the framework of preparation for the PROJECT implementation, MPU "Khersonteploenergo" conducted public meeting regarding the Program of the environmental and social evaluation of the Project on June 27, 2019, composed of the reports of the specialists of the enterprise, comments and answers to the questions of the public. As a result the Program of the ecological and social evaluation of the Project. Photos of the public meeting are given in Annex 6.

Copies of the minutes of public meeting, list of participants and application in the local newspaper are given in Annexes 4, 5 accordingly.

During performance of public meeting the MPU "Khersonteploenergo" submitted both post and electronic address to send any comments and proposals.

Information as to performance of the public meeting and the results are disclosed at web site of the enterprise:

<https://www.teploenergo.ks.ua/news>.

Within two weeks prior to the construction work during the construction period, the MPU "Khersonteploenergo" will remind interested parties of contact information and the procedure for filing complaints. Information will be provided through local media.

Table 16 - Proposed disclosure actions

Disclosure action	Schedule	Responsibility
<p>Local media (newspapers and radio):</p> <ul style="list-style-type: none"> ▪ Description of the scope of modernization works and possible issues for residents, ▪ Provision of the ESMP, Public Grievance Form, contact telephone numbers and addresses for emergencies, ▪ Listing Project information points located for each construction zone separately <p>(list of local media including radio and newspapers is given in table in Attachment 3).</p>	Q2; 2019	MPE Kherson-oblenergo Regional PIU
<p>One-page information Leaflet in Ukrainian language, to be distributed via local authority offices, schools, boarding schools, hospitals etc. The leaflet structure is given in Attachment 1.</p>	Q2; 2019	MPE Kherson-oblenergo Regional PIU
<p>Website information. Separate web-page will be allocated at the state and regional level for sharing the information about the Project implementation status. The following environmental and social documentation concerning the Project will be downloaded (e.g. in pdf. format):</p> <ul style="list-style-type: none"> ▪ Environmental Impact Assessment reports (OVNS/OVD) ▪ Stakeholder Engagement Plan (SEP) including Grievance Mechanism form ▪ Environmental and Social Management Plan (ESMP). 	Q2; 2019 OVNS/OVD will be published 3 working days upon development	MPE Kherson-oblenergo Regional PIU
<p>Phone lines for communication - announcement regards phone line including phone number will be given in website and information leaflet.</p>	Q2; 2019	MPE Kherson-oblenergo Regional PIU
<p>Safety trainings at all project locations: The Contractor(s) will instruct his own employees before the civil/modernization works commencement on the code of conduct in the objects of this project; the workers shall be given instructions to a) avoid communication with patients of hospitals and schoolchildren; ii) behave politely; iii) comply with the recommended and approved schedule for the execution of construction works. The code of conduct is to be shared both verbally and in written leaflets.</p>	Q2; 2019 estimated. Or two weeks before construction works commencement. Every 3 months during construction works or in case of ad hoc situations	MPE Kherson-oblenergo Regional PIU Contractor
<p>Project information points. Make available hard copies of the environmental and social Project documentation and the Grievance Mechanism form.</p>	Q2; 2019	MPE Kherson-oblenergo”

Disclosure action	Schedule	Responsibility
<p>One information points will be located at: information points on all objects of construction and modernization works. In the administrations of all the hospitals, educational institutions, public buildings in the territories of which construction and modernization works will be made to place in public access information about the types of work planned, the expected timeframes for their execution, as well as information on where you can get more details about the current project and where you can file complaints or suggestions. A complete list of related objects is included in section 3 of this PESU.</p>		Regional PIU

Table 17. Information Leaflet Separate for each construction site

LEAFLET INFORMATION
<p>1. about Project</p> <ul style="list-style-type: none"> - short Project description, including project purpose, legal status, information about project lender, expected results, - project schedule, scope, places and stages of modernization works, <p>2. about impacts</p> <ul style="list-style-type: none"> - where, when and what kind of inconveniences should be expected, - traffic organization during the modernization works, - scheme maps of alternative routes <p>3. where to get more information</p> <ul style="list-style-type: none"> - MPU “Khersonoblenergo” office addresses, telephone numbers, and Project responsible persons, - Project MPU “Khersonoblenergo” web site address and telephone information lines for communication, - indicate the Project information points located, including addresses, telephone numbers and information about working hours, - Information what kind of Projects documents are available and where, - Information about Grievance mechanism and where is possible to lodge the grievances.

Monitoring and Reporting

The ESMP execution will be monitored by a person assigned by the company management, optionally the Project Coordinator can be obliged for this monitoring and reporting.

Reporting issues will focus on following:

- Provide ongoing information to identified stakeholders about the project environment and social impacts,
- use the channels of communication to information disclosure and received feedback regarding effectiveness of the mitigation measures implementation listed in ESMP,
- disclose the information about the key Project steps (milestones),
-

Preparation and publishing of the periodical reports on mentioned MPU “Khersonteploenergo” web page about environmental and social performance as a part of periodical company reports, and summary in Annual Report and in local newspaper or in local journal.

Table 18. Stakeholder participating in Project implementation

Stakeholders	Characteristics
Ministry or regional development, construction and utility services	Central Office of Minregion, 9, Velyka Zhytomyrska Str., Kyiv, 01601, Ukraine tel. +38-044-284-05-54, e-mail: minregion@minregion.gov.ua
MPE "Khersonteploenergo"	Ukraine, 73003, Kherson region, Kherson, 1, Ostrivske Highway tel.: +380 (0552) 41-07-65
Construction company and its employees (Contractors)	The general Contractor which will be chosen in tendering procedure.
Raw materials producers and suppliers	These are companies-subcontractors which will be chosen by the general contractor.

Table 19. Independent environmental NGOs

NGO's Name	Contact details
All-Ukrainian ecological public organization MAMA-86	4, Academic Yangel, office. 126, Kyiv 03057, tel. - +38 (044) 456-13-38, fax: - +38 (044) 453-42-97, cell. - +30 (067) 403-26-09
All-Ukrainian ecological league	30-V, Saksaganskoho str, office. 33, Kyiv, 01033, tel:+38 (044) 251-13-32, fax: +38 (044) 289-31-42, e-mail: vel@ecoleague.net
National Ecological Centre of Ukraine	1, Symon Petliura str. (Komintern), Kyiv 01032, tel. - +38 (044) 238-62-60, fax.- +38 (044) 238-62-59, e-mail- necu@i.kiev.ua
All-Ukrainian public organization "Chysta vylia	55 – B, Honchara str., Kyiv, 01034
All-Ukrainian children union "Ekolohichna Varta"	38 Kamianetska str., Khmelnytskyi, 29000, tel. - +38 (0382) 79-46-68, fax. - +38 (0382) 6-13-13
International charitable organization "Ekolohiia - Pravo - Liudyna"	9/apr. 1a, Ivan Franko str., Lviv 79005, tel. - +38 (032) 24-33-888, fax. - +38 (032) 22-57-682, e-mail- epac@mail.lviv.ua, web-site - www.epl.org.ua
All-Ukrainian public organization "Zhyva planeta"	61, Prospect Vidradnyi, office.1, Kyiv 03061, tel. - +38 (044) 332-84-08, faxc. - +38 (044) 497-64-99
Ukrainian ecological association "Zelenyi svit"	8, Lesia Ukrainka str., apt.1, Chortkiv, Ternopil region, 48500, e-mail- gr.world@gmail.com, Web-site - www.greenworld.org.ua
Ukrainian department of international union "Ekolohiia liudyny"	34-A, Academic Paladin str., Kyiv 03680, tel. - +38 (044) 424-14-60, +38 (044) 423-53-85, +38 (044) 423-81-37, fax. - +38 (044) 423-81-37
National youth center "Ekolohichni initsiatyvy"	30 V, Saksaganskoho str., office 33, Kyiv 01033, tel. - +38 (044) 251-13-37
All-Ukrainian charitable fund "Geoeko - XXI stolittia"	3, Kropyvnytskyi str., apt. .2, Kyiv 01004, tel. - +38 (044) 235-24-28, fax. - +38 (044) 216-93-34, e-mail- almitrop@i.com.ua
All-Ukrainian committee of UNO environment Program support (UkrPROONkom)	2, Tereschynivska str., apt.60, Kyiv 01001, tel. - +38 (044) 235-73-74, fax. - +38 (044) 235-70-62, e-mail- intereco@post.com.ua

Table 20. Local media (newspapers, radio, TV addresses)

Description	Name	Contacts
TV channels	Kherson Plus	37, Torhova str., (0552) 39-96-21, (067) 555-11-44, (050) 529-74-93; vladkk@ukr.net
Newspapers	Bulava	http://bulava.com.ua/paper/; Kherson 73000, 46, Radyanska str. E- mail : reklama@bulava.com.ua; (0552) 42-00-31
	Hryvnia	http://www.grivna.ks.ua; т/ф (0552) 41-49-63; e-mail: nformat@ukr.net
	Iz ruk v ruky	Kherson, 7, Naftovykiv, str.; (0552) 396939, (095) 2778030
	V horu	73000, Kherson, 2, Mozolevskogo str., office 2; (0552) 265039; lvgoru@gmail.com
Radio stations	Kherson FM	http://kherson.fm/contact-us/
	https://kherson-news.net	20, Perekopska str., Kherson, Ukraine 73003; info@kherson-news.net; +380937588758
	https://www.0552.ua/	vul. Universitetska, 31; info@0552.ua, (0552) 37-33-33, (068) 180-29-5

10. Grievance Redress Mechanism (GRM)

The overall objective of the GRM Guideline is to establish an effective communication channel among the concerned parties for providing a timely and efficient two-way feedback mechanism to address any complaints made about the project, including those from members of the communities, local businesses and other concerned parties, as well as raising public awareness on the projects and on the availability of a GRM. The Grievance redress procedure suggests resolution of grievances in the spirit of mediation between the parties, and should comply with the spirit of IFI standards and practice

The GRM will be available for those living or working in the areas impacted by the project activities. Any person impacted by or concerned about the project activities will have the right to participate in the GRM, will have easy access to it, and will be encouraged to use it. The proposed GRM does not replace the public grievance redress and conflict resolution mechanisms envisaged by the legal system of Ukraine but attempts to minimize use of it to the extent possible.

The project will pursue a participatory approach in all stages of planning and implementation. This is expected to ensure that the affected people have nothing or little to complain about. However, some people may remain dissatisfied for some reason or the other. Many grievances arise due to inadequate understanding of project policies and procedures and can be promptly resolved by properly explaining the situation to the complainant.

MPU “Khersonteploenergo” will implement the Grievance Redress Mechanism. Special attention will be paid to training of MPU “Khersonteploenergo” staff involved in the grievance mechanism management regarding functioning of grievance redress mechanism, particularly the compulsory reactions to stakeholder’s opinion and communication mechanism.

Complainants or concerned parties may visit local MPU “Khersonteploenergo”, call or send a letter or e-mail or fax to grievance redress coordinator, or oblast administration to register their grievances related to heating project.

Each party participating in the GM at regional level shall maintain a record-book to register the complaints, and regularly share the grievance details with PIU coordinator, to keep the track of grievances and the status of their resolution.

Whichever method is used for receiving the grievance (e.g. e-mail, mail, fax, call, etc.), its registration will be made by the GRM coordinator at the regional level, who will acknowledge receipt and follow up with the grievance investigation and consideration by the GRM at regional level. All the grievances will be recorded in a standard format.

The GRM coordinator at regional level will collect the data on grievances and centralize the grievance registry to assure that every affected person, group or community has an individual registry number and that follow-up and corrective actions are implemented as per resolution provided, or if the issue was not resolved at regional level, it is passed for consideration at the central level. The grievance database will be maintained and updated twice a month by the GRM coordinator at regional level for each project. The database will be designed to make it simple and easy to input data, provide information on grievance and status of its resolution, timing for resolution and level at which the issue was considered and resolved, track individual grievances, etc.

In case the complainant refuses to provide contact details, or no contact information is available in the grievance received by e-mail / mail / fax, the person in charge for grievances at the regional level will consider the anonymous complaint. In such cases, the printed response will be posted at the information board of MPU “Khersonteploenergo”, as well as at the information board of the relevant city authority, so that the complaining party could get familiarized with the feedback.

Grievance process outline, and Grievance Form are accordingly given below. The following indicative timeframe will be used:

- Written acknowledgement of receipt of the grievance: within 5 days of receiving the grievance,
- proposed resolution: within 4 weeks of receiving the grievance – in case of more difficult issues the required time may be longer.

Depending on the nature of grievance, this step may include verification, investigation, negotiation, mediation or arbitration, coordination with appropriate agencies and decision-making. Verification includes collection of documents, proofs and facts, as well as clarifying background information in order to have a clear picture of the circumstances surrounding the grievance case. Verification will be undertaken by members of the GM at the regional level, and overall coordination of activities will be ensured by the GRM coordinator on regional level. Results of verification or fact-finding activities will be presented at the meeting of the GRM at regional level, where the issue will be considered, and resolution will be sought out.

If a grievance cannot be resolved by the GM at the regional level and is forwarded for consideration by the GRM at the central level, appropriate documents collected during investigation and fact-finding shall be shared with the GRM coordinator at the central level.

Consideration of grievance case by GRM at central level may require further verification of the issue, including collection of additional documents, obtaining input from various state concerned parties and project parties to have a clear picture of the circumstances surrounding the grievance case. Results of verification will be presented at the meeting at the central level, where the issue will be considered, and resolution will be sought out.

If amicable solution is not found either of the parties could file case to the court.

The Grievance Procedure should include the following actions:

- Information about the Project implementation will be published on separate MPU “Khersonteploenergo” website, including link to obtain the grievance form,
- General information about the Project, presenting general project issues, project implementation stages, and including information about the grievance possibilities will be published and distributed in form of the brochure by MPU “Khersonteploenergo”,
- MPU “Khersonteploenergo” will establish phone communication lines, and present phone line numbers on above mentioned websites and in brochure,
- The information on the avenues to lodge a grievance will be placed on the information boards of local authorities,
- MPU “Khersonteploenergo” will nominate the person (Project Coordinator), who will deal with grievances.

A workers’ grievance redress mechanism will be established for the employees of construction companies as a part of general system or separately. Contractors of construction works will be informed by MPU “Khersonteploenergo” about necessity of implementation grievance mechanism for their employees in line with the requirements of the WB.

Contractors of construction works will be given the possibility to lodge grievances both through workers representatives and trade unions and independently, personally, regardless of the matter of the complaint.

To assess the effectiveness of the system it is planned that internal audits of grievance mechanism will be undertaken periodically in the organization.

MPU “Khersonteploenergo” will audit its subcontractors.

Moreover, periodic external audits of the grievance management system will be undertaken by independent organizations (auditors) allowing elimination of risks associated with improper functioning of the system.

Telephone: (0562) 47-02-13 Responsible person for review of complaints:

In addition, periodic external audits of the complaint management system will be carried out by independent organizations (auditors), which will eliminate the risks associated with improper functioning of the system.

MPU “Khersonteploenergo” :

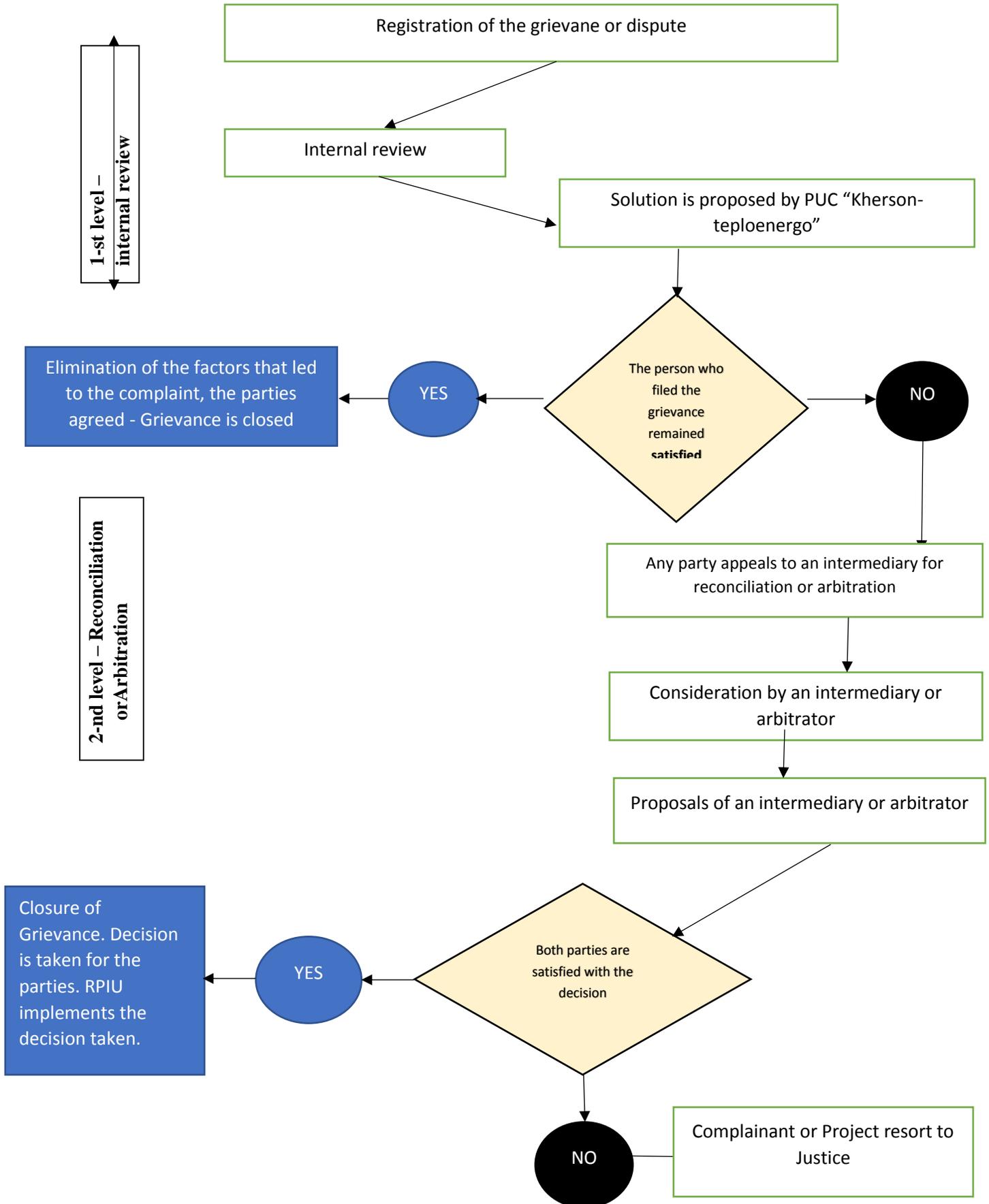
Ukraine, 73003, Kherson region, Kherson, 1, Ostrivske highw.

email: hte@ukr.net

телефон: (0552) 41-01-70

Person responsible: Sanin Oleksandr Anatolyovych – Head of Unit for equipment and heating networks checkout

Scheme 5. Grievance Management Flow Chart



Annex 1 Detailed description of project work

Object N.1 – 161, Admirala Makarova str.

The scope of the reconstruction of the facility includes the dismantling and removal of all existing thermal and mechanical equipment, technological pipelines and valves, network pumps, supply systems, gas supply and distribution systems, electrical equipment, cables and wires, auxiliary communications and structures, window and door blocks, existing smoke pipes, including removal, cleaning, processing and storage of all useful or valuable parts and materials, as well as the disposal of unsuitable materials and garbage for reuse.

Subsequently, the Contractor must design, manufacture, test, deliver, install, complete and commission three (3) new gas water heater boilers, each equipped with automatic forced burners, economizer and appropriate thermal and mechanical equipment, technological pipelines, valves, water supply system and drainage, heat meters and automated process and telemetry control (SCADA), including the installation of technological connections, the construction of a triple block smoke pipes, floor repair, walls and roofs, construction of foundations for equipment, installation of a fire system, alarm systems and detection of flue gases, training of personnel and provision of instructions for operation and maintenance.

Object N.2 – 3, Kupetska str.

The scope of the reconstruction of the facility includes the dismantling and removal of all existing thermal and mechanical equipment, technological pipelines and valves, network pumps, supply systems, gas supply and distribution systems, electrical equipment, cables and wires, auxiliary communications and structures, window and door blocks, existing smoke pipes, including removal, cleaning, processing and storage of all useful or valuable parts and materials, as well as the disposal of unsuitable materials and garbage for reuse.

Subsequently, the Contractor must design, manufacture, test, deliver, install, complete and commission three (3) new gas water heater boilers, each equipped with automatic forced burners, economizer and appropriate thermal and mechanical equipment, technological pipelines, valves, water supply system and drainage, heat meters and automated process and telemetry control (SCADA), including the installation of technological connections, the construction of a triple block smoke pipes, floor repair, walls and roofs, construction of foundations for equipment, installation of a fire system, alarm systems and detection of flue gases, training of personnel and provision of instructions for operation and maintenance.

Object N.3 – 3, Nebesna Sotnia str.

The scope of the reconstruction of the facility includes the dismantling and removal of all existing thermal and mechanical equipment, technological pipelines and valves, network pumps, supply systems, gas supply and distribution systems, electrical equipment, cables and wires, auxiliary communications and structures, window and door blocks, existing smoke pipes, including removal, cleaning, processing and storage of all useful or valuable parts and materials, as well as the disposal of unsuitable materials and garbage for reuse.

Subsequently, the Contractor must design, manufacture, test, deliver, install, complete and commission three (3) new gas water heater boilers, each equipped with automatic forced burners, economizer and appropriate thermal and mechanical equipment, technological pipelines, valves, water supply system and drainage, heat meters and automated process and telemetry control (SCADA), including the installation of technological connections, the construction of a triple block smoke pipes, floor repair, walls and roofs, construction of foundations for equipment, installation of a fire system, alarm systems and detection of flue gases, training of personnel and provision of instructions for operation and maintenance.

Object N.4 – 17, Nebesna Sotnia str.

The scope of the reconstruction of the facility includes the dismantling and removal of all existing thermal and mechanical equipment, technological pipelines and valves, network pumps, supply systems, gas supply and distribution systems, electrical equipment, cables and wires, auxiliary communications and structures, window and door blocks, existing smoke pipes, including removal, cleaning, processing and

storage of all useful or valuable parts and materials, as well as the disposal of unsuitable materials and garbage for reuse.

Subsequently, the Contractor must design, manufacture, test, deliver, install, complete and commission three (3) new gas water heater boilers, each equipped with automatic forced burners, economizer and appropriate thermal and mechanical equipment, technological pipelines, valves, water supply system and drainage, heat meters and automated process and telemetry control (SCADA), including the installation of technological connections, the construction of a triple block smoke pipes, floor repair, walls and roofs, construction of foundations for equipment, installation of a fire system, alarm systems and detection of flue gases, training of personnel and provision of instructions for operation and maintenance.

Object N.5 – 25, Nebesna Sotnia str.

The scope of the reconstruction of the facility includes the dismantling and removal of all existing thermal and mechanical equipment, technological pipelines and valves, network pumps, supply systems, gas supply and distribution systems, electrical equipment, cables and wires, auxiliary communications and structures, window and door blocks, existing smoke pipes, including removal, cleaning, processing and storage of all useful or valuable parts and materials, as well as the disposal of unsuitable materials and garbage for reuse.

Subsequently, the Contractor must design, manufacture, test, deliver, install, complete and commission three (3) new gas water heater boilers, each equipped with automatic forced burners, economizer and appropriate thermal and mechanical equipment, technological pipelines, valves, water supply system and drainage, heat meters and automated process and telemetry control (SCADA), including the installation of technological connections, the construction of a triple block smoke pipes, floor repair, walls and roofs, construction of foundations for equipment, installation of a fire system, alarm systems and detection of flue gases, training of personnel and provision of instructions for operation and maintenance.

Object N.6 – 15b, Kulisha str.

The scope of the reconstruction of the facility includes the dismantling and removal of all existing thermal and mechanical equipment, technological pipelines and valves, network pumps, supply systems, gas supply and distribution systems, electrical equipment, cables and wires, auxiliary communications and structures, window and door blocks, existing smoke pipes, including removal, cleaning, processing and storage of all useful or valuable parts and materials, as well as the disposal of unsuitable materials and garbage for reuse.

Subsequently, the Contractor must design, produce, test, deliver, install, complete and commission three new gas water heater boiler, equipped with automatic forced burners, economizer and appropriate thermal and mechanical equipment, technological pipelines, valves, water supply system and drainage, heat meters and automated process and telemetry control (SCADA), including the installation of technological connections, the construction of a triple block smoke pipes, floor repair, walls and roofs, construction of foundations for equipment, installation of a fire system, alarm systems and detection of flue gases, training of personnel and provision of instructions for operation and maintenance.

Replacement of pipes in heat networks

1. 3, Kupetska str., Kherson

The work of the heating networks after the reconstruction is stipulated by the temperature schedule of 90-65 ° C, which is due to the temperature schedule of the boiler house after the replacement of boilers (95-70 ° C) and taking into account the supplier's demand for the operation of boilers along the independent circuit.

The regulation of the heat output from the boiler house after the reconstruction is high-quality, with a heating schedule of 90-65°C.

Heating networks are provided as double pipes.

Pipelines $\varnothing 159 \times 4.5$; $\varnothing 13 \times 4.5$; $\varnothing 89 \times 3.5$; $\varnothing 76 \times 3.5$; $\varnothing 57 \times 3.0$ according to GOST 10704-91 steel of group B St20 GOST 1050-88 *:

- from boiler-house to TK-1 T1 and T2 2Du159\250 PVT length of 12.0 m;
- from TK-1 to TK-2 T1 and T2 2 Du 159\250 PIT length 51.0 m;
- from TK-2 to 22 a Lugovo Building T1 and T2 2Du76\140 length 18.0 m;
- from TK-2 to the Preschool institution in the street 24b, Lugova T1 and T2 2Du57\125 PIT in the channel КЛ60x45 length 50.0 m;
- from TK-2 to TK-3 T1 and T2 2 Du159\250 PIT length 30.0 m;
- from TK-3 to TK-3 \ 1 T1 and T2 2 Du89\160 PIT length 92.5 m;
- from TK-3 \ 1 to 24a, Lugovo Building T1 and T2 2 Du76/140 length 26.0 m;
- from TK-3 \ 1 to 3, Building Merchantsky T1 and T2 2 Du76\140 in length of 40.0 m;
- from TK-3 to TK-4 T1 and T2 2Du133\225 PIT length 7.0 m;
- from TK-4 to 24a, Lugovo Building T1 and T2 2 Du89/160 in length of 25.0 m;
- from TK-4 to TK-5 T1 and T2 2Du133\225 PIT length 43.0 m;
- from TK-5 to 22, Lugovo Building T1 and T2 2 Du76\140 length 61.0 m;
- from TK-5 to TK-7 T1 and T2 2Du133 \ 225 PIT length 40.0 m;
- from TK-7 to TK-8 T1 and T2 2Du133 \ 225 PIT length 33.5 m;
- from TK-8 to 33, Lugovo Building T1 and T2 2 Du133\225 in length 42.0 m;
- from TK-8 to 6, Komarov Building T1 and T2 2 Du76\ 140 length 20.5 m.

For emptying pipelines for the period of repair or emergency use fittings provided drain lines on steel pipe in heat chambers at the lowest point of the network. Water descents are provided in drainage wells.

Transportation of steel pipes and insulation elements and their installation should be carried out at an outside air temperature not lower than 0 ° C. Work on the connection and thermal isolation of pipe joints should be done at an outside air temperature not lower than 5 ° C.

Installation, transportation, testing of pipelines in accordance with DSTU-N B V.2.5-66: 2012 and the requirements of the manufacturer's factory.

The compensation of thermal extensions is provided at the expense of the angles of the turns of the track, "P" -like and bellows compensators.

2. 161, Admiral Markov str., Kherson

The work of the heating networks after the reconstruction is stipulated by the temperature schedule of 90-65 ° C, which is due to the temperature schedule of the boiler house after the replacement of boilers (95-70 ° C) and taking into account the supplier's demand for the operation of boilers along the independent circuit.

The regulation of the heat output from the boiler house after the reconstruction is high-quality, with a heating schedule of 90-65°C.

Heating networks are provided as double pipes.

The network of the heating system is designed from steel electric welded pipelines $\varnothing 133 \times 4.5$; $\varnothing 108 \times 4.0$; $\varnothing 89 \times 3.5$; $\varnothing 76 \times 3.5$; $\varnothing 48 \times 3.0$ according to GOST 10704-91 steel of group B St20 GOST 1050-88 *:

- from boiler-house to TK-1 T1 and T2 2 Du 133\225 PIT length 25.0 m;
- from TK-1 to TK-2 T1 and T2 2Ду133 \ 225 PIT length 68.0 m;
- from TK-2 to the building of the street. Admiral Makarov, 167 T1 and T2 2Du38 \ 90 in the length of 25.0 m;
- from TK-2 to TK-3 T1 and T2 2Ду133 \ 225 PIT length 79,0 m;
- from TK-3 to the building of the street. Admiral Makarov, 193a T1, T2 2Du57 \ 125 length 12.5m;

- from TK-3 to the building of the street. Admiral Makarov, 193 T1, T2 2 Du108\200 in the length of 73.0 m;
- from the building of the street. Admiral Makarov, 193 to TK-4 T1 and T2 2 Du108\200 length 62.0 m;
- from TK-4 to Building C1 T1TA2 2 Du48\125 in length 5,0m;
- from TK-4 to TK-5 T1 and T2 2 Du89\160 in the length of 31.0 m;
- from TK-5 to Building C4 T1 and T2 2 Du 57\125 in the length of 13.0 m;
- from TK-5 to TK-6 T1 and T2 2 Du89\160 in length 96.0 m;
- from TK-6 to Building C3 T1TAT2 2 Du 48\125 in length 5,0 m;
- from TK-6 to TK-7 T1 and T2 2 Du 76\140 in length 20,0m;
- from TK-7 to Building C7 T1and T2 2 Du 57\125 in the length of 51,0 m;
- from TK-7 to Building C5 T1and T2 2 Du 48\125 in length 26,0 m;
- from TK-7 to Building C2 T1andT2 2 Du 57\125 in length 87,0 m;

For emptying pipelines for the period of repair or emergency use fittings provided drain lines on steel pipe in heat chambers at the lowest point of the network. Water descents are provided in drainage wells.

Transportation of steel pipes and insulation elements and their installation should be carried out at an outside air temperature not lower than 0 ° C. Work on the connection and thermal isolation of pipe joints should be done at an outside air temperature not lower than 5 ° C.

Installation, transportation, testing of pipelines in accordance with DSTU-N B V.2.5-66: 2012 and the requirements of the manufacturer's factory.

The compensation of thermal extensions is provided at the expense of the angles of the turns of the track, "Π" -like and bellows compensators.

3. 3, Nebesna Sotnia str., Kherson

The work of the heating networks after the reconstruction is stipulated by the temperature schedule of 90-65 ° C, which is due to the temperature schedule of the boiler house after the replacement of boilers (95-70 °C) and taking into account the supplier's demand for the operation of boilers along the independent circuit.

The regulation of the heat output from the boiler house after the reconstruction is high-quality, with a heating schedule of 90-65°C.

Heating networks are provided with two-pipe.

Heat consumers are provided with the construction of individual thermal points (IHU).

The network of the heating system is designed from steel electric welded pipelines $\varnothing 159 \times 4.5$; $\varnothing 108 \times 4.0$; $\varnothing 89 \times 3.5$; $\varnothing 76 \times 3,5$ according to GOST 10704-91 steel of group B St20 GOST 1050-88 *:

- from boiler house to TK-1 T1 and T2 2 Du159\250 PIT length 7.0 m;
- from TK-1 to the building of the street. Tiraspol, 1a T1 and T2 2 Du108 \ 200 PVT length 50.0 m and transit through the basement of the building $\varnothing 108 \times 4,0$ length 50.0 m;
- from the house of the street. Tiraspol, 1a to the house of the street. Tiraspol, 2a T1 and T2 2 Du108\200 PVT 40.0 m in length and transit through the basement of the building $\varnothing 108 \times 4.0$ in length of 25.0 m;
- from the house of the street. Tiraspol, 2a to TK-4 T1 and T2 2 Du89\160 PIT length 54.0 m;
- from TK-4 to the building of the street. Nebesna Sotnia, 11 T1 and T2 2 Du89 \ 160 PIT length 41.0 m;
- from TK-1 to TK-2 T1 and T2 2 Du108\200 PIT length 39.0 m;
- from TK-2 to TK-3 T1 and T2 2 Du89\160 PIT length 32.0 m;
- from TK-2 to the building of the 3, Nebesna Sotnia str. T1 and T2 2 Du76\140 PIT length 13.0 m;

- from TK-3 to the building of the 5, Nebesna Sotnia str., 5 T1 and T2 2 Du57 \ 125 PIT length 13.0 m;
- from TK-3 to the building of the 7, Nebesna Sotnia str. T1 and T2 2 Du76\140 PIT length 67.0 m;
- from TK-1 to TK-7 T1 and T2 2 Du89\160 PIT length 80.0 m;
- from TK-7 to the building of the 1 Nebesna Sotnia, str.1 T1 and T2 2 Du76 \ 140 PIT length 37.0 m;
- from TK-7 to TK-5 T1 and T2 2 Du108/200 PIT length 54.0 m;
- from TK-5 to TK-6 T1 and T2 2 Du108\200 PVT length 15.0 m;
- from TK-5 to the building of the 9a, 295 Kherson Division T1 and T2 2 Dy57 \ 125 PIT length 21.5 m;
- from TK-6 to store T1 and T2 2 Du38\110 PVT length of 6.0 m;
- from TK-6 to the building of the 28, Moscow str. T1 and T2 2 Du108\200PIT with a length of 51.0 m and transit through the house to the IHU -2 Ø57x3,5 in length 90.0 m.

]For emptying pipelines for the period of repair or emergency use fittings provided drain lines on steel pipe in heat chambers at the lowest point of the network. Water descents are provided in drainage wells.

Transportation of steel pipes and insulation elements and their installation should be carried out at an outside air temperature not lower than 0 ° C. Work on the connection and thermal isolation of pipe joints should be done at an outside air temperature not lower than 5 ° C.

Installation, transportation, testing of pipelines in accordance with DSTU-N B V.2.5-66: 2012 and the requirements of the manufacturer's factory.

The compensation of thermal extensions is provided at the expense of the angles of the turns of the track, "P" -like and bellows compensators..

4. 17, Nebesna Sotnia str., Kherson

The work of the heating networks after the reconstruction is stipulated by the temperature schedule of 90-65 ° C, which is due to the temperature schedule of the boiler house after the replacement of boilers (95-70 ° C) and taking into account the supplier's demand for the operation of boilers along the independent circuit.

The regulation of the heat output from the boiler house after the reconstruction is high-quality, with a heating schedule of 90-65°C.

Heating networks are provided with two-pipe.

The consumers of heat are provided with the construction of individual thermal points (IHU), and the connection of the local heating system is provided according to the dependent scheme.

The network of the heating system is designed from steel electric welded pipelines Ø159x4.5; Ø108x4.0; Ø133x4.0; Ø89x3.5; Ø57x3,5 according to GOST 10704-91 steel of group B St20 GOST 1050-88 *:

- from boiler-house to TK-1 T1 and T2 2 Du 159\250 PIT length 9.0 m;
- from the boiler-house to the educational building T1 and T2 2 Du 89\160 PIT length 50.0 m;
- from boiler-house to workshop T1 and T2 2 Du 57\125 PIT length 14.0 m;
- from TK-1 to TK2 T1 and T2 2 Du 159\250 PIT length 15.0 m;
- from TK-2 to Building No. 1 T1 and T2 2 Du57\125 with a length of 54.0 m;
- from TK-2 to TK-4 T1 and T2 2 Du 159\250 PIT length 75.0 m;
- from TK-4 to the building of the street of Nebesensnoy hundreds, 25 T1 and T2 2 Du133\225 in length 35,0 m and the transit of the house Ø133x4,5 with a length of 20.0 m;
- from the building of the street of 25, Nebesna Sotnia to TK-5 T1 and T2 2 Du 133\225 in length 169.0 m;
- from TK-5 to TK-6 T1 and T2 2 Du 108 \ 200 PIT length 98.0 m;

- from TK-6 to TK-7 T1 and T2 2 Du 108\200 PIT length 17.0 m;
- from TK-7 to TK-8 T1 and T2 2 Du 108\200 PIT length 147.0 m;
- from TC-8 to the building of 4 Tserkovna str, T1 and T2 2 Du 108 \ 200 in the length of 3,0 m and the transit of the house Ø108x4,0 length of 30.0 m;
- from the building of the street of 4, Cerkovnastr., to the house of the street of 21 Perekopskaya str., T1 and T2 2 Du108\200 in length 29.0 m.

For emptying pipelines for the period of repair or emergency use fittings provided drain lines on steel pipe in heat chambers at the lowest point of the network. Water descents are provided in drainage wells.

Transportation of steel pipes and insulation elements and their installation should be carried out at an outside air temperature not lower than 0 ° C. Work on the connection and thermal isolation of pipe joints should be done at an outside air temperature not lower than 5 ° C.

Installation, transportation, testing of pipelines in accordance with SNiP 3.05.03-85 and requirements of the production plant..

The compensation of thermal extensions is provided at the expense of the angles of the turns of the track, "Π" -like and bellows compensators. The laying of pipelines is underground.

The calculation scheme of the heating networks from the boiler house (after reconstruction) is shown in the drawing UDHEEP-KHE -CQ-02 / R.3-TM (page 3).

Estimated existent heat and coolant costs by type of consumption at the consumer with a temperature graph of 90-65 ° C are given in Appendix.

The hydrodynamic calculation of the reconstructed heating network with available loads and optimized diameters is given in annexes D. The pressure graph (piezometer) is shown in the drawing UDHEEP-KHE -CQ-02 / R.3-TM. (page. 4).

The calculation scheme of the heat network (the state after the reconstruction) is shown in the drawing UDHEEP-KHE -CQ-02 / R.3-TM (page 3).

Pressure in the feeder and in the return pipelines at the outlet from the boiler house was taken: in the supply pipeline, 44 m of water. Art., and in the opposite - 24 m of water. Art. (based on TOR).

It is planned to reconstruct all heating networks from the boiler house, which are on the balance sheet of the MPE "HERSONTEPLOENERGO".

To provide the optimal hydraulic regime in heat networks, it is necessary to lay pipelines PTPU with a conductive steel pipe:

- 99 m in a two-pipe dimension of diameter 159 mm * 4,5 mm;
- 224 m in a two-pipe measuring diameter of 133 mm * 4.0 mm;
- 323 m in two-pipe dimension of diameter 108 mm * 4.0 mm;
- 50 m in two-pipe dimension of diameter 89 mm * 3,5 mm;
- 68 m in a two-pipe measuring diameter of 57 mm * 3.5 mm.

The total length of the heating networks from the boiler house in the two-pipe dimension is 0.869 km (including 764 m to be reconstructed, and two sections of 86 m and 15 m in diameter of 108 mm, which are on the balance of subscribers and are not reconstructed).

5. 25, Nebesna Sotnia str., Kherson

The work of the heating networks after the reconstruction is stipulated by the temperature schedule of 90-65 ° C, which is due to the temperature schedule of the boiler house after the replacement of boilers (95-70 ° C) and taking into account the supplier's demand for the operation of boilers along the independent circuit.

The regulation of the heat output from the boiler house after the reconstruction is high-quality, with a heating schedule of 90-65°C.

Heating networks are provided with two-pipe.

The consumers of heat are provided with the construction of individual thermal points (IHU), and the connection of the local heating system is provided according to the dependent scheme.

The network of the heating system is designed from steel electric welded pipelines $\varnothing 159 \times 4.5$; $\varnothing 108 \times 4.0$; $\varnothing 133 \times 4.0$; $\varnothing 89 \times 3.5$; $\varnothing 57 \times 3.5$ according to GOST 10704-91 steel of group B St20 GOST 1050-88 *:

- from boiler-house to TK-1 T1 and T2 2 Du159\250 PIT length 9.0 m;
- from the boiler-house to the educational building T1 and T2 2 Du 89\60 PIT length 50.0 m;
- from boiler-house to workshop T1 and T2 2 Du 57\125 PIT length 14.0 m;
- from TK-1 to TK2 T1 and T2 2 Du 159 \ 250 PIT length 15.0 m;
- from TK-2 to Building No. 1 T1 and T2 2 Du57\125 with a length of 54.0 m;
- from TK-2 to TK-4 T1 and T2 2 Du 159\ 250 PIT length 75.0 m;
- from TK-4 to the building of 25, Nebesna Sotnia str. T1 and T2 2Du133\225 in length 35,0 m and the transit of the house $\varnothing 133 \times 4,5$ with a length of 20.0 m;
- from the building of 25, Nebesna Sotnia str., to TK-5 T1 and T2 2 Du 133\225 in length 169.0 m;
- from TK-5 to TK-6 T1 and T2 2 Du 108/200 PIT length 98.0 m;
- from TK-6 to TK-7 T1 and T2 2 Du 108\200 PIT length 17.0 m;
- from TK-7 to TK-8 T1 and T2 2 Du 108\200 PIT length 147.0 m;
- from TC-8 to the building of Tserkovna str., 4, T1 and T2 2 Du 108 \ 200 in the length of 3,0 m and the transit of the house $\varnothing 108 \times 4,0$ length of 30.0 m;
- from the building of 4, Cerkovna str., to the house of 21, Perekopska str., T1 and T2 2 Du108\200 in length 29.0 m.

For emptying pipelines for the period of repair or emergency use fittings provided drain lines on steel pipe in heat chambers at the lowest point of the network. Water descents are provided in drainage wells.

Transportation of steel pipes and insulation elements and their installation should be carried out at an outside air temperature not lower than 0 ° C. Work on the connection and thermal isolation of pipe joints should be done at an outside air temperature not lower than 5 ° C.

Installation, transportation, testing of pipelines in accordance with SnIP 3.05.03-85 and requirements of the manufacturer of the plant.

The compensation of thermal extensions is provided at the expense of the angles of the turns of the track, "П" -like and bellows compensators. The laying of pipelines is underground.

6. 95 Bohuna str.

The work of heat networks after reconstruction is provided:

- from the boiler house - according to the temperature schedule 115-70 ° C, which is caused by the temperature schedule of the boiler house after the boiler replacement;
- from CHU -14 - under the temperature schedule 95-65 ° C, due to the transfer of the CHU -14 to work on an independent scheme.
-

The regulation of the heat output from the boiler house after the reconstruction is high quality, with a heating schedule of 115-70 °C.

Heating networks are provided with two-pipe.

The network of the heating system is designed from steel electric welded pipelines $\varnothing 530 \times 8,0$; $\varnothing 426 \times 7,0$; $\varnothing 273 \times 7,0$; $\varnothing 219 \times 6,0$; $\varnothing 15 \times 4,5$; $\varnothing 13 \times 4,5$; $\varnothing 108 \times 4,0$; $\varnothing 89 \times 3,5$; $\varnothing 76 \times 3,5$ according to GOST 10704-91 steel of group B St20 GOST 1050-88 *:

- Lining of pipelines in almost 75% is assumed in reinforced concrete channels on the territory of children's institutions in monolithic reinforced concrete channels.
- For emptying of heat pipes during repair or in emergencies it is intended to use valves of drain lines on a steel pipe in thermal cells at the lowest points of the network. Water descents are provided in drainage wells.
- Transportation of steel pipes and insulation elements and their installation should be carried out at an outside air temperature not lower than 0 ° C. Work on the connection and thermal isolation of pipe joints should be done at an outside air temperature not lower than 5 ° C.
- Installation, transportation, testing of pipelines in accordance with DSTU-N B V.2.5-66: 2012 and the requirements of the manufacturer's factory.
- Compensation for thermal elongation is provided at the expense of the angles of the turns of the route, "P" -like compensators and helical compensators. Pipeline laying is provided by an underground non-channel and partly through impenetrable channels.
- Calculated current consumption of heat and coolant in the consumer are given in Annex G as with the temperature schedule 115-70 ° C for heating networks directly from the boiler room, and for the temperature graph 95-65 ° C for the heating networks from the CHU -14.
- Heating networks from the boiler house provide consumers with heat in the amount of 72,567 Gcal / hour. On the highway No. 1 is released 42,424 Gcal / hour. On the main line No. 2 - 30,143 Gcal / year. Reducing the load by 1.1 Gcal/year is due to the disconnection of consumers based on measurable work.
- Estimated water consumption in the heating networks is: total - 1612,46 t/year, along the main line No. 1 - 942,67 t/year, along the main line No. 2 - 669,79 t/year.
- The total length of the heating networks according to the plan (on the basis of measured works) is about 21.6 km. Indicator is given without heat networks after CHU (except for CHU -14). The length of the heating networks after the reconstruction will be about 20.6 km (taking into account the elimination of the branch from the TC-123 of the highway No. 1 to the connection with the main line No. 2 (TC-227) and the switching of existing consumers for heat supply from TM № 2).
- In view of the fact that the topo-geodesic and geometric characteristics of the heat supply source and the existing construction are unchanged, static pressure in the system is taken at the existing level.
- It is planned to reconstruct part of the heat network (according to the initial data) from the boiler house, which is on the balance sheet of the MPE "HERSONTEPLOENERGO".
- To provide the optimal hydraulic regime in heat networks, it is necessary to lay pipelines PTPU with a conductive steel pipe:
 - o 1566 m in a two-pipe dimension of diameter 530 mm * 7 mm;
 - o 1320 m in a two-pipe measuring diameter of 426 mm * 7 mm;
 - o 61 m in a two-pipe measuring diameter of 325 mm * 8 mm;
 - o 877 m in a two-pipe measuring diameter of 273 mm * 7 mm;
 - o 1180 m in a two-pipe dimension of diameter 219 mm * 6 mm;
 - o 1786 m in two-pipe dimension of diameter 159 mm * 4,5 mm;
 - o 406 m in two-pipe dimension of diameter 133 mm * 4.0 mm;
 - o 27 m in a two-pipe measuring diameter of 108 mm * 4.0 mm;
 - o 125 m in a two-pipe measuring diameter of 89 mm * 3.5 mm;
 - o 313 m in two-pipe dimension of diameter 76 mm * 3.5 mm;
 - o 339 m in two-pipe dimension of diameter 57 mm * 3.5 mm;
 - o 8000 m - along the heating networks from the boiler house (without the CHU).

In addition, CHU -14:

- o 125 m in a two-pipe dimension of diameter 219 mm * 6 mm;
- o 170 m in a two-pipe dimension of diameter 159 mm * 4,5 mm;
- o 88 m in a two-pipe measuring diameter of 133 mm * 4.0 mm;
- o 262 m in two-pipe dimension of diameter 108 mm * 4.0 mm;
- o 349 m in two-pipe dimension of diameter 89 mm * 3,5 mm;
- o 215 m in two-pipe dimension of diameter 76 mm * 3.5 mm;
- o 1209 m - along TsTP-14;

Total – 9209 m.

The total length of the heating networks from the boiler-house in the two-pipe dimension is 20.6 km (including 9209 m to be reconstructed).

Table 22. Length of the heating networks.

Initial mark of the plot (dot points or heat cells)	Final mark of the plot (dot points or heat cells)	External diameter of the heat network area, mm	Length of the heat network area, m
		after reconstruction	
K	TK-102	530	70
TK-102	TK-120	530	103
TK-120	120/1	530	300
120/1	120/2	530	141
TK-204	TK-205	530	204
TK-205	205A	530	80
205A	TK-206	530	80
TK-206	TK-207	530	144
TK-207	TK-208	530	340
TK-208	TK-209	530	46
TK-209	TK-210	530	58
TK-102	TK-103	426	125
120/2	TK-130	426	141
TK-130	TK-140	426	327
TK-210	TK-211	426	97
TK-211	TK-212	426	94
TK-212	TK-213	426	40
TK-213	TK-213A	426	74
TK-213A	TK-214	426	53
TK-413	TK-412	426	157
TK-412	TK-411	426	104
TK-411	TK-410	426	108
TK-103	TK-104	325	61
TK-140	TK-141	273	40
TK-141	TK-142	273	98
TK-142	TK-143	273	156
TK-130	TK-131	273	58
TK-120	TK-121	273	105
TK-121	TK-122	273	120
TK-122	TK-123	273	122
TK-123	TK-124	273	77
TK-124	TK-8-4A	273	101
TK-107	TK-108	219	52

Initial mark of the plot (dot points or heat cells)	Final mark of the plot (dot points or heat cells)	External diameter of the heat network area, mm	Length of the heat network area, m
		after reconstruction	
TK-108	TK-109	219	47
TK-143	CHU -14	219	208
TK-130	TK-132	219	184
TK-132	TK-133	219	44
TK-8-4A	TK-8-3	219	38
TK-8-3	TK-8-2	219	43
TK-8-2	TK-8-1	219	61
TK-211	TK-211/1	219	26
TK-211/1	TK-211/4	219	477
TK-143	CHU -15	159	117
TK-133	TK-134	159	74
TK-103	TK-113	159	191
TK-113	TK-112	159	140
TK-112	CHU - 18: 103, Illicha,103 1, apt 2, Blahoeva	159	27
TK-220	TK-220/1	159	16
TK-220/1	TK-220/2	159	61
TK-220/2	TK-220/3	159	58
TK-220/3	TK-220/4	159	25
TK-220/11	19a,R.Luxemburh	159	123
TK-213	CHU -21	159	263
TK-211/4	TK-211/5	159	164
TK-211/5	CHU -22	159	10
TK-210	TK-210-A-1	159	126
TK-210-A-1	TK-210-A-2	159	16
TK-210-A-2	CHU -23	159	1
TK-203	203Б	159	71
203Б	CHU -25	133	303
TK-151/1	TK-152	133	20
TK-152	CHU -26n	133	89
TK-134	TK-135	133	83
19 a, R.Luxemburh	21, R.Luxemburh	133	35
TK-219/2	219/2A	133	114
219/2A	CHU -24	133	65
TK-135	TK-136	108	27
TK-8-13A	58, Illicha	89	53
TK-226/1	TK-226/1-1	89	72
TK-20-2	19, Budivelnykiv	76	80

Initial mark of the plot (dot points or heat cells)	Final mark of the plot (dot points or heat cells)	External diameter of the heat network area, mm	Length of the heat network area, m
		after reconstruction	
TK-113	TK-10-5	76	57
TK-10-5	86, Illicha	76	50
TK-226/1-1	7, R.Luxemburh	76	126
TK-226/1-1	TK-226/1-2	57	67
TK-226/1-2	32a, Filatova	57	16
TK-226/1-1	34, Filatova	57	33
205A	TK-301	57	40
TK-301	TK-301-1	57	121
TK-301-1	TK-302	57	62
Total			8000
ЦТП-14	TK 14-1	219	5
TK 14-1	TK 14-6	219	75
TK 14-6	TK 14-7	219	45
TK 14-1	TK 14-2	159	33
TK 14-2	29 a, Lavreneva	159	62
TK 14-7	TK 14-8	159	5
TK 14-8	TK 14-10	159	70
TK 14-10	TK 14-11	133	80
TK 14-11	23, Dmytrova	133	8
29 a, Lavreneva	TK 14-3	108	157
TK 14-7	TK 14-9	108	105
TK 14-3	29, LAvreneva	89	81
TK 14-2	15b, Kulish	89	50
TK 14-9	21, Lavreneva	89	100
TK 14-6	25a, Lavreneva	89	118
29, Lavreneva	27, Lavreneva	76	20
TK 14-3	27a, Lavreneva	76	35
15 b, Kulish	15a, Kulish	76	60
15 a, Kulish	TK 14-4	76	60
TK 14-4	15, Kulish	76	10
TK 14-9	23a, Lavreneva	76	15
25 a, Lavreneva	25, Lavreneva	76	15
Total			1209
Grand total			9209

In the course of the survey of existing heating networks to be reconstructed, according to a technical specification approved by the Customer, a number of violations of the protective zones of the heating networks were identified, namely: the placement of small architectural forms on the heating networks, trade

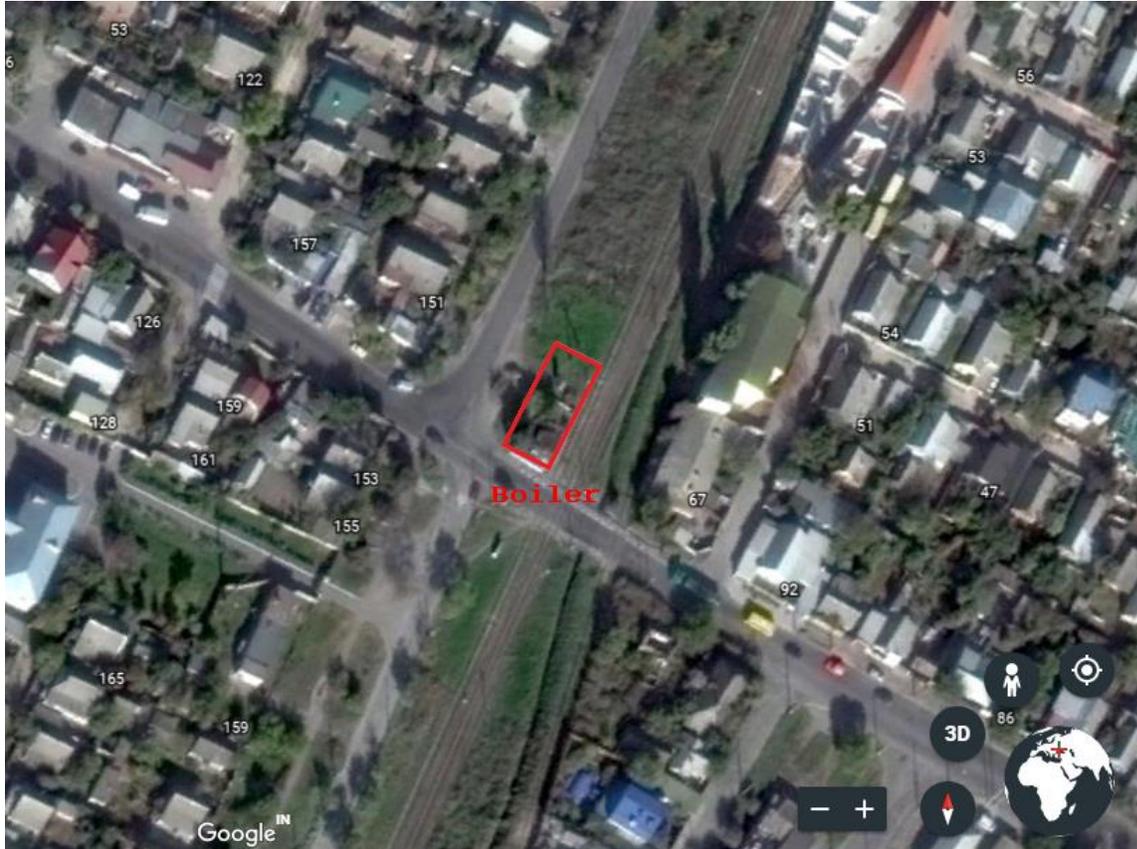
pavilions and planting of vegetation plantations (cultural and self-propelled). Abbreviated resettlement action Plan for networks reconstruction/modernization/rehabilitation works should be developed.

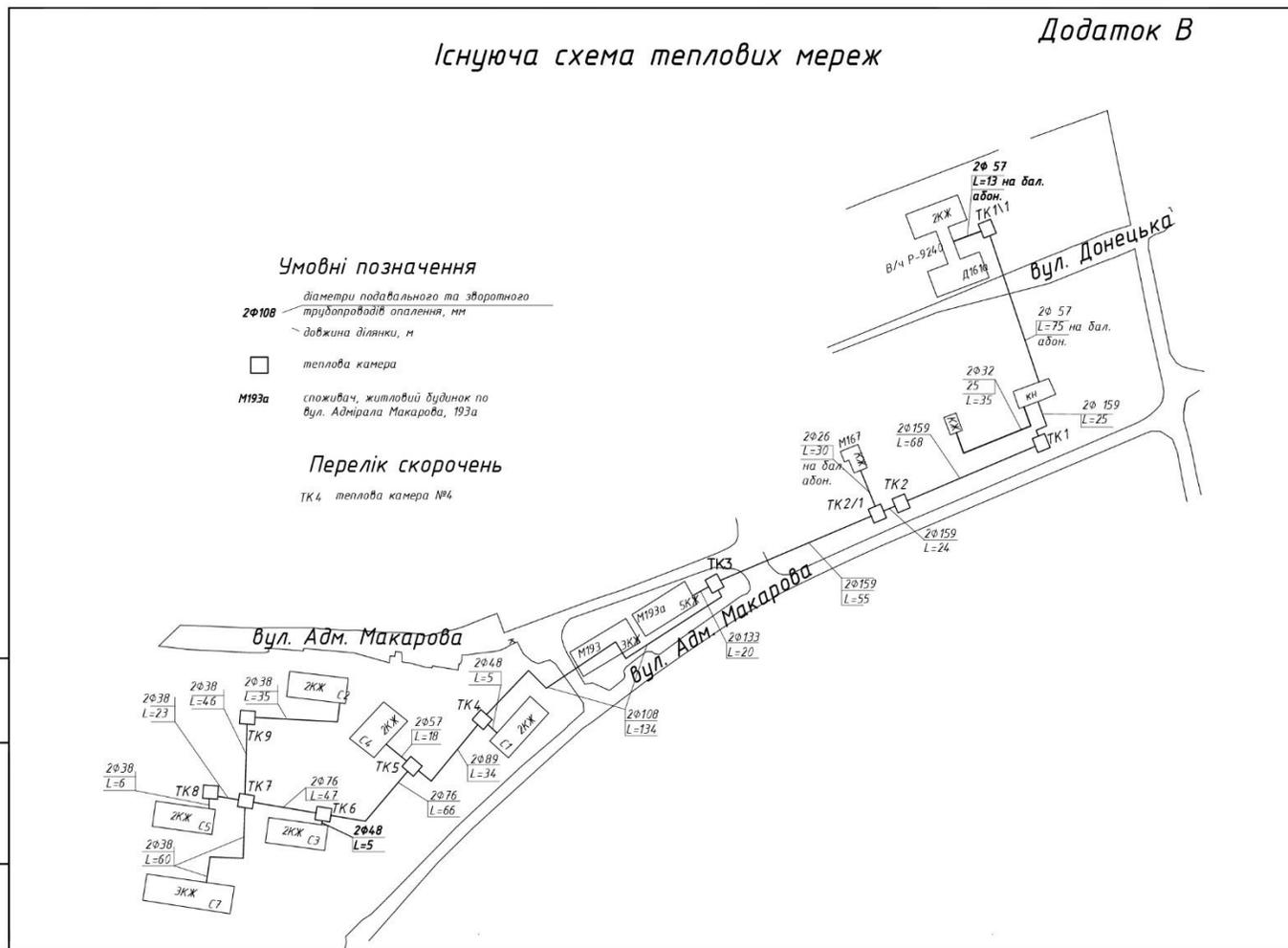
Given the current situation and to prevent public discontent, taking into account that administrative and legal means of resolving land issues and protection zones of heat supply pipelines will require considerable time expenditures, we consider it appropriate to make some adjustments to the plan for building heating networks. In most cases, the heating networks (according to the specified diameters) will be laid in existing directions, with some exceptions, namely:

1. Thermal network from TK120 to TK130, in part, in the area of the spontaneous market is proposed to be laid on the passage of Lavreneva street (Scheme 1).
2. The heating network from TK131 to TK139 along the Dimitrov avenue is to be disconnected, and a residential building at 19, Budivelnkyiv str., should be switched over to the thermal networks from the TP-20 in the TK20\5 district. (Scheme 3).
3. The heating network from TK-125 to TsTP-8, taking into account the fact that the TPP does not work, put in the direction of the heating system from TK8-4, TK8-3, TK8-2, TK8-1 with the re-connection of existing subscribers (Scheme 4).
4. A residential house at 58, Ilyicha street, switching to the heating networks from TK8-14 at the branch of TSTP-8 (Scheme 5).
5. A dwelling house at 103, Ilyich str. to connect to the heating networks directly in TC112 bypassing the CHU-18. (Scheme 6)
6. Disconnect the heating network from TK123 to TK227. Existing consumers on the branch from TK301 and TK302 switch over to the backbone network in the area TK206 (Scheme 7).
7. The heating network from TK213 to TPP-21 is laid along the tabular part of the street. Combo to the input to the collector, without entering the territory of the market. (Scheme 8).
8. The site of the heating system from TK220\4 to TK220\10 to the house on the street. Luxembourg Luxembourg, 21 disable, since the house is re-connected from TK220 \ 11a. (Scheme 9).
9. Residential buildings at 32, Filatov str. and 34 R. Liuxemburh str., 7 switch to the thermal networks of the branch from TK226\1 (Scheme 11).
10. 10. Area from TK414\1 to TK414\2 turn off, the branch from TK414\2 switch from TK411\5. (Scheme 12).

Annex 2 - Maps and mapping of the location of Project objects

1. Boiler room on the 161, Admiral Makarov str.





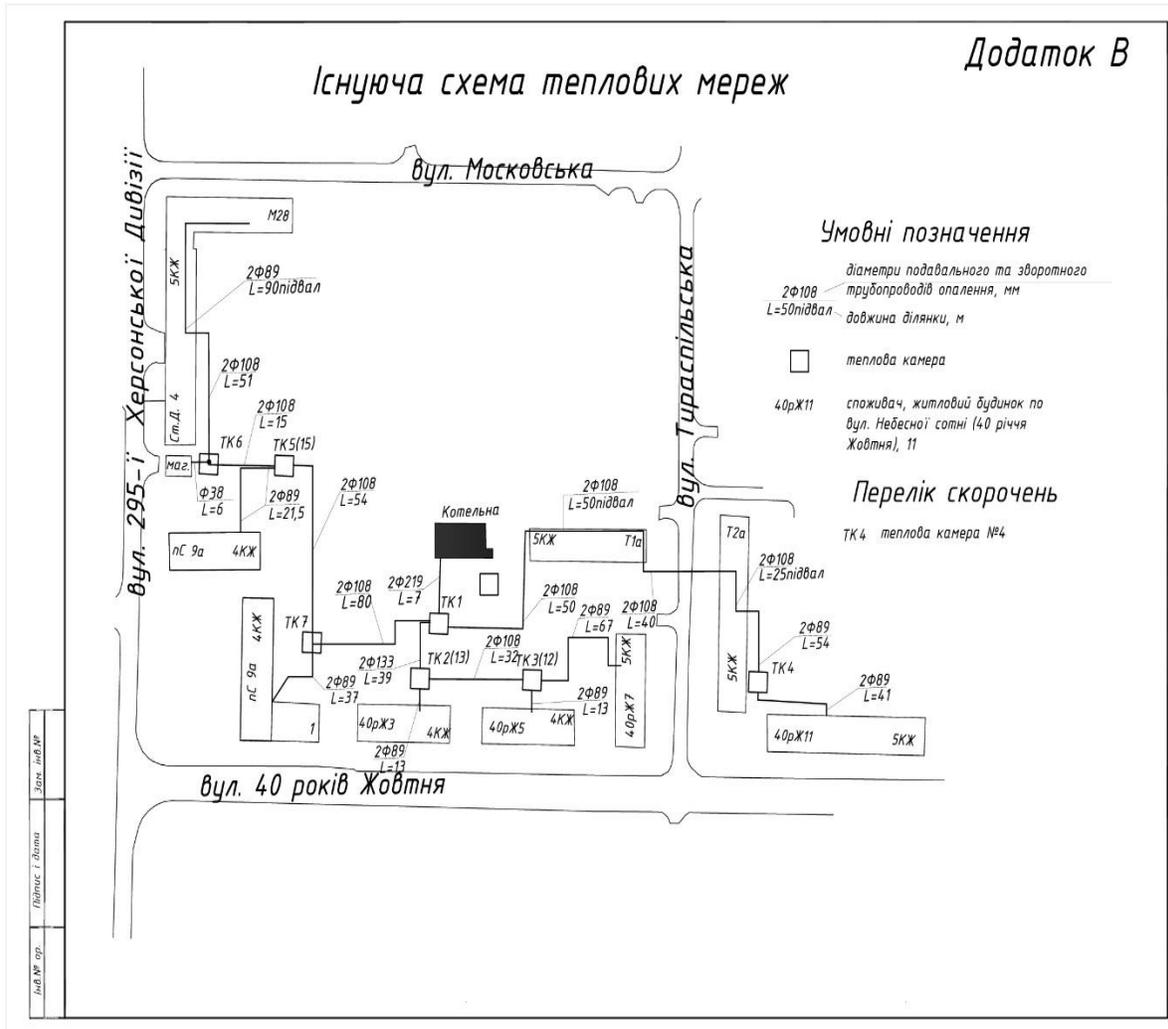
Map-scheme 1. Location of the heat supply network around the boiler room along 161, Admiral Makarov str



(мережа, яка буде замінена)

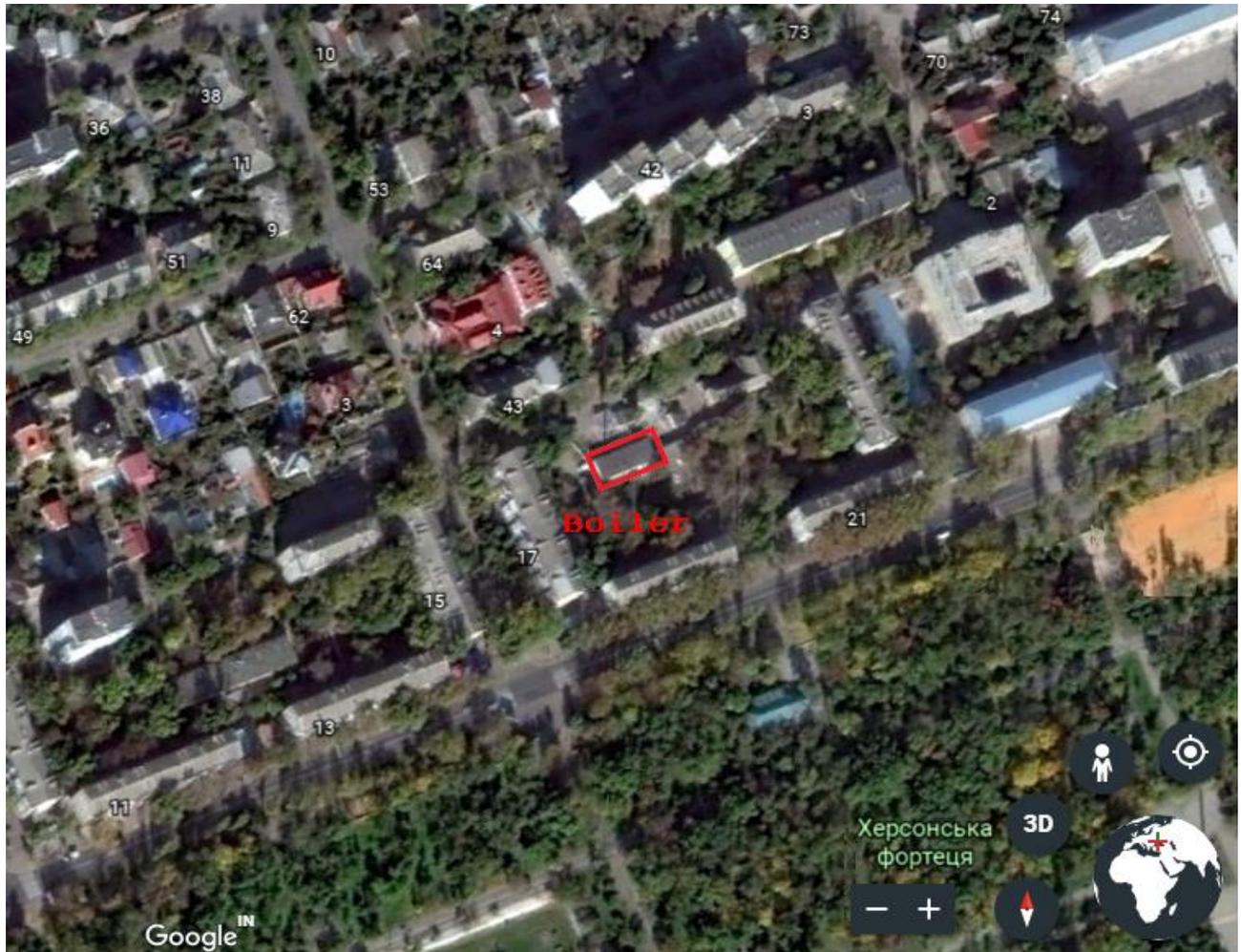
2. Boiler house at 3, Kupetska str.



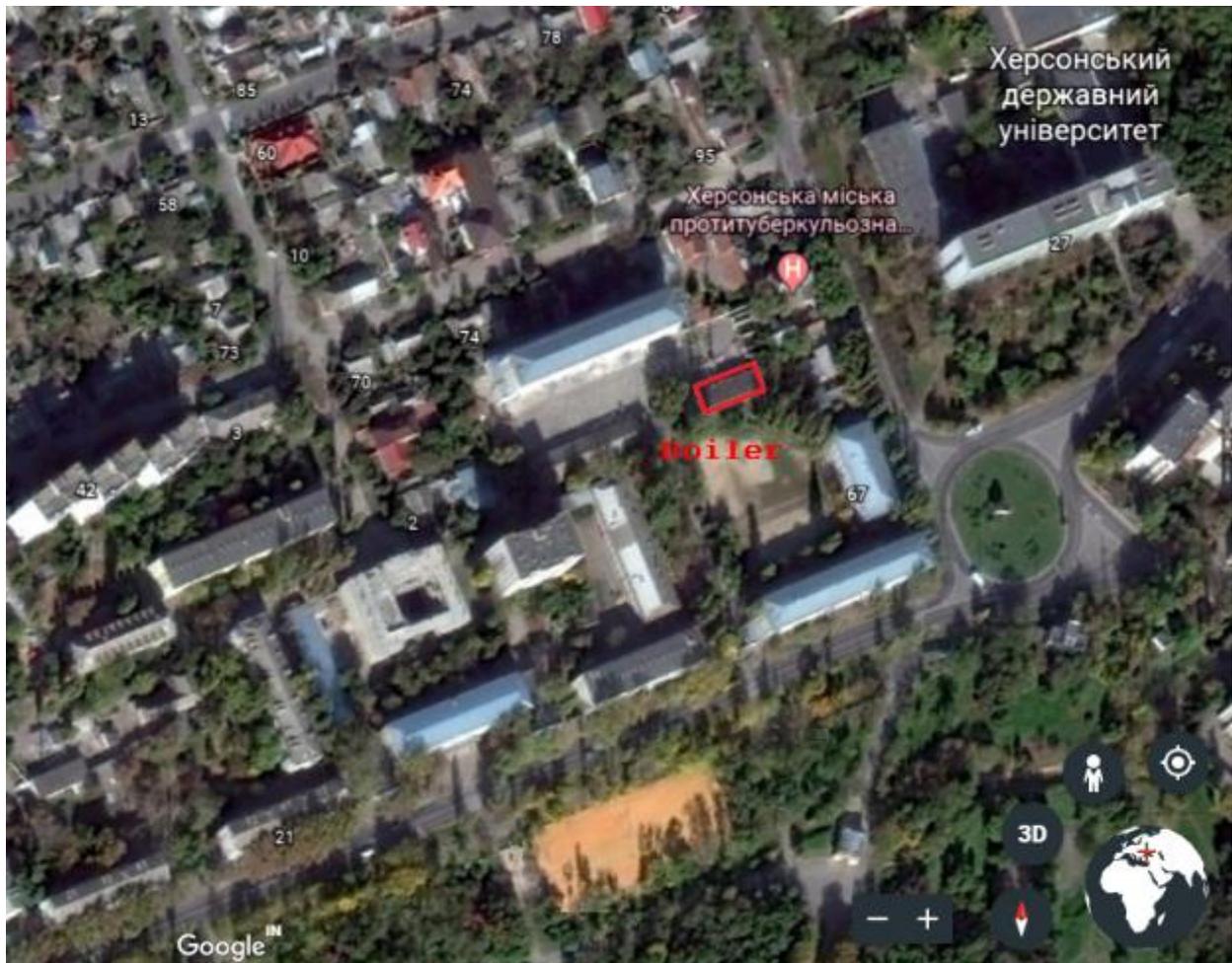


Map-scheme 3. Location of the heat supply network around the boiler room along 3, Nebesnoii Sotni street (the network to be replaced).

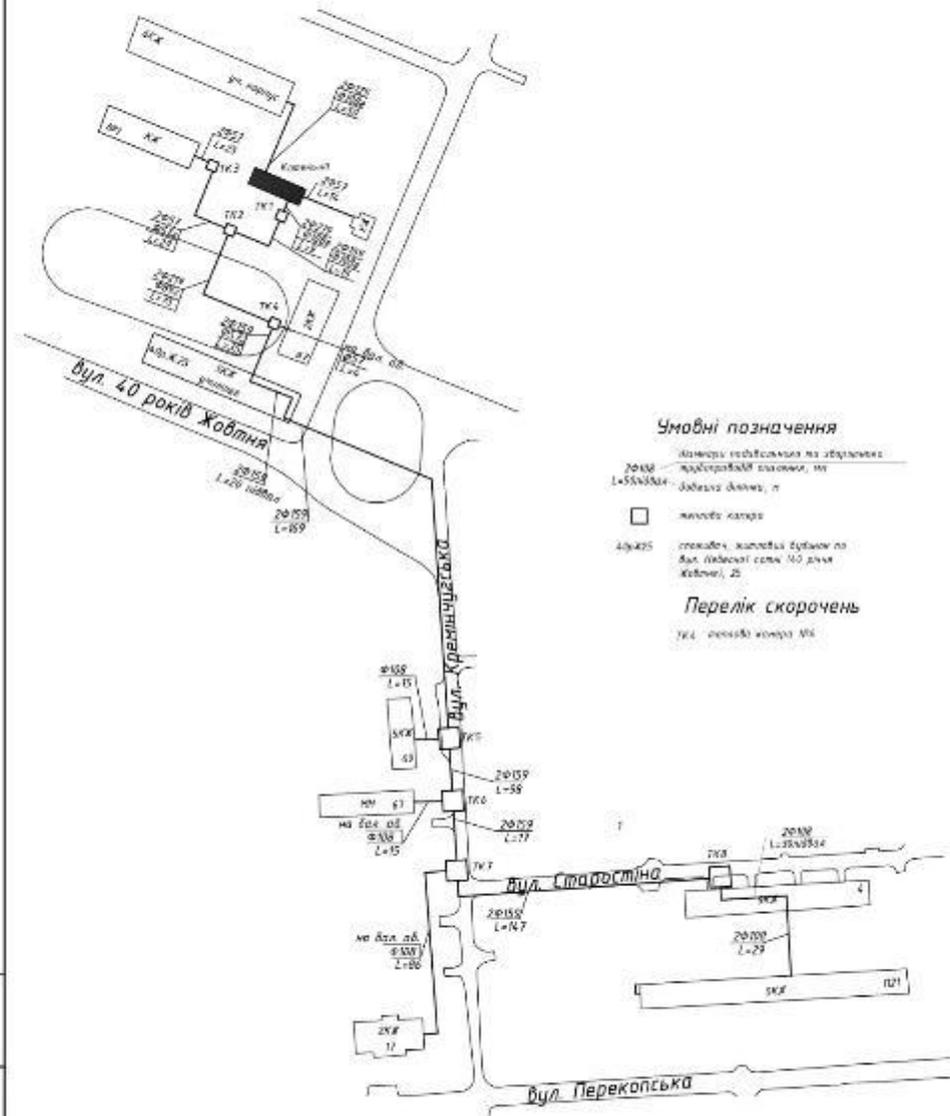
4. Boiler house at 17, Nebesna Sotnia str.



5. Boiler house at 25, Nebesna Sotnia str.



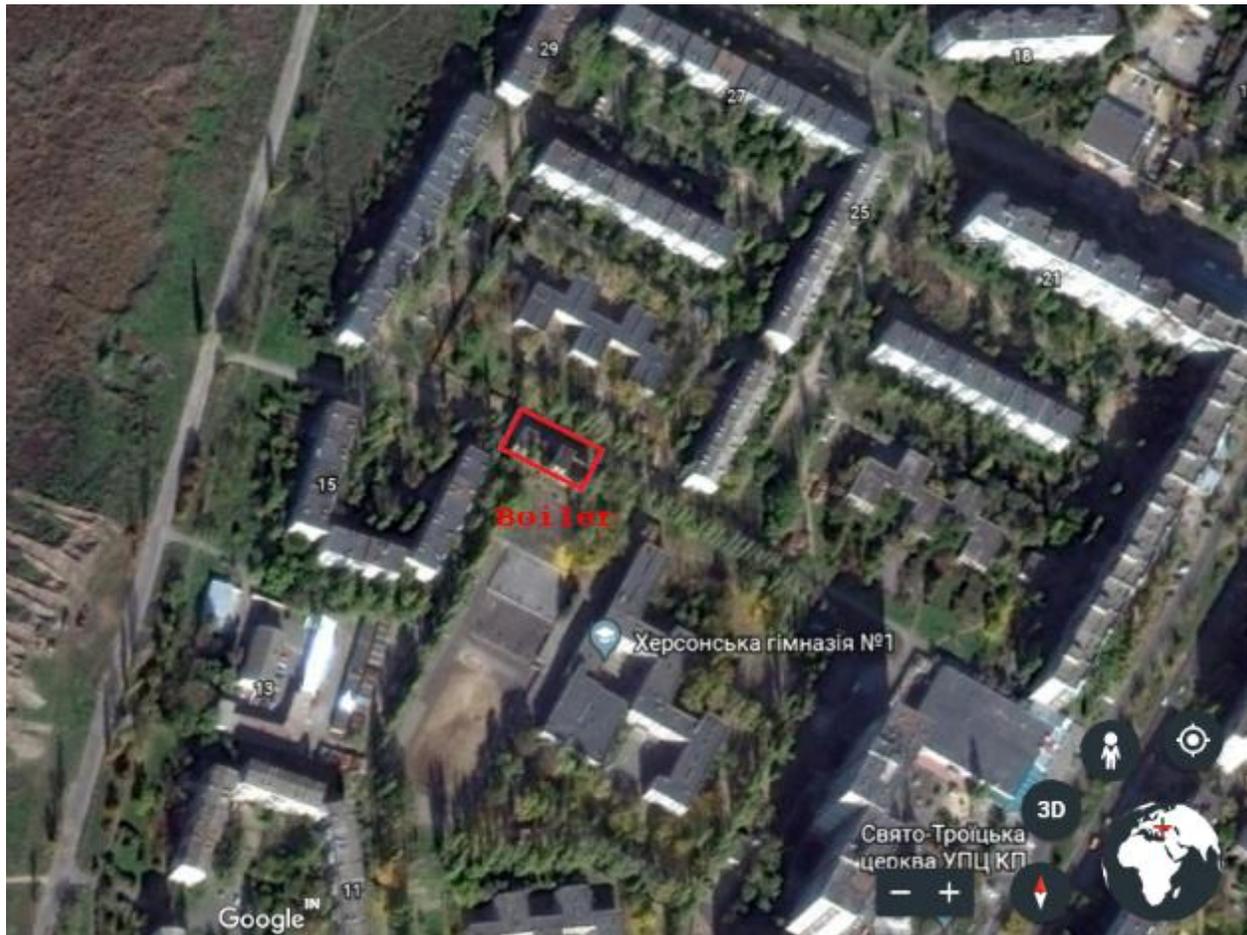
Існуюча схема теплових мереж



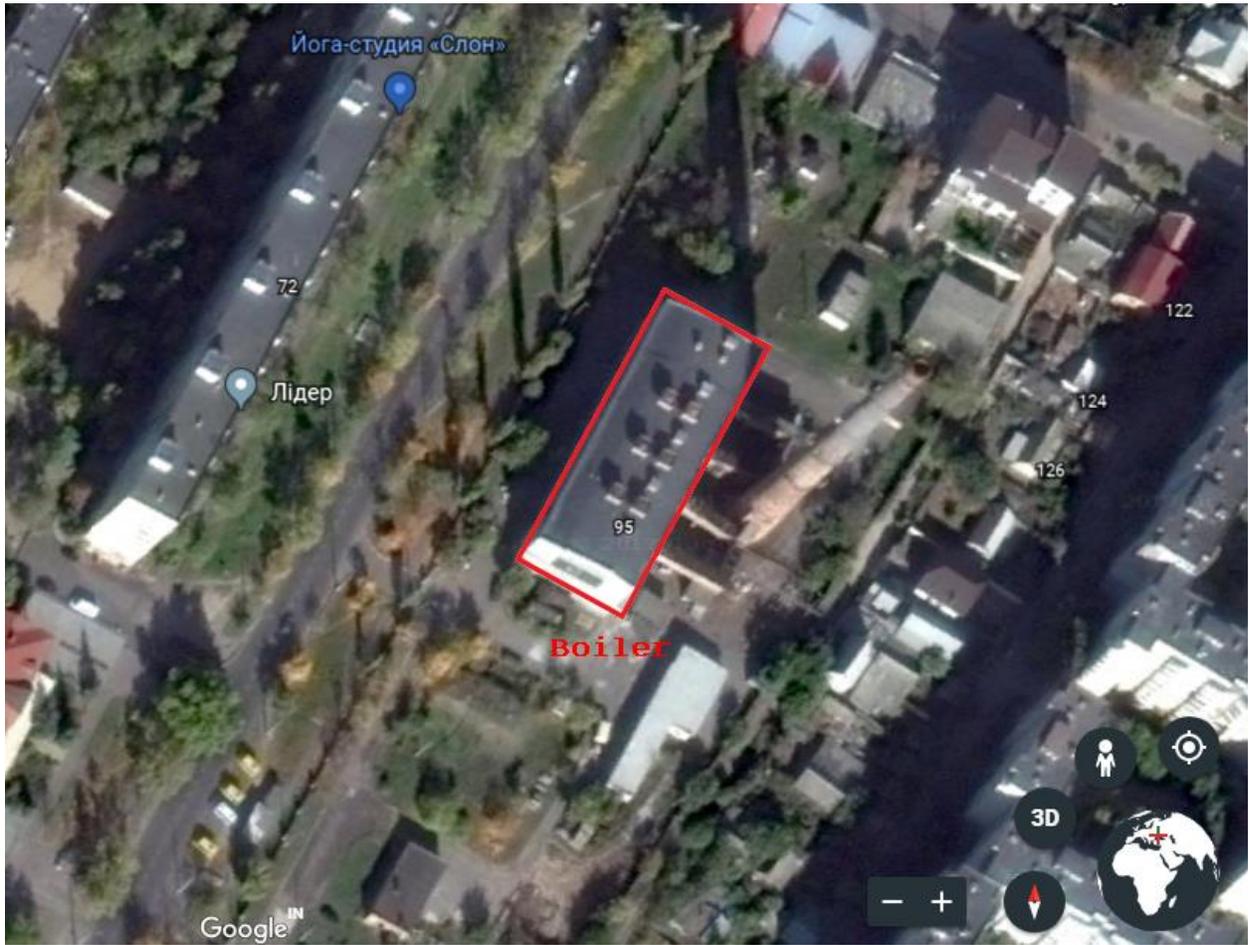
Львівська обл., Львівська міськ. рада, Львівська міськ. рада

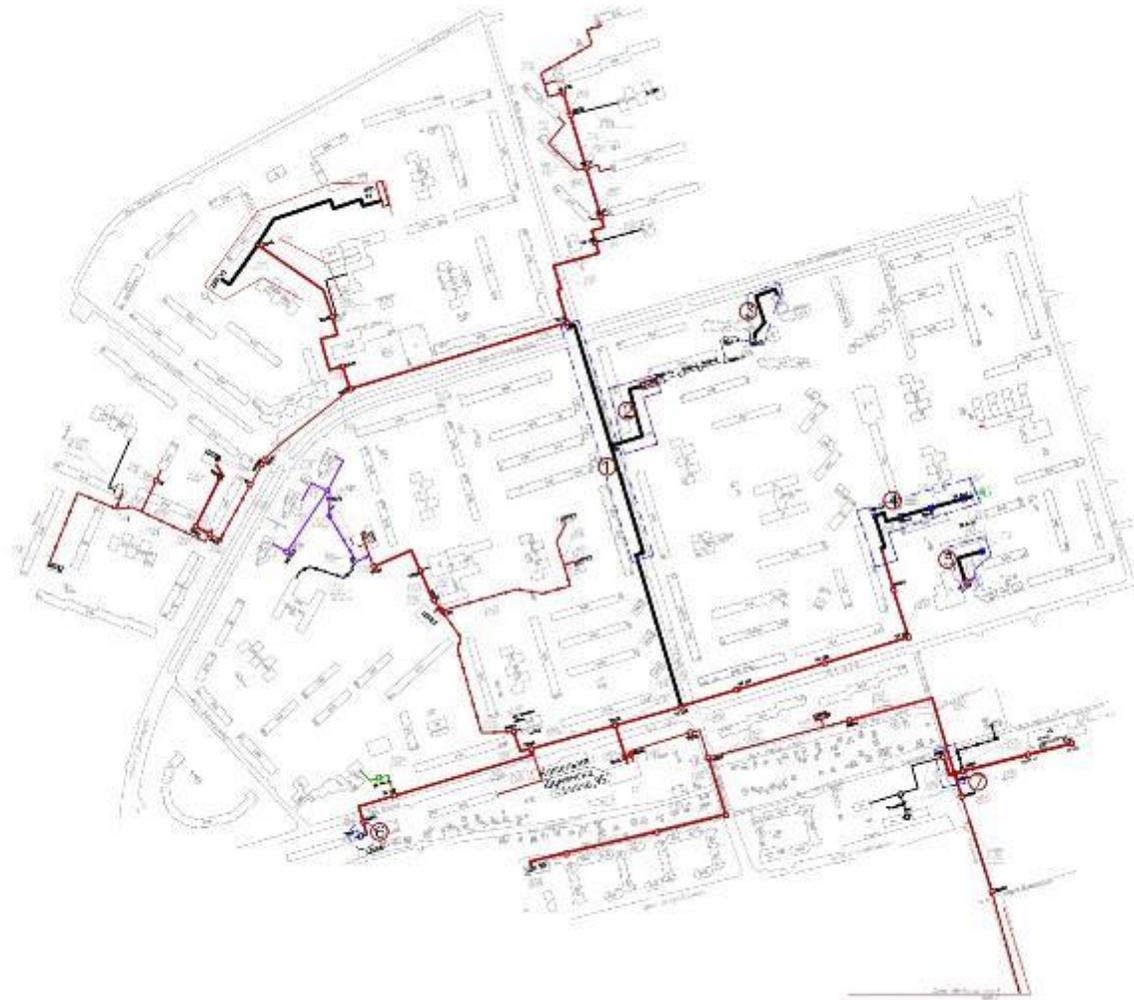
Map – scheme 5. Location of the network from the boiler house along 25 Nebesna Sotnya str. (the network to be replaced)

6. Central heating unit at 15b, Kulish str.



7. Boiler house at 95, Bohuna str.





Map – scheme 6. Location of the heating system next to the boiler house along 95, Bogun str. (the network to be replaced)

Annex 3 - extract from the land cadaster

ВИТЯГ
з Державного земельного кадастру про земельну ділянку

Номер витягу	НВ-6503339712017
Дата формування	29.11.2017
Надано на заяву (запит)	Херсонська міська рада 22.11.2017, ЗВ-6504866842017

Дані, за якими здійснювався пошук інформації у Державному земельному кадастрі

Кадастровий номер земельної ділянки	6510136600:01:001:1980
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Загальні відомості про земельну ділянку

Кадастровий номер	6510136600:01:001:1980
Місце розташування (адміністративно-територіальна одиниця)	Херсонська область, м. Херсон, вулиця Лавреньова
Цільове призначення:	18.00 Землі загального користування (землі будь-якої категорії, які використовуються як майдани, вулиці, проїзди, шляхи, громадські пасовища, сіножаті, набережні, пляжі, парки, зелені зони, сквери, бульвари, водні об'єкти загального користування, а також інші землі, якщо рішенням відповідного органу державної влади чи місцевого самоврядування їх віднесено до земель загального користування)
Категорія земель	Землі житлової та громадської забудови
Вид використання земельної ділянки	Землі загального користування (вул. Лавреньова)
Форма власності	Комунальна власність
Площа земельної ділянки, гектарів	3.5856

Відомості про державну реєстрацію земельної ділянки

Інформація про документацію із землеустрою, на підставі якої здійснена державна реєстрація земельної ділянки	Проведення інвентаризації земель під час здійснення землеустрою, 28.10.2017; Приватне підприємство "Землі Півдня", Балакар Тетяна Олександрівна
Орган, який зареєстрував земельну ділянку	Міжрегіональне управління у м. Херсоні та Автономній Республіці Крим Головного управління Держгеокадастру у Херсонській області
Дата державної реєстрації земельної ділянки	29.11.2017

Створено за допомогою програмного забезпечення Державного земельного кадастру

Відомості про обмеження у використанні земельної ділянки

Вид обмеження у використанні земельної ділянки	Охоронна зона навколо (вздовж) об'єкта енергетичної системи
Площа земельної ділянки (її частини), на яку поширюється дія обмеження	0.3101 гектарів
Підстава для виникнення обмеження у використанні земельної ділянки	Закон Земельний кодекс України 01.01.2002
Дата державної реєстрації обмеження	
Строк дії обмеження	безстроково

Відомості про обмеження у використанні земельної ділянки

Вид обмеження у використанні земельної ділянки	Охоронна зона навколо (вздовж) об'єкта енергетичної системи
Площа земельної ділянки (її частини), на яку поширюється дія обмеження	0.1375 гектарів
Підстава для виникнення обмеження у використанні земельної ділянки	Закон Земельний кодекс України 01.01.2002
Дата державної реєстрації обмеження	
Строк дії обмеження	безстроково

Відомості про обмеження у використанні земельної ділянки

Вид обмеження у використанні земельної ділянки	Охоронна зона навколо (вздовж) об'єкта енергетичної системи
Площа земельної ділянки (її частини), на яку поширюється дія обмеження	0.4046 гектарів
Підстава для виникнення обмеження у використанні земельної ділянки	Закон Земельний кодекс України 01.01.2002
Дата державної реєстрації обмеження	
Строк дії обмеження	безстроково

Відомості про обмеження у використанні земельної ділянки

Створено за допомогою програмного забезпечення Державного земельного кадастру

д обмеження у використанні земельної ділянки Охоронна зона навколо інженерних комунікацій

Площа земельної ділянки (її частини), на яку поширюється дія обмеження 0.1073 гектарів

Підстава для виникнення обмеження у використанні земельної ділянки Закон Земельний кодекс України 01.01.2002

Дата державної реєстрації обмеження

Строк дії обмеження безстроково

Відомості про обмеження у використанні земельної ділянки

Вид обмеження у використанні земельної ділянки Охоронна зона навколо інженерних комунікацій

Площа земельної ділянки (її частини), на яку поширюється дія обмеження 0.2458 гектарів

Підстава для виникнення обмеження у використанні земельної ділянки Закон Земельний кодекс України 01.01.2002

Дата державної реєстрації обмеження

Строк дії обмеження безстроково

Відомості про особу, яка уповноважена надавати відомості з Державного земельного кадастру (нотаріуса) відповідно до закону, що надала витяг з Державного земельного кадастру про земельну ділянку

Витяг підготував та надав В. М. Кудрявцев, Міжрегіональне управління у м. Херсоні та Автономній Республіці Крим Головного управління Держгеокадастру у Херсонській області



Вівторок, 11.06.2019

ОГОЛОШЕННЯ про початок громадського обговорення Плану екологічного та соціального управління з метою виявлення, збирання та врахування зауважень і пропозицій громадськості до планованої діяльності

Відповідно до Проєкту «Підвищення енергоефективності в секторі централізованого тепlopостачання України», для Проєкту який фінансується Міжнародним банком реконструкції та розвитку, місто Харків є учасником даного Проєкту в особі Мисцього комунального підприємства «Харьківтеплоенерго» (МКП «Харьківтеплоенерго»), яке забезпечує тепlopостачанням 51 % населення та обслуговує соціальну інфраструктуру у трьох районах міста.

В рамках Проєкту на об'єктах Нового комунального підприємства «Харьківтеплоенерго» планується:

- виконання реконструкції 8 котельних та теплових мереж із екологічними оптимізаційними заходами, які вимагають модернізаційних витрат, які вимагають частішого регулюванням, що дозволять збільшити площу розподіленого паливного потужності та зменшити споживання природного газу до 15%;
- покращення параснаження (дистанційної модернізації) 15 котельних з встановленням автоматичної системи роботи обладнання з регулюванням температури води в залежності від звичайної погодиного умов;
- реконструкція 140 існуючих вхідних багатоваріантних житлових будинків з встановленням пристроїв обліку теплової енергії;
- встановлення з покращенням приміщення 13 житлових будинків індивідуальних теплових пунктів з парадними системами опалення цих будинків на колекторній мережі;
- реконструкція теплових мереж довжиною 26556 м. в окремих районах області.

Для реалізації Проєкту був розроблений План екологічного та соціального управління (ПЕСУ), який складається із комплексу заходів із покращення наслідків, моніторингу та інституційної спроможності, які повинні бути вжиті під час впровадження та подальшої роботи для усунювання негативних екологічних та соціальних наслідків, із компенсації або мінімізації до прийнятних рівнів.

Тривалість громадського обговорення становить 20 робочих днів з моменту офіційного опублікування цього оголошення (зазначається у назві оголошення) та надання громадськості доступу до Плану екологічного та соціального управління (ПЕСУ).

Принципом усього процесу громадського обговорення громадськості має право подати будь-які зауваження або пропозиції, які, на її думку, стосуються планованої діяльності, без необхідності їх обґрунтування. Зауваження та пропозиції можуть подаватися в письмовій формі (у тому числі в електронному вигляді) та усно під час громадського слухання із внесенням до протоколу громадського слухання.

Заявлення на проведення громадського слухання надавати по адресі: Острівське шосе, 1, м. Харків, 73305, е-мэйл: Info@kh.teploenergo.ua, або за телефоном 0524-410-176

Громадське слухання відбуватиметься 27 червня 2019 року у вільній залі в адміністрації Будівлі МКП «Харьківтеплоенерго» за адресою: Острівське шосе, 1, м. Харків.

Ознайомитися з Планом екологічного та соціального управління (ПЕСУ) МКП «Харьківтеплоенерго» в рамках реалізації Проєкту «Підвищення енергоефективності в секторі централізованого тепlopостачання України» уразомого всього можна [тут](#) (якщо якийсь розділ недоступний [тут](#)).

Вівторок, 26.05.2019

УВАГА! ПОВІДОМЛЯЄМО

На сьогодні підприємством здійснюється заходи щодо пошуку дебіторської заборгованості шляхом пред'явлення Рішень судів, як до державних так і до приватних підприємств.

MINUTES

of public hearings as to the discussion of the Environmental and Social Management Plan of MPU "Khersonteploenerho" within the framework of Ukraine District Heating Energy Efficiency Project

which took place in the assembly hall of the administrative building of the Utility
at 1, Ostrivske shosse, Kherson

June 27, 2019

Kherson

Present:

Chairperson: Kharchenko Serhii Volodymyrovych, Director of MPU "Khersonteploenerho"

Secretary: Pervinenko Viktoriia Yeievhenivna, MPU "Khersonteploenerho" Public Procurement Specialist

Present from the Regional Project Implemented Unit (RPIU) of MPU "Khersonteploenerho":

Burman B.P. - the first Deputy Director of MPU "Khersonteploenerho", the chairman of the tender committee;

Vorobko V.V. - Chief Engineer of MPU "Khersonteploenerho"

Kapitaniuk O.V. - Environmental specialist of the RPIU within the framework of Ukraine District Heating Energy Efficiency Project.

Present from the Central Project Management Group Minregionbud:

Lebedieva N.V. - Environmental Safeguard.

Present from the Department of Housing and Utilities of Kherson City Council:

Chushak V.L. - Deputy Director of the Department;

Yeieremenko Yu.V. - Head of the Energy, Water Supply and Drainage Department;

Sharygin D.I. - Deputy Head of the Energy, Water Supply and Drainage Department.

Participants in public hearings __15__ persons according to the participants' registration record.

Agenda:

1. Announcement of the agenda and time limits of public hearings.
2. Report of Kharchenko S.V., Director of MPU “Khersonteploenerho”, as to the participation of MPU "Khersonteploenerho" in Ukraine District Heating Energy Efficiency Project.
3. Report of Kapitaniuk O.V., Environmental specialist of the RPIU within the framework of Ukraine District Heating Energy Efficiency Project on Environmental and Social Management Plan of MPU "Khersonteploenerho", developed within the framework of implementation of Ukraine District Heating Energy Efficiency Project. The main objective of the Plan and Environmental and Social Mitigation Measures.
4. Questions to the speakers and answers.
5. Discussion by the participants of public hearings (comments, proposals).
6. Summarizing, informing of the participants of the hearings on the procedure for taking into account comments and proposals of the public and closing of public hearings.

HAVE HEARD:

Kharchenko S.V., who announced the agenda and proposed to establish the following time limit:

for the introductory word of the chairperson - up to 5 min.;

for the report of Kapitaniuk O.V., Environmental specialist of the RPIU within the framework of Ukraine District Heating Energy Efficiency Project - up to 20 min.;

for the answers to questions after the report - up to 2 min.;

for the registered speeches in the discussion - up to 5 min.;

for other speeches in the discussion - up to 5 min.;

to summarize and close hearings - up to 5 min.

Voted unanimously

RESOLVED:

To set the following time limits for hearings:

for the introductory word of the Chairperson - up to 5 min.;

for the report of Kapitaniuk O.V., Environmental specialist of the RPIU within the framework of Ukraine District Heating Energy Efficiency Project - up to 20 min.;

for the answers to questions after the report - up to 2 min.;

for the registered speeches in the discussion - up to 5 min.;

for other speeches in the discussion - up to 5 min.;

to summarize and close hearings - up to 5 min.

HAVE HEARD:

1. Kharchenko S.V. informed the Project is being implemented with the support of the World Bank and will allow MPU "Khersonteploenerho" to modernize the heat supply system as a whole, introduce energy and resource saving materials and technologies, implement dispatching and automated control systems for the entire company, and improve the system of heat consumption measuring.

The project envisages:

- execution of reconstruction of 6 boiler houses with installation of energy efficient boilers equipped with modulated burners with oxygen and frequency regulation (allows to smoothly regulate flaming flames and reduce natural gas consumption up to 15%);
- reconstruction of 1 central heating substation
- reconstruction of heating networks
- technical modernization of 15 boiler houses with installation of automatically working system for the equipment with temperature regulation of source depending on outside weather conditions;
- reconstruction of 140 engineering inputs of multi-apartment houses with installation of thermal energy meters;
- installation in basements of 13 houses of individual heat points with the transfer of heating systems of houses on an independent circuit with the replacement of the distribution heating networks.

The works will be carried out in two districts of Kherson: Korabelny district, Suvorovsky district.

2. Kapitaniuk O.V., presented Environmental and Social Management Plan of MPU "Khersonteploenerho" within the framework of Ukraine District Heating Energy Efficiency Project to the participants.

Summary of the report: ***Environmental and Social Management Plan (ESMP)***. An ESMP is developed on the basis of the prepared Program Level Environmental and Social Assessment (PLESA) and consists of the set of mitigation, monitoring and institutional responsibility measures that are mandatory during implementation of the Project to eliminate adverse environmental and social impacts, offset them or reduce them to an acceptable level.

Environmental and Social Mitigation Measures. Minimization of adverse impacts to be achieved through continuous refinement and effective implementation of the environmental and social mitigation measures that would allow to avoid or minimize potential impacts on the urban areas; perform repairs in such a way as to prevent the cutting of trees, destroying of landscape, pollution of air and soil; ensuring labor safety and minimization of health impacts during welding operations, avoiding/minimizing land acquisitions and resettlement impacts, reducing inconveniences to the public during the construction.

Environmental and social monitoring. Environmental and social monitoring during project implementation provides information about the project environmental and social impacts and the effectiveness of mitigation measures.

Environmental supervision and reporting. The ESMP implementation will be supervised by Minregion and CPMU staff periodically (as per monitoring schedule), as well as by the WB (during its supervision missions). Furthermore, MPU “Khersonteploenerho” will annually present short information about the ESMP implementation as part of the Progress Reports to the WB by the Borrower.

Introducing the Grievance mechanism. The main objective of the Grievance mechanism Guideline is to establish an effective communication between stakeholders to ensure a timely and effective feedback for addressing any grievance connected to the project, including those from community representatives, local business and other stakeholders, as well as to raise the awareness of the public about the projects and the availability of Grievance mechanism.

Question to the speaker:

No.	Question to the speaker (with indication of the person submitting it)	The answer, if any (with indication of the person providing it)
1	What measures are planned for trading booths that are located on the heating networks, for example, Shumensky Market	<p>Answered by: Kapitaniuk O.V., Environmental specialist</p> <p>As for the Shumensky market, while designing the decision was made as to the alternative way of laying with the redirection of a part of the heating networks to the street passing along the market.</p> <p>In case the other objects located on the networks are found, a plan of involuntary resettlement will be developed and measures to move the object or to provide compensation are proposed.</p>

Discussion of the questions:

No.	Comments, proposals (with indication of the person submitting them)	Response, if any (with indication of the person providing it)
	-	-

HAVE HEARD:

Kharchenko S.V., who proposed to approve Environmental and Social Management Plan of MPU "Khersonteploenerho" within the framework of Ukraine District Heating Energy Efficiency Project in the proposed version.

Voted unanimously

RESOLVED:

To approve Environmental and Social Management Plan of MPU "Khersonteploenerho" within the framework of Ukraine District Heating Energy Efficiency Project in the proposed version.

The following is added to the protocol:

1. Record of public hearings participants' registration on _3_ sheets.
2. Record of the registration of written comments and proposals received during public hearings on the _1_ sheet.

Chairperson _____
(signature)

_____ Kharchenko S.V. _____
(surname and initials)

Secretary _____
(signature)

_____ Pervinenko V.Y. _____
(surname and initials)

Annex 6
photo report on holding public hearings



