

INTERNATIONAL ACTIVITIES

**RUSSIAN WATER LOAN
FEASIBILITY ASSESSMENT:
CHEBOKSARY MUNICIPAL
PRODUCTION ENTERPRISE
"VODOKANAL,"
REPUBLIC OF CHUVASHIA**

(ENGLISH VERSION)

DRAFT

Prepared by

PADCO

under subcontract to
The Urban Institute

**The
Urban
Institute**

November 1997
UI Project 06611-701

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THE URBAN INSTITUTE

2100 M Street, NW

Washington, DC 20037

(202) 833-7200

www.urban.org

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Foreword

This report on the Cheboksary Municipal Production Enterprise "Vodokanal" (Vodokanal) represents a single volume of a 7 volume series. The series is the second installment of a work effort started by PADCO in February of 1997. Under the first installment, 8 individual vodokanal reports and an Overview report were produced. Both series are produced in support of the Russian Water and Wastewater Project. The current series was prepared for The World Bank with financing from the United States Agency for International Development (USAID) under the Urban Institute/PADCO Shelter Sector Reform Program II. The effort was carried out during the Summer and Fall of 1997.

Like the other individual vodokanal reports, this report presents the results of institutional and financial assessments related to the Vodokanal's ability to contract debt. The report's institutional and financial recommendations are presented to assist vodokanal decision makers improve the Vodokanal's operational and financial autonomy in order to enhance its debt repayment capabilities.

This report was written by Samuel Coxson, Chief of Party and Institutional Analyst, Sunil Perera, Financial Specialist, Alexander Gamota, Economist, Ernest Slingsby, Technical Manager, and Michael Sinclair, Privatization Legal Specialist. Accounting and financial data management and analysis assistance was provided by Elena Arbuzova and Antony Nioradze. Additional commentary was provided by Michael Schaeffer, Financial Analyst. Additional legal research, analysis, and commentary was provided by Anton Litvinov. All these individuals are with PADCO.

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Chapter 1 - Executive Summary and Action Plan

1.1 Executive Summary

The current institutional and economic environment have had a negative effect on the ability of the Cheboksary Municipal Production Enterprise "Vodokanal" (Vodokanal) to be self-sustainable.¹ While the Vodokanal is a separate legal entity from the local administration, it is unable to recover all of its operating costs through its tariff structure which is limited by both the local tariff approval process and existing Federal tax legislation. In 1996, it was able to collect 81% of what it was owed,² including VAT and other services; among the highest collection rates of Russian vodokanals assessed by PADCO. This rate, however, exaggerates its true financial condition since the Vodokanal underbilled its customers in 1996 by roughly 30 percent as a result of its low tariff structure; the Vodokanal did not receive any tariff increases in 1996.³ Taking this into consideration, PADCO estimates that the Vodokanal experienced a 11 billion Ruble loss in 1996. In order to adjust the 1996 collection rate to reflect its cost recovery level, including depreciation and allowed profitability, the Vodokanal in reality only collected roughly 59 percent of what it should have billed. Further, almost 22% of the user charges which it was able to collect was in non-cash form. Lastly, the Vodokanal does not utilize the mechanisms available to it related to service shut-off and metering, and its contractual relations do not encourage improved performance nor cash payments from its customers.

A brief overview of the financial and institutional elements of the vodokanal indicate that:

- Cash collections in 1996 were half of 1995 cash collections;
- Capital improvement grants from the City, the Republic, and the Government have been considerably reduced in recent years. The Vodokanal must look to its user charges to fully fund its operations, capital replacements, and expansions;
- The Vodokanal's current corporate structure is outdated by the Russian Civil Code;
- The Vodokanal contracts out wastewater treatment to a third party. This Contract is the Vodokanal's single largest expense;
- The tariff approval process, which involves the Republic Pricing Committee, is not transparent and does not involve the public;

¹ A vodokanal can be considered to be financially sustainable if it is able to collect enough revenue from its user charges, and other sources, to allow it to continue provide satisfactory service. This involves the vodokanal paying for all operating and maintenance expenses, rehabilitating and replacing capital equipment, and extending and expanding their service as necessary.

² This includes both 1996 billings and the accounts receivable starting balance (as of January 1, 1996).

³ This situation changed in 1997. To date the Vodokanal has received two tariff increases in 1997 which have permitted the tariff structure to better reflect Vodokanal costs. See Table 2.

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- The Vodokanal pays scant attention to increasing vodokanal efficiency (reducing losses/leakage) since their tariff structure is based on water produced and not billed;
 - Since installing the SCADA (System Control and Data Acquisition System) system the Vodokanal has made very substantial progress in integrating its accounting system;
 - The carrying cost for accounts receivable (amounts owed by customers to the service provider) are currently not identified as a normal business expense item; and
 - The Vodokanal does not meter general population customer consumption.

The Vodokanal currently operates under a constant state of “emergency.” The service provider uses its available funds and resources for only emergency repairs and essential maintenance. Most of its facilities, pipe network, and equipment are in need of repair or replacement. The provider seems to have the necessary support of the Administration to undertake reform measures to improve its situation.

At the same time there may be opportunities to reduce the Vodokanal’s operational costs which have yet to be analyzed. For example, the Vodokanal’s management has not fully taken advantage of the SCADA system in performing cost-accounting analyses to determine potential cost-saving operating strategies. Additional opportunities to improve cash collections may exist; for example, charging a service charge for non-cash payments or increased use of service shut-off for non-payment. Other cost saving strategies related to improved production or transmission activities have not been explored or developed. Lastly, demand management strategies have not been fully considered or acted upon.

1.2 Action Plan

Based on this review, Table 1 shows an “Action Plan” (“Plan”) developed for the Vodokanal to assist the vodokanal to improve its operational and financial autonomy. This Plan works in concert with the Action Plan presented in the accompanying “Overview” Report. In addition, the below Plan considers actions to overcome institutional limitations which confront the service provider that are described in fuller detail in Section 2.3 of the “Overview” Report entitled, “Limitations to Operational and Financial Autonomy.”

The goal of the Plan is to promote the Vodokanal’s financial sustainability for current and future operation. The Plan is divided into the following six categories:

1. Corporate Governance;
2. Regulatory;
3. Management Improvement;
4. Tariff/Finance;
5. Operation Efficiency Issues; and
6. Demand Management.

**Table 1
Cheboksary Action Plan**

ACTION ITEM	DESCRIPTION
I. Corporate Governance	
Reorganize Corporate Structure	<p>The Vodokanal's current structure is outdated by the Russian Civil Code. The Vodokanal should reorganize itself as a municipal unitary enterprise. The new Charter should grant to the Vodokanal and its director as much operational autonomy as possible under applicable law, including the power to:</p> <ul style="list-style-type: none"> • Create and revise internal management structures, appoint and dismiss management and other personnel; • Adopt and implement operating plans and policies; • Adopt and implement personnel policies; • Adopt and implement capital repair and capital investment plans and policies, etc.; and • Determine the disposition of all profits. <p>The Charter should include a clear statement of the Vodokanal's purposes and should accurately define its service area. The Charter should prohibit the Vodokanal from engaging in business and activities not reasonably necessary to its principal goal of providing water and wastewater services to customers in its service area.</p> <p>Once reorganized, the following three action items can take place:</p> <ul style="list-style-type: none"> • Conclude New Agreement on Property Transfer; • Conclude New Service Agreement; and • Conclude New Contract with the Vodokanal's Director.
Conclude New Agreement on Property Transfer	<p>After reorganization, a property transfer agreement between the Vodokanal and the Administration should be concluded. Under RF Law, municipally-owned property may be allocated to a municipal unitary enterprise only by right of "economic jurisdiction".</p> <p>To clarify and expand as much as possible, within the existing framework of RF law, the degree to which the Vodokanal can control the disposition of these assets, the Vodokanal and the Administration should enter into a legally-enforceable property transfer agreement with the following elements:</p> <ul style="list-style-type: none"> • A broad statement of the intended use of the assets; • A complete inventory of the assets transferred, and a description and other documentation of their physical condition and depreciable value at the time of transfer; • Transfer of the property for a definite term, restricting the right of the Administration to withdraw the right of "economic jurisdiction" before the end of the term to the case of use of the property for purposes other than those permitted by the property transfer agreement, or failure to comply with the requirements of the service agreement:

**Table 1
Cheboksary Action Plan**

ACTION ITEM	DESCRIPTION
	<ul style="list-style-type: none"> • Periodic revaluation of the transferred assets for purposes of depreciation, in accordance with applicable law, and corresponding amendments to the property transfer agreement to reflect these revaluations; • Periodic amendments to the inventory of the assets transferred to reflect dispositions and acquisitions; and • The term of the agreement should be from five to ten years.
<p><i>Conclude Service Agreement Between the Vodokanal and Administration</i></p>	<p>Once the Vodokanal is reorganized, a service agreement between the Vodokanal and the Administration should be concluded which describes the rights and obligations of each party with respect to levels of service, tariffs, capital investment planning and execution, and other aspects of the Vodokanal's operations and local government support. The Administration and the Vodokanal should negotiate this agreement themselves, and its implementation should be monitored by the Administration department (Regulatory Body - see below) that will set tariffs. The service agreement should project tariff and service levels for three to five years, but should be subject to periodic (perhaps annual) review and revision by mutual agreement. The service agreement should include the following major elements:</p> <ul style="list-style-type: none"> • A statement of the purposes of the agreement; • A general statement of the rights and obligations of the Vodokanal, including the rights to set its own operating, management, personnel, and other business policies; to take all reasonable and necessary steps to bill and collect tariffs from customers; and to deliver services at a level consistent with revenues, and the obligations to operate as a financially-sustainable enterprise, to take all actions reasonably required to enable it to deliver the agreed level of services, and to resolve all disputes regarding non-compliance with the service agreement in proceedings before the local independent regulatory body; • A general statement of the rights and obligations of the Administration, including the right to monitor compliance with the service agreement, and the obligations to permit the Vodokanal to exercise its rights and fulfill its obligations without inappropriate political influence or interference by the Administration, to support a level of tariffs appropriate to the agreed level of service, and to delegate to an independent local regulatory body the power to set tariffs and to resolve all disputes regarding non-compliance with the service agreement; • Statements of long-term and short-term goals for water and wastewater service levels, including objective measures and specific schedules. Such goals could include improved water supply service duration and pressures, reduced water supply system leakage, increased water supply metering, improved water and wastewater system maintenance, reduced energy use, and improved water and effluent quality;

**Table 1
Cheboksary Action Plan**

ACTION ITEM	DESCRIPTION
	<ul style="list-style-type: none"> • A requirement for the Vodokanal to prepare and execute a capital repair and capital investment plan, in coordination with the City's overall plan for social and economic development; • A requirement for the Vodokanal to develop and undertake (and for the Administration to support) a program of customer education and improved customer relations; • Requirements for improved accounting by the Vodokanal, and for period publication of its financial results; • Requirements for periodic reporting by the Administration and by the Vodokanal on performance (or non-performance) of their respective obligations under the service agreement; • Statements of any conditions of the Administration's or the Vodokanal's obligations, including availability of funding for required capital repairs and capital investments, absence of material adverse changes in law, and absence of <i>force majeure</i>; • A statement that the service levels called for by the agreement will be periodically reviewed and revised by mutual agreement; and • A general statement of intent by the Administration and the Vodokanal to cooperate with one another, use their best efforts to fulfill their respective obligations and to allow the other party to exercise its rights under the service agreement.
<i>Conclude Contract with the Vodokanal Director</i>	Once the Vodokanal is reorganized, a new contract with the Director should be concluded with the newly created independent regulatory body - see below. The contract should include financial incentives for achieving written realistic performance and efficiency benchmarks.
II. Regulatory Issues	
<i>Establish an Independent Regulatory Board for Tariff Approval and Service Agreement Management</i>	<p>In order to separate the Administration's role as owner of the Vodokanal and of its assets from its role as tariff and service regulator, the local city Charter should be amended (with or without authorizing legislation by the corresponding RF subject) to create a special independent local government body to act as tariff and service regulator, with as much independence as possible from the Administration. The applicable RF subject legislation, if any, and the Charter amendment should describe the regulatory body's tariff-setting and service monitoring procedures, including provisions stating that:</p> <ul style="list-style-type: none"> • Service levels are dependent on tariff levels and collection rates; that all decisions of the regulatory body must be made based only on the information submitted to it by the Vodokanal, the Administration, and others; • The regulatory body will review tariff proposals on request of the Vodokanal, the Administration, or by petition of customers representing a specified percentage of the Vodokanal's revenues (perhaps with a limitation on the frequency of tariff changes);

**Table 1
Cheboksary Action Plan**

ACTION ITEM	DESCRIPTION
	<ul style="list-style-type: none"> • The regulatory body will review compliance with the service agreement at the request of the Administration, the Vodokanal, or upon request of a substantial proportion of the Vodokanal's customers if they provide some evidence that either party is not in compliance; • All interested parties will have the right to have access to information submitted to the regulatory body, at no cost (copies to be provided at actual cost); • All decisions of the regulatory body regarding new tariffs or compliance with the service agreement will be made only after a public hearing (preceded by publication of adequate prior written notice of the hearing), at which all interested parties will have the right to be heard and to present relevant evidence; • All decisions of the regulatory body will be in writing, stating the evidence presented and the reasons for its decision; • All decisions of the regulatory body will be published in the local mass media and will be available to all interested parties at no cost (copies to be provided at actual cost); • So long as the regulatory body acts within its jurisdiction, according to the procedures described in the Charter and according to applicable law, the City Administration will not interfere with its operations; and • The Administration, the Vodokanal and (to the extent permitted by RF law) other parties affected by the regulatory body's decisions will have the right to appeal to the court or the arbitration court, in accordance with applicable law, based on specified, limited grounds .
<i>Establish Automatic Inflation Escalator Mechanism In Tariffs</i>	The tariff approval process mutually agreed to in the new service agreement should include an automatic inflation escalator mechanism. This mechanism would allow the Vodokanal to adjust water and wastewater tariffs on their own, without further approval of the tariff regulator, to reflect inflationary increases in the cost of major inputs, especially energy costs, according to inflation indices issued periodically (e.g., quarterly) by the appropriate government agency.
III. Management Improvement	
<i>a. Management Reporting</i>	
<i>Improve Management Reporting Systems</i>	The Accounting, Economics, and Customer Billing Departments, should meet on regular basis to discuss joint operation and co-operation. Hiring a Chief Financial Officer (CFO) to co-ordinate these groups, stream-lining these financial operations should improve the quality of the financial reporting. The CFO should be at the same reporting level as the Chief Engineer.
<i>Increase Emphasis on Financial Reporting and Accountability</i>	Monthly reports should include Trial Balance, Monthly Cash Flow, and Profit and Loss statements. All financial statements should have columns comparing forecast versus actual (not adjusted for revenues received). Accounts receivable should be analyzed (bad debt expense) on a monthly basis. The Vodokanal should annually undergo an external audit.

Table 1
Cheboksary Action Plan

ACTION ITEM	DESCRIPTION
<i>Determine the Vodokanal's Information System Needs</i>	The Vodokanal should: review the nature of its current and future data requirements, and decision making processes; review the nature and current capabilities of its staff in providing necessary data; hire computer system specialists to design a comprehensive (complete) management information and reporting system (MIS); train staff on how to use the new reporting system; and sign a service agreement with the MIS - service provider for regular system maintenance and upgrading as well as continued training for staff.
<i>Implement an Efficient Cost Accounting System</i>	The Accounting Department has an ineffective cost accounting system in place. Where computers exist, financial accounting software systems are not linked resulting in numerous bookkeeping errors. Installing a consolidated accounting computer program will greatly enhance the productivity of numerous operations. In addition, the Vodokanal managers will be able to more fully understand its production costs.
<i>Identify Portions of Accounts Receivable As Bad Debt Expense (Include in Cost of Tariff)</i>	Until federal legislation changes, the Vodokanal should begin to write-off those bad debts which it can - i.e., three years and older. Before writing off such debts however, the Vodokanal, working with the support of the Independent Regulatory body, should try to collect all debts before writing them off. The writing-off of uncollectible receivables should be viewed only as a last attempt to be compensated for services already provided. The Regulatory body and the Vodokanal should develop a written procedure for pursuing debt collection.
b. Increasing Collection	
<i>Resist Non-Cash Payments</i>	The Vodokanal should resist all attempts for non-cash payments. If however, this is deemed impractical, the Vodokanal should develop standardized guidelines / procedures for accepting non-cash payments including additional surcharge, interest payment, transactions fees, and clearly defined debt repayment schedule.
<i>Levy Fines For Late Payments</i>	In accordance with existing legislation, the Vodokanal should levy fines to the maximum amount permissible. Fines should occur however, only when it is determined cost effective; i.e., additional revenues collected through fines are greater than the additional administrative costs of collection.
<i>Develop and Implement Service Shut-Off</i>	In accordance with existing legislation, the Vodokanal should develop standards and procedures for shutting off service for non-payment. Standards and procedures should be approved by newly established regulatory board - see above.
IV. Tariff / Finance	
<i>Eliminate Cross Subsidy Paid By Enterprises</i>	The Vodokanal should recalculate full cost recovery water and sewer tariffs for each customer category and set the tariffs for all customer categories to equal these full cost tariffs. ⁴

⁴ Once the cross-subsidy is eliminated, the city should be prepared to handle the new income based Housing Allowance Subsidy Program (HASP) case load. Currently, roughly 5% of the families in Cheboksary receive HASP subsidies. Such income-based subsidies should become the only form of social assistance for making housing and service payments.

Table 1
Cheboksary Action Plan

ACTION ITEM	DESCRIPTION
<i>Revalue Assets</i>	The Vodokanal should have all assets re-appraised by professional appraisers. Such appraisals should be conducted on-site and consider the physical condition of the assets. The depreciation based on this assets valuation should be used in the new tariff.
<i>Implement Public Information Campaign to Explain Vodokanal Tariff</i>	The Administration and the Vodokanal should develop and carry-out a public education program (including public hearings) which will explain the necessity for and benefits from tariff increases. (At the same time, the Administration needs to promote its HASP program).
V. Operation Efficiency Issues	
<i>Meter Production</i>	Measuring all production by meters should be considered a top priority for the Vodokanal. This should be considered one of the primary conditions in the service agreement between the Vodokanal and the Administration.
<i>Reduce Production Inefficiencies</i>	The Vodokanal should compare current actual production with factory designed nameplate capacity and develop a production efficiency program that will be included in the new service agreement with the Administration.
<i>Reduce Delivery Losses</i>	The Vodokanal should determine the magnitude of delivery losses and develop a loss reduction program that will be included in the new service agreement with the Administration.
<i>Stream-line Vodokanal Employment</i>	The Vodokanal management should evaluate total staff requirements to determine if possible staff redundancies and production inefficiencies exist. Where possible, management should reduce staffing requirements.
VI Demand Management	
<i>Meter Consumption</i>	The Vodokanal should follow the guidelines provided by existing legislation; i.e., customers shall install meters on their own or face being billed the maximum amount of water and wastewater they technically could use. Apartment building owners should be able to satisfy these guidelines by installing meters in at building level. Individual apartment owners, however, should be encouraged to install their own meters.
<i>Introduce Incentives in Housing Management Service Agreements to Enforce Existing Rules and Norms for Improved Housing Maintenance and Management Services</i>	A substantial portion of the Vodokanal's delivered water is lost due to poor internal plumbing of most apartment buildings; the majority of which are still owned by the Administration or by enterprises. The Administration should encourage active maintenance of plumbing to reduce water leaks as specified by existing "Housing Fund Technical Exploitation 'Rules and Norms.'" Municipal management and maintenance companies are currently not being held accountable for failing to enforce these "Rules and Norms." The Administration should introduce incentives into the management service agreements to enforce existing "Rules and Norms."

Chapter 2 - Institutional Review

2.1 Assessment of Present Institutional/Regulatory Environment

2.1.1 Legal Status/Charter

The Vodokanal was established as an independent legal entity on August 8, 1992, on the basis of the Cheboksary City Administration Municipal Property Committee Resolution 416. The Charter lists the Founder as the Municipal Property Committee. The Charter provides the Vodokanal's rights, responsibilities and general duties. As an independent legal entity, the Vodokanal can enter into contracts, assume bank loans, sue and be sued, and generally conduct its business as any other enterprise would. The Charter also states that the Founder is not responsible for the obligations of the Vodokanal and that the Vodokanal is not responsible for obligations of the Founder. The Founder also, along with the Labor Collective, has the following exclusive rights:

- To amend or adopt a new charter;
- To appoint and remove the Vodokanal Director and to approve the work agreement with the Director, and
- To abolish the Vodokanal and reassign its assets.

The Vodokanal is to be financially self-sufficient through the recovery of costs from customers through user charges. This self-sustainability includes operations, major capital repairs and replacements as well as new capital improvements. Net profit (*rentabelnost*), after the required payment of taxes, fees, and any fines, is controlled by the workers' collective.

The Charter grants the following rights to the Vodokanal Labor Collective:

- To approve the collective agreement;
- To determine the list of social privileges to be received by the Vodokanal's workers;
- To approve changes to the Charter;
- To approve the Founder's choice for the Vodokanal Director; and
- To approve any Vodokanal reorganization.

The relationship between the City Administration, the Department of Housing and Communal Services and the Vodokanal are very positive. From the President of the Chuvash Republic, the Mayor of the City to all the City Administration staff that PADCO met, the support for the Vodokanal appeared very strong.

2.1.2 Vodokanal Property

The Charter states that the Vodokanal received from the Municipal Property Committee municipal property and cash funds with which to operate the Vodokanal.⁵ On December 5, 1993, the Municipal Property Committee and the Vodokanal entered into an agreement which transferred water and wastewater service related property from the former to the latter on the basis of economic jurisdiction. The agreement, which runs for 5 years, describes the rights, obligations, and responsibilities of both parties with respect to the transferred property. Among the obligations, the agreement states that the Vodokanal is to pay the Municipal Property Committee 0.8 percent of its quarterly net profit. According to Vodokanal officials though, this obligations has never been fulfilled.

2.1.3 Vodokanal Director

The Charter briefly describes the general responsibilities of the Vodokanal Director. The Director is in charge of the day-to-day management of the Vodokanal's operations. The Vodokanal also has a governing body which elects a Council of the Workers Collective. This Council, along with the Founder, appoints the Director and determines the terms of the Director's contract. Under these circumstances it is difficult for the Director to make necessary but unpopular decisions and to discipline poor work performance.

2.1.4 Vodokanal Labor Collective

The Charter gives the Vodokanal Labor Collective substantial rights in the overall management and operations of the Vodokanal. Among them are:

- To appoint the Vodokanal Director mutually with the Founder;
- To mutually accept the Articles of Incorporation of the Enterprise;
- To conclude a labor agreement with the Vodokanal;
- To determine the procedure and priority of receiving social benefits from profits;
- To mutually determine if non-vodokanal endeavors will be undertaken as business ventures, and
- To mutually decide on reorganization or termination with the Founder.

2.1.5 Tariff Approval Process

On November 22, 1996 the Chuvash Republic Cabinet of Ministers passed Resolution No. 275. This resolution gives the City of Cheboksary the authority to approve the Vodokanal's water and wastewater tariffs.

⁵ The Cheboksary Property Committee transferred 199.6 billion rubles in 1992 value to the Cheboksary Vodokanal enterprise.

Table 2 shows the tariff approval history for the last three years. Although there were no increases in for general population tariffs in 1996, they rose 233 percent from the 1995 level to their most recent level in 1997. Likewise, the tariffs for budget organizations and enterprises rose a very substantial 135 percent for water and 130 percent for wastewater from the 1995 level to the most recent tariff in 1997. The Cabinet of Ministers, through Resolution No. 456-P, dated August 2, 1995, set the Vodokanal's profitability (*rentabelnost*) rate to equal 25 percent of production costs (*sebestoimost*). This limit on profitability is still in effect.

Table 2
Cheboksary Three-Year Tariff History
(Rubles/m3)

Date	General Population Water	General Population Wastewater	Other Water	Other Wastewater
July 1997	400	400	3,600	3,360
January 1997	300	300	3600	3360
May 1995	120	114	2677	2359
April 1995	120	114	1,532	1,460
February 1995	---	---	1532	1,460

Note:

1) All tariffs include VAT.

The recent increases in tariff are further indications that the City appears to support the Vodokanal's efforts to recover their costs and become financially self-sufficient.

2.1.6 Social Safety Net

The Cheboksary City Administration provides approximately 5 percent of its general population customer base with income-based subsidy assistance. The bulk of residential subsidies however, comes from the cross-subsidy that enterprises and budget organizations pay vis a vis the higher tariffs which the latter two customer categories pay. According to the Vodokanal, privileged payments, i.e, *lgoti*, by residential customers is a small amount; roughly 2 percent of the total general population customer base.

2.2 Assessment of Vodokanal Management and Operations

2.2.1 Organization and Management

The Vodokanal has an organizational structure very similar to those in other Russian cities with the Chief Engineer and other department heads reporting to the Director. The Director has overall management responsibilities including meeting all the requirements of agreements and the Charter. While these documents describe generally the areas of responsibility the Vodokanal has, they are not specific in their performance criteria and requirements.

The management orientation is on production and the engineering aspects of those operations. There is insufficient focus on the financial impact of operations and decisions. Upper and mid-level management are, however, increasingly becoming more focused on the financial relationships and indicators as it utilizes more of the data generated by the SCADA system. Some areas where Vodokanal staff plan to focus more information and attention on are the annual budgets and monthly analysis of performance and in capital planning.

2.2.2 Personnel and Management

The Vodokanal has 940 employees. The personnel are comprised of 55 management, 215 water production, 215 wastewater production and 455 employees involved with support activities to both water and wastewater functions. The Vodokanal has increased the number of employees in the last seven years from 729 in 1990 to 940 in 1997 for an increase of 30 percent over the seven year period. There are 511 residential customers served per Vodokanal employee. Table 3 shows the comparison of the number of customers served in Western Europe, Latin America and the Russian average for comparison. Cheboksary is close to the Russian average.

Table 3
Comparison of Number of People Served

Entity	Total Number of Employees	Number of Employees per Persons Served (Water)
Cheboksary Vodokanal	940	1 per 511 persons
Average Russian Vodokanal*	--	1 per 380 persons
Average European Water Utility **	--	1 per 2,000 persons
Average Latin American Water Utility**	--	1 per 1,500 persons

*Source: USAID/PADCO, *Orenburg Vodokanal Improving Cost Recovery, Tariff Reform, and Metering Demonstration Project*, 1996.

**Source: World Bank, 1997. Note: averages for non-Russian cities do not include work which is contracted out by the vodokanal to a third party, including repair work, emergency work, operation, maintenance, transportation, billing, collection, and enforcement.

Employment contracts are signed between the staff and the Director. The Vodokanal uses tabular pre-printed forms for the following employment relation purposes: employee contracts; termination letters; internal transfers to other departments, and employee history cards. The relevant details of the employment terms and conditions or other employee management action are handwritten on blank spaces on the relevant form.

All staff are paid monthly. Preparation of the payroll is fully computerized. Detailed pay slips showing the payroll data are computer-generated. Original pay slips are given to employees for information. Employees acknowledge receipt of salary on a register. The computer also generates departmental salary summaries for information.

2.2.3 Operations and Maintenance

The operation control of the Cheboksary Vodokanal works in two echelons. The first echelon of operational control is the individual worker at the water well, storage, pump and transmission line and the treatment plant work stations. The second is a computer control central station which controls valves, pumps, storage levels, and water filtration units within the entire system. This control system, referred to as a System Control and Data Acquisition (SCADA) system, is the only one encountered in cities reviewed by PADCO.

The Vodokanal has a full-time programmer that has been working on the SCADA system for the last three years. The SCADA for the water system appears to be complete and working very well. The Vodokanal reviews its operations monthly and constantly looks to update the SCADA in its control function.

Wastewater treatment is not carried out by the Vodokanal itself. It contracts with a local enterprise, AO Chimprom, for the treatment of wastewater. The charge for treating wastewater is 315 rubles per cubic meter of wastewater treated. The Vodokanal maintains the wastewater collection and main lines as well as the pumping and lift stations of the wastewater system.

2.2.4 Water and Wastewater Transmission and Collection System

Cheboksary's water transmission and distribution system is approximately 448 kilometers long and comprised of pipe of various diameters. The wastewater collection system is approximately 400 kilometer in length. Table 4 illustrates that the age of the system lines varies.

The bulk of the water and wastewater lines are relatively old, with 77 percent of the water and 88 percent of the wastewater lines approaching 30 years old. However, this statistic only provides the age of the general systems. Other characteristics, in addition to the age are the construction materials used, the bedding of the lines and construction procedures used in their installation and the affect that water and wastewater may have on the pipes. For example, high strength industrial wastewater can shorten the life of the wastewater line dramatically. Also, high iron, nitrate and nitrite contents in the water will cause build-up of those chemicals in the water lines and shorten their useful life.

Table 4
Cheboksary Vodokanal Water and Wastewater Line Age

Age	Water Lines (km)	Wastewater Lines (km)
More than 50 years	5	4
More than 40 years	18	8
More than 30 years	80	38
More than 20 years	134	137
More than 10 years	120	146
Less than 10 years	73	51
Less than 5 years	18	16
Total	448	400

The Vodokanal has a very aggressive preventative maintenance program that is tied into the overall SCADA system. The SCADA system provides a history of line breaks, pump outages and other aspects of maintenance interest.

2.2.5 Metering and Demand Management

Although the Vodokanal meters production at the various well fields and intakes, only the consumption of single family residential consumers is metered (approximately 5 percent of the total residential consumer base). Enterprises and nearly all the budget organizations are metered. Metering at the whole-building level would be a good start on demand management as well as connect the consumption of water with the cost of its production for the residential consumer. Currently, no plans have been made to initiate such a metering program.

Chapter 3 - Financial Review and Debt Capacity

3.1 Introduction

In 1996, the Vodokanal received 81 percent of what it billed; among the highest collection rates of Russian vodokanals assessed by PADCO. This rate, however, exaggerates its true financial condition since the Vodokanal underbilled its customers in 1996 by roughly 30 percent as a result of its low tariff structure; the Vodokanal did not receive any tariff increases in 1996.⁶ Taking this into consideration, PADCO estimates that the Vodokanal experienced a 11 billion Ruble loss in 1996. Thus, in order to adjust the 1996 collection rate to reflect its cost recovery level, including depreciation and 25 percent profitability, the Vodokanal in reality only collected roughly 59 percent of what it should have billed.

Additionally, the Cheboksary Vodokanal has, like many of its other Russian vodokanal counterparts, received less and less of its payments for service in cash, receiving barter and offsets instead. Table 5 shows that in 1995 the Vodokanal received 36 percent of its total billed in cash but cash receipts declined to only 22 percent in 1996.

Table 5
Cash versus Non-Cash Vodokanal Collections

	1995 Amount (In 000 Rubles)	1995 Percent of Total Collected (%)	1996 Amount (In 000 Rubles)	1996 Percent of Total Collected (%)
Total Billed and Opening Balance	94,535,000		114,555,000	
Cash Collections	33,919,000	45	20,197,000	22
Non-Cash: Promissory Notes & Offsets	21,454,000	29	30,924,000	33
Barter	19,555,000	26	41,751,000	45
Total Collected	74,928,000	100	92,872,000	100

Note:

1) All amounts include VAT.

3.1.1 Current Water and Wastewater Tariffs

Although the Vodokanal has received two tariff increases in 1997, before that the tariff had not been increased prior to that since May 1995. As a result, the Vodokanal the 1996 tariff structure did not allow the Vodokanal to cover its costs. In 1997, the situation has however been corrected and the current tariff structure better reflects Vodokanal costs.

⁶ See Table 2.

Like population customers in other cities, population customers of the Vodokanal enjoy large cross subsidies from enterprises and budget organizations. The current water and wastewater tariffs for general population customers are 400 rubles, including VAT, per cubic meter of service respectively. Meanwhile, the current tariff for budget organizations and enterprises is 3,600 rubles for water and 3,360 rubles for wastewater, including VAT. Given the current tariffs, the ratio between budget organization and enterprise tariffs to general population tariffs is approximately 9 to 1.

Billing for all communal services is done through a central City Customer Service Department representing all the communal service providers. This Department is divided up to match the three dominant geographic areas of the City: Moskovsky, Leninsky and Kalininsky raions. Residential customers pay to the respective customer service division in their raions. These raions are supposed to forward on to the service provider the payment received. The raions, however, often fail to forward all the money received or issue notes in lieu of the cash payments. This procedure worsens the cash collection condition of the Vodokanal.

3.1.2. Billed Volumes of Water and Wastewater

Table 6 presents Vodokanal billed volumes, by customer category, for 1996. Such volumes only approximate consumption in enterprises and budget organizations and typically are considered to be substantially less than actual consumption for the residential customers. Due to the substantial cross subsidies received by general population customers, they consumed 65 percent of the billed water and wastewater services but paid only 10 percent of 1996 customer billings.

Table 6
1996 Volume and Amount Billed by Customer Category

Customer Category	Water	Percent (%)	Wastewater	Percent (%)	Total	Percent (%)
<i>Volume of Water and Wastewater Billed (000 m3)</i>						
General Population	40,385	68	39,328	63	79,713	65
Budget Organization	5,418	9	5,353	8	10,771	9
Enterprises	13,652	23	17,783	29	31,435	26
Total Billed	59,455	100	62,464	100	121,919	100
<i>Total Water and Wastewater Billed by Customer Class (000 Rubles)</i>						
General Population					9,096,000	10
Budgetary Organizations					24,092,000	25
Enterprises					61,760,000	65
Total Billed					94,948,000	100

3.2 Financial Management System

3.2.1 Organization of the Accounting Department

The Vodokanal's Accounting Department is headed by a Chief Accountant who is assisted by a Deputy Chief Accountant. The following division of functional responsibilities makes up the rest of the Accounting Department.

- Payroll (2 accountants)
- Cashier / Banking (2 accountants)
- Taxation / Securities (2 accountants)
- Inventories / Suppliers (2 accountants)
- Use of profit account / Bank Accounts (1 accountant) Fixed Assets (1 accountant).

The functions of the divisions are described under the respective headings of each section. The main responsibilities of the Deputy Chief Accountant are to prepare the general ledger and journal, and control the accounts receivable and accounts payable. The Chief Accountant is in charge of: financially managing the Vodokanal; supervising 11 accountants, and calculating profit and other taxes. Customer billing and collection is done by a separate Billing Department. There are four accountants attached to this department.

3.2.2 Accounting/Documentation/Consistency

The Vodokanal follows the Russian system of accounting. The accounting codes used by the service provider are the same as those required by the Russian Accounting Regulations. The Vodokanal has adequate documentation and printed formats to comply with Russian Accounting Regulations and other official financial reporting requirements. The filing system is satisfactory. Files are neat, labeled and easily accessible. The accounting reports and financial statements are generally consistent from one year to another. Where they are not, the deviation is pointed out in the relevant sections of this assessment. Accounts of the Vodokanal have been prepared on a cash basis up to 1995. From 1996 onwards, accounts are prepared on an accrual basis in compliance with instructions from the Ministry of Finance.

3.2.3 Inventory Valuation and Depreciation

Inventories (raw materials, spare parts, etc.) are valued on a weighted average basis. Fixed assets are depreciated annually following depreciation schedules established by the Ministry of Finance. Depreciation rates are applied on the revalued cost of assets and are consistent from one year to the next. Various fixed asset categories as well as various assets of the same category have different depreciation rates. Depreciation is calculated on a straight line basis. Table 7 shows the general asset category depreciation rates used by the Vodokanal:

Table 7
Current General Depreciation Schedule

General Asset Category	Depreciation Rate
Buildings	2.5 %
Motor Vehicles	12.5%
Pipelines	2.5% to 5%
Pumps	12.5% to 20%

3.2.4 Taxes

The Vodokanal withholds income tax on staff salaries as well as a one percent pension fund contribution. It forwards these withholdings and its social fund payments to the tax directorate and respective social funds. Profit tax is calculated at 35% of the annual taxable profit. In 1995, there was an additional tax called consumption tax with a progressive rate of taxation.

3.2.5 Contingent Liabilities

As of the Balance Sheet date, there were no contingent liabilities or pending litigations against the Vodokanal.

3.3 Financial Systems and Controls

3.3.1 Billing and Collection

In 1996, 3,625 written agreements with customers had been finalized. Of this number, 1,555 agreements were signed with housing collectives organized as enterprises; 1,129 agreements with private and budget organizations; and 941 agreements with industrial enterprises and shops. Agreements are signed by the Director of the Vodokanal and countersigned by a Ministry of Internal Affairs representative.

General population customers of the Vodokanal include 1,222 apartment blocks with about 113,000 family apartments served with direct connections. There are 6,008 individual homes served with standpipes.

3.3.1.1 Organization

Billing and collection is the responsibility of the Billing Department. The Head of the Billing Department reports directly to the Vodokanal Director and is in charge of customer relations and the development of barter and offset agreements. In addition to the Head of the Billing Department there are 16 other staff which assist in the billing function and meter reading.

Only about five percent of the population or residential customer category is metered. However, almost all industries, shops and budget organizations are metered. Residential customers that are not metered are charged on the basis of established norms. Water meters are said to be unpopular with customers because the norms are quite low when compared to the actual consumption. Water consumption norms vary according to the service provided. The Vodokanal estimates the actual consumption of non-metered apartments to be about 220 liters per person per day.

According to Vodokanal officials, the average residential household billing for a month is approximately 10,800 rubles assuming 3 persons in the family and 150 liters per person per day for water and wastewater. The average household income is about one million rubles per month. Thus, according to Vodokanal data, Cheboksary families only pay about 1.1 percent of their income for water and wastewater services.

General population customers, who live municipal apartments, are billed through one of the three Municipal Unitary Enterprises (MUEs). The Vodokanal monthly bills each of the three MUEs by including a list of individual amounts billable to each customer along with the totals due from population customers. This total is the amount payable by MUEs to Vodokanal. General population customers are billed 100 percent of the population tariff (which has a cross subsidy from budget organizations and enterprises built-in). The MUEs in turn, bill the population customers on a monthly basis for water and wastewater together with other communal services such as heat, rent, gas, electricity, radio and aerial fees.

The Vodokanal directly bills the industries, private enterprises and budget organizations based on metered consumption on a monthly basis. According to Vodokanal staff, 35 percent of the total water consumption is consumed by non-population customers. However, enterprises and budget organizations are billed for 90 percent of the Vodokanal's total billing.⁷

3.3.1.2 Computerization

Billing is fully computerized, including computer-generated invoices. Monthly billing summaries are generated from the same input data. Collection data are also entered into the computer. The computer generates individual customer accounts showing the amounts billed, collected and the balance due. The Vodokanal hired a computer programmer to develop the software program. The computers have a network facility that enables four accountants to work on one software program. Each accountant has been allocated with her scope of computer data input, thus, holding each person responsible for specific tasks. The computer software program appears to be operating effectively. The Accounting Department treats the computerized records of Billing Department as subsidiary ledgers.

The general ledger of the Accounting Department receives summary information and figures generated by the billing department. Therefore, the billing and collection figures shown in the

⁷ See Appendix II Table 18, "Collection analysis table for 1996."

general ledgers should always be in agreement with the figures available in the billing department and serve as a cross-check for revenues.

3.3.1.3 Collection

The Vodokanal directly collects from all enterprises and budget organizations. Enterprises pay through a variety of different methods, including bank wire transfers, cash deposits, barter, offsets or in some cases by exchange of securities such as Treasury bills and promissory notes. Collection from budget organizations is accomplished through bank wire transfers or offsets against various taxes. The Vodokanal also enters into multi-party barter in which a Vodokanal debtor will settle a Vodokanal supplier's invoice directly, either in cash or goods. Multi-party barter even extend to suppliers of high value raw materials from other NIS countries.

As described earlier, MUEs collect cash from general population customers for water and wastewater through their communal services bills which are paid in cash deposited to the local Sberbank. MUEs are expected to pass on the cash collected from the population to the Vodokanal by bank transfer, after retaining five percent for MUE's services and the cost of repairs carried out by them. However, settlements by Leninsky and Moscovsky are irregular. For example, the Leninsky MUE owed the Vodokanal 1.5 billion rubles as of July 15, 1997 while the amounts due from Moscovsky and Kalininsky MUEs were 522 and 60 million rubles, respectively. The MUEs comes under the City Administration. The customers of the Vodokanal are given seven days to settle their bills. Thereafter, penalties accrue at 0.5 percent the outstanding amount per day.

3.3.2 Purchasing Procedure and System

An annual purchasing plan is prepared during the summer period. The Vodokanal's technical sections send their estimated requirements of raw materials that they need for the ensuing year to the head of the Purchasing Department. Technical department heads and the Purchasing Department review their requests and make the necessary adjustments.

Purchasing and storage functions come under one department called the Purchase and Supply Department. The head of this department reports to the Deputy Director of the Vodokanal. There are 6 addition staff to help carry out the purchasing and store keeping function. Barter agreements are drafted by the engineers in consultation with the head of stores section. Copies of the signed barter agreements are sent to the Billing Department.

3.3.3 The Bookkeeping System

The general ledger is posted manually by the Deputy Chief Accountant. The Computer Department has plans to computerize the general ledger before November 1997. The computerization is expected to link the general ledger with that of other books of account that are already computerized, i.e., cash book, payroll and salaries records, stock ledger, billing

and collection records, and fixed assets ledger. Once complete, the computer program should be able to generate a balance sheet for the Vodokanal.

3.3.4 Fixed Assets Control System

A detailed list of the Vodokanal's fixed assets is computerized and is broken-down by department, description of item, year of purchase, cost, rate of depreciation, and depreciation for the year. Total values of all fixed assets agree with the values shown in the Balance Sheet.

Fixed assets were revalued in 1995 and again in 1996. The revaluation was necessary because of the significant depreciation of the ruble during the past decade. The revaluation was based on the guidelines issued by the Ministry of Finance (MoF). In the guidelines, MoF indicated multipliers to be applied on the original cost of the asset. Different multipliers were given for different years of purchase of assets, different categories of assets (e.g., motor vehicles), and different types of assets of the same category (e.g., heavy duty trucks under motor vehicles).

The multiplier range for different years and for different categories of assets as well as different assets of the same category, were:

- 1980 and previous years; range 1.2 to 4.1;
- 1981 to 1994; range 1.3 to 4.6;
- 1995 first quarter; range 1.3 to 4;
- 1995 second quarter; range 1.2 to 2.9;
- 1995 third quarter; range 1.1 to 2.1; and
- 1995 fourth quarter; range 1 to 1.3.

The Ministry of Finance guidelines do not provide explanations for the different multiplier ranges. However, a possible explanation may be that the assets purchased prior to 1980 are older than those purchased after 1981, therefore, a slightly lower multiplier may be more appropriate to the former group when compared to the next group, 1981 to 1994. The Vodokanal used the computerized system to revalue the individual fixed assets by input of the appropriate multiplier for each asset, against the original cost of the asset.

A more accurate value of fixed assets could be obtained by conducting an on site physical valuation by a professional valuation expert. In 1997, the Vodokanal hired Audit Consultants (auditors of the Vodokanal) who also have a certificate to practice as appraisers, to carry out a revaluation on a multiplier basis; no physical surveys were conducted. The Audit Consultants used a lower multiplier. The Audit Consultants informed us that the MoF multiplier was excessive and that the rate may not apply to all cities equally. The revaluation figure computed by the Audit Consultants was 187 billion rubles lower than the total revalued figure obtained from the MoF basis of revaluation. In 1997, the Vodokanal adjusted the value of fixed assets in the accounts, to show the revaluation figures computed by the Audit Consultants. If this adjustment is made by the Vodokanal in 1997, then the depreciation in 1997 will be lower than 1996.

3.3.5 Computerized Systems

The Vodokanal has a separate department called the Computer Management Unit. The computerized systems of the Vodokanal are:

- Billing and Collection;
- Payroll;
- Storage Ledger;
- Cash and Bank Books;
- Fixed Assets;
- Laboratory (quality control calculations and reports);
- Production Documentation;
- Technical Forecasts (includes technical calculations and maps of pipelines);
- Central Despatch and Total System Control; and
- Preventative Maintenance

Presently, the Computer Unit is creating programs that will integrate various segmented, computerized sections of the accounting department with an integrated, networked system. This basic program will be completed in 1997 and the total program is expected to be completed in 1998. Some of the computer software was purchased by the Vodokanal and modified in-house where necessary while other programs were developed in-house. The Accounting Department uses FOXPRO, CLARION and MICROSOFT OFFICE software packages.

The Computer Management Unit 14 staff members. The head of this department reports to the Chief Engineer. The Unit's sections are:

- Information technology (4);
- Technical maintenance (4); and
- Information equipment maintenance (5).

3.3.6 Budgetary Control System

The Chief Economist prepares the Vodokanal's annual budget. The budget shows forecasted revenue and expenses on a quarterly basis for the full year. The Chief Economist does not consult with department heads when developing the budget. The budget is not computerized and all calculations are done by hand or calculator. The Vodokanal Director approves all budgets. The budget is used for internal uses only, it is not submitted to tariff approval authorities as justification for tariff increases.

3.4 Vodokanal Profit and Loss Analysis

In the near GAAP restatement of financial statements, the Profit and Loss Statement reviews the Vodokanal's overall financial activity for the year. Table 8 presents a shortened version of the PADCO restated Profit and Loss Statement. Under Russian accounting standards and

before depreciation, the Vodokanal showed an after tax profit of 3.6 billion Rubles in 1995 and 11.5 billion Rubles in 1996. Depreciation in 1996, however, increased by 155 percent primarily due to the revaluation of fixed assets in 1995. After depreciation, which increased by 155 percent, the Vodokanal suffered a net loss of 11 billion Rubles in 1996. In 1995, the Vodokanal experienced a net profit after depreciation of 12 billion Rubles. Thus, compared to 1995, in 1996 the Vodokanal net profit/loss after depreciation dropped by 188 percent.

Table 8
Cheboksary Vodokanal Adjusted Profit and Loss
for the Years ended December 31, 1995 and 1996

Item	1995 (In 000 Rubles)	1996 (In 000 Rubles)	Percent Change (%)
Water and wastewater revenue	74,580,943	78,994,658	6
Other income	209,562	156,942	-25
Total revenues	74,790,505	79,151,600	6
Total operating expenses (excluding depreciation)	44,612,615	66,920,754	50
Net income before taxes and depreciation	30,177,890	12,230,846	59
Depreciation	8,810,011	22,436,073	155
Taxes (non labor) and other expenses	8,962,435	761,699	-91
Net income / (loss)	12,405,444	(10,966,926)	-188

Note:

1) Revenue does not include associated VAT.

3.4.1 Sales Revenues

Vodokanal revenue increased by only 6 percent in 1996 because there were no tariff increases in 1996. Coupled with increased cost of sales - see below - this resulted in the Vodokanal underbilling its customers by roughly 13 billion Rubles. Table 8 shows that total revenues equaled 79.2 billion Rubles. Table 9, however, shows that total expenses, including depreciation and expenses incurred from use of profit, equals 92.6 billion Rubles.

3.4.2 Cost of Sales

Table 9 shows that the Vodokanal's total operation expenses, including depreciation and incurred from use of profit, rose 71 percent from 1995 to 1996. Bonuses, however, decreased in both real terms as well as a percentage of total expenditures. Also, the large increase in

depreciation expense follows the revaluation upward of assets and consequent higher depreciation expense.

Table 9
Cheboksary Vodokanal Expense Comparison - 1995 and 1996

Expense	1995 (In 000 Rubles)	Percent of Total (%)	1996 (In 000 Rubles)	Percent of Total (%)	Change 1995 to 1996 (%)
Salaries	2,396,644	4	4,131,258	4	72
Bonuses	5,093,463	9	1,605,119	2	-68
Taxes and mandatory labor payments	3,227,370	6	2,553,320	3	-21
Electricity	10,886,559	20	17,155,638	19	58
Materials and chemicals	2,750,904	5	3,954,024	4	44
Repairs and maintenance	2,884,414	5	4,241,216	5	47
Biological cleaning	12,984,124	24	24,658,231	27	90
Taxes (excluding labor related)	982,212	2	1,548,290	2	58
Depreciation	8,810,011	16	22,436,073	24	155
Heating	1,343,472	2	2,236,245	2	66
General and admin.	578,323	1	727,725	1	26
Other Expenses	1,485,130	3	4,109,688	4	177
Total Operating Expenses	53,422,626	99	89,356,827	97	67
Expenses incurred from use of profit	466,895	1	2,714,895	3	481
Total Expenses	53,889,521	100	92,071,722	100	71

Note:

1) The biological cleaning line item represents the payment for wastewater treatment made by the Vodokanal to "Chimprom," a separate enterprise, for wastewater treatment services.

3.5 Balance Sheet Analysis

3.5.1 Accounts Receivable

Accounts receivable are generally fairly current. The total accounts receivable as of December 31, 1996, was 21.7 billion Rubles, representing 23 percent of the total amount billed for the year. Of this amount, 562 million Rubles or 2 percent of the total accounts receivable were

over one year in arrears. The accounts receivable between six months and one year in arrears is 4.2 billion Rubles or 19 percent of the total accounts receivable. Accounts receivable less than six months old amounted to 17 billion Rubles or 79 percent of the total accounts receivable.

Table 10 shows the Vodokanal's accounts receivable by customer category as of December 31, 1996. According to Vodokanal officials, 60 percent of these accounts receivable are owed by government enterprises.

Table 10
Accounts Receivable by Customer Category as of December 31, 1996
(In 000 Rubles)

Total	General Population	Budget Organizations	Enterprises
21,683,000	2,152,000	13,076,000	6,455,000
Percent of total	10%	60%	30%

3.5.2 Bad Debt Estimate

The Vodokanal does not currently write-off or put to into a reserve account a percentage of its accounts receivable as uncollectible. As of December 31, 1996, its accounts receivable was 21.7 billion Rubles. The amount of accounts receivable from budget organizations and enterprises may be bartered or offset as well as paid in cash. These two categories account for 90 percent of the accounts receivable. The Vodokanal is confident that all accounts receivable could be collected and it is unlikely that any of the debt will become uncollectible. Accounts receivable over one year old is only 2 percent of the total accounts receivable. Given the fact that Vodokanals can only write off the accounts receivable of bankrupt customers and that any other write-down of accounts receivable is allowed only after three years and that the accounts receivable over one year is a mere 2 percent, bad debt is considered negligible.

3.5.3 Accounts Payable

In 1996, accounts payable (including salaries, social taxes and other payables) grew by 17 percent from 9.7 billion Rubles at the beginning of the year to 12.3 billion at end of the year. Of this amount, only 2 percent is between six months to one year old. The balance or 98 percent is less than six months old.

3.6 Debt Capacity - Loan Scenarios and Requirements

In determining the Vodokanal's debt capacity for Russian Water and Wastewater Project comparison purposes, PADCO estimated its future revenue requirements and related tariff projections associated with two loan scenarios: 1) a loan for U.S. \$15.0 million; and 2) a loan

for U.S. \$32 million. The smaller amount is the loan amount currently being discussed with the World Bank, while the larger amount represents the full debt service capacity of the Vodokanal at its current approved profitability of 25 percent. Under both loan scenarios, modest efficiency gains are realized from the improvements in its operations and water and wastewater provided decreases as demand management programs (i.e., billing metered consumption) are implemented.

This section describes operational and financial projections for the Vodokanal over a 7 year period. The PADCO forecast model consists of three main sections: 1) tariff projection; 2) cash-flow; and 3) minimum cash collection requirements.

3.6.1 Tariff Projections

Under the model, annual average combined tariffs for years 1996 to 2004 are calculated that would support the indicated debt servicing. The main tariff assumptions include:

- The projected tariff reflects full cost recovery. All of the vodokanals expenses, including "out-of-profit" expenses (except for loan interest) are considered in the tariff as a production expense;
- Annually, 5% of the accounts receivable are written off against taxable income, in accordance with Russian legislation; and
- The loan, the vodokanal matching contribution, and VAT on the capital investment increases the vodokanal's fixed assets and is depreciated fully with the schedule equivalent to the loan repayment schedule.

Positive net profit is one of two main indicators of loan affordability in the model. The interest on the loan is assumed to be paid out of net-profit (in accordance with Russian legislation). Thus, the model calculates the net-profit that remains after the 5% bad debt write off, profit tax payment (including tax credit for investments) and necessary loan interest payment. Surplus net profit is not carried over. If the net profit is positive (1% of gross revenue or higher) throughout the loan repayment period then this is an indicator that the loan may be affordable - see below development fund discussion regarding second indicator.

In computing a new tariff level sufficient to cover production costs, debt service, and bad debts, it is worth drawing a distinction between the constant and variable components of the tariff cost structure. The distinction is made due to substantial differences in volatility of the two components. While the cost of the debt component can be projected into the future and will remain fixed with little variation over the life of the loan, other costs may vary within a considerably broader range depending on the overall production level of the service provider, internal operational efficiency, input costs, and the ability to collect payments. Long-term projections of marginal production costs are impractical and generally difficult to make. Thus, adjustments to the existing tariff levels should be made to reflect the variations in marginal production costs on an annual or as needed basis.

Tables 11 and 12 present the 7-year financial projections, and average cost and full cost tariff level for both scenarios. Additional tariff details and debt service requirements are set out in Appendix I.

Table 11
Loan Scenario I - Loan Amount Under Discussion (\$15 Million)

	Estimated Full Cost Recovery			
	1996	1997	2000	2004
Estimated Total Expenses (in 000 Rubles)	91,259,978	103,669,779	157,668,776	300,989,185
Average Cost per m ³ of Water/Wastewater	765	869	1,799	3,203
Full Cost Tariff per m ³ of Water/Wastewater	1,147	1,303	2,698	4,805

Notes:

- 1) Estimated Total Expenses does not include out-of-profit expenses such as bad debt write-offs, profit tax, and debt service interest payment.
- 2) Average cost of 1 m³ of water/wastewater does not include VAT.
- 3) Full cost average water/wastewater tariff includes 25% profitability and VAT.

Table 11 shows that by incorporating a debt of U.S. \$15.0 million into the Vodokanal's tariff structure, the tariff will rise by about 319 percent over a seven year period. Inflation, running at 15 percent per annum, and the two new components added to the structure of the tariff - debt service payments and bad debts - account for a significant portion of this tariff increase. It is worth emphasizing that the allowance for bad debts reduces the amount available for debt service interest repayment.

The projected rise in the average tariff would translate into tariff increases for all customer groups. Since the ability of enterprises and commercial organizations to cross subsidize residential consumers is already constrained by relatively high tariff levels, the most drastic increase would have to be borne by general population customers. For this customer category, who currently pay an average tariff of 400 Rubles per m³ of water/wastewater, their tariff would rise by 1,100 percent under the first scenario.

Table 12
Loan Scenario II - Debt Capacity at Current Profitability (\$32 Million)

	Estimated Full Cost Recovery			
	1996	1997	2000	2004
Estimated Total Expenses (in 000 Rubles)	91,259,978	103,669,779	157,668,776	329,578,097
Average Cost per m ³ of Water/Wastewater	765	869	1,799	3,508
Full Cost Tariff per m ³ of Water/Wastewater	1,147	1,303	2,698	5,261

Notes:

- 1) Estimated Total Expenses does not include out-of-profit expenses such as bad debt write-offs, profit tax, and debt service interest payment.
- 2) Average cost of 1 m³ of water/wastewater does not include VAT.
- 3) Full cost average water/wastewater tariff includes 25% profitability and VAT.

The second scenario, which incorporates the tariff schedule for a debt of U.S. \$32.0 million, indicates similar findings. Table 12 shows that by incorporating debt service for the agreed loan amount into the Vodokanal's tariff structure, the average tariff will rise by about 359 percent over a seven year period. For general population customers, their average tariff will rise 1,215 percent.

3.6.2 Cash Flow

Cash flow is a problem for all vodokanals assessed. In order to illustrate the limiting role which poor vodokanal cash flow can play, the following assumptions were built into the model:

- Vodokanal collected funds are used for payments in the following order: current year expenses; previous years' accounts payable; and development fund for investment/debt service;
- Overall vodokanal total collection rates use the actual 1996 figure for 1996 and increase 5% annually up to 95% (5% bad debt write off) and remain at 95% thereafter; and
- Surplus development fund balance is fully expended and is not carried over from one year to the next.

The development fund is an accounting convention permitted under Russian accounting rules consisting of monies available from depreciation and net cash flow for principal, vodokanal matching contribution, and investment related tax payments. Thus, the net development fund

balance must remain positive throughout the loan repayment period for the loan to be affordable. This is the second loan affordability indicator in the model.

While the Vodokanal receives 81 percent of what it bills, the Vodokanal actually underbills its customers due the low tariff structure it maintained through 1996. To compensate for this lost revenue, its collection rate for modeling purposes was adjusted to 59 percent. As the cash-flow schedules for the loan scenarios indicate, the Vodokanal's debt capacity is limited by its poor collection.

3.6.3 Cash Collection Requirement

Lastly, the model calculates the required minimum annual cash collection rate needed by the Vodokanal in order to satisfactorily pay those expenses which must be made in cash. This assumes:

- Certain proportions of some production expenses must be made in cash. Others may be paid in non-cash form (see "Overview" report for expense breakdown); and
- That cash payment will be required for all debt service related expenses, including the 10% vodokanal matching contribution and associate investment taxes.

Currently, the Vodokanal receives an adjusted 13 percent of what it collects in cash. The Vodokanal will be required to increase this percentage by the Year 2000 to at least 51 percent and 43 percent for Scenario I and II, respectively, in order to make timely debt repayments, and necessary operating expense payments.

3.6.4 Loan Feasibility

Under current conditions, i.e., the Vodokanal experienced a 12 percent loss in 1996, the Vodokanal is NOT in a position to service debt at any significant level and is not capable of sustaining its current operations. However, if the Vodokanal can increase tariffs to recover its costs, increase its overall collections, and increase its cash collections, the maximum loan level indicated by the PADCO loan feasibility model of \$32 million dollars could be borrowed by the Vodokanal, without any adjustments to its current profitability. At the same time, given the Vodokanal's past history and lack of debt servicing experience, it would be financially more prudent to pursue the smaller loan amount.

In connection with the Russian Federation Water and Wastewater Project loan implementation schedule, Table 13 outlines priority actions and an implementation time line for the Vodokanal to satisfy before long-term borrowing can realistically be initiated:

Table 13
Debt Service Priority Actions and Implementation Time Frame

Vodokanal Priority Action	Implementation Date	Corresponding Project Activity
<i>Collect at least 50 percent of all user charges in cash</i>	Within 3 months	Loan Appraisal
<i>Collect at least 80 percent of all billings</i>	Within 5 months	Board Presentation
<i>Bill full-cost tariffs</i>	Within 5 months	Board Presentation
<i>Meter at least 40 percent of all consumption</i>	Within 7 months	Negotiations
<i>Eliminate cross-subsidies</i>	Within 1 year	Loan Effectivity
<i>Expand the Housing Allowance Subsidy Program (HASP) to incorporate the participation of at least 20 percent of all local families</i>	Within 1 year	Loan Effectivity

Improve Cash Collections - Collect Directly From Population Customers

While the loan scenarios show the minimum required cash collection needed for debt servicing for the two scenarios, the Vodokanal should increase it to at least 50 percent by loan appraisal to improve its overall financial operations. Cash collections can be immediately improved by directly collecting from population customers, and experiencing slight increase in cash collections from budget organizations and enterprise customers. For example, if 90 percent of population (10 percent of total 1996 billings), 50 percent of all budget organization (25 percent of 1996 billings), and 45 percent of enterprise (65 percent of 1996 total billings) billings are received in cash the Vodokanal's cash collection rate would increase from 13 percent to 50 percent, the target noted in Table 13.

Increase Total Collections

Obviously, the steps taken towards increasing cash collections will improve total collections as well. More importantly, the target shown in Table 13 can be achieved by a combination of the Vodokanal billing full cost tariffs, see below, and maintaining the current collection rate (i.e., 81 percent of billed). Further actions at improving collections will need to be taken to achieve the 95% collection rate required to service debt. These are discussed in the longer term Action Plan presented earlier in Table 1.

Bill Full Cost Tariff

Table 8 showed that in 1996, the Vodokanal was unable to recover all of its costs, including out-of-profit expenses, from its user charges. Given this environment, it is unlikely that the Vodokanal will be able to successfully undertake debt service until it is given the ability to bill full cost tariffs. Full cost tariffs will include full depreciation (including for leased fixed assets), billing and collection costs, and interest for short-term production related interest loans. Only when the Vodokanal can demonstrate that it can recover all of its costs through its user charges, i.e., full cost tariffs, should it be eligible for loans.

Meter 40 Percent of Consumption

As a step towards full consumption metering, the Vodokanal should have metered at least 40 percent of consumption by the Negotiations stage of the Project. This target can be achieved if all enterprise (23 percent of 1996 Vodokanal water consumed) and budget organization customers (9 percent of 1996 water consumed) plus 12 percent of all general population customers (68 percent of total 1996 water consumed) are metered. Metering general population customers could be carried-out at the building or individual apartment level. For the Vodokanal, the 12 percent general population target would require metering only a few additional buildings, as 5 percent of the general population customer base already have meters installed.

Eliminate Cross Subsidies and Expand the Housing Allowance Subsidy Program

Achievement of these targets will require a sustained effort on behalf of the Cheboksary City Administration to publicize the HASP and to upgrade the capacity of HASP offices to service larger populations. Meeting this target however is crucial if the local government is serious about assisting the Vodokanal in improving cash collections and eliminating the inefficiencies and inequities created by the cross subsidy. By reducing enterprise general population cross subsidies, the Vodokanal likely to increase their cash collection. Currently, enterprises make only 16 percent (Table 18 of Appendix II) of their payments in cash. In addition, eliminating the cross subsidy and billing on metered consumption, the Vodokanal should experience the benefits of a demand management program; e.g., minimizing the need for further capacity. The expected increased subsidies could be financed out of reductions in general communal services subsidies to recipients of communal services.

The State Committee on Construction should negotiate the actual performance targets, including tariff increases, and financial reforms for the Vodokanal. These negotiations will determine the service provider's true debt carrying capacity. The PADCO model does not consider capital subsidies. The Vodokanal's debt carrying capacity may be improved if such capital subsidies were provided as part of the negotiation.

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B. Scenario II - Debt Capacity at Current Profitability - \$32 Million

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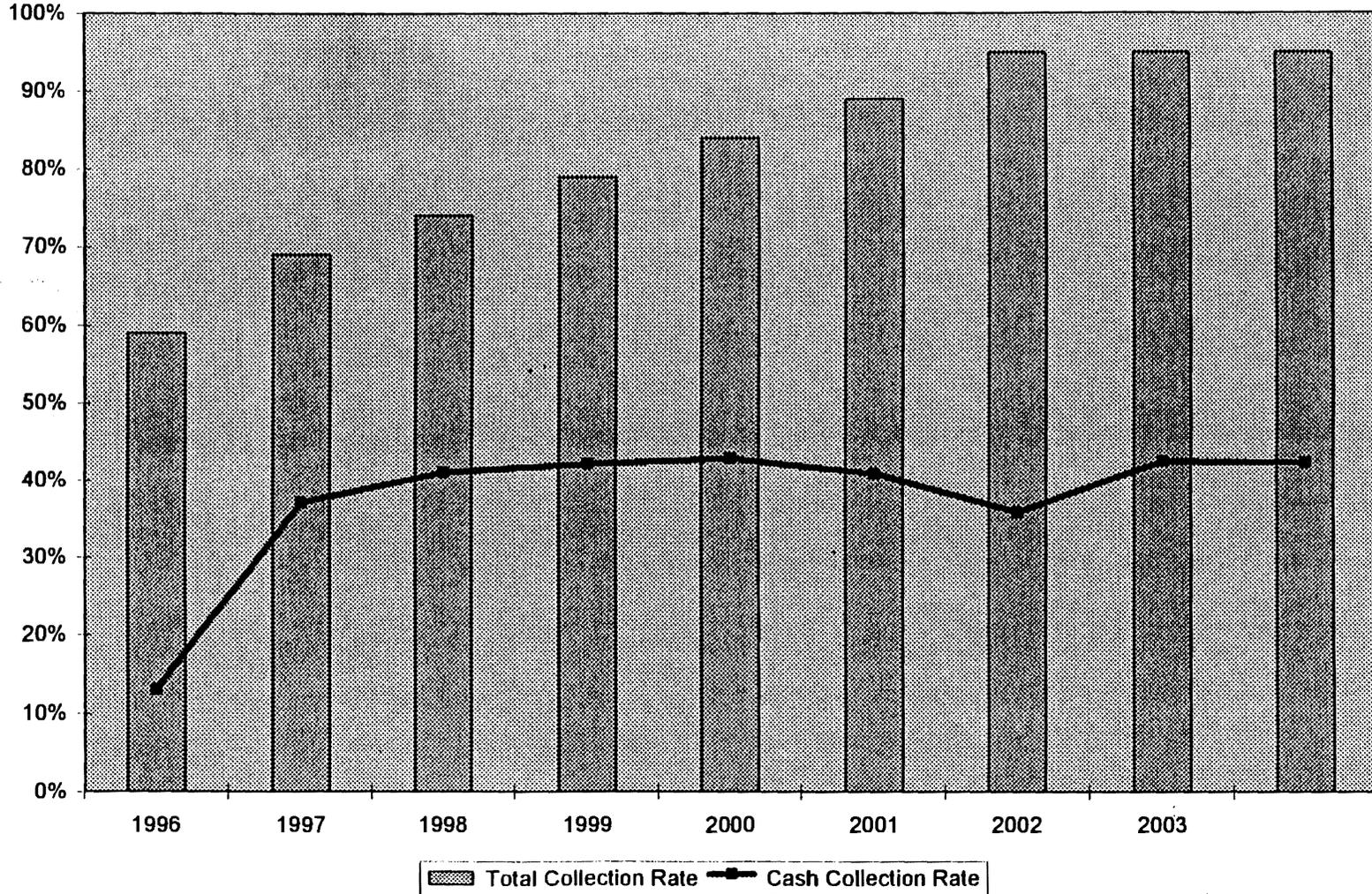
Appendix III - Assessment of the Vodokanal's Past and Current Financial Position

Cheboksary Vodokanal		COMPUTATION OF TARIFF LEVELS								
		Cheboksary Scenario I - Loan Amount Under Negotiations - \$15 Million								
<i>(in '000 Rubles)</i>		1996	1997	1998	1999	2000	2001	2002	2003	2004
Production Expenses:										
<i>Personnel</i>		6,464,102	7,433,717	8,548,775	9,831,091	11,305,755	13,001,618	14,951,881	17,194,640	18,773,838
<i>Energy</i>		17,155,638	19,728,984	22,688,331	26,091,581	30,005,318	34,506,116	39,682,033	45,634,338	52,479,489
<i>Chemicals and Materials</i>		3,301,256	3,796,444	4,365,911	5,020,798	5,773,917	6,640,005	7,636,006	8,781,407	10,098,618
<i>Repairs</i>		3,360,006	3,864,007	4,443,608	5,110,149	5,876,671	6,758,172	7,771,898	8,937,683	10,278,335
<i>Taxes Other Than Profit</i>		3,147,841	3,482,625	3,982,019	4,579,322	5,266,220	6,056,153	6,984,576	8,009,262	9,210,852
<i>Other Expenses</i>		33,491,911	38,515,698	44,293,052	50,937,010	58,577,562	67,364,196	77,468,825	89,089,149	102,452,521
<i>Billing and Collections (1)</i>		1,903,151	2,188,624	2,518,918	2,894,455	3,328,623	3,827,917	4,402,104	5,062,420	5,821,783
<i>Depreciation</i>		22,436,073	24,679,680	28,381,632	32,638,877	37,534,709	43,164,915	49,639,652	57,085,600	65,648,440
	+ Depreciation-Principal Debt Coverage (2)						13,481,914	15,234,563	17,082,710	19,110,235
	+ Depreciation of the 10% VKL Match and VAT (3)						4,314,212	4,875,080	5,460,087	6,115,275
	Total Expenses	91,269,978	103,669,779	119,220,246	137,103,283	157,668,776	199,115,216	228,626,578	262,317,276	300,889,186
<i>Volume of Water / Wastewater Sold (tm3)</i>		119,360	119,360	107,424	85,939	87,658	89,411	91,199	93,023	93,982
<i>Average Cost per m3</i>		765	869	1,110	1,595	1,799	2,227	2,507	2,820	3,203
<i>Profitability - percent of total expenses</i>		25%	25%	25%	25%	25%	25%	25%	25%	25%
<i>Average tariff plus profitability</i>		958	1,086	1,387	1,994	2,248	2,784	3,134	3,525	4,004
<i>Combined Tariff with VAT</i>		1,147	1,303	1,665	2,393	2,698	3,340	3,760	4,290	4,805
<i>Gross Revenue (4) (7)</i>		114,074,973	129,587,224	149,025,308	171,379,104	197,085,969	248,894,023	285,783,223	327,896,696	376,236,481
<i>Bad Debt Reserve (5)</i>		5,703,749	6,479,361	7,451,265	8,568,955	9,854,298	12,444,701	14,289,161	16,394,830	18,811,824
<i>Debt Service Interest Payment*</i>				1,934,586	4,333,472	7,280,233	10,968,865	12,285,151	13,759,370	12,383,433
<i>Gross Profitability</i>		17,111,248	19,438,084	22,353,796	26,706,866	29,662,895	37,334,103	42,867,483	49,184,489	56,435,472
<i>Estimated Profit Taxes (After Improvements Tax Credit)</i>		5,988,936	6,803,329	7,146,724	7,480,688	7,798,932	9,227,826	10,703,816	12,398,792	15,418,214
<i>Profit plus Capital Improvements Tax Credit (6)</i>		11,122,310	12,634,754	13,272,487	13,882,708	14,483,730	17,137,392	19,878,516	23,026,328	28,633,626

Cheboksary Vodokanal		COMPUTATION OF TARIFF LEVELS								
<i>Cheboksary Scenario I - Loan Amount Under Negotiations - \$15 Million</i>										
<i>(in '000 Rubles)</i>	1996	1997	1998	1999	2000	2001	2002	2003	2004	
Cash-Flow										
Accounts Receivable at the beginning of the year (8)	19,607,000	64,163,757	68,097,212	56,749,906	46,536,059	35,431,977	24,306,827	4,073,174	3,482,625	
Gross Revenue (including VAT for current year billing)	138,889,967	155,504,669	178,830,369	205,654,925	236,503,163	298,672,827	342,939,668	393,475,915	451,483,777	
- VAT (Current year billing)	22,814,995	25,917,445	29,805,062	34,275,821	39,417,194	49,778,805	57,156,645	65,579,319	75,247,298	
Collection Rate	59%	69%	74%	79%	84%	89%	95%	95%	95%	
Funds Collected (collection rate*(gross revenue+AR at the beg.))	92,333,211	151,571,214	182,726,410	207,299,816	237,752,947	297,353,276	348,884,360	377,671,634	432,218,082	
Accounts Receivable at the end of the period (8)	64,163,757	68,097,212	56,749,906	46,536,059	35,431,977	24,306,827	4,073,174	3,482,625	3,936,496	
Cash-Flow (collection-expenses-VAT-profit tax)	(27,730,898)	15,180,660	28,554,379	28,440,024	32,868,048	39,231,427	52,397,321	37,378,246	40,563,387	
Depreciation	22,436,073	24,679,680	28,381,632	32,838,877	37,534,709	60,961,041	69,749,275	79,608,378	90,873,951	
Addition to accounts payable	5,294,626	-	-	-	-	-	-	-	-	
Accounts payable at beginning of period	9,681,131	14,976,756	-	-	-	-	-	-	-	
Development fund (Cashflow plus depreciation)	(5,294,625)	39,880,341	54,938,011	61,078,902	70,402,755	100,192,468	122,146,596	116,984,824	131,437,338	
Funds available (Development fund-accounts payable) - (9)	(14,975,756)	24,884,584	54,938,011	61,078,902	70,402,755	100,192,468	122,146,596	116,984,824	131,437,338	
Loan requirements										
10% matching	-	-	2,399,040	2,688,925	3,009,358	3,370,478	-	-	-	
Taxes associated with capital investment	-	-	6,597,360	7,389,043	8,276,728	9,268,816	-	-	-	
Development fund balance	(14,975,756)	24,884,584	45,939,811	51,002,934	59,117,870	87,553,174	122,146,596	116,984,824	131,437,338	
Loan Repayment										
Net debt service	-	-	1,727,309	3,889,172	8,500,206	9,706,978	10,968,885	29,347,862	31,493,688	
Development fund balance after debt service (10)	(14,975,756)	24,884,584	44,212,302	47,133,782	52,617,462	77,846,196	111,177,711	87,836,762	99,943,670	
Cash Collection Rate (required)										
Collected in Cash	13%	37%	41%	42%	43%	41%	38%	42%	42%	
Expenses that should be paid in cash (11)	49,096,015	56,179,848	74,991,981	87,484,631	101,953,778	121,494,074	124,990,274	160,441,750	182,746,980	
Cash Balance	(37,092,687)	-	-	-	-	0	-	-	-	
Notes:										
1. Costs associated with billing and collection services are estimated to be 2% of general population billings.										
2. Depreciation to cover principle debt coverage is assumed to be sufficient to carry out principle payments										
3. The 10% match of the VKL and the VAT associated with the project expenditures are depreciated over the life of the loan.										
4. Gross revenue is calculated using the volume sold times the average cost per m3										
5. Bad debt write off is assumed to be 5% of the total amount billed										
6. An investment tax credit is assumed to be granted. This amounts to one-half the profit tax or 18% of profit										
7. Revenues reflect drops in volumes of water and wastewater as a result of efficiencies and metering: 1998-10%; 1999 - 20%, then a gradual increase in volumes at 2% growth rate thereafter.										
8. Accounts receivable in 1998 and thereafter includes allowance for bad debts that is written off										
9. The Development Fund available for investment is the balance that remains after paying current plus previous accounts payable.										
10. All surplus funds remaining in the Development Fund are assumed to be spent on other projects during the financial year. No funds are carried over to the next year.										
11. Includes portions of all expenses plus taxes that must be paid in cash plus 10% matching funds, project associated taxes and net debt service										

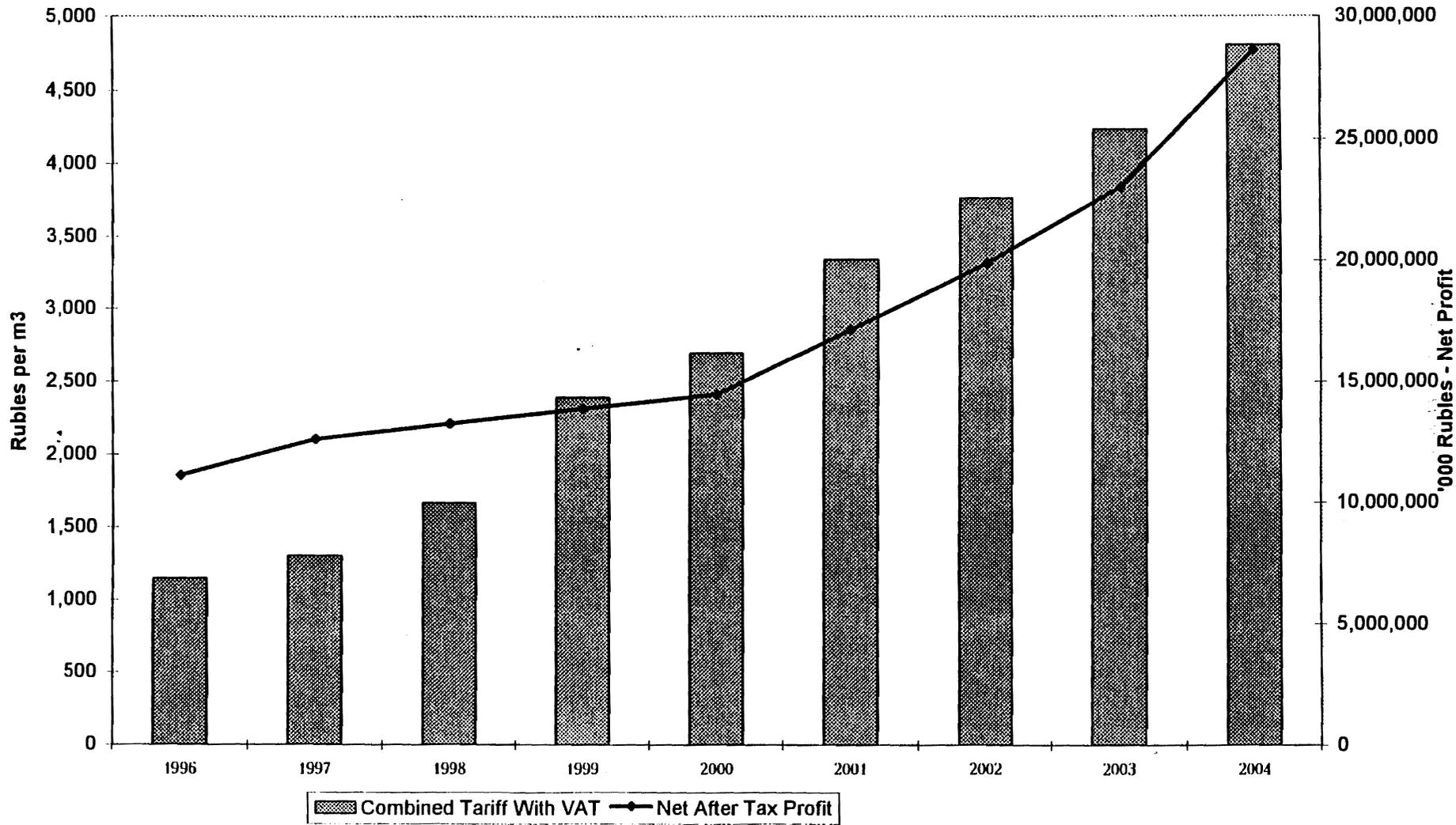
TOTAL COLLECTION RATES AND CASH COLLECTION RATES

Cheboksary Scenario I - Loan Amount Under Negotiations - \$15 Million



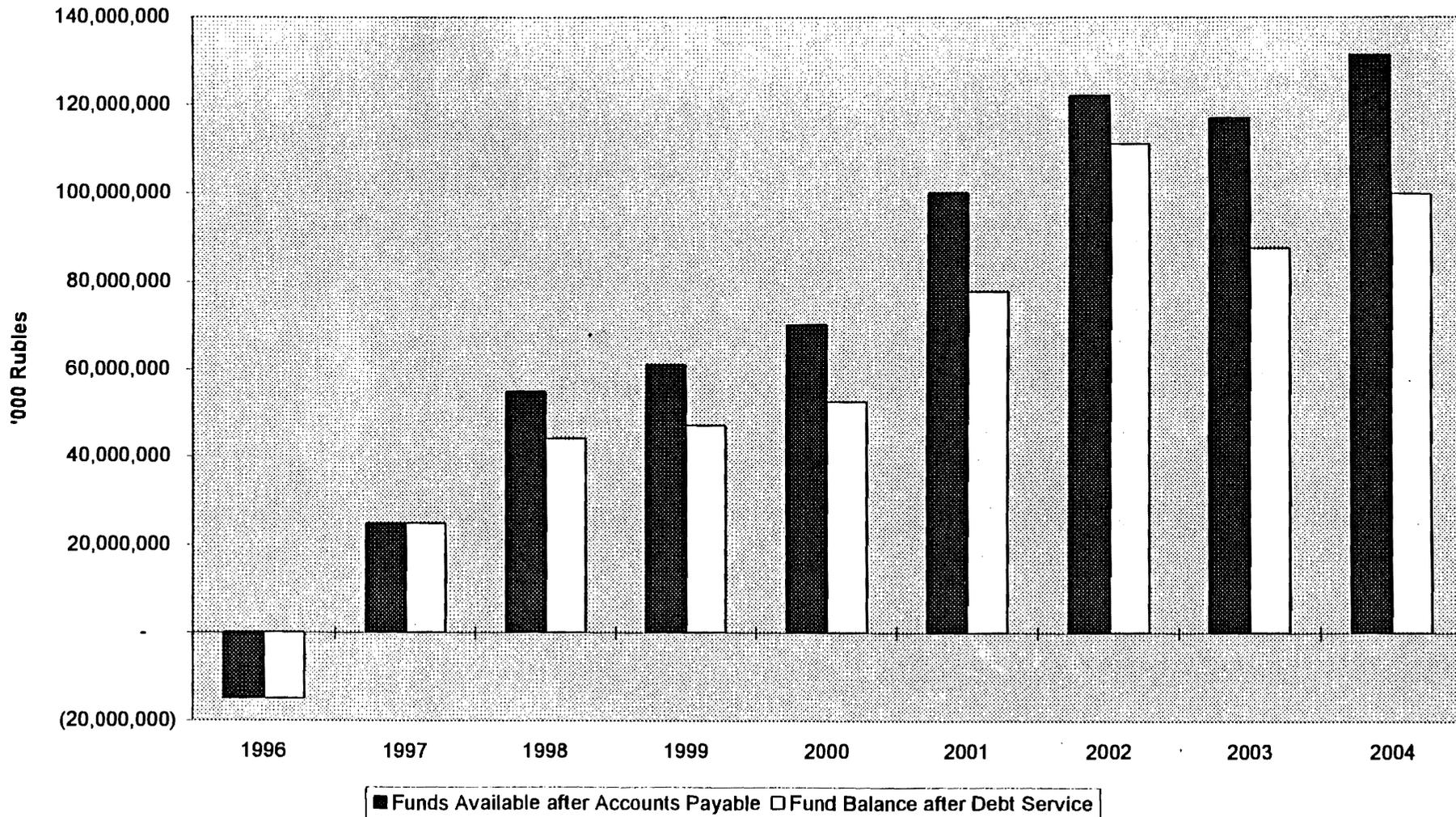
COMBINED TARIFF WITH VAT AND NET PROFIT

Cheboksary Scenario I - Loan Amount Under Negotiations - \$15 Million



DEVELOPMENT FUND BALANCE

Cheboksary Scenario I - Loan Amount Under Negotiations - \$15 Million

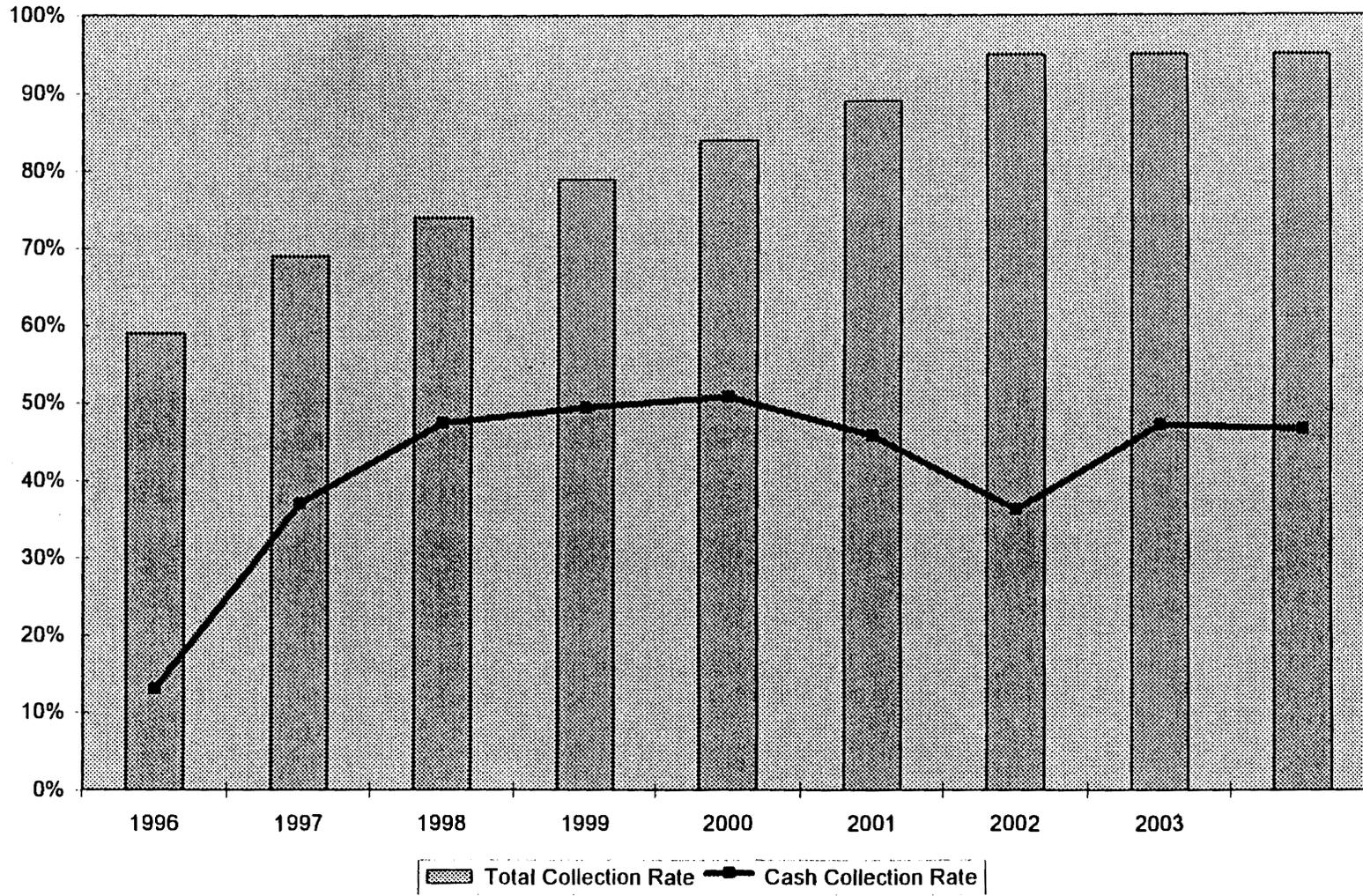


Cheboksary Vodokanal		COMPUTATION OF TARIFF LEVELS								
		<i>Cheboksary Scenario II - Debt Capacity at Current Profitability - \$32 Million</i>								
<i>(in '000 Rubles)</i>	1996	1997	1998	1999	2000	2001	2002	2003	2004	
Production Expenses:										
Personnel	6,464,102	7,433,717	8,548,775	9,831,091	11,305,755	13,001,618	14,951,861	17,194,640	19,773,838	
Energy	17,155,638	19,728,984	22,688,331	26,091,581	30,005,318	34,506,116	39,682,033	45,634,338	52,479,489	
Chemicals and Materials	3,301,256	3,796,444	4,365,911	5,020,798	5,773,917	6,640,005	7,636,006	8,781,407	10,098,618	
Repairs	3,360,006	3,864,007	4,443,608	5,110,149	5,876,671	6,758,172	7,771,898	8,937,683	10,278,335	
Taxes Other Than Profit	3,147,841	3,482,625	3,982,019	4,579,322	5,268,220	6,058,153	6,964,576	8,009,262	9,210,652	
Other Expenses	33,491,911	38,515,698	44,293,052	50,937,010	58,577,562	67,364,198	77,468,825	89,089,149	102,452,521	
Billing and Collections (1)	1,903,151	2,188,624	2,516,918	2,894,455	3,328,623	3,827,917	4,402,104	5,062,420	5,821,783	
Depreciation	22,436,073	24,678,680	28,381,632	32,638,877	37,534,709	43,164,915	49,639,652	57,085,600	65,648,440	
+ Depreciation-Principal Debt Coverage (2)						28,761,416	32,500,400	36,400,448	40,768,502	
+ Depreciation of the 10% VKL Match and VAT (3)						9,203,853	10,400,128	11,848,143	13,045,921	
Total Expenses	91,269,978	103,669,779	119,220,246	137,103,283	157,668,776	219,284,161	261,417,484	287,843,091	329,678,097	
Volume of Water / Wastewater Sold (tm3)	119,380	118,360	107,424	85,939	87,658	89,411	91,199	93,023	93,982	
Average Cost per m3	765	869	1,110	1,595	1,799	2,453	2,757	3,094	3,508	
Profitability - percent of total expenses	25%	25%	25%	25%	25%	25%	25%	25%	25%	
Average tariff plus profitability	956	1,086	1,387	1,994	2,248	3,066	3,446	3,868	4,384	
Combined Tariff with VAT	1,147	1,303	1,665	2,393	2,698	3,679	4,135	4,641	5,261	
Gross Revenue (4) (7)	114,074,973	129,587,224	148,026,308	171,379,104	197,085,969	274,105,202	314,271,855	359,803,884	411,972,621	
Bad Debt Reserve (5)	5,703,749	6,478,361	7,451,265	8,588,955	9,854,298	13,705,260	15,713,593	17,990,193	20,598,631	
Debt Service Interest Payment*			4,127,116	9,244,741	15,531,165	23,400,288	26,208,323	29,353,322	26,417,989	
Gross Profitability	17,111,246	19,438,084	22,353,796	26,706,866	29,662,895	41,115,780	47,140,776	53,970,580	61,795,893	
Estimated Profit Taxes (After Improvements Tax Credit)	5,988,938	6,803,329	6,379,338	5,761,744	5,173,507	7,195,262	8,249,638	9,444,851	12,382,266	
Profit plus Capital Improvements Tax Credit (6)	11,122,310	12,634,754	11,847,342	10,700,381	8,858,224	10,520,230	12,682,819	15,172,407	22,995,637	

Cheboksary Vodokanal		COMPUTATION OF TARIFF LEVELS								
<i>(in '000 Rubles)</i>		<i>Cheboksary Scenario II - Debt Capacity at Current Profitability - \$32 Million</i>								
	1996	1997	1998	1999	2000	2001	2002	2003	2004	
Cash-Flow										
Accounts Receivable at the beginning of the year (8)	19,607,000	64,163,757	68,097,212	56,749,906	46,536,059	35,431,977	26,374,144	4,461,426	3,821,110	
Gross Revenue (including VAT for current year billing)	136,889,967	155,504,669	178,830,369	205,654,925	236,503,163	328,926,242	377,126,226	431,764,636	494,367,145	
VAT (Current year billing)	22,814,995	25,917,445	29,805,062	34,275,821	39,417,194	54,821,040	62,854,371	71,960,773	82,384,524	
Collection Rate	58%	69%	74%	79%	84%	89%	95%	95%	95%	
Funds Collected (collection rate*(gross revenue+AR at the beg.))	92,333,211	161,571,214	182,726,410	207,299,818	237,762,947	324,278,815	383,325,362	414,414,759	473,278,842	
Accounts Receivable at the end of the period (8)	64,163,757	68,097,212	56,749,908	46,536,059	35,431,977	26,374,144	4,461,426	3,821,110	4,310,782	
Cash-Flow (collection-expenses-VAT-profit tax)	(27,730,698)	15,180,660	27,321,764	30,158,968	35,493,471	42,978,352	60,803,860	45,186,044	48,923,955	
Depreciation	22,438,073	24,679,680	28,381,632	32,638,877	37,534,709	81,129,885	92,540,181	105,134,192	119,482,883	
Addition to accounts payable	5,294,625	-	-	-	-	-	-	-	-	
Accounts payable at beginning of period	9,681,131	14,976,756	-	-	-	-	-	-	-	
Development fund (Cashflow plus depreciation)	(5,294,625)	39,860,341	55,703,397	62,797,846	73,028,180	124,108,336	153,344,041	150,300,238	168,386,818	
Funds available (Development fund-accounts payable) - (9)	(14,975,756)	24,884,584	55,703,397	62,797,846	73,028,180	124,108,338	153,344,041	150,300,238	168,386,818	
Loan requirements										
10% matching	-	-	5,117,952	5,732,108	6,419,959	7,190,354	-	-	-	
Taxes associated with capital investment	-	-	14,074,368	15,763,292	17,654,887	19,773,474	-	-	-	
Development fund balance	(14,975,756)	24,884,584	38,511,077	41,302,447	48,953,333	97,144,509	153,344,041	150,300,236	168,386,818	
Loan Repayment										
Net debt service	-	-	3,684,925	8,254,233	19,867,111	20,708,220	23,400,288	62,808,771	67,186,492	
Development fund balance after debt service (10)	(14,975,758)	24,884,584	32,826,151	33,048,214	35,086,222	76,436,289	129,943,753	87,691,465	101,200,327	
Cash Collection Rate (required)										
Collected in Cash	13%	37%	47%	49%	51%	46%	38%	47%	47%	
	12,003,317	56,179,848	86,761,825	102,429,650	120,797,730	148,324,684	139,043,451	195,416,416	220,495,444	
Payment Cash Rate										
Expenses that should be paid in cash (11)	54%	54%	61%	61%	62%	56%	51%	56%	56%	
	49,096,015	56,179,848	88,761,825	102,429,650	120,797,730	148,324,684	139,043,451	195,416,416	220,495,444	
Cash Balance	(37,082,697)	-	-	-	-	-	-	-	-	
Notes:										
1 Costs associated with billing and collection services are estimated to be 2% of general population billings										
2 Depreciation to cover principle debt coverage is assumed to be sufficient to carry out principle payments										
3 The 10% match of the VKL and the VAT associated with the project expenditures are depreciated over the life of the loan										
4 Gross revenue is calculated using the volume sold times the average cost per m ³										
5 Bad debt write off is assumed to be 5% of the total amount billed										
6 An investment tax credit is assumed to be granted This amounts to one-half the profit tax or 18% of profit										
7 Revenues reflect drops in volumes of water and wastewater as a result of efficiencies and metering 1998-10%; 1999 - 20%, then a gradual increase in volumes at 2% growth rate thereafter										
8 Accounts receivable in 1998 and thereafter includes allowance for bad debts that is written off										
9 The Development Fund available for investment is the balance that remains after paying current plus previous accounts payable										
10 All surplus funds remaining in the Development Fund are assumed to be spent on other projects during the financial year No funds are carried over to the next year										
11 Includes portions of all expenses plus taxes that must be paid in cash plus 10% matching funds, project associated taxes and net debt service										

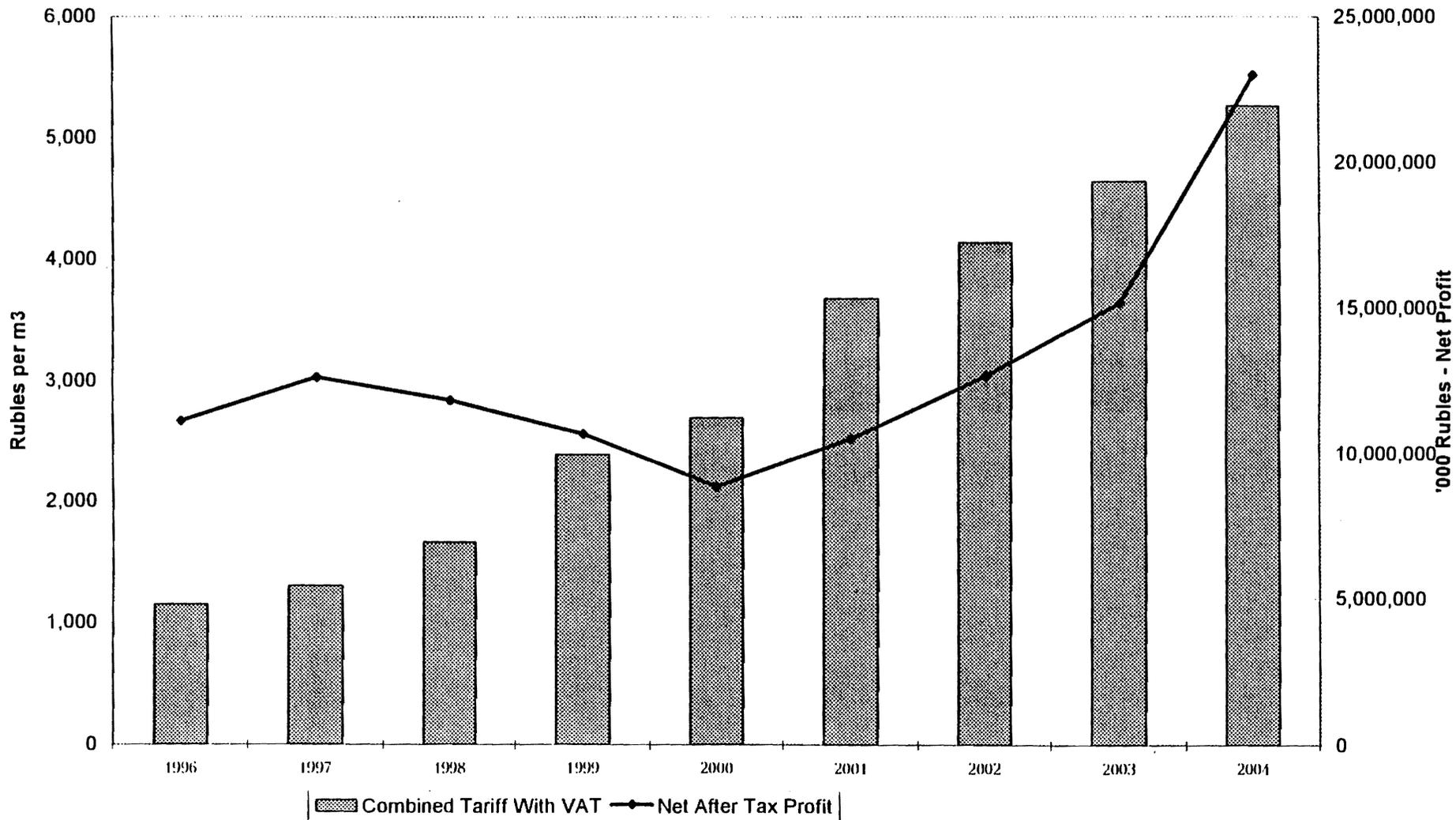
TOTAL COLLECTION RATES AND CASH COLLECTION RATES

Cheboksary Scenario II - Debt Capacity at Current Profitability - \$32 Million



COMBINED TARIFF WITH VAT AND NET PROFIT

Cheboksary Scenario II - Debt Capacity at Current Profitability - \$32 Million



DEVELOPMENT FUND BALANCE

Cheboksary Scenario II - Debt Capacity at Current Profitability - \$32 Million

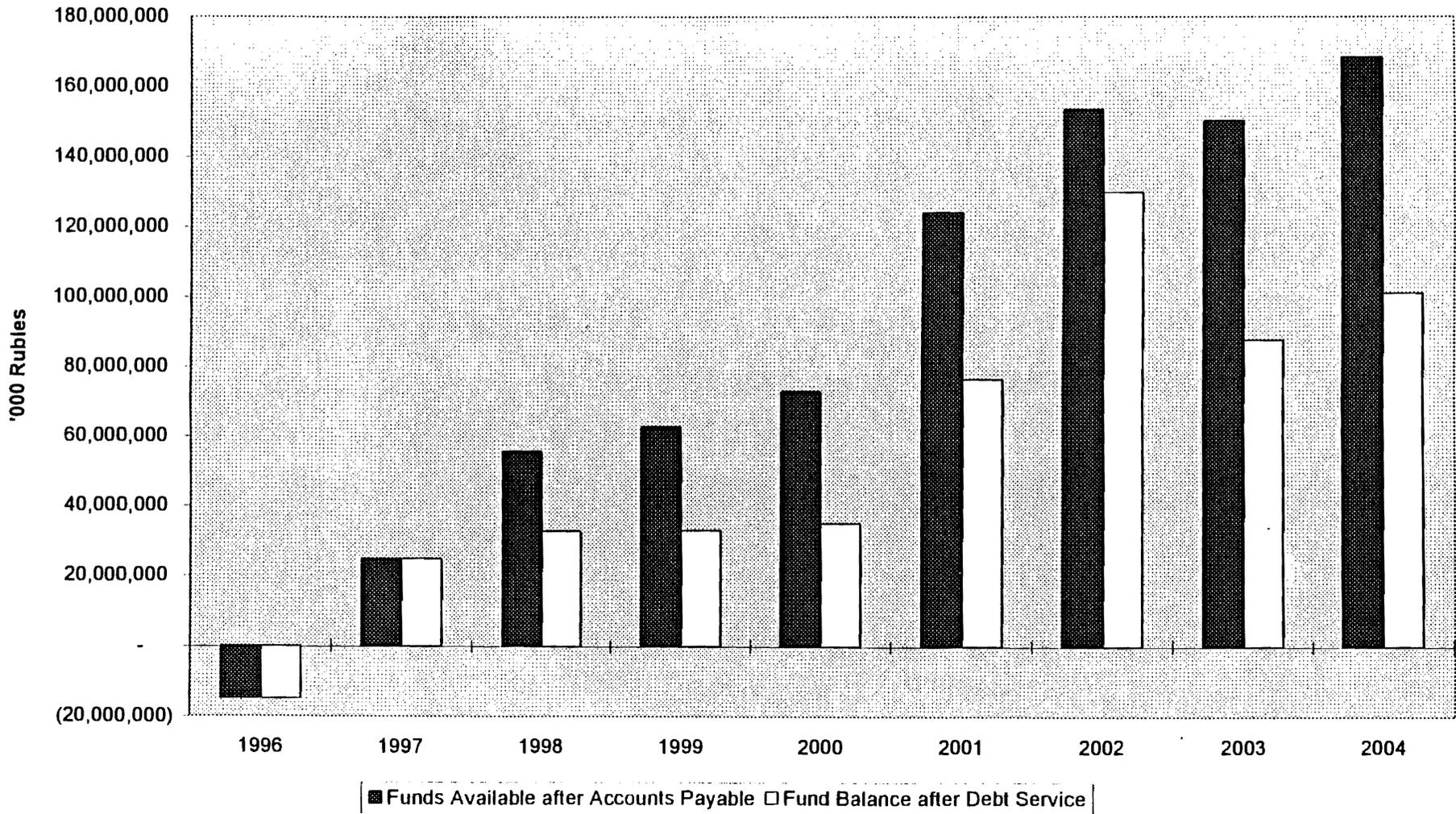


TABLE 1
CHEBOKSARY VODOKANAL
TRIAL BALANCE AS OF JANUARY 1, 1995 AND DECEMBER 31, 1995
(000 RUBLES)

Code Name of Account	JANUARY 1, 1995		DECEMBER 31, 1995 (Cash Basis)		DECEMBER 31, 1995 (Accrual Basis)				ADJUSTED TRIAL BALANCE DEC 31/95	
	Debits	Credits	Debits	Credits	Debits	Credits	Debits	Credits	Debits	Credits
1 Fixed assets	68,338,884		271,757,038		718,563,038		446,806,000		718,563,038	0
2 Provision for depreciation		33,116,790		139,913,900		369,403,900		229,490,000	0	369,403,900
4 Intangible assets			2,181		2,181				2,181	0
5 Depreciation intangible assets				559		559			0	559
6 Long term investments	192,500		192,500		192,500				192,500	0
8 Capital investments			266,845		266,845				266,845	0
10 Stores & supplies	819,456		2,323,152		2,323,152				2,323,152	0
12 Stores, consumables	99,183		412,879		412,879				412,879	0
13 Depreciation consumables		31,349		256,682		256,682			0	256,682
16 Deviation.VAT	44,698		105,453		105,453				105,453	0
19 VAT	232,814		220,528		220,528				220,528	0
23 Auxiliary departments			753		753				753	0
31 Deferred expenses	5,621		27,666		27,666				27,666	0
45 Shipped goods	2,707,962		12,406,649				(12,406,649)		0	0
50 Cash on hand	248		110		110				110	0
51 Cash at bank	138,007		43,087		43,087				43,087	0
58 Short term investments			184,000		184,000				184,000	0
60 Settlement suppliers	217,299	51,081	2,937,832	311,144	2,937,832	311,144			2,937,832	311,144
62 Settlement purchases/customers	6,288	9,467	57,336	3,877	19,607,024	3,877	19,549,688		19,607,024	3,877
65 Settlement insurance		3,831		5,716		5,716			0	5,716
67 Non-budget funds		88,206		414,919		414,919			0	414,919
68 Budgetary funds	62,879	559,770	292,650	1,559,701	292,650	4,949,740	3,390,039		292,650	4,949,740
69 Settlement social insurance		139,699		403,015		403,015			0	403,015
70 Settlement personnel	1,198	354,609	3,404	679,311	3,404	679,311			3,404	679,311
73 Settlement others			407		407				407	0
76 Settlement debtors/creditors	32,468	1,107,550	44,295	2,887,403	44,295	2,887,403			44,295	2,887,403
77 Settlement branches		4,991		26,006		26,006			0	26,006
79 Settlement management	6,516		11,602		11,602				11,602	0
85 Authorized capital		58,292		58,292		58,292			0	58,292
87 Additional capital		36,968,136		140,199,945		356,855,945	216,656,000		0	356,855,945
88 Retained profit		413,093		4,583,314		8,996,314	4,413,000		0	8,996,314
96 Target financing	843		13,417		13,417				13,417	0
TOTAL	72,906,864	72,906,864	291,303,784	291,303,784	745,252,823	745,252,823	453,949,039	453,949,039	745,252,823	745,252,823

Source: Cheboksary Vodokanal trial balance as of January 1 and December 31, 1995.

Note: (1) Details of subsequent journal entries shown separately.

(2) Accounting by Vodokanal was done on a cash basis in 1995. Trial balance was converted to an accrual basis by passing a subsequent journal entry.

TABLE 2
CHEBOKSARY VODOKANAL
TRIAL BALANCE AS OF DECEMBER 31, 1996
(000 RUBLES)

Code	Name of Account	DECEMBER 31, 1996	
		Debits	Credits
1	Fixed assets	722,174,790	
2	Provision for depreciation		391,288,503
4	Intangible assets	212,375	
5	Depreciation intangible assets		1,046
6	Long term investments	192,500	
8	Capital investments	798,088	
10	Stores & supplies	4,914,842	
12	Stores, consumables	1,026,676	
13	Depreciation consumables		779,171
16	Deviation.VAT	201,814	
19	VAT	882,555	812
23	Auxiliary departments		
31	Deferred expenses	48,167	
48	Sale of assets		502
50	Cash on hand	1,511	
51	Cash at bank	457,096	
56	Deposits	1,600	
57	Bank balance in frozen a/c	1,253,756	
58	Short term investments	7,000	
60	Settlement suppliers	2,698,776	5,132,083
62	Settlement purchases/customers	21,683,189	
64	Advances received		964,166
65	Settlement insurance		9,098
67	Non.budget funds		269,610
68	Budgetary funds	751,759	462,734
69	Settlement social insurance		663,977
70	Settlement personnel	10,081	298,404
73	Settlement others		356
76	Settlement debtors/creditors	326,304	4,502,094
77	Settlement in branch		
79	Settlement management	12,104	
85	Authorized capital		58,292
87	Additional capital		355,276,768
88	Retained profit	4,405,830	2,363,971
96	Target financing	10,774	
	TOTAL	762,071,587	762,071,587

Source : Cheboksary Vodokanal trial balance as of December 31, 1996.

Note : (1) Details of subsequent journal entries shown separately.

(2) Accounting by Vodokanal was done on an accrual basis in 1996.

TABLE 3
CHEBOKSARY VODOKANAL
CONNECTION OF THE TRIAL BALANCE AND BALANCE SHEETS AS OF JANUARY 1, 1995
AND DECEMBER 31, 1995
(000 RUBLES)

Code Name of Account	JANUARY 1, 1995	DECEMBER 31, 1995
1 Fixed assets	68,338,884	718,563.038
2 Provision for depreciation	(33,116,790)	(369,403.900)
4 Intangible assets		2,181
5 Depreciation intangible assets		(559)
INTANGIBLE ASSETS (NET)		1,622
6 Long term Investments	192,500	192,500
8 Capital investments		266,845
10 Stores & supplies	819,456	2,323,152
12 Stores. consumables	99,183	412,879
13 Depreciation consumables	(31,349)	(256,682)
INVENTORIES	887,290	2,479,349
16 Deviation. VAT	44,698	105,453
19 VAT	232,814	220,528
VAT ON MATERIALS	277,512	325,981
23 Auxiliary departments		753
31 Deferred expenses	5,621	27,666
DEFERRED EXPENSES		28,419
45 Shipped goods	2,707,962	
50 Cash on hand	248	110
51 Cash at bank	138,007	43,087
BANK & CASH BALANCES	138,255	43,197
58 Short term investments		184,000
62 Settlement customers (a/c receivable)	6,288	19,607.024
60 Settlement suppliers	217,299	2,937,832
68 Budgetary funds	62,879	292,650
70 Settlement personnel	1,198	3,404
73 Settlement others		407
76 Settlement debtors/creditors	32,468	44,295
79 Settlement management	6,516	11,602
OTHER RECEIVABLES	320,360	3,290,190
96 Target financing	843	13,417
CREDIT BALANCES:		
60 Settlement suppliers	51,081	311,144
62 Settlement purchases/customers	9,467	3,877
ACCOUNTS PAYABLE	60,548	315,021
65 Settlement insurance	3,831	5,716
76 Settlement debtors/creditors	1,107,550	2,887,403
77 Settlement. branch	4,991	26,006
OTHER PAYABLES	1,116,372	2,919,125
67 Non. budget funds	88,206	414,919
68 Budgetary funds	559,770	4,949,740
69 Settlement social insurance	139,699	403,015
SOCIAL TAXES PAYABLE	787,675	5,767,674
70 Settlement personnel	354,609	679,311
85 Authorized capital	58,292	58,292
87 Additional capital	36,968,136	356,855,945
88 Retained profit	413,093	8,996,314

Source : Cheboksary Vodokanal trial balance as of January 1 and December 31, 1995.

TABLE 4
CHEBOKSARY VODOKANAL
CONNECTING OF THE TRIAL BALANCE AND BALANCE SHEET
AS OF DECEMBER 31, 1996
(000 RUBLES)

Code	Name of Account	1996
1	Fixed assets	722,174,790
2	Provision for depreciation	(391,288,503)
4	Intangible assets	212,375
5	Depreciation intangible assets	(1,046)
	INTANGIBLE ASSETS (NET)	211,329
6	Long term Investments	192,500
8	Capital investments	798,088
10	Stores & supplies	4,914,842
12	Stores, consumables	1,026,676
13	Depreciation consumables	(779,171)
	INVENTORIES	5,162,347
16	Deviation.VAT	201,814
19	VAT	881,743
	VAT ON MATERIALS	1,083,557
31	Deferred expenses	48,167
48	Sale of assets	(502)
	DEFERRED EXPENSES	47,665
50	Cash on hand	1,511
51	Cash at bank	457,096
57	Bank balance in frozen account	1,253,756
	BANK & CASH BALANCES	1,712,363
56	Deposits	1,600
58	Short term investments	7,000
	DEPOSITS	8,600
62	Settlement customers	21,683,189
60	Settlement suppliers	2,698,776
68	Budgetary funds	751,759
70	Settlement personnel	10,081
76	Settlement debtors/creditors	326,304
79	Settlement management	12,104
	OTHER RECEIVABLES	3,799,024
CREDIT BALANCES:		
60	ACCOUNTS PAYABLE	5,132,083
64	Advances received	964,166
65	Settlement insurance	9,098
67	Non.budget funds	269,610
68	Budgetary funds	462,734
69	Settlement social insurance	663,977
	SOCIAL TAXES PAYABLE	1,405,419
70	Settlement personnel	298,404
73	Settlement others	356
76	Settlement creditors	4,502,094
	OTHER PAYABLES	4,502,450
85	Authorized capital	58,292
87	Additional capital	355,276,768
88	Retained profit (debit)	2,041,859
96	Target financing (debit)	10,774

Source : Cheboksary Vodokanal trial balance as of December 31, 1996.

TABLE 5
CHEBOKSARY VODOKANAL
BALANCE SHEET AS OF DECEMBER 31, 1995
(000 RUBLES)

Codes	Note	As of December 31/95 (accrual)	As of December 31/94 (cash basis)
1	Fixed assets	1 718,563,038	68,338.884
2	Less Provision for depreciation	2 (369,403,900)	(33,116.790)
		----- 349,159.138	
4	Intangible assets	1,622	
6	Long term investment	3 192,500	192,500
8	Capital investment	4 266,845	
	CURRENT ASSETS		
10/12/13	Inventories	5 2,479,349	887,290
45	Shipped goods		2,707,962
16/19	VAT on materials	6 325,981	277,512
62	Accounts receivable	7 19,607,024	6,288
60/68/70/73/76/79	Other receivables	8 3,290,190	320,360
58	Short term investment	9 184,000	
50/51	Bank and cash balances	10 43,197	138,255
		----- 25,929,741	----- 4,337,667
	DEDUCT: CURRENT LIABILITIES		
60/62	Accounts payable	315,021	60,548
70	Salaries payable	679,311	354,609
67/68/69	Social taxes payable	5,767,674	787,675
65/76/77	Other payables	11 2,919,125	1,116,372
		----- 9,681,131	----- 2,319,204
	WORKING CAPITAL	12 16,248,610	2,018,463
	TOTAL NET ASSETS	----- 365,868,715	----- 37,433,057
	FINANCED BY:		
85	Authorized capital	58,292	58,292
87	Revaluation surplus	13 356,855,945	36,968,136
88	Retained profits	8,996,314	413,093
23/31	Deferred expenses	(28,419)	(5,621)
96	Target financing	(13,417)	(843)
		----- 365,868,715	----- 37,433,057

Note: Figures from Cheboksary trial balance. Figures of Cheboksary financial statement have been connected through the connection table.

TABLE 6
CHEBOKSARY VODOKANAL
BALANCE SHEET AS OF DECEMBER 31, 1996
(000 RUBLES)

Codes	Note	As of December 31/96 (accrual)
1	Fixed assets	1 722,174,790
2	Less Provision for depreciation	2 (391,288,503)
		330.886.287
4	Intangible assets	211.329
6	Long term investment	3 192.500
8	Capital investment	4 798.088
	CURRENT ASSETS	
10/12/13	Inventories	5 5,162.347
16/19	VAT on materials	6 1,083,557
62	Accounts receivable	7 21,683,189
60/68/70/76/79	Other receivables	8 3,799,024
56/58	Deposits	8,600
57	Bank balance in frozen account	9 1,253,756
50/51	Bank and cash balances	10 458,607
		33,449,080
	DEDUCT: CURRENT LIABILITIES	
60	Accounts payable	5,132,083
70	Salaries payable	298,404
65/67/68/69	Social taxes payable	1,405,419
73/76	Other payables	11 4,502,450
64	Advances received	964,166
		12,302,522
	WORKING CAPITAL	12 21.146.558
	TOTAL NET ASSETS	353.234.762
	FINANCED BY:	
85	Authorized capital	58.292
87	Revaluation surplus	13 355.276.768
88	Retained profits	(2.041.859)
31/48	Deferred expenses	(47.665)
96	Target financing	(10.774)
		353.234.762

Source : Figures from Cheboksary trial balance. Figures of Cheboksary financial statement have been connected through the connection table.

TABLE 7
CHEBOKSARY VODOKANAL
NOTES TO ACCOUNTS
(000 RUBLES)

NOTE 1	1995	1996
Fixed Assets		
Ledger balance on December 31, 1995/96	68,338,884	271,757,038
Revaluation on January 1, 1995/96	200,800,905	446,806,000
	-----	-----
Sub Total	269,139,789	718,563,038
Purchases during year	2,757,192	4,437,592
Deduct: Assets written off	(139,943)	(825,840)
	-----	-----
Ledger balance on December 31, 1995/96	271,757,038	722,174,790
	-----	-----
NOTE 2		
Provision for Depreciation		
Ledger balance on December 31, 1995/96	33,116,790	139,913,900
Depreciation on revaluation on January 1, 1995/96	98,074,007	229,490,000
	-----	-----
Sub Total	131,190,797	369,403,900
Depreciation on 1995 revaluation		
Depreciation for the year	8,844,603	22,536,951
Deduct: Depreciation on assets written off	(121,500)	(652,348)
	-----	-----
Ledger balance on December 31, 1995/96	139,913,900	391,288,503

TABLE 8
CHEBOKSARY VODOKANAL
JOURNAL ENTRIES PASSED TO RESTATE ANNUAL ACCOUNTS - 1995
(000 RUBLES)

JV#01/95		
01 Fixed assets	446,806,000	
02 Provision for depreciation		229,490,000
87 Revaluation surplus		216,656,000
45 Shipped goods		12,406,649
62 Settlement - customers	19,549,688	
68 Budgetary funds payable		3,390,039
88 Retained profit		4,413,000
	-----	-----
	466,355,688	466,355,688

Journal entry required to convert the Balance Sheet of the Vodokanal prepared on a cash basis in 1995, to a Balance Sheet reflecting figures on an accrual basis.

TABLE 9
CHEBOKSARY VODOKANAL
PROFIT AND LOSS ACCOUNT FOR THE YEAR ENDED DECEMBER 31, 1995
(ACCRUAL BASIS)
(000 RUBLES)

	Note	
Revenue from water (net of VAT)	1	36,291,308
Revenue from waste water (net of VAT)	1	38,289,635
Other income		209,562

		74,790,505
DEDUCT: EXPENSES		
Electricity	2	10,886,559
Chemicals		2,416,107
Labor		2,396,644
Bonus to staff		5,093,463
Social taxes		3,227,370
Other staff expenses		578,323
Repairs by Vodokanal		2,219,392
Repairs by Municipal Enterprises (MUEs)		525,004
Heating		1,343,472
Biological cleaning-waste water	3	12,984,124
Road user tax		982,211
Intake expenses		140,018
Fuel		334,798
Other expenses		1,485,130

		44,612,615
NET PROFIT BEFORE DEPRECIATION		
		30,177,890
Depreciation	4	8,810,011

NET PROFIT AFTER DEPRECIATION		
		21,367,879
Income from fines	5	824,076
Local taxes		(143,510)
Profit tax	6	(6,476,532)
Consumption tax	7	(2,699,574)
Expenses incurred from Use of Profit account 81		(466,895)
Table 6.1/95	8	

NET PROFIT FOR THE YEAR		
	9	12,405,444
APPROPRIATED AS FOLLOWS:		
Net profit transferred to retained profit account 88		(12,405,444)

Source: Revenue figures from the Cheboksary Vodokanal Billing section.
Expense figures from Cheboksary Vodokanal accounts section.

Note: (1). Revenue and expenses shown in the Cheboksary Vodokanal ledger is on a cash basis. Revenue and expenses have been restated to account for on an accrual basis.

TABLE 10
CHEBOKSARY VODOKANAL
PROFIT AND LOSS ACCOUNT FOR THE YEAR ENDED DECEMBER 31, 1996
(ACCRUAL BASIS)
(000 RUBLES)

	Note	
Revenue from water (without VAT)	1	40,884,966
Revenue from waste water (without VAT)	1	38,109,692
Other income		156,942

		79,151,600
DEDUCT: EXPENSES		
Electricity	2	17,155,638
Chemicals		3,301,256
Labor		4,131,258
Bonus to staff		1,605,119
Social taxes		2,553,320
Other staff expenses		727,725
Repairs by Vodokanal		3,360,006
Repairs by Municipal Enterprises (MUEs)		715,658
Heating		2,236,245
Biological cleaning-waste water	3	24,658,231
Road user tax		1,548,290
Intake expenses		165,552
Fuel		652,768
Other expenses		4,109,688

		66,920,754
NET PROFIT BEFORE DEPRECIATION		
		12,230,846
Depreciation	4	22,436,073
NET LOSS AFTER DEPRECIATION		
		(10,205,227)
Income from fines	5	2,528,055
Local taxes		(173,195)
Profit tax	6	(186,190)
Write off of fixed assets & other expenses		(215,474)
Expenses incurred from Use of Profit account 81		(2,714,895)
Table 6.1/96	8	
NET LOSS FOR THE YEAR		
	9	(10,966,926)
APPROPRIATED AS FOLLOWS:		
Net loss transferred to retained profit account 88		10,966.926

Source: Revenue and expense figures from Cheboksary Vodokanal general ledger.

TABLE 11
CHEBOKSARY VODOKANAL
PROFIT AND LOSS ACCOUNT FOR THE PERIOD FROM JANUARY 1, 1997
TO JUNE 30, 1997.
(000 RUBLES)

Revenue from water (without VAT)		29,987,226
Revenue from waste water (without VAT)		28,725,889
Other income		199,459

		58,912,574
DEDUCT: EXPENSES		
Electricity	11,736,307	
Chemicals	1,404,479	
Labor	2,386,414	
Bonus to staff	1,818,701	
Social taxes	1,806,386	
Other staff expenses	357,983	
Repairs by Vodokanal	574,382	
Repairs by Municipal Enterprises (MUEs)	1,731,053	
Heating	2,065,369	
Biological cleaning-waste water	12,837,195	
Road user tax	817,968	
Intake expenses	96,161	
Fuel	322,837	
Other expenses	2,267,092	

		40,222,327

NET PROFIT BEFORE DEPRECIATION		18,690,247
Depreciation		8,293,413

NET PROFIT AFTER DEPRECIATION AND BEFORE TAX		10,396,834

Source Revenue and expense figures from Cheboksary Vodokanal.

TABLE 12
CHEBOKSARY VODOKANAL
EXPENSES CHARGED TO USE OF PROFIT ACCOUNT #81, in 1995
(000 RUBLES)

Fines for late payments	142,658
Contribution to the trade union	16,863
Audit fee	30,000
Canteen expenses	50,733
Allocation to housing communal services, 0.8%	74,737
Employee insurance	9,260
Charities	110,663
Holidays for children	22,018
Medical expenses	1,130
Additional perdiem to staff	8,160
Taxes	673
Total	----- 466,895

TABLE 13
CHEBOKSARY VODOKANAL
EXPENSES CHARGED TO USE OF PROFIT ACCOUNT #81, in 1996
(000 RUBLES)

Payment for communal services	20,518
Contribution to trade union	23,207
Medical expenses	196,460
Food expenses	16,221
VAT on indirect materials	26,004
Library expenses	12,007
Sponsorships	76,885
Boat maintenance and depreciation	172,173
Sports	128,863
Seminars	29,403
Audit fees	90,000
Celebrations	35,050
Canteen expenses	50,565
Additional perdiem to staff	7,005
Transport expenses	29,951
Funerals	5,045
Videos	5,752
Fines for delay in payment of taxes	574,186
Payment to funds of indirect staff	1,215,600

Total	2,714,895

TABLE 14
CHEBOKSARY VODOKANAL
SOURCES AND USES OF FUNDS
(000 RUBLES)

	1995	1996
SOURCES OF FUNDS		
Net profit for the year after depreciation & tax	12,405,444	(10,966,926)
Add: Depreciation for the year	8,844,603	22,536,951
Add: Write off of fixed assets		134,000
Deduct: Sale of fixed assets	(22,500)	
Increase in accounts payable	254,473	3,208,773
Increase in salaries payable	324,702	
Increase in social taxes payable	1,027,344	
Increase in advances received		964,166
Increase in other payables	1,812,753	1,583,325
Decrease in cash & bank balances	95,058	
Decrease in short term investments		175,400
Total	24,741,877	17,635,689
USES OF FUNDS		
Increase in intangible assets	1,622	209,707
Increase in capital investment	266,845	531,243
Increase in inventories	1,592,059	2,682,998
Increase in VAT on materials	48,469	757,576
Increase in accounts receivable	16,899,062	2,076,165
Increase in other receivable	2,969,830	508,834
Increase in short term investment	184,000	
Increase in cash & bank balances		415,410
Increase in deferred expenses	22,798	19,246
Increase in balance in frozen bank account		1,253,756
Purchase of fixed assets	2,757,192	4,437,592
Decrease in salaries payable		380,907
Decrease in social taxes payable		4,362,255
Total	24,741,877	17,635,689

Table 15
Cheboksary Vodokanal
Changes in Accounts Receivable for 1995
(000 RUBLES)

	1995	Population	Budgetary organizations	Industries	Others
+ Accounts receivable at the beginning of the period	2,990,000	20,000	1,281,000	1,689,000	
+ Water and waste water services billed (with VAT)	91,545,000	7,525,000	29,524,000	54,496,000	
- Received at a bank account or at a cash desk	33,919,000	6,134,000	17,748,000	10,037,000	
- Received via off-sets	16,107,000	452,000	0	15,655,000	
- Received via barter	19,555,000	0	9,000	19,546,000	
- Received other way (promissory notes)	5,347,000	0	1,267,000	4,080,000	
= Accounts receivable at the end of the period	19,607,000	959,000	11,781,000	6,867,000	

Table 16
Cheboksary Vodokanal
Changes in Accounts Receivable for 1996
(000 RUBLES)

	1996	Population	Budgetary organizations	Industries	Others
+ Accounts receivable at the beginning of the period	19,607,000	959,000	11,781,000	6,867,000	
+ Water and waste water services billed (with VAT)	94,948,000	9,096,000	24,092,000	61,760,000	
- Received at a bank account or at a cash desk	20,197,000	6,282,000	3,826,000	10,089,000	
- Received via off-sets	15,219,000	1,621,000	3,266,000	10,332,000	
- Received via barter	41,751,000	0	550,000	41,201,000	
- Received other way (promissory notes)	15,705,000	0	15,155,000	550,000	
= Accounts receivable at the end of the period	21,683,000	2,152,000	13,076,000	6,455,000	

Table 17
Cheboksary Vodokanal
Collection Analysis
(000 RUBLES)

	1995	Population	Budgetary organizations	Industries	Others
+ Billed for water supply with VAT	44,857,000	3,754,000	14,467,000	26,636,000	
+ Billed for sewerage with VAT	46,688,000	3,771,000	15,057,000	27,860,000	
TOTAL:	91,545,000	7,525,000	29,524,000	54,496,000	
- Collected	74,928,000	6,586,000	19,024,000	49,318,000	
including					
<i>cash on accounts and in cash desk</i>	33,919,000	6,134,000	17,748,000	10,037,000	
<i>via off-sets</i>	16,107,000	452,000	0	15,655,000	
<i>via barter</i>	19,555,000	0	9,000	19,546,000	
<i>promissory notes</i>	5,347,000	0	1,267,000	4,080,000	
<i>Other ways</i>	0	0	0	0	
= Increase in accounts receivable	16,617,000	939,000	10,500,000	5,178,000	

Table 18
Cheboksary Vodokanal
Collection Analysis
(000 RUBLES)

	1996	Population	udgetary organization	Industries	Others
+ Billed for water supply with VAT	49,060,000	4,708,000	12,549,000	31,967,000	
+ Billed for sewerage with VAT	45,724,000	4,388,000	11,543,000	29,793,000	
TOTAL:	94,948,000	9,096,000	24,092,000	61,760,000	
- Collected	92,872,000	7,903,000	22,797,000	62,172,000	
including					
<i>cash on accounts and in cash desk</i>	20,197,000	6,282,000	3,826,000	10,089,000	
<i>via off-sets</i>	15,219,000	1,621,000	3,266,000	10,332,000	
<i>via barter</i>	41,751,000	0	550,000	41,201,000	
<i>promissory notes</i>	15,705,000	0	15,155,000	550,000	
<i>Other ways</i>	0	0			
= Increase in accounts receivable	2,076,000	1,193,000	1,295,000	-412,000	

Table 19
Cheboksary Vodokanal
Analysis of Taxes and Other Mandatory Payments
(000 RUBLES)

	Method of payment				
	1995	Cash	Off-sets	Others	Non-paid
Profit tax	6,840,511	4,772,511	376,000	1,692,000	
including					
<i>federal budget</i>	2,540,761	2,540,761	0	0	
<i>republican budget</i>	3,322,534	2,196,534	376,000	750,000	
<i>local budget</i>	977,216	35,216	0	942,000	
VAT	11,978,378	11,300,920	164,411	513,047	
<i>federal budget(75%)</i>	8,983,784	8,983,784	0	0	
<i>republican budget(if applicable)(17%)</i>	2,036,324	1,676,913	164,411	195,000	
<i>local budget(8%)</i>	958,270	640,223	0	318,047	
Other taxes except those related to the labor costs	5,101,457	4,936,457	55,000	110,000	
including					
<i>federal budget</i>	2,207,761	2,207,761	0	0	
<i>republican budget</i>	1,196,862	1,141,862	55,000	0	
<i>local budget</i>	1,696,834	1,586,834	0	110,000	
Taxes related to the labor costs	3,132,712	3,132,712	0	0	
including (Income tax 12%, Pension fund 1%)					
<i>federal budget</i>	2,285,717	2,285,717	0	0	
<i>republican budget</i>	693,295	693,295	0	0	
<i>local budget</i>	153,700	153,700	0	0	
Mandatory payments to the non-budgetary funds except those related to the labor costs	840,965	651,965	99,000	90,000	
Mandatory payments to the non-budgetary funds related to the labor costs	76,600	76,600	0	0	

Table 20
Cheboksary Vodokanal
Analysis of Taxes and Other Mandatory Payments
(000 RUBLES)

	Method of payment				
	1996	Cash	Off-sets	Others	Non-paid
Profit tax	658,957	8,257	176,000	474,700	
including					
<i>federal budget</i>	244,757	8,257	0	236,500	
<i>republican budget</i>	320,100	0	124,700	195,400	
<i>local budget</i>	94,100	0	51,300	42,800	
VAT	3,723,755	3,142,755	111,000	470,000	
<i>federal budget (75%)</i>	2,792,816	2,792,816	0	0	
<i>republican budget (if applicable) (17%)</i>	633,039	63,039	100,000	470,000	
<i>local budget (8%)</i>	297,900	286,900	11,000	0	
Other taxes except those related to the labor costs	3,406,102	2,337,042	987,291	81,769	
including					
<i>federal budget</i>	1,292,036	1,292,036	0	0	
<i>republican budget</i>	510,630	510,630	0	0	
<i>local budget</i>	1,603,436	534,376	987,291	81,769	
Taxes related to the labor costs	3,704,666	3,674,666	30,000	0	
including (Income tax 12%, Pension fund 1%)					
<i>federal budget</i>	2,694,583	2,694,583	0	0	
<i>republican budget</i>	857,895	827,895	30,000	0	
<i>local budget</i>	152,188	152,188	0	0	
Mandatory payments to the non-budgetary funds except those related to the labor costs	1,695,207	886,607	238,600	570,000	
Mandatory payments to the non-budgetary funds related to the labor costs	92,710	67,710	15,000	10,000	

Table 21
Cheboksary Vodokanal
Major Expenditures for 1995
(000 RUBLES)

	1995
+ Labor cost of all vodokanal employees including	8,068,430
<i>Salaries</i>	2,396,644
<i>Bonuses</i>	5,093,463
<i>Taxes to the fund of the labor payment and other related</i>	
<i>Mandatory payments to the non-budgetary funds related to the personnel</i>	
<i>Other costs related to the labor</i>	578,323
+ Electricity	10,886,559
+ Chemicals and other production materials	2,416,107
+ Repairs (materials and subcontractors work)	2,219,392
+ Social taxes	3,227,370
+ Heating	1,343,472
+ Biological cleaning - waste water	12,984,124
+ Repairs by Municipal Enterprises (MUEs)	525,004
+ Road user tax	982,211
+ Intake expenses	140,018
+ Fuel	334,798
+ Other expenses	1,485,130
=	
Subtotal expenses	44,612,615
+ Depreciation	8,810,011
=	
Total expenses including depreciation	53,422,626

Table 22
Cheboksary Vodokanal
Major Expenditures for 1996
(000 RUBLES)

	1996
+ Labor cost of all vodokanal employees	6,464,102
including	
<i>Salaries</i>	<i>4,131,258</i>
<i>Bonuses</i>	<i>1,605,119</i>
<i>Taxes to the fund of the labor payment and other related</i>	
<i>Mandatory payments to the non-budgetary funds related to the personnel</i>	
<i>Other costs related to the labor</i>	<i>727,725</i>
+ Electricity	17,155,638
+ Chemicals and other production materials	3,301,256
+ Repairs (materials and subcontractors work)	3,360,006
+ Social taxes	2,553,320
+ Heating	2,236,245
+ Biological cleaning - waste water	24,658,231
+ Repairs by Municipal Enterprises (MUEs)	715,658
+ Road user tax	1,548,290
+ Intake expenses	165,552
+ Fuel	652,768
+ Other expenses	4,109,688
=	
	Subtotal expenses
+ Depreciation	66,920,754
=	
	22,436,073
	Total expenses including depreciation
	89,356,827

Table 23
Cheboksary Vodokanal
Aging Accounts Receivable
1995
(000 RUBLES)

	> 365 days	181 - 365 days	< 181 days	Total
+ Accounts receivable with VAT				
(62,73,76)	11,000	1,645,000	17,951,000	19,607,000
Including				
<i>population</i>		9,000	950,000	959,000
<i>budget organizations</i>	2,000	93,000	11,686,000	11,781,000
<i>industries</i>	9,000	1,543,000	5,315,000	6,867,000
<i>others</i>				
- Bad debts (estimate)				
including				
<i>population</i>				
<i>budget organizations</i>				
<i>industries</i>				
<i>others</i>				
=				
Accounts receivable that with a				
good probability of being collected	11,000	1,645,000	17,951,000	19,607,000
including				
<i>population</i>		9,000	950,000	959,000
<i>budget organizations</i>	2,000	93,000	11,686,000	11,781,000
<i>industries</i>	9,000	1,543,000	5,315,000	6,867,000
<i>others</i>				

Table 24
Cheboksary Vodokanal
Aging Accounts Receivable
1996
(000 RUBLES)

	> 365 days	181 - 365 days	< 181 days	Total
+ Accounts receivable with VAT				
(62,73,76)	562,000	4,162,000	16,959,000	21,683,000
Including				
<i>population</i>		52,000	2,100,000	2,152,000
<i>budget organizations</i>	394,000	3,605,000	9,077,000	13,076,000
<i>industries</i>	168,000	505,000	5,782,000	6,455,000
<i>others</i>				
- Bad debts (estimate)				
including				
<i>population</i>				
<i>budget organizations</i>				
<i>industries</i>				
<i>others</i>				
=				
Accounts receivable that with a				
good probability of being collected	562,000	4,162,000	16,959,000	21,683,000
including				
<i>population</i>		52,000	2,100,000	2,152,000
<i>budget organizations</i>	394,000	3,605,000	9,077,000	13,076,000
<i>industries</i>	168,000	505,000	5,782,000	6,455,000
<i>others</i>				

Table 25
Cheboksary Vodokanal
Calculation of the change in accounts payable
(000 RUBLES)

	1995	Method of payments			
		Cash	Barter	Off-sets	Others
+ Accounts payable at the beginning of the period	2,319,204				
including					
<i>labor(70)</i>	354,609				
<i>energy</i>					
<i>taxes(68)</i>	550,634				
<i>social taxes(69)</i>	132,267				
<i>repairs and maintenance (General Economy) G&A</i>					
<i>emergency work</i>					
<i>other mandatory payments</i>	105,772				
<i>other</i>	1,175,922				
+ Expenses of the vodokanal (the sum of the liabilities for the period excluding depreciation)	44,612,615				
<i>labor</i>					
<i>energy</i>					
<i>taxes</i>					
<i>repairs and maintenance (General Economy) G&A</i>					
<i>emergency work</i>					
<i>other mandatory payments (Auxiliary) others</i>					
- Accounts paid	37,250,688				
including					
Barters and offsets from table 8					
Direct bank settlements:					
<i>labor</i>					
<i>energy</i>					
<i>taxes</i>					
<i>repairs and maintenance (General Economy) G&A</i>					
<i>emergency work</i>					
<i>other mandatory payments (Auxiliary) others</i>					
= Accounts payable at the end of the period	9,681,131				
including					
<i>labor(70)</i>	679,311				
<i>energy</i>					
<i>taxes(68)</i>	5,009,181				
<i>social taxes(69)</i>	403,015				
<i>repairs and maintenance (General Economy) G&A</i>					
<i>emergency work</i>					
<i>other mandatory payments(67)</i>	414,919				
<i>other</i>	3,174,705				

Note: (1) Accounts payable at the end of year = total current liabilities (see Balance Sheet)

(2) Other include biological cleaning - waste water expenses

Table 26
Cheboksary Vodokanal
Calculation of the change in accounts payable
(000 RUBLES)

	1996	Method of payments			
		Cash	Barter	Off-sets	Others
+ Accounts payable at the beginning of the period	9,681,131				
including					
<i>labor(70)</i>	679,311				
<i>energy</i>					
<i>taxes(68)</i>	5,009,181				
<i>social taxes(69)</i>	403,015				
<i>repairs and maintenance (General Economy) G&A</i>					
<i>emergency work</i>					
<i>other mandatory payments</i>	414,919				
<i>other</i>	3,174,705				
+ Expenses of the vodokanal (the sum of the liabilities for the period excluding depreciation)	66,920,754				
<i>labor</i>					
<i>energy</i>					
<i>taxes</i>					
<i>repairs and maintenance (General Economy) G&A</i>					
<i>emergency work</i>					
<i>other mandatory payments (Auxiliary) others</i>					
- Accounts paid	64,299,363				
including					
Barter and offsets from table 8					
Direct bank settlements:					
<i>labor</i>					
<i>energy</i>					
<i>taxes</i>					
<i>repairs and maintenance (General Economy) G&A</i>					
<i>emergency work</i>					
<i>other mandatory payments (Auxiliary) others</i>					
= Accounts payable at the end of the period	12,302,522				
including					
<i>labor(70)</i>	298,405				
<i>energy</i>					
<i>taxes(68)</i>	462,734				
<i>social taxes(69)</i>	663,977				
<i>repairs and maintenance (General Economy) G&A</i>					
<i>emergency work</i>					
<i>other mandatory payments(67)</i>	269,610				
<i>other</i>	10,607,796				

Note 1) Accounts payable at the end of year = total current liabilities (see Balance Sheet)

2) Other include biological cleaning - waste water expenses

Table 27
Cheboksary Vodokanal
Aging Payables
1995
(000 RUBLES)

	> 365 days	181 - 365 days	< 181 days	Total
Account payable (total)			9,681,131	9,681,131
including				
<i>energy</i>				-
<i>labor</i>			679,311	679,311
<i>taxes except labor taxes</i>			5,009,181	5,009,181
<i>Labor taxes</i>				-
<i>Mandatory payments to the non-</i>				
<i>budgetary funds except those</i>				
<i>related to labor costs</i>			414,919	414,919
<i>Mandatory payments to the non-</i>				
<i>budgetary funds related to labor</i>				
<i>costs</i>			403,015	403,015
<i>other</i>			3,174,705	3,174,705

Note: (1) other include biological cleaning - waste water expenses

Table 28
Cheboksary Vodokanal
Aging Payables
1996
(000 RUBLES)

	> 365 days	181 - 365 days	< 181 days	Total
Account payable (total)		295,960	12,006,562	12,302,522
including				
<i>energy</i>				-
<i>labor</i>			298,405	298,405
<i>taxes except labor taxes</i>			462,734	462,734
<i>Labor taxes</i>				-
<i>Mandatory payments to the non-</i>				
<i>budgetary funds except those</i>				
<i>related to labor costs</i>			269,610	269,610
<i>Mandatory payments to the non-</i>				
<i>budgetary funds related to labor</i>				
<i>costs</i>		295,960	368,017	663,977
<i>other</i>			10,607,796	10,607,796

Note: (1) other include biological cleaning - waste water expense

Table 29
CHEBOKSARY VODOKANAL
RATIO ANALYSIS

	1995	1996
BALANCE SHEET RATIOS:		
Revenue as a % of fixed assets (net)	21	24 %
Revenue as a % of net total assets	20	22 %
Current assets as a % of fixed assets (net)	7	10 %
Accounts receivable as a % of revenue	26	27 %
Average collection period (accounts receivable)	3	3 months
Accounts payable as a % of revenue	13	16 %
Average payment period (accounts payable)	2	2 months
LIQUIDITY RATIOS:		
Inventories as a % of current assets	10	15 %
Accounts receivable as a % of current assets	76	65 %
Current assets as a ratio of current liabilities	2.7	2.7 times
Cash/bank balances as a ratio of current liabilities	0.00	0.04 times
Cash collection as a % of total collection	45	22 %
PROFITABILITY RATIOS:		
Net profit after depreciation as a % of revenue	29	Loss %
Net profit for the year as a % of revenue	17	Loss %
Fines for late payment of taxes as a % of revenue		0.7 %
Net profit as a % of total net assets (return on capital employed)	3	Loss %
Biological cleaning expenses as a % of operating expenses	29	37 %

Appendix III - Assessment of the Vodokanal's Past and Current Financial Position

This section gives an analysis of the past and current financial performance and structure of the Vodokanal.

1. Financial Analysis and Methodology

The Balance Sheets of Cheboksary Vodokanal as of December 31, 1995 and 1996 are shown in Table 5 and 6 of Appendix II, respectively. Trial Balances for December 31, 1994, 1995 and 1996 were given by the Vodokanal (see Tables 1 and 2 of Appendix II); the figures were obtained from the Vodokanal general ledger. Annual accounts for 1994 and 1995 were prepared on a cash basis by the Vodokanal, while the accounts for 1996 were prepared on an accrual basis. A trial balance was prepared on an accrual basis from the comparative figures shown in the Balance Sheet as of December 31, 1996. A journal entry was prepared to convert the cash basis trial balance to an accrual basis trial balance (see Table 8 of Appendix II). The Balance Sheets for 1995 and 1996 were prepared from the adjusted trial balances.

Tables 3 and 4, of Appendix II, connect the trial balance items to the Balance Sheets of 1995 and 1996 respectively. The signed financial statements of the Vodokanal have been reconciled with the Balance Sheets.

The Profit and Loss account for 1995 and 1996 are shown in Tables 9 and 10 of Appendix II, respectively. The draft Profit and Loss account for the period from January to June 1997 is also shown in Table 11 of Appendix II. All operational expenses were charged to the cost of sales account (#20) on a monthly basis in the general ledger of the Vodokanal.

2. Explanatory Notes to Accounts

Balance Sheet:

Note 1. Fixed Assets

The fixed assets were revalued in 1995 and 1996. The basis of revaluation is given in detail in Section 3.6, under Fixed Assets Control System. The movement in the fixed asset account in 1995 and 1996 is shown in Table 7 of Appendix II. A detailed list of fixed assets is available in the computer system program of the Vodokanal.

Note 2. Accumulated Depreciation

Accumulated depreciation was also increased by the same multiplier used to revalue the fixed assets. The movement in this account for 1995 and 1996 is shown in Table 7 of Appendix II.

Note 3. Long Term Investment

The investment of 192 million rubles represents an investment in Chuvashsotsbank which became bankrupt and closed. The recovery of this amount is doubtful. A provision has not been made for bad debts by the Vodokanal on account of this investment.

Note 4. Capital Investment

The balance on this account represents the capital costs of a new building under construction in the premises of the main office building.

Note 5. Inventories

Inventories are valued on a weighted average basis. The calculations are done by the computer program. The details of the inventory control system is given in section 3 under Financial Systems and Controls.

Note 6. VAT on materials

The balance on this account is available for set-off against VAT payable in future years.

Note 7. Accounts Receivable

Accounts receivable increased by 11 percent in 1996. The collection efficiency in 1995 and 1996 was 79% and 81% respectively (see Table 15 and 16 of Appendix II). Collection by off-sets as a percentage to total collection in 1995 and 1996 was 29% and 33% respectively. Collection by barter in 1995 and 1996 was 26% and 45% respectively. Collection in cash in 1995 and 1996 was 45% and 22% respectively (see Table 15 and 16).

Out of the total accounts receivable, only 562 million rubles are over one year old (3 percent of the total accounts receivable).

Note 8. Other Receivables

The total shown in the Balance Sheet includes debit balances of suppliers amounting to 2.7 billion rubles (account #60) which represents 71 percent of the total shown in the Balance Sheet. These balances will be set-off against subsequent supplies to the Vodokanal.

Note 9. Bank Balance in Frozen Account

Chuvashsotsbank with whom Vodokanal had a current account went bankrupt and closed, leaving a balance to the credit of the Vodokanal of 1.25 billion rubles. The Vodokanal has sued the bank to recover this amount. The Vodokanal is of the opinion that this amount is not recoverable. However, no provision has been made for bad debts in the accounts.

Note 10. Bank Balance

The bankers of the Vodokanal are Agroprombank and Avtovasbank.

Note 11. Other Payables

Other payables include 4.5 billion rubles under the account, settlement creditors (#76) as of December 31, 1996.

Note 12. Working Capital

Payables are adequately covered by receivables. The large working capital surplus of 21 billion rubles as of December 31, 1996 is because payables were settled from funds generated in 1995 out of the large net profit plus depreciation.

Note 13. Revaluation Surplus

This account represents the credit entry due to the increase in value of fixed assets resulting from revaluation minus the increase in value of the corresponding provision for depreciation.

3. Explanatory Notes to Profit and Loss Account

The Profit and Loss Statement for 1995, 1996 and the draft accounts for the six-month period from January 1, 1997 to June 30, 1997 are shown on Tables 9, 10 and 11, respectively. The annual accounts for 1995 was prepared on a cash basis by the Vodokanal and have been restated to an accrual basis by preparing journal entries to incorporate actual revenue and expenses for 1995 (see Table 8 of Appendix II). The Vodokanal changed its accounting policy from a cash basis to an accrual basis in 1996 to comply with the instructions from the Ministry of Finance.

Note 1. Revenue from Water and Wastewater

Revenue in 1995 and 1996 remained at the same level because there were no tariff increases in 1996. However, revenue during the period January to June 1997 increased by 48 percent when compared to 1996 (pro-rated to six months) because of the two increases in tariffs for all categories of customers in 1997.

Note 2. Electricity

Electricity expenses increased by 58 percent in 1996 because of the increase in electricity tariff.

Note 3. Biological Cleaning - Wastewater

Biological cleaning of wastewater is contracted to a private firm. This expense is the largest single expense item in the Vodokanal. Biological cleaning expenses in 1995 was 13 billion rubles and in 1996 was 24.7 billion rubles recording an increase of 90 percent. This expense

as percentage of total revenue was 17 percent in 1995 and 31 percent in 1996. The increase in 1996 was because of the increase in tariff from 182 rubles to 315 rubles per cubic meter of wastewater treatment (73 percent increase).

Note 4. Depreciation

Depreciation in 1996 increased by 155 percent in 1996 because of the revaluation of fixed assets. The depreciation in 1997 will be lower than in 1996 because the revalued figure of fixed assets was reduced substantially on January 1, 1997 after the Audit Consultants did a revaluation of fixed assets using a lower multiplier compared to the rates given by the Ministry of Finance (details in section 3.3.4, under Fixed Assets Control System).

Note 5. Income from Fines

Late payments by customers of Vodokanal water and waste water bills carry a fine of 0.5 percent per day, after the allowed period of seven days.

Note 6. Profit Tax

Profit tax has been calculated at 35 percent of taxable profits for the year. Profit tax in 1995, on Table 9, shows the taxable profit computed on an accrual basis. Profit tax in 1995 was 6.5 billion rubles because of the significant net profit earned during the year. Table 19, however, shows the actual profit tax which the Vodokanal paid based on a cash basis. Table 19's amount is slightly higher.

In 1996, the Vodokanal changed its accounting to an accrual basis. However, it still paid its taxes on a cash basis. Thus, on Table 10, the profit tax shows the estimated accrual amount of profit paid by the Vodokanal in 1996, while Table 20 shows the actual paid, which the Vodokanal calculated on a cash basis.

Note 7. Consumption Tax

Consumption tax was levied on taxable profit in addition to profit tax in 1995. There were progressive tax rates for the calculation of consumption tax. Consumption tax was abolished from 1996 onwards.

Note 8. Expenses Incurred from Use of Profit Account

Some of the expenses of the Vodokanal were charged to the above account (details in Table 12 and 13 of Appendix II). Total expenses incurred from this account in 1996 was 2.7 billion rubles which included 1.2 billion rubles as payments to social funds and 574 million rubles paid as fines for late payment of taxes.

Note 9. Net Profit / (Loss) for the Year

In 1995, the net profit was 12 billion rubles whereas in 1996, there was a net loss of 11 billion rubles. The main reasons for this significant decrease were: 1) increase in biological cleaning

expenses by 90 percent due to the increase in tariff in 1996; 2) increase in depreciation by 155 percent in 1996 because of the revaluation of fixed assets; and 3) no tariff increases in 1996 to compensate for the significant increases in costs.

However, tariffs were increased two times in 1997. As a result, the draft account for the six month period from January to June 1997 shows a net profit before tax, of 10 billion rubles.

The net profit after all expenses, has been transferred to the retained profit account number 88.

4. Ratio Analysis and Interpretation of Results

A set of ratios is shown in Table 29 of Appendix II. Highlights of the ratio analysis are: 1) lack of cash resources in the Vodokanal for future operations; 2) significant loss in 1996; and 3) biological cleaning expenses is the largest operational expense item in the Vodokanal.

The current bank balance can hardly cover any current liabilities. The working capital ratio is satisfactory. The average collection period is three months which is satisfactory for a utility service firm with a large number of customers.



International Activities Center

The Urban Institute

2100 M Street, N.W.

Washington, D.C. 20037

Telephone: (202) 833-7200

Website: www.urban.org