

**Promoting the Use of Performance-Based Contracts
between Water Utilities and Municipalities in EECCA**

**Case Study no. 1: Yerevan Water Supply Company
Lease Contract**



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Ситуационное исследование № 1: Договор аренды Компании по водоснабжению Еревана

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FOREWORD

This report presents the results of a review of a lease contract awarded to an international operator to manage the water utility in Yerevan. This lease contract was signed between the government of Armenia and Générale des Eaux - Véolia Water and came into force in June 2006.

The findings and conclusions in this report aim to support the Armenian government in its efforts to further improve the design and implementation of future performance-based contracts in the country in the water sector in line with international good practices. The report provides an objective analysis of the most important aspects of the contract (legal and financial aspects, performance indicators, etc.), identifies its strengths and weaknesses and proposes a set of recommendations for improvement. The OECD's *Guidelines for Performance-Based Contracts* served as a benchmark to assess the Yerevan lease contract.

The recommendations from this review could be used as a basis for discussion and consensus-building among key stakeholders in Armenia on the future design of such contracts.

The report was prepared in the framework of the Task Force for the Implementation of the Environmental Action Programme for Central and Eastern Europe (EAP Task Force), whose secretariat is located in the OECD's Environment Directorate. The project was managed by Nelly Petkova, with support provided by consultants Guy Leclerc and Alexandra Rosa (from PricewaterhouseCoopers) and Arsen Karapetyan from Armenia. The preparation of this report was financially supported by the EU Tacis.

The report is based on available documents and data, as well as on inputs provided by the Armenian partners on the project. The authors would like to specifically thank Gagik Khachataryan from the State Committee of Water System for his support throughout the project, Serge Popoff (Managing Director of Yerevan Djur) and his staff as well as Jean-Patrice Poirier from Véolia Water who kindly agreed to spend time with the review team and share their views with us. We are also grateful to all other Armenian experts for their support for and contribution to this analysis.

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The views expressed in this report are those of the authors and do not necessarily reflect those of the OECD or its member countries.

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List of abbreviations

AMD	Armenian Drams
EAP Task Force	Task Force for the Implementation of the Environmental Action Programme for Central and Eastern Europe
EECCA	Eastern Europe, Caucasus and Central Asia
EMRP	Enhanced Maintenance and Repairs Programme
EU	European Union
IDA	International Development Association
KfW	Kreditanstalt für Wiederaufbau (German government-owned development bank)
LPC	Lessee's Procurement Committee
PMB	Project Management Board
PMU	Project Monitoring Unit
PPP	Public Private Partnership
PSRC	Public Services Regulatory Commission
RFP	Request for Proposal
RoA	Republic of Armenia
SCWS	State Committee of Water System (or State Water Committee)
ToR	Terms of Reference
UNCITRAL	United Nations Commission on International Trade Law
USD	US Dollars
VAT	Value-added tax
WRMA	Water Resources Management Agency
WSS	Water supply and sanitation
WSUP	Water System Use Permit
WUP	Water Use Permit
WWTP	Wastewater treatment plant
YWSC	Yerevan Water Supply Company
YWWP	Yerevan Water and Wastewater Project

Exchange rates

In the conversion of financial data presented in this report, the following annual average exchange rates were used:

Table 1. Exchange Rates, Dram/USD, and Dram/EUR, Yearly Average

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Drams/ USD	490.8	504.9	535.1	539.5	555.1	573.4	578.8	533.5	457.8	416.0
Drams/EUR	556.3	565.8	570.8	498.5	497.2	541.8	654.0	662.7	568.7	522.0

Source: Data derived from: EBRD *Transition report updates*; 2007, OECD *National Accounts Database*, 2007.

Map of Armenia



EXECUTIVE SUMMARY

Background

After a previous five-year management contract for the water services in the municipality of Yerevan (2000-2005), in 2005, the foreign private company Véolia Water was awarded a 10-year lease contract to operate the Yerevan water utility. The contract was signed in December 2005 with the State Committee of Water System and came into force in June 2006. A new company “Yerevan Djur” (fully owned by Véolia Water and registered in Armenia) was created to implement the contract.

Under a lease contract, the water utility leases the full operation and maintenance of its facilities within an agreed geographic area to the private operator for a certain period of time. The contract grants the operator the right to invoice and collect tariffs from customers within that area. The public utility owns the assets and remains responsible for major extensions and upgrades. However, in this particular case, the operator is committed to contributing significantly to the maintenance and repair of the system as well as financing some new equipment.

This report reviews the performance-based contract for the Yerevan water utility and provides a set of recommendations for its improvement. These recommendations can be considered by the Armenian government either within the framework of the existing contract (to the extent possible) or in designing future contracts for the sector. The assessment of the contract was conducted against international good practices, such as those contained in the OECD’s *Guidelines for Performance-Based Contracts*. The second major objective of this review was to identify good practices in the design and implementation of the contract, use these practices in updating the Guidelines and make them more relevant to the EECCA context.

The overall conclusion of the review is that this lease contract is generally well-designed and balanced and meets most of the international standards for such contracts. The main elements that need to be included in such a contract are in place which creates a good basis for the smooth implementation of the contract. This analysis looks at preliminary experience with the lease contract which is at an early stage of implementation. Although the contract has been effective for only one and a half years, it was possible to already identify good practices as well as detect certain challenges to both its current and future implementation.

Good practices in contract design and preparation

The water sector reform, launched by the Armenian government several years ago, opened up the way for private sector participation in the country. Attracting the private sector aimed at improving the efficiency of water services and reducing public costs. To achieve these objectives, the government developed a comprehensive strategy which has been implemented in a step-by-step manner and in a specific sequence.

The first experience with a private operator in the sector dates back to the beginning of 2000 when a management contract was awarded to an Italian company to operate and manage the Yerevan water utility. The management contract involved no commercial risk for the company. The implementation of this first contract was not without problems but it allowed the Armenian authorities to learn a great deal from this experience. This knowledge was effectively used in preparing and negotiating the next lease contract, six years later. This experience shows that for a country that is planning to embark on private-sector participation, using first a management contract and then a lease contract could be the right strategy. The benefits would be further enhanced if the management contract could be followed immediately with another contract.

The existence of an independent regulator which monitors compliance of the operator with the major requirements of the contract can significantly contribute to the smooth contract implementation. Experience shows that where such independent institutions exist, performance-based contracts are better complied with. In Armenia, this role is played by the Public Services Regulatory Commission.

Experience also shows that the existence (or the planned implementation) of a performance-based contract helps attract significant external funding. In Armenia, the World Bank provided a loan of about USD 19 million to support investments in the Yerevan water utility. The government is currently negotiating with individual donors and IFIs additional finance for the sector. There is a general understanding within the government that these resources are made available because of the existence of performance-based contracts in the country and as a result of the reform efforts of the government.

The quality of the contract has also benefited from the involvement of an international consultant in contract design. Experience shows that consultants, no matter how experienced they are, can only be efficient in their assistance if they are fully supported by government authorities.

Challenges with contract implementation

While the overall design of the contract meets most international standards (and national legal requirements), some challenges during the first year of the lease contract implementation have already become evident. It should be noted that despite all the efforts and best intentions of all the parties involved in contract implementation and compliance monitoring, there will always be certain conflict situations or risks for which no mitigation measures have been provided in the contract. A 10-year contract cannot regulate every single aspect of such complex relations. Hence, the human factor, such as the parties' willingness to cooperate and find a solution, is key. Nevertheless, the smooth operations and implementation should rely on sound contractual arrangements.

Some of the major challenges identified by this review are related to the:

- Discrepancies between the law and the water use permit: the law requires that Yerevan Djur should pay 1 dram/m³ for the raw water abstraction whereas the permit specifies the amount of 0.05 dram/m³. This difference could have a major implication for the operator's business plan. The parties have decided to cooperate to find a solution to this problem and to bring the law and the Water Use Permit in line.
- Changes in baseline information between the tender and the starting date of the contract: one such example relates to salaries of local employees which increased by 35% between the tender and the start of the contract. The contract requires that local staff salaries should be kept at the same level for at least the first year of the contract. The difference in costs is also a major issue for the operator's business plan.

- Lack of a clear definition of the base year data for performance indicators: the contract specifies fixed yearly targets for the water supply, which is a main performance indicator (continuity of service). The lack of a clear definition of the base year data resulted in a disagreement between the operator and the Public Services Regulatory Commission (PSRC) over which data and what methodology should be used in measuring the indicator of continuity of service. A complementary survey had to be carried out in early 2007 to reach an agreement.
- Difficulties with measuring performance indicators: some performance indicators (e.g. the water quality indicator) may not be representative of the real performance of the operator over the service area because the control points are not properly selected.
- Difficulties with tariff revision: the lack of clarity over the methodology of calculating the volume of the water supplied by the operator and used to calculate the yearly tariff revision formula led to a disagreement between the operator and the PSRC. In the end, it was agreed that the tariff increase would be lower than initially required by the operator and that the increase would be postponed until the fourth year of the contract. While the contract stipulates annual tariff revisions, the agreement to postpone the tariff increase was on exceptional and one-time basis.
- Lack of precision of certain aspects of and terms in the contract: although the contract is rather comprehensive and covers all major issues, numerous amendments had to be made.

On the basis of the above findings, the main recommendations offered to the Armenian government for consideration are:

- The consistency between the contract and the laws should be carefully checked when drafting the contract. When international consultants are hired, local experts should be involved on a permanent basis to ensure that the legal analysis is sound and that the relevant national legislation as well as the specific economic conditions are taken into account. If there are inconsistencies, possible modifications in the contract, but also, if necessary, in the laws, should be considered.
- All the data collected during the tender process and used for calculating key indicators in the business plan should be updated before the contract starting date, particularly if time has elapsed between the starting date and the tender preparation.
- In case of uncertainties or difficulties to obtain reliable data at the start of the contract, it is preferable to set annual performance targets as a percentage of improvement (calculated on the basis of a baseline to be defined) rather than as fixed numbers (in order to avoid recalculating a fixed figure each year) (this is particularly relevant for the indicator on the continuity of service).
- All terms and elements of the tariff revision formula (such as water volume supplied) should be defined as comprehensively as possible in the contract. However, as a contract cannot cover every possible situation in advance, the contract should clearly identify appropriate mechanisms to regulate possible errors (omissions) which will allow to solve the problems that may appear after the signature of the contract. The regulator should be involved as much as possible in the resolution of these problems.
- If the World Bank or other IFI/donor is involved in the arrangement, the rules of their involvement should be included in the contract to ensure a better understanding by all parties.

The experience of Armenia with private sector participation shows that this is not an easy and straightforward process. Implementation of performance-based contracts requires a strong political will, consensus and support from the whole government. It takes political courage to introduce fundamental reforms in this socially-sensitive sector.

It is too early to draw definitive conclusions on the success of the lease contract implementation in Armenia. The global benefits from this contract will only become evident in the years to come. However, early signs show that despite of the contract's complexity, this seems to be a concept that works. Within the EECCA region, Armenia is a pioneer in exploring new "territories".

CHAPTER 1. INTRODUCTION

Since its independence in 1991, Armenia has undergone significant political and economic changes. Along with macroeconomic stabilisation, the government agenda focused on accelerating Armenia's institutional transition towards a modern market economy. This involved a comprehensive water sector reform, including private sector participation in managing the water supply and sanitation infrastructure.

With two performance-based contracts managed by foreign private companies, Armenia is setting an example for many countries. Armenia is further ahead in this process compared to other countries from Eastern Europe, Caucasus and Central Asia (EECCA). The Armenian government has already accumulated significant experience with managing such contracts and their knowledge is particularly valuable. The lease contract for the Yerevan Water Utility (Yerevan Djur) was reviewed for the purpose of improving future contracts.

1. Objectives of the review

The major objective of the Review was to conduct an independent and objective evaluation of all important aspects of the lease contract signed between Véolia Water and the Armenian Government, as represented by the State Committee of Water System in line with good international practices, such as those contained in the OECD's *Guidelines for Performance-Based Contracts*. The report analyses the strengths and weaknesses of the contract and proposes a set of recommendations for further improving the contract's effectiveness. These recommendations are particularly relevant given the government's intentions to arrange other similar contracts in the future. Thus, the review aims to support the Armenian Government in its efforts to improve the design of such contracts. These recommendations do not pretend to be comprehensive; instead, they are focused on selected issues which were identified as particularly important with regard to the smooth implementation of the contract.

This analysis looks at preliminary experience with the lease contract which is at an early stage of implementation. Although the contract has been effective for only one and a half years, it was possible to already identify good practices as well as detect certain challenges to its implementation.

Thus, through this analysis, the review also seeks to identify good practices and draw conclusions which can then be used to further improve the relevance of the Guidelines with regard to specific EECCA experience. This experience was largely missing in the first version of the Guidelines. In this context, the Armenian experience is extremely useful and it demonstrates how other EECCA countries can implement performance-based contracts in the water sector.

2. Performance review process and methodology

At the beginning of 2007, the State Committee of Water System, jointly with Yerevan Djur and the World Bank Project Monitoring Unit (PMU) agreed to participate in this project and have the lease contract reviewed by the OECD/EAP Task Force Secretariat. The EU Tacis provided financial support for the project. The project was implemented under the supervision of the OECD and with the support of a team of consultants from PriceWaterhouseCoopers.

The methodology developed to evaluate the contract is based on the good practices identified in the Guidelines. It consists of a detailed questionnaire coupled with direct interviews. The questionnaire was sent to all major stakeholders involved in the process. The review involves three stages: preparatory activities, review and drafting mission, and preparation of the final report.

A comprehensive set of background documents concerning and relevant to the lease contract were examined by the review team prior to and after the review mission (see the Section on References). The review mission took place from 15 to 18 September 2007 when the team visited Yerevan. During that time the team engaged in extensive discussions with the operator's staff, the State Water Committee, the World Bank PMU, experts from other ministries and state institutions, who were all directly or indirectly involved in the preparation of the contract (See Annex IV for people who were interviewed). The results and recommendations presented in the report were discussed at a meeting with the participation of major stakeholders in December 2007 in Yerevan. In addition, the main lessons learnt from this review will be presented at other international fora and will be disseminated through other meetings and mechanisms.

This report provides an opportunity and is a basis for discussion within the Armenian government to further strengthen the design of such performance-based contracts.

Box 1. Major good practices identified in the Guidelines for Performance-Based Contracts

1. Project scope

(i) Definition of contractual objectives and responsibilities

The contract should define as precisely as possible the objectives to be achieved; establish the rights, obligations and responsibilities of each contractual party as well as joint responsibilities; identify a clear, reliable and efficient mechanism allowing the parties to quickly and efficiently respond to any new circumstances that may arise in the course of contract implementation.

(ii) Service area

The service area should be clearly identified early in the process and preferably before Due Diligence is conducted. The extent of the service area has a direct impact on the costs and revenues of the operator. A proper evaluation of the costs and revenues should be carried out in order to establish adequate contractual objectives and consequent performance indicators.

2. Legal and institutional framework

(i) Legal framework

Before entering into a performance-based contract, the applicable legal framework, including all relevant laws and regulations should be carefully studied and assessed. Based on this analysis (as part of the Due Diligence process), the best contractual model should be selected. If changes in the law are needed, these should be made before the contract is finalised. The selected type of contract should be tailored to the needs of the utility while making the best possible use of the legal framework.

(ii) Institutional framework

The institutional set-up should provide for proper regulation and monitoring of the contract implementation. The regulatory authority should be given a sufficient level of independence in order to ensure that all the parties' interests are well-balanced and protected.

3. Performance indicators

(i) Initial evaluation

Before selecting the performance indicators, the parties to the contract should conduct detailed evaluation of the technical and financial conditions of the water utility in order to fully assess its pre-contractual performance. Such an evaluation will allow the parties to agree on realistic performance indicators given the existing state of the utility.

(ii) Selection of performance indicators

The contract should clearly specify all performance indicators that will be monitored during contract implementation and the mechanisms for their adjustment. If the operator's remuneration is based on the achievement of selected indicators, these should also be clearly identified. Performance indicators could be linked to the financial performance of the utility (e.g. operating ratio, collection efficiency), efficiency of operations (unaccounted-for-water, pipe breaks), operating performance (average hours of service, population served). The performance indicators should be few, simple, realistic and easy to measure to be able to properly monitor their achievement.

4. Tariffs and financial obligations of the contracting authority

(i) Tariffs setting and adjustment

A sound tariff policy should balance considerations related to the utility's financial viability, its social objectives and its economic efficiency. The contract should allow for tariffs to be adjusted over time (tariff revision mechanisms) both in relation to inflation and improvement of services as well as in response to force majeure events or changes in the legal regime. Cross-subsiding should be avoided and replaced, if necessary, by transparent subsidy schemes targeted at well-identified poor households.

(ii) Financial obligations of the contracting authority

When public authorities are fully (e.g. service or management contracts) or partially (e.g. lease contracts) responsible for financing the investment programmes of the water utility, these obligations should be clearly defined in the contract, both in terms of amounts and timeframe of investments. In order to avoid conflicts during the implementation phase, the contract should draw a clear distinction between maintenance works, replacement works and emergency situations.

5. Financial penalties, bonuses and incentives

(i) Financial penalties

In the context of EECCA water utilities, which often face significant financial difficulties, penalties should be used with utmost prudence. In order to avoid putting at risk the general financial health of the utility, and consequently its operational capacity, penalties should be used only when utilities are operated by private contractors. Imposing a penalty would directly affect the ability of the utility to meet the performance levels specified in the contract.

(ii) Bonuses and incentives

If properly designed, bonuses and incentives could contribute significantly to the achievement of the level of services provided by a contractor. When the utility is run by a publicly-owned contractor, bonuses should be provided directly to individuals and not to the utility because no individual will benefit directly from higher performance levels of the utility. When the utility is run by a private operator, incentives should reflect the productivity gains of the utility.

6. Monitoring

Setting an effective system to monitor contract implementation is crucial for evaluating if parties meet their obligations and achieve specified targets. Monitoring provisions should focus on the contractor's success to meet the targets rather than on how it meets these targets. In countries where governments face limited monitoring and regulatory capacity, the monitoring function should be outsourced to an auditing company. The government should then reconfigure its task as monitoring the auditor.

7. Contract enforcement / Contract resolution mechanisms

Performance-based contracts should include formal dispute resolution procedures (e.g. judicial, quasi-judicial, administrative, arbitral). Arbitration should be the preferred dispute resolution mechanism in contracts that include a foreign private entity. The main advantages of arbitration include confidentiality (as it relates to commercial secrets); expertise (arbitrators are selected on the basis of their technical expertise); neutrality (arbitrators are chosen from among individuals unrelated to the parties in the dispute); integrity (arbitrators are chosen from among individuals of high moral repute).

8. Risks

Any long-term contractual relationships involve risks such as: operation and maintenance risks, revenue risks, regulatory risks, political risks. The allocation of key risks should be carefully considered when designing performance-based contracts. Risks should be fairly allocated among parties. The risks should be allocated to the party that is best suited to assume them both in terms of technical expertise and the possibility to mitigate the risk at least cost.

9. Costs

In considering implementing performance-based contracts, the public authorities should be aware of all costs, both direct and indirect, that such contracts may entail to the public sector. Apart from traditional "costs", (overheads or expenditures inherent to the project), there are costs incurred due to indirect "losses" (e.g. costs of hiring consultants to prepare the contract, un-monitorable performance targets). Usually, the contract does not include provisions related to indirect costs. However, during the negotiation stage, the parties should always consider all actual and potential costs inherently and indirectly associated with performance contracting.

CHAPTER 2. THE CONTEXT

This chapter briefly introduces the current developments in the water supply and sanitation sector in Armenia. It looks at the legal and regulatory framework for managing water utilities in the country. In addition, it describes the main premises of the current lease contract in Yerevan.

1. Current developments of the water supply and sanitation sector in the country

Available water resources in Armenia are not scarce but are not abundant either. The level of water resources, in the amount of 10.5 km³/year or about 2 780 cubic meters per capita per year, is average compared to international benchmarks. This calls for more rational and efficient use of water in the country. About 69 percent of the raw water comes from surface water sources and 31 percent from underground sources. Ninety-six percent of potable water comes from underground sources and more than 55 percent of it is delivered by gravity flow. Historically, the underground water has been of high quality and has required only light chlorination treatment.

Due to economic changes in the 1990s, the level of water demand decreased. Since 1985, total demand has dropped by 60 percent. The most substantial decrease was in the demand for irrigation, as a result of the deterioration of irrigation infrastructure and an increase in prices for water and electricity. This decrease also affected the industrial and domestic sectors (which represent 20% of total water consumption). Domestic demand has decreased due to supply shortages and an increase in water prices.

Ninety-two percent of the Armenian population has access to water supply: 80% in rural areas and 99% in urban areas. Eighty-three percent of the population has access to sanitation: 61% in rural areas and 96% in urban areas. However, about 41% of industrial and domestic wastewater is discharged without full treatment (mechanical plus biological treatment). All 20 wastewater treatment plants (WWTPs) in the country were built before 1990 and due to insufficient maintenance during the 1990s and high operation costs, most of them are in bad operating conditions¹.

In order to improve the management of the water sector, the Armenian government launched a comprehensive water sector reform. The main elements of the reform were consolidated in the Water Code (adopted in June 2002, and amended in 2003). The Water Code introduces a number of modern concepts and mechanisms for managing the water supply and sanitation sector, such as river basin management, private sector participation, different types of performance-based contracts, confirming the polluter-pays and user-pays principles as major policy principles.

The reform measures include two main actions:

- The regulatory reform: this reform was carried out with the aim of separating the regulatory aspects, the standards setting, and the operational functions of water

¹ All numbers in this section are taken from the International Benchmarking Network for Water and Sanitation Utilities web-page: <http://www.ib-net.org/en/search/datasheets/ARM.php>

management and handing them over to different independent bodies. This led to the creation of a number of new bodies, including the National Water Council, the Dispute Resolution Commission and the Public Services Regulatory Commission. Responsibilities for managing the water resources were clearly separated from the responsibilities for managing the water supply and sanitation infrastructure. The former were assigned to the Water Resources Management Agency (under the Ministry of Nature Protection), whereas the latter were given to the State Committee of Water System (SCWS or State Water Committee) (under the Ministry of Territorial Administration). In addition, all irrigation infrastructure was handed over to the State Water Committee.

- The financial reform: the main objective of this reform was to commercialise the water sector over the period 2001-2008. To achieve this, the government adopted the “Reform Programme to Improve the Financial Sustainability of the Companies Responsible for the Provision of Drinking Water Supply, Sewage and Irrigation/Drainage Services”.

All water resources in Armenia belong to the state. The state-owned water systems can be under state or private management. The two largest water and wastewater utilities in Armenia are the Armenia Water and Wastewater Company and Yerevan Djur. The Armenian Water and Wastewater Company is owned by the State Water Committee and managed by the French company SAUR under a management contract. Yerevan Djur signed a lease contract with the SCWS. Three other small utilities are operating in rural areas (financed by KfW, a German government-owned development bank). They are owned partially by local municipalities and partially by the State Water Committee. Finally, around 600 villages operate their water services independently.

2. Regulatory context

Apart from the Water Code there are a number of other legal acts that directly shape the regulatory basis for the management of the water sector in Armenia in general and the performance-based contracts enforcement in particular. Below, is a summary of the main regulations:

1. Regulations on drinking water and drinking water quality monitoring

- The ***Law on Fundamental Principles of National Water Policies (May 2005)*** aims at ensuring accessibility to water resources in required amounts, mode and quality to ensure human welfare, development of the country’s social and economic systems and to meet the environmental needs at present and in the future. It includes several main goals related to Article 15 of the Water Code: stable management of water resources; metering and evaluation of water resources; formation of the water resource demand and supply; relationships associated with river basin management.
- The ***Law on Securing Sanitary-Epidemiological Safety of the Population***, enforced by the State Hygiene and Antiepidemic Inspectorate of the Ministry of Health, regulates the quality and safety of supplied drinking water.
- The drinking water quality standards are established by the Ministry of Health Order No. 876 of 25 December 2002. The standards are set in a document entitled: ***Drinking Water. Hygienic Requirements on Water Quality of the Centralised Water Supply Systems. Quality Control, Sanitary Regulations and Norms, No. 2-III-A 2-1***. This document defines the frequency of control carried out by the operator of bacteriological and organoleptic pollutants within the distribution networks.

2. Regulation on contracts with consumers

- **Government Resolution No. 130-r of 22 January 2004** adopted new rules for the use of water supply and sanitation infrastructure as well as the types of contracts to be concluded with various consumer groups. These contracts create the basis of the legal relationship between key entities in the water supply and sanitation (WSS) sector and establish their respective rights and responsibilities.

3. Regulation on payment for water use and wastewater discharges

- The **Law on Environmental and Natural Resource Payments** defines the type of nature protection payments (including payments for discharges of pollutants into water and payments for the placement of production and consumption waste in the environment) as well as the types of payments for the use of natural resources (including payments for water use). This law is administered by three main government agencies: the Ministry of Nature Protection (which designs/introduces the economic instruments and controls the volumes of pollution and natural resources use); the Ministry of Finance and Economy (which proposes the charge rates and allocates the charge revenues) and the State Tax Service (which collects the payments).

3. Institutional context

There are three main institutions in Armenia with direct responsibilities for the management of the water sector in the country. These include:

1. The State Water Committee (SCWS):

The SCWS was created by **Government Resolution No. 92 of 9 February 2001** to implement national water policies by optimising the management of water resources and increasing the effectiveness of reforms in the WSS sector, as well as improving tariff policy. The SCWS was reorganised and restructured by **Government Resolution No. 440 of 17 May 2001**.

2. The Public Services Regulatory Commission (PSCR):

The PSCR was established by the **Law on the Regulatory Body for Public Services (17 January 2004)**. The PSCR is responsible for the regulations of the public utility sector, including the balancing of interests between consumers and the entities operating in this sector. It aims at contributing to the formation and development of competitive markets and encouraging the effective use of resources. With regard to WWS, the PSCR is mostly in charge of issuing and monitoring compliance with the Water System Use Permit requirements (see below).

3. The Water Resources Management Agency (WRMA):

The Water Resources Management Agency was created in 2002. With regard to contractual arrangements in the WSS sector, the WRMA has two main functions: issuing the Water Use Permit (see below) and monitoring the compliance with the Water Use Permit requirements.

The two permits mentioned above are crucial for the smooth operations of a water company. Both of them are specified in the Water Code and in complementary government resolutions. These permits are described below.

1. The Water Use Permit (WUP):

WUPs regulate the extraction and discharge of water. The WUP requirements are based on **Government Resolution No. 864 of 30 December 1998**. All water companies must hold such permits: one for each raw water source and one for each wastewater discharge point. The taxes on raw water

depend on the origin of the water and on the operator's ownership. The WUPs are issued for a period of 3 years. There are currently discussions on extending this period.

WUPs are issued on the basis of opinions made by the Geological Fund of the Ministry of Nature Protection and in relation to the category for which the water will be used: drinking water, irrigation, industrial water, energy, fisheries. The waste water discharge requirements are defined in terms of quantity discharged, quality of the waste water, definition of the discharge point, and timing of the discharges.

2. The Water System Use Permit (WSUP):

The WSUP sets the tariff for water supply and wastewater collection. The tariff requirements are set in the *Public Services Regulatory Commission Resolution No. 33 On the Approval of the Tariff Setting Methodology for Drinking Water Supply, Wastewater Collection and Waste Water Treatment Services* (April 2005). The PSCR monitors the quality of the service and the tariffs applied to consumers. The permit is issued for a period of 10 years. Yerevan Djur holds WSUP No. 0008, issued by the PSCR on 30 May 2006 (Decree No. 88A).

If the operator does not meet the WSUP requirements, there are three main types of penalties that can be imposed on the operator. These include: notification, suspension of the permit (the operator should continue its work until the issue is solved or a new permit is issued, or a new operator is selected), and termination of the permit (termination of the operator's activities).

4. History and current status of the contract

During the Soviet times and the first years of independence of Armenia, water companies were exclusively owned and operated by the state. With the reforms in the sector, the government created opportunities for the private sector to participate in the management of the WSS infrastructure.

As early as 1999, the government invited private sector companies to participate in a competition to manage the Yerevan water utility. This was the first experience in Armenia with private sector participation in the water sector. A management contract² was awarded to ACEA Company (the Rome water services operator) for the period 2000-2005.

After the contract with ACEA expired in 2005, the Armenian government decided to launch a tender for a lease contract for the management of the Yerevan water utility. Under the lease contract, the private operator is responsible for operating and maintaining the facility and the government is responsible for financing investments.

Five companies pre-qualified but only two delivered a final proposal after the due diligence of the existing equipment was carried out. The contract was awarded to Véolia Water (the bidder) and a contract for a 10-year lease was signed with the State Water Committee (the lessor) in December 2005. The contract was prepared with the assistance of an international consultant.

To implement the contract, the bidder created a new company: Yerevan Djur (the lessee and the operator). Yerevan Djur was created in June 2006 as a closed joint stock company³ on the basis of the

² Definition of a management contract: service contract under which the public authority appoints a private contractor to manage all or part of its operations. Under such contracts, the bulk of the commercial risk and all the capital and investment risks remain with the government.

³ The Company is considered closed if the Company shares are distributed only among its founders or other predetermined persons, without the open subscription of shares. The Company is subject to court-supervised liquidation. <http://www.lexadin.nl/wlg/legis/nofr/oeur/lxwearm.htm> .

Law on Joint Stock Companies (April 1996). Yerevan Djur is wholly owned by Véolia Water. Under the lease contract, the operator pays the lessor a fee on a semi-annual basis for the period of the contract. To ensure investments for the Yerevan water utility, the government contracted a USD 18.5 loan from the World Bank. The revenue from the lease fee paid by the operator is used in paying back this loan.

The contract was signed by three parties: the lessor (the State Water Committee), the lessee (Yerevan Djur) and the bidder (Véolia Water). The lessee and the bidder were required to submit a performance security backed by a reputable bank.

A description of the main features of the contract is presented in Annex III to the report.

CHAPTER 3. ANALYSIS OF THE CONTRACT AND CONTRACT IMPLEMENTATION

This chapter presents the core analysis of the review. This includes analysis of all major aspects of the lease contract as well as the preparation of the bidding process and the selection of the bidder which precedes the signature of the contract but is fundamental for the success of its implementation. The analysis is divided into 10 main issues, assessed against international good practices, such as those contained in the OECD's *Guidelines for Performance-Based Contracts* and followed by respective recommendations as well as the identification of good practices.

1. Preparation of the contract

Presentation and analysis

The preparation of the contract started with the drafting of the Terms of Reference (ToR) for the lease contract for the Yerevan water utility. These Terms of Reference specified the main conditions and requirements for preparing proposals. The Request for Proposal (i.e. the ToR together with the administrative requirements) was sent to different companies and posted on the World Bank website according to their usual procedure. The government was interested in attracting foreign private sector companies. The main selection criterion was the level of the water tariff which is a criterion also identified in the Water Code for lease contracts.

Of the five pre-qualified bidders only two submitted proposals. Véolia Water offered the lower tariff and won the contract. The Armenian government hired an independent international consultant to help draft the contract. The consultant was financed by the World Bank.

The existence of a management contract prior to the lease contract was of particular importance for the quality of the lease contract. Due to the experience with the implementation of the previous management contract, the Armenian government was in a position to identify specific problem areas and issues which were better regulated in the lease contract.

For example, the improved knowledge gained by the national authorities during the initial management contract allowed them to better define the performance indicator for the continuity of the service: under the management contract, this indicator was defined as the percentage of customers enjoying a 24-hour water supply. It was acknowledged that this definition could lead to biased measurements as for instance in the case where these measurements are performed in specific areas only, excluding areas where supply is lower than 24 hours a day. As a result, a new methodology to monitor the weighted hours of supply within the whole area covered by the lease contract was developed. This methodology was found to provide a fairer measure of the constancy of water supply. The methodology was finally used in the lease contract to measure the indicator.

The preparation of the lease contract benefited from the involvement of the international consultant on the one hand but also from the improved knowledge and experience of the Armenian authorities, on the other. Experience in Armenia shows that while international consultants bring in significant value added to the process, their sole involvement is not sufficient. Given the significant body of legislation

that needs to be taken into account in preparing such complex contracts, the consultant needs to understand local legislation and local conditions well in order to be able to deliver a good product. In preparing this contract, the Armenian government established a working group which consisted of representatives of different agencies with interest in and responsibilities for the water infrastructure to support the international consultant. The preparation of the contract lasted for months and the Armenian government was fully involved in this process. As a result, this second contract was better adapted to the local legal and economic context.

One particular issue that is worth noting is the quality and accuracy of the baseline information provided to bidders in the Terms of Reference. While some of the technical data are difficult to assess even now, one and a half years after the signature of the contract, due to missing or poor technical designs prepared many years ago, other data changed between the preparation of the tender documentation and the starting date of the contract. One such example is the increase of staff salaries. The salaries of the Yerevan Water Supply Company (YWSC) employees rose by 35% in the period between the tender and the starting date of the contract. In addition, Armenian legislation requires that the operator should maintain the salaries of all local staff during the first year of the contract⁴. Thus, already at the outset, the business plan prepared by the bidders was somewhat unrealistic which could potentially lead to significant difficulties at the stage of contract implementation.

In general, the tendering process was prepared in line with international requirements. The water tariff was the single selection criterion. Water tariff can be considered as a good criterion because its major advantage is that it allows summarising the performance of the private operator aiming at optimising the costs within a fixed context of requirements. The use of this criterion also allows to make an objective and easily comparable selection of the lessee. In this case, the tariffs proposed were announced and compared publicly during the opening of the bids. The water tariff as a single selection criterion is a good practice as it allows a fair, transparent and integrated comparison of the bids.

Recommendations

With this in mind, the following recommendations can be considered:

- The quality of the contract can be further improved if the data from the tender process used to calculate key indicators in the bidder's business plan can be updated before the starting date of the contract, particularly if time has elapsed between the starting date and the tender preparation (which was the case with this contract). Some data sensitive to changes may be frozen over the negotiations period in order to keep the baseline scenario relevant. Alternatively, the government needs to make better projections of key input indicators. In addition, the contract should identify such cases clearly and propose solutions. In the same spirit, the contract documentation has to be as reliable as possible, containing updated maps and appropriate technical designs and descriptions.
- The experience with the previous management contract was particularly beneficial and contributed to the better quality of the lease contract. Such a preliminary experience is crucial and can be recommended as a good practice. Moreover, the benefits from an earlier management contract would be enhanced if the lease contract could immediately follow the period of the management contract so that the new management would not lose the momentum and could build on previous achievements.

⁴ Cf. Contract, Article 11.1.

2. Legal and institutional issues

Presentation and analysis

The contract is based on existing legislation. It also draws upon good international practices. Overall, the contract is well-designed and covers all major issues that need to be reflected in such a contractual arrangement. In case of conflicts of interest, the contract provides a number of mechanisms for their solution. This is a good basis for ensuring the smooth implementation of the contract.

Although the contract is at a relatively early stage of implementation (about one and a half years), some inconsistencies between the contract and existing legislation are already visible. One particular issue relates to the payment of water use/abstraction charges. The law on such charges⁵ specifies that the water use/abstraction charge rate is 1 Dram / m³. The charge rate can be reduced to 0.05 Dram / m³ if the Company using the raw water is at least 50%-owned by the State Water Committee or by the Yerevan Municipality. On the other hand, the Water Use Permits issued to the Company specifies the charge rate of 0.05 Dram / m³.

The previous Yerevan Water and Sewage Company was owned by more than 50% by the State Water Committee and was paying 0.05 Dram / m³ which was consistent with the law. However, since the implementation of the lease contract, the water company is not predominantly owned by the State Water Committee. In September 2007, the authorities required that the Company Yerevan Djur should pay 1 Dram / m³, which is consistent with the law but not with the Water Use Permits.

The average yearly volume of raw water pumped by the operator is 300 million m³, therefore the change of the charge rate would lead to a significant increase of the related costs for the operator (approximately from AMD 15 to 300 million). Thus, it is important to solve this problem and to align the requirements of the law and the Water Use Permit. The parties have decided to cooperate to find a solution to this problem and to harmonise the requirements of the law and the Water Use Permit.

There is a discrepancy not only between the water use permits and the law, but also between the terms of the law and the purpose of the law: the companies benefiting from the charge reductions are defined in the law as “predominantly owned by the State Water Committee” because this definition included all water operators in 1998 when the law entered into force. However, there are now water operators which do not correspond any longer to this definition. In general, there is no reason for the law to distinguish between public and private operators and it would be fair to abolish this distinction in order to avoid any unjustified treatment. Altogether, negotiations on such financial issues against the background of a law which does not seem to be particularly sound should be avoided, as they may backfire and create more problems than helping sort out those that they intend to solve. In addition, the water use permits are issued for a period of 3 years which presents a risk to the lessee operating under a 10-year contract. There are currently discussions with the authorities on extending this period.

A number of other contractual issues were additionally sorted out through numerous amendments signed during the first contract year. Most of these were related to the handover and takeover of the main assets, and to the evaluation of assets value. This particular case did not result in any significant slowdown of the start-up of the contract because there was a delay of only one month in the contract starting date (7 months instead of 6 months between the signature and the starting date). However, in general, this could lead to more substantial delays. This situation is usually explained by the lack of experience at a country level, as the assets evaluation and transfer were not a priority in Soviet times.

⁵ The Law on Nature Protection Payment Rates – adopted and ratified in December 1998. Enacted in January 1999.

Nevertheless, keeping the context in mind, it is better if assets evaluation is carried out during the first six months of the contract and with the support of external consultants.

In addition, even if it is difficult to take into consideration every operating detail from the outset of a lease contract, it is advisable to define as clearly as possible key technical terms to avoid potential technical disputes or misinterpretation which can lead to operational bottlenecks or delays in the contract implementation and/or to a substantial number of technical amendments. The lack of clarity of such as terms as major bursts, emergency situations, substantial breakdowns, repair works, maintenance works, restructure failure posed some challenges to parties to the contract in the course of its implementation.

Recommendations

- Check that the contract and all related legal documents (e.g. the water use permits and water system use permits) are consistent with the legal framework during contract preparation. The contents and duration should also be checked. However, if discrepancies remain, the law may be amended if necessary.
- Avoid negotiations which are not in accordance with the law. If the contract requires changes in the law, amend the law before the contract enters into force.
- In order to smooth the transfer process, undertake assets evaluation during the first six months of the contract, with the support of external consultants.
- Define key terms – such as major bursts, emergency situations, substantial breakdowns, repair works, maintenance works, restructure failure – more clearly so that there is no room for doubt or differences of interpretation.

3. Performance indicators

Presentation and analysis

a. The choice of performance indicators

Well-designed and realistic performance indicators are key factors for the success of contract implementation. Based on its experience with the previous management contract which contained more than 100 performance indicators, the State Water Committee drastically reduced their number under the lease contract⁶ down to 4 major groups. These include:

- Continuity of service;
- Water quality;
- Promptness to react to customers' inquiries and complaints;
- Additional requirements in the service area of Yerevan City:
 - ✓ Restrictive conditions on the continuity of the service (for at least a 4-hour supply) for certain areas as identified in the contract;
 - ✓ Information provided to customers through mass media about the supply schedule, service interruptions due to repair works or incidents in the network. The contract provides specific time limits for each case;

⁶ See Contract, Appendix 6, page 42.

- ✓ Compensation of customers in case of service interruption (exemption from water charges or reduction of the invoice);
- ✓ Minimum pressure at the entrance of multi-storied apartment buildings.

The two most important indicators are the continuity of service and water quality. The continuity of service is the most important indicator from the operator's point of view as the contract provides for particularly heavy penalties if the operator does not meet the requirements set for this indicator.

b. Continuity of service

The contract sets the yearly targets for the indicator related to the continuity of service: the percentage of customers with constant supply (weighted hours of supply / total hours for all customers). These targets range from 78.8% from the first contract year to 80.5% for the second year and 95% for the tenth year⁷. These targets were established on the basis of the information made available during the tender preparation: the baseline target for the first year was set at 76.7%.

The calculation of the service continuity made by the operator for the first contract year shows a share of about 70% instead of the 76.7% which served as a baseline for the targets set in the contract. During the interviews it was explained that this discrepancy could be related to the number of pressure loggers used for taking measurements (76 current loggers instead of 33 loggers by the time of the tender) and the location of these loggers. In addition, measurements have been carried out during the month of April only, which is a rather favourable period for ensuring uninterrupted water supply compared to the winter season, when water consumption increases considerably, mainly because of heating purposes, and compared to the summer season – because of high temperatures and irrigation. Therefore, data from measurements taken during one month only cannot be considered as relevant indicators of the entire contractual year. This shows that a detailed definition of the calculation methods is not sufficient if it is not specified together with a clear definition of the measuring equipment supporting the calculations.

The measurements and the calculation method of the baseline scenario were not checked by the bidder by the time of the tender. The operator is now preparing a document to demonstrate that the initial baseline indicator for water service continuity was not correct. The operator intends to propose another baseline indicator (73% instead of 76% as identified in the Request for Proposal) based on improved measurements taken with the help of a larger number of loggers installed (76 instead of 33).

c. Water quality

The required standards for water quality are the standards defined in the legislation in force⁸. These standards should also be monitored in compliance with the applicable law. The water quality check points are chosen by the authorities. There are about 50 points which are supposed to be representative of the quality of the water delivered to customers. According to the interviews, the analyses performed comply with the threshold required by the regulation.

Each day, the central laboratory carries out fifty physico-chemical and bacteriological tests. The different control points include 29 reservoirs, and 12 to 15 different points on the network. There are 58 monthly control points in the villages. Generally, four sensory indicators are analysed. These include: residual chlorination and 3 bacteriological indicators.

⁷ Cf. Contract, Appendix 6.

⁸ "Drinking water: Hygienic requirements on water quality of the centralised water supply systems: Quality control" No. 2-III-A 2-1 (registered on December 28, 2002, No. 10002340).

The activities of the laboratory are inspected once a year by the Ministry of Health. In addition, there are anti-epidemiological and hygiene centres that belong to the Ministry of Health which control the network. Currently, most customers' claims are related to the bad odour, taste and colour of water. Taking into account the high leakage rate of the network (about 80 to 85% according to the interviews), it is likely that the water provided to customers is not of good quality everywhere.

The water quality check points are not well chosen along the network (e.g. too many near the reservoirs or the chlorination stations and few or none beyond these points). As such, they cannot give a reliable indication of the real water quality in the entire water supply network. The raw water is indeed of high quality but it deteriorates during its transfer through the network. Therefore, the performance indicator, as specified, is not representative of the efficiency of the operator towards its ultimate objective to provide customers with safe drinking water in all parts of the service area. In its 2008 work plan, the operator has foreseen to increase the number of check points on the network. Moreover, a new laboratory to control the water and wastewater quality is currently under development. It will be furnished with modern equipment and will allow to make high level water quality tests.

Recommendations

The range of performance indicators selected in this contract is relevant and sufficient. The choice of the Armenian government can be considered as a good practice.

- The number of indicators selected in the contract is relevant and adapted to the national legal framework. It is limited to 4 major groups of indicators which allows both the authorities and the operator to focus on the quality of the monitoring.
- The type of indicators selected can also be considered as relevant as they provide a fair picture of the operator's activity and efficiency.

However, there is room for improvement with regard to the definition and the monitoring of these performance indicators.

- With regard to continuity of service: it is recommended to postpone the definition of the base year data⁹ to the starting date of the contract (i.e. when the contract comes into force). In such case, the contract would include a yearly increase of the targets of the indicator instead of fixed target numbers. Indeed, using a percentage of the improvement makes it easier to integrate baseline modifications when necessary (the fixed target yearly numbers do not have to be corrected every year). Alternatively, for the most difficult performance indicators, the contract should allow a period of one year for the lessee and the lessor to agree on a calculation methodology. This methodology should also be agreed upon with the auditor.
- With regard to water quality: it is recommended that water quality should be analysed at consistent check points taking measurements at more points than required by the legislation. In order to obtain fair and more precise observations, the water quality indicator can be further specified in terms of different uses. These uses can include: drinking water, water for domestic use only, water for non-domestic use only.

⁹ The base year data is the data that will be used as a reference against which further progress in achieving performance indicators will be measured.

4. Tariffs and financial obligations of the contracting authority

4.1 *Tariff setting and tariff yearly revision*

Presentation and analysis

The tariff proposed by the operator is approved by the Public Services Regulatory Commission. It is set in accordance with the terms and conditions of the Water System Use Permit. The tariff designed by the operator results from the integration of all project costs as required in the ToR (including the lease fee).

From the state's point of view, the tariff setting methodology is linked to the affordability of the population to pay and the political decision with regard to "burden sharing" between water users and taxpayers. The base water tariff has been set at 144 drams/m³ (that is 124 drams for water supply, and 20 drams for sanitation) and will go down to 89 drams (in constant drams) in 10 years in accordance with the financial proposal of the bidder. This shows the operator's commitment to reduce the tariff level according to a tariff reduction schedule.

The Water System Use Permit is issued for the entire duration of the contract. The tariff can be revised on an annual basis. The revision formula is not included in the contract but in the Water System Use Permit only. The formula is based on four indicators agreed upon by the lessor and the lessee to cover the average increase of lessee's costs. These include:

- retail water supply volume;
- annual inflation;
- exchange rate AMD/EUR;
- electricity tariffs.

The tariff revision formula is based on the supplied water volume but water losses are not taken into account. This can lead to hidden impacts on the calculation of the tariff. For instance, during the first contract year, the supplied volume decreased but the volume of the losses increased, which led to a situation where the customers covered water losses. When including water losses in the formula, it should be kept in mind that the most relevant indicator is [m³ of leakage/day/km of pipe] and not [m³ sold/m³ produced], which is biased because it includes the collection rates, or [m³ consumed/m³ produced], which is also biased because it does not remove the network length factor or the daily consumption factor.

Moreover, if the yearly automatic tariff adjustments calculated using the formula lead to a decrease or increase of more than 30%, the contract provides for the possibility to temporarily suspend the adjustment and discuss and re-negotiate the new situation with the Regulatory Commission. It is also worth noting that the contract provides that in case of excess profits (after-tax profits higher than 10% of the annual turnover in the respective year), the operator has to spend 50% of this excess profit in the following year for the rehabilitation of facilities in addition to other agreed plans.

The operator is also responsible for tariff collection. During the first year of operation, the tariff collection has increased from 78% to 83% and it was about 89% by the time of this review. This improvement is mainly due to new managerial procedures.

The PSRC is in charge of the monitoring of the application of the tariff revision formulae. May 2007 saw the first tariff revision. This process did not go as smoothly as expected. There was a disagreement between the operator and the PSRC related to the evolution of the retail water supply

volume. The invoiced volume of some of the budgetary customers (mostly public) decreased significantly during the first year of operation. This was due to the fact that water meters were out of order and these customers were invoiced on the basis of an estimated consumption.

The disagreement was over the method used to estimate consumption volumes: the operator estimated the invoiced volume based on average past consumption, whereas the law requires the assessment of consumption on the basis of meter diameters (size of flow meters). This latter option would have led to a much higher global estimated consumption for these customers. But the operator decided to keep a fair estimation of the volumes in order to maintain a satisfactory collection rate. The PSRC disagreed with the tariff revision calculation because the law was not applied for the estimation of water volumes supplied to budgetary customers. The PSRC considers that the drop of water consumption of budgetary customers has been artificially increased as a result of the methodology used by the operator for the estimated consumption.

The tariff revision requested by the operator was supposed to compensate the lessee for its loss of revenue due to the drop of water consumption by budgetary consumers. However, the tariff increase would have affected all customers except for the budgetary ones. For this reason, the PSRC conducted further analysis of the volume supplied on the basis of a 900-customer sample. The results of this survey are public¹⁰. The survey analysis led to an increase of the tariff lower than calculated initially by the operator (3 drams/m³ instead of 9 drams/m³). Finally, it was decided to postpone the increase of the tariff to the fourth year of the contract in order to keep a consistent price policy¹¹ where the base tariff starts to decrease from the fourth year of the contract. Yerevan Djur has agreed to postpone the tariff increase of year 2 only on an exceptional basis.

Recommendations

This disagreement over the tariff revision shows that, although the contract provision seemed to be fair, problems can still appear at the contract implementation stage. This also shows the need for an accurate definition of the base year and the tariff-setting methodology in the contract. All terms and mechanisms of the tariff revision formula (such as volume supplied) should be defined as comprehensively as possible in the contract. However, as a contract cannot cover every possible situation in advance, as a minimum, the contract should clearly identify appropriate mechanisms to regulate possible errors (omissions) which will allow to solve the problems that may appear after the signature of the contract. The Regulator should be involved as much as possible in the resolution of these problems.

Providing information on the tariff revision method in the water system use permit only is not sufficient also because the WSUP does not provide for the regulation of certain issues such as the method for calculating supplied water volumes. Ideally, the lessee would be better protected if the revision formula had been directly included in the contract (as it exists in many contracts) and even presented in the Request for Proposal. Agreeing on the tariff formula from the outset can substantially help avoid the risks of future potential conflicts.

In case of excess profits, it is commendable that the contract provides for the allocation of half of these profits for additional rehabilitation works which come on top of the agreed works. Such a compensation mechanism in case of high profit or losses certainly helps maintain a good macro-economic equilibrium of the project.

¹⁰ Summary and analysis of monitoring results of potable water consumption volumes in the service area of “Yerevan Djur” CJSC.

¹¹ PSRC Resolutions n°223 A, 224 and 225.

Thus, it is recommended that:

- When permitted by the national legal framework (which is currently not the case in Armenia), the base tariff revision formula should be included in the contract as this helps the operator to better control the risks related to the tariff revision. Such clarity can also help increase the attractiveness of the contract.
- Moreover, water losses should be taken into account in the tariff revision formula. This will help avoid penalising customers and making them pay for the losses. The preferred indicator to account for water losses should be: [m³ of leakage/day/km of pipe].

4.2 Investments related to the World Bank loan

Presentation and analysis

The involvement of the World Bank and the availability of a World Bank loan have been crucial for attracting the private company in managing the Yerevan water utility. The entire World Bank project is named Yerevan Water and Wastewater Project (YWWP). The YWWP Fund is financed partially by the World Bank loan and partially by the government of Armenia. Major investments financed by this Fund are related to¹²:

- Energy savings: USD 10.5 million, among which USD 5 million for the rehabilitation of the distribution networks and USD 5 million for the sectorisation of remaining water distribution systems;
- Improvement of the reliability of water supply and operational control: USD 6.75 million;
- Reduction of environmental pollution: USD 1.5 million.

The goal of the YWWP is to provide all major investments required, as opposed to the Enhanced Maintenance and Repairs Programme (EMRP), which is financed by the operator (AMD 8.87 billion) and aims at undertaking the investments related to maintenance and repair. The operator is also committed to financing, from its own sources, equipment in the amount of about EUR 6 million.

The funds from the loan were placed at the Yerevan Water and Wastewater Project Fund, managed by the World Bank Yerevan Project Monitoring Unit (PMU). However, it is the operator's responsibility to plan, design, develop tender documentation, tender and supervise works financed with resources from this Fund. Any new assets built with World Bank funds remain a state property but they are handed over to the operator to manage during the period of the contract.

There is an indicative investment plan related to the World Bank loan and provided in the Request for Proposal. The contract requires that 3 months after the signature of the contract the operator propose a revised investment plan for the first 5 years. On the basis of the Indicative Investment Plan, the operator is obliged to prepare annual investment plans which have to be approved by the Project Management Board. All procurement services have to meet the Bank procurement rules, specified in its Procurement Guidelines. Although the operator is responsible for organising tenders, there is a procurement committee which evaluates the bids. A PMU representative always sits on this Committee. All contracts with suppliers are signed by both the operator and the PMU but it is the PMU that makes actual payments. The PMU's role in relation to investments is limited to comments

¹² From the YWWP Indicative Investment Plan included in the contract (Appendix 9).

on the consistency of the yearly investments with the approved indicative plan and the World Bank rules.

The procurement procedure includes the following steps¹³:

- The operator elaborates the specifications of the contract, with relative autonomy, for the State Water Committee which is in charge of it;
- The specifications are validated by the PMU;
- The operator is in charge of setting the invitation to tender;
- The tenders are evaluated by the lessee's Procurement Committee (LPC) where the PMU is represented;
- After the selection of the offer by the LPC, the operator prepares the supplier's contract and signs it together with the PMU;
- Payments are the responsibility of the PMU, upon validation by the operator.

When selecting suppliers, the operator does not have to disclose the names of bidders until final evaluation. This procedure helps prevent any interaction with bidders before actual selection. In addition, it was pointed out during the interviews that the State Water Committee is also involved in procurement when a contract exceeds USD 200 000.

This whole procurement procedure provides the operator with strong tools to effectively control the investment expenditure. However, it is a heavy and long procedure, which may delay the implementation of the investment programme. Yerevan Djur has recently reinforced its procurement management team in order to keep under control these delays. Moreover, the presence of the PMU in the bid evaluation process has to be evaluated in terms of actual added value.

Recommendations

With regard to the World Bank investments, the contract is carefully designed and covers all major issues that need to be accounted for.

The procurement procedure described is not common in the international practice. Such a complete procedure is recommended as it helps the operator to control the costs associated with sub-contracting. Therefore, it can be recommended as a good practice. However, due to the number of steps of the procedure, the contracting process can be longer than expected and can lead to delays in the implementation of the investment programme. Therefore, it is recommended that:

- Such a procedure be implemented with support by a strong procurement team;
- The timing of the procedure should be reconsidered in order to make it more realistic. Such a procedure should have sufficient time built-in to allow for all steps to be implemented smoothly. To be feasible, the indicative and annual investment plans should be adjusted and made compatible with the procurement procedures.

¹³ Cf. Contract, Article 5.3.1.

5. Financial penalties and incentives

Presentation and analysis

The contract envisages financial penalties for failure to meet performance indicators. These are detailed in a separate annex. The most significant penalties are imposed when the service continuity indicator¹⁴ is not fulfilled: the penalties are paid in local currency. Penalties are calculated by the independent auditor. The contract does not foresee any incentives related to performance indicators.

For example, the penalties for the major indicator (continuity of water supply) are AMD 30.24 million for each percentage point below the yearly performance standards defined in the contract. The penalties are however limited to a maximum of 3 percent of the total collection revenue in the calendar year.

The Contract does not envisage penalties if the Enhanced Maintenance Repairs Programme (EMRP) is not implemented as planned. The EMRP is a programme aimed at rehabilitating the facilities under this contract as of the takeover date. The contract actually sets the minimum level of expenditure that has to be made annually in this regard.

Although it is logical that the operator should undertake the investments identified in the EMRP in order to comply with the performance indicators requirements, the absence of penalties in the contract (Appendix 8 of the contract) can lead to a dispute if the operator does not meet the EMRP contract requirements.

Recommendations

- It is recommended to include penalties or a settlement agreement in the contract for all the requirements of the contract and not only for the performance indicators requirements.

6. Monitoring of contract implementation

Presentation and analysis

In order to monitor contract implementation, the contract provides for regular reporting from the operator. This includes both annual and semi-annual reporting as well as one-time submissions¹⁵ and *ad hoc* reports.

The contract specifies reporting requirements as well. Some of these are very specific and detailed, particularly with regard to reporting on performance. For example, information is required on new connections, illegal connections, operation and maintenance summary – by source, transmission system, distribution system, sewage system, electricity consumption, continuity of supply, water quality monitoring results and customer service reports.

The exact format and contents of reporting however is left to be decided upon at a later stage. The contract provides that this will be done jointly between the operator and the independent technical auditor. It is the auditor that is responsible for monitoring the accuracy of reporting.

¹⁴ Cf. Contract, Appendix 8.

¹⁵ For instance: the Base Year Data Report, the update of the Emergency Response Plan, the first Contract Year Business Plan, etc.

The PMU and the Regulatory Commission are the main monitoring bodies – the former for the quality of services and quality of water (Art 1.2.5 of the Request for Proposal), the latter for the application of the tariff. The independent technical auditor has to submit the base year data report within 30 days from the starting date of the contract and the lessee has 60 days to approve it or provide comments. While a mutual agreement is very important about initial data, 60 days seem rather short to check the accuracy of some of these data and to provide a formal agreement.

Recommendations

The success of the partnership can only be ensured if all available tools are effectively used and implemented by the parties involved directly or indirectly in the contract. This contract provides sufficient tools to effectively monitor the contract implementation. The issue is how the regulator and the government make use of all this information and if they are in a position to verify the data. Thus, it is recommended that:

- The government should be closely involved in monitoring the contract implementation even if the role of the technical auditor is crucial in this process.

7. Contract enforcement and conflict resolution mechanisms

Presentation and analysis

The contract provides that both parties will act in good faith and to no detriment of each others' interests. The contract provides for settling all conflicts first and foremost in an amicable manner through discussions and arriving at a mutually-beneficial solution. It also allows for a facilitator, a third party, with a substantive knowledge in water and wastewater management who will be able to judge the problem and proposed solutions. The facilitator may consult the parties separately but its final decision is not binding for the parties and cannot be used by the parties in legal proceedings, if the case is taken to court. The costs of covering the facilitator's work will be borne equally by both parties.

The conflict resolution mechanism of last resort is court arbitration. Arbitration is envisaged to be administered by the London Court of International Arbitration¹⁶ and in accordance with the rules of procedure for arbitration of the UN Commission on International Trade Law¹⁷. The arbitrator will be an internationally-recognised expert in adjudicating disputes involving WSS services and will not be a national either of Armenia or the bidder's or operator's home country. The contract also clarifies the meaning of home country with regard to each of the parties.

The contract recognises that it is impossible to specify all possible cases of potential conflicts of interest. Instead, it provides for the most important mechanisms for solving such problems. It identifies the major conflict resolution mechanisms – ranging from acting in good faith, through discussions and finding mutually-advantageous solutions, using a facilitator to going to international arbitrator. These mechanisms are based on international good practices.

¹⁶ The London Court of International Arbitration (LCIA) is a London based institution providing the service of international arbitration. LCIA is an international institution, and provides a forum for dispute resolution proceedings for all parties, irrespective of their location or system of law.

¹⁷ The UN Commission on International Trade Law (UNCITRAL) was established by the UN General Assembly in 1966 "to promote the progressive harmonization and unification of the law of international trade." In 1985, it drafted the UNCITRAL Model Law on International Commercial Arbitration. Agreements which cite the UNCITRAL Arbitration Rules may be bound to this form of dispute resolution.

Recommendations

No conflicts have arisen so far among the parties. Generally, the conflict resolution mechanisms meet international standards and no specific recommendations are suggested.

8. Major risks and mechanisms for risks mitigation

Presentation and analysis

Performance-based contracts often face different risks when implemented. Some of the major risks include operating risks, revenue and financial risks, insurance and political risks.

The **operating risks** are the main risks identified in the Yerevan Djur lease contract. The contract includes an “emergency events” clause (cf. Contract, Article 7.14), which can be summarised as follows:

- If the lessee is responsible for the event **or** if the lessee is not responsible but the financial consequences amount to a maximum of AMD 50.4 million per contract year, the lessee shall bear the related costs.
- If the financial consequences are above AMD 50.4 million per contract year, the related costs shall be allocated between the lessee and the lessor as a result of negotiations between the parties.

Since the beginning of the contract, this clause has been used twice already but the amounts were reasonable and included in the business plan provisions.

Moreover, the contract also includes a financial equilibrium clause (cf. Contract, Article 3.8.7) according to which the lessee will not be held responsible for any event (not only emergency events) resulting in financial consequences of more than AMD 126 million. Therefore, the financial responsibility is clearly defined for an amount below AMD 50.4 million (the lessee is responsible) or above AMD 126 million (the lessor is responsible). However, the lack of fixed rules for the allocation of the financial consequences between these two thresholds leads to:

- A less attractive tender: bidders may be tempted to include high provisions in their business plans and customers may be penalised as a result (the provisions would be included in the tariff).
- A major risk of dispute if the parties cannot agree on the allocation of the financial consequences when the financial consequences are above the threshold.

The following risks are taken into account in the contract:

- **Revenue and financial risks** are well mitigated through the tariff revision formula.
- **Insurance risks** are well mitigated due to having a private sector operator implementing the contract. A local operator that belongs to a global company benefits from the strong reinsurance mechanisms that are available to the global company. Yerevan Djur is insured by an Armenian company as required by the contract but it is reinsured by international companies which already work with Véolia Water in other countries.

- The Operator considers that there are no specific **political risks** in Armenia as compared to other EECCA countries.

Recommendations

- With regard to the **operating risks**, in order to mitigate them better, it is recommended that the contract define more precisely the allocation rules for financial impacts of emergency events concerning the amount between AMD 50.4 million and AMD 126 million.
- Regarding the **insurance risks**, the involvement of a private global company can be considered as a best practice as it makes the insurance mechanism stronger and more reliable.

9. Personnel management

Presentation and analysis

The contract provides that local staff should be employed in accordance with the relevant labour laws in the country. Currently, employment is regulated by the Labour Code and the Law on Employment. Under the contract, the financial conditions of non-management staff employed during the first year are at least similar to or better than those offered by the previous employer. After the second year, the operator may dismiss any staff member in compliance with the labour legislation in force. During the first contract year, the number of employees decreased from 1 788 to approximately 1 400. The staff members who lost their jobs were compensated in accordance with the relevant legislation.

Under the contract, the operator must train the staff in modern management practices and submit training plans every year.

According to the information provided by the operator, a complete training programme has been developed and is being implemented. This programme targets the management staff, specialists, and technical and administrative personnel. The programme includes training courses on commercial / customer relations, financial managements (including “Development of financial management competences”), managerial courses, and compulsory courses (including “Increase of qualifications in the area of drinking water quality control” and “Technical safety at work”).

Recommendations

No specific issues have been raised during the interviews with regard to this matter. The Request for Proposal does not impose any specific constraints or obligations on the operator with regard to the number of staff to be kept in the operating company created by the bidder.

10. Transparency

Presentation and analysis

As discussed earlier, there are a number of checks and balances built into the contract to ensure transparency and accountability of the operator, including financial and technical reporting against set performance indicators as well as a close monitoring of contract implementation by a technical auditor and the World Bank PMU.

The PMU is a local entity which has been set up by the government of Armenia to manage and administer the implementation of the YWWP Investment Programme. Although the PMU is not a direct party to the contract, it has a strong power over its implementation. When contract implementation is complex or procurement procedures for selecting suppliers are too heavy with the involvement of several stakeholders, who are not necessarily signatories to the contract, the overall process may be hampered or slowed down. This may lead to difficulties with enforcing such contracts.

Transparency and good water governance are very sensitive issues in implementing performance-based contracts. Reporting requirements alone are not always sufficient to ensure transparency. Good water governance and an overall environment of fighting corruption are key factors to ensure the successful implementation of performance-based contracts.

Recommendations

- In order to avoid interferences, cost overruns or delays in the implementation of the investment programme, it is recommended that the contract include a clear definition of the roles and responsibilities of all stakeholders involved in the project implementation and in the procurement process.
- External audits should also be conducted to check the compliance of the procedures followed and disclose any discrepancies or mistakes detected. The reports from these audits should be made publicly available.

11. Public information

Presentation and analysis

The number of consumers that have subscribed to Yerevan Djur is 325,550 for water supply and 316,250 for wastewater collection. With regard to water supply, consumers are broken down as follows: 95% are domestic consumers, 4% - commercial, and 1% budgetary consumers. Commercial and budgetary consumers are defined as “legal entity” consumers and together they use about 42% of the water supplied.

According to the operator, the average yearly consumption is between 80 (flat) and 120 m³ per household. Therefore, the average yearly bill is about 13 840 to 20 760 drams per year, VAT included (VAT is 20.14%). The operator estimates that a bill of 20 760 drams per year represents about 2% of the average Yerevan household income which is at par with the World Bank affordability indicator for countries at this level of income.

There are currently no specific social water targeted public programmes to support low-income and socially vulnerable customers in the country. There is a Family Benefit Programme but it provides

support for a broad range of needs and it is not sufficient to help poor households cope with water bills. There is also a public fund, called Paros Fund that intends to help the poorest consumers by financing the installation of water meters whose repayment is spread over 2 years. The poorest consumers are identified on the basis of information registered and managed by the Yerevan Municipality.

Regulatory requirements related to the tariff review procedure do not provide the need to take into account consumers' ability and willingness to pay for the WSS services when the tariff is calculated. Despite the fact that the Water Code establishes the requirement to use the tariff regulation with due regard to the quality of the service and consumers' payment capacity, the PSRC does not make such studies in the course of the regulatory efforts.

Recommendations

- The government could create a special social programme to support low-income consumers and ensure affordability of water. Such a programme could increase the country's attractiveness for private sector operators.

CHAPTER 4. CONCLUSIONS

1. Major findings

The analysis in this report shows that the lease contract is well-designed and contains all major elements that are expected to be included in such contracts. As such, the contract is quite comprehensive and meets most international standards. The contract provides the operator with sufficient tools to keep the main financial risks under control. In addition, the contract has been implemented after a 5-year management contract, which facilitates significantly the implementation of the lease contract. However, after one and a half years of implementation, some difficulties have emerged. The main issues identified during the review are:

- The discrepancies between the law and the Water Use Permit with regard to water use charges;
- The lack of accuracy of the baseline information (e.g. employees' salaries);
- The accurate and clear definition of the base year data for performance indicators (water supply continuity, water quality, customer services and complaints);
- The application of the yearly tariff revision formula;
- The difficulties with regard to monitoring of performance indicators;
- The lack of precision of various aspects of the contract relating to the handover and takeover of the main assets and other key technical terms or definitions.

2. Summary of best practices and recommendations identified

2.1. Improving the attractiveness of the country for the implementation of performance-based contracts

Introducing overall reforms in the water sector, including private sector participation, as well as the right sequencing of these reforms is crucial. A **preliminary experience through a management contract** is key and can be recommended as a good practice. However, the benefits from an earlier management contract would be enhanced if the lease contract could immediately follow the period of the management contract. In such a case, it is recommended to prepare the lease contract in advance to avoid any (protracted) transition period between the two contracts.

The creation of a **social fund** (programme) to support low-income consumers and improve their affordability for water could make these countries more attractive for the establishment of public-private partnerships.

2.2.Improving the performance-based contract

a. Improvements related to the contract preparation stage

Selection of the operator

The **water tariff as a single selection criterion** is a good practice as it allows a fair, transparent and integrated comparison of the bids.

Preparation of the contract

Three major recommendations were identified for the contract preparation stage:

- The set of **data from the tender process** used in the bidder's business plan before the starting date of the contract should be updated as much as possible before the start of the contract. This is crucial particularly if time has elapsed between the starting date and the tender preparation.
- In order to smooth the process of assets transfer, **assets evaluation** should be carried out during the first six months of the contract with the support of external consultants.
- **Discrepancies between the legal context and the contract** should be identified during the contract preparation stage. The consistency of the contract (including its contents and duration) and all related legal documents (e.g. the water use permits and water system use permits) should be checked during the contract preparation stage.

b. Improvements related to the contract's contents

Performance indicators

Two best practices implemented through the contract were identified:

- Using a **restricted number of performance indicators**;
- Choosing **relevant performance indicators** which provide a fair picture of the operator's activity and efficiency.

Three sets of major recommendations emerged from the analysis:

- The **definition of the baseline figures** for the performance indicators should be postponed to the starting date of the contract and the contract should include yearly targets defined in terms of shares of the improvement (e.g. in the case of the continuity of service indicator). Alternatively, for the most difficult performance indicators, the contract should allow a period of one year for the lessee and the lessor to agree on a calculation methodology. This methodology should also be agreed upon by the auditor.
- Targets should be **representative of the real performance** of the operator over the entire network (for example, the water quality performance indicator), including a larger number of check points to have a broader assessment of the quality of water.
- The **definition of certain contract terms should be better clarified** (e.g. major bursts, emergency situation, substantial breakdowns, maintenance works), particularly when such terms are related to the performance indicators. Vaguely defined terms create potential for

conflicts and introduces tensions between the parties. However, as a contract cannot cover every possible situation in advance, the contract should clearly identify appropriate mechanisms to regulate possible errors (omissions) which will solve the problems that may appear after the signature of the contract.

Tariffs

With regard to tariffs, two major recommendations are proposed:

- In order to make the procedure of tariff revision more transparent, it is recommended to include directly in the contract the **tariff revision formula** when possible given the existing national legislative framework (which is currently not the case in Armenia). Such clarity can also help increase the attractiveness of the contract.
- Moreover, water losses should be taken into account in the tariff revision formula, in order to avoid penalising customers and making them pay for such losses. The preferred indicator to account for water losses should be [m³ of leakage/day/km of pipe].

Procurement procedures

The procurement procedure included in the contract can be considered as a best practice as it is comprehensive and can help the operator to control the costs associated with sub-contracting.

However, due to the significant number of steps of the procedure, contracting of suppliers can take longer than expected and this can lead to delays in the implementation of the investment programme. It is recommended that this kind of procurement procedure should be supported by a **strong management team**. The timing of the procedure should be reconsidered in order to make it more realistic.

Penalties

It is recommended to include penalties in the contract, not only for the performance indicators, but also for other relevant cases, particularly those which have a direct impact on the improvement of the service quality, such as the Enhanced Maintenance Repairs Programme (EMRP) (in case the minimum level of EMRP expenditures for each contract year is not reached as planned).

Risks mitigation

In order to better mitigate the operating risks, it is recommended that the contract define more precisely the allocation rules for financial impacts of emergency events that is, not leaving gaps in financial responsibilities of the parties between the two amounts specified (between AMD 50.4 and 126 million) as is the case in the Yerevan Djur contract.

With regard to insurance risks mitigation, having a private global company that implements the lease contract can be considered as a best practice as it makes the insurance mechanism stronger and more reliable.

c. Improvements related to the contract's implementation

The success of the partnership can only be ensured if all the available tools are effectively used and implemented. The contract provides sufficient tools to effectively monitor its implementation. While the role of the technical auditor is crucial in this process, the government should also be more closely involved in contract implementation monitoring.

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- Agreement No. 1, May 2006
- Agreement No. 2, 3 and 4 on the transfer of facilities under the lease contract, May 2006
- Agreement on the inspection and transfer of tangible and non-tangible facilities, June 2006

- Agreement on the transfer of equipment and materials owned by YWSC and staff of the SWC, June 2006
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ANNEXES

Annex I: Socio-economic indicators for Armenia

	2000	2001	2002	2003	2004	2005	2006	2007
GDP (USD mln)	1 912	2 118	2 376	2 807	3 573	4 903	6 387	7 802
GDP (% change, real terms)	5.9	9.6	13.2	13.9	10.5	14.0	13.3	11.1
GDP per capita based on PPP (current international dollars)	1 965	2 607	3 006	3 498	3 936	4 530	5 177	5 769
Population, total (million)	3.80	3.21	3.21	3.21	3.24	3.32	3.39	3.47
Population, urban (% of total)	65.1	64.9	64.7	64.5	64.3	64.1	64.0	..
Consumer price inflation (average, %)	-0.8	3.1	1.1	4.7	7.0	0.6	2.9	3.7
Unemployment (annual average, % of labour force)	11.7	10.4	10.8	10.1	9.4	8.1	7.4	..
Workers' remittances & compensation of employees, received (% of GDF)	4.6	4.4	5.5	24.4	22.7	19.2	18.3	..
Current account balance (USD million)	-278	-200	-148	-189	-162	-204	-290	-242
Current account (% of GDP)	-14.6	-9.4	-6.2	-6.7	-4.5	-4.2	-4.5	-3.0
Trade balance (USD million)	-463	-420	-369	-434	-458	-588	-896	..
Gross capital formation (% of GDP)	18.6	19.8	21.7	24.3	24.9	29.7	30.4	..
External debt (% of GDP)	45.0	42.8	43.2	63.7	52.2	38.0	32.0	..
External debt (% exports of goods and services)	192.5	167.9	147.1	197.9	189.7	140.6	143.9	..
Foreign direct investment, net inflows (% of GDP)	5.5	3.3	4.7	4.3	6.1	5.2	4.5	..
Aid (% of GNI)	11	9.1	11.9	8.6	7.0	3.9	..	..

Source: EBRD, Transition Report 2007; IMF, World Economic Outlook database, Oct. 2007; World Bank, World Development Indicators database, 2007.

Annex II: Armenian water sector indicators

	2001	2002	2003	2004	2005	2006
Water abstraction from water resources (million m ³)	1 726	1 733	1 976	2 803	2 342	2 827
Waste water discharge	..	237	349	346	340	363
Total water consumption	1003	1312	1430	1782	1905	1991
% consumption for households	10.0	8.3	6.9	4.4	3.6	5.1
% consumption for industry	9.0	6.6	15.5	9.9	3.7	4.8
% consumption for agriculture	81.0	85.1	77.6	85.7	92.7	90.1
Access to improved water supply (%)	..	92	..	92	..	..
Rural areas	..	80	..	80	..	..
Urban areas	..	99	..	99	..	..
Access to improved sanitation (%)	..	84	..	83	..	..
Rural areas	..	61	..	61	..	..
Urban areas	..	96	..	96	..	..

Source: National Statistical Service of the Republic of Armenia, Yearbook 2007: Natural Resources and Environment: <http://www.armstat.am/Eng/StatData/>; United Nations Statistics Division, Common Database: <http://unstats.un.org/unsd/databases.htm>

Annex III: Contract summary table

General provisions	
Contracting authority	State Committee of Water System of the Ministry of Territorial Administration
Operator	Yerevan Djur (Véolia Water)
Type of contract	Lease contract
Award, date, duration, possible extension	Contract signed on 14 December 2005 Came into force on 1 June 2006 Duration: 10 years Extension possible if both parties agree and if the lessor notifies the lessee at least 6 months prior to the original end date ¹⁸
Scope of the contract:	
Coverage Area	Yerevan Municipality and 32 surrounding villages 325 552 clients connected ¹⁹
Types of Operations	Drinking water production Water supply Wastewater collection Wastewater treatment (primary treatment)
Service operation and monitoring	
Service operation / operator obligations	The main operator's obligations are ²⁰ : 1. Technical management, including: - Operation of water supply and wastewater facilities, including EUR 6.4 million to finance equipment (vehicles, construction machines, information technologies, information-graphical system, materials for leakage detection, supervision of water production) - Management of the implementation of the Yerevan Water and Wastewater Project (YWWP) 2. Commercial management 3. Implementing an Enhanced Maintenance and Repairs Programme (EMRP) of a minimum amount of AMD 8.87 billion within the duration of the contract 4. Payment of the lease fee 5. Submission of reports according to the contract requirements
Performance indicators	Main performance indicators ²¹ : - Continuity of service - Water quality - Handling customers' complaints
Relations between users and the operator	Management of customers' complaints is part of the performance indicators. The operator also has to ensure water supply in case of incidents or works on the network
Maintenance/repair and new investments	
Responsibility and financing of the maintenance/repair investments	The operator is fully in charge of the maintenance and repair investments through the EMRP
Responsibility and financing of the new investments	Responsibility: the operator under Project Implementation Unit (PMU) monitoring Financing: World Bank loan to the RoA: USD 18.75 million

¹⁸ Cf. Contract, Article 3.6.

¹⁹ According to the Project Implementation Unit.

²⁰ Cf. Contract, Article 7.2 and Appendix 2.

²¹ Cf. Contract, Appendix 6.

Financial provision	
Remuneration of the parties	The operator is paid by the water tariff and pays a lease fee to the contracting authority The lease fee is defined in the contract: AMD 4 billion in total for the duration of the contract ²² The contract includes a financial equilibrium clause (Article 3.8.8)
Tariff structure	Tariff structure is defined in the Water System Use Permit: <ul style="list-style-type: none"> - Single-rate tariff for drinking water supply, water discharge and wastewater treatment services - 10 year-baseline tariff updated yearly
Conditions for revision of the tariff	<ul style="list-style-type: none"> - Yearly update to be approved by the Public Services Regulatory Commission (PSRC), mainly based on 4 indicators: retail water supply volume, annual inflation, exchange rate AMD/EUR, electricity tariffs - Negotiated procedure with the PSRC if the yearly adjustments vary by more than 30%
Control and reporting	
Control by the authority	<p>The PMU responsibilities are clearly defined in the contract. The PMU is mainly in charge of:</p> <ul style="list-style-type: none"> - Payments and fund management - Signing contracts with suppliers - Communication with the World Bank main office - Written communications with suppliers - Review and approval of reports submitted by the lessee - Assignment of one member to the lessee's Procurement Committee <p>The Project Management Board is responsible for the approval of the YWWP Fund annual plan.</p> <p>The PSRC controls:</p> <ul style="list-style-type: none"> - the tariffs adjustments - the quality of the service (quality of water supplied, quality of water discharged, minimum of the service continuity)
Reporting by the operator	Reporting requirements are described in Appendix 7 of the Contract: <ul style="list-style-type: none"> - Base year data report (initial figures of the performance indicators) - Annual submissions (including financial yearly statements) - Semi-annual reports on performance assessed by the independent auditor
Independent technical auditor	<p>The independent technical auditor is selected by the contracting authority, with the agreement of the operator. He is hired jointly by the lessor and the lessee, from a reputable firm, paid from the World Bank loan for the first 5 years and by the lessee for the 5 last years.</p> <p>He is mainly in charge of²³:</p> <ul style="list-style-type: none"> - The compilation of the base year data report - The reconciliation on the assets transfer (including value of the assets) - The assessment of the operator's meeting contract requirements

²² Cf. Contract, Appendix 1.

²³ Cf. Contract, Article 6.7.1.

	(performance indicators and reporting) - The calculation of penalties
Guarantees and sanctions	
Guarantees	The lessee is established and exists under the laws of Armenia. The lessee is wholly owned by the bidder
Arbitration	Arbitration under the UNCITRAL rules at the London Court of International Arbitration ²⁴
Change of applicable law	The contract provides a fair protection of both parties in case of changes of the applicable law. If changes in laws, agreed between both parties, result in net costs or net savings to the lessee in excess of: <ul style="list-style-type: none"> - AMD 25.2 million in any contract year or - AMD 50.4 million from the starting date of the contract an extraordinary tariff adjustment can be negotiated with the PSRC ²⁵
Financial penalties	Financial penalties related to not achieving the performance indicators. The main penalties are based on the service continuity indicator ²⁶ : AMD 30.24 million for each percentage point below the performance standards defined in the contract, up to a maximum of 3% of the total revenue collected for the services
Emergency measures	The operator is in charge of any cost related to an emergency event (due to a third party or to the contracting authority) up to the limit of AMD 50.4 million Above that limit, the costs will be allocated between the parties ²⁷ through negotiations
Responsibilities of the operator	
Insurance obligation	The operator shall contract the following types of insurance, each for the minimum amount ²⁸ of: <ul style="list-style-type: none"> - Third party vehicle liability: AMD 252 million - Third party liability insurance: AMD 504 million - Professional liability insurance: AMD 504 million
Organisation of the service	
Operator's staff	The operator should employ the local staff in accordance with the relevant employment laws. There is one more major requirement: the operator should maintain the salaries of all local staff during the first contract year ²⁹
Assets of the service	
Transfer of the assets at the beginning of the contract	The transfer of the assets at the beginning of the contract will be monitored by the PMU
Fate of assets at the end of the contract	The assets should be handed back to the state in a condition allowing continued operation of the facility meeting the performance standards for a period not less than 5 years ³⁰

²⁴ Cf. Contract, Article 12. 6 and 12.9.

²⁵ Cf. Contract, Article 3.8.7.

²⁶ Cf. Contract, Appendix 8.

²⁷ Cf. Contract, Article 7.14.4.

²⁸ Cf. Contract, Article 7.8.

²⁹ Cf. Contract, Article 11.1.

³⁰ Cf. Contract, Article 4.4.

Annex IV: List of people interviewed during the review mission

World Bank PMU for the Yerevan Water Utility

Garnik Aleksanyan, Director of the Municipal Development Projects Unit
Vanda Varzhapetyan, Administrative Secretary

Yerevan Djur

Serge Popoff, General Manager
Varazdat Avoyan, Contract Director

State Committee of Water System, Ministry of Territorial Administration

Gagik Khachatryan, First Deputy Chairman

Ministry of Finance and Economy

Rubik Davtyan, Head of Department for Public Services Sector's Projects
Hrayr Yessayan, Head of Division, Programme on Water Sector

Water Resources Management Agency, Ministry of Nature Protection

Svetlana Vardanyan, Deputy Head
Edgar Pirumyan, Head of Division, Water Resources Policy and Analysis Division

Public Services Regulatory Commission

Mushegh Koshetsyan, Commissioner
Garnik Balyan, Head of Technical Monitoring and Expertise Division
Hrachya Hakobyan, Deputy Head of Legal/Licensing Department

UNDP, Armenia

Armen Martirosyan, Portfolio Manager, Environmental Governance

Independent consultant

Richard Walking