

Document of
The World Bank
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Report No: ICR00005791

IMPLEMENTATION COMPLETION AND RESULTS REPORT

(IBRD-4888-RU)

ON A

LOAN

IN THE AMOUNT OF US\$200.000 MILLION

TO THE

RUSSIAN FEDERATION

FOR THE

HOUSING AND COMMUNAL SERVICES PROJECT

June 27, 2022

CURRENCY EQUIVALENTS

(Exchange Rate Effective {May 7, 2022})

Currency Unit = RUB

RUB 67.3843 = US\$1

US\$0.0143 = RUB 1

FISCAL YEAR

July 1 - June 30

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ABBREVIATIONS AND ACRONYMS

AMS	Automated Monitoring System
BOD	Biological oxygen demand
CAS	Country Assistance Program
CO₂	Carbon dioxide
COVID-19	Coronavirus disease
CPF	Country Partnership Framework
CPS	Country Partnership Strategy
EMP	Environmental Management Plan
ERR	Economic Rate of Return
ESMP	Environmental and Social Management Plan
FISP	The Saint Petersburg Foundation for Investment Projects
FM	Financial management
FRR	Financial Rate of Return
GDP	Gross Domestic Product
GHG	Greenhouse gas
HCS	Housing and Communal Services
HCSP	Housing and Communal Services Project
IBRD	The International Bank for Reconstruction and Development
ICR	Implementation Completion and Results Report
IRI	Intermediate Result Indicator
ISR	Implementation Status Reports
IWG	Inter-agency working group
KPI	Key performance indicator
LA	Loan Agreement
Medium-Term Program	Medium Term Program of Social and Economic Development for 2006-08
M&E	Monitoring and Evaluation
MoF	Ministry of Finance
MoCHCS	Ministry of Construction and Housing and Communal Services
MoRD	Ministry of Regional Development
NDB	New Development Bank
NPV	Net Present Value
OHS	Occupational Health and Safety
PAD	Project Appraisal Document
PDO	Project Development Objectives
PforR	Program-for-Results
PIU	Project Implementation Unit
RF	Results Framework
RFP	Resettlement Policy Framework
SCD	Systematic Country Diagnostic
SIL	Specific Investment Loan
SS	Suspended solids
TTL	Task Team Leader
US\$	United States Dollar
WB	World Bank
WWTP	Wastewater treatment plant

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DATA SHEET

BASIC INFORMATION

Product Information

Project ID	Project Name
P079032	Housing and Communal Services Project
Country	Financing Instrument
Russian Federation	Investment Project Financing
Original EA Category	Revised EA Category
Partial Assessment (B)	Partial Assessment (B)

Organizations

Borrower	Implementing Agency
The Russian Federation	Ministry of Constructoin and Housing and Communal Services of the Russian Federation

Project Development Objective (PDO)

Original PDO

The project development objective is to improve the quality and financial viability of HCS of Participating Municipalities.

PDO as stated in the legal agreement

The objective of the Project is to improve the quality and financial viability of the Housing and Communal Services of the Participating Cities.



FINANCING

	Original Amount (US\$)	Revised Amount (US\$)	Actual Disbursed (US\$)
World Bank Financing			
IBRD-48880	200,000,000	200,000,000	200,000,000
Total	200,000,000	200,000,000	200,000,000
Non-World Bank Financing			
Borrower/Recipient	6,000,000	132,178,653	132,025,722
Total	6,000,000	132,178,653	132,025,722
Total Project Cost	206,000,000	332,178,653	332,025,722

KEY DATES

Approval	Effectiveness	MTR Review	Original Closing	Actual Closing
26-Feb-2008	05-Feb-2010	13-Apr-2014	30-Nov-2012	31-Dec-2021

RESTRUCTURING AND/OR ADDITIONAL FINANCING

Date(s)	Amount Disbursed (US\$M)	Key Revisions
28-Jun-2013	45.66	Change in Loan Closing Date(s) Reallocation between Disbursement Categories
07-Dec-2015	138.83	Change in Results Framework Change in Components and Cost Change in Loan Closing Date(s) Reallocation between Disbursement Categories Change in Implementation Schedule Other Change(s)
13-Jul-2017	180.24	Change in Results Framework Change in Components and Cost Change in Loan Closing Date(s) Reallocation between Disbursement Categories
27-Jul-2020	198.46	Change in Loan Closing Date(s)
17-Jun-2021	199.86	Change in Loan Closing Date(s)
09-Dec-2021	199.86	Reallocation between Disbursement Categories

KEY RATINGS

Outcome	Bank Performance	M&E Quality
Satisfactory	Satisfactory	Substantial

**RATINGS OF PROJECT PERFORMANCE IN ISRs**

No.	Date ISR Archived	DO Rating	IP Rating	Actual Disbursements (US\$M)
01	30-May-2008	Satisfactory	Satisfactory	0
02	05-Apr-2009	Moderately Satisfactory	Moderately Satisfactory	0
03	07-Nov-2009	Moderately Satisfactory	Moderately Satisfactory	0
04	24-Sep-2010	Moderately Satisfactory	Moderately Satisfactory	3.00
05	08-May-2011	Moderately Satisfactory	Moderately Satisfactory	3.96
06	10-Jan-2012	Moderately Satisfactory	Moderately Satisfactory	10.58
07	10-Apr-2012	Moderately Unsatisfactory	Moderately Unsatisfactory	11.75
08	26-Dec-2012	Moderately Unsatisfactory	Moderately Unsatisfactory	29.68
09	25-Jun-2013	Moderately Unsatisfactory	Moderately Unsatisfactory	45.66
10	28-Dec-2013	Moderately Satisfactory	Moderately Satisfactory	71.63
11	22-Jul-2014	Moderately Satisfactory	Moderately Satisfactory	94.89
12	08-Nov-2014	Satisfactory	Satisfactory	109.36
13	28-May-2015	Satisfactory	Satisfactory	126.49
14	19-Nov-2015	Satisfactory	Satisfactory	138.83
15	01-Feb-2016	Satisfactory	Satisfactory	145.41
16	08-Aug-2016	Satisfactory	Satisfactory	159.33
17	15-Feb-2017	Satisfactory	Satisfactory	168.25
18	31-Aug-2017	Satisfactory	Satisfactory	181.09
19	22-Feb-2018	Satisfactory	Satisfactory	185.64
20	14-Aug-2018	Satisfactory	Satisfactory	189.05
21	12-Feb-2019	Satisfactory	Satisfactory	192.52
22	06-Aug-2019	Satisfactory	Satisfactory	193.88
23	02-Feb-2020	Satisfactory	Satisfactory	197.96
24	25-Jul-2020	Satisfactory	Satisfactory	198.46
25	15-Jan-2021	Satisfactory	Satisfactory	198.86



26	22-Jul-2021	Satisfactory	Satisfactory	199.86
27	21-Dec-2021	Satisfactory	Satisfactory	200.00

SECTORS AND THEMES

Sectors

Major Sector/Sector (%)

Public Administration 13

Central Government (Central Agencies) 1

Sub-National Government 12

Energy and Extractives 52

Other Energy and Extractives 52

Water, Sanitation and Waste Management 30

Other Water Supply, Sanitation and Waste Management 30

Industry, Trade and Services 5

Housing Construction 5

Themes

Major Theme/ Theme (Level 2)/ Theme (Level 3) (%)

Finance 4

Finance for Development 4

Housing Finance 4

Urban and Rural Development 96

Urban Development 96

Urban Infrastructure and Service Delivery 92

Urban Planning 4



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I. PROJECT CONTEXT AND DEVELOPMENT OBJECTIVES

A. CONTEXT AT APPRAISAL

Context

1. **The Housing and Communal Services Project (HCSP, the Project) was prepared at a time when the Russian Federation had initiated a housing and communal services sector reform as one of the country's top development priority areas declared under 2006-2008 Medium-Term Government Program.** Being managed by local governments and driven by inherited Soviet practices, the Housing and Communal Services (HCS) sector was at the time one of the most inefficient sectors of the country's economy and one of the last sectors requiring market economy reforms. Numerous attempts to reform the HCS sector had been undertaken without success in the late 80s-90s, mainly due to a tough economic and political environment, as well as several economic shocks, including the August 1998 financial crisis when the country defaulted on external debt. The 2006-2008 medium-term government program set the following priorities on HCS reform: (i) facilitating private sector participation in housing and communal services; (ii) developing targeted social assistance; and (iii) improving and measuring the quality of provided services.

2. **The HCS sector was experiencing declining quality and non-reliable supply, harmful emissions and pollution of environment coupled with dilapidated infrastructure requiring immediate steps, as the HCS were deemed as critical to the quality of life of the Russian citizens and the country's economy.** By 2008, the HCS sector comprised about six percent of GDP, while consuming 20 percent of the country's energy resources and accounting for 24 percent of the total fixed assets of Russia¹. It should be noted that in Russia, the continuous and quality provision of HCS services is not only important from a comfort perspective, but often is essential for survival due to the particularly harsh climate. At the time of the Project preparation, much of the Russian population was dissatisfied with the quality of the HCS. According to the 2005 All-Russian survey, 56 percent of respondents reported no change and 24 percent reported a decline in services over the past years. Many responders associated the HCS reforms with tariff increases rather than with service improvements.

3. **The HCSP was designed to combine institutional and policy reforms to improve delivery of HCS and investments in physical infrastructure. Underlying causes of poor HCS were both lack of investments and weak institutions.** Implementation of the Federal Government's HCS reform agenda at sub-national levels required measures in three interconnected key policy areas: improving the financial viability and accountability of communal services providers, strengthening the social protection of consumers to ensure affordability of services to all, and enabling the market competition in housing management and maintenance to improve services and reduce prices. The funding gap on federal, regional, and municipal levels was also substantial. The investments needed for comprehensive rehabilitation and modernization of the HCS infrastructure were also huge and assessed at US\$94 billion at the time of the Project preparation at the country scale. Private financing practically did not participate at scale due to high investment risk, low profit, absence of legal and regulatory framework, and widespread political interference into the HCS operations. The sector problems were compounded with a lack of incentives for management and efficient use of services by consumers who historically considered HCS as public good solely under state responsibility.

4. **The Government of Russia requested the World Bank's (WB) assistance for this project, as the WB was seen as a source of global knowledge, best practice and of its comparative advantage to provide integrated support on the macro-economic, financial, technical, social and environmental dimensions, as well the ability to engage at both national and local levels.** Furthermore, the Bank had accumulated vast knowledge of the Russian HCS sector over the past decades due to implementing a number of investment and policy development projects related to municipal water

5. **The HCSP was in line with three strategic pillars of the WB-Russia Country Partnership Strategy (CPS) for the period FY2007-2009:** (i) improving the business environment as enterprises begin to operate in a sector driven by market-based relations and enhanced competition; (ii) strengthening the public sector by improving local governments' management of sector assets; and (iii) mitigating social risk through improved social protection mechanisms. The Project was

¹ HCSP Project Appraisal Document, Report No. 37774-RU, page 3.



consistent with the main goals of the CPS, such as sustaining rapid growth, strengthening public sector management and performance, and improving the delivery of social and communal services, the latter two goals were met through the investments and reforms undertaken in the selected cities under the Project. The HCSP addressed the infrastructure sector support focusing on improving the quality of utility services and housing as stated in the CPS, as well as the Bank's increasing effort to promote development in the regions.

6. The Project was also in line with the Russian Federal Government's reform effort as per the Federal Targeted Program Housing (Zhilishche²) for 2002-2010 and its sub-program "Reforming and Upgrading of the HCS Sector of the Russian Federation". Furthermore, the HCSP was in line with the national program on "Accessible and Comfortable Housing for the Russian Federation Population" that was declared by the Russian President and Government in 2005 as one of four national priority projects and aimed to improve the living conditions and quality of communal services for the population.

7. The proposed HCS loan in the amount of US\$200 million was designed as a specific investment loan (SIL), combining investment and TA financing. The project applied an innovative demand-based approach whereby selected cities had to implement a reform program before gaining access to investment financing.

Theory of Change (Results Chain)

8. The Project was designed to improve the quality and financial viability of housing and communal services in competitively selected participating cities by supporting implementation of HCS reforms at the municipal level and provision of physical investments to communal infrastructure. The Project included reform and investment phases, whereby ten main participating cities received access to the communal infrastructure financing in support of their investment plans in HCS sector upon implementation of the agreed set of reforms (by at least 80 percent), which were focused on three key areas, including improvements in financial viability of communal services providers, strengthening the social protection of HCS consumers, and creation of market competition in housing management and maintenance. During the investment phase, participating cities continued to get capacity building and TA support to further strengthen their HCS reform agenda, going beyond the initially agreed set of reforms. By supporting combination of the reform agenda and infrastructure improvements, the Project-financed activities and respective outputs on many occasions contributed to both improved quality of HCS and better financial viability of HCS services providers. More details are provided on the reform and cities selection methodology in Annexes 7 and 8. The Project also provided targeted support to the federal level authorities to further develop the legal and regulatory framework at the national level, strengthen HCS sector monitoring systems, and disseminate project results and good practice across the country.

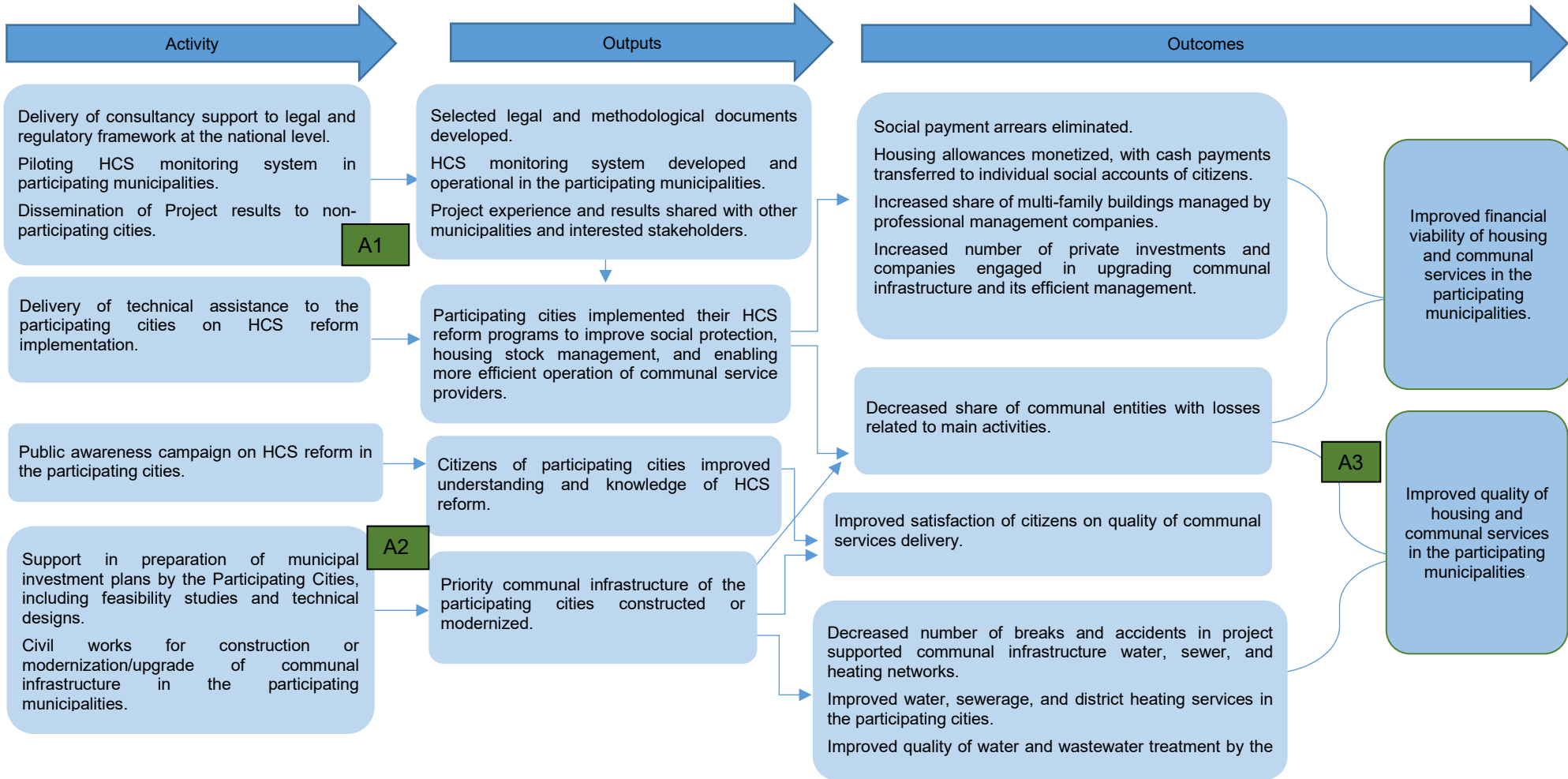
9. Problem challenge: The HCS sector experienced scarce and delayed investments into communal infrastructure, coupled with dilapidated systems, services, and residents' lack of comprehension of the underlying legislative and institutional issues, as well as the need and substance of the reform efforts undertaken by the government that are critical to ensure continuous and reliable supply of HCS services. All these challenges detracted from the efficient operation of housing and communal service provision, and it was difficult to minimize losses and decrease the emissions and overall pollution.

10. Key assumptions considered (A1): selected municipalities capable of implementing the reforms on time (18 months) to get access to investments for physical communal infrastructure improvement; **(A2)** qualified firms available in the market to implement civil works and appropriate capacity of implementing agency to ensure high quality implementation and supervision of those works in various cities; and **(A3)** enabling regulatory framework and capabilities of the state and private companies to maintain and operate the modernized/constructed utility facilities.

² <https://base.garant.ru/2306876/>.



Figure 1: Theory of Change diagram





Project Development Objectives (PDOs)

11.The PDO stated in the Loan Agreement (LA) is to improve the quality and financial viability of Housing and Communal Services of the participating cities.

Key Expected Outcomes and Outcome Indicators

12.The above PDO statement can be unpacked as follows:

- I. improve the quality of HCS of the participating cities, and
- II. improve financial viability of the HCS of the participating cities.

13.To achieve the PDO objectives the following indicators were outlined.

Table 1: PDO indicators as appraised

Expected outcome	Indicator
Improve the quality of HCS of participating municipalities.	Quality of delivery of communal services, including district heating, cold water supply, hot water supply and waste water disposal (number of annual breaks per km)
	Share of multi-family buildings managed by professional management companies (percentage)
	Quality of delivery of communal services for the population improved (percent of population rating services as satisfactory or better)
	People in urban areas provided with access to improved water sources under the project (number)
	Direct project beneficiaries (number)
	Female beneficiaries (number)
Improve financial viability of HCS of participating municipalities:	Social payment arrears eliminated (percent)
	Municipalities that have completed monetization of housing allowances and where cash payments are transferred to individual social accounts of citizens (percent)
	Private companies managing communal sector facilities on the basis of concession agreements and other agreements in the total number of communal entities (percent)
	Private investments in the total amount of investments to upgrade the communal infrastructure (percent)
	Financial viability of communal entities, including district heating, water supply, hot water supply and waste water disposal, improved (measured as percentage of entities that incur operational losses)

Components

14. **Component A** supported the HCS reform implementation at the federal level (estimated: US\$2.3 million; actual: US\$5.1 million) to fill the gaps in (i) the legal and regulatory framework, (ii) establishing HCS monitoring systems on a pilot basis, and (iii) to disseminate the project results and good practice across the country.

15. **Component B** supported the participating cities (ten main and four reserve) with HCS reform implementation (estimated: US\$6.6 million; actual: US\$4.5 million) through technical assistance. It also built capacity of these and other regional and municipal administrations, communal services providers, and consumers to improve HCS service provision, focusing on three reform areas: (i) improving financial viability of communal services providers, (ii) strengthening social protection of HCS consumers, and (iii) creating market competition in housing management and maintenance. This component consisted of four subcomponents: (i) TA assistance to the participating cities on utility reform, social protection and housing, and how-to-guidance on selected reform topics; (ii) evaluation of implementation of municipal reform programs; (iii) knowledge exchange between the participating cities; and (iv) public awareness campaign on HCS reforms in the participating cities.

16. **Component C** supported the preparation and implementation of HCS investment plans in ten main participating cities (estimated: US\$185.8 million; actual: US\$179.1 million). Given the performance-based selection of municipalities, specific investment subprojects were determined during the project implementation with average investment per capita being US\$50, based on the 10 cities with 90,000 - 600,000 population participating in the investment phase, with an aim



to use most of the investment funds for rehabilitating and modernizing existing infrastructure. This component consisted of three subcomponents: (i) preparation of municipal investment plans, feasibility studies and technical designs, (ii) implementation of municipal investment plans, and (iii) supervision of implementation of municipal investment plans.

17. **Component D** supported the Project management and monitoring (estimated: US\$5.1 million; actual: US\$10.6 million), including the technical assistance to implementing agencies, monitoring and evaluation, and financing of operating costs.

B. SIGNIFICANT CHANGES DURING IMPLEMENTATION (IF APPLICABLE)

Revised PDOs and Outcome Targets

18. **The Project underwent six restructurings during its lifetime**, including an increase of the share of the Borrower's co-financing, extension of the loan closing date, reallocation of funds between the project expenditure categories, and incorporation of additional intermediate results indicators. However, none of them triggered PDO and PDO indicators revision, nor a change in the composition of the Project components. The most significant changes during Project's implementation are presented below³.

19. **Increase of the Borrower's co-financing.** The share of the Borrower's co-financing increased from just US\$6 million to US\$91.7 million as part of the project restructuring processed in July 2017 to enable implementation of two more investment contracts in two Project participating cities – Ivanovo and Naberezhnye Chelny, which would reinforce the impact of the HSCP results by contributing to the improvement of the environmental situation in these cities. The Project's environmental B category remained unchanged, and the proposed new subprojects did not trigger new safeguards policies.

20. **Extensions of the loan closing date.** The loan closing date was extended five times. In June 2013 the original HCSP closing date of June 1, 2014, as specified in the Loan Agreement (LA), was extended to May 15, 2016, to allow for processing all planned Project activities and signing all pending contracts. A second extension moved the closing date to May 15, 2018, to enable the completion of all ongoing investment contracts and full achievement of the PDO. This second extension was to a large extent needed to overcome delays in contract execution caused by the series of government reorganizations in 2013 and 2014 during which time there was no authorized government representative to approve and sign contracts under completed tenders or process payments for works under ongoing contracts. A third extension was processed in July 2017 and set the loan closing date to December 31, 2020, to enable the above-mentioned implementation of two additional investment sub-projects in two Project participating cities (Ivanovo and Naberezhnye Chelny). The fourth and the final fifth extensions moved the closing date to September 30, 2021, and then to December 31, 2021, to enable the completion of the ongoing activities which were delayed due to COVID-19 impact.

21. **Reallocation of funds between the Project expenditure categories.** The HSCP restructuring of June 2013, which was associated with the first extension of the closing date, also entailed reallocation of US\$1.7 million from Category (1) "Goods, Works, Consultants' Services and Training for the Project except for Component C (b) of the Project" to Category (3) "Operating costs" to allow for adequate Project management during the additional implementation period. Furthermore, the second restructuring, which extended the loan closing date until May 15, 2018, supported reallocation of US\$700,000 from Category (1) to Category (3), whereas the third restructuring, which increased the share of the Borrower's co-financing and extended the closing date to December 31, 2020, also covered reallocation of US\$3,609,000 from Category (2) "Goods, Works and Consultants' Services for Component C (b) of the Project" to Category (3) and reallocation of US\$1,950,000 from Category (2) to Category (1). Both reallocations aimed to guarantee adequate funding during the extended Project implementation period to secure proper functioning of the Project Implementation Unit (PIU). Finally, the sixth restructuring of June 2021 allowed for reallocation of funds from Categories (1) and (3) to Category (2) and revision of the percentage of expenditures financed from the loan to bring to the unified 24 percent (paid by the loan for any payments processed starting from November 1, 2021, until the loan closure on December 31, 2021). These revisions enabled the Borrower to both disburse 100 percent of the loan funds and ensure the full utilization

³ The chronology and details on all changes are presented in Annex 5, p. 3-4.



of the Borrower's co-financing envisaged for the HCS project in the 2021 calendar year without exceeding the available limits of the allocated Borrower's co-financing in the federal budget.

Revised PDO Indicators

22. **The PDO formulation, PDO indicators and their targets remained unchanged during project implementation.** At the same time, the Results Framework (RF) was enhanced with three additional Intermediate Results Indicators (IRI) added during project restructuring in 2017 to track and monitor the results of two additional investments in two cities and their environmental impact. Moreover, the target value on the number of beneficiaries indicator was increased, to capture additional beneficiaries as a result of implementation of these two investments.

Revised Components

23. **The Project components and their composition remained unchanged during implementation.** At the same time, the increased share of the Borrower's co-financing processed in 2017 resulted in an increased scope of investments supported by the project under Component C.

Other Changes

24. **Modification of the LA between the Board approval and LA signing.** The HCSP loan was approved by the Board in February 2008, while the LA was signed only in September 2009. The delay in signing was mainly due to government reorganization that was launched in autumn 2008 and included liquidation of the Federal Agency for Construction, Housing and Communal Services (Rosstroii), which was initially assigned to implement the HCSP, and the delegation of its functions and authority to the newly formed Ministry of Regional Development of the Russian Federation. Consequently, in response to the Borrower's request and prior to the LA signature, the draft LA was modified to change the original loan closing date from November 30, 2012 (as stipulated in the negotiated draft LA that was approved by the Board) to June 1, 2014, to overcome this delay and enable sufficient time for Project implementation. Since this modification was processed before the LA was signed, it was formalized through exchange of official letters between the Borrower and the Bank and subsequent revision of the closing date in the signing package, without entailing a formal project restructuring.

25. The amendments to the HSCP LA processed as part of the project restructuring in November 2015, also included: (i) the Ministry of Construction and Housing and Communal Services (MoCHCS) was added to the list of definitions in the Appendix since this Ministry took over responsibility for project implementation and oversight from the Ministry of Regional Development (MORD); and (ii) a reference to the project on the development of built-up areas of small and medium-sized Russian towns included in the description of Component D (Project Management and Monitoring). This reference was included in response to the Borrower's request to use a portion of the HCS loan proceeds under Component D to support the MoCHCS to prepare a concept of the new project that would target development of built-up areas in small and medium-sized Russian towns with an emphasis on comprehensive urban development and socioeconomic impact and in line with international best practices and standards acceptable to the International Financial Institutions (IFIs).

Rationale for Changes and Their Implication on the Original Theory of Change

26. **The changes did not impact the idea and nature of the Theory of Change.** All changes, except the above-referenced modification of the original loan closing date, were processed and approved through amendments to the LA and as part of the formal Project restructurings. The PDOs and PDO indicators remained unchanged, while the RF was enhanced with the additional IRIs incorporated in 2017.



27. **The Theory of Change remained valid and relevant during the project implementation**, while additional focus was paid to the maximizing of the Project environmental impact, including decreased air pollution through greenhouse gases (GHGs) reductions and elimination of harmful substances.

II. OUTCOME

A. RELEVANCE OF PDOs

Assessment of Relevance of PDOs and Rating

28. Relevance Rating: High

29. **The PDOs continue to be highly relevant. The Project objectives align to the latest WB Country Partnership Strategy (CPS) for Russia (2012-2016)⁴** which has a focus on the priority economic sectors, and HCS is still one of them. In particular, the HCSP supports the CPS Strategic Theme 1: Increasing Growth and Diversification, by contributing to national goals by providing “Increased access to quality infrastructure assets and improved infrastructure services including through increased participation of the private sector in financing and management of infrastructure” (*CPS Outcome 6*). The challenge under this strategic theme was assessed to be the declining quality of infrastructure assets and services, and significant investment gaps, which the HCSP also identified and was addressing. The Project, furthermore, contributes to CPS Strategic Theme 2: Expanding Human Potential, and the national goal of improving the efficiency of social spending budgets and targeting the CPS’s Socially Inclusive Development Outcome with increased social inclusion of vulnerable groups (*CPS Outcome 11*), as, among three identified reform areas, HCSP supported measures aimed at strengthening social protection of HCS consumers in the participating municipalities.

30. **The Project is also fully relevant to the Russian Presidential Order “On National Goals and Strategic Objectives in the Development of the Russian Federation up to 2024”⁵** that sets the priority of improving housing and urban environment, and further enhanced in the **Executive Order on Russia’s national development goals through 2030⁶**, that reinforces the goal of comfortable and decent living conditions and infrastructure for Russia’s population. The Project’s PDOs relevance is further evidenced by the MoCHCS’s Target Program on “Support for the modernization of utility and engineering infrastructure subjects of the Russian Federation (municipalities)”⁷. The mentioned Program has specific measurable indicators by annum for the period of 2019-2025 that target improvement of HCS quality for the Russian citizens via infrastructure upgrade, modernization and reduction of housing stock vulnerabilities, fostering development of market competition for provision of services and management of the HCS sector, ensuring sustainable development of the utilities sector with increasing efficiency, introducing innovations, forming an investment source and reducing the level of depreciation of fixed assets.

B. ACHIEVEMENT OF PDOs (EFFICACY)

31. **The overall efficacy of the Project is rated as Substantial.**

32. The PDO can be unpacked as the following:

- to improve the quality of the housing and communal services of the participating cities, and
- to improve financial viability of the housing and communal services of the participating cities.

33. **To achieve this**, the fourteen competitively selected medium-sized project participating cities (see Annex 8 & 9 for details), including ten main and four reserve cities, implemented the agreed set of HCS reforms during the first phase of the HCSP and continued to advance their reform agenda with support of the Project-financed TA during the HCSP investment phase, while ten main project cities also benefited from the HCSP investments in their communal

⁴The 2012-2016 Country Partnership Strategy for the Russian Federation are the latest available.

⁵Approved in 2018.

⁶<http://en.kremlin.ru/events/president/news/63728>, approved in July 2020.

⁷<https://minstroyrf.gov.ru/docs/18858/>



infrastructure and got new or rehabilitated district heating, water distribution systems, water and wastewater treatment plants that allowed them to provide better housing and communal services to the citizens and, through combination of reforms and investments, contribute to improved quality of HCS and improved financial viability of HCS sector. Majority of investments in the municipal subprojects were of emergency nature and, in fact, substituted the postponed investments of two decades after 1990s. The HCSP investment program consisted of 31 sub-projects which were implemented in ten main participating cities with the budget of US\$308 million. Sub-projects were classified into the following major categories by investment amounts: (i) wastewater management and treatment (60 percent); (ii) improvements and quality of water services and operation of water networks (33 percent); and (iii) energy efficiency of district heating and proper water accounting (seven percent).

Assessment of Achievement of Each Objective/Outcome

Objective 1: To improve the quality of the housing and communal services of the participating cities

Efficacy Rating: Substantial

Table 2: Objective 1 Indicators

Outcome	Indicators	Baseline (2008)	Target	Actual (2021)
Improve the quality of HCS of participating municipalities.	Quality of delivery of communal services, including district heating, cold water supply, hot water supply and waste water disposal (number of annual breaks in water supply, wastewater per km).	Water 30.4 Wastewater 19.2 Heating systems 10.5	Water 6.10 Wastewater 3.8 Heating systems 2.1	Water 3.2 Wastewater 0.9 Heating systems 0
	Share of multi-family buildings managed by professional management companies (percentage).	15%	90%	90%
	Quality of delivery of communal services for the population improved (percent of population rating services as satisfactory or better).	10%	80%	80%
	Percentage of participating cities connected to the integrated HCS information system financed under the Project.	No portal	30%	100%
	People in urban areas provided with access to water and wastewater connections under the project and having those services 24/7 (number).*	0	563,500	889,000
	Piped household water connections that are benefitting from rehabilitation works undertaken by the Project.	0	161,000	257,000
	Percentage of worn-out assets in the communal infrastructure.	66%	45%	44%
	Volume (mass) of BOD pollution load removed by treatment plant under the project, Ivanovo and Naberezhnye Chelny (tones/yr). (Baseline 2012)	0	44.30	284.6
	Quality of treated wastewater at the district treatment facilities in Naberezhnye Chelny and Ivanovo cities improved. (Baseline 2017)	Ivanovo: 5-day BOD = 9.0; TSS =19.0; NH ₄ =2.05; NO ₃ =64; NO ₂ =0.89; P(PO ₄)=5.6; Zn=0.071; Cu=0.01513; Naberezhnye Chelny: suspended solids 25.0 mg/dm ³	Ivanovo: 5-day BOD = 2.2; TSS =4.5; NH ₄ =0.5; NO ₃ =40; NO ₂ =0.08; P(PO ₄)=0.2; Zn=0.027; Cu=0.005; Naberezhnye Chelny: suspended solids 11.2 mg/dm ³	Ivanovo: 5-day BOD = 2.0; TSS =4.3; NH ₄ =0.48; NO ₃ =38.8; NO ₂ =0.080; P(PO ₄)=0.195; Zn=0.0250; Cu=0.0034; Naberezhnye Chelny: suspended solids 11.3 mg/dm ³



	Biological treatment system failure rate measured as number of failures per year at Ivanovo WWTP. (Baseline 2017)	3.70	0.20	0.20
	Accidents rate at Naberezhnye Chelny main sewer measured by number of sewer pipe bursts per km per year reduced. (Baseline 2017)	0.06	0	0

*See para 27 below

34. Over 3,171,000 people (50 percent female) have benefited directly from the Project activities and got access to the improved housing and communal services. Percentage of the population of the Project participating cities which rated the quality of the HCS services as satisfactory or better reached the set target of 80 percent at the project closure (vs 10 percent baseline in 2008⁸). The awareness program executed under the Project contributed to improved level of residents’ awareness about the HCS reform which is correlated with the improved satisfaction, that was achieved through operational and advisory support on HCS reform through seminars, roundtables and consultations organized by the Project for population of the participating cities and municipal administrations and utilities, as well as through development of HCS user’s internet platform⁹. There were 11,200 direct interviews conducted within the districts of the cities, where the actual Project investments were carried out.

35. As a result of the HCS reforms implemented by the Project cities, percentage of multi-family buildings managed by professional management companies¹⁰ increased from 15 percent (baseline at the HCSP start) to 90 percent at the closure. The housing privatization process and establishment of the housing market in Russia completed in late 1990s that was a prerequisite for housing services reforms. This started with establishment of associations of housing owners and then opening market of housing management and repair servicing, and liberalization of ownership of common spaces in the multi-apartment buildings. Private managers replaced inefficient municipal companies elsewhere in the country. The share of private organizations in the sector of management and maintenance of apartment buildings in the HCSP cities reached 98 percent (average in Russia is 87 percent)¹¹. Consequently, this transformation brought competition in the sector that earlier was virtually non-existent as all was managed by municipal public services. This transformation further enhanced transparency, and accountability of the management companies to the residents and stimulated the management companies to provide better services. In turn, that translated into increased share of citizens in the Project participating cities who expressed their satisfaction with the quality of services provided by the housing management companies – in the cities this share grew by 1.3 times by the Project closure and reached 80 percent (average in Russia is 49 percent)¹².

36. The HCSP contributed to improved water and wastewater services and energy efficiency management and development, as presented below. Specifically, the HCSP-financed activities contributed to improving information management, participatory planning and decision making, and private sector participation in HCS sector, which are key elements for the sector’s sustainable and efficient functioning.

37. 889,000 residents of the HCSP cities¹³ directly benefited from the provided access to improved water and sewerage services under the Project. It covers 257,000 residents¹⁴ who were connected to centralized water distribution networks, of which about 53,000 switched from standpipes to in-house connections, while all earlier connected households or additional 381,000 residents are getting uninterrupted 24/7 water supply in all project cities now. Centralized wastewater collection and treatment services were extended to nearly 251,000 residents¹⁵, and numerous commercial and industrial companies. Accordingly, the HCSP investments resulted in total length of water mains extended by 1,171km (or 20 percent), and wastewater mains by 537km (or 13 percent). **The percentage of depreciated assets in the communal infrastructure of the project cities was reduced from 66 percent to 44 percent**

⁸ Data of statistical reporting form No. 22-ZhKKH (reform) in participating cities, calculations of the M&E consultant.

⁹ <https://www.jkhros.ru>

¹⁰ By the Russian legislation, professional management companies include private management companies, House Owner Associations, cooperatives

¹¹ Data of statistical reporting form No. 22-ZhKKH (reform) in Participating cities, calculations of the M&E Consultant

¹² Data of the All-Russian Public Opinion Research Center (VCIOM)

¹³ Ten main project participating cities which benefited from investments to the communal infrastructure

¹⁴ *ibid*

¹⁵ *ibid*



by the HCSP closure. The latter significantly reduced the rate of accidents and number of breaks in the water supply, wastewater and heating systems which benefited from the Project investments (see next paragraph for more details), thus resulting in improved and uninterrupted delivery of water and heating, uninterrupted wastewater services and also translated into reduction of operation and maintenance cost, contributing to achievement of second HCSP objective “to improve financial viability of HCS services of participating cities”.

38. The improved quality of HCS resulted in fewer complaints, with a proportional reduction in both water and wastewater system interruptions, as citizens started to get uninterrupted 24/7 water and wastewater supply. Reported breaks in water systems declined due to HCSP investments by ten-fold from 30.4 breaks per km of the network a year at the start of the Project to 3.2 in 2021. Wastewater clogs dropped even further from 19.20 per km of the wastewater mains a year to 0.90.

39. One hundred percent of collected wastewater in the HCSP cities which benefited from the Project-financed investments into sewerage collection and treatment is now treated by biological process. Additionally, the HCSP-financed subprojects on modernization of the Ivanovo wastewater treatment plant (WWTP) funded treating wastewater from sub-urban areas as well in the amount of 10 million m³/year since 2020. This modernization also enabled the WWTP to start employing tertiary treatment with removal of nutrients (N and P) since 2021. Furthermore, the Ivanovo WWTP implemented a wastewater sludge digestion process recovering and utilizing biogas for its processes and district heating of the nearby small town Bogdanikha, thus reducing GHG emissions by 30,000 tons of carbon equivalent a year (tCO₂e/yr). The HSCP-financed subproject in Naberezhnye Chelny improved wastewater quality effluent with a reduction of suspended solids from 25 to 11.3 mg/l, fully corresponding to the national standard. These combined actions resulted in a reduction by 284.60 tons of BOD₅ per year in total in the HSCP cities in 2021 compared to the 2009 level. In Bratsk, HCSP-financed reconstruction and upgrade of 232 individual district heating points within multi-story buildings led to a significant reduction of losses and improved operations of hot water and district heating systems, reduction of fees to residential customers and reduced cost of operation and maintenance of district heating and hot water supply. The respective Bratsk 1 and Bratsk 3 subprojects (see Annex 6 for more details on HCSP subprojects by subsectors) supported automation of water and district heating operations in Bratsk housing stock, and reconstruction and automation of individual district heating points to increase efficiency of operations and their environmental protection, including water resources. It also covered design and installation of water and district heating meters, automation of all district heating operations, looped hot water distribution system, and replacement of distribution pipes for potable and hot water supply. Bratsk 1 and Bratsk 3 activities covered investments in 221 apartment buildings (of nearly 600 total) managed by local private operator JSC Zhilishchnye Systemy (JSC Housing Systems). There is also a significant environmental benefit in Bratsk due to reduced demand for fuels that resulted in GHG emission reduction by 10,000 tCO₂e/yr and associated penalties.

40. TA and knowledge products developed under the Project enhanced the operational and maintenance skills of HCS sector players – such as municipal and utility authorities, housing management companies - in proper management of communal utilities and housing stock, as well as developed their knowledge of financial viability approaches and engaging with the private sector partners. The applicability and use of those materials spilled over to the Federal level in the form of manuals, best practices with examples developed based on the Project cities’ experiences on reforms and investment measures aimed at improving the HCS efficiency, financial sustainability and quality, approaches to reduce environmental pollution and improve the quality of drinking water, efficient use of consumed resources generation of savings to the households income, information about the residents’ rights and responsibilities in the HCS sector aiming to improve the system of accounting, transparency and control of HCS sector. All ten main participating cities became connected to the Integrated HCS Information system developed under the HCSP TA component. The various advisory and knowledge products, as well as normative acts developed under HCSP include:

- 64 municipal legal acts, of which 54 were further approved either at the regional or Federal levels;
- 38 methodological recommendations on the composition, procedure for the development and approval of programs for the integrated development of communal infrastructure systems of municipalities;



- 45 information documents and analytical materials for HCS sector municipal-level reforms, including methodological guidelines for calculating the maximum indices of changes in the amount of citizens' payments for utilities;
- automated monitoring system (ASM) of housing and communal services infrastructure work for the participating cities, including a subsystem for analytical assessments;
- nearly 400 oral and written consultations to representatives of more than 200 organizations;
- 83 training events for representatives of city administrations, housing and communal enterprises, home-owners;
- Development and distribution of the Best Practices Handbook which includes numerous examples of best practices of investment projects in the utilities sector and HCS sector institutional transformations in the Project cities and beyond;
- Development of an Internet portal "Reform of Housing and Communal Services in Russia" (<https://jkhrus.ru/>); the portal posted information on transformations in the housing and utilities sector and on the implementation of investment subprojects in the participating cities, to allow for replication in other cities and regions across Russia.

Objective 2: To improved financial viability of HCS in the participating cities.

Efficacy Rating: Substantial

Table 3: Objective 2 Indicators

Outcome	Indicator	Baseline (2008)	Target	Actual (2021)
Improve financial viability of HCS of participating municipalities	Social payment arrears eliminated (percent)	20%	0%	0%
	Municipalities that have completed monetization of housing allowances and where cash payments are transferred to individual social accounts of citizens (percent)	0	14	14
	Private companies managing communal sector facilities on the basis of concession agreements and other agreements in the total number of communal entities (percent)	18%	65%	81%
	Private investments in the total amount of investments to upgrade the communal infrastructure (percent)	26.0%	70%	97.4%
	Financial viability of communal entities, including district heating, water supply, hot water supply and wastewater disposal, improved (measured as percentage of entities that incur operational losses)	60%	10%	27%
	Amount of payable arrears of HCS entities, RUB, billion	297.7 billion	25 billion	2.4 billion
	Percentage of worn-out assets in the communal infrastructure	66%	45%	44%

41. **HCSP contributed to improved financial viability of HCS provision.** The major focus was on cost reduction, more efficient energy consumption, reduced dependency on external funding and improved willingness to pay for increased quality of services. As mentioned above, a major part of all HCSP investments that were financed by the Project to support participating cities' investment plans were of an emergency nature, and their implementation was a tool to prevent collapse of water, wastewater, and heating operations. The HCSP also brought understanding of the importance of HCS sustainability to municipal officials of the participating cities, thus the tariff and investment decisions were taken with consideration of services sustainability.

42. The HCSP improvement reduced coping cost of the residents in switching from bottled water to cheaper and clean potable 24/7 water supply, increased living conditions and associated health benefits due to in-house water and wastewater connections and plumbing. Wastewater treatment improved ambient water quality below Ivanovo, Naberezhnye Chelny and Saransk where wastewater treatment improvements took place. Residents in Bratsk got improved district heating systems that both improved quality of services and at the same time reduced payments. Similar effects were in every participating municipality.

43. As discussed above, the **percentage of dilapidated assets in the communal infrastructure of the participating cities was reduced from 66 percent to 44 percent at the time of HCSP project closure**, reducing operation and maintenance cost. Furthermore, all participating cities fully eliminated their social payment arrears bringing them from 20 percent at the Project start to a sustained zero percent at the Project closure. One hundred percent of project cities completed



monetization of housing allowances where cash payments are transferred to individual social accounts of citizens. Consequently, the **amount of payable arrears of HCS entities in the Project cities dropped from RUB 297.7 billion at the Project start to RUB 2.4 billion at the Project closure**. In addition, the **percentage of private investments in the total amount of investments dedicated to upgrading the communal infrastructure increased by almost four fold to 97.4 percent** compared to a baseline of 26 percent.

44. Table 4 below presents the key parameters of the water and sanitation utilities that represent the prevailing type of recipients of the HCSP investments in ten main participating cities which benefited from both implementation of reforms and investments to the communal infrastructure. **These data confirm increased coverage with water and sewerage services, reduced consumption of water services due to operations close to universal metering** (from 220 liters per capita a day (lpcd) in 2009 to 130 lpcd in 2020) and associated demand management, improved billing and financial management, such as 100 percent collection rate.

Table 4. KPI of HCSP Water and Wastewater Utilities

Parameter	Bratsk	Tula	Volzhsky	Ivanovo	Naberezhnye Chelny	Cheboksary	Saransk	Novokuibyshevsk	Orenburg	Nefteyugansk
Water coverage, 2009, %	94	91	100	85	100	100	100	95	98	79
Water coverage, 2019, %	100	98	100	82	100	100	100	91	94	80
Water coverage 2020, %	100	100	100	86	100	97	100	100	97	80
Sewerage coverage, 2009, %	86	84	97	72	100	90	97	91	83	76
Sewerage coverage, 2019, %	100	82	99	77	100	100	96	87	82	78
Sewerage coverage, 2020, %	100	83	99	83	100	96	100	93	86	78
Residential water consumption, 2009, lpcd	203	237	156	172	147	156	257	222	159	135
Residential water consumption, 2019, lpcd	134	158	118	146	127	111	103	120	122	104
Residential water consumption, 2020, lpcd	137	159	116	140	135	118	105	109	130	104
Water billed, metered, 2009, %	71	56	0.49	55	99	62	20	33	53	58
Water billed, metered, 2019, %	76	67	95	89	100	96	95	83	100	80
Water billed, metered, 2020, %	72	73	97	89	99	91	90	81	90	80
Cost-recovery, 2009, ratio	1.03	1	1.01	1.11	0.99	1.05	1.02	1.1	1.08	1.04
Cost-recovery, 2019, ratio	0.68	1.11	1.01	0.99	1.02	1.02	0.87	1	1.25	1.01
Cost-recovery, 2020, ratio	0.85	1	1.01	0.99	1.09	1.02	0.84	0.97	1.01	1.01
Collection rate, 2009, %	100	100	100	98	100	100	95	93	88	100
Collection rate, 2019, %	98	100	100	100	100	100	100	100	98	100
Collection rate, 2020, %	100	100	100	100	100	100	100	100	97	100
Account receivable, days, 2009	102	76	34	66	54	52	86	153	43	79
Account receivable, days, 2019	144	116	103	101	52	65	368	193	85	119
Account receivable, days, 2020	174	90	106	112	41	65	272	231	99	119

45. At the same time and as can be seen from Table 4, **the increased metering led to the significant drop in water consumption and associated billings, and, thus, revenues received by utilities**. This reduction in billing and revenues was not fully compensated by tariff increases, as neither regional and municipal authorities, nor utilities could set tariffs higher than the limits established by the federal government. This was especially visible after the financial crisis that started in 2014 and the associated national currency devaluation. While tariffs were growing at the rate of 4-5 percent a year, their US\$ value did not increase and even decreased. For example, in Tula's vodokanal, the water tariff was RUB



18 per m³ or US\$0.51 in January 2014, and it became RUB 34 or US\$0.41 in January 2021¹⁶. Another factor was the COVID-19 pandemic that resulted in a significant income reduction due to COVID-imposed limitation measures and quarantines, when many businesses had to either suspend or reduce, or even temporarily or permanently close their activities. Consequently, the average account receivable for Project utilities increased from 90 days to 120 on average and was as high as 272 days in city of Saransk, and close to 180 days in Orenburg city at the end of 2020. Overall, the account receivable rate grew somewhat in all companies due to the prohibition of disconnection or services restrictions in 2020-2021. The 2019 financial and performance results were substantially better: COVID-19 restrictions increased account receivable in six of 10 cities.

46. The percentage of project supported entities that incurred operational losses dropped from 60 percent at the Project start in 2008 to 2021 and was only 27 percent at Project closure, thus, confirming improved financial viability.

The ambitious end target of only 10 percent of the Project supported entities having incurred operational losses was not reached, as the communal entities continue to have losses due to restrictions in setting tariffs for their services to the population which is mandated by the requirements of the Russian legislation. The tariff setting process that was at municipal level at the Project inception was delegated to regional authorities in earlier 2010s, and then became a political instrument following the financial crisis of 2014-2015, and since all tariff adjustments are approved at the Federal level. Thus, annual increase of residents' tariffs is strictly limited, which in turn impedes the utilities setting appropriate tariffs at the cost-recovery level. As discussed above, during last two years, the utilities also experienced a worsened situation with account receivables due to COVID-19 related decline in the population's income. At the same time, compared to the achieved value of 27 percent of entities with operational losses in the Project participating cities (five entities out of eleven operated with losses¹⁷), this still represents a significant achievement, as this value is by far below the average figure of 59 percent of utilities with losses in comparable Russian cities¹⁸ of the same population size (46 cities comparable to Project ones¹⁹). By expert opinion, 80 percent of more than three thousand water supply and sewerage enterprises in Russia are not profitable²⁰. The Project team intentionally kept financial performance indicators to incentivize the participating municipalities and their service providers to foster financial resilience and sustainability.

Justification of Overall Efficacy Rating

47. The overall efficacy rating of the Project is Substantial. The Project substantially contributed to both improved quality of the HCS and improved financial viability of HCS of the Project participating cities via an integrated approach of a reform agenda, technical assistance, and prioritized investments in the physical communal assets. The project proved that HCS are the center and means for municipal reforms, sustainable urban development, and a key factor for improving living conditions of the serviced population.

C. EFFICIENCY

Assessment of Efficiency and Rating

Rating: Substantial

48. **Efficiency of the Project investments in water supply, wastewater collection and treatment, and district heating was substantial.** The Implementation Completion and Results Report (ICR) analyzed in detail the largest investments in each sector, such as water supply in Tula for wastewater collection and treatment, wastewater sludge utilization in Ivanovo, and district heating improvements in Bratsk, that total more than 41 percent of the Project funds (see Annex 4 for details). The water subprojects had more than a 14 percent economic rate of return. Economic rate of return for Ivanovo wastewater investment (benefits included removal of nutrients (N and P), enhancement of wastewater treatment

¹⁶ <https://tariffs.ib-net.org/ViewTariffNew?tariffId=24031&CountryId=0>

¹⁷ The percentage of entities with operational losses is calculated based on weighted average of population served.

¹⁸ Data of the All-Russian Public Opinion Research Center (VCIOM)

¹⁹ For comparison selection of cities that are administrative centers of regions with a population of 90 to 600 thousand people (the demographic indicator used to select cities for participation in the Project).

²⁰ Russian vodokanals are experiencing financial crisis since 2014, and additional information on the performance of 89 Russian cities can be found: https://database.ib-net.org/country_profile?ctry=68



and upgrading secondary treatment process with sludge digestion) was 13 percent and above 40 percent for district heating investments, and the net present value for each type of investment was positive (with a discount rate of 12 percent, see Annex 4 for details). Each subproject contributed to a reduction of environment pollution, and specifically to GHG emissions reduction. The benefits include increase of the housing values, reduced demand for electricity and heat, reduction of penalties of excess emissions and coping cost of cities' residents. At the same time, this analysis does not assign a value to the significant improvement in the quality of potable water, increased convenience of 24/7 services, pressure in the distribution system, and the averted damage of the water resources due to water protection actions implemented under the project. The overall selection of investments in the participating cities was driven by cost efficiency, sustainability potential and the critical need for each municipality. The project benefits are equal or higher than those calculated at appraisal.

Table 5. Results of the Economic Analysis*

	Investments (US\$, millions)	ERR (%)	NPV, 12% discount, (US\$, millions)
Water investments, Tula	33.5	14	4.0
Wastewater investments, Ivanovo	82.3	13	1.49
District heating investments, Bratsk	7.1	41	18.19

*Note: sample of three cities (or nearly 41 percent of all investments into infrastructure)

49. Furthermore, **the first direction of policy reforms implemented by the Project cities was to enhance the communal sector financial viability through a number of activities**, among those reduction of non-efficient costs of communal services providers; independent audit of financial performance of communal services providers and further transparent dissemination to the public of the findings; increased percentage of direct payments by the population for housing and communal services without intermediaries; the conversion of communal service providers to joint stock companies, etc. These measures were also to contribute to the improved transparency and accountability of HCS providers.

50. **The second policy area covered by the reform agenda implemented by the Project cities was targeted to the enhanced social protection of HCS consumers through providing housing allowances, standardizing the databases of the allowance beneficiaries, and settling arrears on social payments.** The third policy area of the reforms was focused on housing sector management improvements with enhancing multi-housing buildings management modes; fostering the competition in the housing service market; raising awareness; and managing space by creating common equity ownership of adjacent land to those buildings. The set of mentioned reforms jointly contributed to a more transparent and accountable approach for HCS players, in turn increasing the overall comprehension of the importance of HCS proper management through increased competition, citizens' roles and responsibilities and active engagement, as well as sustainable and efficient use of provided services.

51. **The procedures implemented under the HCSP are likely to have resulted in adequate value for money of investments.** Priority investments were identified through extensive consultations with residents of the cities for which the PIU provided TA for designs and implementation. Procurement was through international and national competitive bidding procedures to ensure value for money. Moreover, both the national and subnational governments maintain complaints handling mechanisms to allow for citizens to bring alleged cases of fraud and corruption to the attention of the authorities. Collectively, these procedures provide reasonable assurance that investments in cities are providing value for money. The nature of reforms undertaken under the Project encompassed three main elements that laid the path for guaranteeing the sustainability and efficiency of the investments in the infrastructure through improving the legal and regulatory framework, progress and procedures of monitoring, and disseminating the good practices achieved.

52. **Administrative efficiency was substantial.** All HCSP investments, including those which were added to the project scope as part of restructuring in 2017, were completed in line with their contract provisions and transferred for operation to the benefiting utilities of the participating cities by the Project closing date. At the time of closing of the Project, over 99 percent of the loan was disbursed.



53. **The Project implementation efficiency was substantial contributing to tangible outcomes.** While the Project’s lifespan was extended and went beyond the originally planned closing date that led to the increased Bank supervision budget, the expanded project implementation period allowed to gain the constructive outcomes of the Bank’s engagement in the sector that included the continued policy dialog with the government, Project’s contribution to implementation and operational efficiency enhancement of the sector through development of the national level information-analytical system used by the MoCHCS to track implementation of investment and construction projects financed from the federal funds. Furthermore, the Project had catalyzing effect of bringing new partnerships and investments to the sector, including other IFIs. In particular, the Project supported preparation of concepts of new programs in HCS sector (see paragraphs 52-53). The Project’s experience in implementation of water and wastewater investments, including building a strong capacity of FISP PIU, enabled the implementation of the currently ongoing Development of Water Supply and Sanitation Systems in the cities of the Russian Federation, financed by the NDB (US\$320 million loan), and implemented by FISP. Furthermore, the major extension processed in 2017 was to enhance the Project support for additional infrastructure subprojects in the Project cities per the Borrower’s request and with added co-financing from the Borrower, that ultimately enhanced the Project’s value through strengthened environmental impact leading to additional outcomes, e.g. increased number of beneficiaries; and allowed to leverage approximately US\$132 million of the Borrower’s co-financing (vs. the originally envisaged US\$6 million).

D. JUSTIFICATION OF OVERALL OUTCOME RATING

Rating: Satisfactory.

54. **The overall Outcome rating is Satisfactory.** The Satisfactory rating is justified by the High relevance of the PDO, Substantial efficacy and Substantial efficiency.

Relevance	Efficacy		Efficiency	Overall Outcome
Objectives	PDO1	PDO2		
High	Substantial	Substantial	Substantial	Satisfactory

E. OTHER OUTCOMES AND IMPACTS (IF ANY)

Gender

55. **The Project benefited all residents of all HSCP cities, as it improved the quality and regularity of provision of communal infrastructure and increased the overall level of satisfaction among residents of all genders and gave them a greater sense of ownership and awareness about the reforms and improvements in the HCS sector.** Consequently, a gender lens or specific gender activities were not considered relevant at the Project appraisal. Nevertheless, the effort was made to collect data with regard to the gender dimension at the stage of HCSP implementation and to collect gender-disaggregated information on a number of the HSCP beneficiaries.

Climate

56. **Even though HCSP was designed before the Bank articulated its current corporate commitment to address climate change, the Project provided significant climate co-benefits. For water infrastructure investments, these benefits came through reduced non-revenue water and reduced need for pumping, thus less energy consumed.** The HSCP wastewater investments led to the climate change benefits associated with reduced methane emission which came from upgrade of the wastewater processes with aeration, sludge digestion and utilization of biogas. Specifically for the Ivanovo wastewater subprojects this reduction estimate is 30,000 tCO₂e. The energy efficiency improvements will reduce the coal demand for district heating, bringing up water operation efficiency with overall reduction of CO₂ emissions. This example illustrates the benefits achieved under HCSP investments in Bratsk due to reduced demand for fuels that resulted in GHG emission reduction by 10,000 tCO₂e/yr and associated penalties. Similar effects are evidenced in all project cities. See paragraph 29 for more details on climate and environmental impacts of investments.



Institutional Strengthening

57. **The Project was novel in its scale and approach in implementing HCS reforms that had a spillover effect beyond the participating cities.** The current practice of HCS budget management that ensures the high quality and regular HCS provision contributed to changing the perception among the residents about the sector, raising greater awareness and a sense of ownership to foster the multi-household buildings management among residents and increasing competitiveness among private entities to run the housing service market.

58. **The competitive selection of cities to become part of the Project, with provision of relevant TA support to implement and further advance the institutional transformations, new allocation method of funds from the central to municipal level developed and piloted under the project to enable use of federal budget funds for investing into municipally-owned infrastructure, on site monitoring of the construction cycle,** as well as the development of the “Best Practice of Investment Projects and Institutional Reforms in the Cities Participating in the HCSP”²¹ that has been widely disseminated, are among the most tangible results of the Project related to institutional strengthening. **HSCP also contributed to the overall municipal capacity building of the rehabilitated communal facilities.**

59. The Project contributed to improving the Borrower’s project management capacity as the experience gained during project implementation further strengthened the capacity of the PIU (St. Petersburg Foundation of Investment Projects, FISP). This has enabled FISP to successfully continue to perform PIU functions for the investment lending operations in Russia and Russian cities financed by other international financial institutions, including serving as PIU for a major project financed by the New Development Bank (NDB) - Development of Water Supply and Sanitation Systems in the Cities of the Russian Federation which is currently under implementation.

Mobilizing Private Sector Financing

60. **Although there was no direct mobilization of private sector financing as part of the Project’s activities,** there are examples when HSCP-financed investments generated positive crowding-in effects starting from affordable housing including industrial sector investments in a number of the Project cities. The modern and renovated communal infrastructure created incentives for public and private investments on the municipal levels. A vivid example relates to the HSCP investment in Tula, where the Project investments to modernized and rehabilitated communal infrastructure networks enabled the communal facilities to respond to additional demand and bear the additional workload with the sustained quality supply, **allowed for upgrade of the dilapidated residential stock and development of new high-rise residential districts** (named Severnoe Zarechye and Krasnie Vorota)²² allowing for reallocation of residents from emergency buildings and provision of housing to socially vulnerable groups, including large families. In addition, **the rehabilitation of the South-Ural water intake structure in Orenburg enabled additional water networks construction, providing opportunities for water supply to residents of future housing developments in the south-eastern part of the city.**

Poverty Reduction and Shared Prosperity

61. **The HCSP supported achievement of the World Bank’s twin goals of eliminating extreme poverty and boosting shared prosperity.** In the framework of the reform phase, a series of policy actions to improve targeting, funding and delivery of housing allowances were included in the Project’s scope, **as tariffs for HCS were likely to increase over the life of the Project.** Housing allowances are the primary mechanism to protect the **poor from tariff increases as they are designed to limit expenditures on HCS to a maximum share of household income.** Such an action included monetization of housing allowances and where cash payments were transferred to individual social accounts of citizens, consequently resulting in the drastic decrease in the amount of payable arrears. While in the framework of the investment phase, water infrastructure rehabilitation and upgrades acted as catalysts for local development and economic activity, in turn enabling the resident’s relocation from the emergency housing and provision of modern housing to the vulnerable groups as described above.

²¹ The collection of best practices is published on the website of the Ministry of Construction of Russia: <https://minstroyrf.gov.ru/docs/136743/>

²² Tula mini-ICR, FISP, 2021.



62. In addition, the installation of domestic heating points and automated centralized system of metering for monitoring and control of heat and hot-water consumption in apartment buildings not only improved the quality of heat-supply services, achieved energy savings, reduced the rate of heat-supply system breakdowns, but also decreased the housing and communal payments ensuring vital savings for poorer segments of the population.

Other Unintended Outcomes and Impacts

63. **The Project contributed to sustainable and integrated citizen engagement practices** that fostered eagerness of the residents to become part of HCS reform. The various activities and events organized in the framework of the Project (round-table discussions, workshops, consultations and data provided through the web portals) not only informed and educated the residents of participating cities, but also provided the municipal authorities, utilities and residents with many pieces of methodological and knowledge products developed with support of the HCSP TA. At the same time, the informed citizens enhanced the collective social responsibility aspects towards the provided services and multi-apartment buildings' management (public or private), as well as sustainable and quality provision of those services through regular feedback mechanism. For example, in Naberzhnye Chelny through application of advanced methods and approaches in the utility company's management, coupled with specific trainings in the energy efficient technologies conducted for the residents, an optimized consumption of resources and accountable management of apartment buildings was achieved.

64. Project restructuring in 2015 also enabled a portion of the HCS loan proceeds under Component D to be used to prepare a project **on development of built-up areas in small and medium-sized Russian towns with an emphasis on comprehensive urban development and socioeconomic impact**. The concept was approved by MoCHCS and benefitted from the experience of HCSP to its conformity with international good practice and standards acceptable to the International Financial Institutions. This project is under implementation (see next para for details).

65. **At the request of the MoCHCS in 2019, the Project provided TA on a comprehensive survey of municipalities of four Russian regions** (Krasnodar Krai, Rostov and Astrakhan regions, and Republic of Dagestan) to form a ranked list of the cities located near the coastlines of the Caspian, Black and Azov Sea that could potentially participate in large investment projects in modernization of wastewater and stormwater drainage systems to improve the quality of wastewater disposal services and reduce/prevent contamination of natural water bodies through discharges of the untreated wastewater, including stormwater runoffs and disposal of wastewater residuals. Based on the results of this survey that were further supplied with data collected as of March 2020, the Project supported the Ministry with the development of a Concept on a potential investment operation aiming to reduce negative impact on natural water bodies in the municipalities located on the seacoast of the Southern Russia (including detailed investment plans, feasibility studies, technical documentation and designs). At present and based on this Concept, the Ministry is developing an investment program on water disposal in the resort city of Sochi, Krasnodar Krai, that will potentially be financed by the NDB. Furthermore, the Project's experience in implementation of water and wastewater investments, including building a strong capacity of FISP PIU, enabled the implementation of the currently ongoing Development of Water Supply and Sanitation Systems in the cities of the Russian Federation, financed by the NDB (US\$320 million loan), and implemented by FISP. The NDB's project was built on HCSP achieved results and continues to further modernize water treatment, water supply and drainage networks. Specifically, it is aimed to address the issue of water contamination in the Volga River (one of the largest Russian rivers, widely viewed as the mother river of Russia where 11 out of 20 largest Russian cities are situated) that became one of the most pressing environmental issues faced by the country because more than one-third of total river discharges are into the Volga River. The achieved results in the water supply and sanitation sector under HCPS, accompanied with strengthened municipal ownership and enhanced implementation capacity enabled selection of three Project participating cities (Volzhsky, Ivanovo, Cheboksary) to benefit from investments under this operation.

66. In response to the MoCHCS request in 2019, **the Project delivered a TA on the development of the national level information-analytical system²³ that would help the Ministry to track implementation of investment and construction projects financed from the federal funds**, in particular, monitor implementation of the Federal State Program "Provision of affordable and comfort housing and communal services to the RF citizens". This System automated the process of

²³ Information and Analysis System for Management of Investment and Construction Projects (IAS MICP).



planning, collecting, processing, analyzing and monitoring of data on investment construction projects financed with federal budget funds under different government programs, as well as to provide the parties concerned with on-line information on projects' progress. The system was tested back in the summer of 2021 by the Ministry and received very positive feedback and is currently operational.

III. KEY FACTORS THAT AFFECTED IMPLEMENTATION AND OUTCOME

A. KEY FACTORS DURING PREPARATION

67. **The project was originally envisaged to be prepared as a sectoral DPL to be implemented at the municipal level, however the DPL was ruled out by the Russian Ministry of Finance (MoF)** mainly due to concerns that for a DPL, the financing allocated to the winning municipalities in return for their successful implementation of the HCS reforms may not necessarily be invested by those in the HCS sector. The MoF expressed the willingness to use the Bank's fiduciary and project management procedures to ensure better transparency and efficiency of money flows and mitigate potential risks of misuse of funds to ensure that the financing will go to the improvement and modernization of the communal infrastructure. As such, switching from the DPL to IPF instrument was an informed decision based on the Borrower's request and pros and cons analysis conducted. At the same time, it led to the prolonged Project preparation time to process the necessary Project design changes.

68. **Robust background analysis.** The Project drew on the extensive economic and sector work carried out by the Bank during Project preparation to develop and agree with the Borrower on a set of municipal reforms to be implemented by the Project cities at the HSCP reform phase, and benefited from experience and knowledge gained by the Bank and the Borrower through execution of a number of WB-financed lending operations in Russia, which provided valuable insights into various aspects of HCS reforms and investments to HCS infrastructure²⁴.

69. **The Project benefitted from a well-defined set of objectives that were both clear and realistically measurable due to a good monitoring and evaluation plan.** The RF was developed in a way that captured both reform and investment phases of the Project, with refined logical flow of intermediary indicators, all having solid baselines and achievable targets. The risks were adequately assessed, having considered the lessons learned of similar sectoral operations and country-specific context. The Project stakeholders both on federal and municipal level, as well as the beneficiary population, were selected appropriately and were committed to the Project.

70. At the time of the HSCP preparation, the Bank had not yet introduced the Program-for-Results (PforR) financing instrument, but the **Project still attempted to apply an innovative and similar to PforR mechanism, by linking the ability of the participating cities to get access to the investment financing subject to the successful realization of the agreed set of reforms.** Thus, at the project preparation stage, the Borrower, with support and in collaboration with the Bank, developed a robust methodology to select the Project municipalities in a transparent and competitive manner, that also factored in the preparedness and willingness of cities to join the HCSP and work on the reforms, and allowed the municipalities to plan and assess their advancement on the reform agenda. This methodology was drafted prior to the negotiations, while the completion of the competitive selection of cities based on the agreed methodology was made a Project effectiveness condition. Prior to the actual call for applications that was widely announced and open to any medium-sized cities across the country (cities comprised of 90,000 to 600,000 residents), a series of designated workshops was organized to promote the HCSP and inform the potential participants about the Project's application process and requirements.

71. **Ownership and accountability.** Past experience of other projects implemented in Russia has proven the need for having strong Government ownership as a critical element for effective implementation. This particular Project, while experiencing substantial delays during project preparation and in the process of meeting effectiveness conditions of the loan, nevertheless, established solid formations for its effective implementation. This included: the establishment of Inter-Agency Working Group (IWG) which represented all key stakeholders and provided regular oversight and guidance during

²⁴ Reference on experience and projects is provided under Chapter A: Context at Appraisal, paragraph 5.



implementation. Furthermore, the institutional arrangements (set out in the Agency Agreement) between the MoF, MoRD/MoCHCS and FISP PIU ensured sufficient delegation of authorities and functions to the PIU, including day-to-day Project implementation, conducting procurement and preparing all needed contract documentation for the final signature of the line Ministry, and this was beneficial for the Project and sustained the project implementation, though in slower pace, during the government reorganizations.

B. KEY FACTORS DURING IMPLEMENTATION

Factors subject to the control of the government

72. Government reorganizations: the Project faced implementation pace delays as a result of two Russian government reorganizations. While the HCSP was approved by the Board in March 2008, the loan agreement was signed in September 2009. This gap in signing was caused by the comprehensive reorganization initiated by the Russian authorities in 2008 that included **liquidation** of the Federal Agency for Construction, Housing and Communal Services (Rosstroj), which was in charge of the HCSP preparation and was supposed to be responsible for its implementation and transferring of its functions to newly formed Russian Ministry of Regional Development (MoRD). The delay in signing resulted in a need to modify the loan closing date prior to the LA signing (also see in paragraph 25, ICR section “Other Changes” for details). However, the MoRD was in charge of the HCSP only until 2013 when it was disbanded as part of another government reorganization, with responsibility for HCSP implementation transferred to the freshly formed MoCHCS. This reorganization and transition of functions between disbanded and newly formed Ministries took significant time (2014-15), and that caused the second wave of delays in HCSP implementation. As all contracts under the Project and corresponding payments were to be processed by the responsible line Ministry, the protracted transitional arrangements substantially impacted the Project’s ongoing procurement procedures, execution and fulfillment of contractual obligations, until the MoCHCS was officially empowered to be in charge of the Project implementation in 2015. There were no new government reorganizations since then and the MoCHCS remained the line implementing Ministry for the HCSP until the Project closure. This change of the responsible Ministry and corresponding delays in HCSP implementation resulted in a need to process the second project restructuring in 2015 and extend the closing date from May 2016 to May 2018 (see also paragraph 10, ICR section “Significant Changes During Implementation”, and Annex 5 for more details).

73. New financing scheme and format of investment contract: Since the communal infrastructure was municipal property, the Borrower had to come up with a financing scheme that envisaged the procedure of using the loan funds, which were part of the federal budget, for investments into municipally-owned infrastructure. Since it was the first such scheme applied in Russia and it also called for development of a special format for investment contracts which was different from the standard contracts used for Bank-financed operations and required the client to be represented by both the line federal Ministry and a particular city, its development and approval at the Borrower’s side took time and slowed down the start of the bidding process in the cities in the early stages of the Project. With the financing scheme and the format of the investment contract developed and agreed between the Bank and the Borrower, implementation was accelerated.

74. The involvement of an experienced PIU ensured smooth day-to-day project implementation at times of major changes in the Russian Government, including within selected municipalities. The FISP PIU was involved in preparation and implementation of numerous Bank-financed projects in Russia. This strong experience allowed the PIU to navigate through the institutional reorganization in the Government and ensure continued project implementation with adherence to Bank standards on procurement, financial management, safeguards and quality of works.

75. The Borrower ensured adequate co-financing, and even decided to provide additional financing from the federal budget to implement additional investment activities and enhance the project environmental impact in two participating cities. In 2017, the Borrower requested to increase their co-financing share to include two more investment subprojects in already selected Project cities, to reinforce already achieved Project results and maximize the Project’s environmental impact. Furthermore, at the final stage of the HCSP implementation and in response to the COVID-19 impact that included interrupting the supply chain and increasing costs of fuel, electricity, and wide range of construction materials, the Borrower approached the Bank to restructure the Project to revise the percentage of the Borrower’s and loan financing and reallocation of the loan proceeds between the disbursement categories to balance the loan funds and co-financing.



76. The PIU functions were initially to be executed by the Enterprise Restructuring and Financial Institutions Development (FER). However, before the LA signing and since the PIU would need to have significant experience in day-to-day supervision and procurement of large investment contracts, **the Borrower informed the Bank about its decision to conduct PIU rebidding.** Based on the results of the competitive re-tendering exercise conducted in 2008 and positive results of the Bank functional review, FISP was selected to act as PIU for HCSP and executed the PIU functions during the entire project implementation.

Factors subject to the control of the World Bank

77. **Throughout the Project, the Bank maintained quality long-term relations with counterparts** (MoF, MoCHCS and its predecessor MoRD and Rosstroi, FISP PIU, local authorities and benefiting utilities). These relations benefited the Project and paved the way for smooth cooperation and future operations financed by the NDB in the sector. The Bank team also made it possible to arrange for an internal process within the Bank to agree on the format of the investment contract which was acceptable to both the Bank and the Borrower and unblock the bidding process at the early Project stage.

78. **The Bank's supervision and reporting were adequate and provided space for flexibility when it was needed, including obtaining a number of closing date extensions and providing valuable technical solutions to complex infrastructure related subprojects.** The Bank team ensured involvement and advice of experienced international technical expertise for supervision and quality assurance of civil works enabling compliance with sound international practices, while local consultants helped in the reform agenda of HCS, monitoring, development and delivery of the institutional strengthening trainings, workshops, and knowledge materials. The Bank closely monitored the Project implementation and provided adequate implementation support to the Borrower to mitigate the impact of implementation challenges and delays. The Bank team reported implementation issues candidly in ISRs, Aide Memoires, and Management Letters throughout the Project life.

Factors outside the control of government

79. In the last two years of implementation, **the Project had to overcome the issues caused by COVID-19 impact**, especially for the large investment activities under the ongoing contracts in Ivanovo and Tula cities. The lockdown measures introduced in Russia and worldwide and related disruption to domestic and international trade and logistics resulted in the need to revisit the contract implementation schedules, so that to ensure COVID-protecting protocols, and led to delays of supply and installation of equipment, which triggered two restructurings in 2020 and 2021 to extend the loan closing date. **However, these changes did not have an impact on the PDO and the scope of the activities, other than a delayed implementation cycle.**

IV. BANK PERFORMANCE, COMPLIANCE ISSUES, AND RISK TO DEVELOPMENT OUTCOME

A. QUALITY OF MONITORING AND EVALUATION (M&E)

M&E Design

80. **While the Bank guidelines at the Project appraisal did not require PADs to include a theory of change, the Project's logic was well designed and led to achieving the envisaged objectives.** The RF was substantially adequate at the appraisal stage and aimed at measuring the intended Project results associated with the PDO. The addition of intermediate indicators during Project implementation helped in giving a more comprehensive and accurate picture of the Project results. It should be noted that while the Project RF is comprehensive and was developed in line with the Bank guidance existing in 2008, which allowed for substantial monitoring, measuring and reporting the project results and utilizing M&E, the current approach in defining the PDO indicators envisages smaller number of the PDO indicators while having the rest as IRIs.

81. **The performance-based approach when unlocking the investment phase was conditioned by the successful implementation of the reforms.** All monitoring efforts required continuous support provided by local authorities and utilities of the Project cities, and as such that was detailed in implementation agreements between the line Ministry and participating municipalities.



M&E Implementation

82. **M&E data were collected and analyzed adequately during Project implementation.** The baseline and target values of PDO indicators and IRIs were determined at the Project start. Data related to implementation progress under the investment component, and financial management and safeguards, were regularly collected and reported by FISP, in collaboration with the participating cities and with support of the M&E consultancy, up to the Project closure in December 2021. M&E was also done as part of the regular Bank supervision with assistance from the Project cities, line ministry and FISP.

83. **Several experts and organizations have been engaged in implementation of reform and investment phases and verification cycles to ensure, among other tasks, collection and analysis of M&E data in a sound and methodologically consistent manner.** Among those most prominent are the Institute of Urban Economics, SEURECA, Institute of Economics of Housing and Communal Services²⁵, and the Center for Analysis of Real Estate Markets. Participation in the Project contributed to increasing the sustainability and strengthening the expert potential on the ground and enhancing the reform agenda, ensuring engagement with the relevant stakeholders and residents at large, as well as the HCS enterprises, buildings' councils, and developing and fostering mechanisms for ensuring competition in the market for multi-family buildings' management services.

84. **Furthermore, in addition to the indicators specified in the RF, to monitor the city level interventions, the Bank and PIU agreed to collect information related to:** (i) any aspects of continued implementation of the HCS reform agenda by the Project cities after the end of the reform phase with support of the Project TA; and (ii) disaggregated data based on the HCS subsectors (water supply, wastewater, heating, solid waste, and energy) supported by the Project at the city level. This information was summarized and presented in the mini-ICRs developed by the M&E consultancy for each participating city, after subprojects completion and at the Project closure revisited to adjust the Bank's guidance and allow for precise and verifiable monitoring and reporting on the achievements at the city level. As mentioned above, the Project ensured introduction of IRIs to monitor and report the project environmental impact resulted from inclusion of two additional investment subprojects in Naberezhnye Chelny and Ivanovo and a corresponding amendment of the Project end target values on number of beneficiaries (see also paragraph 10, 11). M&E of the project indicators relied on existing statistics and reports routinely produced by municipalities, M&E consultant and the PIU. The civil works routine supervision and monitoring was provided through engagement of independent engineering supervision consultancies, project cities' technical teams, a designated project coordinator on the ground, day-to-day PIU supervision and monitoring with regular progress reports submitted to the Bank, and through regular Bank missions' support.

85. Finally, an external audit was undertaken regularly to track the risk of inappropriate or ineffective use of project financed assets at the municipalities level and to confirm that the assets are properly accounted.

M&E Utilization

86. M&E was generally well-utilized to track the Project performance. The ISRs reported on the Project's progress consistently and were used to introduce necessary adjustments where these were deemed necessary. The addition of intermediate indicators and tracking of performance against them bears this out.

87. A TA on the development of the national level information-analytical system that helps the Ministry to track implementation of investment and construction projects financed from the federal funds across the country was developed under the Project that enhances the overall monitoring and supervision capacities of the authorities. See paragraph 54 for more details on this system.

Justification of Overall Rating of Quality of M&E

88. **The overall rating of M&E quality is considered "Substantial".** The M&E system was well designed, remained stable, with data systematically collected to assess the achievement of the Project objectives and test the links of the results chain.

²⁵ Institute of Urban Economics is currently a leading Russian expert and analytical organization in the field of institutional and economic reforms in housing and communal services. Institute of Economics Housing and Communal Services is a leading expert organization on the development of comprehensive plans for the development of housing and communal services, investment, and production programs of utilities, rationing and tariff formation in the communal sector. Implements projects commissioned by the MoCHCS of Russia, regional and municipal authorities, and utilities.



The RF was timely updated following the 2017 restructuring, when additional IRIs were introduced and the target values of those selected indicators were adjusted to reflect the increased number of investment activities being supported by the Project.

B. ENVIRONMENTAL, SOCIAL, AND FIDUCIARY COMPLIANCE

89. The Project's Environmental and Social Safeguards implementation performance was rated as Satisfactory during the entire project implementation period and there were no issues raised. The Project was rated as Category B and triggered Environmental Assessment (OP/BP 4.01). Recognizing the uncertainty associated with the lack of specific investment proposals at the appraisal stage, the EMP developed a "green" and "red" list of typical investments in the housing and communal sector. The "green" list included investments compliant with Category B projects, while the "red" list showed those with higher environmental risks and requiring full scale EA and therefore, not recommended to be included under the Project.

90. The Project completed all planned mitigation activities and complied with all applicable safeguard policies with no material environmental issues. Minor effects on the environment caused by construction works such as dust, noise, or temporarily traffic disruptions were mitigated by implementation of the Environmental Management Plan (EMP) under each subproject and by clear instructions to contractors on sound practices stipulated in contracts. The HCSP activities were carried out in compliance with the Environmental and Social Management Plans (ESMPs)' requirements, Occupational Health and Safety (OHS) non-compliance cases were not registered, and the last years' COVID-19 mitigation measures monitoring was duly implemented by the implementing entity and contractors.

91. Project environmental outcomes include: (i) improved indices in terms of water and wastewater treatment; (b) energy savings and indirect measures of emissions reduction; and (iii) reduced accidents, spillages due to improved sewage collection and wastewater treatment networks.

92. All the works under the Project were undertaken within the footprint of existing utility facilities/or in the right of way, that are "restricted access" zones and solely municipal property, thus no activities necessitated involuntary resettlement and/or land-acquisition. While no Resettlement Policy Framework (RPF) was required, the practice of similar project implemented under Bank's financing in Russia was applied and implementation agency included a draft RFP as a precautionary measure into Project's Operations Manual (POM).

93. The Project was prepared prior to formal Grievance Redress Mechanism being a requirement, however, the POM contained a framework for handling of complaints which was applied during the Project implementation.

Fiduciary compliance

94. The Financial Management monitoring, including accounting, internal control and reporting aspects, were conducted by the FISP financial department which was adequately staffed and sufficiently skilled, and produced timely quarterly monitoring and annual audit reports, acceptable to the Bank, with no significant issues raised or any audit qualifications. A World Bank Financial Management Specialist had regularly carried out the FM implementation support missions to review project accounting and reporting arrangements, organization and staffing, internal control procedures, planning and budgeting, counterpart funding, funds flow and disbursement and external audits, and throughout the Project those were Satisfactory.

95. The Procurement was led by FISP using standardized procurement documents for those types of investments that had similarities, which in turn enabled much smoother implementation of a larger number of contracts once the reform program was completed in all participating cities. At the same time, the cities benefited from the support of individual consultants that supported the preparation of bidding documents. Furthermore, the specialized format of the investment contract was developed and agreed with the Borrower and approved by the Bank, allowing for both line Ministry and participating cities representing the client (see paragraph 61) to enable the start of the bidding for civil works, and the same format can be used for the similar municipal programs financed from the federal funds, as well as in other countries which have a similar federal structure. Procurement proceeded smoothly with no cases of misprocurement and post reviews identified no violations of policy. **Procurement risk was overall rated Low, and the rating was Satisfactory at all times of the Project implementation.**



C. BANK PERFORMANCE

Quality at Entry

96. Through its earlier engagement in operations and analytical work on transformation in the HCS sector in Russia, as well as in other countries, the Bank has gained meaningful lessons and experience in similar lending operations that was reflected in the project design and determined priorities and a corresponding set of reforms to be implemented by the project cities.

97. **The choice of the lending instrument was determined by the Borrower's request, but the Bank ensured that the reform phase was duly incorporated in the Project design to respond to the challenges faced by the HCS sector. Since these challenges are often systemic and institutional in nature,** the traditional investment loans, which are mainly focused on physical infrastructure, would not be successful in achieving sector-wide reforms. Equally, operations focusing solely on policy aspects often do not result in rapid rehabilitation of infrastructure or improvement of service quality which is essential for the improved quality of services, financial viability of utilities and their continuing support to the HCS consumers. Therefore, the Bank and the Government deemed that an investment lending operation with policy-orientation and with a defined scope supporting the implementation of the Government's agenda on HCS reform would be more effective in achieving the desired development objectives.

98. **The Bank led the participatory process to identify priority policy measures and the set of reforms** to be implemented by the cities to ensure the cities' ownership and commitment to the reform agenda. The Project also rightly earmarked resources for TA which were continuously provided to the Project cities to help them institute further changes in the HCS sector beyond the pre-agreed set of reforms during the investment phase of the Project.

99. **The necessary fiduciary and safeguards frameworks and compliance tools were instituted in a timely manner.** This was done collaboratively between the Bank and the PIU. The relationships with the Borrower during preparation and appraisal were consistently good.

100. **Quality of supervision is assessed as "Satisfactory".** The Project benefited from the committed Bank teams with sufficient budget and technical capacity that pre-empted, identified and resolved implementation challenges and risks.

Quality of Supervision

101. **The Bank team ensured regular Project supervision, just-in-time support with various technical assistance and complex infrastructure related aspects,** as well as established open communication channels with the counterparts. Due to a very good collaboration between the Bank team and the PIU, the latter's high capacity and stability of the Bank's local team, any emerging operational issues and/or issues related to social, environmental and fiduciary policies were promptly addressed. This was complemented by skillful and knowledgeable task team leaders and technical expertise contributed by closely collaborating Global Practices within the Bank (Water, Urban, Social Development, Environment, Governance), and enabled providing timely and detailed advice needed to achieve the Project objectives. At least bi-annual field missions ensured adherence to technical, occupational, social and environmental provisions under the Project and country's national frameworks on those aspects. The latter is also confirmed by the Borrower's ICR, expressing great respect for the Bank team and its instrumental role in helping to enhance the technical skills and institutional capacity with regard to Project management, including fiduciary and safeguards.

102. **Furthermore, the Bank provided very close support across all project management dimensions and various range of stakeholders within the hierarchical chain,** as due to the nature of the Project both federal and regional/municipal level authorities had to interact for smooth implementation to secure cohesive and sustainable results. The Bank's strong technical expertise, joint problem solving, continuity of the Bank core team, and smooth transfer of the project responsibilities at the time of changed task team leaders were all contributing factors towards sustainable outcome. The permanent support from the country office and the Bank team's local staff were fundamental in not only maintaining close collaboration with the Government, but also ensuring the Project's institutional memory for the smooth transitions between HQ-based task team leaders.

103. **To overcome challenges and restrictions imposed by COVID-19 during the last two years of Project implementation when the Bank team was not able to travel to the country for physical monitoring, the Bank quickly**



introduced remote supervision tools. These tools were robustly applied to ensure the monitoring and control of occupational and safety, as well as technical quality norms to successfully deliver all remaining activities, completion of construction works, and provision and installation of the remaining equipment. All above this is ensured the satisfactory completion of all civil works, and with assets being tested and operational by the Project closing.

Justification of Overall Rating of Bank Performance

104. Based on the quality at entry and of supervision, overall Bank performance is rated as **Satisfactory**.

D. RISK TO DEVELOPMENT OUTCOME

105. **Development outcomes realized through the Project are mostly sustained.** The sustainability of development outcomes (improved quality and financial viability of HCS in participating cities) will depend on the cities' ability to continuously commit to reforms and maintain the results of investments financed under the Project. The federal and municipal authorities continue to develop and enforce normative acts and invest in other infrastructure related improvements to maintain and maximize the achieved results both on policy, communal and housing infrastructure maintenance and management levels. So far, all Project cities allocate appropriate financing in their budgets for operation and maintenance of the rehabilitated communal infrastructure that proved to be adequate to maintain the results of the Project investments. Moreover, the achievements recorded in the course of Project implementation were contributing factors for continued investments of both public and private funds which will further enhance the continuous improvement of the HCS in the cities.

The existing risks to development outcomes, which are common to similar infrastructure investments, can be associated with the long-term sustainability of the modernized or built assets and their appropriate operation and maintenance.

Financially, given the COVID-19 pandemic and federal level tariff structure limitations, the debt recovery trajectory is **not** positive and further subsidies would be required to cover the operation and maintenance costs and losses of the HCS service enterprises.

V. LESSONS AND RECOMMENDATIONS

106. Despite the urgent needs a country may face to make emergency investments in the HCS, such as water supply and treatment, or sanitation, or district heating that are common priorities for many urban settlements, the priority should be given to an integrated holistic approach towards rehabilitation/modernization of the communal networks rather than separate investments in the above-mentioned sectors. The latter would yield greater effect and enhance the population's satisfaction level, as the HCS sector plays an aggregator role and provides an opportunity for multi-sectoral collaboration, both for the state and World Bank global practices. In addition, the HCS sector can simultaneously deliver significant impact in all corporate commitments (gender, climate, private capital mobilization, citizen engagement, etc.). Such an approach was applied in the cities of Tula, Bratsk and Cheboksary with simultaneous rehabilitation/modernization to the sanitation system, cold and hot water network, and district heating systems were improved, thus successfully improving service delivery and reducing the public cost in communal services provision.

107. The project provided a set of legal documents and successful examples for reforms in HCS and around it. It opened markets and opportunities for private sector to get engaged in HCS sector and play role in its reforms, and at the same time reduced public **costs** of such services. Replacement of inefficient municipal HCS providers forced cities' authorities to fulfil their financial obligations to these services and eliminate public arrears to HSC providers at the early stage of the HSCP.

108. The Project developed a few innovative approaches that can be applied in the HCS sector related operations. One of the key **innovations** under the Project at the time was the **performance-based criteria that conditioned access to hard investments via successful fulfillment of reforms** that subsequently unlocked the financing of communal infrastructure. This approach was proven to be feasible and can be considered to be applied under Bank-financed lending operations in the HCS sector, allowing to combine the incentives and focus on both the reform agenda and modernization of the communal infrastructure.



109. ***The second innovation was the financing plan introduced for allocation of federal funds to municipal infrastructure investments.*** As it was the first attempt in Russia to implement this type of plan and it required a special format for investment contracts, the process was somewhat lengthier than planned. However, now, when this mechanism is already developed and tested, it can be replicated and applied to other projects in Russia which envisage the use of federal funds in support of **the** municipal communal infrastructure, and, as such, the project has opened new ways to increasing the subnational investment portfolios and apply this financing plan by other IFIs.

110. ***The smooth and timely implementation of HCSP subprojects was ensured by having on board a Project manager and a local working group in each participant city.*** In similar complex and territorially spread out infrastructure projects, **establishing** implementation arrangements for the whole cycle of investments, starting from provision of TA support for feasibility studies and detailed engineering designs, and also for civil works monitoring and supervision would be an added value and foster the accountability and ownership of the built assets by the local authorities.

111. ***Seasonality of construction process shall be taken into account, as this is one of the factors which can affect the investment project implementation.*** This is particularly important for framework projects, such as HCSP, where the exact investments' location is known at the stage of implementation. As such, a framework project usually cannot accurately factor the aspect of construction seasonality to ensure the more precise calculations of the construction period. Thus, in case of framework projects, the civil work planning needs to include the construction seasonality with reasonable reserve.



ANNEX 1. RESULTS FRAMEWORK AND KEY OUTPUTS

A. RESULTS INDICATORS

A.1 PDO Indicators

Objective/Outcome: To improve the quality of HCS of Participating Municipalities

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Quality of delivery of communal services, including district heating, water supply, hot water supply and waste water disposal, improved	Text	Number of pipe breaks: 30.4 in water supply systems, 19.2 in waste water systems, 10.5 in heating systems 09-Apr-2008	Number of pipe breaks: 6.08 in water supply systems; 3.8 in waste water systems; 2.1 in heating systems. 01-Jun-2014		Number of pipe breaks: 3.2 in water supply systems, 0.9 in wastewater systems, 0 in heating systems 20-Dec-2021
Number of breaks per km of pipe a year in cold water services	Text	30.40 30-Jun-2008	6.10 01-Jun-2014		3.20 31-Dec-2021
Number of breaks per km of pipe a year in wastewater systems	Text	19.20 30-Jun-2008	3.80 01-Jun-2014		0.90 31-Dec-2021



Number of breaks per km of pipe a year in heating systems	Text	10.50 30-Jun-2008	2.10 01-Jun-2014		0.00 20-Dec-2021
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Comments (achievements against targets):

Fully achieved and exceeded.

Actual number of water supply system breaks was twice less than the target.

Actual number of waste water system breaks was three times less than the target.

Actual number of heating system breaks exceeded the target and is "0".

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Percentage of multi-family buildings managed by professional management companies	Text	15% 09-Apr-2008	90% 01-Jun-2014		90% 31-Dec-2021

Comments (achievements against targets):

The target is fully achieved.



Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Quality of delivery of communal services for the population improved (percentage of population rating services as satisfactory or better)	Text	10% 09-Apr-2008	80% 01-Jun-2014		80% 31-Dec-2021
<p>Comments (achievements against targets): The target is fully achieved.</p>					

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Number of people in urban areas provided with access to Improved Water Sources under the project	Number	0.00 14-Feb-2012	563,500.00 14-Feb-2012		889,000.00 31-Dec-2021
<p>Comments (achievements against targets): Target value exceeded by 57 percent, thanks to the additional investments introduced in 2017.</p>					

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised	Actual Achieved at
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				Target	Completion
Direct project beneficiaries	Number	0.00	2,500,000.00		3,171,000.00
		14-Dec-2012	14-Dec-2012		31-Dec-2021
Comments (achievements against targets): Target value exceeded by 27 percent.					

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Female beneficiaries	Number	0.00	1,300,000.00		1,712,000.00
		14-Dec-2012	14-Dec-2012		31-Dec-2021
Comments (achievements against targets): Target value exceeded by 31 percent.					

Objective/Outcome: To Improve financial viability of HCS of Participating Municipalities

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Social payment arrears eliminated	Text	20%	0%		0%
		09-Apr-2008	01-Jun-2014		31-Dec-2021



Comments (achievements against targets):

Target fully achieved.

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Percentage of municipalities that have completed monetization of housing allowances and where cash payments are transferred to individual social accounts of citizens	Text	80% 09-Apr-2008	100% 01-Jun-2014		100% 31-Dec-2021

Comments (achievements against targets):

Target fully achieved.

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Percentage of private companies managing communal sector facilities on the basis of concession agreements and other	Text	18% 09-Apr-2008	65% 01-Jun-2014		81% 31-Dec-2021



agreements in the total number of communal entities					
<p>Comments (achievements against targets): Target value exceeded by 16 percent.</p>					

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Percentage of private investments in the total amount of investments to upgrade the communal infrastructure	Text	26% 09-Apr-2008	70% 01-Jun-2014		97.4% 31-Dec-2021
<p>Comments (achievements against targets): Target value exceeded by 27.4 percent.</p>					

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Financial viability of communal entities, including district heating, water supply, hot water supply and waste	Text	60.00 09-Apr-2008	10.00 01-Jun-2014		27.00 31-Dec-2021



water disposal, improved					
<p>Comments (achievements against targets): Achieved value is 17 percent below the set target.</p>					

A.2 Intermediate Results Indicators

Component: Support to HCS reform implementation at the federal level

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Percentage of participating cities connected to the Integrated HCS Information system financed under the project	Text	No portal 09-Apr-2008	30% 01-Jun-2014		100% 31-Dec-2021
<p>Comments (achievements against targets): Target value exceeded by 70 percent.</p>					

Component: Support to implementation of HCS reforms at the sub-national level

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
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Number of participating municipalities which have implemented their reform programs by at least 80 percent	Text	0 municipalities 09-Apr-2008	14.00 01-Jun-2014		14.00 31-Dec-2021
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Comments (achievements against targets):
Target fully achieved.

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Direct project beneficiaries	Number	0.00 14-Dec-2012	2,500,000.00 01-Jun-2014		3,171,000.00 31-Dec-2021
Female beneficiaries	Number	0.00	1,300,000.00		1,712,000.00

Comments (achievements against targets):
Target value exceeded by 27 percent.

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
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Amount of payable arrears of HCS entities	Text	297.7 bln. rubles 09-Apr-2008	25 bln. rubles 01-Jun-2014		2.4 bln. rubles 31-Dec-2021
Comments (achievements against targets): Target value exceeded by more than 10 times					

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Percentage of worn-out assets in the communal infrastructure	Text	66% 09-Apr-2008	45% 01-Jun-2014		44% 31-Dec-2021
Comments (achievements against targets): Target value exceeded by 1 percent.					

Component: Preparation and implementation of HCS investment plans

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Number of people in urban areas provided with access to Improved Water Sources	Number	0.00 14-Dec-2012	563,500.00 01-Jun-2014		889,000.00 31-Dec-2021



under the project					
<p>Comments (achievements against targets): Target value exceeded by 57 percent</p>					

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Percentage of municipal investment plans that are prepared under the project and already implemented	Text	No investment plans 09-Apr-2008	80% 01-Jun-2014		100% 31-Dec-2021
<p>Comments (achievements against targets): Target value exceeded by 20 percent.</p>					

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Piped household water connections that are benefiting from rehabilitation works undertaken by the project	Number	0.00 14-Dec-2012	161,000.00 01-Jun-2014		257,000.00 31-Dec-2021



Comments (achievements against targets):

Target value exceeded by 59 percent.

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Volume(mass) of BOD pollution load removed by treatment plant under the project	Tons/year	0.00	44.30		284.60
		14-Dec-2012	31-Dec-2020		31-Dec-2021

Comments (achievements against targets):

The actual value exceeded the target by 600 percent.

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Quality of treated wastewater at the district treatment facilities in Naberezhnye Chelny and Ivanovo cities improved	Text	Ivanovo: 5-day BOD = 9.0; TSS =19.0; NH4=2.05; NO3=64; NO2=0.89; P(PO4)=5.6; Zn=0.071; Cu=0.01513; Naberezhnye Chelny: suspended solids 25.0	Ivanovo: 5-day BOD = 2.2; TSS =4.5; NH4=0.5; NO3=40; NO2=0.08; P(PO4)=0.2; Zn=0.027; Cu=0.005; Naberezhnye Chelny: suspended solids 11.2 mg/dm3		Ivanovo: 5-day BOD = 2.0; TSS =4.3; NH4=0.48; NO3=38.8; NO2=0.080; P(PO4) =0.195; Zn=0.0250; Cu=0.0034; Naberezhnye Chelny: suspended solids 11.3 mg/dm3



		mg/dm3			
		12-Jun-2017	31-Dec-2020		31-Dec-2021

Comments (achievements against targets):

All actual values exceeded the target and the current effluent corresponds to the Russia's national standard for release into waters of ambient quality.

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Biological treatment system failure rate measured as number of failures per year at Ivanovo WWTP reduced	Number	3.70 12-Jun-2017	0.20 31-Dec-2020		0.20 31-Dec-2021

Comments (achievements against targets):

Target fully achieved.

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Accidents rate at Naberezhnye Chelny main sewer measured by number	Number	0.06 12-Jun-2017	0.00 31-Dec-2020		0.00 20-Dec-2021



of sewer pipe bursts per km
per year reduced

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Comments (achievements against targets):

Target achieved

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Number of water utilities that the project is supporting	Number	0.00	9.00		9.00
		04-Sep-2009	31-Dec-2020		20-Dec-2021

Comments (achievements against targets):

Target achieved



B. KEY OUTPUTS BY COMPONENT

Objective/Outcome 1 To improve the quality of HCS of participating cities.	
Outcome Indicators	<ol style="list-style-type: none"> 1. Improved quality of delivery of communal services, including district heating, water supply, hot water supply and waste water disposal. 2. Share of multi-family buildings managed by professional management companies (percentage). 3. Quality of delivery of communal services for the population improved (percentage of population rating services as satisfactory or better). 4. People in urban areas provided with access to water connections under the project (number). 5. Direct project beneficiaries (disaggregated).
Intermediate Results Indicators	<ol style="list-style-type: none"> 1. Volume (mass) of BOD pollution load removed by treatment plant under the project, Ivanovo and Naberezhnye Chelny (tones/yr). 2. Quality of treated wastewater at the district treatment facilities in Naberezhnye Chelny and Ivanovo cities improved. 3. Biological treatment system failure rate measured as number of failures per year at Ivanovo WTP 4. Accidents rate at Naberezhnye Chelny main sewer measured by number of sewer pipe bursts per km per year reduced. 5. Piped household water connections that are benefiting from rehabilitation works undertaken by the project. 6. Number of water utilities that the project is supporting. 7. Percentage of worn-out assets in the communal infrastructure. 8. Percentage of participating cities connected to the integrated HCS information system financed under the Project.
Key Outputs by Component (linked to the achievement of the Objective/Outcome 1)	<ol style="list-style-type: none"> 1. 3,171,000 direct beneficiaries in total, including 1,712,000 females under the Project. 2. 257,000 of piped household connections benefitted from the rehabilitation works. 3. Some 889,000 people in urban areas provided with access to improved water sources.



	<ol style="list-style-type: none"> 4. Number of pipe breaks reduced and reached: 6.08 in water supply systems, 3.8 in wastewater systems, 2.1 in heating systems; Net output of water 97 percent and net output of heat 97 percent. 5. 90 percent of multi-family buildings are managed by professional management companies. 6. 9 water utilities supported by the Project. 7. 44 percent of worn-out assets of communal infrastructure reached. 8. Some 80 percent of population rated HCS satisfactory or better. 9. 284.6 tones/yr of volume (mass) of BOD pollution load removed by treatment plant under the project, Ivanovo and Naberezhnye Chelny. 10. Quality of treated wastewater at the district treatment facilities in Naberezhnye Chelny and Ivanovo cities improved and achieved: Ivanovo: 5-day BOD = 2.0; TSS =4.3; NH4=0.48; NO3=38.8; NO2=0.080; P(PO4)=0.195; Zn=0.071; Cu=0.01513; Naberezhnye Chelny: suspended solids 11.3 mg/dm³ 11. Number of failures per year at Ivanovo WWTP reduced and reached: 0.20. 12. Accidents rate at Naberezhnye Chelny main sewer measured by number of sewer pipe bursts per km per year reduced to zero. 13. 100% percentage of participating cities connected to the integrated HCS information system financed under the Project.
<p>Objective/Outcome 2 To Improve financial viability of HCS of participating cities.</p>	
<p>Outcome Indicators</p>	<ol style="list-style-type: none"> 1. Percentage of social payment arrears eliminated. 2. Percentage of municipalities that have completed monetization of housing allowances and where cash payments are transferred to individual social accounts of citizens. 3. Improved financial viability of communal entities, including district heating, water supply, hot water supply and waste water disposal (percentage of entities that incur operational losses). 4. Private companies managing communal sector facilities on the basis of concession agreements and other agreements in the total number of communal entities (percent). 5. Private investments in the total amount of investments to upgrade the communal infrastructure (percent).
<p>Intermediate Results Indicators</p>	<ol style="list-style-type: none"> 1. Amount of payable arrears of HCS entities (RUB, billion).



	<ol style="list-style-type: none">2. Number of participating cities, which have implemented their reform programs by at least 80 percent.3. Percentage of municipal investment plans that are prepared under the project and already implemented.
<p>Key Outputs by Component (linked to the achievement of the Objective/Outcome 2)</p>	<ol style="list-style-type: none">1. 100 percent of social payment arrears eliminated.2. 100 percent of municipalities completed monetization of housing allowances and cash payments transferred to individual social accounts of citizens.3. Share of communal entities that incur operational losses reduced and reached 27 percent.4. 81 percent of private companies managing communal sector facilities on the basis of various types of agreements out of total number of communal entities.5. Share of private investments in the total amount of investment in upgrading the communal infrastructure increased and reached 97.4 percent.6. The amount of payable arrears made 2.4 billion RUB.7. 14 of participating cities have implemented their reform programs by at least 80 percent.8. 100 percent of municipal investment plans prepared under the Project are implemented.

**ANNEX 2. BANK LENDING AND IMPLEMENTATION SUPPORT/SUPERVISION****A. TASK TEAM MEMBERS**

Name	Role
Preparation	
Gevorg Sargsyan	Task Team Leader
Peter Ellis	Senior Urban Economist
Ellen Hamilton	Senior Urban Planner
Jan Brzeski	Housing and Urban Specialist
Meike van Ginneken	Senior Water and Sanitation Specialist
Arvo Kuddo	Senior Labor Economist
Dhruva Sahai	Senior Financial Specialist, Consultant
Tatyana Shandrunova	Operations Analyst
Yan F. Zhang	Urban Economist
Vladimir Tsirkunov	Senior Environmental Engineer
Stepan Titov	Senior Economist
Supervision/ICR	
Tatyana Shadrunova	Task Team Leader(s)
Alexander Balakov	Procurement Specialist(s)
Galina S. Kuznetsova	Financial Management Specialist
Olga A. Gubareva	Procurement Team
Rahmoune Essalhi	Procurement Team
Arcadii Capcelea	Environmental Specialist
Stjepan Gabric	Team Member
Nina Kolybashkina	Social Specialist
Dianna M. Pizarro	Social Specialist
Larysa Hrebianchuk	Team Member
Lida Arsamakova	Team Member
Alexander V. Danilenko	ICR contributor
Nora Mirzoyan	ICR contributor



B. STAFF TIME AND COST

Stage of Project Cycle	Staff Time and Cost	
	No. of staff weeks	US\$ (including travel and consultant costs)
Preparation		
FY05	53.291	291,536.64
FY06	55.216	271,953.12
FY07	18.195	110,013.89
FY08	.200	411.59
Total	126.90	673,915.24
Supervision/ICR		
FY06	0	0.00
FY08	3.752	18,425.20
FY09	12.163	41,087.71
FY10	21.305	94,783.48
FY11	24.822	124,336.37
FY12	16.152	89,447.79
FY13	16.129	104,534.38
FY14	18.170	200,193.91
FY15	29.799	228,944.55
FY16	9.115	54,875.36
FY17	20.688	80,861.37
FY18	15.495	84,592.64
FY19	9.166	71,782.55
FY20	16.476	106,381.07
Total	213.23	1,300,246.38

ANNEX 3. PROJECT COST BY COMPONENT

Components	Amount at Approval (US\$M)	Actual at Project Closing (US\$M)	Percentage of Approval (US\$M)
Support to HCS reform implementation at the federal level	2.33	5.12	219.6%
Support to implementation of HCS reforms at the sub- national level	6.66	4.58	68.7%
Preparation and implementation of HCS investment plans	185.81	179.19	96.4%
Project management and monitoring of results	5.19	10.61	204.4%
Total	200.0	199.51	99.7%

ANNEX 4. EFFICIENCY ANALYSIS

1. The HCSP investment program consisted of 31 sub-projects which were implemented in 10 cities with a budget of US\$292.4 million. Sub-projects were classified into three major categories by percentage of total financing: (i) energy efficiency of district heating and proper water accounting – seven percent; (ii) wastewater management and treatment – 60 percent; (iii) improvements and quality of water services and operation of water networks 33 percent.

2. All HCSP contracts were pre-screened for financial and technical viability as well as for operation affordability to the service providers (district heating and water supply and wastewater companies) as well as for residents of respective project locations. The efficiency analysis confirms that the HCSP investments are economically viable, environmentally, and financially sustainable. The economic assessment has been carried out for typical representative samples of physical investments for each category – water in Tula, energy efficiency in Bratsk, and wastewater collection and treatment in Ivanovo. These subprojects were about 41 percent of the HCSP investments program.

3. The economic rate of return (ERR) for the energy efficiency sub-projects in Bratsk were addressing operations of autonomous district heating points: the investments resulted in an ERR above 40 percent. The package of water subprojects in Tula, addressing expansion and reduction of unaccounted water resulted in an ERR of about 14 percent, and wastewater collection and treatment in Ivanovo had an ERR of 13 percent. Financially, as all investments were provided as grants, they had little effect on the financial performance, except some growth in revenues.

(i) Reduction of operation costs and energy consumption of communal services companies in Bratsk

Supply and Installation of the centralized system of recoding, monitoring and management of heat and water consumption in the housing stock in Bratsk HCSP/ICB/BRA-1 (Subproject Bratsk 1) and Design, Supply and Installation of Individual Heat Points HCSP/ICB/BRA-1 (Subproject Bratsk 3). Total funding US\$6.419 million.

4. Bratsk is the second largest city in Irkutsk oblast, Eastern Russia located along the Angara River just below its confluence with the Oka River. It was founded as in 1631, but the settlement remained unimportant until 1954, when both the Tayshet-Lena railway through Bratsk and construction of the Bratsk hydropower station started. A huge aluminum smelter and a timber-processing plant were built to utilize the Bratsk Dam's generated hydropower. The population is 223,100, with the majority of the housing stock being high-rise apartment buildings (5-12 floors) built from 1960-1990, with some older housing of two-three floors from 1930-1960.

5. The Bratsk 1 and its follow-up Bratsk 3 subprojects were initiated by the Bratsk municipality to address (i) excessive losses of heat and inefficiencies of the centralized district heating operations and heat distribution in apartment buildings, (ii) need for excessive and costly water treatment for heat supply with limited water sources for district heating purposes of the required quality, and (iii) excessive demand of coal for hot water and district heating operations. In addition, residents complained about uneven temperature of different rooms in their apartments. The subprojects were in correspondence with the Russian Federal Law No. 261 (Nov. 23, 2009) on Energy Efficiency in Communal Services and Energy Meters.

6. The objectives of Bratsk 1 and Bratsk 3 subprojects were (i) automation of water and district heating operations in the Bratsk housing stock, (2) reconstruction and automation of individual district heating points to increase efficiency of operations and their environment protection, including water resources. The subprojects covered: design and installation of (i) water and district heating meters, (ii) automation of all district heating operations, (iii) looped hot water distribution system, and (iv) replacement of distribution pipes for potable and hot water supply. Bratsk 1 and Bratsk 3 activities covered investments in 221 apartment buildings (of nearly 600 total) managed by a local private operator JSC Zhilishchnye Systemy (JSC Housing Systems). Bratsk 1 and Bratsk 3 were completed in

2018.

7. The economic benefits include reduced losses and improved operations of hot water and district heating systems, reduction of fees to residential customers and reduced cost of operation and maintenance of district heating and hot water supply. There is also a significant environmental benefit due to reduced demand for fuels that resulted in GHG emission reduction and associated penalties. The ERR is 41 percent for the period 2018-2029. Net Present Value (NPV) is nearly RUB 1,700 million (discount rate 12 percent).

Table 1: Bratsk Subprojects’ Economic Benefits

	Period of assessment	Cost savings, RUB million per year	NPV (12% discount rate), RUB million
Reduction in payments for district heating	2018-2029	2018 (actual)-84.5 2019 (actual)-100 2020 (actual)-137.1 2022 – 2035 - 413 per year	4,990

8. In financial terms, the district heating and hot water provider reduced the use of fuels (and associated GHG emissions). The JHC Housing Systems achieved cost-recovery. The Financial Rate of Return is assessed at 20 percent, making expected financial return of the invested capital within 10-12 years.

9. Additionally, there are several benefits not accounted for as described below.:

Table 2: Unintended Co-benefits

Co-benefits	
Environmental	Reduction of air pollution, GHG emissions and harmful substances, due to reduced coal burning for the heat and hot water production; reduced losses of hot water and associated environmental damage. The reduction of coal demand is assessed at the 42,900 tons a year, or roughly 96,000 tCO _{2e} a year. It also reduced emissions of sulfurous and nitrous gases (not accounted).
Social	Improved services quality and uninterrupted supply of heat and hot water to residents.

10. In summary, the Bratsk 1 and Bratsk 3 subprojects’ implementation were successful and contributed to the achievement of the objectives of the HCSP by increasing the efficiency and financial and environmental sustainability of communal services with Economic Rate of Return of 41 percent and net present value of the investment of US\$18.2 million (see table 3).

Table 3: Summary of the Bratsk District Heating Investment Subproject

Total investment	US\$ million	\$ 6.42
Number of people with improved district and hot water services	people	75,748
Reduced coping costs	US\$ per year	\$ 5,603,607
Reduced coal use	tons a year	43,600
Reduced GHG emissions	tons a year	96,586
IRR	%	41%
NPV	US\$, million	\$18.19

Improvement of Water Supply Services in Tula

Water supply in the settlements Skuratovsky and Mendeleevsky of Tula Central district HCSP/NCB/TUL-1 (subproject Tula 1); Residential development of Skuratovsky district of Tula (main networks and structures) and residential development of IV N-E district of Tula main networks (HCSP/NCB/TUL-2) – subproject Tula 2; Out-site networks of housing development “Residential area situated in the north end of Zarechensky district of Tula city” HCSP/NCB/TUL-3 (Subproject Tula 3); Reconstruction of water supply system of Proletarskiy okrug of Tula city (Subproject Tula 4). Total funding of US\$33.564 million.

11. Tula is the largest city and the administrative center of Tula Oblast in Russia, located 193 kilometers south of Moscow. Tula is located on the Upa River, a tributary of the Oka River. Tula’s current population is 501,000. A primarily industrial city, Tula was settled between the 12th and 14th centuries as a fortress at the border of the Principality of Ryazan. Historically, Tula was a major center for the manufacture of armaments. Tula is home to the Klokovo airbase, Tula State University, and Tula Kremlin.

12. By 2009, the water systems in Tula were on the verge of collapse. The water intake and water treatment systems were worn out by 80-90 percent. The majority of equipment was completely deteriorated with a high rate of accidents on distribution networks and reduced water quality which was obvious to residents. The water was supplied from Tarussko-Oksky, Upinsky and Zavolzhsky groundwater aquifers. The Upinsky aquifer was more than 120 years in operation and could not satisfy the city needs. Zavolzhsky aquifer water was contaminated with high hardness and mineralization. Maslovsky-Pesochensky, Skuratovsky, Mendeleevsky water intakes, Volokhov and Kitaevsky artesian water had also a high content of salts of general hardness supplied to the city (hardness from 15-27 mg-eq/l vs. the Russian standard below 10 mg-eq/l). The water shortage was 35,000 m³/day. Due to lack of replacement of water mains in 1980-2010, the water losses were at around 34 percent.

13. The Tula water subproject’s objective was to ensure 24/7 supply of high-quality drinking water from the Nepreikovskiy and Oksky water intakes in the amount of 5,900 m³/day to serve 23,500 residents of Skuratovsky and Mendeleevsky districts. The water investments covered additional demand of 2,800 for non-residential users also through reduction of non-revenue water.

14. The construction and rehabilitation of water mains in the Skuratovsky and IVth North-Eastern micro-districts of Tula was of a strategic importance for development in Tula and its new housing construction. The existing water supply and sewerage systems in this area were not able to supply and divert additional water and wastewater. About 15 percent of the city population experienced interrupted supply. Many residents had small water reservoirs to cope during continuous interruptions. Tula population relied on bottled water as a primary coping strategy for the poor potable water quality. Annual coping cost was assessed at US\$7 million a year.

15. Four water subprojects were implemented in Tula from 2012-2021 with total of US\$33.564 million. All Tula residents are supplied with high-quality potable water. The number of accidents on networks dropped from 350 a year to 120. Non-revenue water rate is slightly lower 11 percent. All saved water is distributed through the networks. The investments, however, did not reduce operation and maintenance costs due to increased volumes of water (in Tula) and scope of treatment (in Ivanovo). In Bratsk this happened due to reduced demand for energy resources.

16. The company also improved its performance with an increased rate of collection up to 100 percent, and account receivables is below 120 days. The economic rate of return of the Tula water supply investments is 15 percent with positive NPV (US\$4.66 million).

Table 4: Summary of the Tula Water Supply Investment Subproject

Investments, total	US\$ million	33.56
Number of people with improved water services	People	232,800
Reduced coping costs, a year	US\$ million	4.68
Economic rate of return	%	14%
Net Present Value, 12% discount rate	US\$ million	4.66

Wastewater collection and treatment, methane capture and utilization in Ivanovo city, Ivanovo Oblast

Rehabilitation of sewage treatment facilities in the village of Bogdanikha, Ivanovo urban district, (HCSP/ICB/IVN-1); Reconstruction of sewage treatment plants - biological treatment unit in Ivanovo (HCSP/ICB/IVN-4); Rehabilitation of sewage treatment facilities. Stage 2. Construction of the final treatment system for biologically treated sewage at sewage treatment facilities of Bogdanikha. Total funding of US\$82.334 million.

17. Ivanovo is the administrative center and largest city of Ivanovo Oblast, located 254 kilometers northeast of Moscow. Ivanovo has a population of 408,330. Ivanovo is located on the Uvod River. Ivanovo gained city status in 1871 and emerged as a major center for textile production. It is served by Ivanovo Yuzhny Airport. Since the beginning of the 21st century there has been declining economic activity in the city.

18. The objectives of the Ivanovo investments in wastewater were to improve the quality of wastewater treatment operations. This consisted of the reconstruction of a wastewater treatment plant (WWTP) in Bogdanikha, biological treatment unit (post-treatment) with chemical precipitation of nutrients, and installation and operation of sludge digester with methane capture and utilization.

19. Ivanovo WWTP operations were not adequate at the start of the project. While mechanical and biological facilities were operational, the quality of operation was poor. The quality of WWTP effluent did not correspond to the standard, and the annual penalties for the improper discharges were up to US\$100,000 a year. Effluent also contained a significant amount of nutrients (Phosphorus and Nitrogen). This poorly treated effluent was discharged to the Uvod River, contaminating water for towns and villages downstream. The poor operational status of the wastewater network also contributed to cross-contamination of drinking water through the poorly operated water network. There was not enough space for the sludge dry beds at the WWTP territory, and wet sludge was often washed into surface water during the wet seasons and winter. Due to HCSP, Ivanovo was able to construct and operate a methane digester system that not only reduced the amount of sludge, but also resulted in a significant reduction of methane emissions.

20. The benefits from the Project are from reduction of nutrient pollution by 95 percent to a pre-project level with annual global benefits of up to US\$2.9 million a year. The quality of discharges corresponds to the National standard for discharges of water of ambient waterbody quality²⁶.

Sludge management operations reduced the need for extra land. Methane digestion process, production and utilization of biogas reduced the WWTP dependency on heat and electricity. Also, this allowed to supply district heating operations of 300 households in the Bogdanikha village. In summary, there were reduced emissions of GHG equal to 30,000 tCO₂e that corresponds to up to US\$3 million a year of carbon co-benefits. Utilized biogas reduced

²⁶ To Category B effluent, which can be conditionally characterized as permissible to discharge into water bodies without limitations water bodies as demonstrating resistance to eutrophication with parameters P below 0.2 mg/l and NH₄ below 1 mg/l. Source: RF National Standard: Best available techniques. Classification of water bodies for the process of regulating wastewater discharges of centralized sewerage systems of settlements (OKK 13.020.01, enforced on 2017-07-01).

internal WWTP demand for electricity by 70 percent and heat by 100 percent as well.

21. The economic rate of return of this investment is assessed at the level of thirteen percent²⁷.

Table 5: Summary of the Ivanovo WWTP Rehabilitation subproject

Investments (total)	US\$, million	81.87
N removal	Tons a year	5.12
P removal	Tons a year	2.01
Reduced cost of maintaining landfill a year	US\$, million	0.05
Benefit from nutrients removal, a year	US\$, million	2.86
Reduced demand for electricity, a year	US\$, million	2.24
Reduced penalties, a year	US\$, million	0.05
Climate co-benefit average a year	US\$ million	2.64
Total per year	US\$ million	14.97
Economic rate of return	%	13
Net present value, discount 12%	US\$ million	1.49

²⁷ As reference ICRs of similar projects: Municipal Water and Wastewater Project/P008832, Russian Federation; Bukhara and Samarkand Sewerage Project/P112719, Uzbekistan.

ANNEX 5. BORROWER, CO-FINANCIER AND OTHER PARTNER/STAKEHOLDER COMMENTS

MINISTRY OF CONSTRUCTION AND
HOUSING&COMMUNAL SERVICES SECTOR

20, 2022
28164-СБ/05

Dear Seligmann,

The Department of Finance and Property Relations of the Ministry of Construction and Utilities Sector of the Russian Federation has reviewed the Implementation Completion Report for the Housing and Communal Services Project (Project) implemented under Loan Agreement of September 16, 2009 #4888 RU (IBRD-4888-RU), and hereby would like to advise that it has no objection, and thank you for efficient collaboration and operational support to the Ministry of Construction of Russia throughout implementation of the Project.

Sincerely,

Director of the Department of Finance and Property Relations

S.Barinov



**MINISTRY OF CONSTRUCTION AND HOUSING&COMMUNAL SERVICES SECTOR
(MOCHCS)**

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IMPLEMENTATION COMPLETION REPORT (ICR)²⁸

Moscow, 2022

²⁸ Agreed with Ministry of Finance and Ministry of Economic Development, Russian Federation.

Materials necessary for preparation of the Implementation Completion Report on the Housing and Communal Services Project in Russia

Background Information on the Project

The Loan Agreement between the International Bank for Reconstruction and Development (IBRD, Bank) and the Russian Federation for financing the Housing and Communal Services Project in Russia (LA, Project) was signed on September 16, 2009, Loan №4888 RU, in the amount of 200 million USD. The Loan Agreement came into effect on February 5, 2010.

Under Section IV.B.2 of Schedule 2 to the Loan Agreement, initially the Loan Closing Date was set as June 1, 2014. During the Project implementation, due to amendments to the LA, the Project Closing Date was extended to December 31, 2021.

One of the conditionalities for execution of the LA and its effectiveness was to develop upfront a methodology for selecting cities through a contest that would be satisfactory to the Bank as well as conduct competitive selection of cities for participation in the Project from among the municipalities which submitted their applications.

By May 15, 2008, 56 applications from municipalities were submitted to the contest (See Annex No. 1). Based on the competitive selection results, the following municipalities were included in the Project as its main participants by Order No. 264, dated July 6, 2009, that was issued by the Russian Ministry of Regional Development: the cities of Bratsk (Irkutsk region), Orenburg (Orenburg region), Saransk (Republic of Mordovia), Cheboksary (Chuvash Republic), Volzhsky (Volgograd region), Naberezhnye Chelny (Republic of Tatarstan), Novokuibyshevsk (Samara region), Ivanovo (Ivanovo region), Nefteyugansk (Khanty-Mansiysk Autonomous District), and Tula (Tula region) (Participating Cities). The cities of Dimitrovgrad (Ulyanovsk region), Pyatigorsk (Stavropol region), Cherepovets (Vologda region) and Arkhangelsk (Arkhangelsk region) were included in the list of reserve cities (Reserve Cities, Project Participants).

At the federal level overall management of the Project implementation under the LA and Russian Government Resolution No. 43, dated January 28, 2005, On the Operational Procedures for Projects Implemented by the Russian Federation with Participation of International Financial Institutions (Resolution), was carried out by the Interagency Working Group on preparation and implementation of the Project (IWG) which consisted of representatives from the Russian Ministry of Finance, the Russian Ministry of Economic Development, the St. Petersburg Foundation for Investment Projects as well as the Russian Ministry of Regional Development (Agency responsible for Project implementation).

The Russian Ministry of Regional Development was abolished by Presidential Decree No. 612, dated September 8, 2014, and Russian Government Resolution No. 2482-r, dated December 6, 2014, appointed MOCHCS responsible for Project implementation as a successor to the abolished Russian Ministry of Regional Development regarding obligations arising from Loan Agreement No. 4888 RU, dated September 16, 2009.

Day-to-day assistance in managing and implementing the Project was provided to the MOCHCS by the St. Petersburg Foundation for Investment Projects (FISP) under Agency Agreement No. 01-01-06/04-450, dated December 18, 2009, which was signed by the Russian Ministry of Finance, the Russian Ministry of Regional Development and the FISP.

In accordance with the Project Implementation Agreements signed by and between the Russian Ministry of Regional Development and the Participating Cities in March 2010, relevant authorities and mandate to manage Project implementation in the Participating Cities were assigned to the Project Director in each Participating City (an official holding a position of not lower than the deputy head of the city administration) and a specially designated Working Group for Project implementation.

The Project combined implementation of an extensive HCS reform program and real investments in rehabilitation, upgrade and reequipment of the existing infrastructure with a focus on addressing key issues in each Participating City and creating, through project activities, more economically and financially sustainable conditions in the sector to make it less dependent on budget support and financing.

The Project consisted of two phases:

- a)** 2008–2010: a reform phase, which included implementation of the housing and communal services sector reform program (reform program) in the Participating Cities; based on the evaluation results, ten cities were selected as main Project Participants and four cities were selected as reserve cities;
- b)** 2012–2021: an investment phase, which included implementation of the HCS investment plans in the selected

cities (Participating Cities), i.e. those municipalities that were successful in achieving results of the sector-wide reforms, as well as the reserve cities which successfully implemented the reform program, provided the IWG made a relevant decision.

At this stage 30 investment projects for the total amount of 18.5 billion rubles were implemented.

The funds for implementation of the investment plans were allocated based on the results achieved during the first Project phase (reform phase) in accordance with the Methodology for Competitive Selection of Project Participants and Allocation of Funds for Implementing the Investment Plans of the Project Participants (Annex A of the Project Operations Manual).

During the reform phase the Participating Cities carried out planned activities based on the developed and approved reform programs. The activities in such reform plans centered around three key areas determined by the Russian Government and the IBRD:

- Improvement of operational performance and financial viability of utilities;
- Strengthening of the social protection system for consumers of housing and communal services;
- Creation of market competition in management and maintenance of housing stock.

To be eligible to participate in the Project during the investment phase, the Participating Cities were required to complete most of their planned reforms (at least 80% of the reform program) and also complete preparation of good quality relevant investment plans, technical design and documentation and feasibility studies included in the investment plans for subprojects agreed with the Russian Ministry of Regional Development.

Based on the evaluation conducted and approved by the IWG, all Participating Cities exceeded the minimum requirement which was to have completed 80% of the reform programs.

The data on the final evaluation of the reform program implementation for each activity separately and for all activities in all Participating Cities which were used during final allocation of funds for implementation of the approved investment plans are provided in Annex No. 2.

During the investment phase the Participating Cities implemented their investment plans (investment subprojects) in the housing and communal services sector. The list of contracts completed in the Participating Cities is provided in Annex No. 3.

The following amendments were made to the Loan Agreement that envisaged extension of the Project Closing Date and reallocation of a portion of the loan proceeds between the Categories:

Upon MOF request No. 17-04-08/20901, dated June 5, 2013, the following amendments were made to the LA by IBRD letter N-2013-00448/ECCU1:

- The Loan Closing Date was extended to May 15, 2016;
- The loan proceeds in the amount of 1,700,000,00 USD were reallocated from Category 1 'Goods, Works, Consultants' Services and Training for the Project except for Component C (b)' (Category 1) to Category 3 'Operating Costs' (Category 3).

Upon MOF request No. 17-04-08/49898, dated August 31, 2015, the following amendments were made to the LA by IBRD letter N-2015-008310/ECCU1, dated December 10, 2015:

- The Loan Closing Date was extended to May 15, 2018;
- The loan proceeds in the amount of 700,000.00 USD were reallocated from Category 1 to Category 3;
- Activities on technical assistance to the MOCHCS in preparation of follow-up projects in the housing and communal services sector, including the preparation of the Project on Developing Build-up Areas in Small and Medium-sized Russian Towns, were included in Component D 'Project management and monitoring' in Schedule 1 to the Loan Agreement.

Upon MOF request No. 17-04-08/21490, dated April 11, 2017, the following amendments were made to the LA by IBRD letter N-2017-000220/RU, dated July 14, 2017:

- The Loan Closing Date was extended to December 31, 2020;
- The loan proceeds in the amount of 5,559,000.00 USD were reallocated from Category 2, including 1,950,000.00

USD reallocated from Category 2 'Goods, Works and Consultants' Services for Component C (b)' (Category 2) to Category 1, and 3,609,000.00 USD reallocated from Category 2 to Category 3;

- Percentage of expenditures to be financed by the loan proceeds under Category 2 was decreased from 100% to 12%.

Upon MOF request No. 17-04-05/54824, dated July 25, 2020, the following amendments were made to the LA by IBRD letter N-2020-0000035/RU, July 28, 2020:

- The Loan Closing Data was extended to September 30, 2021.

Upon MOF request No. 17-04-05/32152, dated April 27, 2021, the following amendments were made to the LA by IBRD letter N-2021-0000248/RU, dated June 21, 2021:

- The Loan Closing Data was extended to December 31, 2021.

Upon MOF request No. 17-04-05/97880, dated December 2, 2021, the following amendments were made to the LA by IBRD letter N-2021-0000358/RU, dated December 10, 2021:

- The loan proceeds in the amount of 230,000,00 USD from Category 1 and the loan proceeds in the amount of 997,000.00 USD from Category 3 were reallocated to Category 2;
- The percentage of expenditures financed from the loan was revised to bring it to the unified 24% to be paid by the loan for any payments under all Categories of Expenditures processed starting from November 1, 2021 until December 31, 2021.

Objectives, components and key results of the Project

The main objective of the Project is to improve the quality and financial viability of the housing and communal services in the Participating Cities.

The Project consisted of four components:

Component A. Support to HCS reform implementation at the federal level:

- (a) Development of legal and regulatory framework for HCS reforms implementation and provision of training at the federal level;
- (b) Establishment of a national HCS monitoring system on a pilot basis;
- (c) Dissemination of the project results to non-participating municipalities and regions.

Component B. Support to the Participating Cities with HCS reforms implementation:

- (a) Provision of technical assistance and training on utility reform, social protection and housing;
- (b) Evaluation of the implementation of municipal reform programs;
- (c) Knowledge sharing between the Participating Cities through capacity building events and written knowledge products;
- (d) Implementation of a public awareness campaign on the HCS reforms.

Component C. Assistance with preparation and implementation of HCS investment plans:

- (a) Preparation of municipal investment plans, feasibility studies and technical designs by the Participating Cities;
- (b) Financing of investment plans of the Selected Cities;
- (c) Supervision of investment plan implementation by the Selected Cities.

Component D: Project management and monitoring

- (a) Technical assistance to the Russian Ministry of Regional Development (Russian Ministry of Construction and Housing&Communal Services) in implementation, monitoring and evaluation of Project results;
- (b) Financing of Operating Costs.

Component A. Support to HCS reform implementation at the federal level. The following activities were undertaken:

- Public opinion surveys on the implementation progress of the HCS reform were conducted at the launch of the Project and at its completion;
- Methodological guidelines on the composition, procedures for development and approval of the programs for integrated development of the utility infrastructure systems in municipalities were developed;
- Methodological guidance on calculating caps on tariffs paid by the citizens for communal services were developed;
- A systems technical design for developing an automated monitoring system (AMS) in the HCS sector was developed for implementation in the participating regions with development of an analytical subsystem. The technical design documentation for the HCS AMS was prepared;
- The 'HCS Reform in Russia' Internet portal was created at www.jkhrus.ru in the Internet, information on transformations in the HCS sector and implementation of investment projects in the Participating Cities was placed on the portal;
- The Best Practice Code was prepared;
- Assistance was provided in developing documentation for preparation of the Project on Developing Build-up Areas in Small and Medium-sized Russian Towns;
- A comprehensive survey in the municipalities located near the coastlines of the Caspian Sea, the Black Sea and the Sea of Azov in four Russian regions (the Krasnodar krai, the Rostov region, the Astrakhan region and the Republic of Dagestan) to rank potential participants of large investment projects in the wastewater and stormwater drain sector aimed at reducing adverse impact on natural water bodies was conducted;
- Upon request of the MOCHCS, the Information and Analytical System for Management of Investment and Construction Projects was developed, designed and installed for the purpose of monitoring investment construction projects.

Component B. Support to the Participating Cities with HCS reforms implementation. This Component included technical assistance provided to the Participating Cities at the local level. The Project focused on supporting institutional changes both during the HCS reform phase and the second investment phase as well as follow-up reforms. During implementation of this component the Participating Cities took part in organization of workshops, round table discussions, consultations and other events undertaken under the Project, implemented proposed activities and adopted municipal legal acts prepared under technical assistance to the cities. This Component also included activities carried out by the Project consultants to promote the Internet portal of the HCS Project, whereas the Participating Cities prepared and provided information on the HCS reform results and implementation of investment subprojects for the portal.

For example, technical assistance provided to the Participating Cities by the competitively selected Consultant included:

- Development of 64 draft municipal legal acts, out of which 54 acts were approved;
- Development of 38 methodological guidelines and 45 information and analytical materials;
- 400 oral and written consultations to representatives of more than 200 entities;
- 83 training events for representatives of the city administrations, housing and utility enterprises and homeowners;
- Preparation of the Best Practice Code describing implementation of investment projects in the utility sector and institutional transformations in the housing and communal services sector.

Component C. Assistance with preparation and implementation of HCS investment plans. Under this Component the Participating Cities implemented 30 investment subprojects (See Annex No. 3 and Annex No. 4 for details). This Component provided technical assistance to the Participating Cities for preparation of investment plans, feasibility studies and technical design and cost documentation for investment subprojects included in the investment plans during the reform phase. The Bank loan was also used to finance investment contracts for implementation of the approved investment plans during the investment phase. In the course of this Component implementation the Participating Cities prepared and got approval for their investment plans, feasibility studies and technical design and cost documentation, provided organizational support for supervision of their investment plans and investment subprojects implementation, took part in acceptance of the completed works under the contracts for implementation of the investment subprojects.

Component D. Project management. This Component financed annual monitoring of the Project implementation

progress and evaluation of the Project results which was one of its implementation conditions. Annual reports on Project implementation performance were prepared by the Participating Cities by analyzing the monitoring indicators to measure progress in implementation of Project activities and achievement of its outcomes in the Participating Cities. If the indicator values depended on the implementation of the investment subprojects in the Participating Cities, the indicator was measured in the cities where such investment subprojects were implemented; the indicators which were not influenced by implementation of specific investment subprojects in a particular participating city, were not measured for evaluation of the Project implementation progress in this city. The indicators of institutional transformations in the HCS under the Project were measured in all Participating Cities because such transformations under the Project took place in all Participating Cities. Collection and analysis of the baseline data for monitoring and evaluation to measure achievement of Project implementation objectives in the Participating Cities were supported by sound methodological guidelines.

The Project also included preparation of mini-ICRs in each Participating City that were prepared with assistance of a competitively selected Consultant.

Main conclusions based on Project implementation results

It can be inferred from the Project outcomes that the following factors contributed to its successful implementation:

1. A competitive selection of the cities for participation in the Projects ensured selection of the cities that were best prepared for its implementation. At the same time when follow-up projects of this kind are implemented, during the selection of the cities it is proposed to take into account not only needs in investments, but also more carefully consider cost effectiveness of investment subprojects planned for implementation at the initial stage of preparation for their implementation;
2. Relevant monitoring of Project implementation progress in the participating cities. It is necessary to carefully select a list of project evaluation indicators taking into account their relevance during the investment stage of the project;
3. Participation of the cities in Project implementation management. A Project Director is to be appointed in each participating city and local working groups on Project implementation are to be set up;
4. Relevant consultants' support to participating cities during implementation of institutional transformations both during the reform phase and the subsequent investment phase. It should be noted, though, that such consultants' support was provided until 2015, when the Project was to be completed according to the initial plans. The extension of the investment phase of the Project to ensure that all planned investment subprojects were completed and new projects could be included in the investment plans was not accompanied by extension of institutional support to the Participating Cities.

When similar projects are launched, it is necessary to carefully evaluate organizational capacity of the cities to participate in their implementation, and have a broader range of sectors represented to ensure that investment subprojects are implemented in parallel in various utility subsectors (heat and water supply, water disposal, electricity supply). While this approach will make the project more complicated, still, as demonstrated by this Project implementation experience, inclusion of different subprojects in a larger project will help improve quality of various subsectors in the utility infrastructure and will ensure improved quality of all communal services that objectively need to be improved. A good illustration of this approach are cities of Bratsk and Cheboksary where implementation of three investment subprojects in each Participating City improved quality of most communal services provided to the population of these cities, i.e. not only services of cold water supply and water sewage but also domestic hot water and heating services.

Evaluation of Borrower and Bank performance

Federal Ministries and the PIU performance

The project implementation arrangements that supported interaction between all Project stakeholders worked well and are currently being used in implementation of the Water Supply and Sanitation Project in the Russian cities financed by the New Development Bank.

The MOCHCS assumed overall responsibility for Project management and Project implementation, it administered funds allocated for project implementation and also supervised disbursement of Project funds for the intended purpose.

The MOF undertook to arrange for signing of the Loan Agreement, supported day-to-day interaction with the IBRD when amendments were made in the LA, supervised disbursement of funds for the intended purpose, provided guarantees on servicing and repayment of the loan funds, it was also a member of the Project Interagency Working Group and the Evaluation Committee under the Project.

The MOED together with the MOF approved relevant Project documentation within its competence taking into account the need to develop and implement consistent public policy on investment and cooperation with international financial institutions, it was also a member of the Project Interagency Working Group and the Evaluation Committee under the Project.

The Project Implementation Unit, i.e. the St. Petersburg Foundation for Investment Projects, was engaged in project preparation and after the Loan Agreement was signed, it fulfilled the functions of the PIU throughout the implementation period under the Agency Agreement mentioned earlier; for example, the FISP supported preparation of tenders in conformity with the IBRD requirements and the Project objectives and also obtained relevant approvals and no-objections.

IBRD performance

The project preparation at the initial stage and its subsequent phased implementation were carried out according to

the World Bank rules and procedures, regulatory and legal acts of the Russian Federation that set out procedures for operations under the projects with participation of international financial institutions.

During all Project preparation and implementation stages the Bank team arranged and supported timely preparation and issuance of no-objections to relevant documentation, as well as introduced changes and issued no-objections to necessary changes and adjustments.

Supervision of Project implementation was arranged quite efficiently, supervision was conducted at a high professional level. Continuous monitoring of the indicators measuring the Project implementation progress, joint discussions of the results achieved and development of relevant proposals for making necessary adjustments were helpful in addressing issues and achieving the set objectives in a timely fashion. The Project implementation experience shows that regular Bank supervision missions is of one of the most efficient measures in addressing issues that occur during Project implementation, monitoring and evaluation of Project implementation outcomes. Quick review and discussion of the most acute issues involving a broader range of participants (representatives of the federal, regional and municipal bodies of power, the Project Implementation Unit, experts hired by the IBRD and the Russian Federation) along with visits to the Project sites and review of Project implementation progress enable project teams to conduct unbiased evaluation of the situation and work out agreed and efficient measures to improve Project implementation performance.

High qualification and active participation of the Bank team in addressing arising problems and issues did not only help to clarify and articulate objectives of the entire Project better but also specify the tasks and objectives of investment subprojects implemented in the cities and adopt correct technical solutions.

Continuation of cooperation

Successful implementation of the Project led to development of a number of joint projects of the MOCHCS and international financial institutions. For example, in March–April 2020 the Project supported implementation of a comprehensive survey of municipalities in four regions of Russia (Krasnodar region, Rostov region, Astrakhan region, Republic of Dagestan) to form a ranked list of potential participants in large investment projects in the wastewater and stormwater drain sector aimed at mitigating negative impact on natural water bodies (Contract No. HCSP/CQS-8). The data collected by this comprehensive survey is being used by the MOCHCS to develop investment projects on water sanitation in the resort city of Sochi to be financed by a New Development Bank loan. Currently the Water Supply and Sanitation Project financed by the New Development Bank is being implemented in the Russian cities.

The list of municipalities that applied to participate in the Project

1	Anapa (Krasnodar region)	29	Naberezhnye Chelny (Republic of Tatarstan)
2	Arzamas (Nizhny Novgorod region)	30	Nefteyugansk (Khanty-Mansiysk Autonomous District)
3	Arkhangelsk (Arkhangelsk region)	31	Nizhnevartovsk (Khanty-Mansiysk Autonomous District)
4	Astrakhan (Astrakhan region)	32	Nizhnekamsk (Republic of Tatarstan)
5	Achinsk (Krasnoyarsk region)	33	Novokuibyshevsk (Samara region)
6	Berezniki (Perm region)	34	Novocheboksarsk (Chuvash Republic)
7	Blagoveschensk (Amur region)	35	Novy Urengoy (Yamal-Nenets Autonomous District)
8	Bratsk (Irkutsk region)	36	Norilsk (Krasnoyarsk region)
9	Bryansk (Bryansk region)	37	Noyabrsk (Yamal-Nenets Autonomous District)
10	Volzhsky (Volgograd region)	38	Orenburg (Orenburg region)
11	Vologda (Vologda region)	39	Penza (Penza region)
12	Dimitrovgrad (Ulyanovsk region)	40	Petrozavodsk (Republic of Karelia)
13	Yessentuki (Stavropol region)	41	Petropavlovsk-Kamchatsky (Kamchatka region)
14	Zheleznogorsk (Krasnoyarsk region)	42	Pyatigorsk (Stavropol region)
15	Zelenodolsk (Republic of Tatarstan)	43	Rybinsk (Yaroslavl region)
16	Ivanovo (Ivanovo region)	44	Saransk (Republic of Mordovia)
17	Izhevsk (Udmurt Republic)	45	Sarapul (Udmurt Republic)
18	Kaliningrad (Kaliningrad region)	46	Surgut (Khanty-Mansiysk Autonomous District)
19	Kamensk-Uralsky (Sverdlovsk region)	47	Taganrog (Rostov region)
20	Kansk (Krasnoyarsk region)	48	Tambov (Tambov region)
21	Kirov (Kirov region)	49	Tula (Tula region)
22	Kostroma (Kostroma region)	50	Tyumen (Tyumen region)
23	Kurgan (Kurgan region)	51	Ulan-Ude (Republic of Buryatia)
24	Kursk (Kursk region)	52	Khabarovsk (Khabarovsk region)
25	Lipetsk (Lipetsk region)	53	Cheboksary (Chuvash Republic)
26	Maikop (Republic of Adygea)	54	Cherepovets (Vologda region)
27	Murmansk (Murmansk region)	55	Elista (Republic of Kalmykia)
28	Mytischki (Moscow region)	56	Yuzhno-Sakhalinsk (Sakhalin region)

Consolidated table of HCS reform implementation by activities and cities²⁹

Item	City	A1	A2	A3	A4	A5	A6	A7	A8	B1	B2	B3	C1	C2	C3	C4	L0	L1plan	L1act	K	Ke ^{ef}
1	Bratsk	21	100	52	100	100	100	100	100	100	100	100	100	100	100	79	77	96	89	0.92	0.92
2	Orenburg	91	100	66	100	100	97	100	100	100	100	100	100	90	100	82	68	91	94	1.03	1.00
3	Saransk	100	0	58	100	80	98	100	83	100	100	100	100	100	100	31	45	89	82	0.92	0.92
4	Cheboksary	23	0	31	100	100	100	52	87	100	100	100	100	100	100	97	66	98	79	0.81	0.81
5	Volzhsky	96	100	42	100	100	65	44	36	100	100	100	100	100	100	58	45	88	80	0.90	0.90
6	Novokuibyshevsk	96	0	41	100	100	100	100	79	100	100	100	12	98	100	5	55	76	72	0.95	0.95
7	Ivanovo	21	100	43	100	100	100	85	50	100	100	100	100	100	100	100	36	76	85	1.11	1.00
8	Nefteyugansk	27	0	48	100	100	100	10	57	100	100	100	98	36	100	91	22	77	70	0.92	0.92
9	Tula	17	0	0	100	100	50	75	95	100	100	100	99	96	100	27	43	69	69	1.00	1.00
10	Dimitrovgrad	0	0	0	100	100	0	100	82	100	100	100	100	100	100	65	31	83	70	0.85	0.85
11	Pyatigorsk	0	0	100	100	100	89	86	65	100	100	100	100	84	100	78	48	96	81	0.85	0.85
12	Cherepovets	98	0	43	100	100	92	100	25	100	100	100	100	100	100	100	38	88	83	0.95	0.95
13	Arkhangelsk	99	0	13	12	100	52	100	88	100	100	100	91	98	100	25	44	77	73	0.94	0.94

²⁹ See Annex 8 for reforms classification.

The list of contracts implemented in the Participating Cities

Contracts implemented in the city of Bratsk

Contracts (HCSP/ICB/BRA-1, HCSP/NCB/BRA-3): Supply and installation of the centralized system of metering, monitoring and regulation of heat and water consumption in the housing stock of Bratsk; Design, supply and installation of individual heating substations

The following types of works were performed:

- 232 individual heating substations were installed and the domestic hot water and water supply system in the multi-apartment buildings was rehabilitated;
- Instrumentation for automatic regulation of individual heating substations was installed;
- Primary metering equipment and the dispatching system were installed along with installation of sensors and server equipment.

The acceptance report (KS-14 (acceptance report form)) dated March 6, 2018.

Contract (HCSP/NCB/BRA-2): Rehabilitation of the WWT Plant in Bratsk. The main sewage collector along the Bratsk-Padun highway section to the WWT Plant. Stage II

The following types of works were performed:

- The sewage collector pipeline made from 1200 mm polyethylene pipes 2,204 m long was installed and reinforced concrete wells were constructed.

The acceptance report dated December 22, 2020.

Contracts implemented in the city of Volzhsky

Contract (HCSP/NCB/VLZ-1): Rehabilitation of 1,000 mm gravity sewage collector No. 9 from SPS No. 5 to SPS

No. 9

The following types of works were performed:

- 1000 mm sewage collector No. 9 extending from SPS No. 5 to SPS No. 9, 1.2 km long, was rehabilitated.

The acceptance report (KS-14) dated December 17, 2015.

Contract (HCSP/NCB/VLZ-3): Rehabilitation of biological treatment plants. Rehabilitation of the intake screen bar building

The following types of works were performed:

- The screen bar building was constructed with installation of mechanical screens, which enabled the wastewater treatment facilities to operate at full design capacity and also increased their reliability and reduced costs associated with wastewater treatment.

The acceptance report (KS-14) dated August 12, 2014.

Contract (HCSP/NCB/VLZ-4): Rehabilitation of 3.28 km long 6 kV cable lines (4L, 7L) from the Gorodskaya-1 substation to distribution substation -7 in the city of Volzhsky

The following types of works were performed:

- The 1,640 long 6 kV cable line was rehabilitated, which allowed the owner to provide reliable and quality power supply to existing consumers in three neighborhoods in the city.

The acceptance report (KC-14) dated September 4, 2014.

Contracts implemented in the city of Ivanovo

Contract (HCSP/ICB/IVN-1): Rehabilitation of the sewage treatment facilities in the village of Bogdanikha (Ivanovo urban district);

Contract (HCSP/ICB/IVN-3): Supply and installation of the APCS, control instrumentation and automation hardware for the line of methane tanks (Rehabilitation of the sewage treatment facilities in the village of Bogdanikha);

Contract (HCSP/ICB/IVN-4): Rehabilitation of the sewage treatment facilities - biological treatment unit in the city of Ivanovo;

Contract (HCSP/ICB/IVN-5): Rehabilitation of the sewage treatment facilities. Stage II. Construction of the tertiary treatment system for biologically treated sewage at the sewage treatment facilities in Bogdanikha (in the city of Ivanovo)

The following types of works were performed:

- The sewage treatment facilities with the capacity of 320,000 m/day were rehabilitated and are now operating according to modern standards;
- A line of methane tanks for anaerobic digestion of liquid organic waste was constructed to produce biogas;
- A boiler house with a power equipment room (co-generators), a methane tanks service building, two tanks for mixing digested sludge, an effluent pumping station, gas holders, a flare unit, a gas treatment

- building were constructed;
- The biological treatment unit with installation of equipment for nitro-denitrification and phosphorus removal processes in the aeration tank was upgraded;
- Activated return sludge pumps in the airlift wells were replaced;
- Scrapers and drain pipes of the preliminary and final settling tanks were replaced;
- A new building of the air blowing station to replace the existing building which was in disrepair was constructed;
- A modular unit for storage and dosing of coagulant for improved treatment of waste water to remove phosphorus was supplied and installed;
- The sludge pumping station was rehabilitated with replacement of technological equipment;
- A tertiary treatment system for biologically treated wastewater was put in place.

The acceptance report (KS-14) dated June 8, 2016, HCSP/ICB/IVN-1.

The acceptance report (KS-14) dated November 30, 2017, HCSP/ICB/IVN-3.

Contract (HCSP/ICB/IVN-2): Supply and installation of the automated wireless system for collecting and processing commercial metering data at the level of the multi-apartment buildings and regulating cold water supply in Ivanovo

The following types of works were performed:

- Design and subsequent installation of heat metering units in the Leninsky, Sovetsky and Frunzensky districts and in the urban district of Ivanovo in 2,696 multi-family buildings.

The acceptance report (KS-14) dated October 2, 2017.

Contracts implemented in the city of Naberezhnye Chelny

Contract (HCSP/ICB/NCH-1): Capital repairs of the ring water supply networks

The following types of works were performed:

- The ring water supply networks in the southeastern part of the city were rehabilitated (the internal surface of the steel pipes was treated with sand-cement mortar with preliminary anti-corrosion treatment of the inside surface of the pipes as well as treatment to remove sediment build-up);
- 33.6 km of the ring networks with a diameter of pipes from 400 to 1200 mm were repaired;
- 19 km of dilapidated distribution steel pipe water supply networks were replaced with polyethylene pipes.

The acceptance report (KS-14) dated September 5, 2014.

Contract (HCSP/ICB/NCH-2): Capital repairs of the gravity collectors of the domestic sewage system in the northeastern part of the city

The following types of works were performed:

- 6.565 km of the old reinforced concrete pipe with a diameter of 500-800 mm of the sewage system were disassembled and removed from the northeastern part of the city;
- New polyethylene pipes were installed, such pipes have an extended service life due to application of modern materials and technologies.

The acceptance report (KS-14) dated September 5, 2014.

Contract (HCSP/ICB/NCH-3): Rehabilitation of the distribution water lines

The following types of works were performed:

- 19.1 km of the worn-out pipelines in very poor conditions with a lot of breaks were replaced by polyethylene pipes, existing steel pipes in disrepair were retired from operation.

The acceptance report (KC-14) dated March 3, 2014.

Contract (HCSP/ICB/NCH-4): Rehabilitation of the pressure manifold of SPS-5, SPS-6 with switchover to a subsidiary sewage in Avtozavodsky Avenue

The following types of works were performed:

- Pressure collectors of SPS-5 and SPS- 6 with a total length of 1,508 m and a diameter of 1,200 mm were upgraded with diversion of wastewater to a subsidiary sewage collector in Avtozavodsky Avenue.

The acceptance report (KS-14) dated July 2, 2014.

Contract (HCSP/ICB/NCH-5): Switching wastewater of the hospital center SPS (sewage pumping station), street block SPS-17 to SPS-17A in the southwestern part of the city

The following types of works were performed:

- The sewage of the hospital center SPS and street block SPS-17 was diverted to SPS-17A in the southwestern part of the city, it created conditions for construction of the Regional Tertiary Care Medical Center.

The acceptance report (KS-14) dated June 18, 2014.

Contract (HCSP/ICB/NCH-6): Capital repair of main sewage collector No. 07 in Naberezhnye Chelny

The following types of works were performed:

- Main sewage collector 07 which was in disrepair and was 8,377 m long was rehabilitated.

The acceptance report (KS-14) dated December 7, 2020.

Contract implemented in the city of Nefteyugansk

Contract HCSP/NCB/NFT-1): Rehabilitation of the heat mains along Zhilaya Str. from MK-1 to UM-11A, Nefteyugansk (I, II phase of construction)

The following types of works were performed:

- 1,600 m of the 500 mm heat networks pipeline were replaced, the heat network architecture was changed to eliminate restrictions for heavy trucks in this section.

The acceptance report (KS-14) dated September 5, 2014.

Contract implemented in the city of Novokuibyshevsk

Contract (HCSP/NCB/NVK-2): Rehabilitation of the wastewater treatment facilities in Novokuibyshevsk

The following types of works were performed:

- The facilities for mechanical wastewater treatment with a capacity of 3,100 m³/h, including primary radial flow settling tanks and the intake screen bar building, were rehabilitated.

The acceptance report (KS-14) dated March 21, 2016.

Contracts implemented in the city of Orenburg

Contract (HCSP/ICB/ORB-1): Rehabilitation of the South-Ural water intake structure

Contract (HCSP/ICB/ORB-2): Completion of rehabilitation of the South-Ural water intake structure

The following types of works were performed:

- The existing riverside horizontal filter pipe water intake that was never in operation was rehabilitated, its capacity was increased to 100,000 m³/day; subsequently, the open water intake that had been earlier in operation was retired;
- The relift pumping station was rehabilitated;
- The chlorination (electrolysis plant) plant was rehabilitated;
- Water treatment facilities were constructed;
- A 2,000 m³ balancing tank for conventionally clean water was built;
- A 2,000 m³ balancing tank for spent water was built;
- A plant for mechanical sludge dewatering was built;
- Sand and grease traps were built;
- A pumping station for backwash water was built.

The high-tech company operating a closed loop of water treatment built under the Project is unique for the Orenburg region, the subproject enabled the company to achieve high quality water treatment and reduce operational costs related to water supply to the city.

The acceptance report (KS-14) dated January 24, 2019.

Contract implemented in the city of Saransk

Contract (HCSP/ICB/SAR-1): Construction of a new complex of treatment plants for Saransk urban district

The following types of works were performed:

- A new wastewater treatment line with a capacity of 65,000 m³/day was built, it includes primary settling tanks (2 pcs), a distribution deck of primary settling tanks, aeration tanks, final radial flow settling tanks (4 pcs), a sludge pumping station, a raw sludge pumping station and a transformer's substation.

The acceptance report (KS-14) dated December 8, 2018.

Contracts implemented in the city of Tula

Contract (HCSP/ICB/TUL-1): Water supply in the Skuratovsky and Mendeleevsky settlements of the Tula Central District

The following types of works were performed:

- The water line with a diameter of pipes from 315 mm to 450 mm, which is 9.2 km long, was completed;
- The construction of the III stage pumping station was completed;
- The construction of water storage tanks was completed;
- The construction of a transformer's substation was completed.

The acceptance report (KS-14) dated February 1, 2016.

Contract (HCSP/ICB/TUL-2): Residential development of the Skuratovsky district in Tula (main networks and structures) and residential development of the IV N-E district in Tula (main networks)

The following types of works were performed:

- The construction of 2.8 km of the water supply networks was completed;
- The construction of 6.7 km of the water supply networks was completed;
- The construction of one sewage pumping station was completed;
- The reconstruction of one water pumping station was completed;
- The reconstruction of two sewage pumping stations was completed;
- The construction of a water pipeline, a crossing under the railways and a crossing under the Upa river with the use of 700 mm pipelines was completed.

The acceptance report (KS-14) dated January 16, 2017.

Contract (HCSP/ICB/ TUL-3): Off-site networks of the housing development estate 'Residential area situated in the northern part of the Zarechensky district in the city of Tula'

The following types of works were performed:

- The construction of a connecting pipeline 6,200 m long to form a closed (ringed) system that connects the water pipelines of the Obidimo-Upa water intake and the Medvensko-Osetrovsky water intake to supply water to several city neighborhoods was completed.

The acceptance report (KS-14) dated January 26, 2018.

Contract (HCSP/ICB/TUL-4): Reconstruction of the water supply system of the Proletarskiy okrug in the city of Tula

The following types of works were performed:

- New polyethylene pipelines were laid along the operating pipeline which was in disrepair.
- New wells and manholes were constructed;
- Shut-off valves and fittings were installed from the village of Dedilovskiye vyselki (Venev monastery) to the village of Anishino and in Section No. 2 from the village of Anishino to the Volyntsevsky settlement.

The acceptance report (KS-14) dated September 30, 2020.

Contract (HCSP/ICB/TUL-5): Construction of the sewage collector in the Zarechensky district in the city of Tula

The following types of works were performed:

- The main pressure and gravity sewage collector which is 5.78 km long and 96 sewage manholes were constructed.

The acceptance report (KS-14) dated October 15, 2021.

Contracts implemented in the city of Cheboksary

Contract (HCSP/ICB/CHB-1): Supply and installation of the automated system for metering and regulating water and heat consumption in multi-family buildings in Cheboksary

The following types of works were performed:

- Operating modes of heat consumption in multi-family buildings were automated, it enables the utility to maintain the temperature graph of heat carrier supplied to the apartment building heating system automatically taking into account ambient air temperature which helps address the issue of overheating in habitable rooms in multi-family buildings.

The acceptance report (KS-14) dated June 14, 2019.

Contract (HCSP/NCB/CHB-2): Construction of water sedimentation treatment lines at the Zaovrazhnaya water treatment plant in Cheboksary

The following types of works were performed:

- A modern line for treating water sedimentation was built at the Zaovrazhnaya water treatment plant. This new line includes three plants: a sediment thickening unit, a balancing tank and a mechanical sediment dewatering plant.

The acceptance report (KS-14) dated October 5, 2016.

Contract (HCSP/ICB/CHB-3): Rehabilitation of the suburban sewage collector in the section from the Vyatka highway junction to the intake chamber in front of the GUP 'BOS', the city of NovoCheboksarsk

The following types of works were performed:

- 6.5 km of the sewage collector were laid in the section from the Vyatka highway junction to the intake chamber in front of the GUP 'BOS' with installation of 88 wells and manholes in the areas with drop of depths and changes in the route.

The acceptance report (KS-14) dated January 16, 2017.

The list of implemented investment subprojects

City of Bratsk

1. Contracts (HCSP/ICB/BRA-1, HCSP/NCB/BRA-3): Supply and installation of the centralized system of metering, monitoring and regulation of heat and water consumption in the housing stock of Bratsk; Design, supply and installation of individual heating substations, 232 individual heating substations in 221 multi-family buildings;
2. Contract (HCSP/NCB/BRA-2): Rehabilitation of the WWT Plant in Bratsk. The main sewage collector along the Bratsk-Padun highway section to the WWT Plant. Stage II, MUE 'The Urban Infrastructure Directorate of the Bratsk Municipality.

City of Volzhsky

3. Contract (HCSP/NCB/VLZ-1): Rehabilitation of 1,000 mm gravity sewage collector No. 9, from SPS No. 5 to SPS No. 9, MUE Vodocanal of the city of Volzhsky;
4. Contract (HCSP/NCB/VLZ-3): Rehabilitation of biological treatment plants. Rehabilitation of the intake screen bar building, MUE Vodocanal of the city of Volzhsky;
5. Contract (HCSP/NCB/VLZ-4): Rehabilitation of 3.28 km long 6 kV cable lines (4L, 7L) from the Gorodskaya-1 substation to distribution substation -7 in the city of Volzhsky, Volzhskiy inter-district networks.

City of Ivanovo

6. Contract (HCSP/ICB/IVN-1): Rehabilitation of the sewage treatment facilities in the village of Bogdanikha (Ivanovo urban district), JSC Ivanovo Vodocanal;
7. Contract (HCSP/ICB/IVN-2): Supply and installation of the automated wireless system for collecting and processing commercial metering data at the level of the multi-apartment buildings and regulating cold water supply in Ivanovo; 2,696 cold water meters installed at the level of the building in 2,696 multi-family buildings;
8. Contract (HCSP/ICB/IVN-3): Supply and installation of the APCS, control instrumentation and automation hardware for the line of methane tanks (Rehabilitation of the sewage treatment facilities in the village of Bogdanikha); JSC Ivanovo Vodocanal;
9. Contract (HCSP/ICB/IVN-4): Rehabilitation of the sewage treatment facilities - biological treatment unit in the city of Ivanovo, JSC Ivanovo Vodocanal;
10. Contract (HCSP/ICB/IVN-5): Rehabilitation of the sewage treatment facilities. Stage II. Construction of the tertiary treatment system for biologically treated sewage at the sewage treatment facilities of Bogdanikha (in the city of Ivanovo)», JSC Ivanovo Vodocanal.

City of Naberezhnye Chelny

11. Contract (HCSP/ICB/NCH-1): Capital repairs of the ring water supply networks, JSC Chelnyvodocanal;
12. Contract (HCSP/ICB/NCH-2): Capital repairs of the gravity collectors of the domestic sewage system in the northeastern part of the city, JSC Chelnyvodocanal;
13. Contract (HCSP/ICB/NCH-3): Rehabilitation of the distribution water lines, JSC Chelnyvodocanal;
14. Contract (HCSP/ICB/NCH-4): Rehabilitation of the pressure manifold of SPS-5, SPS-6 with switchover to a subsidiary sewage in Avtozavodsky Avenue, JSC Chelnyvodocanal;
15. Contract (HCSP/ICB/NCH-5): Switching wastewater of the hospital center SPS (sewage pumping station), street block SPS-17 to SPS-17A in the southwestern part of the city, JSC Chelnyvodocanal;
16. Contract (HCSP/ICB/NCH-6): Capital repair of main sewage collector No. 07 in Naberezhnye Chelny, JSC Chelnyvodocanal.

City of Nefteyugansk

17. Contract HCSP/NCB/NFT-1: Rehabilitation of the heat mains along Zhilaya Str. from MK-1 to UM-11A, Nefteyugansk (I, II phase of construction)), JSC Yugansktranzsteposervis, Nefteyugansk.

City of Novokuibyshevsk

18. Contract (HCSP/NCB/NVK-2): Rehabilitation of the wastewater treatment facilities in Novokuibyshevsk, JSC Novokuibyshevsk wastewater treatment facilities.

City of Orenburg

19. Contract (HCSP/ICB/ORB-1): Rehabilitation of the South-Ural water intake structure in the city of Orenburg, JSC Orenburg Vodocanal;
20. Contract (HCSP/ICB/ORB-2) Completion of rehabilitation of the South-Ural water intake structure in the city of Orenburg, JSC Orenburg Vodocanal.

City of Saransk

21. Contract (HCSP/ICB/SAR-1): Construction of a new complex of treatment plants for Saransk urban district, ME Saranskgorvodocanal.

City of Tula

22. Contract (HCSP/ICB/TUL-1): Water supply in the Skuratovsky and Mendeleevsky settlements of the Tula Central District, JSC Tulagorvodocanal;
23. Contract (HCSP/ICB/TUL-2): Residential development of the Skuratovsky district in Tula (main networks and structures) and residential development of the IV N-E district in Tula (main networks), JSC Tulagorvodocanal;
24. Contract (HCSP/ICB/ TUL-3): Off-site networks of the housing development estate 'Residential area situated in the northern part of the Zarechensky district in the city of Tula', JSC Tulagorvodocanal;
25. Contract (HCSP/ICB/TUL-4): Reconstruction of the water supply system of Proletarskiy okrug in the city of Tula of the Osetrovo-Medvensky water intake, JSC Tulagorvodocanal;
26. Contract (HCSP/ICB/TUL-5): Construction of the sewage collector in the Zarechensky district of the city of Tula, JSC Tulagorvodocanal.

City of Cheboksary

27. Contract (HCSP/ICB/CHB-1): Supply and installation of the automated system for metering and regulating water and heat consumption in multi-family buildings in Cheboksary, individual heating substations with automated regulation of heat consumption for space heating and domestic hot water in 1,510 multi-family buildings;
28. Contract (HCSP/NCB/CHB-2): Construction of water sedimentation treatment lines at the Zaovrazhnaya water treatment plant in Cheboksary, JSC Cheboksary Vodocanal;
29. Contract (HCSP/ICB/CHB-3): Rehabilitation of the suburban sewage collector in the section from the Vyatka highway junction to the intake chamber in front of the GUP 'BOS', city of NovoCheboksarsk, JSC Cheboksary Vodocanal.

Allocation of the loan proceeds by Categories

Category	According to Project Appraisal Document		Actual disbursement	
	Expressed in million USD	Percentage of Expenditures to be Financed	Expressed in million USD	Percentage of Expenditures to be Financed
(1) Goods, Works, Consultants' Services and Training for the Project except for Component C (b) of the Project	20.320	78% through October 31, 2021, and 24% from November 1, 2021	20.319	78% through October 31, 2021, and 24% from November 1, 2021
(2) Goods, Works and Consultants' Services for Component C (b) of the Project	170.688	100% through June 30, 2017; 12% from July 1, 2017 till October 31, 2021; and 24% from November 1, 2021	170.200	100% through June 30, 2017; 12% from July 1, 2017 till October 31, 2021; and 24% from November 1, 2021
(3) Operating Costs	9.012	100% through October 31, 2021, and 24% from November 1, 2021	8.996	100% through October 31, 2021, and 24% from November 1, 2021

ANNEX 6. EXECUTIVE SUMMARIES OF HCSP-SUPPORTED INVESTMENT ACTIVITIES AND THEIR IMPACT IN SELECTED CITIES



EXECUTIVE SUMMARY OF HCSP-SUPPORTED INVESTMENT ACTIVITIES AND THEIR IMPACT FOR THE CITY OF BRATSK

At the first phase of the Project - reforms, Bratsk successfully completed most (more than 90%) of the activities of HCS Reform Program and also completed with proper quality the preparation of the investment plan, design estimates and feasibility studies of investment subprojects included in the investment plan and became one of the main participants of the Project for the **investment phase**.

Table: Details of implemented investment subprojects

Subproject title	Total amount (RF rubles)	Implementation timeline (Dates of contract start and end)
Subproject 1: Supply and Installation of the centralized system of metering, monitoring and regulation of heat and water consumption in the housing stock of Bratsk (contract № HCSP/ICB/BRA-1)	78.7 mln.	20.12.2012 – 30.09.2017
Subproject 2: Rehabilitation of the WWT Plant in Bratsk. The main sewage collector along the Bratsk-Padun highway section to the WWT Plant. Stage II (contract HCSP/ICB/BRA-2)	264.3 mln.	02.11.2012 – 14.06.2017
Subproject 3: Design, supply and installation of individual heating substations (contract HCSP/ICB/BRA-3)	271.6 mln.	17.12.2013 – 30.09.2017

Subproject 1 & 3: Supply and installation of the centralized system of metering, monitoring and regulation of heat and water consumption in the housing stock of Bratsk; Design, supply and installation of individual heating substations

Issues: Severe climatic conditions, sub-zero average annual air temperature, long heating period up to 245 days place a priority on providing the safe and efficient operation of Bratsk heat-supply systems. Due to the existing city combined system of centralized heating and hot-water supply regulation of heat-transfer agent temperature at the heat source did not allow perfectly to maintain comfort heat conditions in apartment buildings (overheating occurred frequently) and to make arrangements related to energy saving. Such factors as wind effect, solar radiance, internal domestic heat release, which vary in different buildings and in different spaces of the same building, were not taken into account in the centralized heat-supply system. Due to the said reasons the total heat losses amounted to 10% to 30%. Moreover, the advantages of reducing heat system power at work-off hours and night-time were not used. Also, during the construction of apartment buildings the cheapest design choices were made resulting in range of issues connected with low reliability of the city centralized heat-supply, heat energy heavy losses, unsatisfactory comfort level in apartment buildings, increase of heat-transfer agent consumption for heating and hot-water supply.

What subprojects did: The works on improvement of heat production and management of heat and hot-water consumption in apartment buildings in Bratsk were aimed at improvement of quality and reducing the cost of provided communal services at the account of the following:

- elimination of excess heat, supplied to the heat system applying quality control of heat consumption at the consumer directly, in apartment buildings;
- decrease of heat and hot-water consumption due to adoption of closed heat and hot-water supply system;
- decrease of losses in distribution networks;
- automatic control of temperature of heat-transfer agent, supplied to the buildings taking into account ambient air temperature;
- timely detection and localization of possible breakdowns, leakages, faults and malfunction of domestic heating points and deviations in heat and hot-water supply parameters due to remote control of primary meters values.

Domestic heating point (DHP) is a complex system designed for transfer of heat from the centralized network to

aseparate building or its part, as well as for control and metering of consumed heat. Automation of domestic heating points helps to combine power saving with providing of comfort in the premises, provides building adequate heating mode, depending on weather conditions, time of day, public holidays and weekends. Automation reduces expenses for maintenance personnel, provides trouble-free DHP operation and its longer service life.

Installation of DHP and centralized system of monitoring and control of heat and hot water domestic consumption was implemented in six housing developments in the Bratsk center.

232 DHP in 221 apartment buildings were installed and automated in total. As a rule, domestic heating plants in Bratsk apartment buildings were installed in the basements, sometimes a special room was allocated for that purpose. Distribution pipelines of hot and cold water supply were reconstructed, and pipes were replaced with corrosion-proof pipes in some buildings to provide operation of DHP.



DHP equipment, installed in apartment building in Bratsk

Benefits: installation of domestic heating points with automatic control of consumption in 221 apartment buildings as well as organizing of common system of metering and monitoring of heat and hot-water consumption in the residential properties allowed to improve the quality of heat-supply services in Bratsk, achieve energy saving, decrease housing and communal payments, reduce heat-supply systems breakdowns rate.

Social: improvement of comfort living conditions in apartment buildings during heating seasons due to elimination of excess heat, supplied to the heating system; improvement of hot-water supply quality due to division of heat-transfer agent and water heated in the domestic heating plants for consumers' needs; saving of the house management expenses on heat supply – up to 20-30% in comparison with the previous level (before DHP installation) due to control and rational use of resources.

Economical: due to decrease of emergency situations expenses on elimination thereof reduced by about RUB 0,3 mln. per year; house management expenses lowered due to decrease of heat consumption per 1 sq.m. of heated area - by about RUB 115,4 mln. per year; house management expenses lowered due to decrease of hot water consumption – by about RUB 1 mln. per year; expenses of heat-supplying company on procurement of heating fuel for residential premises heating reduced by about RUB 67 mln per year; expenses reduced due to decrease of air pollutant emissions at fuel (coal) combustion) – by about RUB 0,024 mln. per year.

Subproject 2: Rehabilitation of the WWT Plant in Bratsk. The main sewage collector along the Bratsk-Padun highway section to the WWT Plant. Stage II

Issues: the threat of collapse of the sewer collector and environmental pollution by untreated wastewater, increasing the reliability of the provision of water disposal services due to the prevention of accidents at the sewer collector.

What subproject did: as a result of the implementation of this investment subproject, a collector pipeline was laid from polyethylene pipes DN1200mm and a length of 2204 p.m. with the construction of 23 reinforced concrete wells. The service life of the collector will be 50 years, its reconstruction made it possible to prevent the occurrence of accidents on it, ensured an increase in the quality of communal services for water disposal as a result of uninterrupted round-the-clock water disposal during the year.



Laying of the sewer collector, dragging the pipeline DN1200 into the case under the road

Benefits:

Social & economical: the implementation of this subproject can be recognized as successful only from a social point of view, while from a financial and economic point of view it is unprofitable: the net present value is negative, the value of the discounted index of return on investment is less than one. Thus, the investment subproject for the reconstruction of the main sewer collector, implemented in Bratsk, due to its nature, does not have economic efficiency, since with high capital costs there is no generation of new financial flows (cost effects from consumers do not always affect the return on investment of the service provider). At the same time, the implementation of this subproject ensured the reliability and quality of the public water disposal service provided to the population and is accompanied by other socially useful effects that are difficult to assess in value terms, such as improving the quality of water disposal services due to a reduction in the number of accidents at the sewer collector; improving transport safety due to the elimination of the risk of wastewater flow to the Bratsk-Padun road section and the railway tracks located on it, etc.

Ecological: The reconstruction of the reservoir also prevented environmental damage, pollution of the recreation area of Kurchatovsky Bay and microbiological contamination of the surface waters of the Bratsk reservoir, which is a source of drinking water for the city.

Additional information: Bratsk Administration, web site <https://www.bratsk-city.ru/>.



**EXECUTIVE SUMMARY OF HCSP-SUPPORTED INVESTMENT ACTIVITIES AND THEIR IMPACT
FOR THE CITY OF CHEBOKSARY (Chuvashia Republic)**

At the first phase of the Project - reforms, Cheboksary successfully completed most (by over 90%) of the activities of HCS Reform Program and also completed with proper quality the preparation of the investment plan, design estimates and feasibility studies of investment subprojects included in the investment plan and became one of the main participants of the Project for the **investment phase**.

Table: Details of implemented investment subprojects

Subproject title	Total amount (RF rubles)	Implementation on timeline (Dates of contract start and end)
Subproject 1: Supply and Installation of automated system of metering and regulating water and heat consumption in multi-family buildings in Cheboksary (contract HCSP/ICB/CHB-1)	227,3 mln.	01.08.2013 – 25.12.2017
Subproject 2: Construction of Sludge Treatment Structures at Water Treatment Facilities "Zaovrazhnaya" in Cheboksary (contract HCSP/ICB/CHB-2)	256,1 mln.	07.10.2013 – 15.08.2016
Subproject 3: Rehabilitation of the suburban sewage collector at the section from highway junction Vyatka to the intake chamber before GUP 'BOS', city of NovoCheboksarsk contract HCSP/ICB/CHB-3)	376 mln.	20.12.2012 – 31.12.2016

Subproject 1: Supply and Installation of automated system of metering and regulating water and heat consumption in multi-family buildings in Cheboksary

Issues: the problem was the inefficient use of water and energy resources, that was both incurring negative impact on both the economy and sustainable use of resources, thus the optimization of modes of consumption of thermal energy for heating and hot water supply, increasing the efficiency of its use, reducing the consumption of coolant were deemed as priority interventions.

What subproject did: during the implementation of this subproject, 1510 apartment buildings were equipped with individual heat points (ITP) with automated regulation of the use of thermal energy for heating and hot water supply; as a result of the installation of ITPs, automation of modes of heat consumption in apartment buildings was carried out, which made it possible to automatically maintain a graph of the temperature of the coolant supplied to the heating system of these houses, taking into account the temperature of the outside air; automation of modes by heat consumption made it possible to solve the problem of "overflow" in the residential premises of apartment buildings, as a result, the loss of thermal energy for heating these residential premises was reduced by 30%."

Benefits:

Social: improving the quality of utilities for heating and hot water supply provided to consumers in apartment buildings. As a result of automatic temperature control, the comfort of living in residential premises has increased; calculations with the heat supply organization for the consumed thermal energy are carried out on the basis of the actual volume of heat energy consumption, measured in an automated mode. Knowledge of the actual value of heat energy consumption

stimulates the owners of premises in apartment buildings and management organizations to carry out energy-saving measures to reduce irrational consumption of thermal energy in the housing stock.

Ecological: improvement of the environmental situation as a result of reducing the volume of emissions of harmful substances into the atmosphere due to a reduction in the volume of fuel combustion for the production of coolant.

Subproject 2: Construction of water sedimentation treatment lines at the Zaovrazhnaya water treatment plant in Cheboksary

Issues: the problem of disposal of washing waters from water treatment facilities has two main aspects: technological, caused by the outdated scheme, which envisages discharge of wash waters into the Volga and also does not meet existing requirements as for quality and quantity indicators related to discharge of wash waters and sludge into the water body; and ecological, caused by discharge of untreated wash waters into the water body, that results in water body pollution, accumulation therein of organic impurities, residual aluminum, adversely affected humans, animals, fish and flora. Wash waters are resulted from washing of rapid sand filters, contact flocculators, sedimentation tanks, microfilters, clean-water reservoirs during operation of water treatment facilities “Zaovrazhnaya”, providing Cheboksary with water. The said wash waters contain many various pollutants. At the beginning of the subproject implementation water treatment facilities “Zaovrazhnaya” were operated using the outdated technology, which, in particular, did not provide wash waters treatment. Wash waters and sludge, containing a lot of suspended solids and chemicals (500 g/cub.m. of suspended solids and 10 g/cub.m. of aluminum ions per 1 cub.m. of spill water) were discharged into Cheboksary reservoir on the Volga river - source of water supply and recreation resource for citizens. Low quality of the natural water resulted in the water intense chlorination at the river intake structures. Considering that the volume of wash waters is from 6 to 10% of the total capacity of water treatment plant, the said plant is one of the largest facilities causing environment significant pollution resulted from wash waters discharge into the Volga.

As a result, OAO “Vodokanal” in charge of the water-supply and sanitation systems in Cheboksary, paid substantial amounts of pollution fines (up to 6 mln. RUB annually). **What subproject did:** at the preliminary stage they examined operations of the water treatment facilities and carried laboratory tests to determine best-performance water treatment process. Also, the processes related to necessity of wash waters recycling and sludge dewatering were examined. Based on the examination results they developed “Regulation for design of wash waters recycling system and for technological process of sludge dewatering at the water treatment facilities “Zaovrazhnaya” in Cheboksary”. According to the said Regulation they developed the design documentation for reconstruction. The design documentation was elaborated by ZAO “Vodoproekt Giprokommunvodokanal” (St.Petersburg)

The project on construction of sludge treatment structures at the water treatment facilities “Zaovrazhnaya” provided the following activities:

- construction of sludge mechanical dewatering shop;
- construction of sludge thickener reservoirs;



Construction of sludge thickener reservoir at the water treatment plant “Zaovrazhnaya” in Cheboksary, November 2013

- construction of wash water recycling structures (stabilization tank and station for water recycling after filters washing);
- installation of auxiliary structures
- and service lines.

The main objectives of the reconstruction of the sludge treatment structure at the Zaovrazhnaya water treatment facilities in Cheboksary were to stop the discharge of contaminated wash water into the Cheboksary reservoir and to increase the efficiency and reliability of water treatment facilities by returning part of the wash water to the head of the facilities.

Benefits:

Ecological: Cheboksary has become the first city in Volga region, which completely stopped wash water discharge into the Volga basins. The project implementation made possible to prevent ongoing discharge into the Volga of 11 mln. cub.m. of wash waters, containing over 2575 ton of pollutants. The sludge started to be dewatered and recycled into so called sludge cake (solid compacted sludge), which can be used for landfill reclamation and other area improvement activities. As there is no necessity in the water intense chloration, use of coagulation agents and toxic chlorine decreased.

Economical: cost of acquiring chlorine (hypochloride) and coagulation agents reduced by about RUB 2 mln. per annum; cost of power supply for water intake from water body and water treatment reduced on average by RUB 2,5 mln. per annum; negative environment impact charge reduced on average by RUB 0,3 mln. per annum; expenses on water tax (public and other needs) payment reduced on average by 3,8 mln. RUB; there are no expenses on payment of charges imposed by Environmental prosecutor's office of the Russian Federation for discharge of untreated wash waters into the water body which on average amounted to RUB 2,5 mln. per annum.

Additional information: AO "Vodokanal", Cheboksary, web site <http://vodo-kanal.ru/>.

Subproject 3: Rehabilitation of the suburban sewage collector in the section from the Vyatka highway junction to the intake chamber in front of the GUP 'BOS', the city of NovoCheboksarsk

Issues: the household effluents for more than 110 thousand people, the breaks and worn out sewerage networks were creating much of inconvenience for the residents, as well as harmful impact on the environment, and were financially inefficient.

What subproject did: 6.5 km of the collector were laid, 88 wells and chambers were installed in places of depth differences and changes in the direction of the route that would ensure the reliability of urban wastewater discharge to sewage treatment plants, reduce operating costs for repairing and eliminating accidents at the sewer collector, increasing the capacity of the collector to ensure the connection of new consumers to the wastewater disposal system.

Benefits:

As a result of the implementation of this subproject, the needs for household effluents for more than 110 thousand people of the city were satisfied, the wear and tear of sewerage networks was reduced by 6% and the current costs for repairing the collector in this section from the interchange of the Vyatka highway to the entrance chamber in front of the SUE "BOS" of Novocheboksarsk to zero were excluded.

Social: elimination of the risks of accidents due to the restoration of the normal technical condition of the collector (elimination of unpredictable ground failures in the emergency section of the collector, including roads).

Ecological: restoration of the normal technical condition of the collector contributed to reducing the risks of wastewater leaving the relief and ensuring the reliability of wastewater disposal to sewage treatment plants.



Shop of sludge mechanical dewatering at the water treatment plant "Zaovrazhnaya" in Cheboksary, 2016

Economical: the financial stability of the organization of water supply and sewerage services was increased by reducing operating costs and eliminating the risk of large-scale man-made accidents, the elimination of which could require significant costs.



**EXECUTIVE SUMMARY OF HCSP-SUPPORTED INVESTMENT ACTIVITIES AND THEIR IMPACT
FOR THE CITY OF IVANOVO (Ivanovo Region)**

At the first phase of the Project - reforms, Ivanovo successfully completed most (by 80%) of the activities of HCS Reform Program and also completed with proper quality the preparation of the investment plan, design estimates and feasibility studies of investment subprojects included in the investment plan and became one of the main participants of the Project for the **investment phase**. In 2017, the Borrower agreed with the Bank to top up the co-financing and included 2 more subprojects in Ivanovo city, to enhance the already achieved results and ecological positive effect.

Table: Details of implemented investment subprojects

Subproject title	Total amount (RF rubles)	Implementation timeline (Dates of contract start and end)
Subproject 1: Rehabilitation of sewage treatment facilities in the village of Bogdanikha (Ivanovo urban district) (contract HCSP/ICB/IVN-1)	936,5 mln.	07.08.2012 – 31.12.2015
Subproject 2: Supply and installation of the automated wireless system for collecting and processing commercial metering data at the level of the multi-apartment buildings and regulating cold water supply in Ivanovo (contract HCSP/ICB/IVN-2)	113,6 mln.	01.04.2013 – 30.06.2017
Subproject 3: Supply and installation of APCS, control instrumentation and automation hardware for the methane tanks. (Rehabilitation of sewage treatment facilities in the village of Bogdanikha), (contract HCSP/ICB/IVN-3)	217 mln.	12.05.2016 – 01.06.2017
Subproject 4: Rehabilitation of the sewage treatment facilities - biological treatment unit in Ivanovo (contract HCSP/ICB/IVN-4)	2,670mln.	20.02.2018 – 31.12.2021
Subproject 5: Rehabilitation of Sewage Treatment Facilities. Stage II. Construction of the tertiary treatment system for biologically treated sewage at sewage treatment facilities of Bogdanikha (in the city of Ivanovo) (contract HCSP/ICB/IVN-5)	1,597mln.	22.11.2019 – 31.12.2021

Subprojects 1 & 3: Rehabilitation of sewage treatment facilities, supply and installation of APCS, control instrumentation and automation hardware for the methane tanks in the village of Bogdanikha

Issues: sewage treatment facilities in Ivanovo were put into commission in 1978 with unfinished works and design deviations – without treatment shop of sludge, appearing as a result of operation of treatment facilities. Sanitary regulations did not allow both further use of sludge in agriculture as fertilizer and its utilization without processing. Warehousing and storage of sludge were made on the special sludge drying beds, with area of 4,8 ha (at statutory rated area of 35 ha). Quarry was excavated for sludge stockpile and by 2010 the period of its use expired, and the quarry was full, so during decades of treatment plants operation the sludge drying beds exceeded the allotted area, putting

environment in danger. The municipal sewage treatment facilities required reconstruction as their service life exceeded 35 years and applied technologies became out-of-date and did not meet the existing requirements.

What subproject did: construction of methane-tanks unit at the first stage of sewage treatment facilities in Ivanovo included as well as complex of auxiliary facilities. Constructed methane-tanks are two reinforced concrete tanks for anaerobic fermentation of liquid organic wastes with biogas obtaining.

Best available technology of primary sludge mix and surplus activated sludge processing was applied. Sewage sludge contains a lot of organics, which in the process of septicity emit an odor and hazardous substances, causing unsatisfactory sanitary- environmental conditions.

Stabilization (fermentation) of sludge, preventing of septicity are to be provided with elimination of putrefactive bacteria (microorganisms of acid fermentation). The subproject provided for that sludge stabilization (household, first of all) is to be carried out by biocoenosis of microorganisms in anaerobic conditions. Method of sludge methane anaerobic fermentation (in the absence of oxygen), applied in the subproject, prevents septicity and reduce the amount of pathogenic microorganisms. The said method provides obtaining of biogas, consisting of methane by 65-70%.



Methane-tanks (tanks for obtaining methane from a sludge) at the sewage treatment plants in Ivanovo

Other facilities of methane-tank unit include:

- boiler room with co generators power house;
- methane-tanks maintenance building; two tanks for fermented sludge mixing;
- sewage pumping station;
- gas-holder;
- flare unit;
- gas treatment building.

Benefits: adoption of advanced technologies, aimed at effective processing of sludge, located in the environment and obtaining of biogas as a result of sludge anaerobic fermentation to be used for providing the heat end power energy, required for operation of treatment facilities. As a result of the project implementation sludge is effectively processed, which allowed to eliminate sludge drying beds by $\frac{3}{4}$ and reduce the volume of produced sludge up to 40%. Moreover, as a result of sludge anaerobic fermentation, the biogas is obtained, which became the source of heat and power energy for operating the treatment facilities, providing by 100% of heat energy demand and 40% of power energy demand. Construction of methane-tanks unit at the sewage treatment facilities in Ivanovo.

Economical: since 2018 there are no expenditures for sludge drying beds maintenance, which effect a saving of about RUB 0,6 mln. per year; reduced expenses for procurement of power energy for sewage treatment plants needs due to biogas usage – by about RUB 30 mln. per year; there are no expenditures for heat power procurement - by about RUB 3,2 mln. per year; there are no expenditures for procurement of natural gas used for nearby village Ogdanikha heat supply (at present sewage biogas, produced at the sewage treatment plants is used for heating) – about RUB 5,5 mln. per year; reduced payment for sludge discharge in environment due to decrease of volumes and change of hazard class of disposed sludge - by about RUB 6,8 mln. per year.

Energy generation: biogas burning produced power energy which covers about 40% of treatment facilities requirements in power and completely (100%) in heat power need.

Ecological: reduced sludge volume disposed in the environment by 53%; improvement of ecological situation at the area of sludge drying beds' location.

Additional information: AO "Vodokanal", Ivanovo. web site <http://www.ivanovovodokanal.ru/>.

Subproject 2: Supply and installation of the automated wireless system for collecting and processing commercial metering data at the level of the multi-apartment buildings and regulating cold water supply in Ivanovo

Issues: the main issues pertained to outdated systems and equipment, that were not proving to be efficient and accurate from both service provision, operation and maintenance, as well as financial perspectives.

What subproject did: automated wireless system for collection and processing of household consumption data, and control of water supply system in Ivanovo was installed, with water/wastewater system remote sensing & control, and established Geo Information System.

Benefits: supply and installation of automated wireless system for collection and processing of household consumption data, and control of water supply system in Ivanovo has led to reduced water losses (NRW) in pipelines and houses from 32% to 10%, reduced labor input for meters reading, recording and billing, reduced water bills for individual household and better control of individual household costs.

Social: settlements between consumers of cold water supply services and the supplier (JSC "Vodokanal", Ivanovo) are carried out on the basis of the actual volume of consumption, measured in an automated mode. Thus, the use of the standard for the consumption of cold water for general household needs is excluded. Knowledge of the actual value of such water consumption stimulates the owners of premises in apartment buildings and management organizations to take measures to eliminate leaks on intra-house networks and equipment. The rationality of water consumption in the housing stock is increasing.

Subproject 4: Rehabilitation of the sewage treatment facilities - biological treatment unit in Ivanovo



Issues: technologies applied in the 70ties of XX century, when sewage treatment facilities were put into operation in Ivanovo, did not provide sewage biological cleaning from nitrogen and phosphorous compounds. Moreover, during 30 years of service, in spite of scheduled repairs, buildings and equipment of treatment facilities were heavy worn-out, some elements of technological scheme required reconstruction and repair. In recent years the quantity of pollutants significantly increased, mostly ammonium nitrogen, oil products, synthetic surfactants, phosphates, heavy metal salts, transferred with sewage from consumers to sewage networks. At the same time, waste waters are delivered to the treatment facilities with higher pollutants concentration ratio as it was in earlier times. There is also a discharge of industrial effluents into urban sewage system with concentrations of pollutants above the maximum permissible

norm. At the same time strict requirements for sewage pollution level are in force in Russia nowadays, their implementation under a special control, which shall be only tightened in future. Existing treatment facilities are not able to provide the sewage treatment quality, meeting the Russian legislation regulations (most values exceed discharge rated values 10-fold). All the above said factors required reconstruction (modernization) of sewage treatment plants and adoption of special technologies of sewage biological treatment up to required norms. **What subproject did:** the subproject on reconstruction of biological treatment unit at the sewage treatment facilities in Ivanovo includes modernization of aero tanks – tanks of biologically active treatment of sewage, mixed with activated sludge and oxygenated, leading to biochemical oxidation of organic constituents and resulted in sewage treatment. Biochemical method shall be applied for sewage biological cleaning from nitrogen and phosphorous compounds, based on nitride nitrification technology (ammonia oxidation to nitric acid and its elimination) with reactant treatment. The said technology provides for arranging in aero tanks of the anaerobic zones (oxygen-free) and anoxic zones (with chemically bonded oxygen, entering with nitrate forms) along with aerobic zones. Thus, the effective cleaning of sewage from organics is achieved. The project implementation provided for other technical activities, including the following:

- construction of pressure distribution manifold for return sludge supply; replacement of scraping equipment and overflow weirs in primary sedimentation tanks; replacement of suction dredgers and drain edges in secondary sedimentation tanks;
- installation of new sluice gates in distribution basins of primary and secondary sedimentation tanks;

- reconstruction of sludge chambers of secondary sedimentation tank with installation of activated return sludge pumps;
- reconstruction of air-lift wells;
- construction of new air blow house instead of existing one, which is in emergency condition;
- packaged unit for storage and dosing of coagulant aid for improvement of sewage treatment as for phosphorous.

Benefits:

Social: reliability (trouble-free) sewage treatment plants operation as a whole; restraint of sanitation charge rates due to saving on purchase of energy resources for treatment plants operation.

Ecological: providing of standard quality of sewage cleaning from nitrogen and phosphorous compounds meeting rated concentration values at the first category fishery waters and improvement of quality of sewage cleaning from phosphorous compounds; reduction of anthropogenic load on water basins feeding Uvod River.

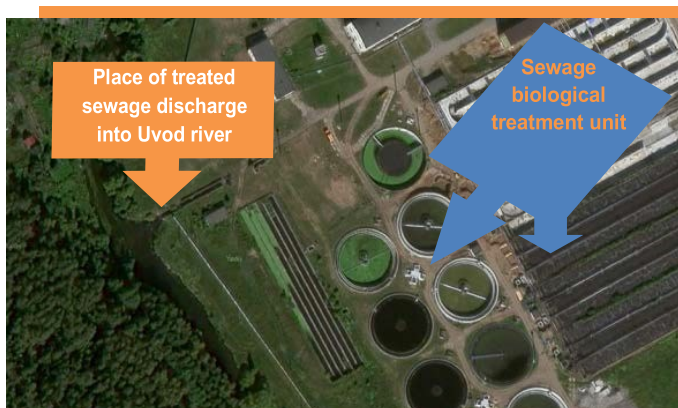
Energy generation: reduction of expenditures for power and heat energy due to installation of energy-saving equipment in the course of treatment plants reconstruction.

Additional information: AO:Vodokanal”, Ivanovo, web site <http://www.ivanovovodokanal.ru/>.

Subproject 5: Rehabilitation of Sewage Treatment Facilities. Stage II. Construction of the tertiary treatment system for biologically treated sewage at sewage treatment facilities of Bogdanikha (in the city of Ivanovo)

Issues: in the recent years the requirements for the quality of sewage discharge became significantly tightened, as well as ecological values subject to control in sewage were increased up to 40. Without creation of final sewage treatment and disinfection capacities, the reconstruction of sewage treatment facilities, which began in 2012, will not be fully completed, since the modern technologies of biological wastewater treatment introduced give a very high, but not one hundred percent degree of removal of nitrogen, phosphorus and suspended substances, and the absence of disinfection facilities will negatively affect the quality of wastewater according to microbiological indicators. Thus, to achieve the required parameters of urban wastewater treatment at discharge into the reservoir of the Uvod River in accordance with the requirements of Russian legislation, this subproject was commissioned.

What subproject did:



Site for construction of sewage secondary treatment and disinfection unit at the place of its disposal to Uvod river at the sewage treatment plants in Ivanovo

Construction of final sewage treatment and disinfection system at the second stage of modernization of the sewage treatment facilities in Ivanovo is implemented through reconstruction completion of the sewage treatment facilities allowing to clean waste waters disposed to Uvod River from hazardous impurities totally. Treatment facilities in Ivanovo shall become the most advanced in Russia and shall be able to intake waste waters from nearby cities of Ivanovo region, in particular, it became possible to construct pressure sewage header for transfer and intake of waste waters from Shuya. The subproject included the construction of a complex of facilities that provide wastewater treatment on disk microfilters and

disinfection with ultraviolet light. Disk microfilters are a system into which a continuous supply of treated wastewater is carried out. Filters are designed to remove suspended solid particles in biologically treated wastewater, reduce the concentration of organic compounds, as well as phosphorus and nitrogen compounds that are part of the sludge adsorbed on the chlorides, released when introduction of the coagulant into the water before the filtration stage.

Wastewater that has passed all stages of mechanical and biological treatment contains pathogenic bacteria. To improve

the microbiological quality of wastewater before its release into the waters in order to prevent the spread of infectious diseases and protect against infection, a system of disinfection of wastewater with ultra-violet radiation is provided. Reconstructed treatment facilities in Ivanovo are among the most advanced in the Russian Federation.

Estimated sewage treatment characteristics under treatment steps and stages

Name	Characteristic of sewage delivered for treatment, mg/l	Characteristic of sewage after primary sedimentation tanks, mg/l	Characteristic of sewage after secondary sedimentation tanks (at the 1 st stage of reconstruction), mg/l	Characteristic of sewage after filters (at the 2 nd stage of reconstruction), mg/l
Suspended particulate pollutants	139	56	10	3
Chemical oxygen demand	425	298	35	30
Biological oxygen demand in 5 days	155	124	5	2,2
Total nitrogen	28,5	25	7	6
Ammonium nitrogen	19	18,2	0,39	0,39
Nitrate nitrogen	-	-	9,1	9,1
Total phosphorus	3,91	3,52	0,4	0,3
Phosphate phosphorus	2,3	2,1	0,3	0,2
Synthetic surfactants	1,24	0,74	0,24	0,1
Chlorides	67,4	67,4	67,4	67,4
Oil-products	1,74	1,00	0,3	0,05

Sewage UV disinfection efficiency

Value name	Content in sewage		Sanitary Regulations and Norms 2.1.5.980-00 rate
	Before the project implementation	After the project implementation	
TC (total coliforms), CFU/100 ml	34000	80	not more than 500
TCB (thermotolerant coliform bacteria), CFU/100 ml	14792	26	not more than 100
Coliphages, PFU/100 ml	1667	N/D	not more than 100

Benefits:

Social: reliable assured 24-hours sanitation services rendering; providing of sanitation at large-scale housing development; connection of up to 80% of Ivanovo public to the central sanitation system; possibility of construction of pressure sewage header from Shuya sewage treatment to sewage treatment facilities in Ivanovo.

Ecological: 100% of sewage analyses results comply with regulatory requirements; improvement of sanitation effectiveness and sewage treatment; improvement of sanitation reliability at strategic facilities; prevention of pollution of Ivanovo and Ivanovo region with sewage waste; improvement of ecological situation in Ivanovo and Ivanovo region in whole.

Economical: Estimated economic benefit from completion of full reconstruction of treatment facilities (system of secondary treatment of biologically treated sewage at the sewage treatment facilities in Bogdanikha village) shall amount to about 3 mln. RUB per year.

Additional information: AO "Vodokanal", Ivanovo, web site <http://www.ivanovvodokanal.ru/>.



EXECUTIVE SUMMARY OF HCSP-SUPPORTED INVESTMENT ACTIVITIES AND THEIR IMPACT FOR THE CITY OF NABERESHNYE CHELNY (REPUBLIC OF TATARSTAN)

At the first phase of the Project - reforms, Naberezhnye Chelny successfully completed most (almost by 100%) of the activities of HCS Reform Program and also completed with proper quality the preparation of the investment plan, design estimates and feasibility studies of investment subproject included in the investment plan and became one of the main participants of the Project for the **investment phase**. It is worth mentioning, that the RF Government agreed with the World Bank and increased its co-financing to include one more investment in the city, namely the capital repair of the main sewage collector.

Table: Details of implemented investment subprojects

Subproject title	Total amount (RF rubles)	Implementation timeline (Dates of contract start and end)
Subproject 1: Capital repairs of ring water supply networks (contract HCSP/ICB/NCH-1)	309,5 mln.	20.04.2012 – 30.06.2014
Subproject 2: Capital repairs of gravity collectors of the domestic sewage system in the northern-eastern part of the city (contract HCSP/ICB/NCH-2)	235,7 mln.	20.04.2012 – 01.12.2014
Subproject 3: Rehabilitation of distribution water lines (contract HCSP/ICB/NCH-3)	117 mln.	20.04.2012 – 30.11.2013
Subproject 4: Rehabilitation of the pressure manifold of SPS-5, SPS-6 with switchover to the to a subsidiary sewage of Avtozavodsky Avenue (contract HCSP/ICB/NCH-4)	81,4 mln.	20.04.2012 – 30.06.2014
Subproject 5: Switching wastewater of the hospital center SPS (sewage pumping station), street block SPS-17 to SPS-17A in the southwestern part of the city (contract HCSP/ICB/NCH-5)	58,7 mln.	20.04.2012 – 31.03.2014
Subproject 6: Capital repair of main sewage collector No. 7 in Naberezhnye Chelny (contract HCSP/ICB/NCH-6)	1,744,3 mln.	30.03.2018 – 27.10.2020

Subprojects 1 & 3: Capital repairs of the ring water supply networks & Rehabilitation of the distribution water lines

Issues: the water treatment plant, operated by OOO CHELNYVODOKANAL, is designed for river water purification and is a complex of engineering equipment and devices for obtaining drinking, technical and technological water. Initially, the traditional technological scheme of water treatment was implemented at the water treatment plant: coagulation, settling, filtration, disinfection. The design capacity of the water treatment plant was 850 thousand cubic meters of drinking and industrial water per day.

Disinfection of drinking water was carried out using liquid chlorine, which was supplied and stored in containers of 800 liters under high pressure in the building of a chlorinated water treatment plant. Since chlorine is a toxic substance, the object of the water treatment station fell under the concept of "hazardous production facility". The operation of a hazardous production facility is associated with risks, the safety of such an object is regulated by law and requires a number of measures that increase the cost of water treatment with a constant increase in chlorine prices (in 2010, the average price of chlorine increased from 9 thousand rubles per 1 ton to 30 thousand rubles).

What subprojects did: elimination of risks related to water chlorination during treatment, transition for more safe methods of water disinfection and improvement of potable water quality, supplied to consumers in Naberezhnye Chelny, through modernization of water treatment system that includes:

- reconstruction of water treatment plant for preparation of sodium hypochloride,
- solution instead of liquid chlorine for water disinfection,
- construction of water carbon treatment plant (water purification by adding powdered activated carbon),

- installation of water UV disinfection units.

In addition, since 2015 potable water at the water treatment plant is disinfected applying 0,8% solution of sodium hypochloride, which is safe alternative to liquid chlorine. Process of preparation and dosing of 0,8% sodium hypochloride is a completely automatic system. All the system is comprised of three independent process lines of sodium hypochloride solution preparation based on electrolysers NST-1500 and seven pumping stations for its dosing for initial disinfection of water to inlet channels and secondary disinfection to product water. The system requires 3,3 kg of salt, 125 l of water and 4,4 kW*h, of electric power for production of 1 kg of chlorine equivalent. Water solution of sodium hypochloride (NaClO), made by electrolytic method is a light-yellow liquid with mass concentration of available chlorine not more than 8 g/cub.dm.



Automatic system of preparation and dosing of 0,8% sodium hypochloride for water disinfection in Naberezhnye Chelny

Construction of water carbon treatment plant: to purify drinking water during emergency and long-term emissions of pollutants into reservoirs from which water is taken for drinking water supply to consumers, during spring floods and during eutrophication (excessive intake of biogenic elements into the reservoir), as well as to create an additional barrier when water is contaminated with petroleum products, phenols, pesticides and eliminate unpleasant tastes and odors, a water carbon treatment plant was built using modern equipment.

Water carbon treatment plant is automatic system based on two units for unloading and unpacking of flexible containers (“big-bags”) with powder of activated mineral carbon, two units for preparation of carbon solution, dosing station, and is designed for preparation of coal slurry before getting of 1-5% solution and dosing it into mixers.



Water carbon treatment station in Naberezhnye Chelny

Water UV disinfection: before potable water is supplied to consumers it is treated in UV disinfection unit. UV disinfection equipment is located in the pumping station of the 2nd stage (delivering water into water pipelines). Maximum rated capacity of the UV disinfection station, consisting of five units, amounts to 17100 cub.m./h. Actual discharge capacity of one unit is 3100 cub.m/h.

Benefits:

Ecological: ultraviolet disinfection of water increases the barrier capabilities of water treatment facilities against microorganisms, including chlorine-resistant (viruses, clostridium spores and protozoan cysts), providing epidemiological safety of drinking water;

scheme of joint application of UV radiation and chloramines is an optimal solution as for reducing of chlorination by-products content; combined chlorine gives rise to chloro-organics in a less degree and stay longer in networks and it is not so high in efficiency as for resistant microorganisms is completely compensated by UV radiation.

Economical: the use of sodium hypochlorite made it possible to solve the problems associated with the transportation, storage and use of a dangerous chemical, the operation of which required specially trained personnel; economic performance rates of the enterprise do not depend on liquid chlorine price rise anymore;



Water UV disinfection units in Naberezhnye Chelny

water treated with sodium hypochloride is more stable and has less corrosivity, that have an effect on pipelines service life.

Additional information: OOO "CHELNYVODOKANAL", web site www.chelnyvodokanal.ru.

Subprojects 2, 4, 5, 6: INTEGRATED MODERNIZATION OF WATER TREATMENT FACILITIES

Issues: the first stage of facilities was put into operation in 1974, and the second stage – in 1984. According to the design the treatment facilities were designated for sewage complete biological treatment. Design capacity of treatment facilities in Naberezhnye Chelny is 380 thous. cub.m./day. Treated and disinfected sewage is disposed into Kama River. The technology of biological wastewater treatment provided for by the project (in aerotanks with subsequent disinfection with chlorine) did not allow for compliance with later requirements for the quality of treated wastewater in terms of the concentration of nitrogen, phosphorus, suspended solids in them, and the content of active chlorine. Excessive intake of biogenic elements (nitrogen and phosphorus) into reservoirs caused their rapid flowering, reduced the oxygen content in the water, which negatively affected the vital activity of aquatic plants, fish and other living organisms. Water reservoirs became unsuitable both for water supply and for swimming. Strengthening of requirements for treated sewage quality and wear and tear of used equipment required integrated modernization of treatment facilities to improve the treated sewage quality and, first of all, removal of excess biogenic elements.

What subprojects did: To provide the quality of sewage cleaning from biogenic elements (nitrogen and phosphorous compounds) nine out of twelve aero tanks were reconstructed applying technology of nitrification and denitrification and biological dephosphorization (enhance removal of organics, nitrogen and phosphorous compounds with mechanical mixing and internal recirculation). In pumping and blower stations designed to supply compressed air to the aeration system of aerotanks, replacement of air blowers has been made.



Launched in 2018, two new adjustable blowers with a capacity of 45,000 cubic meters/hour each allow you to automatically adjust the air supply for biological purification in the required amount during the day, depending on the readings of dissolved oxygen sensors in aerotanks. For the first time in 2014 the technology of treated sewage UV disinfection before discharge to Kama river and refusal from chlorine usage in treated sewage disinfection was applied in Tatarstan Republic.



To prevent secondary pollution of sewage, delivered to biological treatment by internal flows and to reduce the volume of recycled sludge produced during sewage treatment, the shop of mechanical sludge dewatering was reconstructed in 2016 with installation of unit for thickening of excess activated sludge.

Two centrifuges are installed in the sewage sludge mechanical dewatering shop, which separates sludge for cake (solids) and centrate (liquid). Cake is transported by dump trucks to the drying and disinfection sites for achievement of 70% humidity and centrate is pumped to the facility head.

As a result of modernization of sewage biological treatment and disinfection as well as sludge treatment are performed applying state-of-the-art technologies:

- sewage biological treatment with enhance removal of biogenic elements (nitrogen and phosphorous compounds);
- supply of air to aero tanks by adjustable air blowers depending on oxygen concentration
- treated water UV disinfection,
- thickening of excess sludge based on belt thickeners,
- dewatering of sewage sludge and thickened excess activated sludge in centrifuges.



Benefits: As a result of modernization the sewage biological treatment and disinfection, as well as sludge treatment are carried out applying best available technologies. Negative impact on environment and Kama River basin is significantly

reduced due to refusal from use of water chlorine disinfection and enhanced removal of nitrogen and phosphorous compounds from treated water. Dangerous in storage and transportation liquid chlorine is not used in the treatment process no more. Risks, connected with formation of highly-toxic chlororganics in sewage waste disposed to Kama River, were eliminated.

Additional information: OOO "CHELNYVODOKANAL", web site www.chelnyvodokanal.ru.



EXECUTIVE SUMMARY OF HCSP-SUPPORTED INVESTMENT ACTIVITIES AND THEIR IMPACT FOR THE CITY OF NEFTEYUGANSK (the Khanty-Mansiysk Autonomous Region)

At the first phase of the Project - reforms, Nefteyugansk successfully completed most (by 80%) of the activities of HCS Reform Program and also completed with proper quality the preparation of the investment plan, design estimates and feasibility studies of investment subproject included in the investment plan and became one of the main participants of the Project for the **investment phase**.

Table: Table: Details of implemented investment subprojects

Subproject title	Total amount (RF rubles)	Implementation timeline (Dates of contract start and end)
Subproject 1: Rehabilitation of heat mains along Zhilaya Str. from MK-1 to UM-11A Surg, Nefteyugansk (I, II phase of construction) (contract HCSP/ICB/NFT-1)	239,9 mln.	20.08.2013 – 31.08.2014

Subproject 1: Reconstruction of Heat Networks

Issues: total length of double-pipe heat pipeline in Nefteyugansk is 115,2 km. Heat networks pipelines were laid both underground by trenchless method and above ground on low and high supports. Heat networks pipeline wear and tear exceed 60% at the beginning of the subproject implementation. Majority of pipelines (67%) were installed using outdated fibrous insulation, which did not protect pipes from ground waters impact. Difficult conditions of heat networks operation due to nearby ground waters and long service life caused increase of breakdowns. During heating season 1-2 breakdowns happened at the heat network daily. Apart from the fact, that elimination of heat networks breakdowns required additional expenses, compensation of non-effective losses required an increase in production of heat energy, which resulted in extra air pollutant emissions, aggravating the ecological situation in the city. Process losses at heating energy transfer in 2009 amounted to 108,6 thous. Gcal.

What the subproject did: The project is aimed at replacement of worn-out and obsolete pipelines of heat networks with modern pipes applying advanced insulating materials. In addition, to increase the reliability of the supply of heat energy

to consumers, reduce losses of heat energy and coolant, reduce the level of leaks and the overall level of network accidents by using more durable pipe materials in the heating mains of the city and changing the architecture of pipelines. The reconstruction of heating networks was also important for the gradual transition to a closed heat supply system in Nefteyugansk.



Performing of works on reconstruction of heat networks in Nefteyugansk

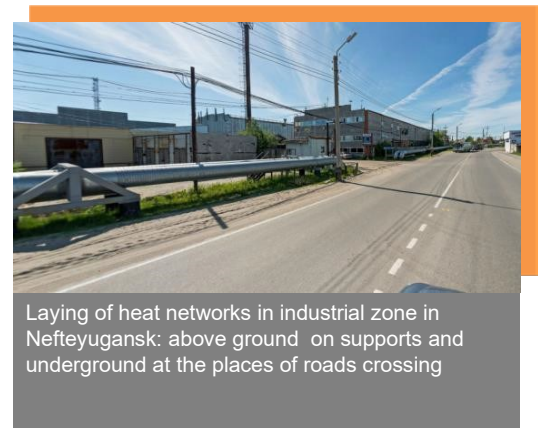
A part of the investment project for reconstruction of heat networks the following activities were included:

- dismantling of existing pipeline;
- laying of 1600 m of a new municipal pipeline (double-pipe version), dia. 500 mm;

- changing of networks laying architecture – submerging of pipeline underground at the places of roads crossing and transport entry into the industrial zone;
- pipes insulation with advanced materials.

Reconstruction of the above-ground heat supply pipeline was implemented in two stages. During the project implementation there was a transition to usage of above-ground heat networks in the Nefteyugansk industrial zone. The main advantages of above-ground heat networks laying are the following:

- no danger from ground and surface waters;
- operation convenience and accessibility for external examination;
- convenient and quick elimination of heat networks breakdowns and heat-transfer agent loss;
- low cost of above-ground heat networks
- in comparison with underground ones.



Laying of heat networks in industrial zone in Nefteyugansk: above ground on supports and underground at the places of roads crossing

During the implementation of the investment subproject, pipes with new polyurethane foam insulation were used, which is much more reliable than the previously used method of insulation from mineral wool in terms of durability and ability to retain heat. The outer shell of pipes used in underground laying, made of high-pressure polyethylene, provides long-term (up to 30 years) effective operation of pipelines. Usage of pipes made of galvanized metal for above-ground laying promote pipelines lifetime extension. Installation of new pipeline was carried out applying online remote control, allowing to detect places of insulation wetness and eliminate potential corrosion spots just during construction and installation works.



Heat networks in Nefteyugansk industrial zone: new pipeline section – to the left, the old section – to the right

Benefits:

Social: significant increase of reliability heat supply to consumers in 2015 in comparison with 2012.

Ecological: decrease of water volume, taken from surface source for filling of the municipal heat-supply system; decrease of ground leaching at the places of pipeline laying; decrease of air pollutant emissions, connected with heating of wasted heat-transfer agent.

Operational: decrease of frequency of reconstructed heat network pipeline breakdowns; decrease of heat networks number requiring replacement from 34% to 31%; decrease of heat loss in the heat supply system and as a result increase of heat productive supply rate; increase of resource productivity in heat supply sector from 30,7 kW/Gcal to 33,8 kW/Gcal; decrease of fixed assets wear in the heat supply sector from 47% to 42%.

Economical: expenses on maintenance and repair of heat networks decreased due to reconstruction thereof - by about RUB 1,6 mln. per year; costs of utility companies reduced due to elimination of chemically treated water losses - by RUB 0,26 mln. per year; costs of utility companies reduced due to heat energy loss reduction – by Rub 0,39 mln. per year; costs of acquisition of natural gas reduced – by about RUB 1,38 mln. per year.

Additional information: Nefteyugansk Administration, web site <http://www.admugansk.ru>.



**EXECUTIVE SUMMARY OF HCSP-SUPPORTED INVESTMENT ACTIVITIES AND THEIR IMPACT
FOR THE CITY OF NOVOKUIBYSHEVSK (Samara Region)**

At the first phase of the Project - reforms, Novokuibyshevsk successfully completed most (by 80%) of the activities of HCS Reform Program and also completed with proper quality the preparation of the investment plan, design estimates and feasibility studies of investment subproject included in the investment plan and became one of the main participants of the Project for the **investment phase**.

Table: Details of implemented investment subprojects

Subproject title	Total amount (RF rubles)	Implementation timeline (Dates of contract start and end)
Subproject 1: Rehabilitation of wastewater treatment facilities in Novokuibyshevsk (contract HCSP/ICB/NFT-2)	44.5 mln.	15.07.2013 – 23.07.2015

Subproject 1: Rehabilitation of wastewater treatment facilities in Novokuibyshevsk

Issues: the wastewater treatment plant was commissioned in 1967. Its buildings and constructions had not been rehabilitated during the entire period of the plant operation, and some technological equipment was worn out and obsolete. For this reason, a decision was made to rehabilitate the mechanical treatment facilities, including the rehabilitation of primary radial-flow settling tanks, entrance screens for buildings and the wastewater pumping station. The main purpose of the subproject was to improve the operational reliability of the mechanical treatment facilities and contribute to improved quality of wastewater treatment and reduced environmental pollution.

What subproject did: in the frames of the subproject the rehabilitation of mechanical treatment facilities at the Novokuibyshevsk wastewater treatment plant was implemented. Reconstruction of mechanical wastewater treatment facilities with a capacity of 3100 cubic meters. m / h, including primary radial settling tanks and a lattice building.



Mechanical wastewater treatment plants: grating and primary radial sump



Process of rehabilitation of primary tanks



Primary radial-flow settling tank after rehabilitation

Benefits: the reconstruction made it possible to extend the period of operation of treatment facilities, update technological equipment, restore the decoration of buildings and structures of treatment facilities, and improve the treatment of sewage entering the treatment facilities. The implementation of the investment subproject in the field of wastewater disposal in the city of Novokuybyshevsk made it possible to improve the following indicators of the centralized wastewater disposal system of the city that contributed to prevention of accidents and stable operation of the mechanical treatment unit of urban sewage treatment plants, reduction of operating costs for the maintenance of this unit; leveling the risk of wastewater spillage on the terrain, reducing the concentration of pollutants (nitrate ions, general iron, anionic-active surfactants, sulfates) in treated wastewater.

In addition to those, and to complement investments in the mechanical treatment facilities supported by the HCSP, the city, backed up by the regional budget funds, financed the construction of the treated wastewater UV disinfection plant.

Social: reconstruction of the building of the grilles of the mechanical cleaning unit made it possible to exclude cases of water ingress on electrical equipment due to leaks in the roof and walls of buildings, which could cause injuries to personnel; improving the stability of the city's wastewater disposal system due to the reconstruction of the mechanical cleaning unit (the number of equipment failures has been significantly reduced). The implementation of this subproject ensured the stable provision of municipal water disposal services and the receipt of other socially useful effects that cannot be estimated in value terms.

Ecological: eliminated the risk of untreated wastewater on the terrain, which contributed to the improvement of the environmental situation; as well the reconstruction of the mechanical treatment unit made it possible to reduce the number of large and medium-sized inclusions in wastewater entering the treatment facilities, and, accordingly, their ingress into the Krivusha River is excluded.



EXECUTIVE SUMMARY OF HCSP-SUPPORTED INVESTMENT ACTIVITIES AND THEIR IMPACT FOR THE CITY OF ORENBURG (Orenburg Region)

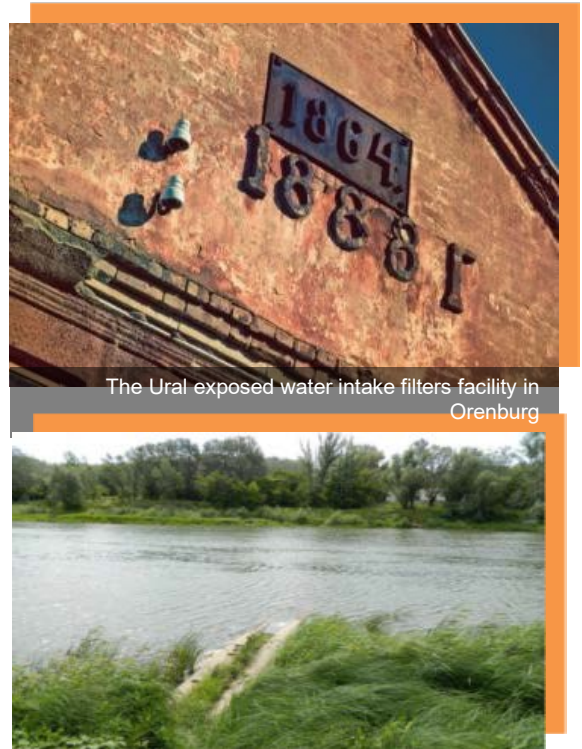
At the first phase of the Project - reforms, Orenburg successfully completed most (more than 90%) of the activities of HCS Reform Program and also completed with proper quality the preparation of the investment plan, design estimates and feasibility studies of investment subproject included in the investment plan and became one of the main participants of the Project for the **investment phase**.

Table: Details of implemented investment subprojects

Subproject title	Total amount (RF rubles)	Implementation timeline (Dates of contract start and end)
Subproject 1: Rehabilitation of the South-Ural water intake structure. Water treatment plants from the surface source (Ural River) with designed capacity of 100 thousand cubic meter/day (contract HCSP/ICB/ORB-1)	309 mln.	12.12.2012 – 30.04.2016
Subproject 2: Completion of rehabilitation of the South-Ural water intake structure (contract HCSP/ICB/ORB-2)	2,276 mln.	29.04.2016 – 07.12.2018

Subprojects 1 & 2: Rehabilitation of the South-Ural water intake structure.

Issues: the Ural exposed (surface) water intake structure, located in the center of Orenburg is one of the oldest water intake structures in Russia and, with capacity of 15 thous.cub.m/day only, is not capable to provide the developing infrastructure of the city center with required volume of water. The main problem of exposed water intake structure is the water quality. The potable water, delivered to Orenburg water supply system before the project implementation, did not comply with the existing requirements in terms of muddiness and coliform bacteria concentration. The water was disinfected with liquid chlorine. Liquid chlorine dosing and storage buildings were located at the distance of less than 50m from the Orenburg center residential area, which did not allow to arrange the required sanitary-protection zone at the pumping and filtering station site and could cause public health threat and environmental damage in the city. Water intake structures were operated with high energy and maintenance costs. Reconstruction of the South-Ural water intake structure was not possible due to its emergency state. The second water intake structure in the city, the South-Ural underground water intake structure, of downhole type, does not either comply with the existing requirements as to water treatment and has low capacity.



The Ural exposed water intake filters facility in Orenburg

What the subprojects did: the subprojects' goal was to replace the exposed surface water intake structure on Ural River, which does not comply with water treatment up-to-date requirements, with underground one, providing higher quality of water to be delivered to consumers. The subprojects included reconstruction of two horizontal filter wells, water disinfection facility and second stage pumping station (for water supply to networks), as well as construction of new

water treatment facilities using modern safe chemicals and effective treatment technologies, introduction of advanced, energy-saving, high-tech equipment with high rate of automation. The works included:

- **reconstruction of two underground horizon filter wells with capacity of 50 thous.cub.m/day each, using energy-saving axial pumps equipped with rpm control, allowing smooth change of flow rate of water delivered at the treatment plant without water-hammer effects;**
- construction of new water treatment facilities, including the building for primary water treating by chemicals, clarifiers and sand filters block, wash water treatment structures and dewatering of pipeline sludge;
- reconstruction of potable water disinfection building using safe weak solution of sodium hypochloride;
- construction of off-site networks ensuring all stages of technological process;
- automation of all the process, including chemicals dosing, using of automatic continuous monitoring of water muddiness, residual chlorine, sediment and water level in tanks at all the stages of water treatment.



Water treatment plants site of the South-Ural water intake pipeline in Orenburg

Advanced technological solutions, which were applied during reconstruction of the water Intake structure helped to improve environmental safety and energy efficiency of the water production technological process. In addition to testing all the equipment, personnel training was carried out, since the quality of water treatment largely depends on the competence and professionalism of equipment operators.

Benefits: the subprojects resulted in reduction of operational costs for maintenance of water intake structure and water treatment facilities and quality improvement of water supplied to the public of central and eastern city areas up to the level of existing sanitation and hygiene requirements. After putting two horizontal filter wells into operation the project allowed removing the Ural exposed water intake structure and low yield wells from operation, achieving the water intake capacity up to 100 thous.cub.m/day and providing the public of central and eastern city areas with uninterrupted and good quality water supply, meeting all Russian sanitary regulations and standards.

Social: substantial quality improvement of the water provided to citizens of central and eastern areas of Orenburg was provided; opportunities of water supply are opened for residents of future housing estates to be built in the south-eastern part of the city with area about 1,3sq.km. for over 40 thousand people; it became possible to construct water networks from the South-Ural water intake structure to several residential settlements with further removing the existing water intake structures of the said settlements from operation, which water treatment quality does not comply with sanitary-hygienic standard requirements; after the Ural surface water intake structure, located in the city center, is closed the vast territory will be accessible for citizens and will be available for development and reconstruction.

Ecological: rate of potable water samples not complying with sanitary norms is decreased fourfold; load on sewage treatment facilities decreased due to introduction of mechanical sludge dewatering.

Economical: reliable potable water supply in the volume of 100 000 cub.m./day is provided to Orenburg citizens; water consumption rate for own needs during water treatment is decreased as compared to 2010 rate from 11-12% to 2-3%; operating (maintenance) costs related to maintenance of the water intake structure and water treatment plants are decreased by RUB 54,2 mln., including RUB 40 mln. of power supply costs; gross profit of OOO "Orenburg Vodokanal" is increased by RUB 665,9 mln. in comparison with 2010 indicators.

Additional information: OOO «Orenburg Vodokanal», web site www.oren-vodokanal.ru



EXECUTIVE SUMMARY OF HCSP-SUPPORTED INVESTMENT ACTIVITIES AND THEIR IMPACT FOR THE CITY OF SARANSK (Republic of Mordovia)

At the first phase of the Project - reforms, Saransk successfully completed most (more than 80%) of the activities of HCS Reform Program and also completed with proper quality the preparation of the investment plan, design estimates and feasibility studies of investment subproject included in the investment plan and became one of the main participants of the Project for the **investment phase**.

Table: Details of implemented investment subprojects

Subproject title	Total amount (RF rubles)	Implementation timeline (Dates of contract start and end)
Subproject 1: Construction of a new complex of treatment plants for Saransk urban district (contract HCSP/ICB/SAR-1)	1,605mln.	11.04.2014 – 31.12.2018

Subproject 1: Construction of new line of sewage treatment facilities

Issues: municipal sewage treatment facilities are located in Lyambirsk region in 6 km to north-west from Saransk, at Insar river flood-plane. All urban waste waters are coming thereto. At the beginning of the subproject implementation the municipal sewage treatment facilities in Saransk were worn-up by 60%. During the design and construction of sewage treatment plants in the mid-80s of the last century, minimum requirements for the quality of wastewater treatment were laid down. Over time, the requirements for the quality of treated wastewater have increased, and existing treatment facilities could no longer provide the purity of purified water that meets modern requirements, including indicators of biological oxygen consumption and the content of biogenic elements (ammonium and nitrate nitrogen, phosphates, etc.) and chlorine compounds. Emergency condition of sewage system had negative impact on the city and its outskirts environment, and first of all, on Insar river water basin. Moreover, sanitation networks did not have reserves for increase of sewage disposal and pumping, and it became a factor affecting the city development. For years, the municipal enterprise “Saranskgorvodokanal”, operating the municipal sewage treatment facilities, carried out scheduled capital repairs of the sewage treatment facilities at the expense of their activity profits. However, the said works allowed to support operation of the facilities and prevent major breakdowns. However, the operating company had no possibility to stop the operation of existing treatment plants to carry out major capital repairs or reconstructions as existing treatment plants operated at their limits. Moreover, MP “Saranskgorvodokanal” had incurred high costs for payment of environment negative impact charges due to worn-out state of sewage treatment plants and noncompliance with the existing requirements for water treatment facility.



Plan of sewage treatment plants new line in Saransk

What subproject did: construction of up-to-date sewage treatment facilities in order to improve the quality of treatment and reduction of environment pollution was carried out through a new (extra) line of sewage treatment facilities with capacity of 2165 thous. cub.m./day.

1. Primary sedimentation basins D=30m	7. UV disinfection building
2. Distribution basin of the primary sedimentation tanks	8. Shop of sludge mechanical dewatering
3. Aero tanks	9. Transformer substation №1 2x400 kVA
4. Secondary sedimentation basins D=40m	10. Transformer substation №2 2x1000 kVA

5. Distribution basin of the secondary sedimentation tanks	11. Filtrate water tank
6. Sludge pumping station	12. Primary sludge pumping station

The new complex of treatment facilities comprises 23 objects for construction and a lot of service lines. The start-up facility includes the following:

- two primary sedimentation tanks;
- distribution basin of primary sedimentation tanks; aero tanks with capacity 65 thous. cub.m./day;
- four secondary radial-flow sedimentation tanks; secondary sedimentation tanks distribution basin; sludge pumping station;
- primary sludge pumping station at the primary sedimentation tanks ;
- transformer substation;
- water UV disinfection station, etc.



The integrated approach to solving sewage treatment problem in Saransk was applied in design and works performance. Installed equipment and constructed facilities are combined by unified production process, which covers all the treatment stages from receiving of sewage from the consumers up to delivery of treated sewage to the river basin.

Benefits:

Social: increase of actual capacity of the sewage treatment plants (volume of received sewage up to 140 - 180 thous.cub./day; elimination of maximum permissible pollutants rate excess in treated waters and of danger of Insar, Alatyr, Sura rivers and all the whole Volga basin pollution with Saransk sewage.

Ecological: the creation of additional capacities of treatment facilities that meet modern environmental and technical requirements made it possible to improve the quality of treatment of wastewater discharged into the Insar River (Volga River basin) and create opportunities for the subsequent reconstruction of former treatment facilities put into operation in the 70 years of the 20th century.

Economical: reduction of operational expenses due to complete putting out of operation of two lines of the old sewage treatment plants, saving amount to about 76 mln. RUB. per year; reduction of expenditures for procurement of some types of chemicals for treatment of sludge drying beds for the purpose of odor removal – by about 0,8 mln. RUB per year.

Additional information: Municipal service department of the Saransk district Administration, web site <https://www.adm-saransk.ru/>.

1. Primary sedimentation basins D=30m	7. UV disinfection building
2. Distribution basin of the primary sedimentation tanks	8. Shop of sludge mechanical dewatering
3. Aero tanks	9. Transformer substation №1 2x400 kVA
4. Secondary sedimentation basins D=40m	10. Transformer substation №2 2x1000 kVA
5. Distribution basin of the secondary sedimentation tanks	11. Filtrate water tank
6. Sludge pumping station	12. Primary sludge pumping station



EXECUTIVE SUMMARY OF HCSP-SUPPORTED INVESTMENT ACTIVITIES AND THEIR IMPACT FOR THE CITY OF TULA (Tula Region)

At the first phase of the Project - reforms, Tula successfully completed most (by 80%) of the activities of HCS Reform Program and also completed with proper quality the preparation of the investment plan, design estimates and feasibility studies of investment subprojects included in the investment plan and became one of the main participants of the Project for the **investment phase**.

In the frames of the HCSP large-scaled subprojects were implemented in Tula, each of them included various types of works with the aim to ensure water supply and/or water removal systems. It was worth to study a comprehensive approach, applied by Tula administration in selection of investment projects and project activities aimed at solving problems with water supply and water removal. The essence of the said approach was that activities had to be socially-oriented, ensure improvement of the quality of life of the citizens, allow creation of a consistent trend of reducing the breakdowns rate and improving the quality of water supply and water removal services, creating the conditions necessary for large-scale housing construction, and, finally, improving the city environment conditions.

Table: Details of implemented investment subprojects

Subproject title	Total amount (RF rubles)	Implementation timeline (Dates of contract start and end)
Subproject 1: Water supply in settlements Skuratovsky and Mendeleevsky of Tula Central district (contract HCSP/NCB/TUL-1)	247, 6 mln.	20.12.2012 – 31.03.2016
Subproject 2: Residential development of Skuratovsky district of Tula (main networks and structures) and residential development of IV N-E district of Tula (main networks) (contract HCSP/NCB/TUL-2)	335, 2 mln.	20.04.2012 – 30.12.2016
Subproject 3: Off-site networks of housing development estate "Residential area situated in the north part of Zarechensky district of Tula city" (contract HCSP/NCB/TUL-3)	375,3 mln.	25.04.2016 – 21.01.2018
Subproject 4: Reconstruction of water supply system of Proletarskiy okrug of Tula city (contract HCSP/NCB/TUL-4)	876,5 mln.	20.11.2019 – 25.12.2020
Subproject 5: Construction of sewage collector in Zarechensky district of Tula city (contract HCSP/NCB/TUL-5)	423,5 mln.	16.07.2020 – 31.08.2021

Subprojects (1, 2, 3): Providing the residents with good quality water and water removal systems in a few Tula districts

Issues: the water supply of Skuratovo and Mendeleevo settlements of the Tula central district was provided from the underground water intake structures, constructed in postwar period, about 60 years ago. The service life expired and those were in emergency condition. The water supplied from Skuratovo intake structure failed to meet the requirements, quality of water in artesian wells also did not comply with regulatory requirements as regards many indicators. There were no water softener stations. There was no water reserve in the existing tanks for fire-fighting needs. Moreover, during summer period the capacities of water intake structures were not enough to provide the public and other consumers with water therefore the water was supplied according to the schedule. Water deficiency, meeting the requirements of sanitary regulations and standards in Tula, was 36,5 thous. cub.m./day. Unsatisfactory water supply becomes a reason for a social tension growth in the Central district.

Skuratovo settlement has the growth capacity for new housing construction. It is planned to construct new 5-storey buildings of total dwelling space of 50 thous. sq.m. in order to solve the problem of resettlement of citizens from emergency, uninhabitable housing. However, the connection to water supply and sanitation networks was not possible due to worn-out state of water intake structures, and existing water supply and sewage networks were not capable to provide additional volume for provision of water and water removal.

Water loss in water supply networks of the Central district amounted to 34,3% of delivered water volume. Further operation of the water supply networks without their modernization could cause significant increase in failures of water supply to consumers and significant deterioration of supplied water quality due to large-scale main equipment breakdown.

There was no centralized water removal system in Skuratovo settlements, as well as in Yuzhniy and Pobeda settlements, also located in the Tula central district.

In the northern area of Tula Zarechensk district there were no centralized water supply networks, and sewage networks (of the city sewage header) were heavily worn-out – one of the network sections was worn out by 95%. At the same time, there was a need for water supply to the village of large families and the construction of a new residential neighborhood was planned.

Thus, there was an urgent demand in solving several social-related problems relating to needs in good quality of water supply and water removal systems in different Tula districts. It was difficult to select projects for investment, as the problems in all the above districts were equally urgent. The solution required integrated and large-scale approach, so it was decided not to be limited with one project for investment but to implement all projects, meeting criteria of sociality, strategic importance, usefulness, quality improvement of communal services and environment conditions.

What subprojects did: to ensure a good quality of water supply and water removal for citizens in those Tula districts where the problem is more urgent; reconstruction and improvement of the efficiency of the existing water supply and water removal systems in Tula, as well as creating opportunities for new housing construction in the Tula central district and providing it with water supply and water removal systems, the following was undertaken:

- pumping station of the 3rd stage, with capacity of 10 389 cub.m./day, two water-storage tanks with volume of 1000 cub.m. each, 5 km of external power supply lines and transformer sub-station as well as water supply networks with total length of 9.2 km were laid.



The project would ensure 24-hours supply of good quality potable water in the volume of 5,9 thous.cub.m/day to the residents of Skuratovo and Mendeleevo settlements (68% of water consumption) and 2,8 thous. cub.m/day to the enterprises and social and cultural facilities, located in these settlements (32% of water consumption). As a result of implementing the subproject “Housing construction in Skuratovo and North-East residential settlements in Tula” they laid 11 km of sewage networks, constructed 6 road and railway bed crossings. Constructors laid 4,5 km of water pipes in Skuratovo settlement and 440 m of water lines to Upa River. 120 m of water pipes with diameter of 710 mm.

were laid under Upa River with the use of horizontal directional drilling method. Two new sewage pumping stations were constructed and one sewage pumping station was reconstructed in Skuratovo residential district of Tula. The new up-to-date pumping stations of model type are the autonomous, compact facilities with all required automated equipment. Under the third subproject “Residential district, located in the northern part of Zarechenck district of Tula” they build a connection pipeline with diameter of 500 mm and length of 6 km between the water line of Obimsko-Upkinskiy water intake structure to Osetrovsko-Medvenskiy intake structure. The capacity of water line is 160 l/sec, 576 cub. m/h, 13824 cub. m/day, at water velocity in the water line - 1,22 m/sec. The water line is made of PE pressure pipes PE 100 SDR 17 - 500X29,7 (potable GOST 18599-2001)1, which ensures long service life. Also they constructed a sewage header with diameter of 900 mm and total length of 1,85 km.



Benefits:

Social: water supply and water removal services were improved for about 26 thousand of residents of several settlements in Tula;

social tension was decreased in settlements where the quality of water was unsatisfactory, or water-supply and water removal systems were not available; communal infrastructure (service lines) was constructed that allowed new housing construction in order to solve the problem of resettlement of citizens from accident-prone, uninhabitable housing in the city of Tula.

Ecological: the quality of potable water is improved under all determinable indicators in the areas where subprojects were implemented: muddiness and color indicators reached zero value, total hardness of water was decreased from 9,5 to 8,4 degree, and iron content was decreased from 0,19 to 0,12 mg/ cub. dm.; constant zero level of water pollution with common and thermotolerant coliform bacteria.

Additional information: Municipal services department of the Tula Administration web site <https://www.tula.ru/administration/sectoral-organs/upravlenie-gorodskogo-khozyaystva/>.

Subproject 4: Reconstruction of water supply system of Proletarskiy okrug of Tula city

Issues: The city is relying on groundwater for water supply, that is brought from different well fields by transport mains. Due to high iron concentration, this water is treated and disinfected (UV treatment) before distribution to the consumers. Tula water supply and sanitation system has already benefited from 3 previous contracts under the HCS project. An existing pipe to be reconstructed is more than 40 years old and is in poor state, with substantial water leakage due to breaks. Its total length is 24 km.



Reconstruction process of water supply of Proletarskiy okrug in Tula

What subproject did: the works included replacement of 9.8 km of old reinforced concrete water supply line that transports water from one of the main well fields to the city population with polyetilen pipe of 900 mm, together with 4 valve chambers for better maintenance. The subproject covered two sections that were in the worst shape.

Benefits: the implementation of the subproject made it possible to meet additional needs for water supply capacities, improve the quality of water supply services, provide high-quality drinking water to about 56 thousand residents of the Central and Proletarsky districts of the city of Tula.

Social: reduction of social tension associated with the problems of high-quality drinking

water supply to the population.

Ecological: reduction of anthropogenic load on the environment due to the elimination of the risks of emergency situations on the main water pipeline.



Subproject 5: Construction of sewage collector in Zarechensky district of Tula city

Issues: the current part of Tula city lacked sewerage for collection of wastewaters, brown tanks were used and implementation would create preconditions for future development of city.

What subproject did: construction of the main collector of pressure-gravity domestic sewer from Klyuchevaya street to the crossroad of Goncharova-Griboyedova streets and further to urban treatment facilities with reconnection of sewage networks from existing consumers (length including pipe laying –8.69 km) and 96 sewage wells.

Benefits: the realisation of this subproject also made it possible to meet the additional needs for wastewater disposal capacities and create a significant social effect in the form of an increase in the amount of tax payments to the organization of water supply and sewerage by increasing revenues.

Horizontal directional drilling rig. (Foreground –expander 400-600 mm)



EXECUTIVE SUMMARY OF HCSP-SUPPORTED INVESTMENT ACTIVITIES AND THEIR IMPACT FOR THE CITY OF VOLZHSKY (VOLGOGRAD REGION)

At the first phase of the Project - reforms, Volzhsky successfully completed most (more than 80%) of the activities of his Housing and Communal Services Reform Program and also completed with proper quality the preparation of the investment plan, design estimates and feasibility studies of investment subprojects included in the investment plan and became one of the main participants of the Project for the **investment phase**.

The city of Volzhsky is the leader among the Participating Cities in the installation of common house meters for communal resources: in all apartment buildings, common house meters for cold water, hot water and thermal energy consumed for heating needs are installed.

Table: Details of implemented investment subprojects

Subproject title	Total amount (RF rubles)	Implementation timeline (Dates of contract start and end)
Subproject 1: Rehabilitation of gravity Sewage Collector No. 9, D1,000 mm, from SPS No. 5 to SPS No.9 (contract HCSP/NCB/VLZ-1)	56,6 mln.	08.08.2012 – 31.03.2015
Subproject 2: Rehabilitation of biological treatment plants. Rehabilitation of the intake screen bar building (contract HCSP/NCB/VLZ-3)	27,5 mln.	08.08.2012 – 01.03.2014
Subproject 3: Rehabilitation of 6 kV 3.28 km long cable lines (4L, 7L) from substation Gorodskaya-1 to distribution substation -7 of city of Volzhsky (contract HCSP/NCB/VLZ-4)	14,785 mln.	08.08.2012 – 31.10.2013

Subproject 1: Rehabilitation of gravity sewage collector

Issues: the section of the municipal sewage header (sewage header No.9), laying along one of the Volzhsky central street (Molodogvardeitsev street), along busy Profsoyuzov boulevard – is a favorite resort place of Volzhsky citizens, which was in emergency condition. The header upper vault was in dare need as a result of ground pressure and sinkholes appeared at the grass lawns and asphalt pavement making it dangerous for the citizens. Risks of a sinkhole collapse put in danger environment and safety of pedestrians and vehicles traffic. The total length of the header to be replaced was 3,5 km, including completely worn-out section – 1,2 km. No.

What subproject did: the old reinforced concrete header was completely replaced with a new one, made of extra-strong PE pipe applying modern technology – pulling of pipe into pipe of the old brick vault by sections of 100-200 m. The said technology allowed to perform works with minimum environment disturbance, i.e. there was no need for constructors to excavate deep trenches and pits in the middle of the street, causing inconveniences for pedestrians and traffic. Moreover, the header reconstruction works were performed without its operation shutdown, i.e. without limitations in water supply and receipt of sewage from service consumers, without causing any inconveniences for the citizens during works performance period. Earthworks with soil excavations were carried out at the sections ends only, where a new pipe was pulled, and the soil, excavated from the trenches at the sections ends, was backfilled upon completion of works. Thus, the sewage header reconstruction works were notable for technological effectiveness, up-to-date materials, environmental friendliness and focus on citizens' comfort. Environmental protection activities were of the utmost importance during design and works performance, environmental requirements were included into the contractors' agreements. Technical supervision experts monitored the implementation of environment protection activities during works performance.



Replacement of sewage header pipe in Volzhsky by pulling into the old vault without trenches excavation

Volzhsky Administration, as the owner of the land site under which the header is laid, undertook the project organizational support: approval documentation was issued. plots of land were allotted, construction vehicles traffic was provided, all that simplified the contractor’s job and promoted timely project implementation in planned volume and on scheduled dates. The sewage header operator – the Volzhsky MUP “Vodokanal” initiated the project and carried out monitoring at all the stages and accepted the project into service as a result.

Benefits:

Social: reconstruction of the sewage header ensured its trouble-free operation, which improved sanitation quality; sewage intake was provided at sanitation from the residential development with more than 50 thousand of residents, amounting to 16% of all city consumers. Conditions have been created for connecting new residential buildings erected in new urban areas to the water removal system.

Ecological: elimination of danger of breakdown at the sewage header section, laying under busy pedestrian streets.

Economical: reduced expenses for breakdown elimination at the header reconstructed section – about by 5 mln.RUB per year; reduced expenses for capital repair due to replacement of worn-out header section and increase of its service life from 25 to 50 years.

Subproject 2: Rehabilitation of biological treatment plant

Issues: at the beginning of the project implementation sewage treatment facilities in Volzhsky were in emergency condition. The equipment was outdated, facilities were not able to provide the adequate quality of sewage treatment – after which there was a large volume of sludge not subject to treatment. Accumulated sludge created a danger to environment, there were risks of the city water sources pollution. Sewage treatment facilities required heavy operational expenditures, expenses for current maintenance and operating service. Poor state of facilities, risks of roof and its support elements collapse put at risk safety of service personnel, working at the bar screen building.

What subproject did: reconstruction of the first stage of the sewage treatment facilities (bar screen building and sewage mechanical treatment facility) ensured the improvement of sewage treatment, cleaning from particulate pollutants and the facilities operation conditions as a whole. Also, the working conditions of the personnel in charge of the trouble-free operation of the treatment facilities were improved due to reconstruction of facilities.



Emergency condition of sewage primary treatment facilities at the first stage of sewage treatment plants in Volzhsky before reconstruction



Sludge mechanical treatment equipment, installed in the bar screen building of biological treatment plants in Volzhsky

According to the adopted design solutions the facilities of the first stage of treatment, which were in emergency condition, were dismantled, a new bar screen building was constructed, along with powered step sewage bar screens; spiral conveyor; screw press; waste tank for temporary storage of dewatered waste; other auxiliary equipment.



New bar screen building (sewage mechanical treatment facility) of biological treatment plants in Volzhsky

Benefits:

Social: improvement of treatment quality of waste waters, delivered from 27% of the city public, improvement of the working conditions for the personnel in charge of the trouble-free operation of the sewage treatment facilities.

Ecological: improvement of operation of the further stages sewage treatment facilities (wet pits, biological tanks), nulling of untreated sewage volume, improvement of rates of biochemical oxygen demand (BOD and BOD₅), indicating the sewage pollution level at the treatment facilities exit, reduction of the volume of environment waste disposal.

Economical: reduced expenses for transportation of dewatered sludge – about by RUB 3,5 mln. per year; reduced expenses for power consumption for water transfer due to decrease of the volume of water, delivered to the treatment facilities “head” – RUB 0,53 mln. per year; reduced expenses for payments for environment discharge of dewatered sludge – about by UB2,3

mln. R per year.

Additional information: Volzhsky Administration, web site <http://www.admvol.ru/>. MUP «Vodokanal», web site <https://www.vkanal.ru/>.

Subproject 3: Capital repair of heat networks & Reconstruction of main power cable lines in Volzhsky

Issues: the total length of heat networks of OOO “Volzhsky heat supply networks” is 688,361 km. In the beginning of 2010 about 80% of heat networks pipelines exceed the breakdown-free service life period, and about one third thereof were in emergency condition and required urgent repair. Heat loss in networks came up to 30%. Carried out research showed that the reason of deterioration of heat supply systems in Volzhsky was caused by using nondurable thermal insulation materials, which do not meet the existing requirement to such materials.

What subproject did: within the frame of investment program of OOO “Volzhsky heat supply networks” the capital repairs of mains and distribution heat networks are performed using pipes with urethane foam insulation and mantle pipe made of high density PE, equipped with online remote control system. Prefabrication of all elements reduces installation costs. Online remote control system allows to timely detect and eliminate emergent defects, thus preventing breakdowns, which are typical for heat networks and other structures.

Benefits: investment program on development of the municipal heat supply system of Volzhsky, Volgograd region, was approved by the Resolution of the Volzhsky City Duma No. 20/19 of the 24th of September, 2010. The said program also envisaged capital repairs and reconstruction of existing heat networks during the program implementation period. Later the heat supply scheme for the period from 2013 to 2028 was adopted by the municipal district Volzhsky Administration resolution No. 6696 of the 6th of September, 2013, which establishes the strategy of the municipal heat supply systems development for a long period and substantiates social and economic feasibility of heat networks reconstruction.

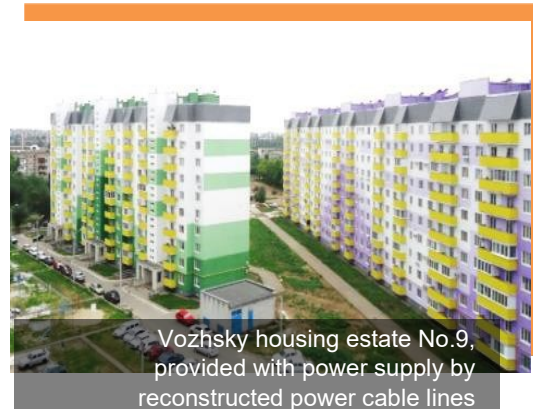
OOO “Volzhsky heat supply networks” applies advanced technologies and modern materials for laying of the above and underground heat supply networks – pipes with special vandal-proof covering (galvanized steel layer) and with stronger thermal insulation. At the same time some sections of above ground heat pipeline are laid underground due to long service life of high density PE mantle pipes and quick installation.



Replacement of pipes of heat pipeline

Issues: the main underground electric cable lines (with a total length of 1.64 km) on the most congested section of the power line from the substation "Grodkaya-1" to the distribution point - 7 (hereinafter RP-7), providing electricity to three micro districts of Volzhsky, by the beginning of the project (2010) run out statutory term, had low throughput and a high degree of wear, often failed. The condition of the cable lines called into question the reliability of power supply to existing consumers and did not allow the city administration to connect new consumers in residential areas under construction nearby. The cable lines were put into operation in 1969, and by the beginning of the project they had been in operation for more than 40 years, that is, their service life was 11 years longer than the standard period of 30 years. Cable wear was 86%. The lines consisted of 2 parallel laid cables ASB-6 with rated voltage up to 6 kV, with three cores, section 185 sq.m, in each. Each cable maximum current load is 250 A, total load of one cable line is 500 A. Actual load of consumers (three city housing estates with population of 27 thousand people), connected to cable, exceeded maximum permissible load.

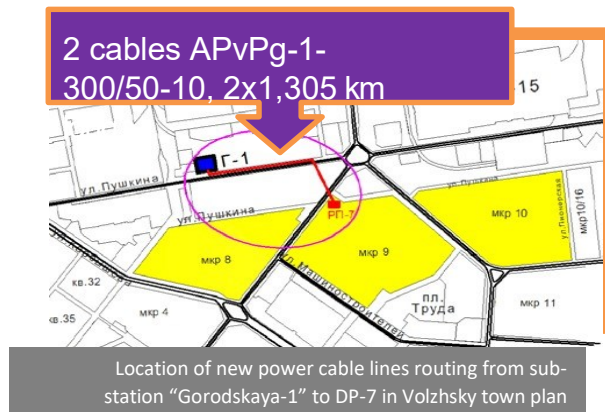
During summer in 2010, when anomalously high temperatures caused sharp increase of power consumption in residential buildings for rooms cooling and ventilation, the total cables load exceeded the maximum permissible load by 33% and sometimes there were breakdowns at the overloaded cable lines and consumers repeatedly suffered from temporary power cut. A great number of coupling sleeves at the said cable (42 pcs. or 1 joint for each 40 m in average), location of some cable sections under tram lines and motorway, caused difficulties for emergency repair and reconstructive maintenance of cable lines. Besides, due to long service life the cable lines appeared to be located in some zones of approach and crossing with other service lines, that increased risks of cable lines damage in case of service lines repair.



Implementation: the main goal of the investment project on reconstruction of power cable lines from sub-station “Gorodskaya-1” to DP-7 is to ensure the reliability and quality of power supply to existing consumers of three city housing estates (about 27 thousand people) and make it possible to connect new consumers applying advanced materials. Under the subproject, the existing cable lines were completely replaced with two lines of new aluminum cables with cross-linked PE insulation and PE sheath, three-core with section 300 sq.mm. and rated voltage up to 10 kV (cable mark APvPg- 1x300/50-10). Thus, the new cable has distinctly bigger section and higher rated voltage. The new cable has higher performance as for current and wattage can bear high loads (2750 kW more than previous ones), estimated service life of the said cable is 50 years due to insulation and sheath advanced materials. Moreover, new cable lines have only two coupling sleeves instead of previous seven, which reduce the risk of emergency breaks and improve cable reliability and service life. During the project implementation, not only cable was replaced with a new one, but cable routing was changed, that resulted in reducing of new cable length by 335 m, up to 1,305 km. Less cable lines length also has positive effect on reliability thereof.



Subproject’s successful implementation in Volzhsky was ensured by coordination of all the participants, including Volzhsky administration, cable lines owner – municipal state enterprise “Volzhskiye mezhrajonnye elektroseti”, design and contractor companies, which implemented works. The city Administration clearly defined the goals, targets and time-limits for identification of problems, connected with housing estates power supply with outdated cable lines and adequate reflection of the situation in the city power supply scheme as well as necessity in power lines development for possible power supply of the projects under construction. City Administration rendered comprehensive assistance to the project executing agencies at the stage of feasibility study, elaboration of design documentation, project implementation, also allotted land plots for parking and traffic of construction machinery, etc. All this provided timely implementation of the project activities.



Benefits:

Social: improved power supply reliability for 27 thousand consumers of three city housing estates; more than 5 thousand of new consumers in 1,2 thousand apartments in new buildings of Volzhsky housing estate No.9 are provided with power supply; provided opportunities for future housing development and connection to power supply line of even more consumers due to increase of cable line limit loads.

Ecological: reduced negative environment impact due to decrease in usage of bitumen and plumb for coupling sleeves repair as a result of applying heat shrink coupling sleeves for cable cores connection.

Economical: volume of power supply to consumers increased – by about RUB 2,4 mln. per year; reduced power specific losses during transmission to consumers – by about RUB 0,49 mln. per year; maintenance costs reduced due to decrease in coupling sleeves to be replaced – by about RUB 0,049 mln. per year.

Additional information: Municipal State Enterprise “Volzhskiy mezhrajonnyye electroseti”, web site <https://vmes34.ru/>.

ANNEX 7. DETAILED DATA ON HCSP CONTRACTS BY COMMUNAL SUBSECTORS

Contracts for construction/reconstruction/repair of water supply systems	
Contract number and name, supplier and supplier country	Total contract value, including taxes (US\$)
HCSP/ICB/ORB-1 Rehabilitation of the South-Ural water intake structure. Water treatment plants from the surface source (Ural River) with designed capacity of 100 thousand cubic meter/day	9,338,917.50
HCSP/ICB/ORB-2 Completion of rehabilitation of the South-Ural water intake structure.	37,218,035.80
HCSP/ICB/NCH-1 Capital repairs of ring water supply networks	9,840,704.06
HCSP/ICB/NCH-3 Rehabilitation of distribution water lines	3,705,447.67
HCSP/NCB/TUL-1 Water supply in settlements Skuratovsky and Mendeleevsky of Tula Central district	6,605,223.12
HCSP/NCB/TUL-2 Residential development of Skuratovsky district of Tula (main networks and structures) and residential development of IV N-E district of Tula (main networks)	8,250,304.84
HCSP/NCB/TUL-3 Off-site networks of housing development estate "Residential area situated in the north part of Zarechensky district of Tula city"	6,189,339.48
HCSP/NCB/TUL-4 Reconstruction of water supply system of Proletarskiy okrug of Tula city	12,519,414.38
Total:	93,667,386.85

Contracts for construction/reconstruction/repair of wastewater treatment systems	
Contract number and name, supplier and country of supplier	Total contract value including taxes (USD)
HCSP/NCB/BRA-2 Rehabilitation of the WWT Plant in Bratsk. The main sewage collector along the Bratsk-Padun highway section to the WWT Plant. Stage II.	6,110,035.15
HCSP/ICB/CHB-2 Construction of sludge treatment structures at water treatment facilities "Zaovrazhnaya", Cheboksary	5,184,622.80
HCSP/ICB/CHB-3 Rehabilitation of the suburban sewage collector at the section from highway junction Vyatka to the intake chamber before GUP 'BOS', city of NovoCheboksarsk	7,788,374.65
HCSP/ICB/NCH-2 Capital repairs of gravity collectors of the domestic sewage system in the northern-western part of the city	7,031,720.79
HCSP/ICB/NCH-4 Rehabilitation of the pressure manifold of SPS-5, SPS-6 with switchover to the subsidiary sewage of Avtozavodsky Avenue	2,591,082.74
HCSP/ICB/NCH-5 Switching wastewater of the hospital center SPS (sewage pumping station), street block SPS-17 to SPS-17A in the southwestern part of the city (contract HCSP/ICB/NCH-5)	1,853,316.23
HCSP/ICB/NCH-6 Capital repair of main sewage collector No 7 in Naberezhnye Chelny	27,124,095.56
HCSP/ICB/SAR-1 Construction of a new complex of treatment plants for Saransk urban district	29,668,367.94
HCSP/NCB/VLZ-1 Rehabilitation of gravity Sewage Collector No. 9, D1,000 mm, from SPS No. 5 to SPS No.9	1,614,428.59
HCSP/NCB/VLZ-3 Rehabilitation of biological treatment plants. Rehabilitation of the intake screen bar building	834,276.58

HCSP/ICB/IVN-1 Rehabilitation of sewage treatment facilities in the village of Bogdanikha (Ivanovo urban district)	20,497,847.12
HCSP/ICB/IVN-4 Rehabilitation of the sewage treatment facilities - biological treatment unit in Ivanovo	40,186,553.03
HCSP/ICB/IVN-5 Rehabilitation of Sewage Treatment Facilities. Stage II. Construction of the tertiary treatment system for biologically treated sewage at sewage treatment facilities of Bogdanikha	21,650,016.20
HCSP/NCB/NVK-2 Rehabilitation of wastewater treatment facilities in Novokuibyshevsk	1,085,339.12
HCSP/NCB/TUL-5 Construction of sewage collector in Zarechensky district of Tula city	5,698,134.01
Total:	178,918,210.51

Contracts related to energy efficiency	
Contract number and name, supplier and country of supplier	Total contract value including taxes (USD)
HCSP/ICB/BRA-1 Supply and Installation of the centralized system of recoding, monitoring and management of head and water consumption in the housing stock of Bratsk	1,617,535.51
HCSP/NCB/BRA-3 Design, supply and installation of individual heating substations	4,815,190.70
HCSP/ICB/CHB-1 Supply and Installation of the automated system of metering and regulating water and heat consumption in multi-family buildings in Cheboksary	4,106,381.21
HCSP/NCB/VLZ-4 Rehabilitation of 6 kV 3.28 km long cable lines (4L, 7L) from substation Gorodskaya-1 to distribution substation-7 of city of Volzhsky	458,253.10
HCSP/ICB/IVN-2 Supply and installation of automated wireless system for collecting and processing commercial metering data at the level of the multi-apartment buildings and regulating cold water supply in Ivanovo	2,251,293.12
HCSP/ICB/IVN-3 Supply and installation of APCS, control instrumentation and automation hardware for the methane tanks. (Rehabilitation of sewage treatment facilities in the village of Bogdanikha)	3,594,726.97
HCSP/NCB/NFT-1 Rehabilitation of heat mains along Zhilaya Str. from MK-1 to UM-11A Surg, Nefteyugansk (I, II phase of construction)	7,034,318.38
Total:	23,877,698.99

ANNEX 8. HCSP REFORM MATRIX & EXPLANATORY NOTE

Matrix of Reforms

Item	Activity	Activity Weight, W	Percentage of Activity Fulfillment (P) or the Value of the Indicator for Evaluating Activity Fulfillment (E)	
			Initial conditions (P0 or E0)	Planned based on Project Phase 1 Outcome (P1_{plan} or E1_{plan})
A. Communal Sector Reform and Improvement of Financial Viability of Sector Enterprises				
A1	Approval of investment programs of communal services providers for no less than a three-year period with identification of sources of their financing and production programs of communal enterprises in accordance with applicable legislation	6.09%	P0 =	P1 _{plan} =
A2	Establishment of tariffs for water and water disposal services for no less than a three-year period taking into account projected inflation	4.88%	P0 =	P1 _{plan} =
A3	Reduction in non-efficient costs of communal services providers	9.46%	E0 =	E1 _{plan} =
A4	Reduction in cross-subsidies to population from other groups of consumers (water and water disposal)	4.02%	E0 =	E1 _{plan} =
A5	Reduction in the amount of payable arrears of entities financed from the local budget for consumed communal services through repayment of arrears	8.50%	E0 =	E1 _{plan} =
A6	Independent audit of financial performance of communal service providers for 2006, 2007, 2008 and 2009 in accordance with Russian accounting standards with publication of results in mass media	5.02%	P0 =	P1 _{plan} =
A7	Increase in percentage of direct payment by population for housing and direct payment for communal services without intermediaries (the settlement and billing center and other entities), namely: - payments for residential premises made directly by residents to the homeowners' association, the housing and construction cooperative, the housing cooperative/management company; - payments for communal services made directly by residents to communal service providers or through settlement accounts of the homeowners' association, the housing and construction cooperative, the housing cooperative/management company to communal service providers	6.71%	E0 =	E1 _{plan} =
A8	Converting communal service providers into joint stock companies and/or engagement of private operators to work in the communal sector	8.50%	P0 =	P1 _{plan} =
B. Social Protection of HCS Consumers				
B1	Provision of housing allowances to households to make payments for housing and communal services in cash	6.60%	P0 =	P1 _{plan} =
B2	Standardization of existing databases on allowance beneficiaries under targeted social assistance programs, including standardization of software, personnel training, establishment of a unified register of allowance beneficiaries and introduction of the management information system	5.23%	P0 =	P1 _{plan} =
B3	Settlement of arrears on social payments	7.29%	E0 =	E1 _{plan} =
C. Housing Sector Reform				
C1	Increase in the number of multi-family buildings where residential premise owners have selected a method of management, with municipalities providing assistance in selecting a method of multi-family building management	8.57%	E0 =	E1 _{plan} =
C2	Development of competition in the housing service market (maintenance and repairs of multi-family buildings)	7.26%	E0 =	E1 _{plan} =
C3	Development, approval and implementation of the municipal Program for information of population on the HCS reform, including placement of information on the Municipality website, approval of the plan for regular consultations with consumers and	3.37%	P0 =	P1 _{plan} =

Item	Activity	Activity Weight, W	Percentage of Activity Fulfillment (P) or the Value of the Indicator for Evaluating Activity Fulfillment (E)	
			Initial conditions (P0 or E0)	Planned based on Project Phase 1 Outcome (P1_{plan} or E1_{plan})
	other stakeholders, arrangement of reporting by management companies to residential premise owners			
C4	Arrangement of transfer of a specified land plot to common equity ownership of residential premise owners in a multi-family building after delimitation of the land plot where this multi-family building is located	8.50%	E0 =	E1 _{plan} =

EXPLANATORY NOTES

A: COMMUNAL SECTOR REFORM AND IMPROVEMENT OF UTILITIES PERFORMANCE

Activity A1: Approval of investment and production programs of communal sector organizations

Problem Description

Lack of transparency is a major issue of the current tariff regulation system in municipalities. Non-transparency has an equal negative impact on all participants of the regulation process and consumers. Producers of communal goods and services are not protected against political decisions on tariffs; local self-governments do not receive required information in full about utility performance; and consumers are just forced to face the fact of tariff growth without any explanations.

Full Name of the Activity

Approval of investment programs of communal sector organizations for at least three years, including identification of sources of finance, and production programs of communal sector organization in compliance with the current legislation.

Note: "Communal sector organization: means organizations regulated by Federal Law No. 210-FZ of December 30, 2004 (version December 25, 2008) "On fundamentals of regulation of tariffs of communal complex organizations", i.e. service providers (utilities): heating, water supply, wastewater discharge and treatment, utilization (burial) of solid waste. All organizations providing electricity within municipality borders (electricity providers) should also be taken into account in planning and implementation of this activity.

Content of the Activity

The activity consists of development and approval of documents at the level of the local self-government:

By the local representative self-government body:

- Procedure for review and approval of the terms of reference for development of the investment program of a utility in absence of a comprehensive communal infrastructure development program;
- Procedure for review and approval of investment programs of utilities;

By the local executive self-government body:

- Procedure for review and approval of the terms of reference for development of the investment program of a utility in line with the comprehensive communal infrastructure development program;
- Procedure for setting up a tariff regulation body for the utilities;
- Procedure for establishing criteria measuring access of consumers to utility goods and services;
- Procedure for obtaining agreement on utility production programs.

In addition, the local self-government:

- Provides its agreement with production programs of utilities regulated at the municipal level (including water supply, wastewater discharge and solid waste utilization services);
- Approves investment programs of water supply, wastewater discharge, heat supply utilities, and electricity providers if appropriate powers are vested (delegated) (or provides its agreement with the programs in an established order).

Activity Outcome

Under this activity, the local self-government will develop a regulatory framework for development and approval of investment programs and obtaining agreement on production programs.

Investment programs of utilities (except gas providers) and electricity providers will be approved; production programs of utilities where tariffs are set by the local self-government will be agreed upon.

Criteria of Activity Completion

The activity will be considered completed, if:

- Documents defining all procedures indicated in Section “Content of the Activity” are adopted;
- Production programs for all utilities where tariffs are set by the local self-government are agreed upon;
- Investment programs for all utilities and electricity providers operating within the municipality borders, except gas providers, are approved.

To provide evidence of fulfillment of the activities, local self-governments will submit copies of adopted documents and copies of approved investment and production programs of utilities and electricity providers. Besides, local self-governments will submit a list of utilities and electricity providers operating within the municipality borders.

Activity Completion Evaluation³⁰

To evaluate completion of activity A1, availability of documents indicated in Section “Content of the Activity” will be checked first. If at least one of these documents is not available, the percentage of the activity implementation will be zero.

If all such documents are available, availability of approved investment programs and agreed production programs for all utilities mentioned above should be checked.

For each utility that operates communal infrastructure systems used for water supply, wastewater discharge and treatment, as well as solid waste utilization facilities and providing over 80% of services and goods to municipal consumers served by these systems and facilities, the activity completion percentage will be determined as follows: 0%, if both programs are not available; 50%, if only one program is submitted; 100%, if both programs are submitted.

For other utilities and electricity providers of the municipality, the percentage of activity completion will be determined by availability of the approved investment programs: 0%, if the program is not available; 100%, if the program is submitted.

To determine the income size of a utility or electricity provider that do not submit statistical report 22-ZhKKh covering the municipality, an income statement should be requested from such companies covering the estimated municipality data with explanations as a supporting document.

An example of evaluation of the final percentage of activity completion in the municipality as a whole is provided below.

Utility/ electricity	Percentage of activity	Income of the utility/electricity provider on core services to	Ratio of the utility/electricity	Contribution of the
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³⁰ Hereinafter examples of activity implementation evaluation are based on provisions of the Methodology of competitive selection of participants for the Housing and Communal Services Project in Russia and allocation of funds for implementation of investment plans of the participating cities

provider No.	completion regarding the utility/ electricity provider	consumers in the municipality in previous reporting period, RUR '000	provider income to total income of all utilities/electricity providers	utility/electricity provider to final percentage of activity completion
(1)	(2)	(3)	(4)	(5)=(2)*(4)/100
1	100%	500 000	25%	25%
2	50%	600 000	30%	15%
3	0%	200 000	10%	0%
4	100%	300 000	15%	15%
5	50%	400 000	20%	10%
Total		2 000 000	100%	P = 65%

Activity A2: Setting long-term water and wastewater service tariffs

Problem Description

Currently water and wastewater service tariffs are set for utilities for one year, while the one-year period of effectiveness is rarely fixed by regulatory acts of the local self-governments. Such regulation policy does not encourage utilities to improve efficiency and reduce costs: because the regulator will withdraw any profit on cost reduction to benefit consumers next year when tariffs will be revised. Under the circumstances, it would be understandable for the utilities to overestimate their costs (production cost).

Full Name of the Activity

Setting water and wastewater service tariffs for at least three years with an annual indexation to cover sector inflation, including electricity and supplies price changes.

Content of the Activity

The activity aims at setting water and wastewater service tariffs for utilities for a medium term. This activity will contribute to creation of incentives for the utilities to reduce costs and to improve performance.

The activity consists of:

- Approval of water and wastewater service tariffs, including tariffs for connection of new properties to the communal infrastructure systems, based on developed and agreed upon production and investment programs of water and wastewater utilities (see also Activity A1), with an effectiveness period of at least three years with annual indexation to cover sector inflation.

Activity Outcome

The local self-government will provide its agreement to water and wastewater utilities regulated at the municipal level regarding their production programs prepared for a period of at least three years with tariffs set to ensure implementation of the agreed programs and rules set to index tariffs annually during the program effectiveness period to cover sector inflation.

In addition, under this activity, investment programs of water and wastewater utilities will be prepared and approved for a period of at least three years; tariffs will be approved for connection to communal infrastructure; rules will be defined for annual indexation of tariffs during the effectiveness period of the investment program, and agreements will be signed between the local self-government and utilities to develop communal infrastructure systems.

Criteria of Activity Completion

The activity will be considered completed, if:

- Production programs for at least three years are agreed upon for water and wastewater utilities regulated at the municipal level; tariffs for goods and services are approved for these utilities for this period, and rules of annual tariff indexation are defined to cover sector inflation;
- Investment programs are approved for a period of at least three years for water and wastewater utilities operating within the municipality borders; tariffs are set for connection of new properties to the communal infrastructure systems for this period, and rules are defined for annual tariff indexation to cover sector inflation;
- Agreements are signed with all water and wastewater utilities operating within the municipality borders to develop the communal infrastructure; and agreements are signed for connection of new properties to the communal infrastructure systems.

To provide evidence of fulfillment of the activities, local self-governments will submit copies of approved regulatory acts, programs and signed agreements indicated above.

Activity Completion Evaluation

Overall, the evaluation procedure of activity A2 is similar to evaluation of activity A1 as applied to water and wastewater utilities. The only difference is that the percentage of activity completion regarding a utility is 100% if what is indicated in Section "Content of the Activity" is fulfilled, and 0%, if otherwise.

Activity A3: **Reduction of inefficient costs of utilities**

Problem Description

Utility costs often include so-called above-standard losses of the product (heat, water) due to high depreciation of fixed assets. Inefficient technologies also increase consumption of resources. Moreover, poor utility management also leads to inefficient costs.

Full Name of the Activity

Reduction of inefficient costs of utilities.

Content of the Activity

Reduction of inefficient costs per unit (heat, water, wastewater). Institutional reform of management structure (upgrading qualification of management staff, implementation of new efficient management technologies along with reduction of non-production costs).

Activity Outcome

Reallocation of costs with the tariff to increase funds for rehabilitation of the communal infrastructure systems.

Criteria of Activity Completion

To provide evidence of the activity completion, local self-governments will submit copies of documents confirming production costs per unit in the utility and the established tariffs, including:

- Statistical report 22-ZhKKh (summary) (Data of HCS utilities performance during reforms);
- Documents that are sent by utilities to the regulator, i.e. production cost report.

Activity Completion Evaluation

To evaluate completion of activity A3, availability of documents indicated above will be checked first. If these documents are not available, activity completion percentage will be zero.

If such documents are available, the proportion of tariff allocated for rehabilitation of the communal infrastructure system operated by the utility or/and facilities used for utilization (burying) of solid waste is estimated for each utility. The final value of the criteria for the overall municipality will be determined as in activity A1.

Example of an estimate is provided below.

Utility No.	Proportion of tariff allocated by the utility to rehabilitation	Income of the utility on core services provided to consumers in the municipality for previous reporting period, RUR '000	Ratio of the utility income to total income of all utilities	Contribution of the utility to final percentage of activity completion
(1)	(2)	(3)	(4)	(5)=(2)*(4)/100
1	10%	500 000	25%	2.5%
2	2%	600 000	30%	0.6%
3	0%	200 000	10%	0.0%
4	8%	300 000	15%	1.2%
5	5%	400 000	20%	1.0%
Total		2 000 000	100%	E = 5.3%

Activity A 4: Reduction of cross subsidies to residents by other consumers of communal services (water and wastewater service providers)

Problem Description

The costly tariff setting system also encourages cross subsidizing. In some municipalities, tariffs for commercial organizations and other consumers are more than twice as large as economically reasonable sizes. The level of cross-subsidies is the highest in water supply and wastewater sectors. Such situation holds back development of normal economic relations between service providers and consumers.

Full Name of the Activity

Reduction or complete elimination of cross-subsidies to residents by other consumers of water and wastewater services.

Content of the Activity

The activity will address the issue of elimination of cross subsidizing.

The activity will consist of development by local self-governments of a cross-subsidy elimination program in the water and wastewater sector. This program will take into account the ceiling values of utility tariff growth indexes for goods and services.

Activity Outcome

The activity will reduce or fully eliminate cross subsidizing of one group of consumers by other groups of consumers of water and wastewater services.

Criteria of Activity Completion

The activity will be considered fully fulfilled, if:

- The representative body of the local self-government approves the cross-subsidy elimination program in the water and wastewater sector prepared in compliance with the current legislation;
- Ratio of tariffs for other consumers to residential tariffs is reduced in line with the approved program.

To provide evidence of the activity completion, local self-governments will submit copies of the following documents:

- Approved cross-subsidy elimination program in the water and wastewater sector;
- Decision regarding approval of water and wastewater service tariffs for various groups of consumers.

Activity Completion Evaluation

To evaluate completion of activity A4, availability of the cross-subsidy elimination program or availability of documents confirming absence of cross subsidizing will be checked first. If such documents or program is not available, the activity completion percentage will be zero.

If cross-subsidy elimination program is available, availability of decisions regarding approval of water and wastewater tariffs for various groups of consumers will be checked.

Based on these decisions, the ratio of tariffs for other consumers to residential tariffs for each utility will be estimated as an indicator of the activity completion. Such ratio will be first estimated separately for water services and wastewater services and then averaged.

Then the indicator for the overall municipality will be determined taking into account the contribution of each utility. An example of such estimate is provided below.

Utility No.	Value of activity completion indicator of the utility	Income of the utility on core services provided to consumers in the municipality for previous reporting period, RUR '000	Ratio of the utility income to total income of all utilities	Contribution of the utility to final percentage of activity completion
(1)	(2)	(3)	(4)	(5) = (2)*(4)
1	2,00	300 000	30%	0.60
2	1,80	500 000	50%	0.90
3	2,20	200 000	20%	0.44
Total		1 000 000	100%	E = 1.94

Activity A5: Reduction of outstanding debts for communal services consumed by organizations financed through local budget by offset

Problem Description

According to state statistics, in 2007, over 50% of the sector companies finished the fiscal year with losses. Bills payable as of beginning of 2007 exceeded RUR 302 billion. Non-payment is a major source of accounts payable on the books of the utilities. The situation is aggravated by the fact that many utilities are municipal unitary enterprises and local self-governments do not allow them to settle issues of non-payments of budgetary organizations in courts.

Full Name of the Activity

Reduction of outstanding debts for communal services and electricity consumed by organizations financed through local budget by offset.

Content of the Activity

The activity consists of reconciliation of bills payable between utilities, electricity providers and organizations financed through the local budget, restructuring this debt and preparation of the amortization schedule.

Activity Outcome

The activity will reduce the debt of organizations financed through the local budget to utilities and electricity providers, thus improving financial viability of the HCS sector.

Criteria of Activity Completion

The activity will be considered fully fulfilled, if:

- Amortization schedules are prepared and approved for all utilities and electricity providers of organizations financed through the local budget;
- Bills payable are reduced or offset in line with the approved amortization schedule or earlier.

The change in arrears to utilities and electricity providers of organizations financed through the local budget will be monitored.

To monitor the situation, local self-governments will submit copies of the following documents:

- Amortization schedules covering all utilities and electricity providers of organizations are financed from the local budget;
- Report on fulfillment of the approved schedules;
- Balance sheets of utilities and electricity providers participating in debt restructuring;
- Annex to the balance sheet “Details of bills receivable and bills payable of utilities”;
- Statistical report 22-ZhKKh (summary) (Data of HCS utilities performance during reforms).

Activity Completion Evaluation

To evaluate completion of activity A5, availability of approved amortization schedules covering all utilities providing services or goods to organizations financed through the local budget will be checked first. If such documents are not available, the activity completion percentage will be zero.

If budgetary organizations do not have outstanding debts and provide evidence of this, the amortization schedules are not required.

If the above documents are available, the final value of activity completion will be determined as a total of the outstanding debt of all organizations financed through the local budget to all utilities as a proportion of the total utility income on services provided to organizations financed from the local budget.

An example of such an estimate is provided below.

First, the total of the outstanding debt of all organizations financed from the local budget to all utilities is estimated.

Utility/electricity provider No.	No. of organization financed through local budget			Total outstanding debt, RUR '000
	1	2	3	
Utility-1	500	200	1 000	1 700
Utility-2	200	100	1 000	1 300
Electricity provider-1	300	200	1 000	1 500
Electricity provider -2	1 000	500	1 000	2 500
Total	2 000	1 000	4 000	7 000

Then, the total income of utilities and electricity providers on services to organizations financed through the local budget is estimated for the last 12 months.

Utility/electricity provider No.	No. of organization financed through local budget			Total income of utilities and electricity providers, RUR '000
	1	2	3	
Utility-1	2 000	800	3 200	6 000
Utility-2	700	400	3 900	5 000
Electricity provider-1	1 300	700	4 000	6 000
Electricity provider -2	4 000	2 100	3 500	9 600
Total	8 000	4 000	14 600	26 600

Then, ratio of the total outstanding debt from the first table to the total income from the second table is calculated: $E = 7\,000/26\,000 = 0.2631$.

Activity A6: Independent audit of utilities financial data with publication of results in mass media

Problem Description

Lack of transparency regarding utility financial status is a major issue of utility operations. Lack of information about the utility financial status reflects negatively on communication between the local self-government bodies and these HC providers, complicates utility regulation processes.

Full Name of the Activity

Independent audit of financial data of communal sector organizations (utilities) and electricity providers for 2007, 2008 and 2009 in accordance with the Russian accounting standards with publication of audit results in mass media.

Note: "Communal sector organization: means organizations regulated by Federal Law No. 210-FZ of December 30, 2004 (version December 25, 2008) "On fundamentals of regulation of tariffs of communal complex organizations", i.e. service providers (utilities): heating, water supply, wastewater discharge and treatment, utilization (burial) of solid waste and electricity providers that should also be taken into account when respective powers are delegated to the local self-government bodies.

Content of the Activity

The activity will contribute to improvement of transparency of utility and electricity providers operations for all service consumers, set up of a system that will provide the local self-government with information about financial status of utilities and electricity providers required for respective management and administrative decision-making.

The activity consists of preparation of financial audit schedule for utilities and electricity providers, identification of sources of their financing, signing audit contracts, audits per se and publication of audit results in mass media (including Internet).

Activity Outcome

Mass media will periodically publish results of independent audit of utility and electricity provider financial data.

Such transparency of financial status of utilities and electricity providers will improve consumer trust in such organizations and will positively reflect on service quality.

Criteria of Activity Completion

The activity will be considered fully fulfilled, if:

- A schedule is approved for auditing all utilities and electricity providers operating within the municipality borders by independent auditors not less than once a year;
- Independent audit of utilities and electricity providers is carried out in compliance with the approved schedule;
- Auditor's opinions or brief independent audit reports are published in mass media within a month of such audit completion.

To provide evidence of activity completion, local self-governments will submit copies of the following documents:

- Audit contracts signed by utilities and electricity providers;
- Auditor's opinions and financial statements of utilities and electricity providers;
- Publications in mass media and Internet.

Activity Completion Evaluation

To evaluate completion of activity A6, availability of the financial audit contract for each utility and electricity provider operating within the municipality borders will be checked first. If such contract is not available, the activity completion percentage for the utility or electricity provider will be zero.

If the contract is available, availability of two groups of documents will be checked: (1) independent auditor's opinion and financial statements of the utility; (2) publications covering the audit results in mass media. Activity completion percentage for each utility will be estimated as follows: 0%, if not all above documents are available; 50%, if only the first group documents are submitted; 100%, if documents of both groups are submitted.

The final percentage of activity completion for the municipality as a whole will be determined as in activity A1.

Activity A7: **Growth of proportion of direct payments for housing and communal services from residents to management companies and utilities (without intermediaries)**

Problem Description

Many municipalities have payment processing centers (PPC) that send housing and communal services bills to residents and collect payments. Local self-governments may press on the PPCs in terms of usage of the collected cash. Such financial flows do not meet the legal requirements, constrains development of housing management business.

Full Name of the Activity

Growth of proportion of direct payments for housing and communal services from residents to management companies and utilities (without intermediaries such as PPC and other), namely:

- Payments for housing space – directly from residents of HOA, housing construction cooperatives, housing cooperatives to the management company;
- Payments for communal services – directly from residents if directly managed by utilities or through accounts of HOA, housing construction cooperatives, housing cooperatives/ management companies – to utilities.

Content of the Activity

The activity will contribute to creation of financial mechanisms on which multifamily house management business will build and to bringing financial flows in compliance with the housing legislation.

The activity will consist of the change (if necessary) of the existing system of financial flows and creation of a system

where housing and communal services payments from residents will be directly deposited on the management company accounts who will settle accounts with their contractors. The PPCs and other intermediaries will turn from payment controllers into billing and collection service providers, and the management company will pay them for this work same as to any other contractors in accordance with the contract terms and conditions.

Activity Outcome

The proportion of direct payments for housing and communal services from residents to management companies and utilities (without intermediaries such as PPC and other) will grow. Hence, a step will be made towards de-monopolization and privatization of HCS billing and collection business.

Criteria of Activity Completion

The activity will be considered fully fulfilled, if the proportion of direct HCS payments to accounts of management companies and utilities operating within the municipality borders grows.

Monitoring will cover residential HCS payments processing and estimation of the proportion of direct residential HCS payments (without PPCs and other intermediaries controlled by local self-governments).

It will be required to provide evidence of lack of any opportunity for the municipality to press the PPCs or other organizations that provide HCS billing and collection services under contracts with HOA, housing construction cooperatives, housing cooperatives/ management companies (control of the flows of finance).

To provide evidence of the activity completion, local self-governments will submit copies of the following documents:

- Report covering the current contractual relations in the municipal HCS sector, the role of PPCs and other intermediaries (if any) in the multifamily houses management, and the flows of finance, including (in the form of attachments):
 - o Samples of contracts signed by residents and management companies and by management companies and PPC (or other intermediaries);
 - o Information on residential payments collected by HCS service providers.

Activity Completion Evaluation

To evaluate completion of activity A4, availability and completeness of the report mentioned above will be checked first. If such report is not submitted, the activity completion percentage will be zero.

If the report is available for each utility and housing organization of the municipality, the completeness of information provided in the report regarding each organization will be checked. If contracts and statements mentioned above are not available, activity completion indicator E of the organization will be zero.

Otherwise, for each organization the proportion of direct payments (without intermediaries) will be determined.

An example of determining the final value of the indicator for the municipality as a whole is provided below.

No. of organization	Value of activity completion indicator of the organization	Income of the utility on core services provided to consumers in the municipality for previous reporting period, RUR '000	Ratio of the utility income to total income of all utilities	Contribution of the utility to final percentage of activity completion
(1)	(2)	(3)	(4)	(5) = (2)*(4)/100
<i>Utilities</i>				
1	100%	300 000	15%	15%
2	60%	500 000	25%	15%
3	0%	200 000	10%	0%

<i>Housing organizations</i>				
4	100%	200 000	10%	10%
5	60%	400 000	20%	12%
6	40%	300 000	15%	6%
7	0%	100 000	5%	0%
Total		2 000 000	100%	E = 58%

Activity A8: Corporatization of utilities and/or encouraging participation of private operators in the communal sector

Problem Description

In most municipalities, resource supply market is monopolized by organizations of the municipal form of ownership. They are highly dependent on local self-governments depriving them of an opportunity to make their own decisions; frequently this leads to growth of outstanding debts undermining financial stability of such organizations. Limits on salaries of municipal enterprises introduced by local self-governments make the sector unattractive for qualified staff. All these things stand on the way of utilities wishing to borrow for modernization of the communal infrastructure.

Full Name of the Activity

Corporatization of communal sector organizations (utilities) and electricity providers and/or encouraging participation of private operators in the communal sector.

Note: "Communal sector organization: means organizations regulated by Federal Law No. 210-FZ of December 30, 2004 (version December 25, 2008) "On fundamentals of regulation of tariffs of communal complex organizations", i.e. service providers (utilities): heating, water supply, wastewater discharge and treatment, utilization (burial) of solid waste. Organizations of the municipal form of ownership – electricity providers should also be taken into account in implementation of this activity.

Content of the Activity

The activity aims at improvement of investment attractiveness of communal infrastructure and electricity facilities, and improvement of professional qualification of the sector staff.

The activity consists of privatization of utilities and electricity enterprises with or without preservation of municipal ownership of such enterprises. This activity may be implemented in two ways:

- Privatization of municipal enterprises providing communal services and electricity on the territory of the municipality (with mandatory sale of shares owned by the municipality);
- Invitation of private investors (operating in any legal organization forms, including individual entrepreneurs) to manage communal infrastructure and electricity systems under concession agreements and other contracts (lease, trust management, etc.).

Activity Outcome

Utilities and electricity facilities will be privatized and/or the number of private operators will increase in the municipal communal sector. Presence of the private business will improve investment attractiveness of the communal infrastructure and electricity facilities for private investors; it will improve qualification of the sector staff. This will contribute to establishment of economic relations between the local self-government and utilities based on contracts.

Criteria of Activity Completion

The activity will be considered fully fulfilled, if communal services are provided and resources are supplied within the

municipal borders by private utilities and electricity providers. Such private companies should have less than 50% of municipal equity.

The following should be monitored: proportion of communal services and electricity services (by volume) provided by private companies (each communal service separately: water, wastewater, heat, solid waste; and each electricity service).

To monitor the activity, the local self-government will submit copies of the following documents:

- Approved municipal program of enterprise privatization and elimination of municipal institutions operating in the communal sector and in the electricity sector;
- State statistical report 1-TEP "Heat delivery data"; 1-vodoprovod "Water pipeline operation data (a separate water pipeline)"; 1-kanalizatsiya "Sewerage operation data (separate sewerage network)"; 1-KKh "Land improvement of urban areas";
- Concession agreements and other contracts (lease, trust management, etc.) for utility and electricity facilities management;
- List of municipal unitary enterprises;
- Information about municipality-owned shares in utilities and electricity facilities privatized earlier.

Activity Completion Evaluation

To evaluate completion of activity A8, availability of the municipal program of municipal enterprise privatization and elimination of municipal institutions operating in the communal sector and in the electricity sector will be checked first. If such program is not available, the activity completion percentage will be zero.

If the program is available for each utility and electricity organization providing 80% of its goods and services to the municipality, availability of concession agreements or other contracts for utility and electricity facility management, as well as availability of information about municipality-owned shares will be checked.

If utilities/electricity facilities are not corporatized (or concession agreement or other contract with a private operator for utility/electricity facility management is not signed), the percentage of the activity completion for such facility (or for respective communal service/electricity service) will be zero.

If the corporatization process is completed with at least 50% of municipal equity in such facility, the percentage of the activity completion for this facility will be 50%.

If the corporatization process is completed with less than 50% of municipal equity in such facility (or if a concession agreement or other contract for utility/electricity facility management is signed with a private operator), the percentage of the activity completion for this facility (or respective communal/electricity service) will be 100%.

The final percentage of completion of activity A8 for the overall municipality will be determined as in activity A1.

B: SOCIAL PROTECTION OF HOUSING AND COMMUNAL SERVICES CONSUMERS

Activity B1: Provision of cash housing and communal service subsidies to households

Problem Description

Under the current legislation, subsidies to low-income households may be delivered only through their bank accounts. According to the 2008 state statistics, only 73 subjects of the Russian Federation moved to provision of cash housing subsidies to low-income households. Experience of subsidy monetization shows that transition from financing of utility losses to transfer of subsidies to household accounts significantly improves discipline of budget payments.

Full Name of the Activity

Provision of cash housing and communal service subsidies to households.

Content of the Activity

The activity aims at implementation of the RF Housing Code provision regarding transition from coverage of losses of housing and communal service organizations incurred due to provision of subsidies to low-income households, to transfer of housing subsidies to household accounts.

The activity will include opening of bank accounts by all subsidy recipients; organization of timely transfer to the opened accounts of budget funds to be used by households for housing and communal services payments. To organize the transition, all recipients will be requested to visit the subsidy service within a certain period to provide bank account data.

Activity Outcome

All eligible households will receive the HCS subsidies in cash deposited on their bank accounts. Transition to such subsidy delivery will improve discipline of household payments for housing and communal services and create incentives for resource saving, control of the volume and quality of the housing and communal services.

Criteria of Activity Completion

The activity will be considered fully fulfilled, if all subsidy program participants receive social payments through transfer of budget funds to their bank accounts in cash and pay for provided housing and communal services in full.

The proportion of housing subsidies delivered through their bank accounts will be monitored.

To monitor the activity, local self-governments will submit copies of the following documents:

- Report on delivery of housing subsidies to households;
- Copies of legal regulatory acts adopted to support delivery of housing subsidies through household bank accounts.

Activity Completion Evaluation

To evaluate completion of activity B1, availability of the report and legal regulatory acts indicated above will be checked. If any of such documents is not available, the activity completion percentage will be zero; if all documents are available, the activity completion percentage will be 100%.

Activity B2: Unification of existing databases of targeted social assistance beneficiaries

Problem Description

Currently no unified database of targeted social assistance beneficiaries exists in the Russian Federation. Besides, various software products are used for such databases complicating development of a single beneficiary register. Lack of a single beneficiary register causes mistakes in targeted assistance provision and reduces social assistance efficiency.

Full Name of the Activity

Unification of existing databases of beneficiaries of targeted social assistance, including unification of software, training of staff, development of the single beneficiary register; implementation of a management information system.

Content of the Activity

The activity aims at development of a single system of registration of citizens who receive targeted social assistance, including unification of databases ensuring compatibility of software applications used for such databases and data aggregation.

The activity consists of preparation, approval and implementation of the single beneficiary register development plan that will include procurement of the required hard and software, activities aimed at unification and aggregation of data covering different categories of citizens – beneficiaries of various social allowances.

Activity Outcome

The unification of the existing databases will result in a system that will aggregate separate databases of beneficiaries of different allowances, in a single register of beneficiaries of targeted social assistance, and this will improve promptness of targeted social assistance provision, quality of service and promptness of information provision.

Criteria of Activity Completion

The activity will be considered fully fulfilled, if the unified software and a single beneficiary register are developed.

Monitoring will cover:

- Availability of the approved single beneficiary register development plan;
- Implementation of the approved plan and development of the single beneficiary register.

For the monitoring purposes, local self-governments will submit copies of the following documents:

- Development plan of the single targeted social assistance beneficiary register;
- Plan implementation report covering development of the single beneficiary register.

Monitoring will include the check of availability and functioning of the aggregated databases covering beneficiaries of different allowances provided under the targeted social assistance programs for different categories of population, as well as availability of the single beneficiary register and unification of the used databases.

Activity Completion Evaluation

To evaluate completion of activity B2, availability of the plan and report will be checked. If such plan or report is not available, the activity completion percentage will be zero; if both documents are available and complete, the activity completion percentage will be 100%.

Activity B3: Elimination of social payments arrears

Problem Description

According to the state statistics, during nine months of 2007 utilities were underpaid over RUR 3 billion that should have been paid as a compensation for benefits. Failure by the authorities to fulfill their financial obligations has a negative impact on the financial status of the sector enterprises, keeps private business from entering the sector and reduces quality of housing and communal services.

Full Name of the Activity

Elimination of social payment arrears.

Content of the Activity

The activity consists of undertaking the inventory of the municipal budget arrears in social payments, signing of social payment debt restructuring agreements with creditors and implementation of the signed agreements.

Activity Outcome

The municipal budget debt to utilities and electricity providers will be covered in part pertaining to benefits and subsidies. Elimination of the budget debt will strengthen financial viability of the utilities and improve attractiveness of the sector for private capital; consequently, quality of the housing and communal services and electricity service will improve.

Criteria of Activity Completion

The activity will be considered fully fulfilled, if the outstanding debt in social payments is eliminated and the current debt in social payments does not exceed the size of the monthly social commitments.

Monitoring will cover:

- Inventory data of budget arrears in social payments to all utilities and electricity providers;
- Debt restructuring agreement signed by the municipality and creditors;
- Implementation of the signed agreements.

For monitoring purposes, local self-governments will submit copies of the following documents:

- Report on inventory of budget arrears in social payments;
- Debt restructuring agreements;
- Report on implementation of the signed agreements;
- Report on fulfillment of the current social payment liabilities;
- Statistical reports 22-ZhKKh (subsidies) (Data on delivery of housing and communal services subsidies) and 26-ZhKKh (benefits) (Data on provision of housing and communal services benefits);
- Financial statements of utilities and electricity providers covering costs associated with delivery of benefits and subsidies and cash actually received to finance them.

Activity Completion Evaluation

To evaluate completion of activity B3, availability of the inventory report on budget social payments arrears, debt restructuring agreements with each utility and electricity provider (if applicable, i.e. if a debt exists) and reports on implementation of the signed debt restructuring agreements and fulfillment of the current commitments in social payments will be checked first. If documents mentioned above are not available, the activity completion percentage will be zero.

If the above documents are available, the final activity implementation indicator will be determined as a total of the outstanding debt in social payments to all utilities and electricity providers of the municipality.

C: HOUSING REFORM

Activity C1: Increasing the number of multifamily houses where housing owners have selected the housing management method on their own

Problem Description

In municipalities, house-by-house management practices normally do not apply. Same prices are established for maintenance and repair of common property in multifamily houses with similar amenities for all owners irrespective of the house physical condition, list and volumes of works. This causes reallocation of resident payments from house to house: in other words, residents of some houses provide material assistance to residents of other houses. This leads to averaging of the physical condition of housing in a municipality, contains differentiation of housing by comfort, emerging of high-comfort housing in the existing blocks of houses. Thus, the only way to improve housing comfort is to buy new housing. Lack of the house-by-house management reduces housing management efficiency, impedes competition among management companies. Implementation of the house-by-house management will contribute to implementation of the RF Housing Code.

Full Name of the Activity

Increasing the number of multifamily houses where housing owners have selected the housing management method on their own, including through assistance provided to housing owners by the municipality in selection of the multifamily house management method.

Content of the Activity

The activity addresses the following issues:

- Organization of planning of works volumes and lists to maintain and repair common property for each multifamily house depending on its physical condition and availability of amenities, requirements to building structures and engineering equipment;
- Pricing of management of each multifamily house based on cost of works and services that will be performed or provided to housing owners under multifamily house management agreement;
- Creation of conditions for control of works progress and service delivery, creation of incentives for fulfillment of works and provision of services of due quality in a multifamily house.

The activity includes:

- Monitoring of housing owner meetings and signing of agreements in multifamily houses where housing owners have selected the management method;
- Organization and holding of meetings in multifamily houses where local self-governments are owners of the common property;
- Provision of information assistance to housing owners regarding selection of the multifamily house management method.

Activity Outcome

An agreement will be drafted and signed with each owner in each multifamily house to provide management of common property in such houses and to provide communal services of due quality to consumers residing in such houses. Management companies will deliver to owners the full set of housing and communal services. Housing owners will receive a complete list of works and services that will be provided to them and their cost. Management companies and HOA will report to housing owners about performance under the multifamily house management agreement, about use of housing owner payments for common property maintenance and repair and for communal services at least once in a year.

Criteria of Activity Completion

The activity will be considered fulfilled, if owners of all multifamily houses select the management method and sign an agreement corresponding to the selected management method.

Monitoring will cover the proportion (by overall space) of multifamily housing stock where owners have selected the management method, as well as the forms of agreements signed by the management companies and housing owners, and management companies reports to housing owners.

Monitoring will also include random checks of:

- Protocols of general meetings of multifamily house owners;
- Signed agreements for compliance with the current legislation.

For the monitoring purposes, local self-governments will submit copies of the following documents:

- Report on results of monitoring of multifamily house management method selection by housing owners;
- List of multifamily houses where HOA are established;
- Approved plan of general meetings in houses where local self-governments are owners of common property;
- Statistical report 22-ZhKKh (reform) (Data on structural reforms and organizational activities in HCS sector);
- Agreements signed in multifamily houses where owners selected a management method.

Activity Completion Evaluation

To evaluate completion of activity C1, availability of documents mentioned above will be checked first. If such documents are not available, the activity completion percentage will be zero.

If such documents are available and they list the multifamily houses that have selected the management method and signed agreements corresponding to the selected management method. The final activity completion indicator will be determined as a ratio of total space of such houses to total space of all multifamily houses located on the territory of the municipality.

Activity C2: Development of competition on multifamily houses maintenance and repair services market

Problem Description

According to state statistics, as of end of 2007, about 75% of operations in multifamily houses management, 58.6% of heating services and about 50% of water and wastewater services in the Russian Federation are controlled by municipal enterprises. Experience shows that the right of economic management is an inefficient way of organizing property management when administrative leverage applied by local self-governments to municipal enterprises prevails over economic reasons.

According to federal law No. 131-FZ "On general principles of organization of local self-government in the Russian Federation", local self-governments should have disposed of or re-profiled municipal property dealing with issues not in local self-government jurisdiction in a manner established by privatization legislation before January 1, 2009. Therefore, municipal enterprises operating in the housing management business should have been privatized or eliminated before 2009.

Full Name of the Activity

Development of competition in the housing services market (maintenance and repair of multifamily houses).

Content of the Activity

The activity aims at privatization of multifamily houses management, maintenance and repair business, improvement of housing management companies qualification.

The activity will consist of development and approval of the program of reorganization, liquidation or privatization of municipal organizations operating in the multifamily houses management, maintenance or repair business, as well as sales of municipal shares in multifamily house management, maintenance or repair enterprises.

Activity Outcome

Municipal multifamily houses management enterprises will be privatized and shares of such enterprises sold or such enterprises will be re-profiled. Payment processing centers are also subject to privatization. The proportion of multifamily houses maintained and repaired by private companies will grow.

Eventually, a system of administrative relations between local self-governments and management companies will be eliminated. After privatization of municipal enterprises operating in the multifamily house management, maintenance and repair business local self-governments will lose an administrative leverage in multifamily management sector.

Criteria of Activity Completion

The activity will be considered fully fulfilled, if local self-governments do not retain any municipally owned organizations or control stock in organizations operating in the multifamily house management, maintenance and repair business.

Monitoring will cover availability of the approved program of reorganization, liquidation or privatization of municipal organizations operating in the multifamily house management, maintenance or repair business; and sales of municipality-owned shares in multifamily house management, maintenance or repair organizations.

To provide evidence of fulfillment of the activity, local self-governments will submit copies of the following documents:

- Approved program of reorganization, liquidation or privatization of municipal organizations operating in the multifamily houses management, maintenance or repair business;

- Report on implementation of the above program;
- Report on sales of municipality-owned shares in multifamily house management, maintenance or repair organizations.

Activity Completion Evaluation

To evaluate completion of activity C2, availability of the documents listed above will be checked first. If such documents are not available, the activity completion percentage will be zero.

If the above documents are available, conditions need to be defined for privatization or liquidation for each organization included in the reorganization program. With all such conditions met, the activity completion indicator for each organization will be 100%, and otherwise, zero.

An example of estimating the final completion indicator for activity C2 for a municipality as a whole is provided below.

Organization No.	Value of activity completion indicator of the organization	Income of the organization on core services provided to consumers in the municipality for previous reporting period, RUR '000	Ratio of the organization income to total income of all utilities	Contribution of the organization to final percentage of activity completion
(1)	(2)	(3)	(4)	(5)=(2)*(4)/100
1	100%	100 000	10%	10%
2	0%	50 000	5%	0%
3	0%	200 000	20%	0%
4	100%	100 000	10%	10%
5	0%	50 000	5%	0%
6	100%	500 000	50%	50%
Total		1 000 000	100%	E = 70%

Activity C3: Development, approval and implementation of municipal HCS reform public awareness campaign

Problem Description

Inadequate public awareness of the goals and objectives of the HCS reforms and their progress is a major weakness of the reform. Lack of information leads to misunderstanding by the population of the essence of the reform and, hence, to lack of public trust to reforms and low public participation and interest in success of the HCS reform.

Full Name of the Activity

Development, approval and implementation of the municipal HCS reform public awareness campaign program, including posting information on the municipal site, approval of the plan of regular consultations with consumers and other stakeholders, organization of management companies reporting to housing owners.

Content of the Activity

The activity aims at improving awareness of public about reforms implemented by the local self-government, about the reform goals and objectives, about rights of residents in housing management, about quality of housing and communal services.

The activity will consist of development and approval of the long-term HCS reform public awareness campaign program and implementation of this program. Competitive selection of the program developer will be encouraged.

The program may include the following activities:

- Development of a special internet site and posting the following information on it:
 - General meeting procedures to select the multifamily house management method;
 - Forms and samples of documents required for such meeting;
 - Recommendations regarding selection of a management company by housing owners in multifamily houses that will reduce the risk of selecting a negligent management company;
 - Sample agreement for multifamily house management;
 - Recommendations regarding records of common property of a multifamily house (common property statement form);
 - Tentative list of technical documents and other documents related to multifamily house management;
 - Recommendations to housing owners in multifamily houses regarding preparation of budgets of multifamily house management;
 - Recommendations regarding annual management agreement performance report of the management company to housing owners;
 - Resolutions of the RF Government issues to develop the RF Housing Code;
 - Clarifications provided by the RF Ministry of Regional Development regarding implementation of the RF Housing Code;
 - Legal regulatory acts adopted at the federal and regional levels regarding management, maintenance and repair of multifamily houses;
 - Information about management companies operating on the territory of the municipality;
- Development and approval of the plan of seminars, conferences and round tables covering multifamily house management issues;
- Brochures containing easily formulated information about rights and responsibilities of residents;
- Setting up of a permanent consultation centre;
- Annual publication of housing reform progress reports in mass media.

Activity Outcome

The activity will set up a system of public information about reforms implemented by local self-governments in the housing sector. Public trust in the reforms will strengthen.

Criteria of Activity Completion

The activity will be considered fulfilled, if the approved HCS reform public awareness campaign program is fully implemented.

Evaluation of the activity will depend on the content of the approved program, on the quality of information materials, as well as on the findings of surveys conducted to assess public awareness of the reforms.

To provide evidence of the activity completion, local self-governments will submit copies of the following documents:

- Approved HCS reform public awareness campaign program;
- Report on implementation of this program;
- Information about conducting seminars and round tables;
- Materials published in mass media, including materials posted in Internet;
- Published brochures and other information materials.

Activity Completion Evaluation

To evaluate completion of activity C3, availability of the program, report and other documents indicated above will be checked. If any of such documents or the program is not available, the activity completion percentage will be zero. If all documents are available and are complete, the activity completion percentage will be 100%.

Activity C4: Organization of transfer of registered land plot to common property of housing owners in multifamily houses

Problem Description

According to federal law No. 189-FZ "On effectiveness of the RF Housing Code", a land plot in the existing block of houses

where the multifamily house is located and other real estate items being part of such house is common property of housing owners in a multifamily house. From the date of land plot identification and its registration in the cadastre, the land plot where the multifamily house and other real estate items being part of the house may be transferred free of charge to common property of housing owners in the multifamily house. To this end, a respective non-regulatory act should be issued by the authorized body upon submission of a joint application by all housing owners in the house.

For various reasons, local self-governments do not rush to carry out land survey. In some cases, they have a limited capacity to do it in a short period of time because specialized contractors and particularly territorial state registration bodies are overloaded. Hence, housing owners do not own land plots associated with their houses and may not control their use.

Full Name of the Activity

Organization of transfer of registered land plot to common property of housing owners in multifamily houses upon completion of land survey where the multifamily house is located.

Content of the Activity

The activity aims at formation of multifamily houses and associated land plots as common property of housing owners in the multifamily houses.

The activity consists of development and approval of the land survey and cadastre registration plan for land plots where multifamily houses are located in the existing blocks of houses and the plan of their transfer to common property of housing owners in multifamily houses, as well as implementation of the approved plans.

Activity Outcome

Land plots associated with houses will be transferred to common property of housing owners in multifamily houses. Housing owners in multifamily houses will become real owners of the land plot associated with their house.

Criteria of Activity Completion

The activity will be considered fully fulfilled, if the land survey and cadastre registration plan for land plots where multifamily houses are located in the existing blocks of houses and the plan of their transfer to common property of housing owners in multifamily houses are fully fulfilled. The land survey and cadastre registration plan should take it into account that over half of land plots where multifamily houses are located in the existing blocks of houses are registered in the cadastre, therefore owners in multifamily houses located on such land plots may become owners of the land plots associated with their house.

To provide evidence of the activity completion, local self-governments will submit copies of the following documents:

- Approved land survey and cadastre registration plan for land plots where multifamily houses are located in the existing blocks of houses;
- Approved plan of transfer of registered land plots where multifamily houses are located in the existing blocks of houses to common property of housing owners in multifamily houses;
- Reports on implementation of plans;
- Statements from the land cadastre about registration and from the Single State Register of Titles (SSRT) about transferring the right of common property on land plots to housing owners in multifamily houses.

Activity Completion Evaluation

To evaluate completion of activity C4, availability of the land survey and cadastre registration plan for land plots where multifamily houses are located in the existing blocks of houses and its implementation report and statements from the land cadastre will be checked first. If such documents are not available, the activity completion percentage will be zero.

Completion of the approved land survey and cadastre registration plan for land plots where multifamily houses are located in the existing blocks of houses, availability of the implementation report and statements from the land cadastre

will be determined by ratio of the total space of houses mentioned above to the total space of all multifamily houses located on the territory of the municipality (proportion of registered land plots).

Then availability of the approved plan of transfer of registered land plots where multifamily houses are located in the existing blocks of houses to common property of housing owners in multifamily houses, implementation report and SSRT statement will be checked.

If all such documents are available, the ratio of the total space of multifamily houses where housing owners enjoy the right of common property on land plot associated with their houses to the total space of all multifamily houses in the municipality will be determined (proportion of transferred land plots).

The final indicator of completion of activity C4 will be determined as a total of the proportion of registered land plots multiplied by 0.5 and the proportion of the transferred land plots multiplied by 0.5.

**ANNEX 9. HCSP METHODOLOGY FOR COMPETITIVE SELECTION OF PARTICIPANT CITIES FOR INVESTMENT
PHASE**

**PROJECT:
“THE HCS REFORM IN THE RUSSIAN FEDERATION”**

**Methodology for
Competitive Selection of Participants of the Project
“The HCS Reform in the Russian Federation”
and Allocation of Funds for
Implementation of Investment Plans of Project Participants**

I. General Provisions

1. The Project “The HCS Reform in the Russian Federation” (hereinafter referred to as the Project) implemented by the Russian Government and the International Bank for Reconstruction and Development (hereinafter referred to as the IBRD) shall include the following two phases:

- 1) Implementation of the HCS Reform Program (hereinafter referred to as the Reform Program) in a number of Russian municipalities;
- 2) Implementation of the HCS Investment Plan (hereinafter referred to as the Investment Plan) in those municipalities that would implement successfully the Reform Program.

2. Assistance to Reform Program implementation and Investment Plan implementation shall be based on the contracts concluded in accordance with the IBRD Procurement Guidelines and funded from the proceeds of the IBRD loan to the Russian Government.

3. This Methodology has been developed in order to establish uniform procedures for competitive selection of municipalities for participation in the Project and develop a mechanism for allocation of loan proceeds for Investment Plan implementation.

Competitive selection of Russian municipalities for participation in the Project shall be carried out by the Interagency Working Group (the IWG) that includes representatives of the Federal Agency for Construction and Housing and Communal Services Sector (Rosstroï) , which is the Project Implementing Agency, as well as the Russian Ministry of Finance, the Russian Ministry of Economic Development and Trade, the Russian Ministry of Regional Development as well as other stakeholders, in accordance with an announcement published in *Rossiyskaya Gazeta Daily*, *Stroitelnaya Gazeta Weekly*, and at the Rosstroï official web-site (hereinafter referred to as the Announcement).

The Announcement will include this Methodology and specific information on the deadlines and the venue of competitive selection as well as the number of copies of documents to be submitted and requirements to their format.

4. A local government of an urban settlement that has submitted the Application for participation in the Project (hereinafter referred to as the Application) in accordance with the conditions specified in the Announcement shall be deemed to be a participant of the contest.

5. The Application shall include the following documents:

- A letter signed by the head of the municipality or the person who substitutes for the head of the municipality with a request to include this municipality in the list of Project participants;
- Documents confirming that this municipality has met qualification criteria set out in this Methodology;
- The Table with evaluation of reform status at the time of application (initial conditions) and reform status at the end of Project Phase 1 (hereinafter referred to as the Results Framework);
- Documents confirming the percentage of Reform Program implementation at the time of application (initial conditions);
- The Investment Plan and, if available, the Feasibility Study for subprojects included in this Plan (hereinafter referred to as the Feasibility Study);
- A letter signed by the head of the supreme body of executive power of the relevant region of the Russian Federation or the person who substitutes for this head with a request to include this municipality in the list of Project participants;
- Documents confirming that this region of the Russian Federation has met relevant qualification criteria.

Duration of Project Phase 1 shall be 18 months.

The dates that shall correspond to reform status at the time of application (initial conditions) and at the end of Project Phase 1 have been specified in the Announcement.

The list of qualification criteria and relevant supporting documents has been provided in Annex 1.

The list of Reform Program components and activities as well as indicators and criteria for evaluation of activities and standard reporting documents has been provided in Annex 2.

The format of the Results Framework has been provided in Annex 3.

Investment Plan preparation requirements have been provided in Annex 4.

Methodological guidelines for preparing investment plans are provided in Annex 5.

6. The submitted Applications shall be subject to primary selection to ensure that they meet the qualification and demographic criteria referred to in Section II.

Applications that have not passed primary selection shall be rejected.

7. Each Application that has passed primary selection shall be evaluated in accordance with Sections III to V and receive a total of assessment scores.

8. Primary selection and evaluation of the Applications shall be based on the documents included in the Applications, taking into account answers of the contest participants to IWG requests (if any of such requests are made during primary selection and evaluation). Requests may be made if the Application does not meet requirements set out in this Methodology, if errors in calculations are detected as well as with the aim of getting necessary clarifications and additional information, the request shall indicate the deadline for submitting this information.

9. In case more than one Application have been submitted by contest participants from the same region of the Russian Federation, the Application with the highest assessment score shall be selected for further review.

Top ten Applications with the highest assessment score shall be selected from the remaining Applications. Municipalities that have submitted these Applications shall be deemed to be main Project participants.

Four Applications with the highest assessment score shall be selected from the remaining Applications. Municipalities that have submitted these Applications shall be deemed to be reserve Project participants.

10. Main and reserve Projects participants shall have a priority right to receive consultancy services under support of activities aimed to reform the HCS sector in Russian municipalities that assist in Reform Program implementation.

11. Loan proceeds for implementing Investment Plans of the main Project participants shall be allocated preliminarily in proportion to the size of permanent population in accordance with Section VI.

12. The IWG decision on competitive selection of Project participants (hereinafter referred to as the Decision), with information on Project participants and preliminary allocation of loan proceeds for implementing Investment Plans of main Project participants shall be approved by Rosstroi and communicated to contest participants within a period specified in the Announcement.

13. Based on this Decision, Rosstroi shall enter into a Project Implementation Agreement with each Project participant that defines mutual rights and obligations of the Parties regarding Project implementation.

14. Prior to Project Phase 1 completion date, each Project participant shall submit to Rosstroi a Report on Project Phase 1 outcome (hereinafter referred to as the Report) that shall include the following documents:

- A letter signed by the head of the municipality or the person who substitutes for this head with a request to fund the Investment Plan of this municipality;
- Documents confirming that this municipality remains in compliance with sectorwide and financial qualification criteria;
- Documents confirming that the region of the Russian Federation remains in compliance with financial qualification criteria;
- The updated Investment Plan and the Feasibility Studies of subprojects included in this Plan as well as relevant preliminary technical design documentation;
- The Results Framework with evaluation of Project Phase 1 outcome;
- Documents confirming the percentage of completed planned reforms at the end of Phase 1.

15. Evaluation of these Reports and final allocation of funds for implementing the Investment Plans of Project participants based on reform status at the end of Phase 1 shall be made by the IWG in accordance with Section VII.

16. The IWG Decision on final allocation of the funds for implementing the Investment Plans regarding each Project participant shall be approved by Rosstroi and shall be communicated to each Project participant within a period specified in the Project Implementation Agreement.

II. Primary Selection of Applications for the Project

17. Primary selection of the Applications shall include examination of conformity of contest participants and relevant regions of the Russian Federation with qualification criteria provided in Annex 1.

18. These qualification criteria shall include sectoral, financial criteria and a demographic criterion.

Sectoral criteria shall reflect minimum requirements to efficiency of the housing and communal services sector of contest participants.

Financial criteria shall largely reflect requirements of the Budget Code of the Russian Federation.

A demographic criterion shall reflect requirements to the size of permanent population of contest participants.

19. If at least one of the criteria provided in Annex 1 has not been met, the Application shall be rejected.

III. The HCS Reform Program Evaluation

20. The HCS Reform status at the time of application (initial conditions) shall be evaluated based on the following formula:

$$L0 = \sum (P0_i * W_i),$$

Where $P0_i$ shall mean the percentage of implementation of the specific i^{th} activity at the time of application (initial conditions) (here and further in the text symbol \sum means sum of terms with subscript index across the entire range of changes in this index; i means an integer from 1 to 15);

W_i shall mean the weight of the i^{th} activity in the overall Reform Program.

21. The planned level of Reform Program implementation at the end of Project Phase 1 shall be calculated using a similar formula:

$$L1_{plan} = \sum (P1_{i_{plan}} * W_i),$$

where $P1_{i_{plan}}$ shall mean the planned percentage of implementation of the specific i^{th} activity based on Project Phase 1 outcome.

22. Percentages of fulfillment of specific activities at the time of application provided in the Results Framework shall be verified on the basis of documents included in the Application for evaluation of completion of activities and/or documents received by the IWG request and in case errors are detected or some supporting information is missing such percentages shall be adjusted.

23. Planned percentage of fulfillment of specific activities based on Project Phase 1 outcome provided in the Results Framework shall reflect the intentions of a contest participant. When Applications are evaluated, these values shall be adjusted only if any logical errors are detected.

IV. Investment Plan Evaluation

24. Evaluation of an Investment Plan submitted by a contest participant shall include evaluation of the following:

R – percentage of facilities and types of activity that have met requirements on preparation of the Investment Plan set out in Annex 4;

T – percentage of projects with a relevant Feasibility Study available.

V. Aggregate Scoring of Project Applications

25. Aggregate scoring of the Application submitted by a contest participant shall be calculated taking into account scoring of the HCS Reform Program and the Investment Plan.

26. Aggregate scoring of the Application submitted by a contest participant shall be calculated based on the following formula:

$$U = (0.3 * L0 + 0.7 * L1_{plan}) * (0.95 + 0.05 * R + 0.05 * T).$$

VI. Preliminary Allocation of Funds for Implementing the Investment Plan

27. Preliminary allocation of loan proceeds for implementing the Investment Plans of main Project participants shall be made in proportion to the size of their permanent population on the basis of the following formula:

$$G_{p_{plan}} = G * N_p / \sum N_p,$$

where

$G_{p\text{ plan}}$ shall mean the amount of loan proceeds planned to be allocated for implementation of the Investment Plan of the p^{th} main Project participant (here and further in the text p means an integer from 1 to 10);

G shall mean total amount of loan proceeds allocated for implementing the Investment Plans of Project participants;

N_p shall mean the size of permanent population of the p^{th} main Project participant.

VII. Final Allocation of Funds for Implementing the Investment Plans

28. When the Report submitted by each Project participant outlining Project Phase 1 outcome is evaluated compliance with the following conditions shall be verified:

- compliance of the Project participant and the region of the Russian Federation with sectoral and financial qualification criteria;
- compliance of the updated Investment Plan, the Feasibility Study of subprojects included in the Investment Plan and technical design documentation with requirements set out in Annex 4.

30. If at least one of such conditions has not been met, a relevant municipality shall be dropped from the Project.

31. During subsequent evaluation of the Report submitted by the Project participant that has met the aforesaid requirements, the actual level of the Reform Program implementation is defined on the basis of Project Phase I outcome:

$$L1_{\text{act}} = \sum (P1_{i\text{ act}} * W_i),$$

where $P1_{i\text{ act}}$ shall mean an actual percentage of completion of the specific i^{th} activity based on Project Phase 1 outcome.

32. The percentage of fulfillment of specific activities provided in the Results Framework based on Project Phase 1 outcome shall be verified against the documents included in the Report for evaluation of completion of activities and/or documents received by the IWG request. If any errors are detected or confirming data are not available, this percentage shall be adjusted accordingly.

33. Based on the outcome of evaluation of the Reports submitted by Project participants, the coefficient of Reform Program completion shall be calculated for each Project participant:

$$K = L1_{\text{act}} / L1_{\text{plan}}$$

In addition to that, an effective coefficient of Reform Program completion shall be calculated as follows:

$$K^{\text{eff}} = 0, \quad \text{if } K \text{ is less than } 0.8;$$

$$K^{\text{eff}} = \min (K; 1), \quad \text{if } K \text{ is greater than or equal to } 0.8.$$

34. Final allocation of loan proceeds for implementing the Investment Plans of main Project participants shall be done in the following way.

First, the amount of funds allocated for main Project participants on the basis of results of Reform Program completion shall be defined using the following formula:

$$G_p = G_{p\text{ plan}} * K^{\text{eff}}_p,$$

where

G_p shall mean the amount of loan proceeds for implementing the Investment Plan of the p^{th} main Project participant;

$G_{p\text{ plan}}$ shall mean the amount of loan proceeds planned to be allocated for implementing the Investment Plan of the p^{th} main Project participant under preliminary allocation of these proceeds;

K^{eff}_p shall mean an effective coefficient of Reform Program completion of the p^{th} main Project participant.

Then the remaining unallocated part of loan proceeds, i.e. G_1 , shall be calculated:

$$G_1 = G - \sum G_p$$

as well as amount G_2 , which is the amount allocated for reserve Project participants taking into account the size of their permanent population and effective coefficients of Reform Program completion calculated for reserve

participants in case the same amount of per capita investments is planned for such reserve participants as the amount planned for main Project participants.

$$G_2 = G / \sum N_p * \sum (N_s * K^{eff}_s)$$

where

N_s means the size of permanent population of the s^{th} reserve Project participant (here and further in the text s is an integer from 1 to 4);

K^{eff}_s means an effective coefficient of Reform Program completion by the s^{th} reserve Project participant.

If $G_1 \leq G_2$, then the remaining part of the loan proceeds shall be allocated among reserve Project participants in proportion to the size of their permanent population and effective coefficients of Reform Program completion they have received.

In this case amount of loan proceeds G_s allocated for implementation of the Investment Plan for the s^{th} reserve Project participant shall be determined on the basis of the following formula:

$$G_s = G_1 * N_s * K^{eff}_s / \sum (N_s * K^{eff}_s).$$

If $G_1 > G_2$, then

$$G_s = G_2 * N_s * K^{eff}_s / \sum (N_s * K^{eff}_s),$$

while the remaining difference ($G_1 - G_2$) shall be allocated among all Project participants in proportion to the size of their permanent population and effective coefficients of Reform Program completion they have received; it means that an additional amount of loan proceeds allocated for Investment plan implementation for the m^{th} Project participant (m is an integer from 1 to 14) shall be calculated using the following formula:

$$G_m = (G_1 - G_2) * N_m * K^{eff}_m / \sum (N_m * K^{eff}_m).$$

*Annex 1
to the Methodology for Competitive Selection of
Participants of the HCS Reform Project (Phase I),
and Allocation of Funds for Implementation
of Investment Plans of Project Participants*

Qualification Criteria

The list of qualification criteria for initial evaluation of Applications for participation in the Project includes two sector-specific, ten financial criteria, and one demographic criterion.

Sector-specific criteria reflect minimum efficiency requirements to the municipality's HCS sector.

Financial criteria reflect provisions of Articles 92, 107 and 111 of the Budget Code of the Russian Federation as well as requirements relating to overdue payments under loans provided by international financial institutions. These criteria shall apply to both local municipal budget and the respective regional budget.

The demographic criterion reflects requirements relating to the size of municipality's permanent population.

Table 1-1 gives a complete list of qualification criteria, indicates the range of permissible values and specifies the type of supporting documents confirming compliance.

Table 1-1

The List of Qualification Criteria for Initial Evaluation of Bidders' Applications

Criterion	Acceptable Range	Type of Supporting Documents
Sector-specific Qualification Criteria		

Criterion	Acceptable Range	Type of Supporting Documents
1. Average cost recovery level for housing and communal services set by the municipality for population last year	≥ 90%	Copies of approved regulatory legal acts
2. Average collection rate of HCS payments last year	≥ 90%	A copy of Federal State Statistics Form No. 22-ZhKKh (consolidated)
Financial Qualification Criteria		
3. Ratio of local budget current expenditures to local budget revenues (Article 92-2)	≤ 100%	Last-Year Report on Local Budget Execution
4. Ratio of local budget deficit to local budget revenues, without federal or regional financial assistance (Article 92-5)	≤ 10%	
5. Ratio of municipal debt to local budget revenues, without financial assistance from other governments (Article 107)	≤ 100%	
6. Ratio of the municipality's debt service to local budget expenditures (Article 111)	≤ 15%	
7. Amount of the municipality's overdue debt to the federal budget under international financial institutions' loans, including overdue debt under guarantees and warranties	0	
8. Ratio of regional budget current expenditures to regional budget revenues (Article 92-2)	≤ 100%	Last-Year Report on Regional Budget Execution
9. Ratio of regional budget deficit to regional budget revenues, without federal financial assistance (Article 92-4)	≤ 15%	
10. Ratio of regional public debt to regional budget revenues, without financial assistance from other governments (Article 107)	≤ 100%	
11. Ratio of the region's public debt service to regional budget expenditures (Article 111)	≤ 15%	
12. Amount of the region's overdue debt to the federal budget under IFI's loans, including overdue debt under guarantees and warranties	0	
Demographic Criterion		
13. Permanent population of the municipality	from 90,000 to 600,000	Data of the 2002 National Census

*Annex 2
to the Methodology for Competitive Selection of
Participants of the HCS Reform Project (Phase I),
and Allocation of Funds for Implementation
of Investment Plans of Project Participants*

List of Areas and Activities of the HCS Reform Program

Table 2-1 presents areas and activities of the Reform Program as well as indicators and main types of reporting documents for evaluation of activities at the time of application submitted by contest participants and at the stage of reports submitted by Project participants with results of Project Phase 1.

Clarifications to the Reform Program which provide a short and full name of each activity, description of the issue,

description of the activity, outcome of its implementation, detailed criteria for its implementation as well as reporting documents submitted for evaluation are given in documents attached to the Announcement.

Table 2-1

List of Areas and Activities of the Program for Reform of the Housing and Communal Sector (Matrix)

Item	Activity	Evaluation Indicator	Type of Reporting Document for Activity Evaluation
A. Communal Sector Reform and Improvement of Financial Viability of Sector Enterprises			
A1	Approval of investment programs of communal services providers for no less than a three-year period with identification of sources of their financing and production programs of communal enterprises in accordance with applicable legislation	Production and investment programs approved in accordance with applicable legislation	Copies of approved investment and production programs developed by communal services providers
A2	Establishment of tariffs for water and water disposal services for no less than a three-year period taking into account projected inflation	Relevant legal acts adopted by regulatory agencies	Copies of approved legal acts
A3	Reduction in non-efficient costs of communal services providers	Inefficient costs per unit of product reduced (heat, water, water disposal)	Copies of legal documents sent by the communal service provider to the regulatory agency, the communal service provider documentation, form of statistical report 22-ZKH
A4	Reduction in cross-subsidies to population from other groups of consumers (water and water disposal)	Ratio of tariffs set for other consumers to tariffs set for population	Copies of legal acts that set tariffs for water and water disposal for population and other consumers of communal services
A5	Reduction in the amount of payable arrears of entities financed from the local budget for consumed communal services through repayment of arrears	Payable arrears of entities financed from the local budget for consumed communal services as a percentage share of total revenues from sales of services to entities financed from the budget	A Municipality report, a copy of the balance sheet of the communal service provider, attachments to the balance sheet "Description of accounts payable and accounts receivable of the communal service provider" as well as the arrears reconciliation document
A6	Independent audit of financial performance of communal service providers for 2006, 2007, 2008 and 2009 in accordance with Russian accounting standards with publication of results in mass media	Financial reports and the auditor's opinion published in mass media	A copy of the financial report, a copy of auditor's opinion, a copy of publication in mass media
A7	Increase in percentage of direct payment by population for housing and direct payment for communal services without intermediaries (the settlement and billing center and other entities), namely: - payments for residential premises made directly by residents to the home	A percentage share (%) of direct payments for housing and direct payments for communal services without intermediaries (the settlement and billing	A Municipality report on fulfillment of this activity

Item	Activity	Evaluation Indicator	Type of Reporting Document for Activity Evaluation
	owners association, the housing and construction cooperative, the housing cooperative/management company; - payments for communal services made directly by residents to communal service providers or through settlement accounts of the home owners association, the housing and construction cooperative, the housing cooperative/management company to communal service providers	center and other entities)	
A8	Converting communal service providers into joint stock companies and/or engagement of private operators to work in the communal sector	A percentage share of consumers served by private operators	A Municipality report, forms of state statistical reports
B. Social Protection of HCS Consumers			
B1	Provision of housing allowances to households to make payments for housing and communal services in cash	A relevant regulation approved	A relevant regulation, form of statistical report 22 ZKH – allowances
B2	Standardization of existing databases on allowance beneficiaries under targeted social assistance programs, including standardization of software, personnel training, establishment of a unified register of allowance beneficiaries and introduction of the management information system	Unified databases on allowance beneficiaries under targeted social assistance programs established and made operational	A copy of a part of the unified register of allowance beneficiaries
B3	Settlement of arrears on social payments	Ratio of allowances and privileges assigned to allowances and privileges paid	Copies of approved financial plans and reports on financing allowances and privileges, forms of statistical reports 22 ZKH – allowances, 26 ZKH - privileges
C. Housing Sector Reform			
C1	Increase in the number of multi-family buildings where residential premise owners have selected a method of management, with municipalities providing assistance in selecting a method of multi-family building management	A percentage share (total living space) of multi-family buildings where residential premise owners have selected a method of management by a managing company, by home owners associations and have entered into contracts in accordance with the Russian Housing Code	A Municipality report on fulfillment of the activity, form of statistical report 22 ZKH – reform
C2	Development of competition in the housing service market (maintenance and repairs of multi-family buildings)	A percentage share (total living space) of multi-family buildings where	A Municipality report

Item	Activity	Evaluation Indicator	Type of Reporting Document for Activity Evaluation
		maintenance and repairs are done by private companies	
C3	Development, approval and implementation of the municipal Program for information of population on the HCS reform, including placement of information on the Municipality website, approval of the plan for regular consultations with consumers and other stakeholders, arrangement of reporting by management companies to residential premise owners	The municipal Program of increasing awareness of population on the HCS reform approved and implemented	Approved municipal Program of increasing awareness of population on the HCS reform, monitoring of the Program implementation, relevant information placed on the Municipality website
C4	Arrangement of transfer of a specified land plot to common equity ownership of residential premise owners in a multi-family building after delimitation of the land plot where this multi-family building is located	A percentage share of multi-family buildings where residential premise owners have the title of common equity ownership to the building land plot	A Municipality report on activity fulfillment, a statement from the Unified State Register of Enterprises and the Land Cadastre

*Annex 3
to the Methodology for Competitive Selection of
Participants of the HCS Reform Project (Phase I),
and Allocation of Funds for Implementation
of Investment Plans of Project Participants*

**Results Framework
(the Table for evaluating fulfillment of activities included in the HCS Reform Program)**

1. Table 3-1 contains a format of the Table filled in by a contest participant at the time of application submission.

Table 3-1 has boxes filled in with the number and description activities of the Reform Program, their weight as well as empty boxes where a contest participant has to put percentages of activity status at the time of application, i.e. $P0_i$ (initial conditions) and the planned percentage of activity status based on Project Phase 1 outcome, i.e. $P1_{i\ plan}$ (for activities A1, A2, A6, A8, B1, B2 and C3) and a quantifying value of the indicator for evaluating fulfillment of the activity at the time of application, i.e. $E0_i$ (initial conditions) and the planned value of the indicator based on Project Phase 1 outcome, i.e. $E1_{i\ plan}$ (for activities A3, A4, A5, A7, B3, C1, C2 and C4) .

Values of $P1_{i\ plan}$ and $E1_{i\ plan}$ shall be set by a contest participant and shall be deemed to be targets that this contest participant intends to achieve not later than the deadline of Project Phase 1.

Values of $P0_i$ for activities undertaken by several communal service providers shall be determined with the use of the following formula:

$$P0_i = \sum (P0_{it} * S_t) / \sum S_t,$$

where

$P0_{it}$ means the percentage of activity fulfillment at the time of application (initial conditions) for the t^{th} communal service provider;

S_t means total amount of revenues of the t^{th} communal service provider from operational sales to consumers within the municipality in the past reporting period.

Formulas for calculating $P_{1i\ plan}$, E_{0i} , and $E_{1i\ plan}$ for activities undertaken by several communal service providers are analogous to the aforesaid formula.

Information provided in the Results Framework is used when the Application submitted by the contest participant is evaluated in accordance with Section III of this Methodology.

Values of P_{0i} and E_{0i} indicated by contest participants shall be verified on the basis of reporting documents attached to the Application; the types of such documents are listed in Annex 2.

Values of P_{0i} and $P_{1i\ plan}$ for activities A1, A2, A6, A8, B1, B2, and C3 are taken directly from the Results Framework.

Values of P_{0i} and $P_{1i\ plan}$ for activities A3, A4, A5, A7, B3, C1 and C4 are calculated on the basis of values of E_{0i} and $E_{1i\ plan}$ using the following principle.

Regarding each i^{th} activity, from all Applications that meet qualification criteria:

- 1) one quarter of indicators with minimum values is selected out of all E_{0i} indicators and the arithmetic mean $\{E_{0i}\}_{min}$ is calculated for such indicators;
- 2) one quarter of indicators with maximum values is selected out of all E_{0i} indicators and the arithmetic mean $\{E_{0i}\}_{max}$ is calculated for such indicators;
- 3) one quarter of indicators with minimum values is selected out of all $E_{1i\ plan}$ indicators and the arithmetic mean $\{E_{1i\ plan}\}_{min}$ is calculated for such indicators;
- 4) one quarter of indicators with maximum values is selected out of all $E_{1i\ plan}$ indicators and the arithmetic mean $\{E_{1i\ plan}\}_{max}$ is calculated for such indicators.

Regarding activities A3, A4, A5, the value of P_{0i} for each specific participant shall be determined in the following way:

$$\begin{aligned}
 P_{0i} &= 0\%, && \text{if } E_{0i} \text{ is not less than } \{E_{0i}\}_{max} ; \\
 P_{0i} &= 100\% * (\{E_{0i}\}_{max} - E_{0i}) / (\{E_{0i}\}_{max} - \{E_{1i\ plan}\}_{min}), && \text{if } E_{0i} \text{ is between } \{E_{1i\ plan}\}_{min} \text{ and } \{E_{0i}\}_{max}; \\
 P_{0i} &= 100\%, && \text{if } E_{0i} \text{ is not greater than } \{E_{1i\ plan}\}_{min} .
 \end{aligned}$$

Regarding activities A7, B3, C1, C2 and C4, the value of P_{0i} for each specific participant shall be determined in the following way:

$$\begin{aligned}
 P_{0i} &= 0\%, && \text{if } E_{0i} \text{ is not greater than } \{E_{0i}\}_{min} ; \\
 P_{0i} &= 100\% * (E_{0i} - \{E_{0i}\}_{min}) / (\{E_{1i\ plan}\}_{max} - \{E_{0i}\}_{min}), && \text{if } E_{0i} \text{ is between } \{E_{0i}\}_{min} \text{ and } \{E_{1i\ plan}\}_{max} ; \\
 P_{0i} &= 100\%, && \text{if } E_{0i} \text{ is not less than } \{E_{1i\ plan}\}_{max} .
 \end{aligned}$$

The value of $P_{1i\ plan}$ is calculated using analogous formulas.

2. When Project participants prepare Reports, they use the Table similar to Table 3-1, but instead of two columns Project participants fill in only one column indicating actual percentages of activity status based on Project Phase 1 outcome (for activities A1, A2, A6, A8, B1, B2 and C3) and the actual value of the indicator for evaluating fulfillment of activities based on Project Phase 1 outcome, i.e. $E_{1i\ act}$ (for activities A3, A4, A5, A7, B3, C1, C2, and C4).

Formulas used to calculate $P_{1i\ act}$ and $E_{1i\ act}$ for activities undertaken by several communal service providers are analogous to the formula presented on page 1 of this Annex.

Information provided in the Results Framework shall be used in evaluating the Project participant Report in accordance with Section VII of this Methodology.

Values of $P_{1i\ act}$ and $E_{1i\ act}$ indicated by Project participants shall be verified on the basis of documents attached to the Report; types of such documents are listed in Annex 2.

Values of $P_{1i\ act}$ for activities A1, A2, A6, A8, B1, B2 and C3 are taken directly from the Results Framework.

Values of $P_{1i\ act}$ for activities A3, A4, A5, A7, B3, C1, C2, and C4 are calculated on the basis of values of $E_{1i\ act}$ provided in the Results Framework using formulas analogous to the formulas presented on page 2 of this Annex.

Table 3-1

Format of the Results Framework

Item	Activity	Activity Weight, W	Percentage of Activity Fulfillment (P) or the Value of the Indicator for Evaluating Activity Fulfillment (E)	
			Initial conditions (P0 or E0)	Planned based on Project Phase 1 Outcome (P1_{plan} Or E1_{plan})
A. Communal Sector Reform and Improvement of Financial Viability of Sector Enterprises				
A1	Approval of investment programs of communal services providers for no less than a three-year period with identification of sources of their financing and production programs of communal enterprises in accordance with applicable legislation	6.09%	P0 =	P1 _{plan} =
A2	Establishment of tariffs for water and water disposal services for no less than a three-year period taking into account projected inflation	4.88%	P0 =	P1 _{plan} =
A3	Reduction in non-efficient costs of communal services providers	9.46%	E0 =	E1 _{plan} =
A4	Reduction in cross-subsidies to population from other groups of consumers (water and water disposal)	4.02%	E0 =	E1 _{plan} =
A5	Reduction in the amount of payable arrears of entities financed from the local budget for consumed communal services through repayment of arrears	8.50%	E0 =	E1 _{plan} =
A6	Independent audit of financial performance of communal service providers for 2006, 2007, 2008 and 2009 in accordance with Russian accounting standards with publication of results in mass media	5.02%	P0 =	P1 _{plan} =
A7	Increase in percentage of direct payment by population for housing and direct payment for communal services without intermediaries (the settlement and billing center and other entities), namely: - payments for residential premises made directly by residents to the home owners association, the housing and construction cooperative, the housing cooperative/management company; - payments for communal services made directly by residents to communal service providers or through settlement accounts of	6.71%	E0 =	E1 _{plan} =

Item	Activity	Activity Weight, W	Percentage of Activity Fulfillment (P) or the Value of the Indicator for Evaluating Activity Fulfillment (E)	
			Initial conditions (P0 or E0)	Planned based on Project Phase 1 Outcome (P1 _{plan} Or E1 _{plan})
	the home owners association, the housing and construction cooperative, the housing cooperative/management company to communal service providers			
A8	Converting communal service providers into joint stock companies and/or engagement of private operators to work in the communal sector	8.50%	P0 =	P1 _{plan} =
B. Social Protection of HCS Consumers				
B1	Provision of housing allowances to households to make payments for housing and communal services in cash	6.60%	P0 =	P1 _{plan} =
B2	Standardization of existing databases on allowance beneficiaries under targeted social assistance programs, including standardization of software, personnel training, establishment of a unified register of allowance beneficiaries and introduction of the management information system	5.23%	P0 =	P1 _{plan} =
B3	Settlement of arrears on social payments	7.29%	E0 =	E1 _{plan} =
C. Housing Sector Reform				
C1	Increase in the number of multi-family buildings where residential premise owners have selected a method of management, with municipalities providing assistance in selecting a method of multi-family building management	8.57%	E0 =	E1 _{plan} =
C2	Development of competition in the housing service market (maintenance and repairs of multi-family buildings)	7.26%	E0 =	E1 _{plan} =
C3	Development, approval and implementation of the municipal Program for information of population on the HCS reform, including placement of information on the Municipality website, approval of the plan for regular consultations with consumers and other stakeholders, arrangement of reporting by management companies to residential premise owners	3.37%	P0 =	P1 _{plan} =
C4	Arrangement of transfer of a specified land plot to common equity ownership of residential premise owners in a multi-family building after delimitation of the land plot where this multi-family building is located	8.50%	E0 =	E1 _{plan} =

Annex 4 to the Client Report
to the Methodology for Competitive Selection of
Participants of the HCS Reform Project (Phase I),
and Allocation of Funds for Implementation
of Investment Plans of Project Participants

Investment Plan Preparation Requirements

1. General provisions

The Project is intended to finance the Investment Plan that includes subprojects (contracts) under which planned activity

- is consistent with the following development objectives:

- 1) improved quality of delivery of housing and communal services;
- 2) improved financial viability of communal service providers;

- contributes to achievement of the following outcome indicators:

- (i) reduced number of pipe breaks in water and heating distribution networks per km per year;
- (ii) reduced water losses measured as the difference between produced water and water delivered to consumers;
- (iii) reduced number of blockages in sewerage per km per year;
- (iv) improved energy efficiency of the heating system as measured by ratio of (primary energy used for producing heat minus heat supplied to consumers) to primary energy used for producing heat;
- (v) improved ratio of annual operating revenues (with the exception of budget subsidies) to total annual operating costs.

- meets the following requirements to economic and financial performance:

- 1) economic IRR should be not less than 15%;
- 2) financial IRR should be not less than 12%;

- is consistent with requirements of the EMP under the HCS Reform Project published on the official Internet site of Rosstroy www.gosstroy.gov.ru;

- is consistent with other requirements set out in this Annex.

Each subproject shall satisfy at least one of the aforesaid indicators, while the overall Investment Plan must contribute to achievement of all aforesaid objectives and indicators.

Before completion of Project Phase 1 participants must develop the Feasibility Study for subprojects including calculations of the aforesaid indicators of economic and financial performance, agree it with the Project Implementing Agency and prepare relevant preliminary technical design documentation.

2. Definitions

These Requirements use the following definitions:

Construction means buildings, constructions, installations, including completion of incomplete constructions on specially allocated land plots.

Capital construction facility means a separate building (construction) together with equipment, lines of communication, which has the following characteristics:

- it is built and operated in accordance with technical design documentation (construction plan);
- during construction period it requires earth works and construction and installation activities for preparation of foundation pits;
- it includes erection and operation of supporting constructions.

Rehabilitation of facilities (productions, enterprises) means changes in *quality* of characteristics of *existing* capital

construction facilities of enterprises, their parts, production facilities, values of production capacity, quality of the engineering and technical infrastructure.

Rehabilitation has the following characteristics:

- it is conducted accordance with one project design;
- it allows for demolition of capital construction facilities;
- it allows for construction of new capital facilities instead of demolished ones;
- it does not provide for construction of additional or other production facilities;
- it allows for construction of new auxiliary and service facilities.

In case of rehabilitation the following types of rehabilitation are singled out in doing environmental assessment:

- rehabilitation with additional land allocation;
- rehabilitation without additional land allocation;
- rehabilitation with demolition of capital construction facilities;
- rehabilitation without demolition of capital construction facilities.

Technical upgrade means rehabilitation without demolition and construction of capital facilities, mainly related to replacement (upgrade) of main technological equipment and the engineering infrastructure.

Capital repairs (overhauling) mean works performed to restore operational qualities and resources of capital facilities, including partial replacement of structures, devices and technological equipment.

Current (scheduled) repairs (repair works) mean works performed to maintain operational qualities, consumer properties, exterior of facilities, which are not related to replacement of structures and technological equipment.

Landscaping and land improvement mean works on land plots performed to improve “the look” of land plots and ensure favorable and safe use conditions.

Landscaping and land improvement works have the following characteristics:

- they are mainly related to environmental protection and urban greening;
- they are performed under a relevant section of overall technical design documentation for construction, rehabilitation, technical upgrade of capital facilities.

Construction works on landscaping mean construction works to improve land plots, to build landscaping facilities under a separate project.

Land remediation means a type of land improvement works performed after completion of construction or liquidation of facilities with the aim of avoiding negative impact of construction of facilities and their operational impact on environment.

Remediation of land predominantly includes restoration of land plot original conditions, for recreational purposes, making land look attractive. Remediation of land includes among other things restoration of the fertile soil layer, greening and other land improvement works.

Decontamination of land means a type of work performed on contaminated or landfill land plots, predominantly related to restoration of normal quality of soil and subsoil to avoid negative impact of such land plots on environment.

Planned activities mean any activity which is subject to environmental assessment.

Regarding environmental assessment planned *construction* activities to construct buildings, constructions for industrial and communal purposes include activities at the construction stage and at the operation stage.

3. Criteria and characteristics of planned activities for inclusion in the Investment Plan

With regard to planned activities included in the Investment Plan, in order to get environmental assessment:

- no special study to define the character and nature of environmental impacts is required, including activities that do not need sanitary protection zone;
- **environmental impact assessment may be based on tested methods, existing norms and standards;**
- it is anticipated that types of environmental impacts would be limited and specific, including the situation with “no significant environmental impact”;
- **it is also anticipated that EMP would be developed and implemented to eliminate non-permissible negative impacts.**

The following activities can be included in the Investment Plan:

- 1) Capital construction using standard design (repeated application design), which received a positive opinion of state expertise, or otherwise does not require reclassification of the facility into Category A;
- 2) Modifications in capital construction and/or its parts. Such modifications should not alter its structure and other characteristics in respect to its reliability, technical and environmental safety and do not exceed maximum permissible indicators for construction, rehabilitation as outlined in Urban Development Rules of Procedures;
- 3) Construction, repair works on capital and non-capital auxiliary facilities (constructions, buildings), if such buildings are defined by land use and land development regulations as auxiliary types;
- 4) Construction, repair works of non capital construction facilities;
- 5) Land remediation;
- 6) Land decontamination;
- 7) Activities aimed at improving environmental conditions that may be assessed as “not requiring special environmental assessment”, including:
 - greening and landscaping of territories;
 - construction works on landscaping;
- 8) Trade operations and other operations related to procurement, delivery and use of:
 - substances, raw materials, materials, which may be used without obtaining environmental licenses;
 - instruments, equipments, devices which have quality certificates to comply with environmental and sanitary and hygienic requirements;
 - module mobile thermal plants, power stations, water and sewage treatment facilities, which are used for emergency works and as emergency engineering source.

4. Specific requirements for land sites

The planned activities are performed on sites with special legally formalized application, which permits the implementation of planned activities only in case the Owner’s rights are in place.

Construction of new communal capital facilities in cities and rayons that are sources of regulated environmental impacts (thermal plants, treatments facilities, waste reloading and sorting facilities) is allowed only on industrial and communal sites if there is:

- a distance between the site and the residential area consistent with the standard sanitary protection zone (SPZ);
- an approved SPZ plan, which allows for new construction without SPZ alterations.

5. List of facilities

This list of facilities (buildings and other facilities, constructions and communication lines) is developed for the following planned activities:

- rehabilitation;
- technical upgrade;
- capital construction;
- current (scheduled) repairs;
- landscaping.

Construction of facilities mentioned earlier is included in the Investment Plan provided planned activities are consistent with criteria, characteristics and conditions per point 3 and point 4, or other construction conditions that do require reclassification of the facility into Category A.

1. Heating supply

- 1.1. District (group) thermal plant with capacity up to 100 MW with specific conditions as per point 4
- 1.2. Thermal plant (boiler house) with capacity up to 10 MW for heat supply to specific blocks of apartment buildings (micro district), group of buildings and constructions
- 1.3. Central heating substation of the district heating system
- 1.4. Heating substations of specific buildings and constructions (individual heating substation)
- 1.5. Pumping stations
- 1.6. Main, distribution and residential block heating network
- 1.7. Space heating systems of residential buildings, facilities and constructions
- 1.8. System of monitoring and control of heat distribution networks
- 1.9. Heat meters

2. Power supply for HCS facilities

- 2.1. Transforming stations
- 2.2. Distributing substations and devices
- 2.3. Power transmission lines: overhead and cables
- 2.4. Renewable energy sources
- 2.5. Rayon diesel (gas & diesel) power stations with capacity up to 100 MW, excluding construction of new plants
- 2.6. Energy supply for buildings and constructions

3. Water supply

- 3.1. Surface water intake facilities with volume of intake up to 2000 m³ per day
- 3.2. Subsurface water intake facilities
- 3.3. Waterworks pumping stations, holding and elevated tanks, water towers.
- 3.4. Water treatment plants, water hardness removal, deferrization for drinking and service needs
- 3.5. Distribution and looped water supply network
- 3.6. Water supply systems of buildings and constructions
- 3.7. System of monitoring and control of water distribution pipes
- 3.8. Water meters

4. Sewage

- 4.1. Wastewater treatment facilities, excluding new construction
- 4.2. Buildings and installations to treat wastewater sediments
- 4.3. Sewer and pipes
- 4.4. Sewage pumping stations

5. Collection, treatment and rain water and melted snow water discharge

- 5.1. Facilities, buildings and systems for collecting, treating and discharging rain water and melted snow water
- 5.2. Pumping stations.

6. Engineering protection, housing stock maintenance, sanitary cleaning and urban amenities

- 6.1. Waster reloading and sorting stations
- 6.2. Facilities, building and drainage systems of specific buildings
- 6.3. Land remediation

6.4. Land improvement and decontamination

6. List of facilities that shall not be included in the Investment Plan

It is not allowed to include the following facilities in the Investment Plan:

- 1) **Facilities that do not form part of the HCS system, including high voltage power transmission lines, fuel pipelines, water pipelines and their constructions, industrial waste treatment facilities;**
- 2) Facilities under planned activities the implementation of which includes:
 - changed in the approved part of the land planning arrangement, urban development zoning, changes in the documentation on land planning, sector-wide development schemes and transport development plans;
 - reclassification of land, reclassification of forest land into non-forest land;
 - changes in development area limits, limits of land zoning, authorized land use;
 - capital construction in protected historical areas, water supply reserves, except for facilities and buildings, intended for water supply purposes.
- 3) **Construction of facilities, plants, buildings, which are classified as hazardous under technical and sanitary and hygienic classification, including:**
 - incineration, processing of all types of waste, sediment of wastewater;
 - recycling of asbestos and asbestos containing waste;
 - industrial and waste water treatment, including water discharge, with annual flow more than 5 % of total water flow of the river or 2,000 m³ per day or more;
 - hydrotechnical facilities;
 - high voltage power transmission lines, oil pipelines and gas pipelines with diameter of pipes more than 200 mm and pressure more than 2 MPa;
 - overhead power transmission lines with voltage 380 V and above;
 - landfills for all types of waste;
 - storage facilities for oil, petrochemicals with capacity from 100 m³;
 - storage facilities for 1st class hazard chemicals.
4. **Facilities under planned activities which require environmental expertise at the federal level as per Federal Law, article 11 On Environmental Expertise, with relevant documents reviewed and approved by bodies of state power of the Russian Federation:**
 - projects (design documentation) for construction, rehabilitation, expansion, technical upgrade, mothballing and liquidation of facilities, which may have an impact environment within two or more regions of the Russian Federation;
 - business projects, which may have an impact on environment of neighboring countries, referred to in Convention on Environmental Impact Assessment in the Cross-Border Context;
 - documentation supporting agreements on natural resource use and/or waste management within the jurisdiction of the Russian Federation.

Annex 5 to the Client Report

to the Methodology for Competitive Selection of Participants of the HCS Reform Project (Phase I), and Allocation of Funds for Implementation of Investment Plans of Project Participants

Table 5-1 shows a tabular format to be used by contest participants in preparation of the Investment Plan that would be included in the Application.

Table 5-1

Investment Plan Format

Item	Subproject	Availability of Feasibility Study (yes/no)	Implementation Period (months)	Estimated Costs (USD)
Objective 1. Improvement of Financial Viability of Sector Enterprises				
1				
2				
...				
Objective 2. Improvement of Quality of Communal and Housing Service Delivery				
1				
2				
...				
Objective 3. Improved Accessibility of Communal and Housing Services				
1				
2				
...				
Total cost of the subprojects, S (USD)				

It is recommended that subprojects be included in the Investment Plan in the order of their priority (the top priority subprojects for each Project objective are included first).

The Investment Plan is recommended to be prepared in such a way as to make the total cost of the subprojects (in US dollars) equal to the amount determined by the following formula:

$$S = 50.7 * N,$$

where N means the size of permanent population of the contest participant.

2. The format of the table used by Project participants for submitting the updated Investment Plan included in the Report is similar to the format of Table 5-1.

The total cost of subprojects of the pth main Project participant shall be equal to G_{p plan} calculated in accordance with Section VI of this Methodology.

The total cost of subprojects of the sth reserve Project participant shall be equal to the amount calculated in accordance with the following formula:

$$G_s = 0.8 * G * (N_s / \sum N_p),$$

where

G means the total amount of loan proceeds allocated for implementation of the Investment Plan prepared by Project participants;

N_p means the size of permanent population of the p^{th} main Project participant.

ANNEX 10. SUPPORTING DOCUMENTS (IF ANY)

1. HCS Project Appraisal Document (2008)
2. HCS Loan Agreement (2009)
3. HCS Aide Memoires and Management Letters (2010-2021)
4. HCS Project Restructuring Papers
5. HCS Project Operations Manual
6. Disclosable Implementation Status and Results Reports (2010-2021)
7. Country Partnership Strategy (CPS) for Russia (2007-2009, 2012-2016)
8. National Goals and Strategic Objectives in the Development of the Russian Federation up to 2024, (2018).