



PROBLEMS AND THEIR SOLUTIONS IN ENSURING THE UNINTERRUPTED, COST-EFFECTIVE AND COST-EFFECTIVE SUPPLY OF NATURAL GAS TO CONSUMERS

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Article history:	Abstract:
Received: 6 th December 2021	This article deals with the complaints of natural gas consumers in the autumn-winter period, the problems encountered during the operation of the natural gas system and suggestions for their solution, heating and heating in gasified courtyards. Analysis of installed gas equipment for water treatment and proposals for the use of modern energy-efficient gas burners for gas saving, the current situation and proposals for the maintenance of gas accounting and payment discipline among suppliers and consumers Samarkand region in the example of gas supply.
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INTRODUCTION.

In our country, a number of positive steps are being taken to ensure the uninterrupted, cost-effective and cost-effective supply of natural gas to consumers. The fact that the implementation of this work is now becoming a state policy, that is, the drastic reforms carried out in the country to develop industry, production and entrepreneurship, in itself provides them with uninterrupted, cost-effective and cost-effective energy resources. puts. In this regard, the relevant gas supply companies are working to explain and promote the "Rules and culture of gas use."

RESEARCH RESULTS AND ANALYSIS:

Tasks to provide the population and other consumers of natural gas with gas, to fully meet the needs of natural gas are mainly the responsibility of the President of the Republic on July 9, 2019 "On measures to improve the health of the population and its management system" is being implemented in accordance with the Resolution No. PP-4388. In addition, in accordance with this resolution of the President and the concept of development of the oil and gas industry of the Republic of Uzbekistan until 2030, increase the volume of hydrocarbons, modernize the gas transportation system, calculate the production, processing, supply and sale of natural gas. and priority is given to improving oversight. At the same time, a number of tasks are being carried out, such as the study and approval of investment projects, improving the mechanisms for their implementation and strengthening financial discipline in the oil and gas industry. In addition, in order to ensure safety measures for consumers in the use of natural gas, on January 12, 2018, the Resolution of the Cabinet of Ministers of the Republic of Uzbekistan No. 202 "On the rules of use of natural gas" will be signed:

- Provision of gas supply to consumers on the basis of partial restriction schedules in case of emergency or in case of violation of the technological mode of operation of main and distribution gas pipelines
- Determining the annual demand of consumers for natural gas and on this basis to conclude agreements between consumers and suppliers and take measures to supply gas on this basis.
- Procedures for connecting newly built facilities and settlements to the gas network
- Instructions on the conclusion of contracts and ensuring the legal implementation of the terms of contracts for the supply of natural gas in accordance with the rules of socially and strategically important consumers engaged in production activities and the rules of rational use of natural gas with continuous, uninterrupted and cost-effective in the future and requirements were developed.

However, there are still a number of shortcomings in the supply of natural gas to the population and businesses. As a result of insufficient compliance with the requirements of the law and by-laws in the identification of deficiencies and problems in the provision and identification of problems, continues to cause legitimate complaints by consumers.

Studies and research show that we offer the following to ensure the uninterrupted, cost-effective, economical and rational use of natural gas by consumers.

By gas supply organizations:

- Supply to consumers, taking into account the capacity of gas supply pipelines and the capacity of gas transportation organizations
- Supply and approval of natural gas to wholesale consumers in order to ensure uninterrupted supply of natural gas to households during the autumn months, when natural gas consumption is high.
- To ensure the stable operation of gas pipelines and its facilities, to provide qualified personnel on a regular basis and to take measures to increase their productivity.
- Concluding contracts with gas transport companies for the supply of gas in the norms set for the next year due to the complete registration of consumers
- Ensuring that domestic gas appliances meet consumer standards
- Ensuring that preventive inspections and repairs are carried out in accordance with the schedules and procedures established in the facilities and internal gas equipment installed in the gas supply system.
- "Introduction of an automated system of control and accounting of natural gas" with full online access to consumers in order to properly account for gas consumed by consumers and strengthen payment discipline.

Gas burners installed in heating furnaces, heating boilers and water heating equipment play an important role in the uninterrupted and uninterrupted supply of gas to consumers in the rational and economical use of gas by consumers. According to the researchers, the demand for natural gas in the winter will be higher than ever, and the safe, rational and economical use of gas at such times is one of the main principles of our consumers. Today, a total of 3,546,148 homes in the country are gasified with natural gas, of which 2,756,321 apartments are private and one-story apartment houses on the ground, and 789,827 gasified apartments are multi-storey houses.

In the well-known single-storey houses, ie 2756321 houses, the heating equipment and hot water treatment equipment are made individually, ie the gas is burned in the fireplaces by means of gas burners.

If 30% of these homes have water heating equipment for bathrooms and other purposes, then 825,396 households use water heating equipment.

$2756321 + 825396 = 3581717$ gas burners are used to burn gas in heating boilers and water heating equipment, not counting the heating stoves installed in single-storey and courtyard houses, and assuming that all apartments have heating boilers. The study of Samarkand region showed the following results.

The total number of homes gasified with natural gas in Samarkand region is 288,108, of which 224,807 are apartments, and 30% of the houses have hot water supply, which is 67,442 apartments, or $224807 + 61442$ installed in apartments. = 292249 units of gas are burned in the furnaces by means of gas burners.

Today, gasified courtyard houses are mainly obsolete, natural gas-fired GGP 1-horn and 2-3-horn gas burners, developed by hand or factory, which do not have heat regulators (thermoregulators). q or those who have also lost the ability to work spiritually obsolete.

As a result of calculations and monitoring carried out in the cities and districts of Hududgaz Samarkandgaz LLC, it was found that the consumption of this gas is $1.3 \text{ m}^3 / \text{h}$ or 32 m^3 per day.

So, when calculating the amount of gas consumed in the gas burners in the above-mentioned water heaters:

$67442 \times 1,3 \text{ m}^3 \text{ h} = 87674 \text{ m}^3$ hours Water heaters consume $87674 \text{ m}^3 \times 24 \text{ hours} \times 30 \text{ days} = 63 125280 \text{ m}^3 \text{oy}$ and $63125280 \text{ m}^3 \text{oy} \times 12 \text{ months} = 757503360 \text{ m}^3$ per year, taking into account the year-round operation.

Similarly, when we calculate the amount of gas consumed in the boilers installed to heat the courtyards: $224807 \times 1.3 \text{ m}^3 \text{ hours} = 292249 \text{ m}^3 \text{ hours}$ $292249 \text{ m}^3 \text{ hours} \times 24 \text{ hours} \times 30 \text{ days} = 210419352 \text{ m}^3 \text{ months}$. Taking into account that the average heating season in the Republic of Uzbekistan is 5 months, $210419352 \text{ m}^3 \text{ months} \times 5 \text{ months} = 1.52.096 \text{ m}^3 \text{ years}$. The amount of natural gas consumed by gas burners installed in the boilers and hot water treatment equipment installed in the rooms is $1052.096000 \text{ m}^3 \text{ year} + 75703360 \text{ m}^3 \text{ year} = 1.80959900 \text{ m}^3 \text{ year}$.

It can be seen that the current gas burners used in Samarkand region alone consume an average of 1809599000 m^3 of gas per year for hot water and heating in the backyards of the population (here in rural areas (excluding 2-3 heating stoves installed in each house for heating, each apartment is heated by the local heating system)).

Today, every family is looking for ways to save the family budget on the basis of energy saving, so the energy produced in many regions of the country today is energy-efficient, automatically controls heat and automatically controls gas consumption, safe to use and affordable. The burners market is set in motion.

The hourly gas consumption of these modern gas burners is $0.8 \text{ m}^3 / \text{h}$, which saves 0.5 m^3 per hour from existing gas burners.

When the above calculations are studied on the basis of modern gas burners;

$67442 \times 0.8 \text{ m}^3 / \text{hour} = 53953 \text{ m}^3 / \text{hour}$ $53953 \text{ m}^3 / \text{hour} \times 24 \text{ hours} \times 30 \text{ days} = 38846592 \text{ m}^3 / \text{month}$ in hot water treatment equipment;

$38846592 \text{ m}^3 / \text{month} \times 12 \text{ months} = 46615909 \text{ m}^3 / \text{year}$ compared to existing gas burners

It is possible to save gas in the amount of $757503360 \text{ m}^3 / \text{y} - 466159109 \text{ m}^3 / \text{y} = 291344256 \text{ m}^3 / \text{year}$.

In heating boilers for domestic heating, this figure is the consumption of gas in modern gas burners.

$224807 \text{ flats} \times 0.8 \text{ m}^3 / \text{h} = 179845 \text{ m}^3 / \text{h}$

$179895 \text{ m}^3 / \text{hour} \times 24 \text{ hours} \times 30 \text{ days} = 129488832 \text{ m}^3 / \text{month}$

$129488832 \text{ m}^3 / \text{month} \times 5 \text{ months} = 647444160 \text{ m}^3 / \text{year}$ Gas consumption.

This means that existing gas burners have been replaced by modern energy-efficient gas burners for hot water and heating in courtyards. $379923 \text{ m}^3 / \text{h} - 233788 \text{ m}^3 / \text{h} = 146125 \text{ m}^3 / \text{h} / \text{month} \times 12 \text{ months} = 1\,753\,500 \text{ m}^3 / \text{year}$ There is an opportunity to save natural gas.

This means that with the installation of modern gas burners = an average of $400 \text{ m}^3 / \text{month}$ of gas consumption in hunting houses, $10521000 : 400 \text{ m}^3 / \text{month} = 26302$ apartments, ie it will be possible to gasify an additional 26302 apartments at the expense of saved gas.

From a financial point of view, a house with a modern gas burner uses 6 million cubic meters of gas a year. 46,560 soums will save the family budget.

In addition, due to the fact that about 30-40% of medium and low pressure gas pipelines operating in the country are on the verge of expiration, their ability to supply gas at the required pressure is limited. gas supply problems are emerging, leading to consumer complaints, as well as excessive losses of natural gas from these gas networks and its facilities.

One of the main reasons for the problems in the supply of natural gas to consumers is the stabilization of payment discipline in accordance with the contracts concluded between the supplier and the consumer.

Despite the presence of the resolution and other normative documents developed by the Cabinet of Ministers of the Republic "On mutual settlements between natural gas consumers and gas supply organizations", mutual settlements are established in the prescribed manner. there are many objections from gas transportation organizations due to the increase in receivables and payables due to non-fulfillment.

There is confusion in the implementation of mutual settlements, mainly with consumers, and there are protests from suppliers and consumers. In order to eliminate these shortcomings, the President of the Republic of Uzbekistan on 24.09.2020 PQ-4840 on additional measures for the implementation of the project "Introduction of automated systems of natural gas control."

The resolution provides for the implementation of the Decree of the President of the Republic of Uzbekistan dated June 8, 2020 No. PF-6010 on additional measures to improve the mechanism of sale of "natural gas and electricity", the expansion of modern information and communication technologies. It is planned to improve the natural gas metering system, eliminate losses, as well as ensure the timely full recovery of payments for natural gas consumed. In addition, there have been a number of recent incidents as a result of non-compliance with the "Safety" and "Gas Supply Rules" in the use of natural gas: "Gas poisoning", "Gas-air mixture" flashes are happening.

The main reasons for this are the failure of consumers to adhere to the culture of gas use, as well as insufficient publicity in the gas supply companies - lack of attention to advocacy and preventive inspections, as well as other types of services for gas pipelines and their facilities.

CONCLUSION.

In short, in order to ensure "uninterrupted, cost-effective, economical and rational use of gas", the following recommendations should be implemented.

Reconsider the structure of organizations that supply natural gas to consumers and form a union of states on the basis of normative documents with the rules of "Safety in the gas industry" and "Exploitation of the gas industry."

- Submission of the forecast of gas consumption for the next year, distributed by gas consumers to the gas supply company in a timely manner.

- In turn, the gas supply company distributes the demand for natural gas by quarters (for the winter period, by months) (taking into account the reserves for new facilities in the next year), gas demand for the next year, Hududgaz JSC for forecasting and submission to the Ministry of Energy.

- Prioritize the supply of gas to domestic consumers, including family businesses, departmental and municipal housing, dormitories of legal entities, local boilers for consumers of strategic and social importance established by law for the needs of the population.

- Absolute adherence to the solutions for the installation of efficient gas equipment in accordance with the standards set in the new gasification projects

- Meters of natural gas consumption metering devices (convenient for them) that provide reliability of metering in the calculated range of gas consumption, are equipped with the necessary devices to bring the volume of gas to standard conditions and are compatible with the system of automatic control and metering of natural gas consumption to the points of location).

- Initiation and implementation of relevant programs for gasification of regions and industrial and production facilities.

- Submit relevant proposals to the management and influence its implementation in order to stabilize the gas supply system and attract investment for its further development.
- Formation and timely implementation of programs for the overhaul, reconstruction and modernization of obsolete underground gas pipelines and their facilities operating in the regions.
- To accelerate the propaganda work on the replacement of obsolete and obsolete gas burners and other gas-consuming equipment in modern homes and to develop appropriate programs for its implementation.
- Organize training courses to improve the technical, legal and financial knowledge of employees working in the gas supply system.

In conclusion, it is necessary to make radical changes in the system, as well as to develop the system, strengthen their material and technical base, attract qualified personnel to the system, improve the skills and responsibilities of existing specialists, automatically control gas supply to consumers and As a result of the installation of gas meters, the quality of services in the gas supply system will be improved, as well as the living standards and living conditions of the population.

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