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**NATURAL GAS DISTRIBUTION
COMMERCIALIZATION PROJECT**

**NIS Institutional Based Services Energy
Efficiency and Market Reform Project
Contract No CCN-Q-00-93-00152-00
DELIVERY ORDER NO 15**

ARMENIA

Final Report

Prepared for

U S Agency for International Development
Bureau for Europe and NIS
Office of Environment, Energy and Urban Development
Energy and Infrastructure Division

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NATURAL GAS DISTRIBUTION COMMERCIALIZATION PROJECT

I INTRODUCTION

In accordance with Delivery Order 12 Contract CNN-0002-Q-12-3152-03, this report represents the pilot project report for the U S Agency for International Development's (USAID's) metering, billing and collections project for the natural gas sector of the Republic of Armenia. The assigned scope for this assignment includes

- ▶ undertake, through the use of pilot projects, efforts to improve metering, billing and collection in the natural gas distribution sector,
- ▶ supply limited equipment to support the pilot projects,
- ▶ provide training to distribution company staff on metering, billing, collections and customer service

This project was undertaken jointly by CMP International and Hagler Bailly in close cooperation with the Ministry of Energy, Armgazprom, Armgaz and Yerevangaz

II BACKGROUND

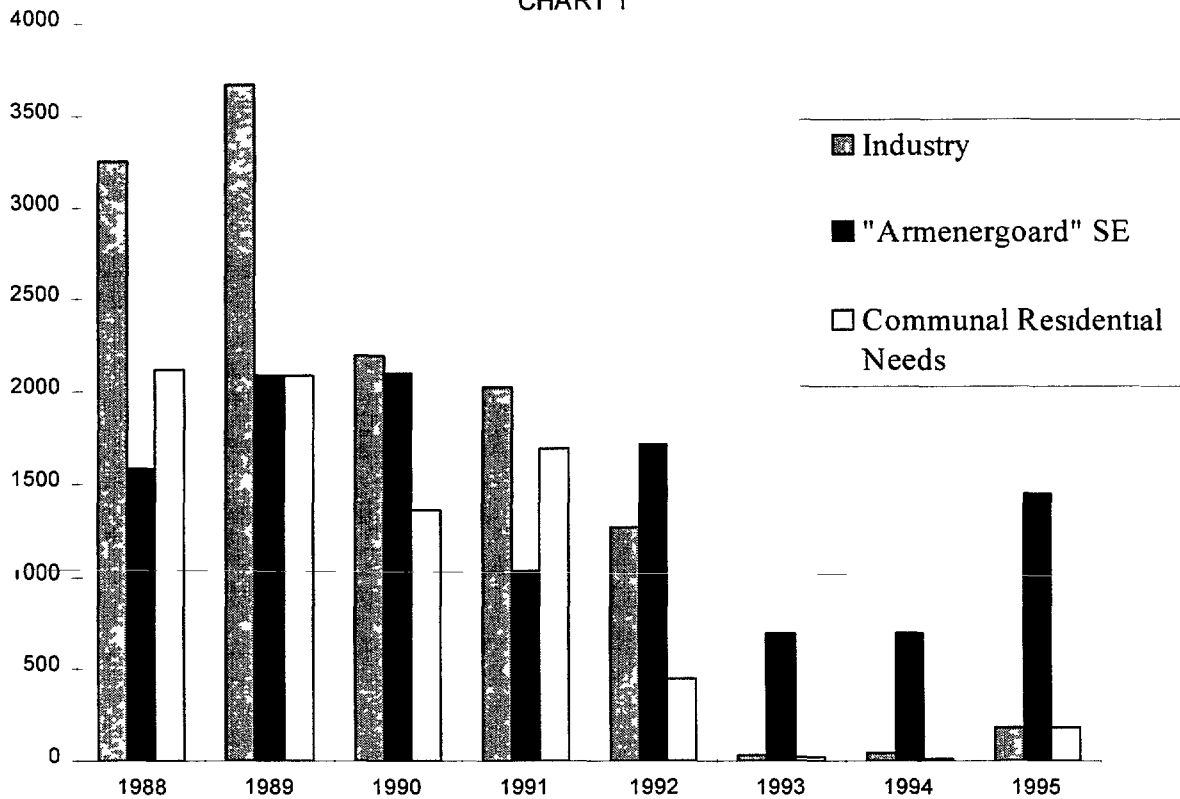
During Soviet times, natural gas was in plentiful supply with 61.5% of Armenia's residents using this energy source. As in other Soviet countries, gas was not metered for residential customers and bills were calculated using a residential norm. The bill calculation estimated the amount of gas used each month, based on the number of people in the household, the type of appliances in use, and the surface area of the dwelling. However, because the calculation was done once a year and was not an accurate method of measuring supply or demand, revenues often fell short of gas purchases. Further, under the normative tariff calculation, if consumers increased their consumption of gas, they would not see a corresponding increase in the cost of gas service. As a result, there were no incentives for consumers to use energy efficiently.

In 1991, the disintegration of the USSR and embargo of Armenia by Azerbaijan caused a severe economic crisis. By 1992, since Armenia was unable to pay for gas supply, residential gas sales were curtailed, although supply to the power sector and a limited number of industrial accounts and other critical facilities (e.g., bakeries) continued. Cash flow problems

continued to plague the natural gas sector and maintenance of the distribution system all but ceased (Chart 1 below)

Consumption Levels by Year

CHART 1



Source Hagler Bailly

As a result of the crisis conditions, it became clear that the lack of metering, combined with billing on a normative basis and poor collection procedures were seriously impairing the industry. To resume natural gas flow on a commercial basis, substantial changes in business practices would have to be made. In 1996, the gas industry made a few attempts to restore gas use. Gas was provided in some villages with prices charged to the entire village based on the readings of a master meter. It was left to the town government to determine how to acquire payment from consumers. There were major disputes between consumers who complained about excessive use by their neighbors. In short, the villages were unable to pay for the gas deliveries and Armgazprom was forced to stop deliveries.

Hagler Bailly examined the results of the attempted gas delivery restart program undertaken by Armgasprom and determined that it was necessary to have volumetric pricing for consumers and to require end user meters. Hagler Bailly prepared an assessment of commercialization of the natural gas industry and presented this information in a series of

workshops held in late 1996 (Exhibit I) Three options were presented 1) status quo, i.e., let the industry continue to deteriorate, 2) resume gas supply to consumers on a normative basis, or 3) resume gas supply to consumers on a commercial basis Hagler Bailly recommended the third option including a proposal for a pilot program Overall, the management of the gas industry, gas specialists and experts from the Ministry of Energy supported the proposal

The basic outline of the proposal was the following

- ▶ gas use should be properly metered, both at the end user level and further “upstream” to help indicate losses,
- ▶ price reform for natural gas was critical as the current gas tariffs were insufficient to successfully support distribution commercialization,
- ▶ any reconnection should be designed to permit disconnection of individual consumers,
- ▶ there should be a metering, billing and collections software put in place to track payment, usage and other customer information

In association with the Ministry of Energy and gas industry specialists, a number of sites were selected for the pilot projects The criteria included the residential saturation of natural gas in that area historically, the perceived ability of the population to pay for the gas consumed, the conditions of the gas pipeline network supplying the area and ease of restoration, and recommendations from the Ministry of Energy and Armgazprom Numerous site visits were conducted to select the pilot project sites Ultimately, there were some changes in sites due to timing considerations Most of the pilot project activities focused on YerevanGaz¹

The benefits of the pilot projects include

- ▶ improved consumer service since natural gas is generally less expensive than competing fuels (although this is not always the case, especially with biomass),
- ▶ development of accurate cost information regarding installations and restart of natural gas,

¹The Armenian gas industry has gone through a series of restructurings Most recently, YerevanGaz was divested from ArmGaz Their service territory is the capital city

- ▶ collection of information on the condition of the gas network based on the pressure testing and rehabilitation work,
- ▶ trained gas industry personnel in modern metering, billing and collection practices,
- ▶ installation of high efficiency US made equipment and trained staff in installation and maintenance procedures,
- ▶ acquisition of information to help determine the extent to which the restart of natural gas impacts other sectors, especially the power sector

III. IMPLEMENTATION STEPS

In accordance with USAID 22 CFR 216, an environmental impact assessment was prepared and the project was expected to yield a positive environmental impact. The environmental assessment indicated a few minor mitigation measures including network pressurization requirements before regasification, procurement and training in the use of leak detection equipment, waste and scrap disposal, and consumer safety education.

A number of steps were identified to implement the new metering, billing and collection process in Armenia including:

- ▶ rehabilitation and regasification of the distribution system (especially important given that the network had been out of use for several years with no cathodic protection or maintenance),
- ▶ meter installation policy and procedure training (Exhibit II),
- ▶ purchase of equipment for operations support (Exhibit III),
- ▶ business process analysis and computer system design,
- ▶ purchase and installation of computer equipment,
- ▶ software training. The following table describes the major components of the work plan and the completion dates.

Table 1

Work Plan Component and Timetable

Description of Work	Status	Date Completed
Inspection of distribution system	Complete	March 1997
Reviewed materials list for meter procurement	Complete	March 1997
Environmental assessment	Complete	June 1997
Standardized procedures and drawings were developed to serve as guide for meter installation	Complete	June 1997
Operations training seminar meter installation design	Complete	June 1997
Written procedures for meter reading, billing and collections	Complete	August 1997
Design meter assembly	Complete	August 1997
Delivery of leak detection equipment	Complete	February 1998
Bid awarded to Paros for manufacture of meter assembly materials	Complete	June 1998
Delivery of meter assembly materials	Complete	July 1998
Approval from Gas Standards Committee	Complete	July 1998
Delivery of gas meters	Complete	August 1998
Installation of gas meters	on going	
Delivery of computers	Complete	July 1998
User training on software	On going	July 1998
Business process training	Complete	September 15

IV. CUSTOMER RELATIONS, METERING, BILLING AND COLLECTIONS

IV 1 Customer Relations

To implement the project, it was necessary to undertake a number of efforts including customer relations. A public information process is important for acceptance of metering, billing and collection policies by the utility's customer. Exhibit IV is a customer handbook developed by the project team to disseminate the rights and responsibilities of the customer and the company. This handbook is being used in the pilot areas to help educate consumers regarding the program and how the metering, billing and collections effort will take place.

The basis for our commercialization philosophy is provided in Exhibit V. These are the policies and procedures to be used as guidelines for customer metering, billing and collections.

IV 2 Metering

The inaccurate system of calculating use (normative), and the resulting imbalance in revenues collected and payments to gas suppliers lead to high debts to gas providers and eventual curtailment of residential gas service. The pilot project will install 2,074 residential meters within the Yerevangaz Distribution Company service territory as well as turbine meters at regulating stations in both the Yerevangaz and ArmGaz Distribution Companies. Large capacity meters (sized for multifamily dwellings and apartments) were provided to both ArmGaz and YerevanGaz to support the commercialization effort.

IV 3 Meter Reading

The basis for a billing system is a good system for meter reading. Discussions were held at Armgasprom with officials to explain the basic principles of meter reading. During those meetings the project team emphasized the importance of adhering to basic meter reading procedures (Exhibit VI). Recommendations were given regarding the structure of the meter reading department. The department should be divided into two functional areas: meter reading and meter inspection, thus allowing for a more efficient use of personnel. This structure also positions the department to implement reading meters by cycle and route. A meter reader can read a minimum of 200 meters in a city setting per day if the meter books are set up efficiently by neighborhood. Currently, the Ministry requires the energy sector to read all meters on the last day of the month. When gas is restored to the entire residential population of Yerevan, the required number of meter readers for one day (assuming 400,000 customers in Yerevan, and each reader reading 500 meters per day) would be 800 to read all the meters (not necessarily with accuracy). If on the other hand, there were 20 cycles, and 20 days to work, it would take only 40 full-time employees, thereby cutting the cost.

IV 4 Billing

Prior to the pilot project, gas sector did not use computers to do their billing. Based on suggestions made by Kantor (TACIS program) they started using a manually created spreadsheet format for to record billing revenues. However, this process is time consuming and provides little information on which to manage the collections process.

The project team met with officials from Armgasprom to discuss the development of a customer data base system. During the meetings, the Armenians expressed many concerns about cash flow. In their present situation, the meter reader reads the meter and presents the bill to the consumer. A billing cycle of thirty days would be too long from a cash flow standpoint. Therefore, after many meetings and much discussion, it was decided that meters would be read at 15 day intervals. Bills would be produced and hand delivered to the customer, who would in turn have to pay for the gas consumed within 10 days. (See Exhibit VII for a description of the paper flow from meter reading to bill preparation)

IV 5 Collections

Collection of customer debt is one of the most serious problems facing the gas sector. Lack of a strong policy from the central distribution office hampers the collections effort. Non-payment is a complex problem for which there are no easy answers. Disconnection of industrial customers results in lost wages, and has a negative impact on the local economy. Pensioners and the unemployed do not have the resources to pay for natural gas. And socialist lessons of the last seventy years still impact thinking.

The project team worked with Yerevangas to develop a more rigorous collection system. Under these procedures, the distribution company delivers the bill to the customer and waits ten (10) days for payment. If payment has not been received, they send the meter reader out to disconnect. Yerevangas reports that collection of billed revenues is at 95%. Additionally, we advised the company on changes that would improve efficiency (work spread over 20 days or cycles), and reduce collusion between customers and employees (separate the meter reading and collection function and rotate meter routes).

V. SOFTWARE DEVELOPMENT

As part of the electric distribution pilot projects, a software package was developed for the electric sector. This package has been successfully implemented in the Komitas network of Yerevan. The same model was used in the natural gas pilot project areas to create an effective meter reading, billing and collection program. The system provides the distribution company with the ability to maintain current and historical information about their consumers gas usage (meter readings), and facilitates the process of billing and collecting revenues. It also provides batch summary reports to support management and accounting functions reporting requirements to the Ministry of Energy.

The software supports the following metering, billing and collection methodology,

- ▶ Meter reading by routes and cycles,
- ▶ Separate procedures for meter reading billing and collections,
- ▶ Meter and meter testing database,
- ▶ Debt aging and development of a disconnection list

Although the software was designed to be used in a computer network environment, given the relatively small size of the consumer base for the natural gas pilot projects, it was not necessary to network the local offices at this time. The software can be used in an individual work station set up².

VI RESULTS

Significant progress has been made since the inception of the project. The project team has

- ▶ Gained the approval of the State Standards Committee for the installation of Schlumberger Metris Meters
- ▶ Designed meter assembly and gained approval from State Standards Committee
- ▶ Presented the concept of two customer classes and rates for each class, this concept was accepted by the Energy Commission,

²For more information about the software, see the report *Distribution Commercialization System Improvement Report* by Hagler Bailly (September 1998)

- ▶ Produced a Customer Handbook for distribution to new gas customers detailing the rights and responsibilities of the customer and the company,
- ▶ Developed meter reading billing and collection policy guidelines,
- ▶ Gained acceptance for charging security deposits as a way to protect revenues from nonpayment and lower the company's write off, however, the application of the procedure was not correct (See recommendation)

In late 1997 the Ministry and the Energy Regulatory Commission of Armenia saw the need for terms of gas use. The project team had significant input into the resulting policies (see Exhibit VIII)

VII. RECOMMENDATIONS

Although there has been substantial change, further work will be necessary for the natural gas sector to become self sufficient. The project team recommends the following key tasks be undertaken to support the distribution commercialization in the natural gas sector

Metering

- ▶ All billing meters must be owned by the company. Changes need to be made to the Laws of the Republic of Armenia to allow the company to take possession of the meters by eminent domain
- ▶ The concept of rotating meter books for efficiency and to prevent collusion between the customer and the meter reader
- ▶ The metering department must introduce cycle billing for cost control

Billing and Collections

- ▶ Security deposits were taken as prepayments which is not a correct application of the procedure. Prepayments reduce needed cash flow. A security deposit is held in an escrow and applied to the customer's balance in the event of a default
- ▶ Bills are presently delivered by the meter reader. This is inappropriate as it presents a further opportunity for collusion between the consumers and the meter readers

- ▶ The meter reading and collection function should be separated. The person responsible for providing the reading for the bill should never be responsible for collecting the bill. It encourages collusion between the customer and the meter reader.
- ▶ Management personnel should be hired who will be responsible for the billing and collections function. Collecting money is a difficult job and managers who have operations responsibilities will not give collections the priority it should have.
- ▶ A targeted strategy for collecting should be developed
 - decide who can pay and who cannot pay and put collection resources to use collecting from those with an ability to pay,
 - prioritize accounts by amount owed and age of debt

Human Resources

- ▶ Presently the salary for meter reading personnel is low. Compensation should be increased including the implementation of a reward for uncovering theft of service.
- ▶ Employment policies, including Standards of Conduct for utility employees, should be developed.

Training

- ▶ It has become clear in our discussions with local office management and operating personnel that there is a need for extensive business process training at various levels of the distribution companies. Training that should be considered includes
 - a) Revenue protection training
 - using the meter reader,
 - using the billing process
 - b) Distribution company marketing and customer service,
 - c) Metering, billing and collections,
 - d) Basic management skill building in commercial operations (perhaps through internships)

VIII CONCLUSIONS

The natural gas distribution commercialization projects are a useful step forward in determining the proper extent to which natural gas can be reintroduced into Armenia. It is clear that it is not cost-effective to restart the entire natural gas network. In many areas, consumers have already substituted other fuel types and, when combined with rehabilitation costs as well as metering, the cost would be too great to restart the gas supply. This pilot

project also offered an opportunity to test how the Armenian market responds to the use of commercial principles for the provision of natural gas. It is clear that for the introduction of natural gas to be successful economically, equipment alone is insufficient. The introduction of proper business processes to improve the metering, billing and collection process, as well as ensure adequate consumer satisfaction, is arguably much more critical to the overall success of the restoration process.

APPENDIX A

EXHIBIT I PRESENTATION FOR WORKSHOP

Commercialization of the Natural Gas Sector in Armenia

Hagler Bally Consulting, Inc..
18 Proshian
Yerevan, Armenia

November 20, 1996

Project Team

- Dean White
 - Bagrat Safarian
 - Armen Arzumanian
 - Agassi Chitchian
 - Areg Galstian
 - Ruben Rubenian
- Project Director
Engineer/ Natural Gas Specialist
Project Manager
Engineer/ Procurement
Ministry of Energy
Armgasprom

Description of the Natural Gas Sector

- **Vertically integrated monopoly**
 - Armgasprom State Concern
- **Structural characteristics**
 - Three regional transmission enterprises - high pressure
 - length of pipes 1,918 km
 - Ten regional distribution companies - medium and low pressure
 - length of pipelines 14,400 km.
 - Underground gas storage system
 - available capacity 180 mln cub m

Description of the Natural Gas Sector

- Number of customers

- level of residential saturation of natural gas is 61.5%

- » Industrial 2,560
 - » Residential 454,457

Description of the Natural Gas Sector

- Metering system
 - » Meters for industrial and commercial consumers are generally in place
 - » Lack of residential metering altogether
 - billing based on normative principles

Background

- **Gas supply**

- Since 1991 severe decline in gas supply due to the blockade and economic crisis
- Only thermal plant (over 80% of total consumption) and several main industries received gas
- Almost no gas supplied to residential and commercial subsector

Background

- Gas supply to Armenia: (mln cubic meters)

Year	Residential		Industrial & Other		Total	
	mln cubic meters	%	mln cubic meters	%	mln cubic meters	%
1988	1,250	100%	4,504	100%	5,755	100%
1993	13	1%	788	17%	801	14%
1995	4	0.6%	1,455	32%	1,459	25%

Background

- **Cash flow**

- Severe drop of expected revenues
- Low cash flow in the gas subsector due to barter arrangements and low collection rate in power system

- **Financial situation**

- High debts to foreign gas suppliers and banks
- Unreasonably high transportation rate (\$14 per Th. cubic meters) due to the large fixed costs

Background

- **Technical situation**

- Since 1991, almost no maintenance to the system due to the lack of financial means
- Poor condition of facilities
- High level of technical losses

Goals & Objectives

- Resume the gas supply to consumers in Armenia
 - Provide customers with better services
- Assure the economic viability of the gas industry in Armenia
 - Commercialize of natural gas distribution subsector



Available Options

- Option 1. Resume gas supply to consumers on a normative basis
- Option 2. Preserve existing situation/ status-quo
- Option 3. Resume gas supply to consumers on a commercial basis

Option 1

- Resume gas supply on a normative basis
 - Attempts by Armgasprom to supply gas to several villages in 1995
 - Failed due to the lack of personal metering, billing and disconnection system

Option 2

- **Preserve existing situation/ status quo**
 - Continue inefficient usage of alternative energy carriers by population (liquid fuel, fire wood, etc.)
 - Negative environmental impact, natural resource devastation, economic inefficiency
 - Further deterioration of the gas distribution system
 - Further inefficient use of electricity
 - Further deterioration of electricity distribution network

Option 3

- Resume gas supply to consumers on a commercial basis
 - Resume O&M of the gas distribution network
 - Reduce negative environmental impacts (indoor, outdoor) through fuel substitution
 - Restore some cash flow to the gas sector
 - Resume providing services to customers
- Option 3 selected

Implementation Steps

- Testing and necessary rehabilitation of gas distribution and indoor systems and gas appliances
- Consumer education
- Installation of individual and master meters



Implementation Steps

- Individual metering and disconnection
- Metering and billing software development
- Evaluation of results and development of a replication plan

Information on Pilot Projects

- **Criteria for selection of pilot project sites**
 - Level of residential saturation of gas
 - Ability of the population to pay for gas
 - Conditions of the gas pipeline network
 - Recommendations from the Ministry of Energy and Armgasprom
 - Specific site visits

Information on Pilot Projects

- Pilot projects in numbers

Total budget allocation

Name of place	# of	Budget allocation (estimate)			
	customers	USAID	Arm gasprom	Customer	Total
Nerqin Ptgni	317	\$40,118	\$10,599	\$11,515	\$62,232
Verin Ptgni	134	\$13,915	\$3,286	\$4,134	\$21,335
Nubarashen	1,553	\$141,691	\$33,212	\$50,740	\$225,643
Dzoraghjur	303	\$47,203	\$13,819	\$12,688	\$73,710
Tsakhkadzor	337	\$47,610	\$15,253	\$13,773	\$76,636
Tsamakhaberd	150	\$20,368	\$3,020	\$5,636	\$29,024
Gomadzor	220	\$22,237	\$5,128	\$6,891	\$34,256
Total	2,804	\$333,142	\$84,317	\$105,377	\$503,187

Information on Pilot Projects

- Pilot projects in numbers:
Budget allocation per customer

Name of place	# of	Budget allocation (per customer)			
	customers	USAID	Arm gasprom	Customer	Total
Nerqin Ptgni	317	\$126 5	\$10 6	\$36 3	\$196 3
Verin Ptgni	134	\$103 8	\$33 4	\$30 8	\$159 2
Nubarashen	1,553	\$91 2	\$21 4	\$32 7	\$145 3
Dzoraghjur	303	\$155 8	\$45 6	\$41 9	\$243 3
Tsakhkadzor	337	\$141 3	\$45 3	\$40 9	\$227 5
Tsamakhaberd	150	\$135 8	\$20 1	\$37 5	\$193 4
Gomadzor	220	\$101 1	\$23 3	\$31 32	\$155 7



Environmental Impact

- Environmental assessment prepared in accordance with 22 CFR 216 (USAID Environmental Procedures)
- Project is expected to yield positive net environmental impacts due to substitution away from other, more polluting fuels

Environmental Impact

- **Minor mediation strategies identified:**
 - Network pressurization testing for leakage
 - Waste and scrap disposal
 - Consumer education

Recommendations

- If USAID humanitarian procurement of natural gas is monetized, consider using at least \$2 million of programmed funds to allow Armgazprom to expand project

APPENDIX B

**EXHIBIT II REGASIFICATION AND INSTALLATION
PROCEDURES**

Numerous discussions were held with the operations department to determine their operational needs. Standardized procedures and drawings were developed to serve as a guide for the installation of residential and commercial meters (appendix B). From these discussions the following list of equipment for operational support was developed:

Leak Detectors

Pipe Locators

Schlumberger Metric meters (Residential)

Equimeter turbine meters with correctors

Equimeter large capacity meters

As a way of insuring installation uniformity, the concept of project management was introduced to the management of Armgas. They readily agreed with the idea and we developed a list of responsibilities for one individual to oversee the project. The responsibilities are as follows:

- Insure that standards and procedures are met
- Keep the project on schedule
- Be responsible for the inventory of meters
- Keep detailed documentation of the project

A training session was held on June 17, 1997, to discuss the standardization of regasification procedures and the procedures for the standardized installation of residential meters. Those procedures as written, and agreed to, by Armgas officials, are on the following pages:

Regasification Procedures Gas Utilization Equipment

- 1 All gas utilization equipment must be acceptable to the gas company. The equipment shall be suitable for the proposed use.
- 2 Conduct a detailed visual inspection of all gas utilization equipment in house and apartment buildings. Check for excessive corrosion and cracks in heat exchangers.
- 3 List all units and tag all equipment converted over the last six years for propane use. Note modifications that are needed for natural gas use.
- 4 All gas utilization equipment and their vent connectors shall have clearances from combustible material so that operation will not create a hazard to persons or property.
- 5 Gas utilization equipment connected to a piping system shall have an accessible shutoff valve installed within 6 feet of the equipment it serves. Where a connector is used, the valve shall be installed upstream of the connector.
- 6 Gas utilization equipment shall be permitted to be placed in operation after the piping system has been tested, determined to be free of leakage and purged.
- 7 The test for leakage after the equipment is connected is the gas supplied at its supply pressure. Leak test all equipment, connections, and valves.
- 8 Turn on all gas burning appliances determined that the pilots, where provided, and main gas burners are working properly. Clean and adjust air as required.

**Armenian Natural Gas Pilot Projects
Regasification Procedures
Purging Systems**

General

When purging any main or service, caution should be used to avoid formation of a hazardous gas-air mixture. Purging can be done safely provided that a moderately rapid and continuous flow is maintained.

Procedure

- 1 All purging activities shall take place above ground with the gas being released away from people and buildings
- 2 If needed connect a piece of plastic or steel pipe at the end of the inside or end of the distribution main to carry the gas being purged away from the buildings
- 3 Purge vents shall be of a size that will permit the free escape of purging gas to atmosphere and shall extend approximately six (6) feet above the ground to prevent possible ignition from ground sources
- 4 Purging must be continuous, without interruption, and shall continue until a reading greater than 95% raw gas is attained using a combustible gas indicator
- 5 The discharge point shall not be left unattended during the purging

**Armenian Natural Gas Pilot Project
Regasification Procedures
Pressure Testing Piping in Buildings**

Planning

- 1 Record all house and apartment buildings on plans with outside locations of shut off valves
- 2 Check all records to determine pressure ratings for all inside piping and fittings
- 3 Identify all inside piping sizes
- 4 Identify the apartment units that contain main feed lines versus lateral connections with sizes

Preparation

- 1 Conduct a detailed visual inspection of all inside piping and fittings
- 2 Shut off all appliance valves
- 3 If an appliance valve is missing, disconnect unit and cap or install a valve
- 4 Repair any deficiencies, such as, corroded pipe and fittings Cap any open end pipe

Operation

- 1 Notify all consumers and town officials prior to the start of pressure testing inside piping
- 2 With air pressure set at 3 PSIG on the low pressure distribution, start to turn on each house and apartment building one at a time
- 3 Test duration shall not be less than ½ half hour for each apartment building and 10 minutes for each single family dwelling

**Armenian Natural Gas Pilot Projects
Regasification Procedures
Pressure Testing Distribution System**

Planning

- 1 Outline the area to return to gas service on a map or other plan which shows the distribution system
- 2 Indicate, on the plan, all mains with pipe sizes, valves and fittings
- 3 Check all records to determine manufacturers pressure testing ratings for all distribution materials and fittings and indicate on plans
- 4 Indicate on plans the methods for isolating sections of the system prior to pressure testing
- 5 Identify all services by house and apartment building Record the locations of outside shutoff valves Check all records to determine manufacturers pressure ratings for all materials and fittings

Preparation

- 1 Conduct a detailed visual survey Repair or replace badly corroded pipe or fittings
- 2 Check all valves as shown on plans of the area to be regasified Grease valves as necessary and operate all valves to ensure proper functioning
- 3 Repair any deficiencies
- 4 Install necessary equipment to provide test pressures and volumes to each system

Operation

- 1 Notify all consumers and town officials prior to the start of pressure testing
- 2 Each distribution system to be operated above 1 PSIG should be tested with air at 90 PSIG for 1 (one) hour
- 3 Each distribution system to be operated at less than (one) 1 PIG should be tested with air at 3 PIG for 1 hour
- 4 The low pressure distribution air test should be conducted with all the outside service shutoff valves to the houses and apartment buildings in the closed position

APPENDIX C

**EXHIBIT III LIST OF EQUIPMENT FOR OPERATIONAL
SUPPORT**

List of Equipment for Operational Support

Schlumberger Metris Meters

Equimeter Turbine Meters

Equimeter Large Capacity Meters

Pipe Locators

Leak Detectors

Meter Assembly Materials

APPENDIX D

EXHIBIT IV CUSTOMER HANDBOOK

CUSTOMER HANDBOOK

WELCOME to Yerevangas (Haygas) Distribution Company!

This booklet provides each new residential customer a summary of the rights and responsibilities of the customer

Each privilege that is granted, and every duty that is required, imposes an obligation on the company and the customer to accept these privileges and perform these duties with good faith, honesty and fairness

APPLICATION

To become a customer you must first contact the company. They will ask you to sign a customer contract.

GAS SERVICE

A gas service is the pipe from the street into your home and to your gas meter. You will NOT be charged for the pipe outside your home or the gas meter. There IS a charge for any additional pipe going from the meter into your home.

METERING DEVICE

The metering equipment that the gas company uses to calculate the bill indicates the number of cubic meters of gas used by the customer. Meters are tested at the factory before they are installed at your home. If you think that the meter is not working properly, call the gas company and they will test the meter. There will be no charge if the meter is not accurate. If you ask for a test more than one time in one year, and the meter is correct, you will be charged for the meter test.

The gas meter is the property of the gas company and the gas company may terminate service to any customer who unreasonably refuses to allow access to their home to read and inspect the gas meter. The customer MAY NOT tamper with the meter. Anyone found tampering with a metering device will be penalized to the fullest extent of the laws of Armenia.

THE GAS BILL

Every 30 days the gas company will read your meter and take the reading back to the company where they will prepare the bill for the gas that you used, at the rates approved by the Energy Commission.

WHEN TO PAY

Your bill will be delivered to your home and you MUST pay for the gas within 10 days

IF YOU DO NOT PAY

If you do not pay for the gas that you used, the gas company will turn off your gas meter so that you can no longer use it

HOW TO USE GAS AGAIN

To use gas again, you must go to the bank and pay your bill Show the receipt to the Company

The Company will send someone to turn on the meter the next day

PENALTIES FOR NONPAYMENT

The Company will charge you extra for being late AND the Company will charge you to turn your meter on after the bill has been paid

APPENDIX E

EXHIBIT V COMMERCIALIZATION POLICIES

COMMERCIALIZATION POLICIES

DEFINITIONS

- Residential Service Gas service to customers for domestic purposes (single or multi-family)
 - Consumption under 10,000 CM per month
 - This rate is for heat, and non heat (cooking and hot water)
- Commercial Service Gas service to customers who use more than 10,000 CM per month
 - This rate is for heat, and non heat (cooking and hot water)
- Security Deposit Money held by the Utility company to protect the company from commercial losses
 - The money is kept in a separate bank account

METERING POLICIES

All Utilities shall meter their product with metering devices that register in cubic meters

The gas meters are installed, owned and maintained by the utility at its expense

Gas Meters will be tested by the distribution company, at a company owned facility

The devices will be tested prior to installation at a residence or business, and shall comply with the accepted Government standards

If a meter is found to be out of compliance with the standard, it will be repaired before installation at a home or business

A customer has the right, after the meter is installed, to question the accuracy of the metering device and request a meter test. However, he may not question, and request a test, more than one time in 12 months, without being charged for the test

If the meter is found to be in error beyond the standards, (fast meter) the company will repay the customer for the over billing. If the company finds that the meter is slow, the company may, but is not required to, charge the customer for the over billing

To ensure fairness, all meters that are tested, that are not in compliance, where an adjustment to a customer's bill will be made, must be reported to the commission, monthly, the meter number, the test results, the repairs made, and the amount of the adjustment

The customer will provide within their premises, without charge, suitable space for the installation of the company's meter

The customer will not re-meter or sub-meter for the purpose of re-selling gas to another party

The company has the right to access their meter at all times. A customer may not unreasonably refuse access. If the customer does not permit access, he may be disconnected without notice.

Tampering with, or destruction of, the utility company's metering devices, is not permitted. The penalty for tampering is loss of gas service without notice, and any other penalty defined by the statutes of The Republic of Armenia.

BILLING POLICIES

Billing for utility service will occur at regular intervals. Each utility is required to keep an accurate account of all of the charges billed to each customer and all payments received from each customer.

A utility will not present a bill for payment without having read the meter first.

All bills will be based on an actual reading. The company may be subject to a penalty if the meter reading is falsified and billed to the customer.

All bills will be calculated using the rates as established and approved by the Energy Commission (ERC).

The bill will show the number of units (CM) used, the rate charged for those units, and the calculation.

The company has the right to re-bill a customer if an error has been made in the billing. The customer will be responsible to pay charges that were not billed because of an error. The company is responsible to repay the customer if they have collected too much as a result of an error.

All residential customers will pay the bill in a timely fashion.

Customers will provide the meter reader access to the meter so that a bill can be rendered. The company can disconnect a meter for the customer's failure to provide access to the meter.

The utility company may charge a penalty (late fee) for any bill that has not been paid in a timely fashion.

COLLECTION AND DISCONNECTION POLICIES

The utility can disconnect the utility service for the following reasons non payment of the bill, safety, refusal to allow access to the meter, tampering, or theft of service

The utility, after having correctly presented the customer a bill, has the right to terminate service to any customer that has not paid the bill in a timely fashion

A utility employee will attempt to contact the customer to ask if payment has been made If the customer provides a receipt, the employee will leave the service on If the customer cannot provide a receipt, then the employee will discontinue the service After the service has been turned off, the customer must then go to the payment agency or bank, and pay the whole bill Then the customer must go to the utility company office and show the receipt to the designated person, who will then schedule the meter to be turned on again

The utility will turn the meter back on as soon as possible but not to exceed 1 5 days The utility may charge a fee to reconnect the meter

If the customer has been disconnected for non-payment, the company has the right to demand a security deposit to protect the company and the other paying customers from commercial losses

The deposit amount will not exceed the amount equal to two estimated billing periods

The utility will keep a log of all deposits that they have received They will note the account number, customer name, address, amount of deposit and the date taken

If a customer moves, or their meter is locked for nonpayment, and they do not turn the service back on, then the deposit will be applied to the bill to reduce the debt If the customer wants service again, either at the same location, or a new one, then another deposit will be required

The deposit will be returned when the customer moves or has made timely payments on their account for a period of 2 years

APPENDIX F

EXHIBIT VI METER READING PROCEDURES

Meter Reading Procedures

- 1 Meter readers will not omit any meters on their route
- 2 All meters will be read on the scheduled day
- 3 Meter readers will record only actual reading from the meter Falsification of meter readings will result in immediate discharge
- 4 The meter reading document will be printed from the computer each day
- 5 Each meter reader will sign their name to their assigned meter reading sheets
- 6 The meter reader must verify each meter number, then write meter reading in space provided
- 7 The meter reader should check the prior reading to be sure that the new reading is not too high too low or that the meter has stopped
- 8 If the meter reader is unable to access the meter for a reading, he must go back to get the reading before the bill date
- 9 Meter readers will return their work to the office to be processed by the computer daily
 - a Any problem found with a meter while reading will be reported to the supervisor immediately upon return to the office
 - b If the meter reader detects a gas leak he must not wait to return to the office, but **MUST** immediately report the leak to the office
- 10 Meter readers are responsible to report to the company any of the following
 - a Meters or meter fits that have been vandalized
 - b Broken wire seals, loose index screws
 - c Meters turned the backwards
 - d Meters bypassed or diverted in any way to steal gas
- 11 The meter reader will be responsible for delivering the bill to the customer

APPENDIX G

**EXHIBIT VII PAPER FLOW METER READ TO MILL THIRTY
DAY CYCLE**

**Paper Flow
Meter Read to Bill
Thirty Day Cycle**

Day 1	Read meter
Day 2	Read meters not read on Day 1 in the evening
Day 3	Enter meter readings for bill production
Day 4	Correct errors
Day 14	Produce bills
Day 15	Deliver bill, read meter, lock for nonpayment
Day 16	Read meters not read day 15
Day 17	Enter data
Day 28	Produce bill
Day 30	Deliver bill, read meter, lock for nonpayment

APPENDIX H
EXHIBIT VIII TERMS OF USE

TERMS OF USE

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Approved by the Decree #
As of _____ 1998
By the Ministry of Energy of RoA

NATURAL GAS USAGE RULES

SECTION I

GENERAL PROVISIONS

Main concepts used in Natural Gas Usage Rules

Gas – natural gas or dry gases associating oil which are derived from fields or produced in gas and oil processing factories with quality features defined by appropriate standards

Gas supply enterprise – legal entity which holds a gas import or gas transmission or gas distribution license

Consumer (Customer) – a legal entity or a physical person that has connection to gas pipeline, in compliance with these Rules and, procedures and technical specifications defined by other normative acts, and that has signed a Gas Supply (Purchase) Contract with a Gas Supply Enterprise

Gas system – a technical system of gas pipes, gas appliances, regulating stations and valves, owned or administered by the customer

Gas Distribution Network - a technical system including gas distribution pipelines, gas regulating stations and facilities, equipment necessary for their reliable and safe operation, by the means of which system gas delivery to customers located in a certain geographical area is implemented

Indoor Gas System – gas in-door network, along with its valves, starting right after the commercial gas meter (boundary point) and all gas appliances installed in the apartment

Technical Specifications – Conditions and requirements presented to a new customer with regard to gas supply implementation, defined by normative acts and governing documents ensuring gas system reliable and safe operation, with technical and economical justification

Accounting period - time duration specified in the contract for which the gas consumption should be determined and mutual settlements should be made between the gas supply enterprise and the customer

Average daily gas quantity – the supplied gas volume, which is determined based on monthly supplied gas volume and the number of days within the given month

Hourly gas consumption – Gas consumption nominal quantity specified by the technical documentation of a gas appliance

Gas consumption request – required daily (monthly, annually) gas volume, which meets the demand of a customer's technological devices

Commercial gas meter – an equipment, by the means of which the quantity of delivered gas is metered and based on the reading of which mutual settlements between the gas supply enterprise and the customer are made

Boundary point – a border, which separates gas systems owned or administered by the gas supply enterprise and the customer

Delivery point – a border, where the gas commercial meter is installed

Natural gas (hereafter - Gas) Usage Rules (hereafter - GUR) hereby define provisions with respect to gas supply by gas supply enterprise to consumers (customers), their interrelations and are binding for them regardless of their ministerial subordination, organizational and legal type and ownership form

Apart from these rules gas supply enterprises and customers should comply with norms and regulations with respect to gas industry safety, technical operation, environmental considerations and fire safety, and construction, defined by the Legislation of Armenia, as well as normative acts by the Energy Commission of the RoA

Gas usage is permitted in the case of meeting the following main conditions which comply with the Legislation of the RoA

existing connection of gas appliances to the gas pipeline, provided that the mentioned connection should comply with the normative acts and technical provisions for connection with the gas supply network, and the gas appliances should be verified by authorized bodies of the RoA (hereafter referred to as Authorized Bodies) for technical supervision of the Gas Industry

availability of Gas Supply (Purchase) Contract (hereafter referred to as Contract) with a gas supply enterprise

Gas Supply (Purchase) Model Contracts should be defined by the Energy Commission of the RoA

An Act including the asset list of the gas supply network, responsibility boundaries for operation and metering procedure for gas consumption should be attached to the Contract, and should be deemed as an inseparable part of the Contract

The Contract term is considered to be prolonged in the case if by the Contract termination date none of the parties requires its revision or dissolution

Gas Usage Rules for residents are defined in Section VIII of GUR

SECTION II

TECHNICAL PROVISIONS FOR CONNECTING GAS APPLIANCES OF CONSUMERS TO THE GAS PIPELINE

Development, setting and getting consent on technical specifications for connection of new consumer appliances to the gas network of the gas supply enterprise or increase of new or in-use capacities of appliances of consumers connected to the network, restructuring of gas appliances should comply with the procedure defined by the Ministry of Energy of the RoA and agreed with the Energy Commission of the RoA

The gas supply enterprise may give technical specifications to a second-tier customer for connecting to the gas network beyond the boundary point of the Customer only after getting a written consent from the Customer

Compliance with the technical provisions agreed upon by gas supply enterprise and consumer is mandatory for parties

The time period for review of the request of a consumer about connection of new capacities and setting of technical provisions should be set up to one month from the date of the request submission

Prior to starting the construction activities the customer (Consumer), with the participation of a designing institution, should submit to authorized bodies the working draft and blueprints of gas system of its enterprise. Each authorized body within 10 days should check the compliance of drafts with the technical specifications, as well as to other requirements of technical norms and standards and should give their consent for commencement of construction related to gas system

In the case of discovering deviations in reviewed drafts from technical specifications or normative requirements, an appropriate written justification should be delivered to the Customer (Consumer)

Design, construction and assembling and calibration activities in respect to gas supply are entitled to legal entities which hold appropriate licenses for the mentioned activities

SECTION III
THE PERMISSION FOR
COMMISSIONING AND OPERATION OF
GAS SYSTEM

Newly connected and restructured gas systems, as well as gas distribution networks (regardless of their ownership form) should comply with construction norms and rules, fire safety rules, gas system safe operation standards and other normative acts, be provided with agreed upon proper design and hand-over technical documentation

Newly connected or restructured gas systems, as well as gas distribution networks (regardless of their ownership form) prior to commissioning should undergo hand-over experiments according to the defined procedure. Based on positive outcomes of the experiments the appropriate authorized body should give the permission for commissioning the gas system.

After the commissioning of gas a distribution network or a gas system the appropriate adjustment activities should be carried out pursuant to the defined procedure.

A gas supply enterprise should carry out gas supply to a new customer in the case of availability of a gas meter which is sealed by both of two parties as it is set forth in the Contract.

In the case of discovery by authorized bodies of any shortcomings, non-compliance with defined technical specifications and other norms of gas appliance installation in the gas system of a customer, gas supply to the mentioned customer by a gas supply enterprise is prohibited until the elimination of discovered defaults.

Commissioning and operation of conserved gas systems should comply with the provisions herein set forth in this Section of GUR. The decision about the necessity of pre-commissioning experiments of conserved or seasonal consumption gas systems should be made by the appropriate authorized body.

In the case of gas supply and (or) consumption without a permission by authorized bodies, the defaulting party (parties) should bear responsibility pursuant to the Legislation of Armenia.

SECTION IV
TECHNICAL SUPERVISION OVER GAS SUPPLY
ENTERPRISES AND GAS SYSTEMS

Technical supervision over gas supply enterprises and gas systems, regardless of their form of ownership, organizational and legal type and ministerial subordination, should be carried out by authorized bodies within their jurisdiction

The authorized bodies should inform the Energy Commission of RoA about the recorded violations revealed in the process of inspections

Implementation of technical supervision by authorized bodies shall not exempt legal entities and physical persons from obligations and responsibilities with respect to inspection and maintenance of gas system safe operation and technical condition requirements within their jurisdiction.

In the case of causing obstacles to the full access of the representatives of authorized bodies to a gas supply enterprise and a consumer gas system, the official persons of the latter should bear responsibility under the Legislation of Armenia

In the case of non-performance or improper performance of obligations by officials of authorized bodies the mentioned officials should bear responsibility according to the Legislation of Armenia

SECTION V

GAS CONSUMPTION REGIMES AND MAIN CONDITIONS

Gas consumption by consumers should be according to the quantities specified in the contract

Make changes in gas quantities is allowed only by the mutual agreement of the customer and gas supply company, pursuant to the procedure and time-frame specified in the contract

The gas supply enterprise must provide contractual gas pressure at the delivery point, if the consumer maintains gas consumption quantity specified in the contract

In those cases, when the gas pressure amount and consumption quantity are not specified by the contract, the gas supply enterprise must provide at the delivery point gas pressure amount set forth by standards

The gas should be supplied continually, if the contract doesn't contain provisions for supply interruption or restriction

Gas supply lawful restrictions and/or interruptions should be conducted by the dispatch service of the gas supply enterprise upon the instruction of the central dispatch service of the gas supply system and according to the earlier developed and agreed with consumers schedule Gas supply restriction and interruption

terms are specified in the contract. The gas supply enterprise must notify the customer about any accidents and gas supply restrictions caused by the accident.

Based on the written direction from the authorized body overseeing gas system safety regarding accidents dangerous for maintenance personnel, the customer must interrupt or limit gas consumption and the gas supply enterprise dispatch service must interrupt or limit gas supply, upon mutual prompt notice.

Gas supply to the customer should be resumed upon the appropriate written instruction (phone message) by the authorized body.

The gas supply enterprise has the right for partial or complete termination of gas supply to the customer upon prior written notice, in the cases defined and by conditions specified in the contract.

Gas supply termination and resumption should be carried out by the representative of the gas supply enterprise in the presence of the responsible person of the customer or after notifying the customer about interruption, and after getting consent in the case of resumption.

Disputes arising between gas supply enterprise and the customer should be resolved according to the procedures set forth in the contract, these Rules and the Legislation of Armenia.

SECTION VI

THE PROCEDURE FOR DETERMINING THE QUANTITY, COST OF THE CONSUMED GAS AND PAYMENT

The quantity of the gas consumed is determined based on the readings of commercial gas meters, and the cost of it is determined by the tariff.

Responsible persons of the customer and the gas supply enterprise should prepare a bilateral act about the quantity of consumed gas as of the last day of the reporting period, based on the reading of the commercial gas meter and should check the proper condition of the meter. In the case if the responsible person of the customer fails to show up on the appointed date the gas supply enterprise has the right for preparing a one-side act.

The gas supply enterprise should prepare the bill against the consumed gas based on the act on the quantity and quality of consumed gas.

After preparation of the act, within the payment period defined in the contract, the contract parties may dispute the gas quantity recorded in the act and claim for a revision. By the expiration of the mentioned period, the party operating the gas meters must maintain and upon the first demand provide the claiming party or the authorized body all documents related to gas metering within the reporting period, i.e. records on operative information, cards, computer outputs and others.

The above mentioned documents should be kept until the final resolution of the dispute

The customer should make the payment for gas based on the bill delivered by the gas supply enterprise, within the payment period defined by the contract

In the case of failure by the customer to pay within the period starting from the moment of receipt of the bill up to the expiration date of the payment period the customer is charged a penalty for each day of delay a specified by the contract percentage of the unpaid amount or the bank interest rate as of the date of payment, whereas the gas supply enterprise has the right to terminate the gas supply to the customer within specified by the contract period upon official notice

Gas supply enterprise retains the right for termination of gas supply to the defaulting customer until full payment by the latter of due amount and penalties

In the case when the gas supply is interrupted, the resumption should take place within 24 hours after submission of a document verifying the full payment of due amount and penalties, and if necessary, costs associated with supply interruption and resumption, if it is not otherwise set forth in the contract. In the case of failure by the gas supply enterprise to resume gas supply to the customer within the mentioned period, the gas supply enterprise must reimburse the customer against the under-supplied gas during the period following the mentioned term as it is defined in the Clause 43 of these Rules

In the case of revealing any misprint in the bill the customer should contact the gas supply enterprise

The gas supply enterprise should check the records on the bill within 5 days after receiving notice about the misprint

In the case of confirmation of the misprint the gas supply enterprise should correct the mistake within 2 days and by getting the consent of the customer, reimburse the over-paid amount to the customer or record it as an advance payment, and in the case of underpayment, deliver a new bill, if it is not otherwise set forth in the contract

The amount overpaid by the customer should be reimbursed within 15 days after the request is received from the customer, whereas for each day exceeding the mentioned period a penalty should be charged according to the percentage of the unpaid amount set forth in the contract or according to the bank interest rate as of the date of the payment. Payment by the new bill should be done pursuant to Clauses 31 and 32 of these Rules

In the case of discovering by the gas supply enterprise or the customer any default in the operation of the commercial meter, the parties should follow the procedure set forth in the contract. In the case if the contract does not include a provision for such kind of procedure, a bilateral act about the malfunctioning of

the commercial meter should be prepared, and in the case of disagreement by any of the parties, a unilateral act should be prepared, which, after the conclusion of an authorized body or, if necessary ArmStateStandard representative, should serve as basis for the gas meter test and reconciliation of consumed gas quantity. If it is necessary to disassemble the meter and transport it to the testing center of ArmStateStandard for confirmation of the fact of meter's malfunctioning, the responsible party for meter operation should give a 2 days prior written notice to the other party to ensure the participation of the latter in the whole process of testing.

Reconciliation based on testing results should be carried out only if the following preconditions are in place:

the term for the meter regular test is not expired,
the measurement error exceeds the allowance range of the given meter,
the meter error brought to a loss for the party which is not responsible for the meter operation.

The gas supply enterprise should conduct reconciliation for the period from the last meter test up to the resumption of metering based on the error part exceeding the allowance range.

Reconciliation of consumed gas should be conducted to the benefit of the party which is not responsible for meter operation.

For the mentioned period:
overpaid amount should be recorded as advance payment, if the responsible party for meter operation is the gas supply enterprise,
for underpaid amount a new bill should be submitted to the customer, if the responsible party for meter operation is the customer.

In the case if the deviation of gas meter reading is within the allowed range, the claiming party should bear the costs associated with meter testing, whereas in the case if the malfunctioning of the meter is confirmed, the party responsible for meter operation should bear those costs.

Deviations of meter reading are allowed and don't require reconciliation of consumed gas quantity and its cost, if in the result of testing it is proved that those deviations are within the allowance range conditioned with the accuracy class of the meter.

In the case of discovering an intentional non-compliance of commercial gas meter, under the responsibility of the customer or gas supply enterprise, with technical conditions for installation and/or operation standards, the party which has discovered the violation and has borne actual losses, together with the other party, should prepare an act about metering violation. The act is a separate accounting document and serves as basis for gas consumption quantity reconciliation.

In the case of disagreement by the other party with the metering violation act the dispute should be resolved according to the Clause 28 of these Rules
Gas consumption quantity reconciliation should be conducted jointly, for the whole period from the date of the last inspection of the commercial gas meter up to the metering resumption

- a) based on the installed consumption capacity and number of work hours (taking into consideration the actual time period of gas consumption) of customer gas facilities, if the responsible party for the meter operation is the customer, if it is not otherwise defined by the contract,
- b) based on the error portion exceeding the error allowance range of the meter, if the responsible party for the meter operation is the gas supply enterprise, if it is not otherwise defined by the contract

Elimination of meter defaults should be carried out on the basis of metering violation act, by the means of the party responsible for meter operation no longer than within 3 working days
The amount calculated based on the act should be reimbursed not later than within 30 days, if not, the amount should be collected according to the procedure under the Legislation of Armenia

SECTION VII

RESPONSIBILITIES OF THE GAS SUPPLY ENTERPRISE AND THE CUSTOMER

The gas supply enterprise is responsible for ensuring gas supply to the customer according to the signed contract

In the case of interruptions or restrictions of customer gas supply, except for cases described in the Clause 40 of this GUR, the gas supply enterprise should pay a penalty to the customer for under-supply – up to 3% of the calculated amount of non-supplied gas, according to the signed contract The losses that the customer bears in the result of gas supply interruption or restriction which is not intended by the contract should be reimbursed by the gas supply enterprise according to the Legislation of Armenia

In the case if the customer constantly keeps the consumption quantity lower than it is set forth in the contract, for any other reason than introduction of gas saving technologies, the gas supply enterprise is empowered to claim compensation from the customer according to the procedure defined in the contract

The gas supply enterprise does not bear any responsibility for gas under-supply, if it is caused by

Force-Majeure conditions specified in the contract,
such operational actions of the customer which bring to gas supply
interruption (incorrect shutoffs, breaches of operation rules, wreck of gas
facilities, etc)
gas supply restrictions allowed by law or interruption terms specified in the
contract

The gas supply enterprise must notify the customer about any accidents and
reasons for gas supply restrictions

In the case of gas supply limitation the non-supplied to the customer gas quantity
is determined based on the actual time period of gas supply restriction and the
difference between the average consumption during the previous reporting period
and the gas quantity delivered during the restriction period

The customer must immediately inform the gas supply enterprise about any
interruption of gas supply

The duration of and the reasons for gas supply limitation are determined by the
appropriate documents of gas supply enterprise and the customer and are fixed by
a bilaterally prepared act

The gas supply enterprise, within 7 days, should review the claim of the customer
about gas under-supply, and in the case of approval, should pay a penalty
according to the Clause 39 of these Rules and the contract, within 15 days after
the claim of the customer has been received For each day of delay, the penalty
amount increases by the percentage set forth in the contract or the defined bank
interest rate as of the date of the payment

If by the fault of any customer gas under-supply occurs to another customer of
the gas supply enterprise in the result of reasons described in the Sub-Clause
40 b), the gas supply enterprise is empowered to demand from the given
customer reimbursement of losses the gas supply enterprise has sustained,
pursuant to the procedure defined in the contract and the Legislation of Armenia

The gas supply enterprise is responsible for ensuring gas quality measures set
forth in the contract, or, in case of unavailability of such provisions in the
contract, defined by Standards, at the point of the gas network specified in the
contract

The customer should pay for consumed gas not meeting quality standards at the
rate set by the Energy Commission of RoA and confirmed by the contract, if the
gas quality satisfies the needs of the customer

In the case if the gas quality does not meet the contract provisions, the customer
has the right for terminating or limiting gas consumption until the improvement
of the gas quality, upon official notification of the gas supply enterprise
according to the procedure defined in the contract

The gas quality and the duration of supply of gas not meeting quality standards should be determined based on measurement results by the appropriate devices of the supplier and the customer. An act should be prepared between the gas supply enterprise and the customer, and the gas quantity is determined based on the gas supply duration mentioned in the act and average consumption of gas supplied within that period.

Illegal gas consumption is considered to be the following

- consumption without contract availability,
- consumption circumventing connection of a gas meter,
- consumption without availability of a meter or with violations of technical conditions for meter installation

In the case of discovering by authorized bodies of illegal gas consumption, the faulty party (parties) should bear responsibility under the Legislation of Armenia

The gas supply enterprise and the customer are responsible for technical condition, maintenance, and compliance with safe operation standards of gas appliances, gas pipelines and commercial meters which are installed in areas under their ownership, or under their administration and within their domains defined by the contract

Maintenance and operation of gas appliances, gas pipes and gas meters owned or administered by the customer can be contracted to the gas supply enterprise according to the defined price list for such kind of services. Maintenance and operation of the customer's gas system can also be contracted to other legal entities or physical persons pursuant to the Legislation of Armenia

Gas supply enterprise should bear all the costs associated with operation and planned and non-planned maintenance of gas commercial meters owned by the customer but contracted to the gas supply enterprise. Planned or non-planned replacement of those meters should be carried out by the means of the gas supply enterprise, after which they become the ownership of the gas supply enterprise

The customer should bear all the costs associated with operation and planned and non-planned maintenance of gas commercial meters under the ownership and contractual responsibility of the customer. Planned or non-planned replacement of those meters should be carried out by the means of the gas supply enterprise, after which they become the ownership of the gas supply enterprise

The gas supply enterprise should implement gas odorization and control the extent of odorization, pursuant to the requirements of the standards and safety rules

Gas delivered to production enterprises and thermal power plants may not be subjected to odorization according to the contract provisions. Such kind of customers should have automated systems for gas leakage detection and alarm.

SECTION VIII

GAS USAGE BY THE RESIDENTIAL SECTOR

A General Provisions

Residents are allowed to use gas in the case of availability of a request for gas supply and provision of the following conditions:

existing connection, in compliance with the defined by normative acts procedure and technical conditions, to the gas network of gas appliances verified by authorized bodies,
signed agreement with gas supply enterprise

The owner for each of apartments (houses), dachas he/she owns and the renter for the rented area, if it is not otherwise set forth in the rent contract, should sign a separate gas supply contract with the gas supply enterprise on behalf of the customer party in each of the contracts.

The contract should include as an attachment the act for gas household system operation responsibility and appropriate instruction of the customer, which should be an inseparable part of the contract.

The time period for responding (approval or justified denial) to requests about gas supply should be defined up to one month.

The gas supply enterprise, starting from the effective date of the contract, must organize gas metering and billing for that customer.

Gas supply establishment to a new apartment (house, dacha), including also gas in-door system, should be carried out by the gas supply enterprise, and the costs should be incurred by the initiating party. Gas supply resumption to an apartment (house, dacha) with previously established gas system, including in-door system (except for gas appliances) with initial plan and technical conditions, should be implemented with the initiation and expenses of the gas supply enterprise. In the case of deviations from initial plan and technical conditions, the customer should bear expenses associated with gas supply resumption.

Gas supply establishment, including gas in-door systems, to buildings with multiple apartments should be initiated and funded by the owner of the buildings. Gas supply resumption to buildings with previously established gas supply system, including in-door system (except for gas appliances) with initial plan and technical conditions, should be implemented with the initiation and expenses of the gas supply enterprise.

In the case of deviations from initial plan and technical conditions, the customer should bear expenses associated with gas supply resumption

Gas supply establishment to residential areas should be carried out in compliance with gas system safety standards, operation rules, fire safety rules, construction norms and rules, defined on the basis of technical specifications and designs and estimates developed by the gas supply enterprise, and pursuant to requirements set forth by these Rules

Gas supply to apartments, houses and dachas is permitted only from one connection point, without a provision of an additional supply point for them

B Operation of gas appliances in multi-apartment residential buildings, dachas and houses (residential areas)

The Customer is responsible for compliance with safe operation rules and integrity maintenance of residential in-door gas systems, whereas the technical maintenance and repair can be contracted to the gas supply enterprise according to the defined price list

In-door gas systems' maintenance and repair may also be contracted to other legal entities or physical persons holding appropriate licenses

C Gas metering and Billing in Residential Areas

The representative of the gas supply enterprise should record customer meter readings and prepare billing documents, as of the last date of the accounting period specified in the contract, after mandatory inspection of technical condition of commercial meter installation and external state, and in-door gas system

Commercial gas meters should be sealed by the gas supply enterprise and the customer

Customers having no opportunity for sealing the commercial gas meter may substitute sealing with other equivalent means, not hindering the operation of the meter

The way of sealing by the customer of the commercial meter should be confirmed in the customer's card or by a separate act

The gas supply enterprise and the customer should bear mutual responsibility for breach of the sealing or substituting it means

Customers should pay for consumed gas at the tariff set forth by the Energy Commission of the RoA

The customer should make the payment for consumed gas within 10 days after the submission of the bill by the gas supply enterprise, which is prepared according to the meter reading

In the case if the customer fails to pay for the consumed gas within 10 days after the bill is submitted, the gas supply enterprise may interrupt gas supply to the customer giving 5 days prior written notice to the customer. Gas supply should be resumed within 24 hours after submission by the customer of a document verifying the payment.

In the case of questioning the accuracy of the amount mentioned on the bill the customer should apply to the gas supply enterprise within 10 days after receiving of the bill.

The gas supply enterprise should check its records within 5 days after the appeal is received.

In the case if the error in the bill is confirmed the gas supply enterprise should correct the error within 2 days and deliver to the customer another bill.

The gas supply enterprise should check the accuracy of the commercial gas meter within 5 days after receipt of the appeal from the customer.

In the case if the gas supply enterprise discovers an error which had caused over-charging of the customer, the gas supply enterprise should conduct reconciliation for the period after the last inspection date of the technical condition of the meter and record the error part exceeding the error allowance range of the meter which had been charged to the customer as an advance payment. In such cases the gas supply enterprise should bear the expenses associated with testing the meter.

The customer is not responsible for discovered error that had caused under-charging of the customer.

If the meter error is within the allowance range of the meter the customer should bear the expenses associated with meter testing, if the meter testing was initiated by the customer.

Gas meter reading errors are considered to be allowed and don't require reconciliation if the deviations are within the error allowance range defined by the accuracy class of the meter.

In the case of revealing illegal gas consumption (consumption without a contract, consumption by-passing the meter, consumption without a meter, in the cases when the seal of the meter, under the responsibility of the customer, is damaged, detached or has mechanical defaults, which lead to metering failure), the gas supply enterprise should interrupt the gas supply to the consumer (customer) and should jointly with the consumer (customer) prepare an Act on Illegal Consumption. The act is deemed to be a special accounting document and serves as basis for reconciliation of gas consumed by the customer.

In the case if the customer disagrees with the Act on Illegal Consumption, the issue should be resolved according to the Legislation of Armenia

The gas supply enterprise, based on the Act on Illegal Gas Consumption, should conduct reconciliation for the period starting from last reading date of the customer commercial meter up to the instant the Act on Illegal Gas Consumption is prepared. Reconciliation should be done based on the installed consumption capacity of customer's gas appliances (with the actual consumption period), and for the following operation duration

for heaters and water heaters

for December, January, February - 16 hours per day

for the rest of the months - 5 hours per day

for other gas appliances - 10 hours per day

The amount calculated based on the Act on Illegal Gas Consumption should be paid not later than within 30 days, otherwise, the gas supply enterprise should collect the amount according to the procedure set forth in the Legislation of Armenia

Gas supply to the customer should be resumed within 3 days after submission by the customer of the document verifying the payment of the amount calculated on the basis of the Act on Illegal Gas Consumption, also, in the case of gas in-door system breach, of the amount for the system recovery

In the case of breach by the customer of the gas in-door system, the gas supply enterprise should carry out recovery of the system, on the expense of the customer, according to the defined price list

In the case of discovering by an appropriate authorized body of illegal gas consumption, the given customer should bear responsibility pursuant to the Law of the RoA

Disputes arising between the gas supply enterprise and the customer should be resolved according to the Legislation of Armenia