Environmental Assessment Report

Volume 1

Part 6: Donetsk Oblast

FINAL

November 2005
NOTE TO FILE:

The following Environmental Assessment Report is one of several that was prepared in support of the Urban Infrastructure Project for Ukraine which was under preparation in 2005-2006. This is a category B project for rehabilitation of various utilities, including water supply, waste water treatment, and solid waste. The EAs cover investments under Component B for Rehabilitation Investments under the project. Any technical variations in the final plans for these sites will be addressed in the review of the EMPs scheduled to take place in conjunction with the launch workshop. All subsequently identified works under Component B must comply with the preparation of similar EAs in accordance with the Environmental Framework Policy dated November, 2005, before the disbursement of any funds for the specific site. Investments under C. for Energy Efficiency under the Project must comply with the preparation of an abbreviated EA/EMP specified under a separate Environmental Framework Policy prepared specifically for Component C.
Ukraine: Urban Infrastructure Project

ENVIRONMENTAL ASSESSMENT REPORT

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PREFACE

Urban Infrastructure Project (UI Project) and Nistru River/Black Sea Protection Project (NR/BSP Project) (GEF sub-project) have been merged into a single Urban Infrastructure Project (GEF sub-projects are treated under the UI Project) as their broad environmental goals include improvement of hygiene and health of the population, provision of low-cost and sustainable water supply and sanitation delivery services, and improvement of environmental conditions in Ukraine, with a special focus on the Nistru River and Black Sea basin as a priority region.

Within the framework of this integrated project, the EA Consultant is responsible for preparation of:

- Environmental Framework Policy (EFP);
- Environmental Assessment (EA).

Environmental Framework Policy

The Environmental Framework Policy document reflects key provisions of environmental policies adopted by Ukraine and the World Bank, the results of their comparative review, and demonstrates their compatibility on all major issues.

The existing methodological frameworks for environmental assessment, developed in Ukraine and adopted by the World Bank, have been reviewed as part of the EFP preparation. This review reveals a very close similarity of these frameworks, with only few minor inconsistencies, which have not been encountered in the preparation of environmental assessments for selected investment projects.

Environmental Assessment

The Environmental Assessment documents, presented in this submission, have been prepared according to the World Bank environmental policies (OP4.01) and procedures, which are compatible with the Law of Ukraine “On Environmental Review” and the EIA-related State Construction Standard DBN A.2.2-1-2003 “The Environmental Impact Assessment Content and Composition for Construction Projects” (Kyiv, 2004).

There have been numerous changes in the list of proposed projects, which should be subject to environmental assessment. The most recent list of projects, provided to the EA Consultant and dated 12 October, 2005, appears to be different from the initial list, included in the Terms of Reference.

At the same time, the Environmental Assessment studies were carried out for a number of other projects/locations, included in the expert’s findings/e-mails dated 13 May, 11 June, 17 August and 26 August, 2005 (Ivano-Frankivsk, and towns in Kharkiv Oblast: Kupyansk, Izium, Chuguev).

According to above mentioned, the present report consists of two volumes:

- **Volume 1** - preliminary sub-projects identified for inclusion under UI project (according to the list dated 12 October, 2005).
- **Volume 2** - addition sub-projects reviewed according to expert’s findings.

The general content of Final EA Report is given below.
INTRODUCTION

Donetsk oblast is located in South-Eastern part of Ukraine. In the southwest, the area borders with Zaporizhzhia and Dnipropetrovsk Oblasts, on the Northeast - with Lugansk Oblast, on the East - with Rostov Oblast, which is a Russian territory. Southern part of oblast borders with Azov Sea. The area of the oblast – 26.5 thousand km$^2$, which constitutes 4.4% of the total area of the country.

Total population of oblast is 4.95 million (approximately 10% of the total population of the country). Population density is 191 person/km$^2$, 90% of which lives in the cities and townships. Population density in Donetsk oblast is the highest in Ukraine. Also, it is the oblast with highest percentage of urban population.

Oblast is divided into 18 districts. There are 49 cities and towns in the oblast. The largest are Donetsk (above 1 million people), Mariupol' and Makeevka (above 500 thousand people), Gorlovka, Kramatorsk and Slaviansk. There are 1120 villages in the oblast.

Donetsk oblast is one of the most industrially developed oblasts in Ukraine. There are more than 2000 industrial enterprises (800 of which are the major enterprises), specializing in coal mining, energy generation, heavy machinery production and construction materials. More than 300 mineral deposit sites are in exploitation in the oblast.

High concentration of industry, developed agricultural sector and wide transport infrastructure, as well as high population density create a significant impact on biosphere - probably the highest not only within the Ukraine, but also all over Europe.

Donetsk oblast is one of the most environmentally “tense” regions in Ukraine. The most acute problems in oblast are the issues of the air and water pollution, as well as accumulation of industrial (often hazardous) wastes, especially from the mining industry.

The city of Donetsk is an administrative, economic and cultural centre of Donetsk oblast. Donetsk is located on the border Kalmius river. It is located on intersection of major railroads and highways. There is an airport in the city. There are 9 districts in the city - Budenovskiy, Voroshilovskiy, Kalininskiy, Kievskiy, Kirovskiy, Kujbyshhevskiy, Leninskiy, Petrovskiy and Proletarskiy.

The city territory is 35834 ha, 23263 ha are built up territories; 18223 ha are vegetated areas.

By the beginning of 1990, the city population constituted 1,1 million people and had a tendency to increase as a result of population migration from the rural areas and other regions. At present, there is a tendency to decrease in total population.

According to historical data, the city was established at the end of 17th century, when a settlement of settled Cossacks was founded, named "Alexandrovskaya sloboda". Further development of the city was connected with discovering and beginning of mining of coal deposits in 1820. In 1869, as a result of merge of several miner's settlements at Alexandrovsky mine, working settlement Yuzovka was founded. Donetsk was officially named as a city in 1917. Since 1924 it did bear a name Stalino. It was renamed as Donetsk in 1961.
The city can be described as a multipurpose centre. Leading industries are: coal mining, metallurgy, heavy machinery production, chemical, coke-chemical, building materials production, light industry, as well as food-processing industry.

The city is also of great cultural importance: Donetsk Scientific Centre of the Academy of Sciences, educational and research institutes, theatres and cinemas are located there.

There are architectural monuments in Donetsk: theatre (1935-40, architect Kotovsky), the covered market (1961, architect K. Feldman), the house of the design organizations, the high-rise building „Trilistnik“, and also the monuments: V.I. Lenin, T.G. Shevchenko, "Nepokornie", Eternal Glory to the Soviet soldiers and victims of German fascist terror, an obelisk in honour of the economist and publicist V.V. Bervi.

Donetsk has a centralized gas distribution system, as well as supply of liquid gas in containers. It is primarily used for cooking.

**Climate**

Donetsk oblast is located within the continental climatic area of the moderate zone, with cold and not snowy winter, hot and dry summer. The average temperature for January is from -4°C on the Azov Sea coast to -7.8°C in Debaltsevo area; average temperatures for July are correspondently +21, +23°C. Duration of a frost-free period is 160-170 days. The sum of active temperatures is 2900-3150°C.

Duration of a period with temperatures above +10°C is around 170 days. Annual precipitation varies from 375 mm on Azov Sea coastline to 556 mm on Donetsk range. Above 70-80% of annual precipitation amount occurs during warm period of the year. Snow cover is not significant (10 - 19 cm) and unstable. Among the adverse climatic parameters - winter thawing periods, icings, deep frost penetration with the absence of snow cover, spring frosts, dry winds, which bring frosts in the winter and rains and frequent fogs in the summer. Donetsk oblast belongs to droughty, very warm agro-climatic zone.

**Physical and Geographic Description of the Region**

The Donetsk Oblast is located within the Central Steppe area. The regional topography comprises the Donetsk, Azov Sea, and Central Russian Highlands, and the Dniepro, Black Sea and Donetsk Lowlands. The area has been severely affected by various human activities, with numerous mining waste dumps, quarries, ancient burial grounds, etc.

The variety of topographic forms has resulted in the diverse soil pattern, with the land surface of the area being affected by progressive erosion.

There are over 110 rivers in the Donetsk Oblast, draining into the Black Sea and/or Azov Sea. Of that, 47 rivers have the length of over 25 km. The rivers draining the Azov Sea catchment basin include the Siversky Donets River with tributaries (Kasenny Torets, Bakhmut, Krasiva, Borova, Aidar, Lopan, Derkul etc.), Kalmius, Grusky Elanchik, Mius and Krynka. The rivers of the Black Sea Basin include the Samara and Vovcha Rivers with their tributaries. Even the largest rivers of the Donetsk region are classified into the small river category, with mean annual flow discharge rate being at 1-2 l/s per km². The water mineralisation is generally high (over 1-2 g/l) due to the negative precipitation/evaporation
ratio and strong impact of mining waters, with the total hardness being as high as 30 mg-equiv/l.

The regional deficit of available water resources is covered by flow diversions from the Siversky Donets River via the Siversky Donets-Donbass Canal.

There are many floodplain lakes, mainly in the Siversky Donets River valley, and the Slaviansk system of saline water lakes, developed as a result of surface suffosion (the Veisovo, Repne and Slepne Lakes).

The region's recreational potential comprises the scenic landscapes of the Donetsk Mountain Ridge, mineral water sources, and medicinal mud present in the lakes.

**Geology and Hydrogeology of the Area**

The geological and tectonic structure in the area of the Donetsk Oblast is very complex. Its central and eastern areas are founded upon the Donetsk Folded Formation, the western area represents a transition zone between the Donbass Region and Dniepro-Donetsk Lowland, and the southern area occupies the southern slope of the Ukrainian Crystalline Shield.

The first and second parts of the Donetsk Oblast represent the surface of the Donetsk Plateau, affected by erosion and denudation processes, founded upon the Hercynian folded formation. The third part lies within the area of the Azov Sea Coastal Highland, based upon the Precambrian Crystalline Shield, and the Azov Sea Coast Lowland, based upon the Neogene strata. The Donetsk Folded Formation represents a complex anticlinorium system, comprising a thick layer of metamorphosed Palaeozoic sedimentary deposits, arranged in anticline and synclinal folds, overlain with the Permian and Meso-Neozoic deposits in the subsided areas. The area geology is dominated by coal beds of Carboniferous age, with thickness ranging between 10 to 12 km. These beds represent the major coal-mining target. They are overlain with the Lower Carbon limestone and dolomite strata, and the chalk and marl rocks of the Cenomanian/Turonian age. Limestone and dolomite strata are exploited to provide raw material for the metallurgical industry. The extraction technique features an open-quarry process, with the quarries being over 100 m deep. The Quaternary deposits comprise Aeolian/Diluvium loess deposits, being 5-15 m deep.

The geology of the Azov Sea Coast area comprises granites, covered by sedimentary deposits on the slopes. The base rocks are overlain with the superficial deposits, consisting of loess in the locations of water divides, and sand/pebble in the river valleys. The base rocks outcrop in many places, representing weathered surfaces.

The Donetsk Oblast occupies a western part of the Donetsk Hydrogeological Area, limited by the Dniepro-Donetsk artesian basin in the north and the fractured-rock aquifers of the Ukrainian Crystalline Shield in the south and south west. The water contained in the fractured crystalline rocks is slightly saline, with the mineralisation ranging between 1 g/l to 3 g/l. The productivity of wells drilled into these aquifers is generally low, from 1 l/s to 5 l/s.

Groundwater present in sedimentary deposits widely vary in both – quantity and quality. The upper part of geological cross-section can be characterized by the presence of fresh- and slightly saline waters. In the salinised rock formations of perm deposits, salt brines are widespread.
The fractured chalk and marl aquifers of the Cenomanian/Turonian age, as well as the Lower Carbon limestones are most saturated with water. These aquifers are utilized for water supply of many settlements and industrial enterprises.

As a whole, Donetsk oblast can be characterized by technogenically disrupted groundwater dynamics, caused by groundwater use for water supply, mining industry, etc. The restructuring of coal mining industry has lead to termination of mine waters removal in many cases, which often causes elevation of groundwater level and flooding. Therefore, to reduce these negative effects, leakages from water supply and sewerage networks should be reduced to a maximum possible extent through rehabilitation and modernization of water supply and sewerage facilities.

The current geo-morphological structure has been mainly shaped by the tectonic movements that occurred during the Neogene and Quaternary periods. The Donetsk Plateau, which represents a significant landscape feature, is dissected by numerous deep erosion valleys with the depth of up to 150-200 m.
1. REHABILITATION OF PUMPING STATIONS OF THE SIVERSKY DONETS-DONBASS CANAL, OPERATED BY THE STATE WATER UTILITY "UKRPROMVODOCHERMET"

1.1. Current Situation

State Water Utility, responsible for centralized water supply (SWU UkrPromVodCherMet) was established in 1930 with the purpose to eliminate water resources deficiency in Donbass. The SWU UkrPromVodCherMet is responsible for centralized water supply of the mining and smelting industry, other industries and population of Donetsk oblast. Figure 1 represents a view of a headquarters building.

SWU UkrPromVodCherMet acts as a legal person. It is governed by Donetsk oblast state administration. It is state-owned and self-funded enterprise. SWU UkrPromVodCherMet is a multi-activity enterprise with the following basic kinds of activity:

- Water diversion with the purpose of water supply of mining regions;
- Long distance water supply through water mains and pumping station(s) services;
- Centralized water supply to mines and industrial water of cities, settlements, industry, collective farms, agricultural societies and other consumers on a contractual basis;
- Preparation of potable water supply development and realization of measures aimed at water resources conservation.

In addition, the enterprise provides the following services:

- Water quality control with using the capacity of a water quality research laboratory, development of design and budget documentation, performance of research, adjustment and maintenance work for water supply utilities;
- Development and registration of pollution prevention activities, land inventory;
- Carrying out research into water legislation and technology;
- Metal moulding and casting;
- Manufacturing of metal products, including pipes, fittings, valves, equalizers, air cocks, spare parts, and other metal structures.

As of 01.12.2002, "UKRPROMVODOCHERMET" is presented in Table 1.1.1. Main Building of the SWU "UkrPromVodoCherMet"
The enterprise consists of:

- **Central mechanical repair workshops (CMRW)**, which are in charge of providing the spare parts, necessary for repair of non-standard equipment, manufacturing of valving equipment, etc. Up to date, design-budget documentation and hermetic sealing methodology, intended for insulation of channel at emergency segments are developed by the experts of the enterprise. Insulation works for channel emergency segments are to be conducted by a special divers and construction workers brigade without interruption of water delivery services.

- **Donbassvodoremont (DBVR)**, which carries out special repair-construction works on water supply facilities and water pipelines. Design-budget documentation and hermetic sealing methodology, intended for insulation of channel at emergency segments are developed by the experts of the enterprise. Insulation works for channel emergency segments are to be conducted by a special divers and construction workers brigade.

- **Central control-research and design and survey water laboratory**, which controls the activities of 20 water laboratories, located on filtering plants in Gorlovsky operational department of water supply and wastewater removal facility ODWSWRF and having corresponding accreditation certificates.

- **Novomichalovskoe agricultural management branch (NovAMB)**.

- **Gorlovsky ODWSWRF**, which was established on July 1<sup>st</sup>, 2004, in the framework of the program “Donbass Water”, on the basis of property complex of the communal
enterprise "Vodokanal" (the town of Gorlovka), provides water supply and wastewater removal services for the town of Gorlovka.

Also, there are 8 structural subdivisions of SWU «UkrPromVodCherMet» – district branches, which carry out water treatment services and its transportation into dry regions of oblast. Namely, these are:

**Slaviansk district branch**, which is the main branch of SWU «UkrPromVodCherMet», provides population, industry and agricultural sector of the towns of Slaviansk, Kramatorsk and Druzhkovka with potable and service waters. This branch carries out water transportation through Siversky Donets-Donbass Canal in order to provide dry regions of the oblast with water. At present, there are the following main water supply and hydrotechnical structures are at the balance of Slaviansk district branch:

- 2nd Donetsk water main with the length of 61 km and total productivity of 373 thousand m³/day and two filtering plants with total productivity of 270 thousand m³/day;
- Beliansk water main with productivity of 14 thousand m³/day;
- a segment of the Siversky Donets-Donbass Canal with a length of 23.8 km;
- 2 groundwater intake facilities with 104 artesian wells with total productivity of 197 thousand m³/day;
- 14 pumping stations with total productivity of 205.5 thousand m³/hour;
- 3 water reservoirs with total capacity of 445.81 million m³;
- hydroelectric power plant with productivity of 3680 kW.

A segment of a Siversky Donets-Donbass Canal, maintained by the Slaviansk district branch, is presented in Figure 1.3. One of the pumping stations, maintained by the Slaviansk district branch is presented in Figure 1.4.

**Chasovoyarsky district branch**, which maintains corresponding water supply and hydrotechnical constructions, provides population, industry and agricultural sector of the towns of Artemovsk, Dzerzhinsk, Konstantinovka, Soledar and Chasov Yar with potable and service waters. This branch also carries out water transportation through Siversky Donets-Donbass Canal. A 45.8 km long segment of a channel, 5 water mains with total length of 200.7 km, Belokuzminovsky groundwater intake facility with 45 artesian wells, having total productivity of 13.8 thousand m³/day, 2 filtering plants with total productivity of 60 thousand m³/day, 8 pumping stations with total productivity 8.8 thousand m³/hour and 2 water reservoirs with total capacity of 3.9 million m³ are also maintained by Chasovoyarsky district branch.
Figure 1.3. The Siversky Donets-Donbass Canal Section Operated by the Slaviansk District Branch

Figure 1.4. Pumping Station No. 1-a (Level 1) Operated by the Slaviansk District Branch
productivity of 201 thousand m³/hour and a water reservoir with capacity of 5.6 million m³ are also maintained by Gorlovsky district branch. Arched junction of the Siversky Donets – Donbass Canal maintained by the Gorlovsky district branch is presented in Figure 1.5.

Figure 1.5. Arched Junction of the Siversky Donets – Donbass Canal. Gorlovsky District Branch

Enakievo district branch which maintains corresponding water supply and hydrotechnical constructions pumps 6 towns of Donetsk oblast, namely Enakievo, Torez, Shakhtersk, Snezhnogorsk, Dniprovsk, and Kirovskoe with potable and service waters. 3 filtering plants with total productivity of 450 thousand m³/hour, 9 pumping stations with total productivity of 5.9 thousand m³/hour, 2 water reservoirs with total capacity of 25.5 million m³ and water mains with total length of 287.3 km are also maintained by Enakievo district branch.

Makeevsky district branch which includes population, industry and agricultural sector of the towns of Makevka, Hartszamma, Zugres, Zhdanovka and Panteleimonovka with potable and service waters along 1.1 km long segment of Siversky Donets – Donbass Canal, 2 filtering plants with total productivity of 300 thousand m³/day, 9 pumping stations with total productivity of 119.2 thousand m³/hour, 4 water reservoirs with total capacity of 50.8 million m³ and water mains with total length of 147.2 km are also maintained by Makeevsky district branch.

Donetsk district branch which includes population, industry and agricultural sector of Yasinovataya, Makeevka and Krasnoarmeisk settlements with potable and service waters in particular, the district branch maintains filtering plants with total productivity of 300 thousand m³/day, 11 pumping stations and 4 water reservoirs with total capacity of 25 million m³ and water mains with total length of 198.2 km also maintained by the district branch.

Krasnoarmeyevsk district branch maintains filtering plants with total productivity of 300 thousand m³/day, 5 pumping stations and 4 water reservoirs with total capacity of 25 million m³ and water mains with total length of 167 km.
pumping stations with total productivity of 17.8 thousand m$^3$/hour, 488.7 kilometres of water mains and water reservoir with total capacity of 25 million m$^3$.

**Mariupol district branch**, which maintains corresponding water supply and hydrotechnical constructions, provides population, industry and agricultural sector of the town of Mariupol with potable and service waters. In particular, this district branch maintains 2 filtering plants with total productivity of 290 thousand m$^3$/day, 13 pumping stations with total productivity of 31 thousand m$^3$/hour, 2 water reservoirs with total capacity of 105.6 million m$^3$ and water mains with total length of 211 km.

Water is delivered from the Siversky Donets river through Siversky Donets-Donbass Canal and further, through Juzhno-Donbassky water main to Mariupol. Along the way, water is elevated 260 m high, which is executed with the help of 6-level system of pumping stations. A snapshot of Siversky Donets-Donbass Canal is presented on Figure 1.6.

![Figure 1.6. The Siversky Donets-Donbass Canal](image)

The Siversky Donets river, 20 water storage reservoirs and more than 100 artesian wells serve as water supply sources for SWU «UkrPromVodCherMet»”. 2 million m$^3$ of potable water and 0.4 million m$^3$ of service water are daily provided to the consumers by SWU «UkrPromVodCherMet»”. There are no alternative water supply providers in Donbass region, so that, SWU «UkrPromVodCherMet»” is holding a monopoly for centralized water supply services.

As of 01.10.2005, SWU «UkrPromVodCherMet»” maintains water supply and hydrotechnical structures with a total value of basic production assets constituting 1.5 billion UAH, in particular:

- The Siversky Donets-Donbass Canal - the main source of water supply for Donetsk oblast, with a length of 132 km, throughput capacity of 37 – 43 m$^3$/second and an average discharge of 1106 million m$^3$/year;
- 17 water reservoirs with a total volume of 665.1 million m$^3$;
- 17 water filtering plants with a design capacity of 2.79 million m$^3$/day.

75 pumping stations and 23 water supply networks with a total length of 2012 km are maintained in order to provide water supply services to consumers. SWU «UkrPromVodCherMet» also maintains power supply and dispatcher-technical communication installations, electrolytic protection and transportation units. The scheme of Donetsk oblast water supply by SWU «UkrPromVodCherMet» is presented in Figure 1.
As of 01.01.2005, there are 90 pumping stations with 75 among them performing centralized water supply services and having total productivity of 39957.6 thousand m³/day. There are 17 filtering stations in the system with productivities of 5 to 500 thousand m³/day. There are 94 water reservoirs within the centralized water supply system with capacities of 400 to 10000 m³. Total length of a water distribution network of Gorlovsky ODWSWRF constitutes 1072 km.

There are 687 pipeline connections to water mains and 43279 pipeline connections to a water distribution network of Gorlovsky ODWSWRF.

In order to provide pumping stations, working on a channel, with stable energy supply, 7 electric sub-stations for 110/10 kV and 3 sub-stations for 35/6 kV are maintained. 18 electric transformers for 100-35 kV with total power capacity of 437.8 MVA are installed on these substations. Total length of electric power transmission lines is 45.2 km.

The terms of operation of electric equipment on a channel have exceeded the normative terms 1.5 times. This causes frequent failures of equipment: 17 large vertical electric motors had two major repairs each, 4 other motors had one major repair each.

During last 4 years, because of aging, windings of three out of four installed power transformers 110/10 kV, with 20 MVA power capacity were damaged. In particular, in the year 2000, one of the transformers did undergo a major overhaul. Morally and physically obsolete equipment is being operated by. For example, there are oil switches installed in switching centres, which are out of production for several decades already; isolation on relay protection switches has dried up, etc.
There is a system of scheduled preventive maintenance repairs across the energy utility unit, however, it does not guarantee uninterrupted energy supply and thus, continuous water delivery by the pumping stations system.

In accordance with acting legislation, tariffs for water supply services, provided by SWU «UkrPromVodCherMet» are regulated by the State. However, under current conditions and tariffs, SWU «UkrPromVodCherMet» in the year 2004 had negative profits.

Structure of expenditures, incurred by SWU «UkrPromVodCherMet» for centralized water supply services for the 9 months of the year 2005 can be presented as follows:

- electric energy expenses- 53.5%,
- employee wages – 12.3%;
- social insurance deductions - 4.7%;
- amortization - 11%;
- equipment repairs – 8.3%;
- tax deductions – 0.7%;
- security guarding expenses - 2%,
- additional materials and spare parts- 0.9%,
- fuel costs – 1.5%,
- services of other organizations- 1.4%,
- expenses for cleaning materials- 1.8%,
- other expenses - 2%.

As can be seen from the above operating cost information, energy expenses is a major part of the cost price for water supply services. Because of the increased tariffs for electric energy, expenses for water supply services are also continuously increasing. In response to this matter, energy-saving policy (rehabilitation of water mains, optimal hydraulic configuration of a water supply network (pipeline and pump characteristics), increase of energy efficiency of the equipment, introduction of multi-tariff water meters, etc.) is introduced at the enterprise. Reduction of electric energy cost fraction will allow to reduce the total cost of water supply services.

As of 01.09.2005, there were 5939 people employed by the enterprise.
1.2. Proposed Investment Project

The proposed water supply rehabilitation project for the State Water Utility “UkrPromVodCherMet” comprises the following components:

1.2.1. Rehabilitation of Water Pumping Capacity of the Siversky Donets-Donbass Canal, Operated by the UkrPromVodCherMet Utility

This project component involves the replacement of the Level 1-4 Rising Pumps serving the Siversky Donets-Donbass Canal, with the total cost of 26 million USD, which will be used to finance both domestic and external purchases.

The project investment components are presented in Table 1.1.

Table 1.1. Investment Project Components

<table>
<thead>
<tr>
<th>Cost Item</th>
<th>Proportion of the Total Project Cost, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Design and investigation works</td>
<td>6.4</td>
</tr>
<tr>
<td>2 Preparatory works (old equipment dismantling, basement preparation for new pumping stations)</td>
<td>2.3</td>
</tr>
<tr>
<td>3 Purchase of 11 pump units</td>
<td>70.9</td>
</tr>
<tr>
<td>4 Installation of purchased pump units</td>
<td>17.7</td>
</tr>
<tr>
<td>5 Testing and commissioning of new installed equipment</td>
<td>2.7</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

The planned duration of implementation phase, including the purchase of new equipment, phased decommissioning of old pumping equipment, installation and commissioning of new equipment, is 50 months. The proposed project involves the phased replacement of 11 pump units (Rising Levels 1, 2, 3 and 4), handling flows conveyed by the Siversky Donets-Donbass Canal. Table 1.2 contains the list of pumps proposed to be replaced under the project.

Table 1.2. List of Pumps to be Replaced

<table>
<thead>
<tr>
<th>Pump Units</th>
<th>Phase 1</th>
<th>Phase 2</th>
<th>Phase 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 1 pump unit</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Level 2 pump unit</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Level 3 pump unit</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Level 4 pump unit</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td><strong>Total for a Phase</strong></td>
<td><strong>5</strong></td>
<td><strong>4</strong></td>
<td><strong>2</strong></td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td>11</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

It is proposed to purchase the following equipment:

- **Level 1 pump station:** the requirement is for four pump units, including the provision for the replacement of pump units No. 1, 4, and 5 at the Canal WPS No. 1. The latter three units have the following characteristics: capacity \( W = 6,548 \text{ kW} \), flow rate \( Q = 26,700 \text{ m}^3/\text{h} \), head \( H = 80 \text{ m} \). The fourth replacement target is the speed-regulated pump unit No. 7 at the Canal WPS No. 1a, with the following characteristics: flow rate \( Q = 10,000 \text{ m}^3/\text{h} \), head \( H = 80-100 \text{ m} \).
- **Level 2 pump station:** two pump units are required, including one unit (flow rate \( Q = 26,700 \text{ m}^3/\text{h} \), head \( H = 80 \text{ m} \)) to replace the speed-regulated pump unit No. 4 at the
Canal WPS No. 2; and the second one (capacity $W=6,974$ kW, flow rate $Q=10,000$ m$^3$/h, head $H=80-100$ m) to replace the pump unit No. 7 at the Canal WPS No. 2a.

- **Level 3 pump station**: three pump units are required, including two units (capacity $W=3,210$ kW, flow rate $Q=24,000$ m$^3$/h, head $H=75$ m) to replace pump units No. 1 and 2 at the Canal WPS No. 3, and one unit ($W=5,63$ kW, $Q=18,000$ m$^3$/h, $H=56$ m) to replace pump unit No. 8 at the Canal WPS No. 3a.

- **Level 4 pump station**: two pump units are required, including one unit (capacity $W=1,376$ kW, flow rate $Q=18,000$ m$^3$/h, head $H=24$ m) to replace pump unit No. 2 at the Canal WPS No. 4, and another one ($W=765$ kW, $Q=10,000$ m$^3$/h, $H=24$ m) to replace the speed-regulated pump unit No. 4 at the Canal WPS No. 4a.

The estimated cost of new pump units is 18.7 million USD (11 pump units, 1.7 million USD each).

It is planned that the UkrPromVodCherMet Utility will contribute to the financing of certain project costs.

The expected annual energy saving, resulting from the replacement of pumping equipment, is estimated at 75,062,000 kW per year with pump unit efficiency being at least 90%.
1.3 Analysis of Potential Environmental Impacts

In line with the World Bank EA policy and procedure, the proposed project and all its components are classified into the environmental category B.

1.3.1. Physical Impacts

The proposed investment project involves the replacement of Level 1-4 water pumps operated in the system of the Siversky Donets-Donbass Canal, including the design investigations, purchase of efficient pumping equipment, preparatory works associated with the dismantling of old pumps, preparation of basements for new pumps, and installation of new pumps at the existing WPS sites.

The implementation of proposed project would ensure a significant reduction in energy costs, reflected in the customer tariffs, as well as improvement of service quality and reliability, and overall environmental performance of the Siversky Donets-Donbass Canal system.

The planned activity would mainly consist of works associated with the replacement of old inefficient pumps with new energy-efficient units, to be carried out within the existing pump station buildings. These works are not likely to affect the existing ecological equilibrium in the locations of existing WPS, nor would it cause any environmental pollution or deterioration. The potential physical impacts of the proposed investment project are likely to be insignificant, being limited to the dismantling/installation phase.

Local geology: no adverse effects are likely to arise due to the fact that all pumping equipment subject to replacement is located within the existing WPS buildings (WPS's No. 1, 1-a, 2, 2-a, 3, 3-a, 4, 4-a), i.e. in isolation from the surrounding geological environment, and the equipment sizes and construction works involved are not likely to produce any adverse impact. The proposed project does not entail any additional land acquisition.

Water resources: the overall project impact will be positive as a result of improved environmental safety of local water bodies, achieved through the rehabilitation and improvement of water supply system elements. Another significant benefit relates to the improved control and minimization of the potential for accidental releases due to failures in the canal operation.

Also, the proposed project would help reduce water losses in the transmission system of the Siversky Donets-Donbass Canal.

Ambient air: no adverse impacts are likely to arise, since all works associated with the rehabilitation of water pumping stations do not involve any harmful emissions.

Existing utilities/infrastructure: overall impact is likely to be positive, since the implementation of proposed rehabilitation measures would significantly improve the operational reliability of pumping capacity operated in the Siversky Donets-Donbass system and reduce energy costs due to higher efficiency of new pumping equipment.
<table>
<thead>
<tr>
<th>Canal Elevatio Zones</th>
<th>Canal’s WPS</th>
<th>Proposed replacement targets (pumps)</th>
<th>Actual capacity of pumps, operated simultaneously, kW</th>
<th>Actual yearly energy demand, thousand kWh</th>
<th>Proposed new pump capacity, kW</th>
<th>Expected yearly energy consumption after replacement, thousand kWh</th>
<th>Expected level of energy saving as a result of pump replacement, thousand kWh</th>
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</thead>
<tbody>
<tr>
<td>I</td>
<td>No. 1</td>
<td>No’s. 1, 4, 5</td>
<td>21828</td>
<td>191213</td>
<td>6548</td>
<td>3 un. (115,035); 2 un. (38,031)</td>
<td>30661</td>
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<td>No. 7</td>
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<tr>
<td></td>
<td>Total for Level 1 WPS</td>
<td></td>
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<td></td>
<td></td>
<td>160552</td>
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</tr>
<tr>
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<td>No. 2</td>
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<td></td>
<td></td>
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</tr>
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<td>No. 2a</td>
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<td>202146</td>
<td>6974</td>
<td>3 un. (130928); 2 un. (42590)</td>
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<tr>
<td></td>
<td>Total for Level 2 WPS</td>
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<td></td>
<td></td>
<td>181492</td>
<td></td>
</tr>
<tr>
<td>III</td>
<td>No. 3</td>
<td>No’s. 1, 2</td>
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<td>3210</td>
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<td>Total for Level 4 WPS</td>
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<td>540832</td>
<td></td>
<td></td>
<td>468770</td>
<td>75062</td>
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</table>

The above estimate is based on the data available in the operational control service of the UkrPromVodCherMet Utility. According to this estimate, the energy efficiency is expected to increase from 81% to 90%, and the level of energy saving, starting from the Project Year 3, is expected to be at 26.0 million kWh, to achieve the highest level of 75.1 million kWh by the Project Year 6. The achieved reduction in energy costs would release funds, required for loan repayment, without any increase in water tariffs.

The implementation of proposed project would help reduce the costs of repair and spare parts, improve the technical state of canal elements and water quality as received at the filtration plants, and minimize the potential for adverse effects associated with accidents. Only new pumping equipment will be installed, to be supplied from the manufactures with all relevant documents, describing their environmental performance characteristics.

**Local climate, flora and fauna:** Given that the proposed project does not entail any additional land allocation, and will be implemented in the built-up area, there will be no additional loss of habitat, and no damage to vegetation cover in the surrounding area will be incurred.
1.3.2. Social Impact

The replacement of 11 old and obsolete pumps at the WPS's operated by the UkrPromVodCherMet Water Utility would provide significant social benefits due to improved reliability and constancy of water supply service in the Donetsk Oblast, to be achieved through the introduction of energy-saving technologies and equipment. The expected reduction in energy consumption (by 75 million kWh/year) would provide significant savings, estimated at 500,000 UAH per year. Additional savings would be achieved as a result of reduced water losses. It is expected that the money required to repay the loan will be released by these savings, and no increase in customer tariff will be required.

The improved level of operation and maintenance of the Siversky Donets-Donbass Canal, as well as better quality of water treatment, transmission and distribution service, would improve the social, epidemiological and environmental situation in the region, and contribute to the implementation of energy-saving practices in the municipal sector.

The proposed project does not entail any involuntary resettlement and will not produce any adverse effect on the regional cultural assets.
1.4. Review of Alternative Options

A continuing 'status quo' scenario will result in:

- The inability to ensure the sustainable water supply service in the Donetsk Region with the existing pumping capacity of the Siversky Donets-Donbass Canal system, especially in the light of regional development prospects in industry, agriculture and municipal sector;
- The inability to implement energy-saving strategies, aiming to reduce the energy costs associated with the operation and maintenance of the Siversky Donets-Donbass Canal and water supply system in general;
- The inability to achieve a reduction in energy cost per product (potable and technical water) unit;
- The need in increasing the level of water tariffs for the UkrPromVodCherMet customers.

The proposed project solutions are based on the modern energy- and resource-saving practices, which have proved very useful in Ukraine and abroad. The implementation of proposed project is seen as the most feasible way of improving the reliability of water service and preventing further deterioration of environmental and social situation and human health in the region.

The proposed rehabilitation of Level 1-4 water pumping stations represents an urgent step that needs to be made to improve the water transmission capacity of the Siversky Donets-Donbass Canal, ensure the environmentally safe operation of water supply system in the Donetsk Region, and minimize the potential for accidents that may result in negative environmental consequences.
1.5. Environmental Management Plan

1.5.1. Brief Description of Key Environmental Issues

The results of this environmental assessment indicate that the implementation of proposed investment project would not produce adverse impact on the adjacent industrial, agricultural and municipal infrastructure, surface and underground utilities; recreational areas and cultural assets.

It is expected that the proposed rehabilitation measures for the existing pumping capacity of the Siversky Donets-Donbass Canal will provide significant environmental benefits.

1.5.2. Mitigation Plan

The proposed investment project involves the rehabilitation of water pumping capacity of the Siversky Donets-Donbass Canal system, as well as a suite of energy- and resource-saving improvements.

The ultimate objective of this project is the rehabilitation of existing pumping capacity of the Siversky Donets-Donbass Canal, that would ensure the stable and reliable operation of water supply service in the region, and energy-saving improvements that would result in improved quality and reduced cost of service, as well as minimized potential for the adverse environmental impacts.

The proposed performance targets include:

1. Adequate level and quality of water supply service provided to customers, particularly the population.
2. Reduction in specific energy and resource consumption in the operation of water transmission and distribution service.
3. Reduction in water losses, both potable and technical.
4. Constancy of service.
5. Improvements in the quality of the water put into supply, to ensure that existing potable standard is met.
6. Improved environmental safety of the Siversky Donets-Donbass water transportation system.

1.5.3. Monitoring Plan

The monitoring programme will need to be introduced and implemented by the Borrower to ensure compliance of all proposed rehabilitation activities with existing sanitary and environmental standards.

At this stage, there is no provision for the independent monitoring to be carried out by non-governmental organisations.

Given that the proposed works will not affect the environmental media, no detailed monitoring programme has been developed at this stage.
2. REHABILITATION OF WATER SUPPLY AND WASTEWATER SERVICES, OPERATED BY THE STATE MUNICIPAL WATER UTILITY "DONETSK OBLAST VODOKANAL"

2.1. Current Situation

The State Oblast Municipal Utility (SOMU) "Donetsk Oblast Vodokanal" was established in April, 1966. The main source of raw water for the Donetsk Oblast Vodokanal is the Siversky Donets – Donbass Canal.

Donetsk Oblast Vodokanal provides water supply and sewerage services for 33 towns, 55 townships and 26 villages. Daily average water delivery to consumers constitutes 412 thousand m³, including 50 thousand m³ from privately owned sources. Total actual delivery capacity of wastewater treatment plants is 174 thousand m³/day.

The total length of water supply network of Donetsk Oblast Vodokanal is 7770.6 km; there are 115 pumping stations. It is around 571 thousand consumers. Donetsk Oblast Vodokanal provides a variety of services. Except for water supply and sewerage utility services, it also provides:

- diagnostics of pipelines and boreholes, using television probes, floating digital diagnostic probes (for sewer collectors) and self-propelled video devices for inspection of pipelines;
- sanitation and facing with a cement-sandy solution of steel pipelines with diameters of 426-1020 mm;
- trenchless dismantling of pipelines along with installation of new pipes;
- design, maintenance, assembly, adjustment and alignment works on measuring and water meter devices;
- potable water quality control, as well as surface water and groundwater quality control;
- wastewater quality control;
- calculation of MAC (Maximum Allowable Concentrations) of pollutants, discharged into sewerage network and natural reservoirs;
- consulting, expert-analytical, information, scientific-research and marketing services;
- installation of measuring devices;
- installation, repair and adjustment of chlorinator devices, ventilation installations and air turbo-blowers;
- metrological consulting services, with the use of metrological flow meter device for research, testing, certification and checking of flow meters and water counters;
- determination of leaks in pipelines with use of the acoustic equipment.

Donetsk Oblast Vodokanal provides water supply and sewerage services to three groups of consumers:

- 1st group - population (living in dwellings of any pattern of ownership), fruit farming societies;
- 2nd group (non-industrial) - institutions and organizations, which are financed from budget funds, dairy and banking industry, communal enterprises, and those enterprises, which, along with their primary activity, deliver heat energy and hot water to population, agricultural consumers, etc.
- 3rd group (industrial) - any other enterprises and organizations.
General level of reimbursement at the Donetsk Oblast Vodokanal has decreased in recent years, as a result of increased cost of energy, higher expenses for employees' compensation, etc. Addition of new units to existing water supply and sewerage networks has lead to an increase of expenses for their maintenance and refurbishment.

The Donetsk Oblast Vodokanal acts as a legal entity of community property and has the following structure:

- 23 operational departments (SRCE), providing water supply and sewerage services in settlements of Donetsk oblast;
- data processing centre (Donetsk);
- maintenance management department (Enakievo);
- motorized transport division (Donetsk).

The Donetsk Oblast Vodokanal, represented by its 23 structural departments, provides population and industry of Donetsk oblast with potable water. The Donetsk Oblast Vodokanal buys potable water from State Water Utility (SWU) "UkrPromVodCherMet" (88% of the total water supply) and delivers it to consumers across Donetsk oblast. Some structural departments use groundwater as an additional source of water supply, which constitutes 12% of the total.

Donetsk Oblast Vodokanal consists of 23 operational departments of water supply and wastewater removal facility (ODWSWRF), which provide consumers in Donetsk oblast with water supply and sewerage services.

Existing ODWSWRF's coverage areas do not coincide with administrative-territorial divisions of Donetsk oblast.

Locations of the Donetsk Oblast Vodokanal Utility and its 23 operational departments are shown in Figure 2.1.

Figure 2.1. SMWU "Donetsk Oblast Vodokanal" and its 23 operational departments
Description of ODWSWRF’s Operating within the Donetsk Oblast Vodokanal System

Avdeevka ODWSWRF

Avdeevka operational department of water supply and wastewater removal facility was established in 1993.

Surface water resources. Avdeevka ODWSWRF purchases water from SWU “UkrPromVodCherMet”. Water, which is stored in the reservoir, is directed through the city distribution network.

Groundwater resources. There is a groundwater field, called “Brooklin well”, which is currently not in operation, because of on-going reconstruction.

Water delivery into the distribution network. Water is delivered to the town of Avdeevka through the pipeline (D=800 mm), which is connected to the right line of the water main (D=1200 mm), owned by SWU “UkrPromVodCherMet”. Total length of a water supply network is 112.2 km. Daily water consumption by the town of Avdeevka is 18.5 thousand m³. Capacity of a water reservoir is 4000 m³. Annual sanitation and disinfection of the reservoir are performed.

Rules for industrial sewage discharge into the sewer network on ODWSWRF were established in 2003. The rules were agreed with Yasinovatskaya district Sanitary-Epidemiological Station and Donetsk regional ecological inspection.

Sewage treatment. Wastewaters are directed on a sewage treatment plant OAO “Avdeevka by-product coke plant” which provides wastewater treatment services for Avdeevsk ODWSWRF. A photo of a wastewater pumping station, maintained by Avdeevka ODWSWRF is presented in Figure 2.2.

Figure 2.2 Wastewater pumping station building Avdeevka
Amvrosievka ODWSWRF

Surface water resources: There are no surface water resources.

Groundwater resources: There are 12 artesian wells, which form 4 water - intake facilities. Total production rate of these water - intake facilities is 5000 m³/day. Each water-intake facility has a 2nd level pumping station, water reservoir, built-in chlorination units, which utilize liquid chlorine.

Water delivery into the distribution network: Water is delivered to the town of Amvrosievka from a water intake facility #1, located in Leninskoe village (5 artesian wells with total production rate of 2400 m³/day and Beloyarovskoe water intake facility (3 artesian wells with total production rate of 1800 m³/day). To the Novoamvrosievskoe township water is delivered from the water intake facility #2, located in Krasnovka village (3 artesian wells with total production rate of 400 m³/day). To the township of Kutynyikovo water is delivered from the water intake facility # 3 (1 artesian well with production rate of 400 m³/day). There are sanitary protection zones established around all water-intake facilities and artesian wells. ODWSRF owns 159.3 km of water mains and distribution lines.

Industrial wastewaters: The sewer network of the town of Amvrosievsk is self-flowing, there are no wastewater pumping stations (WPS). Total length of a network is 13.4 km. Sewerage network of Novoamvrosievskoe township has total length of 8.7 km. It is represented by self-flowing and pressure sewers.

Wastewater treatment: Treatment of municipal and industrial sewage of the town of Amvrosievka is conducted at the sewage treatment plant #1 with design capacity of 11000 m³/day. Sewage treatment plant has a 2-level design, including mechanical and biological treatment. Liquid chlorine is used for sewage disinfection. Treated wastewaters are discharged into a Sukhoy Log valley, connected to M. Elanchik river. Actual productivity of wastewater treatment plant is 2300 m³/day.

Treatment of municipal and industrial wastewaters in Novoamvrosievskoe township is conducted on sewage treatment plant #2 with design capacity 900 m³/day. Sewage treatment plant has a 2-level design, including mechanical and biological treatment. Treated wastewaters, after secondary settling tanks, are discharged into Dolzhikova valley, connected to Krynka river. Actual productivity of this wastewater treatment plant is 800 m³/day. Liquid chlorine is used for sewage disinfection.

Artemovsk ODWSWRF

General characteristics:

- Total length of water pipelines = 760 km,
- Annual productivity - 7491.2 thousand m³, which includes 6333.9 thousand m³ – for population.
- There are 297 (one per apartment building) water meters installed,
- There are 18410 (per house or apartment) water meters installed.
Urgent issues:

30% of water pipelines are in emergency situation, degree of wear exceeds 50%.

Surface water resources:

There are no surface water resources for Artemovskoe ODWSWRF. It purchases potable water in Chasovoyskoe utility of SWU "UkrPromVodCherMet", after filtering stations. The source of water is the Siversky Donets – Donbass Canal.

Figure 2.3. The Boiler House at the WwTP Site in Artemovsk

Groundwater resources: The town of Artemovsk, Krasnoarmeisk and Klesheevsky water-intake facilities, with total productivity of 12200 m³/day.

The town of Chasov Yar, Chasovoysk, Bogdanovsk and Nikochevsky water-intake facilities with total productivity of 1660 m³/day.

The town of Seversk, Kinoysky, and Sukhovarsky water-intake facilities, with total productivity of 3200 m³/day.

Water delivery into the distribution network:

- **The town of Artemovsk.** Water is delivered through the water mains into Western and Eastern distribution points. Further it is either self flowing or pumped) into the water distribution system of the town.

- **The town of Chasov Yar.** Groundwater are directed from its source to the 2nd level pumping station and further through fitting stations directly into distribution system of the town.

- **The town of Seversk.** The water is delivered through network of water distribution point, and further it is either self flowing or pumped into the distribution network.

Wastewater collection system:

- Annual capacity – 5236.7 thousand cubic metres of rainwater and 930.6 thousand cubic metres of wastewater resources.
Volnovakha ODWSWRF

Volnovakha ODWSWRF performs water supply services for settlements of Volnovakha district, delivering water from Veliko-Anadol'skaya filtering station. The water is provided by SWU “UkrPromVodCherMet”.

**Surface and groundwater resources:** There are no potable surface and groundwater resources at Volnovakha ODWSWRF.

**Water delivery into the distribution network:** Water is delivered into distribution system of a town, townships and villages along three main directions:

- The town of Volnovakha, Blizhniy township, Octiabr'skoe and Kirovskoe villages are provided with drinking water through the water main V-Anadol' (FS) – Volnovaha – HMF Donskoe.
- Townships Olginka, Novotroitskoe, villages Pol'noe, Juzhno-Donbasskaya, and MarLNIS are provided with drinking water through the water main V-Anadol' (FS) – Novotroitskoe.
- Townships of Vladimirovka and Blagodatnoe are provided with drinking water through the water main V-Anadol' (FS) – Ugledar.

Total length of water distribution network, belonging to Volnovakha ODWSWRF constitutes 289.15 km. The length of a water main is 35.75 km.

**Industrial and municipal wastewaters:** Volnovakha ODWSWRF is responsible for transportation and treatment of wastewaters with a total volume of 1406.6 thousand m$^3$/year, in particular 1289.5 thousand m$^3$ - municipal wastewaters and 117.1 thousand m$^3$ - industrial wastewaters. Total length of the sewerage network is 102.5 km. The main sewer’s total length is 35.6 km.

The town of Volnovakha has a combined sewerage system; all wastewaters (rainstorm water, industrial and municipal wastewater) are transported and treated jointly.

Dzerzhinsk ODWSWRF

**Surface water resources:** Dzerzhynsk ODWSWRF receives potable water from two water mains of Chasovoyarsky district branch of SWU “UkrPromVodCherMet”:

- Gorlovka – Dzerzhinsk, through the water main with D=900mm, Q=21000 m$^3$/day.
- Donetsk water main – Dzerzhinsk filtering station, Q = 3000 m$^3$/day.

**Groundwater resources:** There is a water-intake facility “Krasnie kolodtsy”, Q = 48 m$^3$/day. Water-intake facility has three wells with depths of 28, 32 and 40 meters, pumping station, water reservoir with capacity of 500 m$^3$, chlorination facility, located at the pumping station. Total productivity is 1300 m$^3$/day. Actual water usage is around 48 m$^3$/day, which is 4% of the design capacity. The reason for the gap between design capacity and the actual rate of water use is an emergency condition of water well buildings and equipment: only one well is actually working, as of 1.08.2003.

**Water delivery into the distribution network.** Water consumption by population, constitutes 82% of the total, consumption by the industry – 18% of the total. Total length of distribution network, operated by the ODWSWRF – is 478.6 km, namely 15% of pig-iron
pipes and 85% of steel pipes. The average age of the pipes is 20-60 years. Because of a high degree of wear the leakage amount is high. It is estimated, that the level of losses is 35%.

**Industrial and municipal wastewaters.** All wastewaters from the territory of a town are delivered to a wastewater treatment plant, where mechanical and full biological wastewater treatment is conducted. Treated wastewaters are discharged into Krivoy Torets river. There is a 100.5 km of sewer networks (5% of pig-iron pipes, 47.5% of ceramic pipes, 35.5% of reinforced concrete pipes and 12% of steel pipes). Among them, 8.4 km is fully amortized and 3.2 km needs replacement. There are three wastewater pumping stations within the system.

**Rules for industrial sewage discharge into the sewer network** were designed by the ODWSWRF and enacted by the decision of Dzerzhinsk town council on 20.11.2002 and Novgorodskiy township council on 17.02.2005.

**Dimitrov ODWSWRF**

**Surface water resources:** Dimitrov ODWSWRF is receiving water from Krasnoarmeyskoe district branch of SWU "UkrPromVodCherMet".

**Groundwater resources:** There are no groundwater resources in exploitation.

**Water delivery into the distribution network:** Potable water is delivered to distribution system through the system of water mains and pumping stations. Total length of a water distribution network is 267.7 km, where 9% - pig-iron pipes, and the rest are steel pipes. The age range of the pipes is 20-60 years. Because of a high degree of wear, there is a high level of losses due to leaks in the system. On average, degree of water losses is 35% of the total.

**Industrial and municipal wastewaters:** Industrial wastewaters constitute around 6% of the total volume of wastewaters, however, these waters are much more contaminated, than municipal ones. At present, major part of industrial wastewaters is discharged into the sewerage system of a town without a primary treatment, except for wastewaters, containing dangerous contaminants. Enterprises, producing such wastewaters, conduct primary treatment of these wastewaters on local wastewater treatment plants, which allows discharge of these wastewaters into the sewerage system of a town, in accordance with the Rules for industrial wastewaters discharge into municipal sewerage system.

**Wastewater treatment:** All wastewaters, originated from towns of Krasnoarmeysk, Rodinskoe and Dimitrov, are transported through the system of sewer networks and wastewater pumping stations onto common sewage disposal plant, where mechanical and full biological wastewater treatment is conducted, with further discharge of treated wastewaters into the Kazenniy Torets river.
Dobropolie ODWSWRF

Surface water resources: Potable water is delivered to the towns of Belitskoe, Belozerskoe and a township of Novodonetskoe from Krasnoarmeyskaya filtering station, belonging to the district branch of SWU "UkrPromVodCherMet"; to the town of Dobropolie from Krasnoarmeyskoe district branch of SWU "UkrPromVodCherMet", as well as from local sources.

Groundwater resources: The town of Dobropolie is served by the Zolotoy Kolodets, Annovka and Larino water-intake facilities. The Aleksandrovka township is served by the Aleksandrovskiy water-intake facility.

- Water-intake facility "Zolotoy Kolodets" is located in the basin of a river Kazennyi Torets, includes 11 artesian wells with total productivity of 780 m³/hour and two water reservoirs with capacities of 3000 m³ and 6000 m³.
- "Annovskiy" water-intake facility, located on the right slope of a river Byk, includes 2 wells with productivity of 81 m³/hour and a reservoir with capacity 500 m³.
- "Larino" water-intake facility includes two wells with productivity of 80 m³/hour and a reservoir with capacity of 100 m³.
- "Aleksandrovskiy" water-intake facility is located in 2 km to the west of the bottomland of Samara river, includes 2 wells with productivity of 60 m³/hour and a reservoir with capacity of 1000 m³.

Water delivery into the distribution network: Potable water is delivered to the reservoirs in the towns of Belitskoe, Dobropolie, Belozerskoe, townships Novokuznetskoe and Aleksandrovka, where it is partially mixes with groundwater, and is delivered to consumers afterwards (water supply service is conducted 16 hours/day).

Industrial and municipal wastewaters: Wastewaters, discharged into surface water bodies, are treated to a degree, necessary to exclude possibility of negative influence on receiving waters. Municipal wastewaters undergo both – mechanical and biological treatment. Wastewaters are also disinfected in order to avoid bacterial contamination of the receiving waters.

Rules for industrial sewage discharge into the sewer network: Wastewater discharge into sewer networks is conducted in accordance with the "Rules of wastewaters discharge into municipal and industrial sewer networks of the settlements served by Dobropol'sky water supply and sewerage facility", approved by the decree # 94 of Dobropol'sky City Council, enacted on 26.02.03, the town of Dobropolie.
Dokuchaevsk ODWSWRF

Surface water resources:
The source of water supply is the water utility “Gorodskie reservuary” (water is delivered from the water mains owned by SWU “UkrPromVodCherMet” through the pipeline with D-530 – 600 mm. It came into service in 1967, design capacity – 2000 m³/day.

Groundwater resources.
Shevchenkovsky water-intake facility – 3 artesian wells (2 are in operation: 3A, 58A and 1 is for backup: 63A). Central water-intake facility – 3 artesian wells.

Water delivery into the distribution network: Dokuchaevsk ODWSWRF sells potable water to population and industry of Dokuchaevsk town townships of Aleksandrovka, Yasniy and Elenovka and Dokuchaevsk farm. Dokuchaevsk ODWSWRF maintains water supply networks with total length of 168.5 km where the length of water mains is 42.4 km.

Water mains:
• Shevchenkovsky water main is constructed of steel pipes with diameter D=426 mm and has a total length of 9 km. It was commissioned in 1974.
• Central water main is constructed of steel pipes with diameter D=325 mm and has a total length of 3 km. It was commissioned in 1962.
• Elenovka water main is made of steel pipes with a diameter D=321 mm and has a total length of 12.9 km. It was commissioned in 1982.

Distribution and delivery of water to consumers is carried out through water supply network, made of steel and pig-iron pipes with diameters ranging from 300 to 600 mm. Average diameter for the water supply network – 300 mm. The average rate of delivery is 10 liters per second.

Industrial and municipal wastewaters:
Industrial and municipal wastewaters from its consumers and petrol station are collected into the sewer network.

Rules for industrial sewage discharge into the sewer network:
Dokuchaevsk ODWSWRF and approved by Elenovsk township council No. 376 and by Elenovsk township council.

Wastewater treatment: There are two
• Dokuchaevsk wastewater treatment plant with productivity of 9600 m³/day and
• Elenovsk wastewater treatment plant with productivity of 700 m³/day.

Druzshkovka ODWSWRF

Surface water resources: ODWSWRF receives potable water from the second Donetsk water main from Slaviansk district branch of SWU “UkrPromVodCherMet”.

Groundwater resources: Seven artesian wells of Raisky water intake facility are not in operation since 1999.

Water delivery into the distribution network: ODWSWRF provides water supply services for the town population (59.5 thousand people) and industries, located at the town territory. There are two pumping stations. Total length of the water supply network is 330 km. There are also 4 water reservoirs in the system.

Industrial and municipal wastewaters. Wastewaters from population and industry (industrial wastewaters constitute 27% of the total volume) are delivered to the town wastewater treatment plant. After treatment, wastewaters are discharged into Kazenniy Tretz river. There are 6 wastewater pumping stations in the system. Total length of sewerage network is 113.5 km.

Rules for industrial sewage discharge into the sewer network were approved by the decision No. 304 of Druzshkovka town council on 09.04.2003.

Wastewater treatment. There is a mechanical and biological wastewater treatment at the plant.

Enakievo ODWSWRF

Surface water resources: 98.5% of water is the water, purchased by Enakievo ODWSWRF from Enakievo district branch of SWU “UkrPromVodCherMet”.

Groundwater resources: In order to reduce shortage of potable water in most remote areas groundwater resources (water from capping wells) are used:

• Capping well #1 is located on the right bank of Bulavin river, the town of Enakievo, Tikhaya st. Depth of a well – 5 meters, productivity – 62.5 m³/hour.
• Capping well #2 is located on the right bank of Bulavin river, the town of Enakievo, Pogranichnaya st. Depth of a well is 7 meters, productivity – 62.5 m³/hour.
• Capping well #3 is located at the area of Enakievo ponds. Depth of a well is 4 meters, productivity – 54.2 m³/hour. This well is not currently operational.

Water delivery into the distribution network: Daily water consumption by the town and all adjacent townships is in a range of 78-82 thousand m³.

Industrial and municipal wastewaters: Wastewater removal and discharge of treated effluents is carried out by the enterprise on the basis of permission for special water usage # Ukr.Don-2165 as of 27.06.02, issued by the State administration of environmental and natural resources management in Donetsk oblast. Collection of wastewaters from consumers and their delivery to a wastewater treatment plant is carried out through both self-flowing and pressure sewers, using wastewater pumping stations.
Rules for industrial sewage discharge into the sewer network are determined by the rules for wastewater collection, approved by the decision of Enakievo executive committee # 272 as of 21.05.03.

Wastewater treatment: Wastewaters from the towns of Enakievo, Juzhnokommunarovsk and wastewaters from local industry are directed to wastewater treatment plant #1, located in the town of Enakievo, with productivity of 56000 m³/day. Actual daily volume of treated wastewaters is within the range of 18-21 thousand m³. Wastewaters from the town of Uglegorsk, the townships of Aleksandrovskiy and Bulavinka and from local industry are directed to wastewater treatment plant #2, located in the town of Uglegorsk, with productivity of 10000 m³/day. Actual daily volume of treated wastewaters is within the range of 2500-3200 m³.

Konstantinovka ODWSRF

Surface water resources: ODWSRF receives potable water from the second Donetsk water main from Chasovoyarskiy district branch of SWU “UkrPromVodCherMet”.

Groundwater resources: Belokuzminovskiy and Belgorodskiy water supply sources.

Water delivery into the distribution network: Total length of a water supply network is above 540 km. Network consists of steel, pig-iron, composite and polythene pipes with diameters ranging from 600 to 50 mm. There are also six water pumping stations within the system. The daily volume of water delivered to consumers is 31000 m³. The volume of a water reservoir is 6000 m³.

Industrial and municipal wastewaters: Sewerage system of a town consists of a sewer network (more than 140 km of ferro-concrete, pig-iron, steel and ceramic pipes with diameters ranging from 150 to 800 mm), seven wastewater pumping stations and a wastewater treatment plant with design capacity of 40000 m³/day.

Wastewater treatment: Wastewater treatment plant is equipped for a full mechanical and a biological wastewater treatment. Disinfection of effluents is conducted before their discharge into Krivoy Torets river, using liquid chlorine.
Krasnoarmeysk ODWSWRF

Surface water resources: Currently, the main water supply source for the town of Krasnoarmeysk is the 3rd level water supply pumping station of SWU "UkrPromVodCherMet".

Groundwater resources: There are no groundwater resources.

Water delivery into the distribution network: Water is delivered through the three water mains into the distribution system of a town. Total length of a water supply network is 280.5 km. It includes 63.1 km of water mains, 160.8 km of street networks and 56.5 km of inner quarter networks. There are 11 water pumping stations in the system, in particular, 9 - in Krasnoarmeysk and 2 – in Rodinskoe.

Industrial and municipal wastewaters: Total length of a water supply network is 137.1 km. There are 1946 sewer shafts, 6 main latches and also 50 latches on a wastewater pumping station. There is no wastewater treatment plant.

Krasniy Liman ODWSWRF

Surface water resources: There are no surface water resources.

Groundwater resources: There are 36 wells operated by the Krasniy Liman ODWSWRF

Water delivery into the distribution network: After the 1st level pumping station, water is delivered into the water reservoir and further - to the 2nd level pumping station. After the 2nd level pumping station, water is delivered into the distribution system of a town. There are three operational water pumping stations. Total length of a water main – 140.3 km, average monthly volume of water delivered to the consumers - 131 000 m³.

Industrial and municipal wastewaters: Total length of sewerage network is 113.1 km. There are 16 wastewater pumping stations. Waste waters consist of municipal sewerage and wastewaters from railroad industries of a town.

Rules for industrial sewage discharge into the sewer network are complied with by the town industry.

Wastewater treatment: Wastewaters are directed to wastewater treatment plant with productivity of 10000 m³/day, equipped with mechanical and biological treatment units. Chlorination is performed before the discharge into the river.

Novoazovsk ODWSWRF

Surface water resources: There are no surface water resources.

Groundwater resources: There are 8 artesian wells, located on the territory of a town and neighbouring villages. Water is elevated by deep pumps; replacement and major overhaul of pumping equipment is completed.

Water delivery into the distribution network: Water is delivered into the water supply network of a town through the water main with diameter D=300 mm and total length of 6 km.
Industrial and municipal wastewaters: Wastewater discharge and the following treatment are carried out at a biological wastewater treatment plant, which is located behind the town borders.

Rules for industrial sewage discharge into the sewer network were enacted in August 2003.

Wastewater treatment: All wastewaters undergo treatment and filtration. Storage pond is a part of a system.

Novogrodovka ODWSWRF

Surface water resources: The main source of water supply for the town of Krasnoarmeysk is the 3rd level water pumping station of SWU “UkrPromVodCherMet”.

Groundwater resources: There are no groundwater resources.

Water delivery into the distribution network: Water is delivered through the three water mains into the distribution system of a town. Total length of a water supply network is 280.5 km. It includes 63.1 km of water mains, 160.8 km of street networks and 56.5 km of inner quarter networks.

Industrial and municipal wastewater: Total length of a water supply network is 137.1 km. There are 1946 sewer shafts, 6 main latches and also 50 latches on a wastewater pumping station. There is no wastewater treatment plant. There are 6 wastewater pumping stations. In particular: 5 stations in Krasnoarmeysk and 1 station – in Rodinskoe. There is no wastewater treatment plant.

Selidovo ODWSWRF

Surface water resources: Selidovo ODWSWRF receives potable water from Krasnoarmeysk district branch of SWU “UkrVodoChermet”. There are water pumping stations in the towns of Selidovo, Ukrainsk, Gorniak, township Tsukurino (Novoselidovsk poultry farm) and in the township Ostriy. 5 pumping stations have a total productivity of 45900 m³/day.

Groundwater resources: Tsurkinskiy water intake facility is part of a water supply system. It consists of 2 artesian wells and a 2nd level pumping station with productivity of 1800 m³/day.

Water delivery into the distribution network: Selidovo ODWSWRF sells potable water to population and industry of the towns of Selidovo, Ukrainsk, Gorniak, townships Kurahovka, Ostriy, Vishneviy, Tsukurino and villages Nikolaevka, Marinovka, Mikhailovka, Zbriano, Aleksandropolie, Izmailovka and Leninsko. ODWSWRF maintains water supply network with total length of 474.4 km.

Industrial and municipal wastewater: Selidovo ODWSWRF receives municipal wastewaters from its consumers and carries out mechanical and biological wastewater treatment on a wastewater treatment plant. ODWSWRF maintains 8 wastewater pumping stations in the towns of Selidovo, Ukrainsk and Gorniak.
Rules for industrial sewage discharge into the sewer network were developed by Selidovo ODWSWRF and approved by Selidovo town council on 28.12.02.

Wastewater treatment: Selidovo ODWSWRF maintains 2 wastewater treatment plants with total productivity of 30000 m³/day, in particular:

- Integrated wastewater treatment plant with full mechanical and biological wastewater treatment cycle for the towns of Selidovo, Ukrainsk and Novogrodovka.
- Wastewater treatment plant of the town of Gorniak, where full mechanical and biological wastewater treatment is performed for wastewaters of the town of Gorniak.

Slaviansk ODWSWRF

Surface water resources: The town of Slaviansk has two sources of water supply:

- Northern and Cherevkovskie water reservoirs operated by the district branch of SWU “UkrVodoChermet”, containing mixed water from surface and groundwater sources.
- Mayaki water-intake facility, which uses water from the Siversky Donets river, provides water supply services for the area of a railway station.

Groundwater resources: There are no groundwater resources.

Water delivery into the distribution network: As of 01.01.2003, there are 483.7 km of water supply network, managed by the Slaviansk ODWSWRF, in particular:

- water mains – 85.2 km,
- street networks – 240.6 km,
- inner quarter networks – 18.9 km,
- water service entrances – 139 km,
- 4 water supply pumping stations,
- 11 booster pumping stations,
- 670 water supply network shafts,
- 132 fire hydrants,
- 1210 latches,
- “Mayaki” water – intake facility with filtering station, having design productivity of 12000 m³/day.

Total water consumption of the town is on average 30 - 31 thousand m³/day. There are 95268 consumers, which are using services, provided by Slavianskoe ODWSWRF.

Industrial and municipal wastewaters. As of 01.01.2003, there are 120 km of sewerage network maintained by Slaviansk ODWSWRF, in particular:

- sewer collectors – 45.5 km,
- street networks – 37.5 km,
- inner quarter networks – 25.2 km,
- sewer outlets – 11.8 km,
- sewer shafts – 935,
- sewerage pumping stations – 16,
- 4 pressure sewer collectors, delivering wastewaters to a wastewater treatment plant.
Wastewater treatment: Wastewater treatment plant has a design capacity of 48000 m³/day.

Starobeshevo ODWSWRF

Surface water resources: There are no surface water resources.

Groundwater resources: Water-intake facilities of Komsomol'skoe town and Kipuchaya Krynitsa are used by Starobeshevo ODWSWRF.

Water-intake facility of Komsomol'skoe town:
- well #3 (Depth – 91 m, pump productivity – 120 m³/hour, pressure head – 60 m),
- well #5 (Depth – 80.5 m, pump productivity – 120 m³/hour, pressure head – 60 m),
- well #20 (Depth – 91.6 m, pump productivity – 120 m³/hour, pressure head – 60 m),
- well #35 (Depth – 90 m, pump productivity – 90 m³/hour, pressure head – 60 m).

Water-intake facility Kipuchaya krynitsa:
- well #13 (Depth – 180.5 m, pump productivity – 255 m³/hour, pressure head – 30 m),
- well #14 (Depth – 114 m, pump productivity – 255 m³/hour, pressure head – 30 m),
- well #16a (Depth – 200 m, pump productivity – 255 m³/hour, pressure head – 30 m).

Water delivery into the distribution network: Potable water is delivered to water supply networks of Komsomol'skoe town and townships of Starobeshevo, Rodnikovoe and Kipuchaya Krynitsa.

Industrial and municipal wastewaters: Wastewater pumping station of Komsomol'skoe town delivers wastewaters to the local wastewater treatment plant. Wastewater pumping station of Starobeshevo township delivers wastewaters to the wastewater treatment plant of Noviy Svet township.

Wastewater treatment: Wastewater treatment plant (commissioned in 1954) of Komsomol'skoe town performs wastewater treatment of effluents, delivered by the wastewater pumping station of Komsomol'skoe town.

Shezshnoe ODWSWRF

Surface water resources: Grabovskoe water reservoir, maintained by Enakievo district branch of SWU “UkrVodoChermet” serves as a source of water supply.

Groundwater resources: There are no groundwater resources.

Wastewater treatment: Mechanical (sand catchers and primary settling tanks) and biological (aerofilters and secondary settling tanks) wastewater treatment is applied at the plant.

Kirovo ODWSWRF

Surface water resources: Kirovo ODWSWRF receives water from Enakievo district branch of SWU “UkrPromVodCherMet” for the town of Kirovo and from Makeevka district branch of SWU “UkrPromVodCherMet” for the town of Zshdanovka.
Groundwater resources: There are no groundwater resources.

Water delivery into the distribution network: Provision of population and industry of Kirovo town with potable water is carried out through 2 water mains with diameters of 400 and 500 mm, connecting pumping stations of the 1st and 2nd level. Zshdanovka town is connected to the 1st level pumping station in a similar fashion, with water mains of 300 mm and 500 mm diameters. Total length of water supply network in Kirovo town is 45.66 km (pig-iron and steel pipes) and in Zshdanovka town – 52.72 km (pig-iron and steel pipes). Average age of these pipes is above 50 years. The level of leakage in the system is up to 53%.

Industrial and municipal wastewaters: All wastewaters, received from the towns of Kirovo and Zshdanovka, as well as from the Kommunar township, are directed through the system of sewers and sewerage pumping stations to a wastewater treatment plant, where full mechanical and biological wastewater treatment is performed. Treated effluents are discharged to the Krynka river.

Rules for industrial sewage discharge into the sewer network are approved by the State environmental and natural resources management board in Donetsk area. Actual parameters of wastewaters, discharged into the Krynka river are in compliance with the established norms.

Wastewater treatment: Design productivity of a wastewater treatment plant – 28.8 thousand m³/day. In 2004, the actual average daily load constituted 8.22 thousand m³/day.

Tel'manovo ODWSWRF

Surface water resources: There are no surface water resources.

Groundwater resources: Water is delivered from the 9 wells of Samsonovsky water intake facility. Depth of wells – 170–180 m, productivity – 43.2 m³/hour.

Water delivery into the distribution network: Water is delivered from groundwater wells, located in immediate vicinity of a 2nd level pumping station. Further, water is pumped to the pumping station of a 3rd level, from where it is directed to water supply networks of the Tel'manovo township and villages of Zaporoszets and Lukovo.

Industrial and municipal wastewaters: Tel'manovo ODWSWRF is dealing with collection of municipal and industrial (dairy plant) wastewaters.

Wastewater treatment: Mechanical and biochemical wastewater treatment processes are applied. In order to remove bacterial pollution, disinfection of wastewaters is performed. Wastewater treatment plant of Tel'manovo ODWSWRF consists of mechanical (sand catchers and primary settling tanks) and biological (aerofilters and secondary settling tanks) wastewater treatment units. Disinfection of treated wastewaters is made with chlorinated lime. Wastewaters are directed to a wastewater treatment plant through the pressure sewer.
Torez ODWSWRF

**Surface water resources:** Water supply of the town of Torez and miner's settlements is carried out by Enakievo district branch of SWU “UkrPromVodCherMet” (Enakievo filtering plant) through Novo-Stozshkovskiy water distribution point and also by Shakhterskiy ODWSWRF.

**Groundwater resources:** There is no groundwater resources.

**Water delivery into the distribution network:** Water is delivered to the town through two water mains (D=700 mm) and further – to 8 pumping stations and to distribution network. Total length of a water distribution network is 614.7 km.

**Industrial and municipal wastewaters:** Municipal wastewaters constitute 72% of a total volume and industrial – 28%.

**Wastewater treatment.** There are 3 wastewater treatment plants, carrying out mechanical and biological wastewater treatment, as well as disinfection. Productivity of sewage disposal plants:

- Wastewater treatment plant of a town (commissioned in 1975) has design productivity of 30000 m$^3$/day and actual productivity of 10700 m$^3$/day;
- Wastewater treatment plant of “Volynskaya” mine (commissioned in 1979) has design productivity of 700 m$^3$/day and actual productivity of 90 m$^3$/day;
- Wastewater treatment plant of “Objedinennaya” mine (commissioned in 1957) has design productivity of 2000 m$^3$/day and actual productivity of 100 m$^3$/day.

Shakhtersk ODWSWRF

**Surface water resources:** Water supply of the town of Shakhtersk and miner's settlements is carried out by Enakievo district branch of SWU “UkrPromVodCherMet” (Enakievo filtering plant).

**Groundwater resources:** There is no groundwater resources.

**Water delivery into the distribution network:** Shakhtersk ODWSWRF provides with water supply services the town of Shakhtersk and 3 townships with total population of 70000 people. Currently there are 326.78 km of water supply networks, 3 booster stations and seven pumping stations are maintained by Shakhtersk ODWSWRF.

**Industrial and municipal wastewaters:** Municipal sewerage services is responsible for collection of wastewater from local consumers and their treatment before discharge into surface waters. Currently, 96.1 km of sewer networks and 7 pumping stations are maintained by the ODWSWRF.

**Rules for industrial sewage discharge into the sewer network** are developed by Shakhtersk ODWSWRF and are approved by decision of Shakhtersk town council №19 as of 21.01.2004.

**Wastewater treatment.** There is a municipal wastewater treatment plant with productivity of 10000 m$^3$/day.
2.2. Proposed Investment Projects

In order to modernize water supply and wastewater removal systems of Donetsk oblast, in the framework of this project it is proposed to purchase various kinds of equipment with estimated cost of 22 million UAH (4.4 million USD). Because structural subdivisions of SRCE cannot act as legal persons (their managers are acting on the grounds of the power of attorney, which has been issued by Donetsk Oblast Vodokanal, information on the needs in investments for purchasing of various equipment is given for all district branches of Donetsk Vodokanal.

2.2.1. Water supply: Purchase of Water Meters, Flow Regulators; Well Pumps, Booster Pumping Stations, High-Pressure Pumps and Reverse Osmosis Installations

2.2.1.1. Purchase of Water Meters for Apartment Houses

Purchase of water meters with the following diameters is planned: $D = 20\,\text{mm}$ - 9764 units; $D = 25\,\text{mm}$ - 583 units; $D = 32\,\text{mm}$ - 440 units; $D = 40\,\text{mm}$ - 385 units; $D = 50\,\text{mm}$ - 144 units; $D = 65\,\text{mm}$ - 13 units.

The total number of water meters to be purchased is 11329 units, with a total cost of 3.9 million UAH


<table>
<thead>
<tr>
<th>Location</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avdeevka ODWSWRF</td>
<td>40</td>
</tr>
<tr>
<td>Amvrosievka ODWSWRF</td>
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<td>Artemovsk ODWSWRF</td>
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<tr>
<td>Vplinovakha ODWSWRF</td>
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<td>Dzerzhinsk ODWSWRF</td>
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<td>DimitrovODWSWRF</td>
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<tr>
<td>Dobropolie ODWSWRF</td>
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<tr>
<td>Dokuchaevsk ODWSWRF</td>
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<tr>
<td>Druzshkovka ODWSWRF</td>
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<tr>
<td>Enakievo ODWSWRF</td>
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<tr>
<td>Konstantinovka ODWSWRF</td>
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<tr>
<td>Krasnoarmeisk ODWSWRF</td>
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</tr>
<tr>
<td>Krasny Liman ODWSWRF</td>
<td>140</td>
</tr>
<tr>
<td>Novoazovsk ODWSWRF</td>
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</tr>
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<td>Novogrodovka ODWSWRF</td>
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<td>Slaviansk ODWSWRF</td>
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<td>Starobeshevo ODWSWRF</td>
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<td>Snezhnnoe ODWSWRF</td>
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<td>Kirovskoe ODWSWRF</td>
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<tr>
<td>Tel'manovo ODWSWRF</td>
<td>30</td>
</tr>
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<td>Torez ODWSWRF</td>
<td>1516</td>
</tr>
<tr>
<td>Shakhtersk ODWSWRF</td>
<td>942</td>
</tr>
</tbody>
</table>

Composition of a metering unit: water meter, filter, return valve, pressure reducing valve. Installation of water meters in apartment houses will have a positive effect and will lay the ground for transition to European norms of water consumption.
2.2.1.2. Purchase of Pressure Regulation Units (Pressure-Reducing Valves and Air Stands) for all 23 ODWSWRF’s

Pressure reducing unit is utilized for pressure control in the water supply network. It contains: latches, filter and a pressure-reducing valve. Total quantity of pressure reducing units of different diameters to be purchased- 142 units, with a total cost of 4.9 million UAH.

Air stands are installed in order to prevent air accumulation inside the pipelines. Total quantity of air stands to be purchased is 80 units (produced by the A.R.I. company), with a total cost of 167.5 thousand UAH.

Estimation of quantity of pressure reducing units and air stands is presented in Table 2.1.

Table 2.1. Estimation of quantity of pressure reducing units and air stands

<table>
<thead>
<tr>
<th>Location of ODWSWRF</th>
<th>Pressure reducing units, number of units</th>
<th>Air stands, number of units</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Avdeevka</td>
<td>10</td>
<td>-</td>
</tr>
<tr>
<td>2 Amvrosievka</td>
<td>4</td>
<td>-</td>
</tr>
<tr>
<td>3 Artemovsk</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>4 Volnovaha</td>
<td>18</td>
<td>1</td>
</tr>
<tr>
<td>5 Dzerzhinsk</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>6 Dimitrovo</td>
<td>9</td>
<td>12</td>
</tr>
<tr>
<td>7 Dobropole</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td>8 Dokuchaevsk</td>
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</tr>
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<td>9 Druzshkovka</td>
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<td>10 Sokolino</td>
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<td>13 Krasnoarmeisk</td>
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<tr>
<td>14 Novoazameisk</td>
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<tr>
<td>15 Novogrodovka</td>
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</tr>
<tr>
<td>16 Selidovo</td>
<td>14</td>
<td>10</td>
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<tr>
<td>17 Snezhnok</td>
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<td>10</td>
</tr>
<tr>
<td>18 Kirovskoe</td>
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<td>-</td>
</tr>
<tr>
<td>19 Starobeshevo</td>
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<tr>
<td>20 Telfmanovo</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>21 Torez</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>22 Shakhtersk</td>
<td>9</td>
<td>11</td>
</tr>
</tbody>
</table>

Installation of pressure reducing units and air stands will allow to monitor the energy consumption and reduce the probability of pipe ruptures. It will also help to reduce losses of water from pipes and increase the degree of its rational use.

2.2.1.3. Purchase of Well Pumps for 9 ODWSWRF’s

Total quantity of well pumps to be purchased is 63 units, with a total cost of 4.3 million UAH, including:

- Amvrosievka ODWSWRF – 12.
- Artemovsk ODWSWRF - 9,
- Dobropole ODWSWRF - 6,
- Dokuchaevsk ODWSWRF - 6,
- Krasny Liman ODWSWRF - 14.
- Novoazovsk ODWSWRF - 7,
- Tel'manovo ODWSWRF - 5,
- Shakhtersk ODWSWRF - 2,
- Starobeshevo ODWSWRF - 2.

2.2.1.4. Purchase of Booster Pump Stations and High-Pressure Pumps of Various Capacity

The installation on booster pumping stations is needed in order to provide uninterrupted water supply services, especially in high-rise buildings. Total number of booster pumping stations to be purchased – 26 units, with a total cost of 2.3 million UAH, and 11 high-pressure pumps with a total cost of 1.6 million UAH.

2.2.1.5. Purchase of Reverse Osmosis Installations for Groundwater Treatment

It is planned to purchase 18 installations for groundwater desalination with individual productivity of 50 m$^3$/day and 9 installations with individual productivity 20 m$^3$/day. The list of proposed locations of these installations is presented in Table 2.2.

<table>
<thead>
<tr>
<th>Location of ODWSWRF</th>
<th>Productivity, m$^3$/day</th>
<th>Number to be purchased, number of units</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Amvrosievka</td>
<td>20</td>
<td>6</td>
</tr>
<tr>
<td>2 Artemovsk</td>
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<td>3 Dzerzhinsk</td>
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<td>5 Dokuchaevsk</td>
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<td>1</td>
</tr>
<tr>
<td>6 Enakievo</td>
<td>50</td>
<td>2</td>
</tr>
<tr>
<td>7 Konstantinovka</td>
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<td>4</td>
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<tr>
<td>8 Novoazovsk</td>
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<tr>
<td>9 Starobeshevo</td>
<td>50</td>
<td>2</td>
</tr>
<tr>
<td>10 Tel'manovo</td>
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</tr>
<tr>
<td>11 Shakhtersk</td>
<td>50</td>
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</tr>
</tbody>
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2.2.2. Wastewater Collection and Treatment: Purchase of Air Blowers, Pumps and Mobile Sludge Dewatering/Packaging Plants

2.2.2.1. Purchase of Air Blowers for 16 ODWSWRF’s

New air blowers are required to optimise the existing wastewater treatment system through replacement of existing equipment by the equipment of lower capacity. Total quantity of air blowers to be purchased – 35 units, with a total cost of 3.1 million UAH, including:

- Amvrosievka ODWSWRF - 2,
- Artemovsk ODWSWRF - 3,
- Dzerzhinsk ODWSWRF - 2,
- Dimitrovo ODWSWRF - 2,
- Dobropole ODWSWRF - 2,
- Dokuchaevsk ODWSWRF - 2,
- Druzshkovka ODWSWRF - 2,
- Enakievo ODWSWRF - 3,
2.2.2.2. Purchase of Sewage Pumps of Varying Capacity for 12 ODWSWRF

New sewage pumps are proposed to be purchased to replace old and inefficient existing equipment. Total quantity of sewer pumps to be purchased – 92 units, with a total cost of 2.1 million UAH, including:

- Artemovsk ODWSWRF – 14
- Dzerzhinsk ODWSWRF -4
- Dobropolie ODWSWRF -8
- Druzshkovka ODWSWRF -6
- Selidovo ODWSWRF -12
- Slaviansk ODWSWRF -20
- Konstantinovka ODWSWRF -6
- Snezhnoe ODWSWRF -2
- Novoazovsk ODWSWRF -2
- Enakievo ODWSWRF -4
- Torez ODWSWRF -6
- Shakhtersk ODWSWRF –8

Expected economic gains from the replacement of sewage pumps are estimated at 142 thousand UAH.

2.2.2.3. Purchase of Mobile Sludge Dewatering/Packaging Plants

It is planned to purchase sludge dewatering equipment in order to form mobile workshops, in particular, three mobile systems for sludge dewatering with productivity 5 – 15 m³/hour. It would include an NP-15 press machine for sludge dewatering and a BCAVPK packaging machine. These mobile dewatering systems are to be used for the groups of closely located towns.

2.2.3. Water Supply and Wastewater Treatment: Purchase and Installation of Sodium Hypochlorite Production Plant

It is planned to purchase electrolysis plant, intended for sodium hypochlorite synthesis from sodium chloride. It is planned to produce sodium hypochlorite for all district branches of Donetsk Oblast Vodokanal. The plant is to be located at the territory of Slaviansk ODWSWRF. Design productivity of a plant – 50 kg/hour (1.2 tonnes/day). Sodium hypochlorite is used for disinfection of both – potable and waste waters. Application of sodium hypochlorite will allow to reduce concentration of chlorine-organic chemical compounds in treated waters.
2.3. Analysis of Potential Environmental Impacts

In line with the World Bank EA policy and procedure, the proposed project and all its components are classified into the environmental category B.

2.3.1. Physical Impacts

The proposed investment project involves the purchase of water meters, to be installed at the apartmental buildings, and water network pressure controls; replacement of old inefficient pumping equipment; purchase of reverse osmosis units for groundwater treatment; purchase of equipment for mobile sludge dewatering/packaging plants; purchase and installation of sodium hypochlorite production system to substitute existing chlorination stage in water/wastewater treatment processes.

The improved control of water pressure in the mains is key to achieving a reduction in water losses and ensuring the sustainable use of available water resources. The installation of pressure reduction valves would help maintain the optimal flows in the networks, and ensure more efficient and continuous control of water supply system operation. Additionally, the pressure reduction valves will substitute the current practice of flow regulation by keeping the flow gates half-open, which limits the supply of water to various customers.

In practice, the works planned under the proposed rehabilitation project, will consist of metering and pressure control equipment installations in various locations of the distribution network, pump repair and replacement at the booster stations, installation of high-pressure pumps and air blowers, and will be carried out within the existing work premises and in the basement floors of apartmental buildings. These works are not likely to affect the existing ecological equilibrium in the locations of existing 23 operational units of the Donetsk Oblast Vodokanal Utility, nor would it cause any environmental pollution or deterioration.

The potential physical impacts of the proposed investment project are likely to be insignificant, being limited to the dismantling/installation phase.

The purchase and operation of mobile sludge dewatering/packaging plants will result in a significant reduction of sludge slurry volumes.

Generally, the proposed measures will reduce the potential for accidents, improve the operational performance of all district water utilities in the region, reduce significantly the energy consumption as a result of decreased non-productive losses, which is a significant economic and environmental benefit in itself.

Local geology: no adverse impacts are likely to arise, since all rehabilitation targets are located indoors, in the Utility workshops or apartmental buildings, being isolated from the local geological environment. Due to the scope and nature of proposed rehabilitation works, any adverse impact on the geology is unlikely.

The operation of mobile sludge dewatering/packaging plants will facilitate a significant reduction in the liquid sludge volume, which are currently generated at an annual rate of

OP 4.01 Environmental Assessment
up to 40,000 tonnes (dry weight), and the volume of already generated/accumulated sludge is at about 350,000 tonnes. There has been a continuous growth in sludge generation and disposal, placing additional demand for land and posing threat to the environment. The improved sludge management arrangement will contribute to the improvement of local environmental situation. The dewatered and packaged sludge can be used in agriculture, tree planting and land restoration.

**Water resources:** the overall project impact will be positive as a result of improved environmental safety of local water bodies, achieved through the rehabilitation and improvement of water supply system elements. Another significant benefit relates to the improved control and minimization of the potential for accidental releases due to failures in the canal operation.

**Ambient air:** no adverse impacts are likely to arise, since all works associated with the rehabilitation of water pumping stations do not involve any harmful emissions.

**Existing utilities/infrastructure:** overall impact is likely to be positive, since the implementation of proposed rehabilitation measures would significantly improve the operational reliability of water supply and wastewater collection/treatment system, and reduce the potential for accidents that may affect the adjacent utilities/infrastructure.

**Local climate, flora and fauna:** Given that the proposed project does not entail any additional land allocation, and will be implemented in the built-up area, there will be no additional loss of habitat, and no damage to vegetation cover in the surrounding area will be incurred.

2.3.2. Social Impacts

The installation of customer metering devices will provide significant benefits through the improved control of water consumption and more sustainable management of available water resources. It will provide a basis for a transition towards the optimised water use practices, to be comparable with the European water consumption rates.

The stable operation of pumping capacity and improved control of water pressure will help eliminate the practice of alternate service provision to the selected customer groups and shift towards the continuous service operation regime. Additionally, the provision of continuous water service to households living in the upper floors of high-rise buildings will be fully in line with the social equity principle, where the customers pay only on the basis of the service actually provided.

The purchase of reverse osmosis system for groundwater treatment will help improve the quality of water put into supply, which is especially important in the Donetsk Oblast where surface water and groundwater sources in many cases do not meet the potable supply standard (elevated levels of hardness, mineralisation, iron, manganese, nitrites, fluorides etc. that may have a harmful effect on human health).

The purchase of sodium hypochlorite unit to replace the chlorination process used to disinfect the potable supplies and sewage effluents will provide significant benefits for human health. Currently, the raw water quality requires a relatively high level of chlorine dosing. Chlorination of the organic-rich raw water is likely to produce unwanted and potentially harmful chlorinated hydrocarbon compounds in the drinking water. The chloroform, present in the drinking water at relatively high concentrations, is particularly...
dangerous, posing a higher risk of cancer disease. The proposed sodium hypochlorite option is effective in terms of its disinfection, oxidation, germicidal, antiviral and antifungal action, being safe for the environment. In water treatment process, the sodium hypochlorite is used for water disinfection, equipment/pipework treatment (including hot water supply equipment), disinfection of water treatment equipment (ion exchange, carbon and membrane filters), as well as for the removal of iron, manganese, and hydrogen sulphide. The application of sodium hypochlorite is very effective in terms of controlling/minimizing the chlorine levels in the treated water.

The proposed replacement of many existing air blowers operated at the wastewater treatment plants, to be substituted with lower capacity air blowers, will enable their continuous operation, resulting in the improved treatment efficiency and better quality of effluents discharged into the receiving water bodies. It can be concluded that this measure will help improve the quality of wastewater collection/treatment service without compromising the quality of local ambient waters.

The proposed project would improve the social, epidemiological and environmental situation in the region, and contribute to the implementation of energy-saving practices in the municipal sector.

The proposed project does not entail any involuntary resettlement and will not produce any adverse effect on the regional cultural assets.

2.4. Review of Alternative Options

A continuing ‘status quo’ scenario will result in:

- Further deterioration of water supply service, provided to population and industries in the region,
- Instable operation of wastewater collection and treatment service, poor quality of treatment.

The proposed project solutions are based on the modern energy- and resource-saving practices, which have proved very useful in Ukraine and abroad. The implementation of proposed project is seen as the most feasible way of improving the reliability of water service and preventing further deterioration of environmental and social situation and human health in the region.

The proposed investment project will ensure the environmentally safe operation of water supply system in the Donetsk Region, and minimize the potential for accidents that may pose threat to the environment.
2.5. Environmental Management Plan

2.5.1. Brief Description of Key Environmental Issues

The results of this environmental assessment indicate that the implementation of proposed investment project would not produce adverse impact on the adjacent industrial, agricultural and municipal infrastructure, surface and underground utilities, recreational areas and cultural assets.

It is expected that the overall environmental effect of proposed rehabilitation measures for the Donetsk Oblast Water Utility will be positive.

2.5.2. Mitigation Plan

The proposed investment project involves the rehabilitation and upgrade of existing water supply and wastewater collection/treatment infrastructure in Donetsk Oblast, as well as improvement of energy efficiency in the municipal sector.

Key objectives of the proposed project include the upgrade of existing water supply and wastewater collection/treatment capacities in a manner that ensures the accident-free and environmentally sound operation of water services, provided to the population and industry in the Donetsk Oblast.

Key performance indicators for the proposed project include:

1. Adequate level and quality of water supply service provided to customers, particularly the population.
2. Reduction in specific energy and resource consumption in the operation of water transmission and distribution service.
3. Reduction in potable water losses.
4. Elimination of intermittent water supply practice.
5. The volume of water actually supplied fully meets the potable demand.
6. Improvements in the quality of the water put into supply, to ensure that existing potable standard is met.
7. The level of improvement in the living conditions, achieved through better management and control of leaks from sewage networks.

2.5.3. Monitoring Plan

The monitoring programme will need to be introduced and implemented by the Borrower to ensure compliance of all proposed rehabilitation activities with existing sanitary and environmental standards.

At this stage, there is no provision for the independent monitoring to be carried out by non-governmental organisations.

Given that the proposed works will not affect the environmental media, no detailed monitoring programme has been developed at this stage.
3. INSTITUTIONAL ISSUES

Water supply facilities of Donetsk oblast have a range of unresolved technical and economic problems:

1. Technical condition of the main water supply source – the Siversky Donets – Donbass Canal, which is in service for more than 40 years without a major overhaul, concerns experts: there is a continuous annual deterioration of technical condition of hydraulic works of the channel, ongoing process of concrete works destruction, corrosion of metal and aging of equipment, resulting in high degree of losses.

2. Absence of an alternative water supply source for Donetsk oblast. Termination of construction of the Dniepro-Donbass Canal, where, in second turn of construction, commissioning of a 2-thread water pipeline with a 16 m\(^3\)/s discharge and of several pumping stations for Donets oblast was planned. It seems impossible to resume construction in volume of originally developed project. Privatisation is under way on this channel.

3. One feature of the water supply system of Donetsk oblast is high water salinity in water storage basins and underground sources.

4. Pumping stations, which are currently in operation, are equipped with the out-of-date pumping equipment and need serious reconstruction. Especially serious problems are associated with the city’s water distribution network.

5. Deterioration of operational condition of a water supply service facilities has lead to an increased number of accidents. In the last four years the accident rate has increased by 12.5%.

6. Increase of an accident rate and absence of capital investments into a major overhaul of pipelines leads to a major leakages in the water distribution network (on average, up to 35% of the total water volume supplied, or 208 million m\(^3\) per year or 570 thousand m\(^3\) per day).

7. Demands of all categories of consumers, and at first, population demands, are not completely satisfied: 134 settlements in oblast are importing potable water.

8. Quality of potable water, delivered to consumers, does not always meet the standards of SanPin. Deterioration of water quality, especially its microbiological parameters is recorded in many settlements of Donetsk oblast. This can be explained by scheduled daily interruptions of water supply and imperfection of its purification disinfection technologies.

9. There are other sources of water supply in the oblast: fresh water from underground sources, with total stock of 200 million m\(^3\) and mine waters, with total stock of 1 billion m\(^3\). These waters can be utilized on a local scale, conditioning that certain investments are available for such purpose.

10. Actual water consumption in Donetsk oblast makes 950 million m\(^3\), including more than 500 million m\(^3\) of potable water. However, there is a tendency to decrease in water consumption (5% annual decrease) on an oblast scale.

In order to resolve problems with water supply and wastewater removal services in Donetsk oblast, a “Program for reforming and improvement of water supply services in Donetsk oblast for the period of 2003 - 2005 with the prospect of development through the year 2010” was started. It was developed under the order of Donetsk oblast administration by NIGTIGH, Kiev. The actions, planned in this program can be divided into following directions:

- Energy-saving measures.
• Measures on increase of reliability of a water supply system and its separate elements in settlements.
• Measures on reduction of water leakages.
• Measures on water resources economy.
• Measures aimed at wider utilization of groundwater resources.

Measures aimed at water quality improvement.

State Water Utility “UkrPromVodCherMet”

In line with its development strategy objectives, the UkrPromVodCherMet Water Utility has made significant advances in introducing the up-to-date technology, applying the automatic control systems, and improving the process logistics. These efforts have enabled significant resource savings at the company level, with the average staffing of its district operational units being lower by 30-35% than the guideline level.

Since September 2004 through August 2005, the UkrPromVodCherMet Water Utility completed the occupational safety certification for all work stations.

In 2004, 374 company specialists took part in the computer training course “Information Science and Computer Equipment”.

In 2004, as part of the introduction and certification of the Quality Management System compliant with the State Standard DSTU ISO 9001-2001, 78 company specialists were trained and qualified as internal auditors of quality management system.

The UkrPromVodCherMet Water Utility’s policy has always been to ensure the proper quality of service, and the company’s efforts have been recognized and appreciated. In 2003, the company received the European Quality Award, in 2004 it received the Award for High Service Quality and Reliability, and the award of the European Market Research Centre for high professional achievements, business leadership and contribution to Ukraine’s integration into the global economic system. In March 2005, the UkrPromVodCherMet Utility received the Ukrainian National Rating Diploma “Ukraine: Best Companies” for continuing orientation towards the customer’s interests, promotion of dynamic development and significant contribution to the national economy development.

State Municipal Water Utility “Donetsk Oblast Vodokanal”

The present investment project proposal has been prepared on the basis of the results of the Theoretical Study and Development of Mathematical Simulation Model of the Existing Water Supply and Distribution System, which covered all 23 district water utilities, operating within the Company’s system.
4. PUBLIC CONSULTATIONS

In accordance with the World Bank requirement, the public consultation process was organized as part of the environmental assessment, in order to discuss the proposed urban infrastructure development projects with various stakeholder groups in Donetsk. This public consultation involved two stages.

The first public consultation was held in October 2005, the second one - in November 2005. For the Utility UkrPromVodCherMet, the first public consultation was combined with the second public consultation of Donetsk Oblast Vodokanal.

In the friendly atmosphere of the meeting, attendees raised and discussed various questions, which are detailed in the Minutes of Consultation Meeting, annexed to the present EA Report.

Additional information on public consultation process can be found in the Annex A.
CONCLUSIONS

In the light of the present study, it can be concluded that the proposed rehabilitation project for the UkrPromVodCherMet Water Utility, that includes the rehabilitation of pumping capacity (replacement of the Levels 1-4 pumping units) of the Siversky Donets-Donbass Canal, operated by the UkrPromVodCherMet Utility can be promoted to the next project preparation stage based on the positive outcome of the environmental assessment.

The results of this environmental assessment indicate that the implementation of proposed investment project would not produce adverse impact on the adjacent industrial, agricultural and municipal infrastructure, surface and underground utilities, recreational areas and cultural assets.

Based on the analysis of existing situation, it can be concluded that there is an urgent need in implementing the proposed water supply/wastewater system rehabilitation projects for the State Municipal Utility "Donetsk Oblast Vodokanal", including:

- Water supply: purchase of measuring and pressure regulation equipment; purchase of well pumps, booster pumping equipment and high-pressure pumps; purchase of reverse osmosis treatment equipment;
- Wastewater collection/treatment: purchase of air blowers, sewage pumps, mobile sludge dewatering/packaging units to handle sludge generated at the WwTP sites;
- Water supply and wastewater collection/treatment: purchase and installation of sodium hypochlorite production unit.

The EA results indicate that the proposed project can be promoted to the next project preparation stage.

It is expected that the proposed rehabilitation measures for the existing water supply and wastewater collection/treatment system in the Donetsk Oblast will provide significant environmental benefits.
Annex A - Materials on Public Consultations
The Need for Public Consultation

According to the requirements of the World Bank and Ukrainian legislation, it is necessary to consult project-affected groups and local nongovernmental organizations (NGOs) about the project's environmental aspects and to take their views into account when performing Environmental Assessment (EA) of investment project on municipal infrastructure. Thus, generation of positive attitude on all stages of projects is the necessary requirement for the project performance.

Organisation of Public Consultations

According to Terms of References, the Consultant (IWMC) has organized the public consultation process in the following way:

1. Two public consultations for each project location were carried out:
   - **The first public consultation** - the purpose of this consultation was to present the planned project, review the EA outline and schedule, Terms of Reference, and to solicit from affected groups and local NGOs any environmental issues they consider to be a priority and they wish to see addressed in the EA report.
   - **The second public consultation** - the purpose of this consultation was to present the results of EA work, discuss positive and negative impacts of planned project, to review the draft EA document to insure that the issues identified in the first public consultation have been properly addressed and resolved to the satisfaction of locally affected groups and NGOs.

The main objectives of public consultations were as follows:
- To make the EA project transparent and open for the public;
- To discuss various issues and concerns with project-affected groups, to familiarize public with potential negative impacts and problems during realization of investment projects;
- To have feedback from competent bodies and local project-affected groups during the EA process on potential positive and negative impacts.

2. To invite local stakeholders, the places and dates of two public consultations were announced in local/oblast newspapers, followed by the telephone and fax communications. Key participants are:
   - Loan Recipients (Municipal Utilities);
   - Key field institutions;
   - Key research organizations and organizations performing Environmental Impact Assessment (EIA);
   - Local state administrations;
   - State authorities (environmental authorities and sanitary epidemiological service);
   - NGOs;
   - TV, radio stations, newspapers.

3. Responsible persons (from IWMC and Grant Recipients) were appointed for each location.

4. The following information materials were prepared for each consultation:
   - Agenda;
   - Information on the project - distribution material:
• Press-release for mass-media.

5. Records of consultations were carefully documented, including the lists of attending persons, pictures/photos, and minutes of each consultation meeting.

6. All comments and opinions of participants were taken into account during the preparation of EA reports.

Public consultations in Donetsk Oblast were conducted according to the approved programme.

Public Consultations in Donetsk

The First Public Consultation

1. A working meeting with the potential borrower (Donetsk Oblast Vodokanal) to discuss key organizational issues was held, where the date and venue were discussed and the 1st Consultation Meeting Preparation Plan was agreed. It was decided to hold the first public consultation meeting on 25 October, 2005, at the conference hall of Donetsk Oblast Vodokanal.

2. The announcement of the meeting was published in the oblast newspaper “Zhizn” on 21 October 2005, No. 151 (Attachment 1).

3. The meeting agenda (Attachment 2), distribution material (Attachment 3) and press-release (Attachment 4) were prepared.

4. The minutes of the 1st consultation meeting were maintained (Attachment 5), pictures are made (Attachment 6).

5. Mass-media have reflected the event in their news programmes and publications (Attachments 7, 8).

The Second Public Consultation

The Second Public Consultation for investment projects at the Donetsk Oblast Vodokanal

1. A working meeting with potential borrowers (Donetsk Oblast Vodokanal and UkrPromVodCherMet Water Utility) to discuss key issues relating to the organization of the second consultation meeting was conducted, where the meeting date and venue were discussed, and the 2nd Consultation Meeting Preparation Plan was agreed. It was decided to hold the second public consultation meeting on 11 November, 2005, at the conference hall of Donetsk Oblast Vodokanal. For the Utility UkrPromVodCherMet, the first public consultation was combined with the second public consultation of Donetsk Oblast Vodokanal; the second public consultation for UkrPromVodCherMet was conducted on the 29-th of November.

2. The meeting date and venue were announced in the oblast newspaper “Zhizn” on 8 November 2005, No. 160 (Attachments 9).

3. The Meeting Agenda (Attachment 10) and press-release (Attachment 11) were prepared.
4. The minutes of the 2\textsuperscript{nd} consultation meeting were maintained (Attachment 12), and pictures (Attachment 13) were made.

5. Mass-media have reflected the event in their news programmes and publications (Attachment 14).

The Second Public Consultation for Investment projects in UkrPromVodCherMet

a) For the second public consultation for State Water Utility UkrPromVodCherMet was conducted on the 29-th of November.

b) The meeting date and venue were announced in the oblast newspaper “Zhizn” on 24 November 2005, No. 170 (Attachments 15).

c) The Meeting Agenda (Attachment 16) and press-release (Attachment 17) were prepared.

d) The minutes of the 2\textsuperscript{nd} consultation meeting were maintained (Attachment 18), and pictures (Attachment 19) were made.

e) Mass-media have reflected the event in their news programmes and publications (Attachment 20).

Conclusions

A set of very important and interesting issues/comments/opinions were identified/received as a feedback from interested and project-affected groups, in particular, potential loan recipients, NGOs and general public. All comments have been taken into account and properly addressed during the preparation of EA reports.

The feedback received from the public consultations has proved invaluable in assessing the following aspects of the proposed projects:

- Compliance of planned investment projects with the Ukrainian environmental legislation and regulations;
- Completeness of available information on the current environmental situation;
- Current environmental permitting status of each proposed project;
- Completeness of available information on the potential environmental impacts associated with the proposed investment project implementation;
- Adequacy of proposed mitigation measures in terms of ensuring the environmental safety and sustainability;
- Acceptability of potential environmental impacts and environmental feasibility of each proposed project;
- Need for additional environmental information or clarification of available environmental data.

The positive response received from various stakeholder groups shows the high level of importance and urgency, associated with the implementation of proposed projects in Donetsk City and Oblast. These investment projects are expected to significantly improve the existing situation in water supply (rehabilitation of water pipelines, construction of booster stations, etc.), waste water collection/treatment (rehabilitation of municipal sewer network,
municipal wastewater treatment plant and sewage pumping stations) sectors. Due to purchase of laboratory equipment for analysis and control, the institutional capacity of an implementing agency will be strengthened. The proposed projects would contribute to the improvement of municipal infrastructure, quality of life and environmental situation in the region.

The projects will not cause involuntary resettlement of population.

The potential physical impacts of proposed projects on local geology, climate, air quality, fauna, water bodies, soil, vegetation cover, and existing utilities/infrastructure, are likely to be insignificant and will be limited to the construction phase.
The first public consultation – 25 October, 2005

Announcement in the Newspaper

Source: the Oblast newspaper “Zhizn”, 21 October 2005, No. 151(2937)

25 October 2005, at 11.00
in conference hall of Municipal Utility Donetsk Oblast Vodokanal

the public consultation for discussion on investment projects on the rehabilitation of water supply and wastewater in Donetsk Oblast, TOR for EA will be conducted. Interested persons are welcome.
Attachment 2
Translation

Agenda
The First Public Consultation Meeting
25 October, 2005
(13 Universitetskaya str., Donetsk)

11.00
About proposed investment projects and their importance for Ukraine

11.20
A. Kuzin – Scientific Director of IWMC
About EA, TOR on EA, requirements of WB and Ukrainian legislation to EA performance, about the structure of EA Report

11.40
About the importance of investment projects for Donetsk

12.00
About planned investment projects in Donetsk in the domain of water supply and wastewater treatment/collection

12.20
Questions, comments, discussion
Information material

In the framework of EA process of investment projects on development of urban infrastructure aimed at improvement of hygiene and health of the population and improvement of environmental conditions, sustainable water supply and sanitation delivery services, energy-saving.

KEY ACTIVITY AREAS:

- Rehabilitation of water supply system;
- Rehabilitation of wastewater collection/treatment system.

In Donetsk Oblast, the following projects are proposed:

- Rehabilitation of Pump Stations;
- Replacement of Pumping Equipment;
- Installation of pressure reduction valves;
- Purchase and installation of water meters.

It is expected that proposed projects will demonstrate their significant social benefits, resulting from the improvements in existing water supply and wastewater collection/treatment systems. These projects will contribute to the improvement of environmental situation in the region, provide access to better quality services, and result in reduced energy costs of these services.

PUBLIC CONSULTATION

25 October 2005 – review the EA outline and schedule, Terms of Reference, and identification from affected groups and local NGOs any environmental issues they consider to be a priority and they wish to see addressed in the EA report

November 2005 - review the draft EA document.

Head: Scientific Direction IWMC
Kuzin Alexander

Contact person: Utkina Kateryna
Tel./fax.: (057) 702 15 78
E-mail: akousine@mail.ru
Press Release

Today, on 25 October 2005 at the conference hall of Municipal Utility Donetsk Oblast Vodokanal, the first public consultation on the WB investment projects on urban infrastructure was conducted. Key investment areas: rehabilitation of water supply, wastewater and solid waste management systems.

According to WB requirements, a proposed project may be implemented only after EA process. EA must be conducted according to the WB procedure and relevant requirements of Ukrainian legislation.

The generation of positive public attitude at all stages is a key requirement for proposed projects. It is planned to conduct two public consultations in order to ensure that the identified issues have been properly addressed and resolved to the satisfaction of locally affected groups and NGOs. It is planned to have feedback from local population, corresponding points for meeting with representative of local population and NGOs will be organized.

The consultation process has been initiated by the Association Industrial Waste Management Centre (the Consultant responsible for EA preparation) and Municipal Utility Donetsk Oblast Vodokanal.
Minutes (No. 1)  
of the First Public Consultation  
on WB Urban Infrastructure Project  

Donetsk  

25 October 2005  

Place - Conference Hall, Municipal Utility Donetsk Oblast Vodokanal (13 Universitetskaya str., 8300 Donetsk Ukraine, Tel./fax: 305-52-12, 304-51-70).  

Organizers - Association Industrial Waste Management Centre, Municipal Utility Donetsk Oblast Vodokanal.  

Chairman – Kuzin A.K., Scientific Director of IWMC  


Secretary – Muravskaya O.V. – Specialist on PR, Municipal Utility Donetsk Oblast Vodokanal.  

Coordinator on public relations – Gonchar N.V.  

40 persons were present. Registration sheets are available at the IWMC office.  

1. Kuzin A.K., Scientific Director of IWMC – told about WB Urban Infrastructure project that is implemented in Kharkiv, Odessa, Chernihiv, Ivano-Frankivsk and Donetsk cities. He told about activities planned in Donetsk City, about Loan Recipient, EA process, TOR and schedule. He gave preliminary assessment of existing situation. He told about IWMC in general.  

2. Abuzyarov I.K., Deputy Head of State Department of Ecology and Natural Resources - informed about key problems in water supply and waste water sectors in Donetsk city and Donetsk oblast, underlined the fact of great losses of water (in particular, in Gorlovka town losses are about 50 %), told about the necessity to normalize loadings on water networks and energy saving. He also underlined the necessity to purchase and install water meters. He said that proposed projects would improve decision-making process.  

3. Stepovoi Yu.I., Director of Municipal Utility, Slavyansk town – described the situation in Slavyansk town and problems with pumping equipment. In particular, equipment in SPS N5 (constructed in 1988) has reached the end of operation life. Due to change of pumping equipment there is great energy saving.  

4. Dolbeshenko A.A., Director of Municipal Utility, Druzhkovka town – told about Ukrainian-Dutch project in the domain of municipal services (the main aim is economical effect due
to reduction of energy consumption), underlined the importance of WB loans for the city development. The Utility has the experience of the whole project process (from preparation of documentation till the implementation). The key priorities are improvement of water supply and treatment of drinking water and waste water treatment.

5. **Bachinskiy V.T.**, Director of Municipal Utility, Avdeevka town – told about poor state of pipelines, underlined the necessity to rehabilitate the water supply networks and to reduce water consumption and to purchase flushing equipment.

6. **Oleinikova G.M.**, Director of Artemovsk branch of NGO MAMA-86 (NGO responsible for social assessment) – underlined the necessity to consider the problems with potential increase of tariffs due to project implementation. She underlined that this issue was the most important for the population.

7. **Berezin V.B.**, Director of Ecological-and-Cultural Centre Bakhmat – expressed dissatisfaction to the public consultation carry-out. He said that more scientists, NGO representatives and businessmen should have been participated. He also said about some problems with tender performance in separate cases.


9. **Maslak V.N.**, General Director of Municipal Utility Donetsk Oblast Vodokanal - described the situation with the investment project implementation, underlined the importance of loans for the rehabilitation of water supply system. Due to project implementation, measures on rehabilitation of water supply system will be implemented, energy losses will be reduced, water consumption control and accounting will be introduced, the existing system will be improved. He told about Energy-Saving Fund (created due to cooperation with Holland) and that city administration supported and was interested in the investment project implementation. He underlined the importance of information distribution to population.

Comments:

**Oleinikova G.M.**, Director of Artemovsk branch of NGO MAMA-86 – proposed to create permanent Supervision Committee.

**Answer:**

**Maslak V.N.**, General Director of Municipal Utility Donetsk Oblast Vodokanal – agreed. It is planned to conduct open discussion of project with interested persons, information will be given on web-site, after negotiations and additional consultation with WB experts the final list of investment projects will be compiled.

10. **Benoit Plaige**, Head of TACIS project “Solid Municipal Waste Management in Donetsk Oblast” – told about similar projects in Moldova. The duration of such projects is large, the negotiation and preparation process is quite long and includes performance of technical, economical assessment, tender on equipment and service, etc.

11. **Maslak V.N.**, General Director of Municipal Utility Donetsk Oblast Vodokanal – gave information on financial issues. Repayment is planned to be made due to reduction of non-
production losses: installation of meters (at present losses in multi-stored apartment buildings are 7-14%) and energy saving (it is planned to reduce energy consumption on 50%). Vodokanal specialists have obtained international certificated and have great experienced – their knowledge will be useful for project implementation. Detailed calculations were made for 23 departments on Municipal Utility Donetsk Oblast Vodokanal. It is not planned to increase tariffs for population.

12. Kuzin A.K., Scientific Director of IWMC - thanked all participants for attention, promised to address all identified issues in EA Report, invited to cooperation during performance of proposed projects. He announced that the second public consultation would take place on 10-11 November, corresponding advertisement would be published in newspaper.

Signatures:
Chairman
Secretary
Coordinator on public relations
Abuzarov I.K., Deputy Head of State Department of Ecology and Natural Resources

Kuzin A.K., Scientific Director of IWMC
Maslak V.N., General Director of Municipal Utility Donetsk Oblast Vodokanal

Oleinikova G.M.
Benoit Piage, Head of the project
"Solid Municipal Waste Management in Donetsk Oblast"
Newspaper Publication

Source: the Oblast newspaper “Zhizn”, 3 November 2005, No. 158(2944)

WB is Going to Give Investments for “Voda Donbassa”

The article is devoted to proposed investment projects in Donetsk. Due to lack of funding the programme "Voda Donbassa" is not performed. In the framework of WB projects Municipal Utility Donetsk Oblast Vodokanal is going to implement various measures aimed at improvement of water supply and wastewater treatment/collection services, replacement of equipment, etc. Benefits (in particular, in the domain of energy-saving) from the projects performance are described. The first public consultation is discussed. Conclusion – proposed projects are very necessary and public consultation is very important for population.
Мировой Банк инвестирует «Воду Донбасса»

На фоне громкой продажи «Кри- ворохстав» менее заметной оказалась встреча украинского премьера с представителями Мирового Банка, прошедшая на прошлой неделе в Киеве.

Встреча Юрия Еханурова сегодняшнему репортерам стала историческим моментом. Ведь МВФ имеет для Украины не менее важное значение, чем открывает долгосрочныеные перспективы и

внушительная объема финансирования. По информации МВФ, на данный момент Украина утверждено выделение около 4,6 млрд. долларов на 33 проекта за последние 10 лет было разработано и реализовано около 15 новых проектов в области коммунального хозяйства.

В апреле текущего года Мировой Банк предложил инвестиционный проект развития коммунальной инфраструктуры городов Украины. Предполагаемая сумма финансирования на этот год составляет около 3 млрд долларов. В рамках этого проекта участвуют около 20 городов, включая Одессу, Черновцы, Ивано-Франковск, Днепр. Учтены все требования отраслевого министерства и Государственной инспекции по вопросам коммунального хозяйства.

Вносимые изменения включают в себя: регулирование давления в водопроводных сетях, установка измерительных устройств, замена устаревших водопроводных сетей и электрораспределения для канализационных очистных сооружений, упрощение учета потребления водоснабжения.

Проекты, предложенные МВФ, предусматривают внедрение новых технологий, в том числе автоматизации и цифровизации, с участием местных властей. В то же время, реализация этих проектов требует значительных финансовых вложений, что вызывает опасения у некоторых политиков и общественности.

В заключение, можно сказать, что Мировой Банк с его инвестициями играет важную роль в развитии коммунальной инфраструктуры Украины, однако реализация этих проектов требует значительных усилий и вовлечения всех заинтересованных сторон.
Internet subscription
Municipal Utility Donetsk Oblast Vodokanal plans to take a WB loan for water supply optimization in Donetsk Oblast

Summary

The main topic is first public consultation in Donetsk. Proposed investment projects are described and the necessity to conduct public consultation in the process of project implementation is underlined.
ОКП «Донецкоблводоканал» планирует взять кредит у Мирового Банка для оптимизации водоснабжения городов Донецкой области

Вчера, 25 октября с 11:00 до 12:30 в административном здании ОКП «Донецкоблводоканал» состоялись общественные слушания, или так называемые консультации с общественностью. Данное мероприятие проходило в рамках подготовки экологической оценки инвестиционных проектов по развитию коммунальной инфраструктуры городов, направленных на обеспечение населения качественными коммунальными услугами, улучшение санитарно-эпидемиологической и экологической ситуации в регионе, обеспечение бесперебойной работы систем водоснабжения и водоотведения, а также, энергосбережение.

Дело в том, что администрация ОКП «Донецкоблводоканал» выразила желание взять кредит у Мирового банка на сумму 4 млн. долларов, которые планируется израсходовать на приобретение и установку домовых счетчиков, а также решение вопросов снижения энергоотребления устаревшего оборудования. Кроме прочего, с помощью кредита специалисты обводоканала планируют восстановить насосные станции, произвести замену насосов, а также, установку клапанов для регулировки давления. Условия получения кредита всего 5% годовых. Среди участников проекта, все водоснабжающие предприятия Донецкой области - структурные единицы ОКП «Донецкоблводоканал». На сегодняшний день, переговоры по получению кредита находятся в начальной стадии.

Как отметил основной докладчик А. Кузин, представитель Харьковского отделения Украинского НИИ Экологических Проблем, организацией, выигравшей тендер на проведение экологического аудита, от реализации проекта ожидается большой социальный эффект и улучшение экологической ситуации в регионе. Учитывая «горький опыт» предыдущих проектов подобных финансовых структур, было принято решение о широком привлечении общественности к разработке и реализации проекта. Кузином был приведен пример, когда попытка самостоятельного принятия решений по работе с проектом без ведома населения привела к краху одного в регионе. По его словам, ранее казавшихся невозможными 28-ми миллионами долларовым проект Европейского Банка Реконструкции и Развития в Харьковской области, когда население вышло под здание областного совета с требованием отказать от строительства мусорника на площади в 100 тысяч кубометров бытовых отходов. Такая же участь ждала проект в Мариуполе и Херсоне. Учитывая предыдущий опыт, разработчики проекта решили избегать недоразумений с населением и пойти навстречу общественности.

Уже 11-го ноября состоится следующий этап проекта - общественные слушания по предоставлению и рассмотрению проекта ответа по Экологической оценке.
The second public consultation – 11 November, 2005
The second public consultation - Donetsk Oblast Vodokanal
The first public consultation - UkrPromVodCherMet

Announcement in the Newspaper

Source: the Oblast newspaper “Zhizn”, 8 November 2005, No. 160

11 November 2005, at 11.00
in conference hall of Municipal Utility Donetsk Oblast Vodokanal
Address:
13 Universitetskaya str., 8300 Donetsk

the public consultation for discussion on investment projects on the rehabilitation of water supply and wastewater in Donetsk Oblast, Draft EA Reports will be conducted. Interested persons are welcome.
Всеукраинский республиканский комитет по делам моряков и их семей сообщает о 11-м заседании, которое 16 сентября 2005 года состоялось в Киеве. В заседании приняли участие представители всех областей Украины, а также делегаты из России, Беларуси и Польши.

Заседание началось с обсуждения вопросов о реализации поставленных задач по сохранению моряков и их семей, в том числе о поддержке и развитии морского образования и науки.

Докладчиком был выступлен вице-президент республиканского комитета по делам моряков и их семей, кандидат экономических наук, Г. И. Горбунов, с докладом на тему "Современные тенденции в развитии морского образования".

Затем были рассмотрены вопросы о подготовке к следующему заседанию, а также о возможности сотрудничества с другими организациями и общественными формированиями.

Заседание завершилось принятием ряда решений, в том числе о необходимости дальнейшего развития работы республиканского комитета по делам моряков и их семей. Всем присутствующим были выданы приглашения на следующее заседание, которое будет проведено в ближайшем будущем.

Заседание было оценено как очень продуктивное и полезное для дальнейшего развития работы республиканского комитета по делам моряков и их семей.

Г. И. Горбунов
Agenda
The Second Public Consultation Meeting
in the Framework of EA Process for Proposed Investment Projects
on the Urban Infrastructure Development

11.00
Opening
A. Kuzin – Scientific Director of IWMC

11.10
Investment Projects on the Urban Infrastructure Development
Yu. Shestakov – Chief Engineer of Municipal Utility Donetsk Oblast Vodokanal

11.30
About experience of installation of new pumping equipment, the necessity to dewatering the sludge
Yu. Stepovoi – Director of Slavyansk Vodokanal

11.40
About the necessity to replace pumping equipment and meters, expected effect due to their installation
A. Dolbeshenkov – Director of Druzhkovka Vodokanal

11.50
About the necessity to demineralise underground waters, use of hypochloride for water disinfection, dewatering of sludge, mobile units
N. Zotov – Director of Information Center of Donetsk Oblast Vodokanal

12.00
About the general situation in water supply and wastewater sector
N. Nasonkina – Head of Chair in Donbas National Academy of Construction and Engineering

12.10
Short characteristics of public relations in Donetsk Oblast Vodokanal
N. Gonchar – Head of Department of Control and Record Keeping

12.15
Participation of population in decisions making on plan of water supply and wastewater sectors development, exemplified by Soledar Town
G. Oleinikova – NGO MAMA-86, Artemovsk Branch

12.30
About EA results, Final EA Report, potential positive and negative impacts
A. Kuzin – Scientific Director of IWMC

State Water Utility Ukrpromvodchmeret – announcement on the EA process
Press Release

Today, on 11 November 2005, in the conference hall of Municipal Utility Donetsk Oblast Vodokanal (address: Universiteskskaya str., 13 Donetsk, tel./fax: 305 52 12, 304 51 70), the public consultation on WB investment projects on urban infrastructure was held. Key areas of investment are the rehabilitation of water supply and wastewater collection/treatment systems. The potential loan recipient is Municipal Utility Donetsk Oblast Vodokanal (provides services for 33 towns, 55 urban villages and 26 small villages).

The Municipal Utility Donetsk Oblast Vodokanal consists of 23 municipal utilities which provide services for population in Donetsk City and Oblast.

For technical modernisation of water supply and sewage systems it is planned to purchase and install various equipment (total amount is 22 mln UAH = 4.4 mln USD). As structural units of Municipal Utility Donetsk Oblast Vodokanal are not juridical persons, information on investment resources for purchase of equipment is compiled for Donetsovbivodokanal in general.

According to the WB requirements, the EA is required for the proposed project, to be prepared according to the WB procedures and Ukrainian legislation requirements.

Draft EA Reports have been prepared for all proposed projects. The analysis of proposed projects demonstrates their significant social benefits, resulting from the installation of water meters in apartment buildings (result: water saving and rational use of water), improvements in existing water supply and wastewater collection/treatment systems. Stable work of pumps will allow to provide water supply services during 24 hours. Installation of new air blowers will cause improvement in waste water treatment. These projects will contribute to the improvement of environmental situation in the region, provide access to better quality services, and result in reduced energy costs of these services.

The proposed projects will not cause involuntary resettlement. Their potential physical impacts on local geology, climate, air quality, fauna, water bodies, soil, vegetation cover, and existing utilities/infrastructure are considered to be minor and limited to the construction phase.

Since the generation of positive public attitude on all stages is a key requirement for proposed projects, the EA results are presented to general public.
Minutes (No. 2)  
of the Second Public Consultation Meeting  
in the framework of investment projects on urban infrastructure development

Donetsk  
11 November 2005

Place - conference hall of Donetsk Oblast Vodokanal (address: Universiteskskaya str., 13 Donetsk, tel./fax: 305 52 12, 304 51 70).


Chairman - Zotov N., Director of Information Center of Municipal Utility Donetsk Oblast Vodokanal.

Secretary - Muravskaya O., specialist on PR of Municipal Utility Donetsk Oblast Vodokanal;

Coordinator on public relations - Gonchar N., Head of Department of Control and Record Keeping.

30 persons were present. Registration sheets are available at the IWMC office.

Agenda:


2. Presentation and discussion of TOR on EA conducting on the proposed project “Rehabilitation of pumping capacities of Siversky Donets-Donbass Canal, State Water Utility UkrPromVodCherMet”.

I. Presentation and discussion on the Report of EA on “Modernisation of water supply-waste water collection/treatment systems of Donetsk Oblast Vodokanal Municipal Utility”.

1. Kuzin A., Scientific Director of IWMC - informed about performed EA in the framework of UI Project. According to WB requirements the potential impact on the following environmental components were studied: geology, water resources, atmospheric air, microclimate, vegetation cover, flora and fauna, technogenic environment. Also social impacts were studied. Results of analysis have shown that negative impacts are not expected due to implementation of projects.

2. Shestakov Yu., Chief Engineer of Municipal Utility Donetsk Oblast Vodokanal - told about the direction of investment. Water meters are necessary for the control of water consumption and rational water use. Installation of units for regulation of water pressure, replacement of pumps and other equipment will provide water supply services during 24 hours, reduce water losses and energy consumption.
3. **Stepovoi Yu.** Director of Slavyansk Vodokanal – told about the experience with modernisation of SPS 5. Replacement of equipment has reduced energy consumption. He told about the problems with wastewater treatment plant: at present the area of 11 hectares is filled with sludge and 15500 m³ of sludge is stored of sludge plants.

4. **Dolbeshenkov A.**, Director of Druzhkovka Vodokanal – told about their experience of pumps replacement. He paid attention to the fact that net cost of water is higher than the tariff and specific costs for energy is 60% of tariff. The developed energy-saving programme will allow to reduce energy consumption from 2 mln kWh/year to 1 mln kWh/year. Installation of energy meters will allow to introduce energy accounting.

5. **Zotov N.**, Director of Information Center of Donetsk Oblast Vodokanal – told about proposed projects in details; underlined the necessity to purchase and install electrolysis unit for sodium hypochlorite (location – Slavyansk Town) and for demineralisation of underground waters and mobile units for sludge dewatering.

6. **Nasonkina N.**, Head of Chair in Donbass National Academy of Construction and Engineering – described the existing situation in the domain of water supply and wastewater treatment/collection in Donbass Oblast: poor state of pipeworks, frequent breaks, low efficiency of pumps (about 40%), low drinking water quality. She underlined the necessity to install units for de-ironing and softening of water and treatment from nitrates.

7. **Gonchar N.**, Head of Department of Control and Record Keeping – told about performed PR activity, web-site of the Utility and its structure.

8. **Oleinikova G.**, NGO MAMA-86, Artemovsk Branch – told about population participation in the elaboration of development plan for Soledar Town in the domain of water supply and wastewater. She demonstrated the poster on environmental protection.

**Presentation and discussion of TOR on EA conducting on the proposed project “Rehabilitation of pumping capacity of Siversky Donets-Donbass Canal, UkrPromVodCherMet Municipal Utility”**.

1. **Alipov A.**, First Deputy Director of State Water Utility UkrPromVodCherMet – told about their wish to participate in the UI project. They plan to perform investment projects on the amount of 26 mln USD on the purchase and instalment of pumping equipment. The proposed projects will improve efficiency and energy-saving and will give positive effects.

2. **Prishepa L.**, Deputy Chief Engineer of State Water Utility UkrPromVodCherMet – told about the utility and that the most of equipment was installed 48 years ago. Municipal Utility UkrPromVodCherMet consumes about 80 million kWh per month and expected annual energy-savings are estimated to be at about 75 million kWh.
3. **Cherkasova T.**, Financial Director of State Water Utility UkrPromVodCherMet – told about financial issues of reconstruction and modernisation of equipment of Siversky Donets-Donbass Canal. Costs for energy are about 50% of the total costs. Replacement of 4 pumps will give economy of about 75 million kWh per year.

4. **Abuzyarov I.**, Deputy Head of State Department of Environmental Protection and Natural Resources – underlined positive environmental impacts of the projects. Due to projects implementation, transfer to modern approaches is expected. Energy-saving and costs reduction will cause improvement in environmental aspects.

5. **Kuzin A.**, Scientific Director of IWMC - thanked everybody for attention and invited to cooperate and discuss results in the future. He said that he was very pleased to see such interest from public. He said that further information would be given on the next stages of project preparation. He announced that the second public consultation for the projects for UkrPromVodCherMet would take place after completion of EA and corresponding information would be given in newspaper.

**Signatures:**
Chairman
Secretary
Coordinator on public relations
Zotov N., Director of Information Center of Donetsk Oblast Vodokanal

Shestakov Yu., Chief Engineer of Municipal Utility Donetsk Oblast Vodokanal
Nasonkina N., Head of Chair in Donbass National Academy of Construction Engineering

Discussion
Alipov A., First Deputy Director of State Water Utility UkrPromVodChem
Internet subscription
The Second Public Consultation have begun with new project presentation

Summary

The main topic is second public consultation in Donetsk on the EA of proposed investment projects. Proposed projects are described and benefits from their implementation are given. New project of State Water Utility UkrPromVodCherMet is described and great interest of public is underlined. General information on EA is presented.
The second public consultation - UkrPromVodCherMet

Announcement in the Newspaper

Source: the Oblast newspaper “Zhizn”, 24 November 2005, No. 170

29 November 2005, at 10.00
at the conference hall of State Water Utility “UkrPromVodCherMet”
Address:
85 Artem street, Donetsk

the public consultation for discussion on investment projects on the rehabilitation of water pumping capacity of the Siversky Donets-Donbass Canal will be conducted. Interested persons, NGOs and specialists are welcome.
Agenda
The Second Public Consultation Meeting
in the Framework of EA Process for Proposed Investment Projects
on the Urban Infrastructure Development
Investment project “Rehabilitation of pumping capacity
of Siversky Donets-Donbass Canal”

101.00
Opening
A. Kuzin - Scientific Director of IWM

10.10
Investment Project “Reconstruction of pumping stations on Siversky Donets-Donbass Canal”,
TOR
A. Orlov - General Director
T. Cherkasova - Economics Director

10.30
Principles and approaches to evaluation of technical state of equipment and hydro-technical units on Siversky Donets-Donbass Canal
V. Didenko Deputy Director, the Siversky Donets-Donbass Canal Operating Unit

10.45
About the effectiveness of introduction of new pumping equipment on pumping stations on Siversky Donets-Donbass Canal
V. Kharaptovich – Chief power engineer
M. Borysov – Director of Slavyansk District Utility

11.15
About the Environmental Assessment
I. Abuzyarov – Deputy Head of State Department of Environmental Protection

11.30
Impact of project implementation on water supply in Oblast
V. Ermakov – Deputy Head of Housing and Municipal Service Management Company

11.45
Principles of PR on UkrPromVodCherMet
N. Berezin – Head of Technical Department

12.00
Discussion

12.15
About EA results, potential positive and negative impacts
A. Kuzin - Scientific Director of IWM
Press Release

Today, on the 29-th of November, 2005 at 10.00 in the conference hall of State Water Utility UkrPromVodCherMet (address: Artema str., 85 Donetsk), the public consultation on WB investment project “Rehabilitation of pumping capacity of Siversky Donets-Donbass Canal” was held. The Utility was created in 1930 for elimination of water resources deficit in Donbass. The Utility provides water supply services for mining-and-smelting complex, industries, municipal sphere and population in Donetsk Oblast.

In the framework of proposed investment projects it is planned to purchase and install pumping equipment (total costs – about 26 mln.USD) for reconstruction of pumping station of Level 1, 2, 3 and 4 of Siversky Donets-Donbass canal. As structural units of UkrPromVodCherMet are not separate juridical persons (the heads are acting on basis of letters of attorney), information of needs and requirements in investment resources is compiled for the Utility in general.
Minutes
of the Second Public Consultation Meeting
in the framework of investment projects on urban infrastructure development
State Water Utility UkrPromVodCherMet

Donetsk
29 November 2005

Place - conference hall of UkrPromVodCherMet (address: Artema str., 85 Donetsk, tel./fax: 332-34-89, 304 21 62).

Organizers - Association Industrial Waste Management Centre, State Water Utility UkrPromVodCherMet.

Chairman - Orlov A., Director of State Water Utility UkrPromVodCherMet.

Secretary - Suprunenko E., Engineer, Technical Department of UkrPromVodCherMet;

Coordinator on public relations - Berezin N., Head of Technical Department.

59 persons were present. Registration sheets are available at the IWMC office.

1. Orlov A., Director of State Water Utility UkrPromVodCherMet – gave short characteristics of the Utility and its activity. Siversky Donets-Donbass Canal (exploitation was begun in 1958) canal is exploited by the Utility. One investment projects is implementing now. Clearance and repair of open canal bed was performed without shutdown of the canal. This activity has caused the reduction in water losses on 40000 m³/day. Taking into account the great energy intensity, replacement of pumping equipment will be the next important project. Due to project implementation the energy saving will be achieved (up to 75 mln kW/hour per year). Total costs are 26 mln USD, implementation period is 5 years, pay-back period is 10 years. Repayment of credit will be performed due to economy of costs. Environmental impacts are positive.

2. Cherkasova T., Economics Director – characterised financial aspects of the proposed investment project. The project is very topical due to great energy intensity and constant increase of energy prices (the price has been increased in 2 times from 1999 – from 12 up to 22 kopeiki for 1 kW/hour). Implementation of project will allow to obtain economy of 3 mln USD in a year. Thus, the repayment of credit will be performed due to resource saving. There is no necessity to increase tariffs. The credit will be taken in the amount of about 25 mln USD and about 1 mln USD will be co-financed by UkrPromVodCherMet. The repayment amount (taking into account bank rates) will be 39 mln USD. Taking into account the economy in the amount of about 54 mln USD, the project is very attractive and the Utility may have the possibility to perform repayment before due date.

3. Berezin N., Head of Technical Department – informed about technical policy aimed at energy saving. He explained some technical moments and features of pumping stations, gave base for the necessity to rehabilitate stations. He characterised proposed project and
its main stages: design works, preparation and disassembling works, installation and balancing and commissioning. The project will be implemented during 5 years (2006-2010). Tender on equipment purchase will be conducted. The key demands for the equipment are high efficiency (on 20% more than installed equipment, thus no less than 90%) and high performance reliability (up to 25 years without repair).

4. **Didenko V.**, Deputy Director of the Siversky Donets-Donbass Canal Operating Unit - explained key principles on evaluation of technical state of equipment and hydro-technical units on Siversky Donets-Donbass Canal. The key task for the Utility is to perform non-stop work of the canal. Quality management system was introduced on the Utility and is covered all processes of water supply. The proposed project was discussed on technical meeting and councils. The project implementation will allow to have high performance reliability and prevent great ecological problems and emergency situations in Donetsk Oblast.

5. **Kuzin A.**, Scientific Director of IWMC – informed about performed EA in the framework of UI Project. According to WB requirements the potential impact on the following environmental components were studied: geology, water resources, atmospheric air, microclimate, vegetation cover, flora and fauna, technogenic environment. Also social impacts were studied. Results of analysis have shown that negative impacts are not expected due to implementation of projects.

**Signatures:**
Chairman
Secretary
Coordinator on public relations
Orlov A., Director of State Water Utility UkrPromVodCh