THE MİNİSTRY OF EDUCATİON OF THE REPUBLİC OF AZERBAİJAN

AZERBAIJAN STATE UNIVERCITY of ECONOMICS

INTERNATIONAL GRADUATE AND DOCTORATE CENTER

MASTER DISSERTATION

ON THE TOPIC

“ PROBLEMS OF WORLD ECONOMY IN THE GAS INDUSTRY.”

MEHDIYEV AMIL ARIF oglu

BAKU – 2019

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MASTER DISSERTATION

ON THE TOPIC

"PROBLEMS OF WORLD ECONOMY IN THE GAS INDUSTRY."

Code and name of Programme: 060401 "World economy"

Specialisation: "International trade"

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BAKU – 2019

Elm andı

Mən, Mehdiyev Amil Arif oglu and içirəm ki, "Problems Of World Economy In The Gas Industry" mövzusunda magistr dissertasiyasını elmi əxlaq normalarına və və istinad qaydalarına tam riayət etməklə və istifadə etdiyim bütün mənbələri ədəbiyyat siyahısında əks etdirməklə yazmışam.

Qaz sektorun dünya iqtisadiyyatında problemləri

Xülasə

Tədqiqat aktuallığı: Ən mühüm enerji növlərindən biri təbii qazdır. Təbii qaz - ən mühüm enerji daşıyıcısıdır və dünya əhalisinin sayının və sənaye istehsalının həcminin artması ilə əlaqədar olaraq qaz hasilatının həcmi ildən – ilə artır. Beləki, hər bir dövlətin enerji istehlakının səviyyəsi onun iqtisadi inkişafının əsas göstəricisidir.

Tədqiqatın məqsəd və vəzifələri: Tədqiqatın əsas məqsədi dünya iqtisadiyyatında təbii qaz bazarinin xüsusiyyətlərini və inkişafinin, əsas tendensiyalarını, qaz sektorunda transmilli şirkətlərin fəaliyyətini və Azərbaycan Respublikasının dünya qaz bazarına çıxışının problemləri və perspektivlərini, xüsusiyyətlərini müəyyən etməkdən ibarətdir. Məqsədə nail olmaq üçün tədqiqat işinin vəzifələri aşağıdakı kimi müəyyənləşdirilmişdir: Dünyanın enerji balansında təbii qazın yerini və əhəmiyyətini aşkar etmək, onun inkişafının xüsusiyyətləri və perspektivlərini qeyd etmək, tələbatın və onun təhcizatının quruluşunu və dinamikasını öyrənmək və s.

İstifadə olunmuş tədqiqat metodları: Tədqiqat işində dialektik, tarixi, iqtisadi və statistik, struktur və müqayisəli təhlil və s. metodlardan istifadə edilmişdir.

Tədqiqatın informasiya bazası: Dissertasiya işinin informasiya bazasını internet resursları, qanunvericilik və normativ aktlar, rəsmi məlumatlar, beynəlxalq təşkilatların və transmilli şirkətlərin materialları və hesabatları, həmçinin bu sahə üzrə müxtəlif müəlliflərin elmi araşdırmaları təşkil edir.

Tədqiqatın məhdudiyyətləri: Tədqiqatın aparılması üçün əsas məhdudiyyətlərdən, mövcud elmi-tədqiqat resursların və elmi ədəbiyyətın az və ya məhdud olmasi.

Tədqiqatın nəticələri: Son illərdə qlobal iqtisadiyyatın enerji balansında bir enerji qaynağı, sənaye üçün xammal kimi yüksək məhsuldarlığı və neft və kömürlə müqayisədə ətraf mühiti üçün daha səmərəli olmasına görə təbii qazın rolu və əhəmiyyəti davamlı olaraq artır. Ekspertlərin fikrincə təbii qazın mayeləşdirilməsi və yeni qaz boru kəmərlərinin çəkilməsi üçün texnologiyaların ucuzlaşması nəticəsində bu tendensiya gələcəkdə də davam edəcəkdir.

Nəticələrin elmi-praktiki əhəmiyyəti: Qlobal iqtisadiyyatda təbii qaz bazarının xüsusiyyətləri və inkişafının əsas tendensiyaları müəyyən edilmişdir, qaz sektorunda transmilli şirkətlərin fəaliyyəti qiymətləndirmişdir və Azərbaycan Respublikasında qaz sənayesinin xüsusiyyətləri və inkişaf perspektivləri aşkar edilmişdir.

Açar sözlər: Təbii qaz, Mayeləşdirilmiş (sıxılmış) təbii qaz, Transmilli Şirkətlər.

ABBREVIATIONS AND MARKS

BP - British Petroleum
Cent. - Central
CIS – Commonwealth of Independent States
EIA – Energy Interrnational Agency
IEA – International Energy Administration
LNG – Luquefied Natural Qas
LTD – Limited company
$\boldsymbol{m^3}$**-** Cubic meter
OECD – The Organisation for Economic Co-operation and Development
OJSC – Open Joint Stock Company
TNC – Trans-National Corporation
UAE – United Arab Emirates
UK – United Kingdom
US – United States
USA – United States of America

CONTENTS

INTRODUCTION

The relevance of the research topic: Energy resources play an important role in the modern global economy. Thus, the energy consumption of each state is a key indicator of its economic development. Their importance is due to the fact that more than 70% of all minerals produced in the world belong to the category of energy resources.

One of the most important types of energy is natural gas. Natural gas is the most important energy carrier and the volume of gas production is increasing year by year as the world population and industrial production increase. Currently, gas production in the energy balance of the planet is about 25% and is projected to reach 30% by 2050.

In recent years, the role and importance of natural gas in the energy balance of the world economy has been steadily increasing due to the high productivity of raw materials and industry as well as environmentally clean compared to oil and coal in recent years. The largest gas consumers are the US and Russia. The share of gas consumption in these countries in the global gas consumption is 22% and 13.3%, respectively. Since the role of the energy source, such as gas in the global economy, is so great, importing countries are also of great importance.

Taking into account the fact that the gas industry is one of the key sectors of the world economy has a significant impact on the structure and dynamics of the economy, as well as ensures the development and improvement of the social sphere and creates prerequisites for economic growth, the research topic is relevant. The supply of energy resources to each country, the implementation of gas supply agreements with foreign buyers, the filling of the budget revenues, and the achievement of high rates of socio-economic development depend on the results of the gas industry.

Gas as the most important source of fuel and energy is a factor in the technological structure of the economy, scientific and technological progress, and

increase in labor productivity and social development, which affects the incomes of the population. Energy is the basis for the development of civilization on earth. Generally, fuel and energy complex is one of the leading forces of socio-economic development.

Considering the importance of the gas industry for the socio-economic development of each country, to ensure future development, it is important to ensure the sustainable functioning of this industry by increasing the efficiency and investment attractiveness of its business. From this point of view, the economic and scientific analysis of processes, the history of the formation and development of the gas industry are crucial for the role and place of the gas industry in the socio-economic development of the world economy. All of the above suggests the need to study the development of the gas industry, problems and prospects in the global economy. From this point of view, the research topic in this regard is relevant and proceeds from the requirements of today.

Purpose and objectives of the research: The main goal of the study is to identify the main trends and characteristics of the natural gas market in the world economy, the activities of transnational companies in the gas sector, as well as problems and prospects for the access of the Republic of Azerbaijan to the world gas market.

To achieve this goal, **the objectives** of the research work are as follows:

- To identify the place and importance of natural gas in the energy balance of the world;
- Define the role and place of the gas industry in the world economy;
- To define the nature and structure of the gas industry, emphasize the features and prospects of its development;
- To study the structure and dynamics of natural gas supply and its demand;
- Determine the nature of international trade and the formation of its global market in natural gas;

- Explore the centralization of transnational companies in the gas sector and identify the features and prospects for their development;

- Evaluate the activities of transnational oil and gas companies in different parts of the world;

- Determine the stages of formation and development of the gas industry in the Republic of Azerbaijan and analyze the characteristics, location and characteristics of development compared with other countries;

- To identify problems and prospects for Azerbaijan's access to the world gas market;

- Determine the prospects for the cooperation of the Republic of Azerbaijan with European countries in the export of gas;

- Directions for improving the state policy in attracting foreign capital in the oil and gas industry.

The scientific novelty of the research is as follows:

- The main trends in the characteristics and development of the natural gas market in the world economy have been determined;

- The activities of transnational companies in the gas sector were investigated and evaluated;

- The features and prospects for the development of the gas industry in the Republic of Azerbaijan were identified.

Object of research: Gas industry in the global economy.

The subject of research: Economic and institutional relations in the process of formation and development of the gas industry.

Methods of research: Dialectical, historical, economic and statistical, structural and comparative analysis and other methods were used in the study.

Research information base: Dissertation information database is composed of Internet resources, legislative and normative acts, official information, materials and reports of international organizations and transnational companies, as well as

scientific studies of various authors in this area.

Volume and structure of work: The dissertation consists of the introduction, 3 chapters, the conclusion and the list of used literature. The total volume of the work is 78 pages. Literature list contains 27 names of literature.

CHAPTER 1

FEATURES OF THE GLOBAL MARKET OF NATURAL GAS AND THE MAIN TENDENCIES OF ITS DEVELOPMENT.

1.1. Natural gas in the world energy balance.

The energy factor plays an important role in the sustainable development of society. Energy is widely used in industry, services, transport and in everyday life. Heat and electricity generated from energy use have a strong influence on the expansion of economic activity.

Energy resources, supply, trade, transformation (converting), as well as information on consumption is reflected in the energy balance. The energy balance covers all stages from product development to its final consumption and is a source of information for analyzing, forecasting and regulating the energy economy. Using this information, we learn about energy sales in individual countries, the number of primary and secondary energy sources, consumption and its use is analyzed and appropriate decisions are made. Energy information is grouped into separate regions, countries, continents and the world. The energy balance of each country covers a system of accounting indicators for collecting and coordinating data on all energy products that are imported, exported and used in the country for a certain period of time.

The world energy balance is the energy balance of the world's largest producers and consumers of energy. This balance includes detailed information on energy supply and consumption worldwide for 150 countries and regions of the Organization for Economic Cooperation and Development and more than 100 other countries that produce and consume energy. Based on the World Energy Balance data, the level of each country's supply with these products is determined by the degree of dependence on other countries and is used to determine supply and demand for products.

The global energy balances are the oil equivalent of oil, natural gas, coal, nuclear, hydropower, and alternative and renewable energy sources, each of which

has a certain weight. (A.M.Quliyev, F.N. Məmmədov, K.M.Nəbiyev, X.M.Nəbiyev, 2016)

The use of energy carriers around the world is shown in table 1.1 for the oil equivalent in 2016–2017:

Table 1.1 Global energy use balance of energy carriers (Millions tons oil equivalent)

	2016	**2017**
Oil	4557,3	4621,9
Natural Gas	3073,2	3156,0
Coal	3706,0	3731,5
Nuclear energy	591,2	596,4
Hydro electricity	913,3	918,6
Renewables	417,4	486.8
Total	13258,5	13511.2

(**Source**: According to the data of the Energy Information Administration, it has been compiled by the representative. https://www.eia.gov/ (10.10.2018)

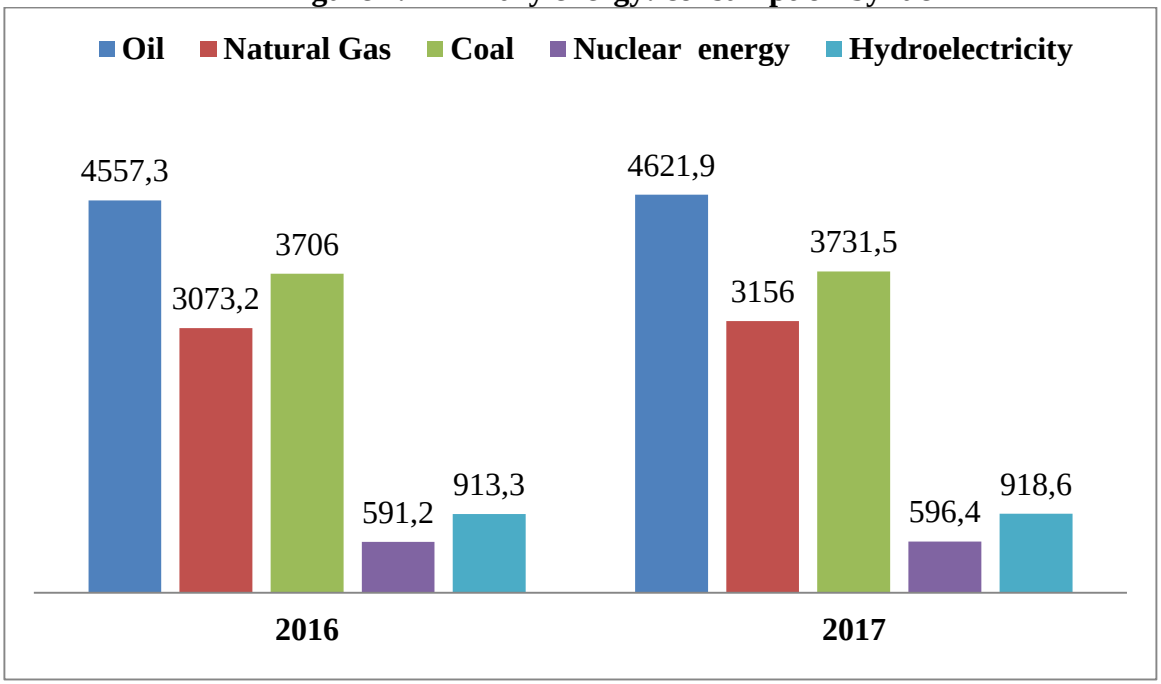
As can be seen from the table, the use of energy carriers in 2016–2017 increased by 252.7 million tons, or about 2% in absolute terms. In 2016, 85.3%, and in 2017 - 85.2% of the global demand for energy carriers was provided by oil, gas and coal. According to the Energy Information Administration (EIA) forecast, oil, natural gas and coal will remain the main energy consumers. According to this forecast, the use of energy in the world from 2000 to 2020 will increase by 60%.

Especially the share of oil and gas in the demand of world energy is very high, and they account for about 3/5 of this demand. On the other hand, it is obvious that hydrocarbons and their products are indispensable raw materials for the chemical and petrochemical industries. That is, the use of oil and gas in the chemical and petrochemical industries is more cost-effective and efficient than their direct use in the energy sector.

And the specific weight of coal, nuclear energy and hydrogen can be said to be almost constant. With the exception of hydrogen, four of these types of energy (oil, gas, coal, and nuclear energy) are non-recoverable sources of energy. Of course, their stock is not infinite, and these stocks may be exhausted. Therefore, it is necessary to make a lot of effort to immediately increase the use of renewable energy sources

(solar, wind and hydro).

Figure 1.1 Primary energy: consumption by fuel



Source: According to the data of the International Energy Administration, it has been compiled by the representative. https://www.eia.gov/ (10.10.2018)

The share of oil in the balance of energy carriers, used in the world is higher than that of other energy carrier sources. In 2016, the share of it's accounted for 34.4% of the balance and 34.2% in 2017. From 2016 to 2017, oil utilization increased from 4,557.3 million tons to 4,621.9 million tons, an increase of 64.6 million tons or 1.42% in absolute terms.

The oldest and most used energy-saving coal in the global economy still retains its vital role. Currently, its share in the total energy balance in the world is 27.6% in 2016 and 27.6% in 2017. Although coal in relation to oil and gas is extremely dangerous, it is still widely used in various fields, especially in the production of electricity.

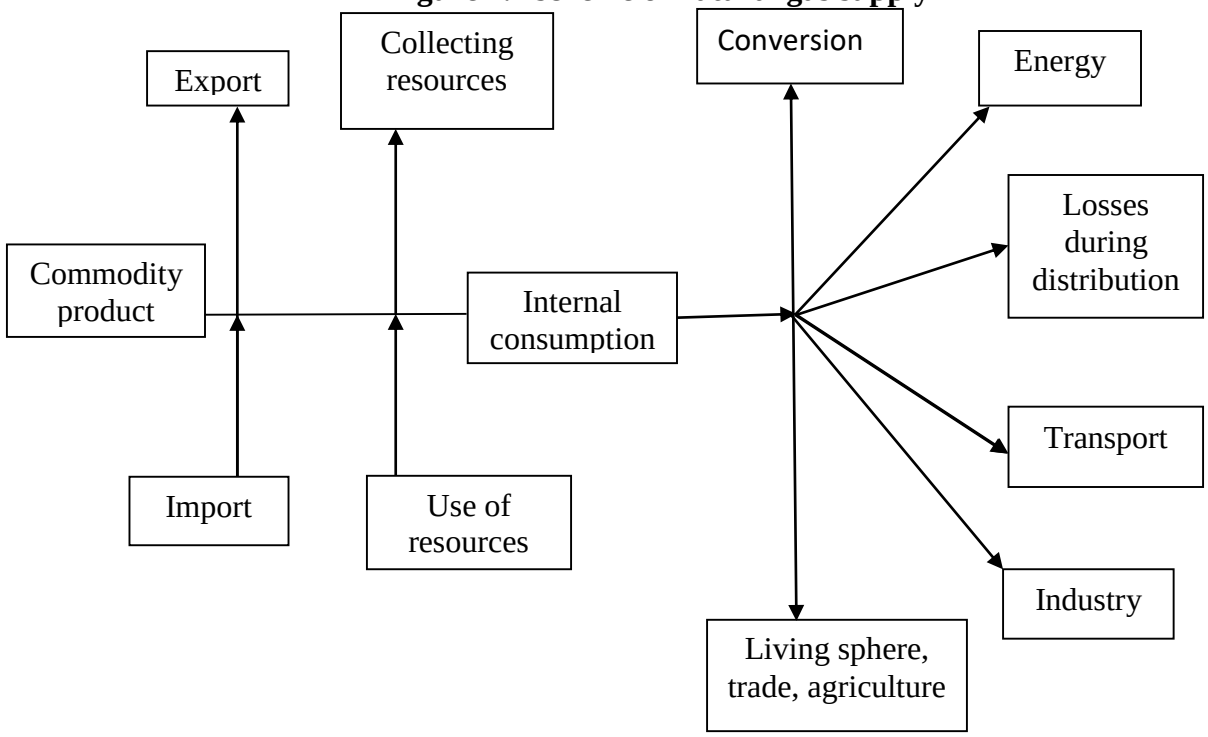
In recent years, the role and importance of natural gas has steadily increased due to the energy efficiency of the world economy as an energy source and its high productivity for industry compared to oil and coal, being more environmentally friendly for the environment. According to experts, this trend will continue in the

future due to the lower cost of natural gas liquefaction technologies and the laying of new gas pipelines.

Natural gas encompasses gases in subterranean formations in the form of liquid and gaseous and mostly methane gas. It includes only non-dispatcher gas produced from hydrocarbon-bearing gas fields and associated gas produced using crude oil. Liquefied natural gas is natural gas that condenses into a liquid by cooling from normal atmospheric pressure to about minus 160 degrees Celsius. Liquefied natural gas is non-toxic liquid that has neither color nor odor. Natural gas can be measured in volume or energy content. Cool, calories and others, units of measure of energy, while the volume is usually cubic meters.

The gas supply scheme (the path from production to consumption) is as follows:

Figure 1.2 scheme of natural gas supply



Source: According to the data of Azerbaijan's statistical indicators, SSC, 2018, it has been compiled by the representative. https://www.stat.gov.az/ (12.10.2018)

Data on natural gas are collected according to the gas supply scheme and cover the following sections:

- Processing of natural gas;

- Import based on origin;

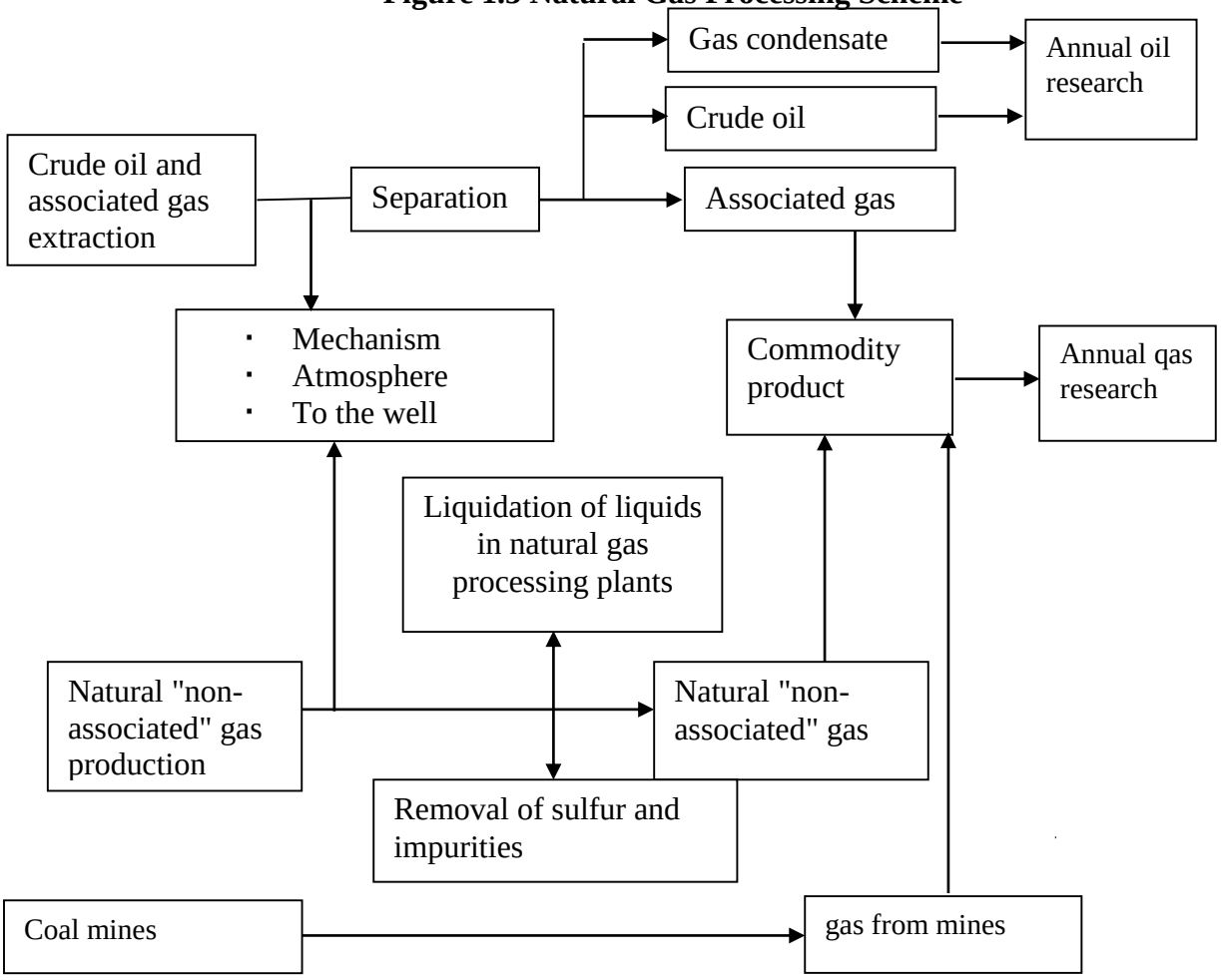
- Consumption by sector;

- In accordance with the destination export.

Extracted natural gas can be processed in several ways, depending on the production conditions.

A simplified scheme for processing natural gas is as follows:

Figure 1.3 Natural Gas Processing Scheme



Source: According to the data of Azerbaijan's statistical indicators, SSC, 2018, it has been compiled by the representative. https://www.stat.gov.az/ (12.10.2018)

Over the past 20 years, global energy consumption has increased by almost 40%, including natural gas - by 65%, coal - by 28%, oil - by 12%. As a result, the share of natural gas in the world balance of major energy resources reached 25%, the share of oil — 35%, and coal — 29% reached. (А.Ф. Джинджолия, 2013)

In particular, the share of natural gas in the total balance of energy used in the world is 23.2% in 2016 and 23.4% in 2017. The use of natural gas in 2016-2017 increased from 3,073.2 million tons to 3,156.0 million tons and increased by 82.8 million tons in absolute terms or by 2.7%.

The energy balance shows a growth trend in developing countries where traditional energy carriers dominate (coal, fuel oil and others), but the share of natural gas does not exceed 18%. According to the International Energy Agency (IEA), natural gas consumption (especially in electricity production) is expected to increase significantly. According to forecasts, the consumption of "blue fuel" in the production of electricity in 2010-2020 will be higher than coal consumption. (В.М. Кудров, 2015)

In recent years, the concept of "natural gas can be the key to clean energy" has expanded considerably. Natural gas is the most reliable energy carrier among all types of fuel. The use of natural gas will allow to solve one of the global tasks - to achieve global sustainable energy supply, without exceeding the load on existing ecosystems.

The rapid development prospects of the global gas industry are determined by the emergence of new technological solutions and opportunities for solving energy and economic problems.

In absolute terms, the group of industrialized countries leads the world in gas consumption. Developing countries, including OPEC, overtook other regions in terms of gas consumption intensity. While average annual gas consumption in Asia and the Pacific, South and Central America, Africa and the Middle East increases by at least 6%, in Europe there is an average annual growth of 4.1%. (Н.Н. Кулбатыров, 2014)

The main consumers of natural gas in the global economy are the industrial, agricultural, service, consumer, transport and energy sectors. The dynamics and scale of demand for natural gas are different for different groups of consumers. Some consumers increase the share of gas to cover their energy costs, while others prefer competitor’s energy sources - substitutes. As a result, there is a change in the structure of energy consumption, determined by technological factors, environmental

requirements and government regulation, along with competitive products in the energy market.

Among the largest gas consumers, the majority of gasified areas and sectors are divided, forming steady and stable consumer groups. This process differs depending on the nature of electricity production in different countries, the characteristics of industrial production, and the state of the infrastructure. The massive construction of highly efficient combined-cycle power plants has led to a rapid increase in the use of natural gas in electricity. Natural gas is used as a valuable raw material for the chemical and petrochemical industries not only as technical fuel, but also for the production of ammonia, methanol, nitrogen fertilizers, aromatic hydrocarbons, acetylene and a wide range of chemicals.

Natural gas consumption occurs in the conversion (transformation) and energy sectors of the energy industry, gas distribution and transport, as well as in the final consumption sectors (transport, industry, services, utilities and others).

It is known that natural gas is used for various purposes, and its use as a fuel for energy production increases markedly. Improving gas turbine engine technology has further increased the use of natural gas in energy production. In this sector, gas has many advantages over other types of fuels extracted: high efficiency, lower capital costs and no pollution. Among all the fuels produced, gas is the cleanest and in terms of environmental protection its use is more profitable. In recent years, natural gas has been used to produce almost 20% of world electricity and about half of the heat at world thermal power plants and heat stations.

Most of the world's natural gas is consumed in the electricity and utilities sector: in 2015, 77% of natural gas in the world was used in the electricity and utilities sector (metallurgy, chemistry and others), 10% in industry, 2% as motor fuel, 11% in flares. In the future, the share of consumption in the sector of electric power industry and utilities will increase by 77-78%, in industry - by 11-12%, and use as motor fuel - up to 3%. (А.М. Кузнецов, 2012)

In the gas consumption, the commercial-household sector is an important group. The demand for natural gas in this sector is increasing in accordance with consumer characteristics, such as high calorific value, ease of use and full burning. What is more, this thus makes it alluring for cooking, warming houses, offices and different places.

Energy consumption includes “domestic needs”. This includes natural gas consumed in the energy sector for extraction (mining, oil and gas) or conversion (for the production of heat or gas used for pumping pumps, compressors).

All energy supplied to end-users in transport, industry and other sectors is included in final consumption.

Information on the use of natural gas in sectors and areas of final consumption is collected separately for energy and non-energy (raw materials). The most important consumers who use natural gas as raw materials are the chemical and petrochemical industries.

It should be noted that the final consumption of natural gas is 16% of the world total. The share of natural gas in energy and non-energy use varies depending on the level of development of the petrochemical industry in countries.

Thus, in recent years, the balance of natural gas in the global energy balance is constantly increasing due to the high productivity of raw materials, energy and environmentally friendly resources compared to oil and coal. This trend will continue in the future and may even intensify due to the introduction of cheaper technologies for the liquefaction of natural gas and the laying of new gas pipelines.

1.2 Structure and dynamics of demand for and supply of natural gas.

In the second half of the XIX century (1950-2000), world production and consumption of natural gas increased several times, but the growth rates were uneven. Thus, before the start of the global energy crisis (from 1950 to 1970), gas production increased 5.34 times in 1970–2000, despite the impact of the energy crisis on the

world economy, increased 2.37 times. In 2000, compared with 1990-2000, consumption grew rapidly, but did not reach speed in the third quarter of the last century. (В.Е.Рыбалкин, 2012)

The level of natural gas production is one of the key factors affecting the global energy value. The gas production situation in these countries has a significant impact on the entire global gas market and is highly dependent on factors such as the territorial structure of the global gas market, the availability of natural gas, economic development, infrastructure development, demographic factors, climate and even hydrography and topography.

According to BP's World Energy Statistical Review, natural gas production in the world was as follows:

Table 1.2 Natural gas productions in the world (billion cubic meters) in 2011-2017

Natural gas: Production in billion cubic meters

	2011	2012	2013	2014	2015	2016	2017	Growth rate per annum		
								2017	2006-2016	Share 2017
North America	705,5	731,1	739,6	786,9	816,2	812,2	818,2	1,0%	2,6%	25,9%
South & Cent. America	144,0	149,4	152,1	154,0	155,5	153,7	153,9	0,4%	1,4%	4,9%
Europe	226,1	229,2	223,0	212,1	207,8	205,1	208,0	1,7%	-2,3%	6,6%
CIS	678,3	668,2	681,7	667,3	663,5	661,9	701,2	6,2%	-	22,2%
Middle East	452,7	474,8	489,4	507,2	523,1	542,4	567,4	4,9%	6,5%	17,9%
Africa	174,2	178,7	170,5	172,5	175,1	178,0	193,5	9,0%	1,1%	6,1%
Asia Pacific	430,0	438,0	446,8	463,8	485,0	498,9	522,4	5,0%	4,0%	16,5%
World	2810,8	2869,4	2903,0	2963,8	3026,2	3052,3	3164,6	4,0%	2,2%	100%
of which: OECD	979,9	1010,8	1018,2	1059,6	1093,0	1106,3	1129,5	2,4%	1,9%	35,7%
Non-OECD	1831,0	1858,7	1884,8	1904,2	1933,2	1946,0	2035,1	4,9%	2,3%	64,3%
European Union	138,6	130,3	129,3	118,3	107,0	104,8	101,3	-3,1%	-5,3%	3,2%

Source: According to the data of the BP Statistical Review of World Energy, June 2018, it has been compiled by the representative. https://www.bp.com/ (15.10.2018)

As can be seen from the table, the volume of gas production in the world in 2011–2017 increased year by year, despite its slight decrease in 2016. World gas production in 2011 amounted to 2810.8 billion cubic meters, 2869.4 billion cubic meters in 2012, 2903.0 billion cubic meters in 2013, 2963.8 billion cubic meters in 2014, and 3026.2 billion cubic meters in 2015, in 2016 up to 3,052.3 billion cubic meters, and in 2017 up to 3,164.6 billion cubic meters. The average annual growth rate of natural gas production in 2006-2016 is 2.2% worldwide, 2.6% in North America, 1.4% in Latin America, 2.3% in Europe, 6.5% in the Middle East, 1.1% in Africa and in Asia and the Pacific 4.0%.

Currently, the world produces nearly 3 trillion cubic meters of gas per year. Approximately 74% of this gas is produced in the United States, Russia, Iran, Canada, Qatar, China and Norway. The gas production situation in these countries has a significant impact on the entire world gas market.

The world's 10 largest gas producing countries in 2017 are:

Table 1.3 the world's 10 largest gas producing countries in 2017

Countries	**Production volume is billion cubic meters**
USA	734,5
Russia	635,6
Iran	223,9
Canada	176,4
Qatar	175,7
China	149,2
Norway	123,2
Australia	113,5
Saudi Arabia	111,4
Algeria	91,2

Source: According to the data of the BP Statistical Review of World Energy, June 2018, it has been compiled by the representative. https://www.bp.com/ (15.10.2018)

As is observed from the table, the USA is the largest gas producer in 2017. Gas production in the United States in 2017 amounted to 734.5 billion cubic meters, in Russia, 625.6 billion cubic meters, in Iran, 223.9 billion cubic meters, in Canada, 176.4 billion cubic meters, in Qatar, 175.7 billion cubic meters, in China, 149.2

billion cubic meters, in Australia 113.5 billion cubic meters, in Saudi Arabia 113.5 billion cubic meters, and in Algeria 91.2 billion cubic meters.

The volume of natural gas production in the CIS, which includes Russia, which ranks second among the largest gas-producing countries in 2017, is as follows:

Table 1.4 Natural gas productions in the CIS countries (billion cubic meters) in 2011-2017

Natural gas: Production in billion cubic meters

	2011	2012	2013	2014	2015	2016	2017	Growth rate per annum		
								2017	2000-2016	Share 2017
Azerbaijan	16,0	16,8	17,4	18,4	18,8	18,3	17,7	-2,7	10,7	0,5
Kazakhstan	20,1	19,8	21,4	21,7	22,0	22,9	27,1	18,6	4,2	0,7
Russian Federation	616,8	601,9	614,5	591,2	584,4	589,3	635,6	8,2	-0,3	17,3
Turkmenistan	62,3	65,1	65,2	70,2	72,8	66,9	62,0	-7,1	0,6	1,3
Ukraine	19,5	19,4	20,2	20,2	18,8	19,0	19,4	2,5	-o,5	0,5
Uzbekistan	53,9	53,9	53,9	54,2	54,6	53,1	53,4	0,8	-1,1	1,5
Other CIS	0,3	0,2	0,2	0,2	0,2	0,2	0,2	-6,1	-0,4	-
Total CIS	678,3	668,2	681,7	667,3	663,5	661,9	701,2	6,2%	-	22,2%

Source: According to the data of the BP Statistical Review of World Energy, June 2018, it has been compiled by the representative. https://www.bp.com/ (15.10.2018)

As is presented in the table, the largest gas producer among the CIS countries is the Russian Federation. In the period from 2011 to 2017, the volume of gas production in the Russian Federation, increased and decreased. Thus, the volume of gas production in the Russian Federation reached 616.8 billion cubic meters in 2011, 601.9 billion cubic meters in 2012, 614.5 billion cubic meters in 2013, 591.2 billion cubic meters in 2014, up to 584.4 billion cubic meters in 2015, up to 589.3 billion cubic meters in 2016 and 635.6 billion cubic meters in 2017. Compared to 2011, gas production in the Russian Federation amounted to 2.4% in 2012, by 0.4% in 2013, by 4.1% in 2014, by 5.2% in 2015, by 4.5% in 2016 and in 2017 it has grown by 3%. The average annual growth rate of natural gas production in the Russian Federation in 2006–2016 was 0.3%.

At present, the global gas industry applies global innovations and uses modern equipment for the extraction of mineral resources, the exploration of new deposits and

their transportation to increase gas production.

An analysis of the main trends in the development of the global energy market shows that in the coming decades, the global natural gas market may play a leading role.

Natural gas is cheaper than oil, and its reserves around the world are much larger. But what are the world reserves of natural gas? The next British report by BP, "Statistical Review of the World Energy", which in 2017 approved 193.1 trillion cubic meters of natural gas throughout the world, which is enough to ensure peace for over 52 years. The countries with the largest reserves of natural gas (78.8 trillion cubic meters) are located in the Middle East, with the lowest reserves of natural gas (3 cubic meters) Europe. According to the report, the volume of natural gas reserves in the world in 1997–2017 was as follows:

Table 1.5 Total proven reserves

	At end 1997 Trillion cubic meters	**At end 2007 Trillion cubic meters**	**At end 2017 Trillion cubic meters**	**At end 2017**			
				Trillion cubic meters	**Trillion cubic Feet**	**Share of total**	**R/P ratio**
North America	8,0	8,4	10,9	10,8	381,9	5,6%	11,4
South & Cent. America	6,6	7,8	8,3	8,2	290,3	4,2%	45,9
Europe	4,9	5,0	3,0	3,0	104,5	1,5%	12,2
CIS	40,3	41,2	59,0	59,2	2091,1	30,6%	72,6
Middle East	48,6	75,6	78,8	79,1	2794,2	40,9%	119,9
Africa	10,2	14,0	13,8	13,8	487,8	7,1%	61,4
Asia Pacific	9,4	13,6	19,2	19,3	681,8	10,0%	31,8
World	128,1	163,5	193,1	193,5	6831,7	100,0%	52,6
Of which: OECD	13,8	14,7	17,7	17,8	628,9	9,2%	13,6
Non-OECD	114,2	148,9	175,4	175,6	6202,8	90,8	74,2
European Union	3,6	2,6	1,2	1,2	41,7	0,6	10,0

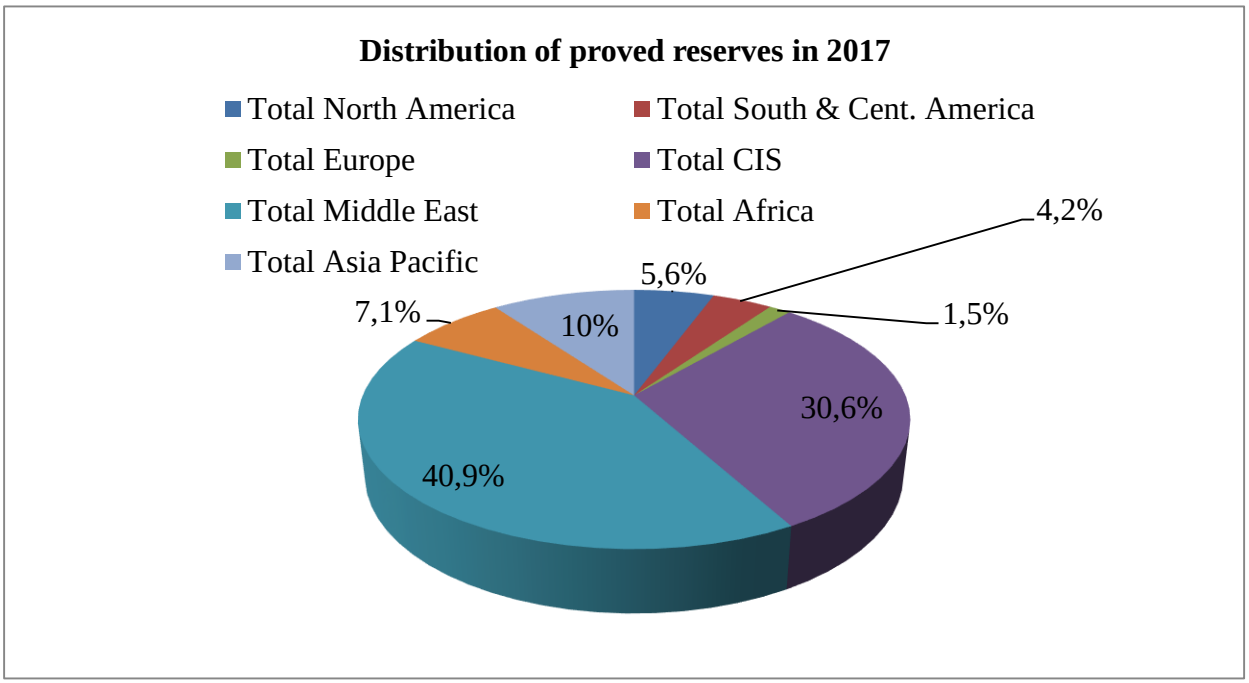
Source: According to the data of the BP Statistical Review of World Energy, June 2018, it has been compiled by the representative. https://www.bp.com/ (16.10.2018)

As can be seen from the table, natural gas as well as oil by reserves in 2017 is in the first place the Middle East (40.9%), and the second CIS (30.6%) in the world. In

third place is the Asia-Pacific region with 10.0% and the African region with a share of 7.1% in fourth place. The regions with the lowest global gas reserves are North and Latin America and Europe. The share of these regions in world gas reserves is 5.6%, 4.2% and 1.5%, respectively, 11.3% of world natural gas reserves.

All this is shown in the diagram in a clearer form:

Figure 1.4 Distribution of proved reserves in 2017



Source: According to the data of the BP Statistical Review of World Energy, June 2018, it has been compiled by the representative. https://www.bp.com/ (16.10.2018)

About a quarter of the world's natural gas reserves are concentrated in the Middle East and the CIS.

In 2017, 10 of the world's largest gas reserves are as follows:

As it is seen from the table, Russia has the largest gas reserves in 2017 with a total of 35 trillion cubic meters. More than 90% of natural gas produced in Russia accounts for Western Siberia (87% in Yamalo-Nenetski region and 4% in Khanty-Mansi Autonomous Region). “Gazprom” is the largest oil and gas transnational company in Russia producing gas.

In 2017, Iran has the second place with 33.2 trillion cubic meters of natural gas. The main producer of gas in this country is the National Iranianian Oil Company

(NİOC). In addition, foreign companies like Aquitane, Total, Eni, Petronas, CNPC, Belnetexim are also engaged in gas production in Iran.

Table 1.6 The world 's largest gas reserves in 2017

Country	Reserves (trln. cubic meters)	Gas producing companies
Russia	35	"Gazprom" OJSC
Iran	33,2	“National İranian Oil Company”,”Elf Aquitane”, “Total”, “Eni”, “Petronas”, “CNPC” and “Belnetexim”
Qatar	24,9	Joint ventures with “Qatar Petroleum”, “Exxon Mobil”, “Total”, “Kogas”, “Itochu Corporation”, “LNG Japan Corporation”, “Mitsui” and “Maribeni”
Turkmenistan	19,5	"Turkmengas" state company
USA	8,7	“Exxon Mobil”, “BP”, “ConocoPhillips ” and “Chesapeake”
Saudi Arabia	8	“Saudi Aramco”
Venezuella	6,4	"Petroleos de Venezuela" state-owned company “Sosiedad Anonima” (PDVSA)
UAE	5,9	“Abu Dhabi” State Gas Company (ADGAS)
China	5,5	“China National Petrolium Corporation”, “CNPC”, “China National Offshore Oil”
Iraq	3,5	“South Gas”, “Bahras Gas”, “ Royal Dutch Shell”, “CNOOC”, “CNPC” and its subsidiaries “Petro China”

Source: According to the data of the BP Statistical Review of World Energy, June 2018, it has been compiled by the representative. https://www.bp.com/ (16.10.2018)

Qatar is one of the world's three largest natural gas reserves. In 2017, the volume of natural gas reserves in Qatar is 24.9 trillion cubic meters. The main gas producing companies of this country are Qatar Petroleum's joint ventures with Exxon Mobil, Total, Kogas, Itochu Corporation, LNG Japan Corporation, Mitsui and Maribeni.

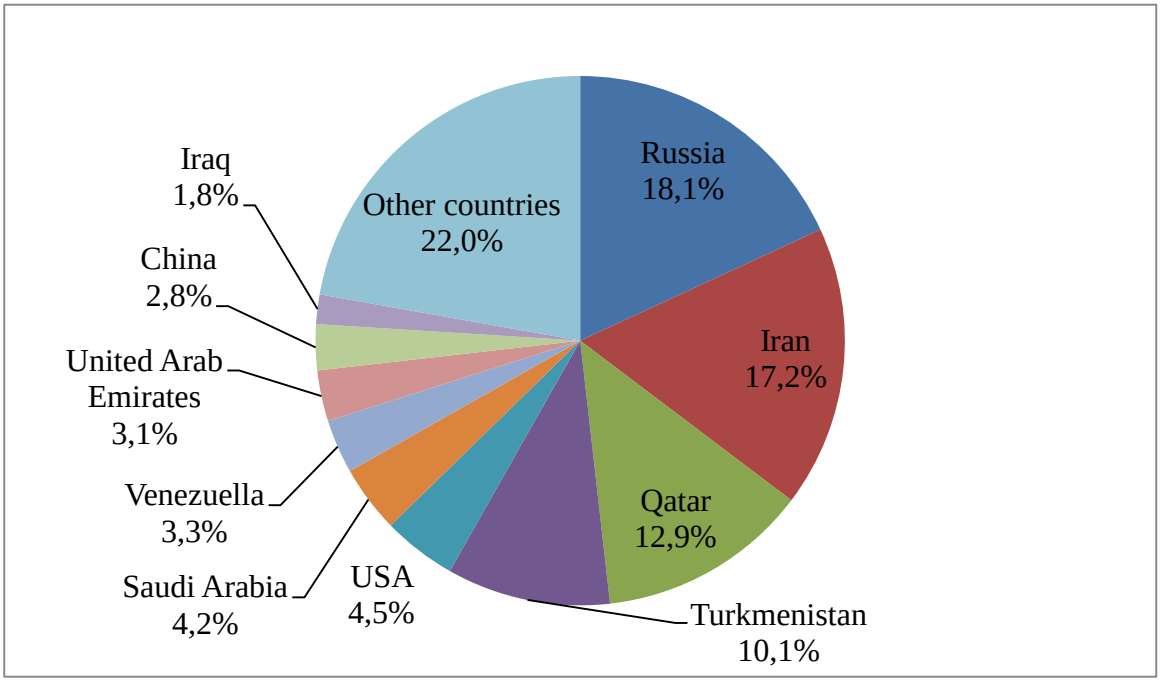
In 2017 Turkmenistan ranks fourth in the list of natural gas reserves. Its natural gas reserves are 19.5 trillion cubic meters. In recent years, as a result of the revaluation of the Kalkynish gas field, Turkmenistan has witnessed a significant increase in its gas reserves and its natural gas reserves amount to 19.5 trillion cubic meters. This raw material is the basis of the Turkmen economy, and most of the revenue of the state of Turkmenistan is formed from the export of energy resources.

The United States, which has 8.7 trillion cubic feet of approved natural gas

reserves, ranks fifth in this rating. Approximately 60% of the total gas reserves in the United States are concentrated in several states, including 29.5% in Texas, 12.9% in Wyoming, 8.5% in Colorado, and 8.4% in Oklahoma. The major gas producing companies in the United States are BP, Exxon Mobil, ConocoPhillips and Chesapeake.

Saudi Arabia is in the sixth place among the countries with the largest natural gas reserves. The natural gas reserves in this country are about 8.0 trillion cubic meters. Natural raw materials are managed by state-owned Saudi Aramco. According to official data of this country, Saudi Arabia has about 77 oil and gas fields, more than half of the total black gold reserves are located in eight oil and gas fields.

Figure 1.5 World Gas Stocks Countries



Source: According to the data of the BP Statistical Review of World Energy, June 2018, it has been compiled by the representative. https://www.bp.com/ (20.10.2018)

Venezuela is in the seventh place in the list of countries with the largest natural gas reserves. The country's natural gas reserves total 6.4 trillion cubic meters. Most gas reserves are gas produced jointly with oil. Approximately 70% of the natural gas produced in this country is spent on the needs of oil companies, 28% in the needs of

the local market and the remaining 2% for the development of liquid gas. The major oil producing companies in the country are Petroleos de Venezuela state and Sosiedad Anonima (PDVSA).

The eighth place is United Arab Emirates with 5.9 trillion cubic meters of natural gas. This country is in the fourth place in the Middle East, due to its natural gas reserves. The main gas producer of this country, Abu Dhabi, is the state gas company (ADGAS). 5.6 trillion cubic meters of natural gas in the UAE is located in Abu Dhabi, the country's capital.

The ninth is China, with 5.5 trillion cubic meters of natural gas, and the tenth is the Iraq state with 3.5 trillion cubic meters of natural gas.

Thus, 150.6 trillion cubic meters of world gas reserves or 78.0% are in the above-mentioned countries and 22% in other countries.

The dynamics of natural gas consumption in different regions in 2016-2017 was as follows:

Table 1.7 Dynamics of natural gas consumption in the regions in 2016-2017 (Million tons oil equivalent)

Regions	2016	2017
Total North America	818,2	810,7
Total South & Cent. America	150,6	149,1
Total Europe	434,7	457,2
Total CIS	492,6	494,1
Total Middle East	437,6	461,3
Total Africa	114,5	121,9
Total Asia Pacific	625,1	661,8
Total World	3073,2	3156,0
of which: OECD	1427,3	1442,5
Non-OECD	1645,9	1713,5
European Union	385,9	401,4

Source: According to the data of the BP Statistical Review of World Energy, June 2018, it has been compiled by the representative. https://www.bp.com/ (20.10.2018)

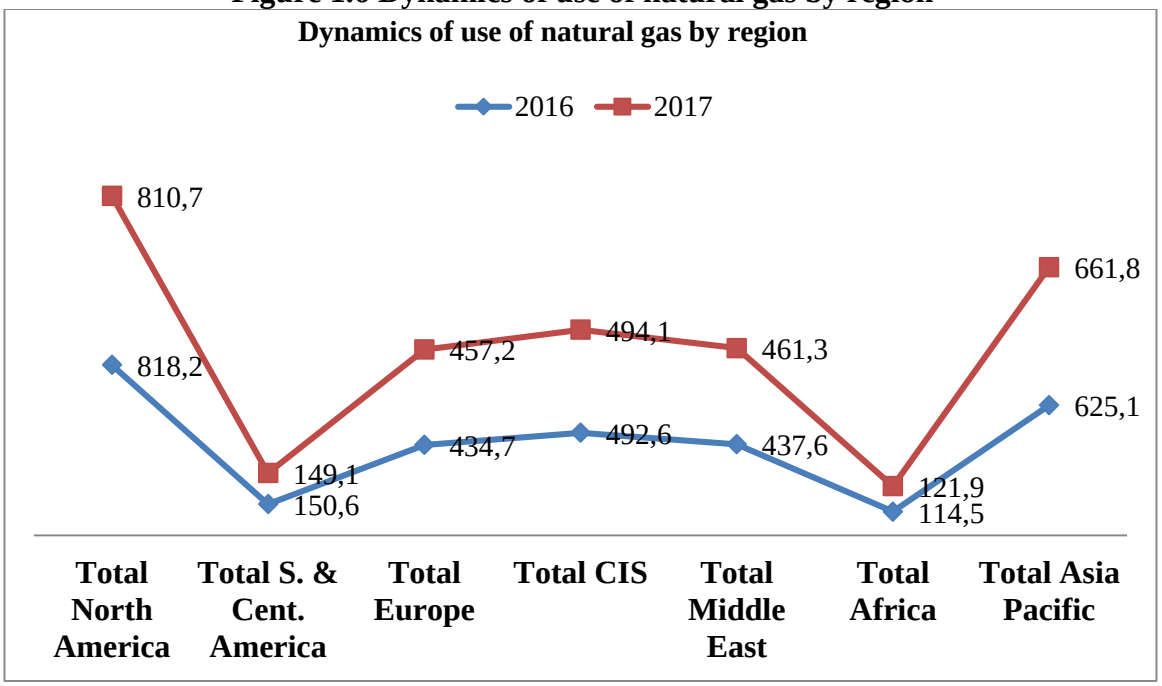
As the table shows, natural gas is most often used in the North American region. The North American region used 818.2 million tons in 2016 and 810.7 million tons in

oil equivalent in 2017. The volume of natural gas use in the North American region has dropped by 0.9% compared to 2016.

In 2017, gas was used in 149.1 million tons in South and Central America, 457.2 million tons in the European Region, 494.1 million tons in the CIS countries, 461.3 million tons in the Middle East region, 121.9 million tons in the region of Africa and 661.8 million tons in oil equivalent in the Asia-Pacific region.

In 2017, 25.7% of world natural gas consumption accounted for the North American region, 4.7% in the South and Central America region, 14.5% in the European region, 15.6% in the CIS, 6% in the Middle East region, 3.9% in the African region and 21% in the Asia-Pacific region.

Figure 1.6 Dynamics of use of natural gas by region



Source: According to the data of the BP Statistical Review of World Energy, June 2018, it has been compiled by the representative. https://www.bp.com/ (20.10.2018)

Thus, the use of natural gas in the world is very inadequate, leading to the deepening of regional energy disproportion. The volume and structure of natural gas consumption in the world economy depend on the demand and supply factors of natural gas. Among the determinants of interest are the expanding requests of vitality escalated ventures (metallurgy, science, mechanical building, and others). One of the

important factors among the demand factors is the ever-increasing personal consumption of the overall energy balance. Proposal factors include volume of production, scale of gas reserves and delivery to end users.

1.3 Features of the international trade in natural gas and the formation of its global market.

Gas is more efficient and, most importantly, an ecologically clean source of energy today. In recent years, the share of gas in Western Europe has increased, and according to experts' calculations, this trend will continue in the future. The main factors contributing to its further increase are the increase in the number of gas-powered power plants, the increase in gas consumption in the residential sector, the decline in the attractiveness of nuclear energy over the last decade, and further environmental problems.

Although its natural gas balance is slightly lower than that of oil and coal, it is currently the fastest growing energy carrier in terms of energy consumption. At the same time, it is expected that by 2020 the share of natural gas will reach 25%, mainly due to the decline in the share of coal.

The global gas market is a dynamically developing subsystem in the global economy. At the end of the 20th century, along with traditional North American gas markets, the European market was fully formed and the fluid gas market in the Asia-Pacific region intensively developed. The scale of international trade on natural gas allows for the conclusion that the global gas market is shaped, which together with oil plays a major role in the formation of global energy and global energy balance. It has long blocked the development of the natural gas market with the features of its transportation: unlike many goods that can be transported by rail, road, air and water transport, complex and expensive infrastructure is needed to deliver gas from the producer to the consumer. Compressor installations include gas pipelines, distribution networks, gas tanks, special vessels - methane carriers, gas liquefaction facilities and

subsequent regeneration, special terminals and so on.

The achievement of scientific and technological achievements and the relatively high cost of alternative energy sources, the development of promising areas have successfully solved its transportation problem. Gas pipes with a length of several thousand kilometers were laid off at the seabed, and the corrosion and high pressure resistant pipes were constantly upgraded. The technology of gas purification and liquefaction is also successfully developing for sea transportation. Currently, there are several large regional gas markets in the world, including the gas markets of America, Europe, the Middle East, Africa, the Asia-Pacific Basin, the CIS regions and the Baltic countries. Global gas markets are actively involved in various government agencies as well as international organizations. This process can be suspended based on solidarity of consumers and suppliers based on business and government general rules and the transparency of the commodity market.

Despite its high environmental safety, natural gas requires the creation of expensive infrastructure. While predicting 80% increase in gas consumption by 2020, its transport costs will increase substantially due to the fact that the largest consumers are far from major gas fields. The main expenditure items will be gas pipelines, liquefied gas plants and so on. The main directions of gas movement can be exported from Russia, North Africa and Caspian region to Western Europe and from Canada to the United States. It should also be noted that the share of liquefied gas, which accounts for about 20% of the global gas trade is increased. Such deliveries are mainly carried out by sea transport to East Asian countries:

- In the case of a competitive market, gas prices may change dramatically in the short and long term. In the short term, as in any product market, prices are determined by marginal gas costs in the markets for the final consumption. Storage allows vendors to store gas if the end-user's demand or prices are low. In the long term, prices have a tendency to fluctuate around marginal costs and the key element is the initial cost of capital. This law is subject to world gas prices;

- The end-user demand for heat (mainly in residential and commercial areas) and at some power plants (required for heating and cooling) is highly dependent on weather conditions and is subject to seasonal fluctuations.

Dependent customers require the delivery of gas at any time. Seasonal demand causes additional costs for delivery. Less dependent customers with the ability to switch from one type of energy to another can be provided with suspended contracts, which allow suppliers to deliver the highest demand from dependent customers.

An important feature of most gas markets is the pricing mechanism, primarily related to its transportation. Transportation of gas from the place of production is much more expensive than the product itself. These features emerge at the final stage of sales.

In the past, the gas market was mainly in the production areas, but the development of new technologies in gas pipelines led to a global expansion of the gas market.

In international trade there are two main types of transportation of natural gas:

1) In the form of gas through the pipeline;
2) In liquid form with special vehicles. (LNG)

Currently, the regions are split due to the peculiarities of transportation of leading pipelines in the global gas market. Specific consumers are bound by a specific pipeline manufacturer.

Natural gas liquefaction was discovered in the XIX century. In 1873, German engineer Carl von Linde produced the first compressor for liquefaction of natural gas. The first gas liquefaction plant was built in 1912 in West Virginia. Industrial gas liquefaction began in 1941 at Cleveland (Ohio) plant. In 1959, the first gas bearer, Methane Pioneer, delivered liquefied gas from Lake Charles (Louisiana) to Geneva Island (Great Britain). Thus, the possibility of delivering liquefied gas to the sea has been proven. (В. И. Митрофанов, 2014)

Liquefied (compressed) natural gas is mainly used in the transport sector.

Compressed gas is a natural gas stored in high pressure balloons and used for special vehicles. They are mainly used in low-pass passenger vehicles, light trucks, medium-load trucks, city and school buses. Liquefied gas is used in heavy vehicles - intercity buses, train locomotives and saddler trailers for highway carriage. Requirements for the content of combustible gas at low temperatures and its ability to evaporate (volatilization) limit the use of this gas in vehicles.

Gas transported through pipelines can be delivered to the point of destination, where the pipelines are laid, in the form of liquefied gas, with special vehicles and gas being delivered to any port of the world. Transportation, however, is especially expensive in the form of liquefied petroleum gas (especially in markets far from the seas), therefore, in the transportation of gas through the pipeline, it dominates global consumption.

D. Jenkins believes that the market for liquefied gas may already be global, but the "behavior" of this market is different from the global oil market and the liberalized natural gas markets on land. In his opinion, the LNG market will never be the same as on the global oil market, and cannot provide the same comfort. (В.Р.Окороков, 2014)

According to the experts of Cedigas, the global demand for natural gas in the future, as well as international trade with a gas pipeline, will increase by 2.5–3% per year, and trade in liquefied natural gas will increase by 6–7% per year. Especially in the energy sector (European countries, as well as developing countries with their own gas reserves) there will be a noticeable increase in demand for natural gas. (В.М. Кудров, 2011)

Liquefied natural gas is mainly supplied to Asian countries, as well as to American markets. Its main producer is Qatar. Pipeline gas supply is typical for the European market. The main supplier is Russia. If the supply of liquefied gas is more marketable than market supply and spot contracts, gas sales through the pipeline are based on long-term contracts and oil prices with the advantage of a single supplier. In such conditions it is difficult to talk about a single pricing policy of gas exporting

countries. Despite the concerns of consumer countries, it was almost impossible to establish a heap of gas OPEC. (М.В.Пашковская, 2012)

At present, the role of natural gas in world energy balance is increasing every year thanks to the construction of major gas pipelines and the solution of the problem of gas transportation in the special tankers, as one of the most common energy consumers in the world economy. Natural gas is transported over long distances, mainly through pipelines, and losses there. In case of loss of transport and distribution the following is provided:

- Losses at the time of delivery - losses during gas transportation over remote distances;

- Losses at distribution - losses at gas supply through local distribution networks.

Such losses may include losses due to measurement errors (measurement errors or temperature and pressure drops during measurement). In addition, pipelines may have large or small leaks.

All losses can be classified as losses during transportation and distribution of natural gas from production sites to consumption. It should be noted that these losses make up less than 1% of the global gas supply.

To determine the role of natural gas in the energy market, there must be detailed and reliable information on the import and export of gas.

Gas imported from another country is consumed in this country, but production is exported. Transit trade and re-export should not be included in the volume of trade. Trading information is displayed in energy units (TC) and volume units (Mm^3).

According to a review of BP's world energy statistics for 2018, gas sales on world markets in 2016 and 2017 were as follows: (Appendix 1, page 86)

As is observed from the table, Germany is the most imported gas pipeline by pipeline in 2016. In 2016, the volume of imports by pipeline in Germany was 95.6 billion cubic meters. The figure was 94.8 billion cubic meters in 2017, down 0.8 percent compared to 2016. In 2016, the pipeline imported 13.4% of world gas, and in

2017 Germany’s share was 12.8%. In the United States, imports of the pipeline by 2016 amounted to 79.5 billion cubic meters in 2017, an increase of 1.5 percent compared to 2016 and amounted to 80.7 billion cubic meters. Worldwide, the share of the United States in gas imports through pipelines was 11.1% in 2016 and 10.9% in 2017.

Australia is the country that imports the least gas by pipeline in 2016. In 2016, the volume of imports by pipeline in Australia was 6.4 billion cubic meters. The volume of this pointer diminished by 9.4% contrasted with 2016 and added up to 5.8 billion cubic meters in 2017. Globally, gas imported through the pipeline in 2016 is 0.9% and 0.8% in 2017 is accounted for by Australia.

In 2016, Japan is the largest gas importer with LNG. In 2016, Japan's LNG imports totaled 113.6 billion cubic meters. The volume of this indicator was 113.9 billion cubic meters in 2017. The share of Japan in global LNG imports was 31.8% in 2016 and 29.0% in 2017.

Norway is the largest gas exporter by pipeline in 2016. The volume of export by pipeline in Norway was 109.4 billion cubic meters. The volume of this indicator was 0.1 billion cubic meters in 2017.

In 2016, LNG is the largest gas exporting country in the world. In 2016, exports to LNG in Qatar amounted to 107.2 billion cubic meters. The figure was 103.4 billion cubic meters in 2017. The share of Qatar in world LNG imports was 30.0% in 2016 and 26.3% in 2017.

According to forecasts, by 2019 Australia overtaking Qatar will become the largest LNG exporter, while Qatar will overtake the USA by 2030.

It should be noted that in 2015, two liquid gas plants in Indonesia (Donggi-Senoro) and Australia (GLNG) were put into operation. For comparison, in the first quarter of 2016, supplies from Sabine Pass (US) and Gorgon (Australia) have started. In 2015, liquefied gas would not be produced in the LNG plant in Angola due to repair work. LNG export from this country was suspended due to armed conflict in

Yemen.

According to experts, the African region will be the world's largest LNG exporter until 2028. This is due to the development of the largest gas fields in the east of the continent. In the next five to ten years, projects that have already been developed are planned to be built, LNG in Mozambique and Tanzania, and two large plants in Angola and Cameroon. For the successful implementation of these projects, construction of pipelines linking the fields of oil and gas fields is required.

In the future, the Middle East can become a major exporter of gas, taking into account the significant geological reserves of natural gas in this region. Nigeria and Libya have huge gas reserves and may soon enter the world market. Thus, Libya is actively absorbing liquefied gas technology and joins the gas pipeline connecting Algeria with Italy. Nigeria has not yet been involved in global gas trade, but increasing global demand for blue fuel will soon push for Nigeria's significant natural gas reserves. The Asia-Pacific region carries out the sale of liquefied gas, its main buyers are Japan and South Korea and main suppliers are Indonesia, Malaysia, Australia and Brunei.

Even if gas exporting countries expand their markets only in the economic sphere, some importers are actively trying to influence the domestic policies of the supplier countries. At present, the world experience in regulating international energy markets is expected to be transformed into the World Energy Code. This will cover the general rules of honest, responsible behavior, ensuring the interests of all parties operating in the competitive market.

Thus, the existence of the global natural gas market allows all countries, regardless of the presence of natural resources, to use gas from the international trade channels.

CHAPTER 2

THE ACTIVITIES OF TRANSNATIONAL COMPANIES IN THE GAS INDUSTRY.

2.1. The processes of centralization of multinational companies in gas industry.

The key players in the natural gas market are the world's largest oil and gas transnational corporations. Transnational corporations are a union of large companies with branches and affiliates in several countries around the world. According to UN recommendations, transnational corporations are said to be united by international companies that are registered in the United Nations, which sells products in 2 or more countries, sells their products in several countries and is home to residents and traders in different countries. Transnational corporations all over the world are divided into moderately strong, largest and giant corporations, mainly based on macro indicators (sales, revenue, volume of assets, number of employees, etc.) characterizing their activities.

The world's largest oil and gas transnational corporations, Saudi Aramco (Saudi Arabia), Exxon Mobil (US), BP (UK), Royal Dutch Shell (Netherlands-UK), Sinopec Croup (China), China National Petroleum Corporation (GIN) ConocoPhillips (USA), Chevron (USA), Total (France) and other companies. In recent years, many of these oil and gas transnational corporations have become one of the major types of gas business.

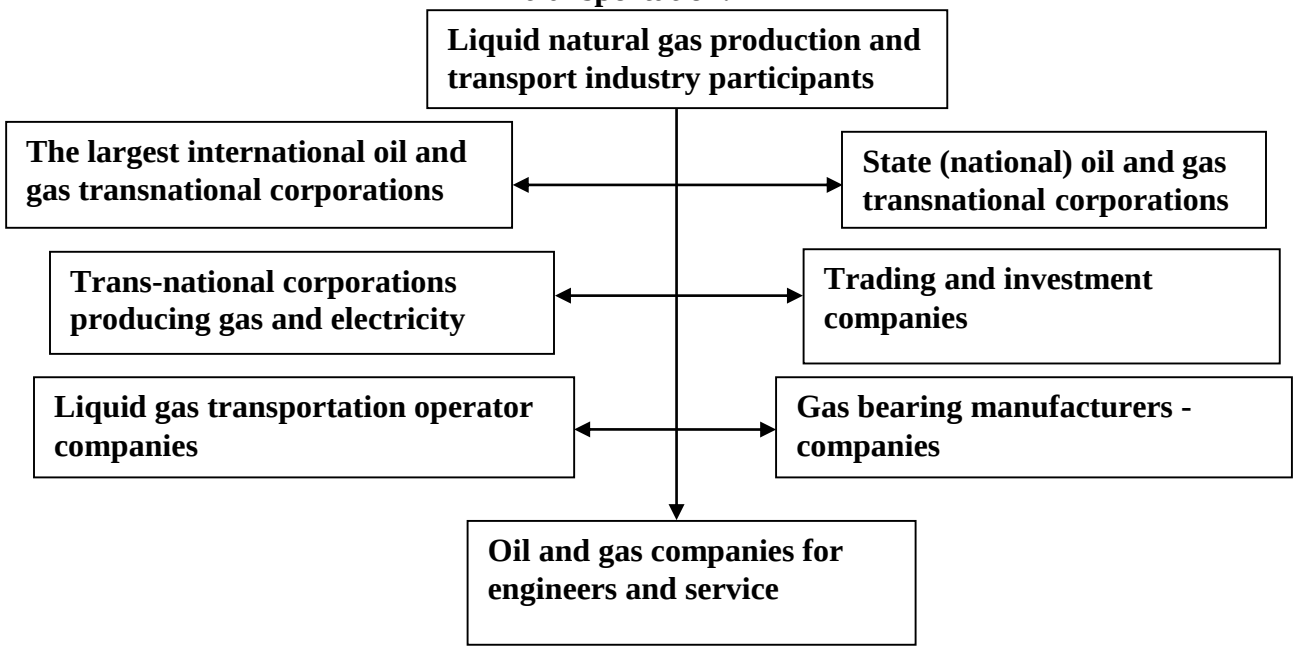
One of the most important areas of these transnational corporations' operations, which have significant portfolios in the gas industry, is projects on liquid gas. The increase in the role of liquefied natural gas in the activities of transnational companies was due to diversification of importing companies' gas supply and the willingness of producers to expand their markets. At the same time, the development of transnational companies in the liquefied natural gas market, significant improvements in technology creation, reduction of the cost of implementing projects and the ecological

features of this energy resource. (В.С. Морозов, 2015)

Companies are trying to diversify transnational corporation business so as to ensure stability and business development. From this point of view, working with liquefied natural gas has a strong synergistic effect. Compared to the pipeline, liquid gas can be delivered from any liquefied plant to all rectification terminals. This allows you to quickly change the amount of production and energy consumption depending on market conjuncture. At the same time, the producer is freed from the disruptions in network sales (depending on the specific consumption, multi-billion cost of construction of gas pipelines, political risks of transit and sales countries and other related risks).

The classification of companies with assets in liquefied natural gas production and transportation has been reflected in the following scheme:

Figure 2.1 Classification of companies with assets in liquefied gas production and transportation.



Source: According to the data of Морозов В.С. Крупнейшие нефтегазовые транснациональные корпорации в отрасли производства сжиженного природного газа. 2015. № 6, it has been compiled by the representative. (10.01.2019)

Each transnational corporation may combine several corporations. For example, Mitsui, a manufacturer of gas transporting tankers, owns 18 subsidiary gas carriers

from Mitsui OSK. Some major oil and gas companies, such as Qatar Petroleum (Qatar) and Petronas (Malaysia), have Qatar Gas (Nakilat) and MICCs, which are the operators of the world's first and second largest liquid tanker fleet. Such combination of activities allows corporations to reduce their risk of default by buyers, and to reduce their cost due to the existence of a domestic market and production and technical relationships within a corporation.

However, it should be noted that liquid gas is a market for big players. Likewise, liquefied gas projects are characterized by high capital investment, which requires substantial investment and long-term investment strategies. All oil and gas companies, representing high international and global activities, act as a driving force of the natural gas market and major investors.

The largest 10 transnational oil and gas companies operating in the global gas sector in 2017 have been:

Table 2.1 the largest 10 oil and gas companies operating in the global gas sector in 2017

	Corporations' names and countries
1	Gazprom (Russia)
2	Exxon Mobile Corp (USA)
3	Petro China (China)
4	Royal Dutch Shell (Netherlands-Britain)
5	BP(Great Britain)
6	Chevron (USA)
7	Total (France)
8	Statoil (Norway)
9	ConocoPhillips (USA)
10	Eni (Italy)

Source: According to the data of the BP Statistical Review of World Energy, June 2018, it has been compiled by the representative. https://www.bp.com/ (10.01.2019)

Gazprom is a Russian transnational company engaged in geological exploration, production, transportation, storage, processing and sale of oil, gas and gas condensate, as well as heat and electricity.

Gazprom is in the top place in the world: (http://www.gazprom.ru/)

1) According to the volume of natural gas reserves: It's share in the world's gas reserves is 17%, its share in Russian gas reserves is 72%;

2) Natural gas production: It's share in the world is 12% of the world's gas and 68% of the gas produced in Russia;

3) Due to the length of gas transmission systems;

4) According to the volume of gas exports: Gazprom's share in the gas supply to Europe's far-abroad countries is 34.2%.

Gazprom is in the top spot in Russia:

1) According to the volume of gas processing: The share of Gazprom in the total gas production in Russia is 53%;

2) Production of thermal energy;

3) For power generation and electricity generation in the heat generating unit: Gazprom's share in Russia's electricity generation is 15%.

Gazprom is second in Russia due to the processing of oil and stable gas condensate. It's share in the production of oil and stable gas condensate in Russia was 18%.

The “Gazprom” is Russia's third largest producer of oil and gas condensate. It's share in the production of oil and gas condensate in Russia was 11%.

Exxon Mobile is the world's most influential oil and gas company emerging as a result of the merger of US “Exxon” and “Mobile” companies. In recent years, despite the adverse conditions in the global energy market, it is one of the five largest oil and gas companies listed on the Fortune Global 500 list. Exxon Mobile, one of the largest companies in the world in terms of market capitalization, pays great attention to environmental protection from innovations in the oil and gas industry. Daily production is 4,151 million, oil reserves - 20 billion barrels. In 2017, the market capitalization of Exxon Mobile was $ 363.3.

According to the company's report, the financial performance of Exxon Mobile in 2014-2017 has been as follows:

As can be seen from the table, the company's revenue decreased by 34.2% in 2015 compared to 2014 and by 22.7% in 2016 compared to 2015, but compared to

2016, revenue increased by 18.2% in 2017 and amounted to 237 162 million dollars.

The company's gross profit compared to 2014 decreased by 27.2% in 2015 and by 9.4% in 2016 compared to 2015, but increased by 15.9% in 2017 and amounted to 74,817 million dollars. Despite the fact that the net profit decreased by 50.3% in 2015 compared to 2014 and by 51.5% in 2016 compared to 2015, it increased 2.5 times in 2017 compared to 2016 and amounted to 19.71 billion dollars.

Table 2.2 Exxon Mobile's financial performance in 2014-2017
(millions of dollars)

	31.12.2014	**31.12.2015**	**31.12.2016**	**31.12.2017**
Total revenue	394105	259488	200628	237162
Total benefit	97932	71220	64530	74817
Operating Income	34082	12883	936	12074
Net profit	32520	16150	7840	19710

Source: According to the data of the Investing, it has been compiled by the representative. https://www.investing.com/ (12.01.2019)

"Petro China" LTD is a Chinese oil and gas transnational company. This company was established in November 1999 as part of China 's CNPC. " Petro China " is the world's largest transnational company, despite its strong financial crisis as a result of increased production costs associated with a challenging situation in the world market. As a result of CNPC's reorganization, production, petrochemical, and natural gas assets were also transferred to "Petro China". " Petro China " is a stock company. This company's share control interest belongs to CNPC. "Petro China" is engaged in the exploration, development and production of oil and natural gas, as well as the processing, transportation and sale of oil and petroleum products, petrochemical products and natural gas.

"Petro China" operates in Kazakhstan, Azerbaijan, Algeria, China, Canada, Ecuador and others. Market capitalization is about $ 1 billion.

According to the company's report, financial performance of Petro China in 2014-2017 has been as follows:

As the table shows, the company's revenue decreased by 24.4% in 2015 compared to 2014 and by 6.3% in 2016 compared to 2015, compared to 2016, in 2017

increased by 24.7% and amounted to 2015.890 billion yuan.

Table 2.3 Financial performance indicators of Petro China (2014 - 2017) (millions of dollars)

	31.12.2014	**31.12.2015**	**31.12.2016**	**31.12.2017**
Total revenue	2282962	1725428	1616903	2015890
Total benefit	442809	275136	240928	288937
Operating Income	153877	56430	48874	57769
Net profit	107173	35653	7900	22793

Source: According to the data of the Investing, it has been compiled by the representative. https://www.investing.com/ (12.01.2019)

The company's total profit compared with 2014 decreased by 37.8% in 2015 and by 12.4% in 2016 compared to 2015, but increased by 19.9% in 2017 compared to 2016 and amounted to 288937 mollion yuan. The company's net profit in 2015 decreased by 66.7% compared with 2014 and in 2016 compared to 2015 by 77.8%, but increased by 2.9 times in 2017 compared to 2016 and amounted to 22793 million yuan.

PetroChina's financial performance explains that the related to cost reduction, production optimization, revenue generation, and increased average sales prices for oil, natural gas and petroleum products. Also, as a result of the sale of a part of the Trans-Asian Gas Pipeline Co., the company in 2016, 24.5 billion yuan has earned a one-off profit.

The market capitalization of this company by June 2018 was estimated by Forbes Global 2000 at $ 220.2 billion.

According to the Reuters news agency, the launch of the second and third production lines of Yamal LNG in 2018 led to an increase in Russian natural gas supplies and allowed Petrochina to expand its presence on the European market. Thus, Petrochina, a Chinese oil and gas company, sells liquefied gas to Europe through the Yamal LNG project, due to the decline in demand in the Asian market.

It should also be noted that "Yamal LNG" implements a project for the construction of liquefied natural gas (LNG) with a capacity of 16.5 million tons per annum based on the resources of the South Tambeyskoye field. Shareholders of

Yamal LNG are Novatek (50.1%), Total (20%), CNPC (20%) and Silk Road Fund (9.9%).

Royal Dutch Shell is a British oil and gas company. This company was established in 1907 as a result of merger with Royal Dutch Petroleum Company and British Shell Transport and Trading Company. Shell is engaged in geological exploration and production of oil and gas in more than 80 countries around the world. At the same time, more than 30 refineries of the countries of the world fully or partially belong to it. With more than 43,000 stations, Shell has the world's largest fuel consumption network. Along with all this, Shell has a large number of chemical enterprises, including the production of solar panels and other alternative energy sources.

Royal Dutch Shell owns 27.5% of Russia's Sakhalin Energy. The other shareholders of these companies are Gazprom (50%), Japanese Mitsui (12.5%) and Mitsubishi (10%).

According to the company's report, financial performance of Royal Dutch Shell in 2014-2017 has been as follows:

Table 2.4 Financial performance indicators for Royal Dutch Shell in 2014 - 2017 (millions of dollars)

	31.12.2014	**31.12.2015**	**31.12.2016**	**31.12.2017**
Total revenue	421105	264960	233591	305179
Total benefit	63789	42221	42583	55080
Operating Income	19891	-3218	858	14606
Net profit	14874	1939	4575	12977

Source: According to the data of the Investing, it has been compiled by the representative. https://www.investing.com/ (12.01.2019)

As can be seen from the table, the company's revenue decreased by 37.1% in 2015 compared to 2014 and by 11.8% in 2016 compared to 2015, but compared to 2016, revenue increased by 30.6% in 2017 and amounted to 305179 million dollars.

The company's gross profit compared to 2014 decreased by 33.8% in 2015, but increased by 0.9% in 2016 compared to 2015 a nd by 30.6% in 2017 compared to

2016 and amounted to 55080 million dollars. Despite the fact that the net profit decreased by 87% in 2015 compared to 2014, but increased by 2,4 times in 2016 compared to 2015 and 2.8 times in 2017 compared to 2016 and amounted to 12.977 billion dollars.

By 2017, the net debt of the company amounted to $ 65,353 billion, or 11% less than the indicator of 31.12.2016 ($ 73346 billion). The volume of market capitalization of Shellin in June 2018 was estimated by the Forbes Global 2000 rating agency at approximately $ 306.5 billion.

Shell's market capitalization is estimated at $ 306.5 billion. Earlier, BP (British Petroleum) company, which is engaged in the export of Iran's oil production, and later increased its interest to other regions. At present, British Petroleum operates in all fields of oil and gas industry, with renewable energy sources in the field of bioenergy and wind energy. BP sells oil and gas to China, Italy, the Netherlands and other countries.

BP's financial performance in 2014-2017 has been as follows:

Table 2.5 Financial performance of BP in 2014-2017 (millions of dollars)

	31.12.2014	**31.12.2015**	**31.12.2016**	**31.12.2017**
Total revenue	353568	222894	183008	240208
Total benefit	41328	31737	27669	37175
Operating Income	872	-10460	-2928	6310
Net profit	3780	-6482	115	3389

Source: According to the data of the Investing, it has been compiled by the representative. https://www.investing.com/ (14.01.2019)

As can be seen from the table, the company's revenue decreased by 40% in 2015 compared to 2014 and by 17.9% in 2016 compared to 2015, but compared to 2016, revenue increased by 31.3% in 2017 and amounted to 240208 million dollars.

The company's gross profit compared to 2014 decreased by 23.2% in 2015 and by 12.8% in 2016 compared to 2015, but increased by 34.4% in 2017 compared to 2016 and amounted to 37175 million dollars. The company's net profit increased by 29.5 times to $ 3389 million in 2017 compared to 2016.

Chevron, the second largest in the United States after Exxon Mobile, is one of the largest oil and gas exploration companies in 35 countries worldwide. The company produces oil in various regions of the world. This company has a number of oil refineries, as well as a large network of gas filling stations. It produces natural gas and oil exploration and production, petroleum products, chemicals, household chemicals, fertilizers, as well as ore, colored and rare earth metals. The market capitalization equals to $ 248.1. The market capitalization of this company in June 2018 was estimated by Forbes Global 2000 rating at approximately $ 152.6 billion.

Chevron's financial performance in 2014-2017 has been as follows:

Table 2.6 Chevron's financial performance in 2014-2017 (million dollars)

	31.12.2014	**31.12.2015**	**31.12.2016**	**31.12.2017**
Total revenue	199941	129648	110484	134779
Total benefit	72101	59867	51194	59023
Operating Income	-	-	-	-
Net profit	19241	4587	-497	9195

Source: According to the data of the Investing, it has been compiled by the representative. https://www.investing.com/ (14.01.2019)

As can be seen from the table, the company's revenue decreased by 35,2% in 2015 compared to 2014 and by 14,5% in 2016 compared to 2015, but compared to 2016, revenue increased by 22% in 2017 and amounted to 134779 million dollars. The company's gross profit compared to 2014 decreased by 17% in 2015 and by 14.5% in 2016 compared to 2015, but increased by 15.3% in 2017 compared to 2016 and amounted to 59023 million dollars. The net profit of the company decreased by 76.2% in 2015 compared to 2014. The company has worked with 497 million dollars in 2016. In 2017, the company 's revenues amounted to $ 9,195 billion.

Total is one of the companies that wishes to create progressive standards in the oil and gas industry. Total's activities include oil and gas exploration and production, crude oil processing, refining and marketing of oil and petrochemical products, and the production of alternative energy sources. Total production of the company is 2.6 million, oil reserves - 10.7 billion barrels. The market capitalization of this company by June 2018 was estimated by the Forbes Global 2000 rating agency at about $ 168

billion.

According to the company's report, Total's financial performance in 2014-2017 has been as follows:

Table 2.7 Total financial performance of the company in 2014-2017 (Millions of dollars)

	31.12.2014	**31.12.2015**	**31.12.2016**	**31.12.2017**
Total revenue	212018	143421	127925	149099
Total benefit	62512	47863	43896	49406
Operating Income	10697	4723	5731	10532
Net profit	4244	5087	6196	8631

Source: According to the data of the Investing, it has been compiled by the representative. https://www.investing.com/ (14.01.2019)

As can be seen from the table, the company's revenue decreased by 32.4% in 2015 compared to 2014 and by 10.8% in 2016 compared to 2015, but compared to 2016, revenue increased by 16.6% in 2017 and amounted to 134779 million dollars.

The company's gross profit compared to 2014 decreased by 23.4% in 2015 and by 8.2% in 2016 compared to 2015, but increased by 12.6% in 2017 compared to 2016 and amounted to 49406 million dollars. Despite the fact that the operating income decreased by 55.8% in 2015 compared to 2014, but increased by 21.3% in 2016 compared to 2015 and 83.8% in 2017 compared to 2016 and amounted to 12.532 billion dollars.

The net profit of the company increased by 19.9% in 2015 compared to 2014, 21.8% in 2016 compared to 2015 and 39.3% in 2017 compared to 2016.

Statoil, founded in 1972, is the State Oil Company of Norway. Statoil owns a shareholding stake in the Norwegian state. Statoil changed its name to Equinor in May 2018. This company is one of the world's largest suppliers of crude oil and natural gas. "Equinor" exploits oil and gas fields in Haidrun, Glitne, Kristin, Huldra, Mikkel, Ormen Lange, Norne, Sleupner, Snorre, Statfjord, Snohvit, Sygna, Troll, Tordis, Veslefrikk, Vigdis, Volve, Asgar and Visund in the Norwegian continental shelf. At the same time, the company owns refineries in Karsto, Mongstad

Tjeldbergodden, Melkoya and Kolsnes. Equinor operates worldwide in Angola, Azerbaijan, Algeria, China, Brazil, US, Libya, Iran, Venezuela and Libya. At the same time, Equinor has processing plants in Denmark, France, Germany and Belgium.

Equinor has taken part in the shooting of the Baku-Tbilisi-Ceyhan oil pipeline, as well as Zeepipe, Franpipe Statpipe and Europipe oil and gas pipelines. The market capitalization of this company by June 2018 was estimated at $ 90.2 billion by Forbes Global 2000 rating agency.

The financial performance of Equinor in 2014-2017 has been as follows:

Table 2.8 Financial performance indicators of Equinor in 2014 – 2017 (millions of dollars)

	31.12.2014	**31.12.2015**	**31.12.2016**	**31.12.2017**
Total revenue	96708	57900	45688	60971
Total benefit	48728	31646	24183	32759
Operating Income	17878	1366	80	13771
Net profit	3871	-5192	-2922	4590

Source: According to the data of the Investing, it has been compiled by the representative. https://www.investing.com/ (15.01.2019)

As can be seen from the table, the company's revenue decreased by 40.1% in 2015 compared to 2014 and by 21.1% in 2016 compared to 2015, but compared to 2016, revenue increased by 33.5% in 2017 and amounted to 60971 million dollars.

The company's gross profit compared to 2014 decreased by 35.1% in 2015 and by 23.6% in 2016 compared to 2015, but increased by 12.6% in 2017 compared to 2016 and amounted to 32759 million dollars. In 2017, the company's revenues from operations amounted to 13,771 billion dollars. In 2017, the net profit of the company was 4590 million dollars.

ConocoPhillips, the third-largest US company in terms of market capitalization, has a great role and importance in world gas production and processing. In many countries around the world, Conoco Phillips has subsidiaries such as Broadridge Financial, Burlington Resuorces, Conoco Phillips (Qatar), Conoco Phillips (Kanada) and Phillips Petrolium.

The total revenue of this company increased by 22.4% in 2017 compared to 2016 and reached $ 29558 million, while its gross profit grew 43.8% to $ 11971 million.

One of the world's largest gas companies, Eni, is the Italian multinational oil and gas company in 2017. This company is engaged in oil and gas exploration and production in Russia, Kazakhstan in Africa, the Gulf of Mexico, and so on. Eni has Ravenna, Taranto, Ferrera Erbodnone, Livorno, Mantua, Brindisi and Ferrera Natural Gas Stations.

The company sells its products in Italian, European and non-European markets.

In 2015 - 2017, Eni's gas sales in the world markets have been as follows:

Table 2.9 The volume of gas sales in the world market of Eni in 2015-2017 (billion cubic meters)

	2015	**2016**	**2017**
Italian markets	38,44	38,43	37,43
European markets	42,89	42,43	38,23
Non-European markets	6,39	5,45	5,17
Total	87,72	86,31	80,83

Source: According to the data of the Investing, it has been compiled by the representative. https://www.investing.com/ (15.01.2019)

As seen from the table, the volume of gas sales by Eni company worldwide has declined year by year. According to the information provided by the company, the decrease was due to the decline in the volume of liquefied natural gas sold to Argentina, the United Arab Emirates and Japan.

In 2017, the total revenue of this company amounted to $ 66919 million, the total profit of $ 29687 million, the operating income of $ 8140 million and the net profit of $ 3374 million.

The market capitalization of this company by June 2018 was estimated at $ 70.7 billion by Forbes Global 2000 rating agency.

As shown in the table, “Royal Dutch Shell” Corporation has participated in 16 projects of natural gas extraction, “Exxon Mobil” Corporation 11, “BP” Corporation 8, “Total” 11, “Chevron” 3 and “ConocoPlillips” 3. These corporations have localized their assets in liquid gas production in several countries in Africa, the Middle East and

the Pacific. Chevron and Exxon Mobile are represented in 2 foreign countries and Shell is represented in 9 countries. The average share of these companies in joint ventures with local oil and gas companies and other representatives of the liquid gas industry is 26.7%, which does not give them control over the project but guarantees the interests of regional liquefied natural gas policy. The interests of the representatives in each major regional market make corporations one of the major, diverse, less-dependent players in the global economy.

Table 2.10 The largest oil and gas transnational corporations in liquid gas extraction projects in 2015

Names of corporations	The number of threads, unit	Total power Yearly mln. tons	Average share of participation in projects, %	Capacities, Yearly mln. tons
Royal Dutch Shell	16	105,8	22,89	24,11
Exxon Mobil	11	68,3	25,72	17,57
BP	8	50,5	28,30	14,29
Total	11	68,2	15,18	10,35
Chevron	3	21,6	27,82	6,01
ConocoPlillips	3	11,6	40,34	4,68

Source: According to the data of Морозов В.С. Крупнейшие нефтегазовые транснациональные корпорации в отрасли производства сжиженного природного газа. 2015. № 6, it has been compiled by the representative. (17.01.2019)

It should be noted that the role of Qatar Petroleum (Qatar) and Sonatrach (Malaysia) in the production of world liquefied gas is large. However, such corporations operate in mono market and national boundaries, which does not give them stability. In countries where there is an unfavorable political environment, military conflicts, and environmental disasters, corporation business is highly vulnerable and can stabilize very quickly and completely lose its relationship with international investors. Therefore, such large national oil and gas corporations are not the largest transnational corporations in the world. (В.С.Морозов, 2015)

Taking into account such an effective advantage of the world's largest oil and gas transnational corporations, many of them are trying to adopt the transportation and recycling of liquefied gas to end-use or re-export to technologically diversify, not just geographically, but also technologically. BP, for example, has BP Shipping, a very

large subsidiary tanker fleet for liquefied natural gas (7 gas carriers). All major oil and gas transnational corporations, which have been reviewed, have the power to regenerate in sales markets. Naturally, in many aspects of liquefied natural gas, such deepening will ensure stable development of the corporation in the long term, and this is fully consistent with the key principles of the modern investment strategy of the world's oil and gas companies.

At the beginning of the development of the gas industry, the gas industry was in the hands of large transnational corporations that emerged as a result of demonopolization of the US oil industry. After the creation of the Seven Sisters, 90% of the gas industry was managed by modern American companies Chevron, Texaco, Golf Oil, Exxon, Mobil, the British-Dutch Royal Dutch Shell and the British-Persian BP. At present, the newest "Seven Sisters" have been created, which includes the corporations of non-OECD countries, which are the most important oil and gas market. It includes China's CNPC, Russia's Gazprom, Iran's NIOC, Brazil's Petrobras, Venezuela's PDVSA, Malaysian Petronas and Saudi Aramco Saudi Arabia. Currently, these companies, which are the main shareholder of the state, control 30% of world production and more than 30% of world oil and gas reserves. For comparison, the previous "Seven Sisters" companies accounted for only 10% of natural gas production and 3% of world gas reserves.

Thus, the activity of leaders in the production and consumption of gas is historically determined. It is also important to note that the main energy consumers are developed and developing countries in Asia and most of the world's hydrocarbon reserves are concentrated in countries in transition and developing countries. Consumers like the United States, China, and the European Union are combining their economic and political resources to go to the same markets, which leads to a sharpening of contradictions and competition.

2.2. The activities of oil and gas TNCs in various regions of the world.

All factors, including the forced reduction of costs and optimizing the flow of cash as a result of falling oil prices in the world market, have had a considerable impact on major energy companies in recent years. However, as a result of increased oil prices in 2017, the financial performance of global oil and gas companies has significantly improved and has led to falling into the top 10 of the world's largest.

There are several rating agencies that assess the performance of the world oil and gas companies. For example, Forbes Global 2000, Platts Global 250, Fortune Global 500, Tmn, and so on. Some of these rating agencies estimate companies' earnings, while others measure the daily production and severity. The Forbes Global 2000 rating agency estimates companies based on their income, earnings, assets and market value. The Global Platts Top 250 rating agency estimates companies' return on investment, the amount of assets, revenues and profits to characterize the financial condition of the companies.

According to Global Platts Top 250 rating agency, in 2017, the largest 25 transnational oil and gas companies in different parts of the world are: (Appendix 2, page 87)

As it is seen from the table, five of the world's 25 largest oil and gas companies, Valero Energy Corp., , Exxon Mobile Corp. , "Enter prize Products Partners" LP, "Next Era" Energy Inc. and "Phillips 66" owned by Americas. Eight of the world's 25 largest oil and gas companies, Reliance Industries, Korea Electric Power Corp., China Petroleum & Chemical Corp., Indian Oil Corp. LTD, "Oil & Natural Gas" Corp.LTD, "PTT" Plc, "China Shenhua" Energy Co. Ltd., "SK Innovation" Co. Ltd companies have been owned by Asia / Pacific Rim. Of the top 25 oil and gas companies in the world, 12 are Gazprom, E.ON SE, Lukoil, Total, SA, PJSC Transfert, Centrica plc, SSE Plc, Iberdrola, SA, PJSC Rosneft Oil Co., Royal Dutch Shell plc, Enel Spa, Electricite de France SA belonged to the EMEA region.

Let's analyze the activities of the top three companies in the 2017 ranking of the

Global Platts Top 250.

Gazprom is the Russian company ranked first in the 2017 rating of the Global Platts Top 250 agency.

As of 31.12.2017, 38.37% of the shares of Gazprom were sold to the Russian Federation, 10.97% to Rosnefte-gaz stock company, 0.89% to Rosgasification joint-stock company, 25% 20% belong to ADR owners and 24.57% to other registered persons. It should be noted that 100% of the shares of Rosneftegaz and 74.55% of the shares of Rosgasification joint-stock company belong to the Russian Federation, and 50.23% of Gazprom shares directly or indirectly belong to the state.

The main directions of the financial and economic activity of "Gazprom" are:

1) Gas extraction: This includes geological exploration and gas production;

2) Transportation: This includes gas transportation;

3) Gas supply: This includes gas sales to Russia and abroad;

4) Storage of gas: This includes the storage of produced gas from underground gas storage facilities;

5) Gas condenser and oil production: This includes gas condensate and oil production and sale;

6) Processing: includes the processing and sale of gas condensate, oil and other hydrocarbons;

7) Heat and power generation and sale.

Gazprom's operating performance in 2015 - 2017 was as follows:

As can be seen from the graph, the volume of natural and associated gas production in Russia increased in 2016 compared to 2015, although only slightly (0.1%); in 2017 compared to 2016, it increased by 12.4%, reaching 472.1 billion m^3.

Oil production in Russia increased by 7.3% in 2016 compared to 2015 and by 3% in 2017 compared to 2016.

Gas condensate production in Russia increased by 1.1% in 2016 compared to 2015 and 10.8% in 2017 compared to 2016.

Total hydrocarbon production in Russia increased by 3.9% in 2016 compared to 2015, but did not change in 2017 compared to 2016.

The processing of liquefied hydrocarbon raw materials decreased by 1.3% in 2016 compared to 2015 and by 2.7% in 2017 compared to 2016.

Electricity production decreased by 6.4% in 2016 compared to 2015, and by 0.6% in 2017 compared to 2016.

Table 2.12 Operational indicators of Gazprom in 2015 – 2017

	2015	**2016**	**2017**
Production of natural and associated gas in Russia, billion m^3	419,5	420,1	472,1
Oil production in Russia, million tons	44,0	47,2	48,6
Gas condensate production in Russia, million tons	15,3	15,9	15,9
Production of total hydrocarbons in Russia, million bar in oil equivalent	3170,2	3202,5	3550,2
Processing of liquid hydrocarbon raw materials, million tons	66,8	65,9	64,1
Electricity generation, billion kW / hr	148,0	157,5	156,5

Source: According to the data of the Annual report of PJSC Gazprom for 2017, it has been compiled by the representative. http://www.gazprom.ru/ (21.01.2019)

Gazprom is closely monitoring the costs. This ensures high level of financial stability of the company. Most of this company's revenue comes from the sale of oil, gas and other hydrocarbons to Western and Central European countries, the Russian Federation, and to the former Soviet Union countries.

The dynamics of net sales of Gazprom from 2015 to 2017 has been as follows:

Table 2.13 Net income from Gazprom's sales in 2015 - 2017 (billion rubles)

	2015	**2016**	**2017**
Net gas sales	3427,2	3302,8	3340,6
Net income from sales of oil and gas products	1555,6	1497,6	1687,1
Net income from crude oil and gas condenser sales	260,6	411,9	539,9
Net income from heat and electricity sales	424,7	481,7	503,8
Net income from sales of gas transportation services	194,0	199,0	235,1
Other Income	211,2	218,1	239,6
Total	6073,3	6111,1	6546,1

Source: According to the data of the Annual report of PJSC Gazprom for 2017, it has been compiled by the representative. http://www.gazprom.ru/ (21.01.2019)

As it is seen from the table, the company's net income increased by 0.6% in 2016 compared with 2015, and increased by 2017 to 7.1% in comparison with 2016. Net income from sales of gas, net income from sales of oil and gas products, net income from sales of crude oil and gas condensate, net income from sales of heat and electricity, and net income from gas transportation services an increase in the company's net income. In 2017, 51% of Gazprom 's net income for the total amount of 6546.1 billion rubles is net income from gas sales, 25.8% - net profit from sales of oil and gas products, 8.2% - 7.7% of the net income from the sale of crude oil and gas condensate, 3.6% of net income from electricity and heat sales, and 3.7% of net sales of gas transportation services.

The profit of Gazprom in 2015 - 2017 has been as follows:

Table 2.14 Profit of Gazprom in 2015 - 2017 (billion rubles)

	2015	**2016**	**2017**
Sales earnings	1228,3	725,6	870,6
EBITDA indicator	1874,7	1322,7	1466,9
Annual earnings per share of Gazprom shareholders	787,1	951,6	714,3

Source: According to the data of the Annual report of PJSC Gazprom for 2017, it has been compiled by the representative. http://www.gazprom.ru/ (21.01.2019)

As it is seen from the table, the company's sales profit decreased by 40.9% in 2016 compared to 2015 and increased by 20% in 2017 to 870.6 billion rubles compared to 2016.

The EBITDA (Earnings Before Interest, Depreciation and Earnings) indicator decreased by 29.4% in 2016, compared to 2016, an increase of 11% in 2017 to 1466.9 billion rubles.

The annual profit of Gazprom shareholders increased by 20.9% in 2016, compared to 2016, down from 249% in 2017 to 714.3 billion rubles. Profitability of the EBITDA indicator in 2017 was 22%, and the annual profitability of Gazprom's equity was 11%.

"E.ON" SE is a European company, which is ranked second in the 2017 rating of the Global Platts Top 250 agency. The main activity of the company is:

1) Exploration and production of natural gas;

2) Transportation and distribution of natural gas;

3) Electricity generation and distribution.

The financial performance of E.ON in 2015-2017 has been as follows:

Table 2.15 Financial Indicators of E.ON in 2015 - 2017 (EUR million)

	31.12.2014	**31.12.2015**	**31.12.2016**	**31.12.2017**
Gross income	113095	42656	38173	37965
General benefit	13463	9988	6385	8705
Operating Income	-694	-81	-506	4602
Net profit	-3160	6999	-8450	3925

Source: According to the data of the Investing, it has been compiled by the representative. https://www.investing.com/ (23.01.2019)

As shown in the table, the total gross revenues of the company decreased by 62.3% in 2015 compared to 2014 and 10.5% in 2016 compared to 2015. In 2017 compared to 2016, down 0.5% to 37,965 million euros.

The company 's gross profit margin decreased by 25.8% in 2015 compared to 2014 and by 36.1% in 2016 compared to 2015. Increased by 36.3% in 2017 compared to 2016 and amounted to EUR 8705 million. In 2017, the company's revenues from operations amounted to 4602 million euros. In 2017 the net profit of the company amounted to 3925 million euros. In 2017 the total assets of this company amounted to 55,950 billion euros.

"Reliance Industries" LTD is the Indian company and the largest holding company in the rating of 2017 of the Global Platts Top 250 agency. The main activity of the company is:

1) Oil and gas extraction;

2) Oil refining.

At the same time, Reliance Industries Ltd. has a large number of petrochemical plants, food, electronics and retail chains.

According to the company's report, the financial performance of Reliance Industries in 2015-2017 has been as follows:

As it is seen from the table, the total gross revenues of the company have

decreased by 21.9 in 2016 compared to 2015, and increased by 12.6% in 2017 compared to 2016. Compared to 2017, rose by 23.6% to $ 4082650 million in 2018.

Appendix 8. Table 2.16 Financial performance indicators of Reliance Industries for 2014-2017 (31 March, millions of dollars)

	31.03.2015	31.03.2016	31.03.2017	31.03.2018
Gross income	3754350	2932980	3301800	4082650
General benefit	598080	674260	742690	1022710
Operating Income	259100	343680	350010	487820
Net profit	235660	297450	299010	360750

Source: According to the data of the Investing, it has been compiled by the representative. https://www.investing.com/ (23.01.2019)

The company 's gross profit increased by 12.7% in 2016 compared to 2015 and 10.1% in 2017 compared to 2016. In 2018, an increase of 37.7% to $ 1022.710 million. The Company 's revenues from revenues increased by 32.6% in 2016 compared to 2015, and by 1.8% in 2017 compared to 2016. Compared to 2017 and increased by 39.4% in 2018 to $ 48,7820 million.

The company's net profit increased by 26.2% in 2016 compared to 2015 and 0.5% in 2017 compared to 2016 and 20.6% in 2018 compared to 2017. As of March 31, 2013, the company 's net profit amounted to $ 360,750 million.

Thus, the incorporation of well-formed and balanced advanced investment strategies allows the largest oil and gas transnational corporations to be in favorable conditions even in economic crises and cheap energy resources.

CHAPTER III

PROBLEMS AND PROSPECTS FOR AZERBAIJAN'S ACCESS TO THE WORLD GAS MARKET.

3.1. Features of the Azerbaijani gas industry and prospects for its development.

The gas industry is one of the leading branches of the Azerbaijani economy. Gas, as the cheapest and cleanest fuel type, plays an important role in the formation of the heat and energy system of the Republic of Azerbaijan.

The development of the gas industry in Azerbaijan dates back to the last century. For the first time, natural gas was consumed in 1859 to obtain steam in Surakhani. In 1902, the well drilled in Surakhani scored a gas fountain. This well, with a daily average of 57 000 m^3, has led to the formation of the first gas transportation system in the country. In 1907, 130 000 000 m^3 of gas was produced in Azerbaijan. However, despite the fact that there was a gas fountain in the Surakhani well, most of the gas was released into the air because the plant could not use that amount of gas at that time. From this point of view, gas production was 48 million m^3 in 1919 and 34 million m^3 in 1920-1921.

In 1923, a section on gas consumption was created at Azneft, related to the development of the gas industry in Azerbaijan. Subsequently, this division was transformed into a major division of gas production and drilling.

The state-owned Azqaz gas company exploration and exploitation facility was established in 1936 in connection with the gas industry development, and the volume of gas production in the country began to increase.

The dynamics of natural gas production in Azerbaijan in 1937-1992 has been as follows:

As is presented in the table, the volume of natural gas production in Azerbaijan in 1937 - 1985 increased year by year (excluding 1950).

Since 1990, Azerbaijan has seen a significant drop in the country's gas industry.

In comparison with the previous year, natural gas production in Azerbaijan decreased by 13.1% in 1991 and by 8.7% in 1992.

Table 3.1 Natural gas production in Azerbaijan in 1937 - 1992, mln m^3

Years	1937	1940	1950	1960	1965	1970	1975	1980	1985	1990	1991	1992
Natural gas:	1991	2498	1233	5841	6180	5521	9890	14004	14067	9926	8621	7872
Associated gas	1991	2498	999	1300	3149	2539	4184	3839	2987	2123	1497	1371
Natural gas	-	-	234	4541	3031	2982	5707	10165	11080	7803	7124	6501

Source: According to the data of Azerbaijan's statistical indicators, SSC, 2018, it has been compiled by the representative. https://www.stat.gov.az/ (07.01.2019)

From 1993 to 2002, the dynamics of natural gas production in Azerbaijan was as follows:

Table 3.2 Natural gas production in Azerbaijan in 1993 - 2002, mln m^3

Years	Natural gas - total	including:	
		associated gas	natural gas
1993	6 805	1 109	5 696
1994	6 379	1 382	4 996
1995	6 644	2 145	4 499
1996	6 305	2 076	4 229
1997	5 964	2 008	3 956
1998	5 589	2 334	3 255
1999	5 997	3062	2 935
2000	5 642	2 859	2 783
2001	5 535	3 165	2 370
2002	5 144	3 118	2 025

Source: According to the data of Azerbaijan's statistical indicators, SSC, 2018, it has been compiled by the representative. https://www.stat.gov.az/ (07.03.2019)

As it is seen from the table, in 1993 - 2002, Azerbaijan experienced a decline and stagnation in the gas industry of the country. As compared with 1993, it decreased by 6.3% in 1994, by 2.4% in 1995, by 7.3% in 1996, by 12.4% in 1997, by 17.9% in 1998, by 11.9% in 1999, by 7.1% in 2000, by 18.7% in 2001 and by 24.4% in 2002.

After independence, the Republic of Azerbaijan gas industry of the country again started to develop as a result of carried out President H. Aliyev of economic policy,

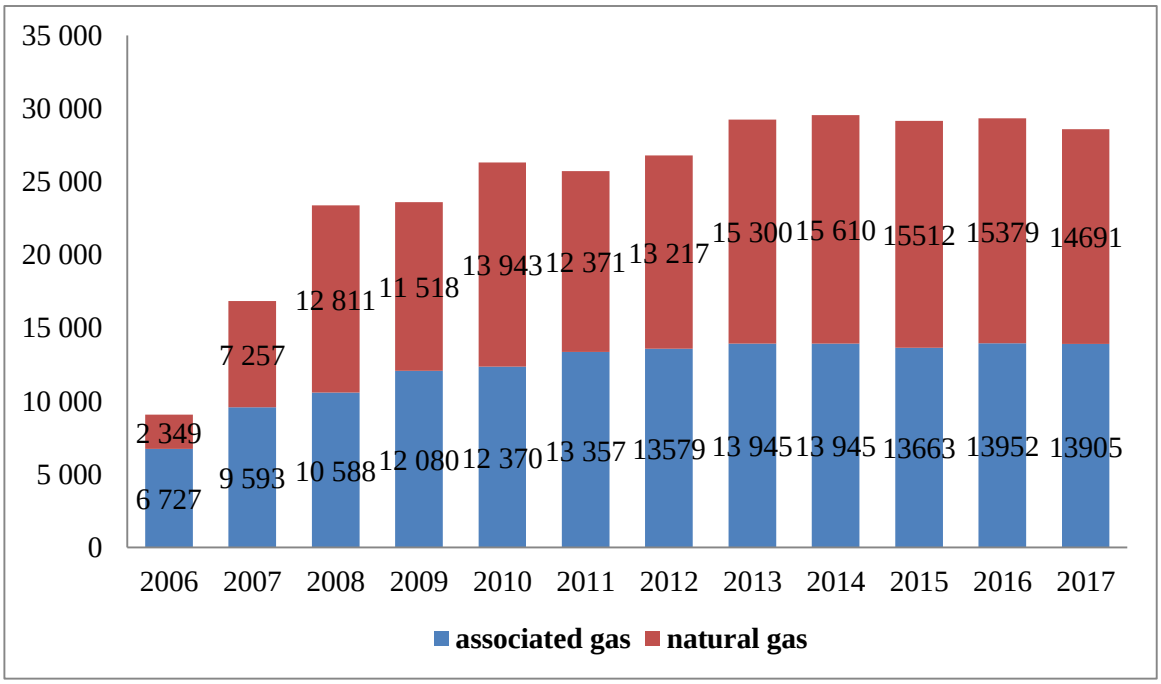
successful reforms, financial stability and so on.

Natural gas production in the Republic of Azerbaijan in 2003 - 2017 has been as follows: (Appendix 3, page 88)

As is observed from the table, in the country in 2003 - 2005, there was a tendency towards decline. So, in 2003, 5,128 million square meters, 4,995 million square meters in 2004, and 5732 million square meters of natural gas were produced in 2005.

However, after the gas production in the Shah Deniz-1 gas field in 2006, its volume has increased. It can be more clearly seen from the graph below:

Figure 3.1. Natural gas production in the Republic of Azerbaijan in 2006-2017, mln m^3.



Source: According to the data of the State Statistical Committee of Azerbaijan, it has been compiled by the representative. https://www.stat.gov.az/ (08.03.2019)

As can be seen from the graph, 67% from 9076 million square meters of gas produced in 2006, 64.3% from 16850 million square meters of gas in 2007, 69.8% from 23399 million square meters of gas in 2008, 69.2 % from 23598 million square meters of gas in 2009, 63.4% from 26312 million square meters of gas in 2010, 63.4% from 25728 million square meters of gas in 2011, 64.3% from 26,796 million square meters of gas in 2012, 61.2% from 29245 million in 2013, 63.7% from 29555 million

square meters in 2014, 65.9% from 29175 million square meters in 2015, 63.8% from 29331 million square meters of gas in 2016 and 63.6% from 28.596 billion square meters of gas in 2017 amounted to tank gas.

Total extracted natural gas was 64.3% in 2007, 69.8% in 2008, 69.2% in 2009, 63.4% in 2010, 63.6% in 2011, 64.3% in 2012, 61.1% in 2013, 63.7% in 2014, 65.9% in 2015, 63.8% in 2016 and 63.6% in 2017 were commodity natural gas.

In 2007, 37.2% of all marketable natural gas was produced from associated gas, and 62.8% in natural gas, in 2008 24.1% was produced from associated gas, and 75.9% in natural gas, in 2009 32,0% was associated gas, and 68.0% natural gas, in 2010 28.8% was associated gas, and 71.2% natural gas, in 2011 27.2% was associated gas, and 72.8% natural gas, in 2012 26.0% was associated gas, and 74.0% natural gas, in 2013 18.4% was associated gas, and 81.6% natural gas, in 2014 20.4% was associated gas, and 79.6% natural gas, in 2015 22.6% was associated gas, and 77.4% natural gas, in 2016 20.9% was associated gas, and 79.1% natural gas and in 2017 22.6% was associated gas and 77 , 4% natural gas.

At present Azerenergy JSC is the largest gas user in our republic. In 2011- 2017, gas production per capita in the Republic of Azerbaijan was characterized by the following figures:

Table 3.4 Gas production per capita in the Republic of Azerbaijan in 2011-2017 (m^3)

	2011	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Gas extraction per capita	1807	1879	1925	1999	1994	1929	1868

Source: According to the data of the Azerbaijan's energy, SSC, 2018, it has been compiled by the representative. https://www.stat.gov.az/ (10.03.2019)

As can be seen from the table, the volume of gas production per capita in Azerbaijan is 1807 cubic meters in 2011, 1879 cubic meters in 2012, 1925 cubic meters in 2013, 1999 cubic meters in 2014, 1994 cubic meters in 2015, 1929 cubic meters in 2016 and 1868 cubic meters in 2017. Gas generation per capita in 2011-2017 found the middle value of 1914.4 cubic meters every year.

Compared to last year, gross output per capita increased by 4% in 2012, by 2.4% in 2013, by 3.8% in 2014, by 0.2% in 2015, by 3.3% in 2016 and by 3.2% in 2017.

The Shahdeniz gas field, discovered in 1999, has played a special role in the development of the gas industry. This gas field is one of the largest in the country, with one trillion square meters of gas in the collector, also one of the largest gas fields in the world. The Shahdeniz field in the Production Sharing Agreement (PSA), BP performs work on behalf of the companies: BP (operator - 28.8%), SOCAR (16.7%), TPAO (19%), Lukoil (10%), Statoil (15.5 %) and NICO (10%). The contract area, which was about 859.8 square meters, required 4.0–5.0 billion US dollars for this project.

The development of the gas field under the Shahdeniz project is expected to be implemented in two stages. The Shahdeniz-1 development was achieved in seven years, and in November 2006, gas was extracted from the production well for the first time at a production platform, which was installed on the agreement field.

The gas produced from the field was transported to Georgia via the Baku-Tbilisi-Erzurum pipeline in February 2007 and to Turkey via the South Caucasus in July.

This field has so far produced approximately 280 million m^3 of gas and has been supplying gas to Azerbaijan, Turkey and Georgia since 2007.

The maximum annual production capacity of the Shahdeniz gas field is 10 billion cubic meters of gas and 50,000 barrels of condensate per day. As a result of the technical optimization of existing facilities in 2014, the maximum daily output capacity of the Shahdeniz field was raised from 27.3 million square meters to 29.5 million square meters.

In the first half of 2018, 5 billion standard m^3 of gas and 9 million barrels (or 1.1 million tons) of condensate were extracted from this field. At present, the Shahdeniz field's production capacity is about 10.9 billion cubic meters per year, 32 million standard m^3 per day.

Final investment decision on Shahdeniz-2 development was adopted in Baku in

2013. The cost of development of the Shahdeniz-2 field is $ 28 billion and it is planned to produce 400 billion cubic meters of gas from this field.

At present all the works under Shahdeniz-2 project are implemented according to the schedule. Like all large-scale projects, the Shahdeniz-2 project is also implemented by partner companies from different countries. The share of these companies in the Shahdeniz-2 is BP (operator - 28.8%), Petronas (15.5%), Lukoil (10%), NICO (10%), SOCAR (10%), SGC Upstream (6.7%) and TPAO (19%).

Gas produced by Shahdeniz-2 gas field first will be exported to Turkey and then to Europe. The gas produced in the Shahdeniz-2 project will be transported to Turkey, with an annual output of 6 billion cubic meters, to Europe, with 10 billion cubic meters.

At present SOCAR is studying the possibilities of the third phase of the development of the Shahdeniz field with a capacity of 1.2 trillion m^3. According to experts, the demand for "Shahdeniz" -3 market must be strong and there must be a strong infrastructure for gas production. Thus, the Shahdeniz-3 project will become a

larger project than the Shahdeniz-2 project, and its development will take place after 2030.

The achievements of the Republic of Azerbaijan in the field of discovery of gas resources do not end with the Shahdeniz field. The first gas field discovered by SOCAR on its own during independence was the Umid gas field in the Caspian Sea. According to preliminary estimates, the hydrocarbon reserves of this gas field are estimated at 40 million tonnes of condensate and 200 billion cubic meters of gas. It is expected that the field will generate 30-40 billion dollars in the state budget. At the same time, 80 million tonnes of condensate of Babek gas field and 400 billion cubic meters of gas, 45 million tonnes of condensate of the Absheron gas field and 350 billion cubic meters of gas, 40 million tonnes of condensate of the Nakhchivan prospective gas field and 300 billion cubic meters of gas, while the reserves of the Azeri-Chirag-Guneshli block of gas reserves are 360 billion cubic meters of gas, we

can see that the country's gas reserves are quite large. All this creates a basis for our republic to seek a way out of global markets as a major exporter of gas.

Thus, in recent years the Republic of Azerbaijan has been implementing global projects. This is a logical consequence of the policy pursued by President Ilham Aliyev. The implementation of such global projects in our country in the modern period will help increase the income of our country, increase social security of the population and other areas.

3.2. Perspectives of cooperation of Azerbaijan with the EU countries in the field of gas export.

Azerbaijan, known all over the world as the oil country, now introduces itself as a new natural gas source in international markets, a safe and reliable supplier of "blue fuel". The main reason why Azerbaijan was recognized as a gas supplier in the region was the discovery of the 1999 Shahdeniz gas condensate field.

On March 12, 2001, the President of the Republic of Azerbaijan H. Aliyev visited Turkey to turn Azerbaijan into a gas exporting country in the XXI century. Within the framework of this visit, the agreement on the purchase and sale of natural gas between the countries involved in deliveries of natural gas to Turkey was signed. On September 29, 2001, during the visit of Georgian President E. Shevardnadze to Baku, an agreement was signed between Azerbaijan and Georgia on the transit, transportation and sale of natural gas through Georgia. For this purpose the construction of the Baku-Tbilisi-Erzurum (South Caucasus Pipeline (SCP)) pipeline has started. This pipeline, originated from Sangachal Terminal, was built to transport gas from the Shahdeniz gas field to Georgia and Turkey. Turkey, which is on the same route as the Baku-Tbilisi-Ceyhan pipeline, is connected to the country's gas distribution system. Its diameter is 42 inches, and the length is 691 km, 443 km of this pipeline is located in Azerbaijan and 248 km in Georgia. The South Caucasus Pipeline, which was put into operation in late 2006, will deliver Shahdeniz-1 gas to Georgia, and from 2007 to Turkey. By mid-2018, the average capacity of the South

Caucasus Pipeline was approximately 21 million m^3 of gas.

Under the contract between Gazprom and SOCAR in 2010 Gazli-Mahammad-Mozdok gas line exports to Russia from Azerbaijan 991 million cubic meters of natural gas per year. This natural gas pipeline was previously transported from Russia to Azerbaijan.

Since 2006, Azerbaijan has been supplying natural gas to Iran via the Baku-Astara natural gas pipeline, while Iran supplies this gas to Nakhchivan via Salmas-Nakhchivan line, and thus, Iran gets 15% of transit revenue. Gas supply to Nakhchivan Autonomous Republic, which is the border with Armenia, Turkey and Iran, depends on this natural gas dispatched through Iran.

In recent years, the discovery of large new fields in the country has allowed Azerbaijan to supply the country with gas and export its own gas to Europe. The increase in the volume of extracted gas has raised the issue of how to transport Caspian gas to Europe. Several projects have been proposed to transport Azerbaijani gas to Europe.

In 2010, the Memorandum on Cooperation in Gas Supply was signed in Bucharest on the implementation of the Azerbaijan-Georgia-Romania Interconnector (AGRI) project between Romania, Azerbaijan and Georgia. The AGRI project provided for gas to be extracted in the Caspian Sea through Azerbaijan and Georgia, and then exported to the markets of Hungary, Romania and other European markets through the Black Sea.

Another project in the transportation of Azerbaijani gas to Europe is Interconnector Turkey-Greece-Italy (ITGI) gas pipeline. The ITGI gas pipeline envisages transporting 10 billion cubic meters of gas first. This gas pipeline will stretch from Azerbaijan to Georgia and with the help of Turkey to Greece and Italy.

Another project was proposed by BP. This natural gas pipeline project, SEEP ("South East Europe Pipeline"), envisages transporting 10 billion cubic meters of gas per year from existing gas pipelines to Romania, Hungary, Serbia, Croatia and

Bulgaria starting from 2018.

A memorandum on strategic energy cooperation was signed between the EU and the Republic of Azerbaijan in 2011. This memorandum has given impetus to the implementation of TAP (Trans Adriatic Pipeline) and TANAP (Trans-Anatolian Pipeline) projects.

In 2011, Baku hosted a joint declaration on the Southern Gas Corridor between President of the European Commission H. Barroso and President of Azerbaijan Ilham Aliyev. The Southern Gas Corridor is a natural gas pipeline network that will transport gas produced in the Caspian Sea to Europe without dependence on Ukraine and Russia. Within the framework of the Southern Gas Corridor, several gas pipelines have been supplied to our republic, one of which is the Nabucco gas pipeline. This pipeline will transport natural gas from the Caspian Sea to Central Europe through Azerbaijan, Turkey, Bulgaria, Hungary, Georgia, Austria and Romania. The maximum annual capacity of this project is 31 billion m^3. However, because of the existence of problems with the resource base and the lack of technical details, it could not be built.

These various projects, bringing Azerbaijani gas to Europe, were only discussed for about 10 years without any result. No one took the first step to invest funds into these projects. Having seen this, the Republic of Azerbaijan signed the TANAP project with Turkey in 2012. Then Shah Deniz-2, then the TAP project was launched.

The Shahdeniz consortium has considered proposals on pipeline projects for the export of natural gas to Europe, and evaluated TAP and ITGI gas pipeline projects to Italy at the initial stage. In 2013, the Shahdeniz Consortium announced that the TAP gas pipeline had been selected to deliver gas from the Shahdeniz-2 field to consumers in Southeast Europe, Italy and Greece because it did not meet the previously announced criteria of the consortium. TAP gas pipeline is a continuation of the Baku-Tbilisi-Erzurum (South Caucasus gas pipeline) and TANAP gas pipeline. The TAP pipeline envisages transportation of Shahdeniz-2 gas through Albania, Greece and the

Adriatic Sea to southern Italy and then to Western Europe. The capacity of the pipeline is expected to be 10 billion cubic meters per year and maximum 20 billion cubic meters per year. The TAP pipeline will connect to TANAP at the Turkish-Greek border at Kipa.

On 17 May 2016, the foundation of the TAP pipeline was laid in Thessaloniki, Greece. The TAP project is not only the continuation of the Southern Gas Corridor, but also the continuation of SCP and TANAP. TAP shareholders are BP (20%), Fluxys (19%), SOCAR (20%), Enagás (16%), Snam S.p.A (20%) and Axpo (5%).

TANAP has important economic and political importance not only for Shahdeniz gas, but also for the extraction of natural gas from Absheron, Shafag-Asiman, Umid and others.

On September 20, 2014, a ceremony marking the 20th anniversary of the "Contract of the Century" and laying the foundation of the Southern Gas Corridor (CGP) was held in Baku. At the ceremony, the project on the export of Azerbaijani gas to Europe via Georgia and Turkey was laid. This project will mainly be delivered through pipelines from Azerbaijan, Georgia, Turkey, Bulgaria, Albania, Greece and the Adriatic Sea to Italy.

After the ceremony, Ilham Aliyev (President of Azerbaijan), Irakli Garibashvili (Prime Minister of Georgia), Taner Yildiz (Turkish Energy Minister) Antonis Samaras (Greek Prime Minister), Rosen Plevneliev (President of Bulgaria) and Damian Giknuri (Albanian Energy Minister) and other representatives of the ceremony signed the first phase of the Southern Gas Corridor (CGD). This corridor envisages transporting 10 billion cubic meters of gas to Europe and 6 billion cubic meters of Azerbaijani gas to Turkey at the first stage.

The Southern Gas Corridor CJSC and the State Commission were established in connection with the implementation of this project in the Republic of Azerbaijan and these projects were entrusted to SOCAR Midstream Operations and SOCAR Upstream Management International. In CJSC Southern Gas Corridor, 49% of the

stake is owned by SOCAR and 51% by the state. Revenues of Shah Deniz-1 are financed from the equity of CJSC Southern Gas Corridor and borrowed from foreign and local financial markets.

The Southern Gas Corridor combines the following four areas:

1. South Caucasus Pipeline Expansion (SCP) Project;
2. Shah Deniz-2 project;
3. TANAP project;
4. TAP version.

The South Caucasus Pipeline Expansion Project (SCPX), with a total cost of $ 4.9 billion, covers the construction of a new pipeline to pass through the territory of the Republic of Azerbaijan to Georgia and two compressor stations in the Republic of Georgia. This project has been implemented since 2013. The pipeline will connect to TANAP on the Georgian-Turkish border, which will serve the delivery of Azerbaijani gas to Turkey and from there to Europe. As a result of the expansion, the SCPX capacity will reach 23.4 billion cubic meters. As a result, gas transportation will increase by 3 times. Its length is 424 km in Azerbaijan, 61 km in Georgia and connection to TANAP 2 km.

On March 17, 2015, with the participation of Presidents of Azerbaijan, Turkey and Georgia, the foundation of TANAP in Turkey was laid. Trans Anadolu (TANAP) project, which is part of the Southern Gas Corridor with a total cost of $ 40 billion, is a new addition to the natural gas market of the Republic of Azerbaijan. The project will transform your republic into an international gas exporter, which is still known as an oil exporter in global markets. This project envisages the transportation of Azeri natural gas to Turkey via Turkey via the pipeline from Turkey to Europe (Bulgaria and Greece). This project is one of the key elements of the Shahdeniz-2 field development.

The TANAP project, worth $ 7 billion, is expected to be completed in five years and will be completed in four stages.

Under the agreement, the first stage of the project in 2018 had to end. On 12 June 2018, the opening ceremony of the TANAP was held in Eskisehir, Turkey. Turkish President R.T.Erdogan, President of the Republic of Azerbaijan I.Aliyev, heads of state, energy ministers and heads of energy companies took part in the ceremony.

The second phase of the agreement is expected to take place in 2020. In 2020, the capacity of the pipeline will be 16 billion cubic meters per year, and 10 billion cubic meters of gas will be sold to Europe and 6 billion cubic meters of gas will be sold to Turkey. The third phase of the agreement is expected to take place in 2023, and the fourth stage in 2026. In 2023, the capacity of the pipeline is expected to reach 23 billion cubic meters per year, up to 31 billion cubic meters in 2026. In this project, Turkey has 20% share with TPAO and BOTAS and 80% with SOCAR.

Official Ankara considers TANAP as a priority project. In the future, TANAP will enable to transport not only Azerbaijani gas, but also the Middle East gas to Europe and Turkey.

The opening ceremony of the Southern Gas Corridor was held in Sangachal on May 29, 2018 and was attended by President of the Republic of Azerbaijan Ilham Aliyev. In his speech, Aliyev pointed out that the TANAP project is a very important part of the Southern Gas Corridor and that currently the country's proven gas reserves are equal to 2.6 trillion cubic meters.

Today the Republic of Azerbaijan is also contributing to the implementation of the Southern Gas Corridor project. Thus, the Southern Gas Corridor is a project that will generate additional benefits to the republic and strengthen its long-term development.

Thus, the positions of Azerbaijan and European countries on the transportation of Azerbaijani gas in different ways coincide, and there are already projects in this direction. All these projects envisage the export of "blue fuel" to the global markets in Azerbaijan. This will make Azerbaijan a reliable and important partner in global gas

markets.

3.3. Directions for improving the state policy in attracting foreign capital to the oil and gas industry.

Regular monitoring of the global gas market in order to ensure high prices, sales and supplies is an important condition for the formation of investments for the development of the gas industry in Azerbaijan, the realization of the economic and geopolitical interests of the country. The effectiveness of such regulation will depend on the resource, technology and economic factors that determine the development of the gas industry, the potential for coordinating production and financial policies with major gas producers and exporting countries.

In the early 1990s, after the independence of the Republic of Azerbaijan, the country had to use the country's rich oil and gas resources in order to be able to find a place in the global market. Thus, oil revenues were the only means to bring the country's economy out of the crisis, providing stability in the republic. However, the country does not have the power to exploit its oilfields because at the time when the existing technologies and technologies in the oil and gas industry of the republic did not meet modern requirements and at the same time demanded large amounts of oil and gas exploitation. The best way to address these lingering problems was to attract foreign capital into the country's oil and gas industry.

The rich oil and gas resources of the Caspian Sea in Azerbaijan were not only interested in Russia, Iran, Turkey and Ukraine, but also Britain, the Netherlands, Poland, China, Japan and many other western and eastern states consuming only a quarter of the world's energy.

From this point of view, an agreement was signed by the great leader Heydar Aliyev on September 20, 1994, in the context of a $ 7.4 billion joint investment of oil in the Azeri, Chirag and Gunashli fields of the Caspian Sea. The agreement envisages cooperation with eight world countries (USA, UK, Turkey, Russia, Norway, Saudi

Arabia, Japan and the Republic of Azerbaijan) and 13 largest oil companies ("SOCAR", BP, McDermott, LUKOIL, , "Exxon", "Pennzoil", "Turkish Petroleum", "Ramco", "Itochu", "Delta" "Amoco"). This contract, worth $ 14 billion, includes 80% of the investment (BP (17.12%), Statoil (8.56%), Amaco (17.01%), Unique (11.12%), Pennzoil (9.81%), Lukoil (10.0%), McDermott (2.45%), Turkish Petroleum (1.75%) and Ramko (2.08% i)) foreign firms.

Over 30 years, total oil revenues will amount to $ 157.6 billion, and our country's revenues will be $ 81.7 billion. In 1995-1996, the Oil Consortium allocated $ 700 million for the implementation of this agreement.

The first oil was produced in 1997, three years after the signing of the "Escape Contradictory".

Since 1999, oil exports have been started, resulting in large amounts of funds to the republic. Thus, the economy of the country attracted more foreign investors.

After this agreement, the number of companies wishing to participate in the country's energy fields has increased. From 1994 to 1997, Azerbaijan attracted 10 foreign contracts with 33 oil companies (15 countries), and nine foreign direct investment contracts in 1998 and 1999. In the period from 1995 to 1999, 3944.5 million manat and $ 4866 million were attracted to the country's economy. In the years 2000-2017, $ 120.6 billion was invested in the country's economy.

In general, we should use the following figures to track the dynamics of foreign investment attracted to the national economy in 1995 – 2017:

As shown in the table, $ 125.5 billion in foreign investment was attracted to the country's economy in 1995-2017. The largest investment in the country's economy was recorded in manats in 2016 (16216.1 million manat), in dollars in 2014 ($ 11697.7 million). This situation was primarily related to the devaluation of manat in 2015. In 2012 - 2017 foreign investments in the country economy were attracted to 68460 million manat or $ 62553.3 million.

In 2000–2017, $ 29.2 billion, or 24.2% of all foreign investment attracted to the

country, were financial loans, $ 77.8 billion, or 64.5% were direct investment, $ 217.7 million or 0.2% were oil bonuses, $ 13.4 billion, or 1.1% other investments.

Table 3.5 Dynamics of foreign investment attracted to the economy in 1995 - 2017

Years	Foreign investments	
	Million of manat	Millions of dollars
1995	331,4	375,1
1996	533,1	620,5
1997	1042,4	1307,3
1998	1139,0	1472,0
1999	898,6	1091,1
2000	829,5	927,0
2001	1016,8	1091,8
2002	2172,8	2234,9
2003	3311,0	3371,0
2004	4496,3	4575,5
2005	4 628.5	4 893.2
2006	4 514.2	5 052.8
2007	5 727.2	6 674.3
2008	5 625.8	6 847.4
2009	4 395.1	5 468.6
2010	6 619.7	8 247.8
2011	6849,8	8673,9
2012	8102,7	10314,0
2013	8269,3	10540,9
2014	9175,7	11697,7
2015	10998,9	10719,1
2016	16216,1	10161,1
2017	15697,3	9120,5

Source: According to the data of Azerbaijan's statistical indicators, SSC, 2018, it has been compiled by the representative. https://www.stat.gov.az/ (15.03.2019)

As it is seen from the table, the volume of foreign investments attracted to the country's economy has decreased since 2014. Compared to the previous year, $ 978.6 million in 2015, $ 558 million in 2016, and $ 1040.6 million in 2017 decreased. Considering the foreign investment attracted to the country's economy, the share of direct investment in total foreign investment was high all year round. For example, in 2016, a total of $ 10161.1 million of foreign investments was attracted to the country's economy by 21.6 percent of financial loans, 72.1 percent of direct investments, and 6.3 percent other investments. In 2016, the volume of oil bonuses within the foreign investment amounted to $ 100,000. In 2017, 19.6% of foreign investment totaled $

9120.5 million in financial credits, 62.6% - direct investments and 17.8% - other investments. In 2017, the volume of oil bonuses within foreign investment amounted to $ 1.4 million.

Table 3.6 the structure of foreign investment attracted to the country's economy in 2005-2017 (million US dollars)

Years	2005	2010	2014	2015	2016	2017
Total foreign investment:	4893,2	8247,8	11697,7	10719,1	10161,1	9120,5
Financial Loans	698,4	3405,9	1880,6	2210,2	2197,8	1783,3
Direct Investments	4030,4	3614,9	8049,2	7483,1	7323,6	5713,8
Oil bonus	1,0	2,0	17,0	2,0	0,1	1,4
Other Investments	163,4	1225,0	1750,9	1023,8	639,6	1622,0

Source: According to the data of Azerbaijan's statistical indicators, SSC, 2018, it has been compiled by the representative. https://www.stat.gov.az/ (15.03.2019)

At present, SOCAR successfully represents the republic, based on the production sharing agreement between 25 companies in 15 countries. Today, SOCAR is a transnational company that meets international standards and carries out large-scale projects beyond its borders with technical and economic capabilities.

Most of the direct investments attracted to the country's economy are directed to the oil and gas sector. In 1995-2013, about $ 51.6 billion was invested in the oil and gas sector of the country and $ 62.7 billion in 2000-2017.

The share of direct investment and financial loans in the structure of foreign investment attracted to the country's economy in 2017 has decreased, and the share of other investments has increased. (Appendix 4, page 89(Figure 3.2 and 3.3))

The composition of direct investment attracted to the country's economy in 2000-2017 has been as follows:

As it is seen from the table, the specific weight of the oil and gas sector was high in the structure of direct investments attracted to the economy in 2000 - 2017. For example, the specific weight of the oil and gas sector in the structure of direct investments attracted to the economy in 2017 amounted to 85.8%.

In the study of direct foreign investments attracted to the oil and gas sector, it is

of particular importance to study the structure of foreign and joint venture enterprises in the country and to invest in fixed capital on IFI. According to the official information provided by the Republican ConEC, 551 units in Azerbaijan's economy in 2000, 1091 units in 2010, 1235 units in 2015, 1424 units in full and joint foreign investment in 2017. In 2017, 37% (528 units) of these enterprises were trade: repair of vehicles, 19.0% (271 units) in the industry including the oil and gas industry, 10.6% (151 units) occupational, scientific, technical activities, 9.7% (138 units) in construction, 5.2% (74 units) in transport and warehousing, 2.9% (41 units) information and communication, 2.1% (30 units) agriculture, fishing, 2.9% (41 units) worked in the accommodation of tourists and public catering. However, official statistical data on the country affiliation of such enterprises operating in the country are not provided.

Table 3.7 Composition of direct investment attracted to the country's economy in 2000-2017, ($ million)

Years	Oil and gas sector	Non-oil sector
2000	546,1	118,0
2001	820,5	79,3
2002	1966,3	45,6
2003	2972,4	45,4
2004	4088,1	104,2
2005	3799,9	230,5
2006	3422,3	368,4
2007	4003,3	439,1
2008	3350,7	494,1
2009	2412,7	624,4
2010	2955,3	659,6
2011	3407,8	886,0
2012	4287,8	1094,0
2013	4935,2	1041,0
2014	6730,7	1318,5
2015	6622,7	860,4
2016	5617,4	1706,2
2017	4900,8	813,0

Source: According to the data of Azerbaijan's statistical indicators, SSC, 2018, it has been compiled by the representative. https://www.stat.gov.az/ (18.03.2019)

According to official data, 8.7 billion manat of total foreign investments in the economy of the country in 2017 totaled 6.3 billion manat (72.6%) of the total foreign

investment (mainly oil and gas), 2.4 billion manat (17.4%) falls.

In 2015-2017, 24.8 billion manat directed to the main capital of the country, 75 percent of foreign investments or 18.6 billion manat fell to mining industry (mainly oil and gas).

At present our state is considering the future activity of the Azeri-Chirag-Guneshli oil field and tries to reach agreement with foreign investors to extend this project. Because the Azeri-Chirag-Gunashli oil field has large volumes of untreated oil. Development of Shah Deniz-2 gas field is successfully implemented. Today, our state is engaged in the implementation of the Southern Gas Corridor, the first in Europe, in infrastructure projects. As a result of the implementation of the Southern Gas Corridor, new projects have been launched - "Big Absheron" project. This gas field has approximately 350 billion cubic meters of gas and is expected to be produced after 1-2 years. In parallel with this project, the project is "Well-wet" and "Umid-Babek" projects. Production is expected to start in the next few years on the project "Watershed" and "Umid-Babek". Therefore, our country holds talks with foreign investors to maintain a long-term production level in the country. However, as the President said, "If no Azerbaijani government invested in the implementation of these projects, no foreign investor would invest." Thus, in order to attract foreign capital to the oil and gas industry, the Azerbaijani state should first of all invest in these projects. For this purpose our republic has a strong political will and financial resources.

Signing of large-scale contracts in the republic proves the growing interest of our country in the world's largest transnational corporations. Establishment of branch offices of the world's largest transnational corporations in our country is a direct flow of foreign investments.

According to official data, the volume of foreign capital envisaged for the exploitation of oil and gas fields in Azerbaijan and the specific weight of the Republic of Azerbaijan in these projects are characterized by the following figures:

Table 3.8 the volume of foreign capital envisaged by the exploitation of oil and gas fields in the Republic of Azerbaijan

Chamber name	Investment ($ billion)	Specific weight of the Republic of Azerbaijan (%)	Oil extraction (million tonnes)
"Günəşli"	1,7 -2,0	7,5	80- 150
"Azəri", "Çiraq"	12,0	10	600
"Sahdəniz"	1,5 – 2,0	10	100-150
"Qarabag"	4,0	10	100
"Dan Ulduzu- Əşrəfi"	1,5 – 2,0	25	100
"Yalama"(D-22)	3,0-3,5	50	150 – 300
"Lənkəran – dəniz" "Talış dəniz"	1,5 – 2,0	40	100
"Abşeron"	5,0	50	75 – 100
"Oguz"	2,0	50	90 – 120
"Naxçıvan"(Past D3)	2,0	50	75
"Kürdaşı"	0,3 – 0,5	20	30 – 60
"İnam"	1,0-1,5	50	50-80
"Güney-Qərbi Qobustan"	3,0-4,0	50	150-250
"Muradxanlı"	9,0	40	150-300
"Kürsəngi", "Qarabaglı"	2,0	50	100
"Alov", "Araz", "Şərq"	0,5-0,8	50	60-90
"Zəfər", "Məşəl"	2,0	50	100-120
"Atəşgah"	2,0	50	120-150
"Lerik- dəniz", "Savalan", "Padar"	0,8-1,0	20	50-100

Source: According to the data of the A.Şəkərəliyev, Q.Şəkərəliyev, "Azərbaycan iqtisadiyyatı: reaallıqlar və perspektivlər", Bakı, 2016, it has been compiled by the representative (20.03.2019)

Thus, a large amount of foreign investment was attracted to the exploitation of our country's oil reserves in the "New Oil Strategy". The "Contract of the Century" created favorable conditions and favorable conditions for expansion of relations between Azerbaijan and other countries of the world, recognized as an independent state, integration with the EU, strategic partnership and friendship relations with the great powers of the world. Following this agreement, investment in the oil and gas sector in the Republic of Azerbaijan, the Shahdeniz field, oil and gas pipelines were constructed, as a result of which the Southern Gas Corridor was implemented in the country today. As a result of implementation of transport projects in the country, the

Baku-Tbilisi-Kars corridor took place. The Republic of Azerbaijan has invested about $ 1 billion in this project. From this point of view, the "Contract of the Century" has a unique place in the development of the republic. As a result of successful implementation of this contract, oil products are channeled to the non-oil sector, human capital, infrastructure projects and our country is developing. All these works are the result of our state's well thought out policy.

3.4. Factors of increasing the efficiency of export of Azerbaijan natural gas.

The implementation of projects envisaging the entry of Azerbaijan's gas resources to the global markets has never been easy. However, the dynamic settlement, geo-location position of our country located on the seaside of the Caspian Sea and so on. It made possible the implementation of large gas projects connecting Asia and Europe. The main reason for the recognition of Azerbaijan as a gas supplier in the region was due to the launch of the Shahdeniz gas condensate field since 2006.

Natural gas exports of the Azerbaijan Republic in 2009 - 2017 are characterized by the following figures:

Table 3.9 Natural gas export from the Republic of Azerbaijan in 2009 – 2017

Years	Quantity (million m^3)	Amount, thousand US dollars
2009	671 ,7	125 321,9
2010	1 792,9	288 545,4
2011	2 885,8	574 551,6
2012	2 714,0	648 717,2
2013	3 035,1	701 980,2
2014	1 825,7	304 684,0
2015	8 432,7	1 505 023,9
2016	8 396,0	1 096 683,2
2017	7 543,5	1 193 712,4

Source: According to the data of Foreign Trade of Azerbaijan, SSC, 2018, it has been compiled by the representative. https://www.stat.gov.az/ (21.03.2019)

As it is seen from the table, in 2009 - 2017 the Republic of Azerbaijan exported 37297.4 million cubic meters of natural gas. The volume of natural gas exports in 2009 was 671.7 million m^3 ($ 125321.9 thousand), in 2010 it was 1792.9 million m^3 (288545.4 thousand dollars), in 2011 - 2885.8 million m3 (57,4551.6 thousand

dollars), 2 714.0 million m^3 ($ 648717.2 thousand) in 2012, 3035.1 million m^3 (701980.2 thousand dollars) in 2013, In 2014 to 1825.7 million m3 (304684.0 thousand dollars), 832.7 million m^3 (1505023.9 thousand dollars) in 2015, 8396.0 million m^3 in 2016 1096 683,2 thousand dollars), in 2017 it was 7543,5 million m^3 (1193712,4 thousand dollars).

Currently, Russia, Iran, Turkey and Georgia, Greece is among the buyers of Azerbaijani gas.

Natural gas exports of the Republic of Azerbaijan to countries in 2009 - 2017 are characterized by the following figures:

Table 3.10 Natural gas export from the Republic of Azerbaijan for the years 2009 – 2017

Years	Countries	Quantity (million m^3)	Amount, thousand US dollars
2009	**Georgia**	671,7	125 321,9
2010	**Russian Federation**	759,4	188 397,0
	Islamic Republic of Iran	644,4	26 302,9
	Georgia	389,1	73 845,5
2011	**Russian Federation**	1 430,9	412 649,7
	İran İslam Respublikası	798,0	36 005,5
	Georgia	656,9	125 896,4
2012	**Russian Federation**	1 416,1	454 845,2
	Islamic Republic of Iran	403,8	18 608,7
	Georgia	894,1	175 263,3
2013	**Russian Federation**	1 516,9	470 419,5
	Georgia	1 101,9	212 345,0
	Islamic Republic of Iran	416,3	19 215,7
2014	**Georgia**	1 246,6	240 952,7
	Islamic Republic of Iran	389,2	17 970,4
	Russian Federation	189,9	45 760,9
2015	**Turkey**	5 947,7	1 173 102,7
	Georgia	2 163,0	320 314,8
	Islamic Republic of Iran	322,0	11 606,4
2016	**Turkey**	6 245,7	840 735,5
	Georgia	1 985,9	251 200,6
	Islamic Republic of Iran	164,4	4 747,1
2017	**Turkey**	5 708,1	955 355,7
	Georgia	1 835,4	238 356,7

Source: According to the data of Azerbaijan's statistical indicators, SSC, 2018, it has been compiled by the representative. https://www.stat.gov.az/ (23.03.2019)

As can be seen from the table, in 2010 gas exports of the Azerbaijan Republic

increased by 2.7 times compared with the previous year, increased by 1.6 times in 2011, decreased by 6% in 2012, and increased by 11.8 in 2013%, in 2014, it decreased by 39.8%, in 2015, it increased to 4.6 times, in 2016, by 0.4% and in 2017, by 10.2%, decreased.

In 2009 - 2017 natural gas has been exported to Azerbaijan, Georgia, Iran, Russia and Turkey.

If in 2009 only 671.7 million cubic meters of gas (or 125,321.9 thousand US dollars) were exported to Georgia, then in 2010 to the Russian Federation - 759.4 million cubic meters (or 188,397.0 thousand US dollars), to the Islamic Republic of Iran - 644.4 million cubic meters (or 26,302.9 thousand US dollars), to Georgia - 389.1 million cubic meters (or 73845.5 thousand US dollars) were exported.

In 2011, 1430.9 million cubic meters (or 412,649.7 thousand US dollars) were exported to the Russian Federation, 798.0 million cubic meters to the Islamic Republic of Iran (or 36,005.5 thousand US dollars), to Georgia – 656.9 million cubic meters of meters (or 125,896.4 thousand US dollars). In 2012, 1,416.1 million cubic meters (or 454,845.2 thousand US dollars) were exported to the Russian Federation, 403.8 million cubic meters to the Islamic Republic of Iran (or 18,608.7 thousand US dollars), to Georgia - 894 , 1 million cubic meters of meters (or 175,263.3 thousand US dollars). In 2013, 1,516.9 million cubic meters (or 470,419.5 thousand US dollars) were exported to the Russian Federation, 416.3 million cubic meters to the Islamic Republic of Iran (or 19,215.7 thousand US dollars), to Georgia - 1101 , 9 million cubic meters of meters (or 212,345.0 thousand US dollars). In 2014, 189.9 million cubic meters (or 45,760.9 thousand US dollars) were exported to the Russian Federation, 389.2 million cubic meters to the Islamic Republic of Iran (or 17,970.4 thousand US dollars), to Georgia - 1246 , 6 million cubic meters of meters (or 240,952.7 thousand US dollars). In 2015, 5,947.7 million cubic meters (or 1,173,102.7 thousand US dollars) were exported to Turkey, 322.0 million cubic meters to the Islamic Republic of Iran (or 11,606.4 thousand US dollars), to Georgia -

2,163.0 million cubic meters of meters (or 320,314.8 thousand US dollars). In 2016, 6,245.7 million cubic meters (or 840,735.5 thousand US dollars) were exported to Turkey, 164.4 million cubic meters to the Islamic Republic of Iran (or 4,747.1 thousand US dollars), to Georgia - 1 985.9 million cubic meters (or 251,200.6 thousand US dollars).

In 2017, 5,708.1 million cubic meters (or 955,355.7 thousand US dollars) were exported to Turkey, to Georgia - 1,835.4 million cubic meters (or 238,356.7 thousand US dollars).

According to the State Customs Committee of the Republic of Azerbaijan, 6184,175,000 cubic meters of natural gas was exported from the Republic of Azerbaijan during the first ten months of 2018 and the cost of exported natural gas amounted to $ 1,209,621,000.

Export of Azerbaijani gas to Greece began in November 2007 with the transportation of Azerbaijani gas to Turkey via Greece. Greece did not buy Azerbaijani gas on the basis of a direct purchase and sale agreement, but as a result of the re-export of gas to Azerbaijan by Turkey through the BOTAS pipeline to Greece.

However, because the gas delivered to the European market belongs to our country, Greece is a potential gas exporter. Export of Azerbaijani gas to Greece was possible thanks to transit cooperation with Turkey. This does not mean direct gas exchange between Azerbaijan and Greece.

On April 5, 2011, a Memorandum of Understanding was signed between the Greek State Gas Company DEPA and SOCAR representatives. According to the agreement, the Baku-Tbilisi-Erzurum pipeline will be exported to Greece under the bilateral Azerbaijani gas purchase and sale agreement. After signing this contract, Greece will be the first European country to export gas directly to Azerbaijan, and Azerbaijan will gain access to EU markets. Thus, Azerbaijan will sell gas to itself, which will be the first Azerbaijani gas to be transported directly to Europe. According to the agreement, Greece, for the first time, acquired about 2 billion cubic meters of gas per year and

then the volume of gas will be increased more than twice.

The Greek government expects the Shahdeniz-2 field to come to work, and with the purchase of more gas, it seeks to solve most of its demand through Azerbaijani gas.

Azerbaijan's direct gas export to Greece will lead to the expansion of transit corridors in the region. The merger of the Baku-Tbilisi-Erzurum pipeline with the Turkish-Greek pipeline will increase the profitability of the largest energy route in the region. The Azerbaijan-Turkey-Greece trilateral cooperation will take a broad geo-scale. According to the agreement signed between Turkey and Greece, it was decided to extend the Turkish-Greek pipeline from Ankara to Komotini. This means that the geography of the Baku-Tbilisi-Erzurum pipeline will expand further. As the Baku-Tbilisi-Erzurum pipeline connects the Greek-Balkan Peninsular to the gas line, the largest gas network in Europe will be formed. This gas route system is designed to transport 20 billion cubic meters of gas annually. The Republic of Azerbaijan will export only 15 billion cubic meters of gas annually from the Shahdeniz field. The volume of gas produced from Inam, Alov, Umid and Bahar fields will allow our country to export more than 20-30 billion cubic meters of gas annually.

At the bottom of the Adriatic Sea at the end of 2013 it is planned to build a pipeline linking Greece with Italy, which will be a continuation of the Turkish-Greek pipeline. Thus, Azerbaijan's gas will be transported via Turkey, Greece to Italy and then to various European countries.

Thus, by exporting Azerbaijani gas, Greece will play the role of a transit country in ensuring the energy security of its own state and exporting gas to European markets at a time. According to President Ilham Aliyev, the strengthening of energy cooperation between the Greek state and the Republic of Azerbaijan will lead to new relations between the EU countries.

Countries such as Romania, Slovenia, Bulgaria, even Jordan and Syria will benefit from the Azerbaijani-Turkish-Greek gas pipeline. In general, it is planned to

transport gas from Central Asia, the Middle East and the Caspian Sea to Europe via Greece.

According to experts, the gas extracted from the Shahdeniz-3 field will generate an additional 15 billion cubic meters of gas annually in 2030-2035. Our country also has the opportunity to export gas from other fields, except the Shahdeniz field. After 2021-2022, 5-7 billion cubic meters of Umid and Babek fields, 5 billion cubic meters of Absheron field and 4-5 billion cubic meters of Azeri-Chirag-Guneshli fields will be exported. According to the estimates, 50-55 billion cubic meters of gas will be transported through the territory of the Republic of Azerbaijan in 2020-2025. This gaseous petrol to be transported not exclusively our gas saves yet additionally to the travel of gas from Kazakhstan and Turkmenistan. It is also important to emphasize that negotiations between Turkmenistan and Azerbaijan are going on for the construction of the Trans-Caspian gas pipeline.

CONCLUSION

In recent years, the role and importance of natural gas has been steadily increasing as energy sources in the global economy have high energy efficiency as a source of energy, as raw materials for the industry, and more efficient for oil and coal compared to coal. According to experts, this trend will continue in the future due to the decline in technology for liquefying natural gas and laying new gas pipelines.

The level of natural gas production is one of the key factors affecting the world's energy value. The volume of gas production in the world in 2011 - 2017 has increased year by year, despite its slight decrease in 2016. Currently, the world produces nearly 3 trillion cubic meters of gas per year. Approximately 74% of this gas is produced in the United States, Russia, Iran, Canada, Qatar, China and Norway. The gas production situation in these countries has a significant impact on the entire world gas market.

Natural gas is cheaper than oil, and its reserves are much greater worldwide. In 2017, there are 193.1 trillion cubic meters of natural gas reserves in the world, which is enough to secure the world for more than 52 years. Most natural gas reserves located in the Middle East countries which are 78.8 trillion cubic meters, but the European countries have 3 cubic meters of natural gas.

Most of the natural gas used in the North American region. The North American region used 818.2 million tons in 2016 and 810.7 million tons of oil equivalents in 2017. The volume of natural gas use in the North American region has dropped by 0.9% compared to 2016.

In 2017, 25.7% of the world's natural gas use is in the North American region, 4.7% in the South and Central America region, 14.5% in the European region, 15.6% in the CIS, 6% in the Middle East region, 3.9% in Africa region, and 21% in Asia-Pacific region.

The global gas market is a dynamically developing subsystem of the global economy. At the same time, the single global gas market has not been formed. The key obstacles to the formation of the global gas market are high gas transportation and

the high share of transport infrastructure in natural gas prices. For example, the share of main and distribution networks in the price of natural gas from Norway to Western Europe is 70% of all costs.

At present, there are several major regional gas markets in the world, including gas markets in America, Europe, Africa, Asia-Pacific, Middle East, CIS and Baltic countries.

The key players in the natural gas market are the world's largest oil and gas transnational corporations.

The largest oil and gas companies operating in the world's gas sector in 2017 are Gazprom (Russia), Exxon Mobile Corp (USA), Petro China (Royal), Royal Dutch Shell (Netherlands-Britain), BP (UK), Chevron (USA), Total (France), Statoil (Norway), ConocoPhillips (USA) and Eni (Italy) .

Five of the world's top 25 oil and gas companies, Valero Energy Corp., according to the 2017 rating of the Global Platts Top 250 agency, Exxon Mobile Corp. , "Enter prize Products Partners" LP, "Next Era" Energy Inc. and "Phillips 66" owned by Americas.

Eight of the world's 25 largest oil and gas companies, Reliance Industries, Korea Electric Power Corp., China Petroleum & Chemical Corp., Indian Oil Corp. LTD, "Oil & Natural Gas" Corp.LTD, "PTT" Plc, "China Shenhua" Energy Co. Ltd., "SK Innovation" Co. Ltd companies have been owned by Asia-Pacific Rim.

Of the top 25 oil and gas companies in the world, 12 are Gazprom, E.ON SE, Lukoil, Total, SA, PJSC Transfert, Centrica plc, SSE Plc, Iberdrola, SA, PJSC Rosneft Oil Co., Royal Dutch Shell plc, Enel Spa, Electricite de France SA belonged to the EMEA region.

The gas industry is one of the leading branches of the Azerbaijani economy. Gas, as the cheapest and cleanest fuel type, plays an important role in the formation of the heat and energy system of the Republic of Azerbaijan.

Since 1990, Azerbaijan has seen a significant drop in the country's gas industry.

In comparison with the previous year, natural gas production in Azerbaijan decreased by 13.1% in 1991 and by 8.7% in 1992. After the independence of the Republic of Azerbaijan, the country's gas industry has begun to develop again as a result of the economic policy implemented by the country's President H. Aliyev in the country, successful reforms, financial stability and so on.

At present Azerenergy JSC is the largest gas user in our republic. Gas production per capita in 2011-2017 was about 1914.4 cubic meters on average.

The Shah Deniz gas field, discovered in 1999 in the development of the gas industry in the Republic of Azerbaijan, has played a special role. This gas field is one of the largest gas fields in the country with one trillion cubic meters of gas in the collector. The Shah Deniz-1 development was achieved in seven years, and in November 2006, gas was extracted from the production well for the first time at a production platform, which was installed on the agreement field.

The gas extracted from the field was transported to Georgia via Baku-Tbilisi-Erzurum pipeline in February 2007 and to Turkey in July by the South Caucasus Pipeline. So far, about 280 million cubic meters of gas has been extracted from this field and since 2007, it supplies gas to Azerbaijan, Turkey and Georgia.

Final investment decision on development of Shah Deniz-2 was adopted in Baku in 2013. The Shah Deniz-2 field is estimated at $ 28 billion and is expected to produce 400 billion cubic meters of gas.

At present, SOCAR explores the possibilities of the third phase of the development of the Shah Deniz field with a capacity of 1.2 trillion cubic meters. According to experts, the demand for "Shahdeniz" -3 market must be strong and there must be a strong infrastructure for gas production. So, the Shah Deniz-3 project will be a major project from the Shahdeniz-2 project, and its development will take place after 2030.

The achievements of the Republic of Azerbaijan in the field of discovery of gas resources do not end with the Shah Deniz field. The first gas field discovered by

SOCAR during its independence is the "Umid" gas field located in the Caspian Sea. According to preliminary estimates, the hydrocarbon reserves of this gas field are estimated at 40 million tons of condensate and 200 billion cubic meters of gas. It is expected that the field will generate $ 30-40 billion in the state budget.

At the same time, 80 million tonnes of condensate and 400 billion cubic meters of gas resources of the Babek gas field, 45 million tonnes of condensate of the Absheron gas field and 350 billion cubic meters of gas, 40 million tonnes of condensate of the Nakhchivan prospective gas field and 300 billion cube gas, and gas reserves of Azeri-Chirag-Guneshli fields are 360 billion cubic meters of gas, we can see that the country's gas reserves are quite large. All this creates a basis for our republic to seek a way out of global markets as a major exporter of gas.

In recent years, the discovery of new large deposits in the country has allowed Azerbaijan to supply gas to Azerbaijan and export its own gas to Europe. The increase in the volume of extracted gas has raised the question of which route the Caspian gas to Europe will be. Several projects have been proposed to transport Azerbaijani gas to Europe.

These various projects, bringing Azerbaijani gas to Europe, were only discussed for 10 years, although there were no results. No one took the first step to invest funds into these projects. Having seen this, the Republic of Azerbaijan signed the TANAP project with Turkey in 2012. Then, the Shah Deniz-2 project, and then the TAP project, was launched.

On September 20, 2014, a ceremony dedicated to the 20th anniversary of the "Contract of the Century" and the foundation of the Southern Gas Corridor (ACG) was held in Baku. At the ceremony, the project on the export of Azerbaijani gas to Europe via Georgia and Turkey was laid. .The project will mainly be delivered through pipelines from Azerbaijan, Georgia, Turkey, Bulgaria, Albania, Greece and the Adriatic Sea to Italy.

At present, the positions of Azerbaijan and European countries on the

transportation of Azerbaijani gas in different ways coincide, and there are already projects in this direction. All these projects envisage the export of "blue fuel" to the global markets in Azerbaijan.

After the "Contract of the Century", the number of companies wishing to participate in the country's energy fields has increased. From 1994 to 1997, Azerbaijan attracted 10 foreign contracts with 33 oil companies (15 countries), and nine foreign direct investment contracts in 1998 and 1999. In the period from 1995 to 1999, 3944.5 million manat and $ 4866 million were attracted to the country's economy. In the years 2000-2017, $ 120.6 billion was invested in the country's economy. Most of the direct investments attracted to the country's economy are directed to the oil and gas sector. In 1995-2013, about $ 51.6 billion was invested in the oil and gas sector of the country, and $ 62.7 billion in 2000-2017. , The specific weight of the oil and gas sector in the structure of direct investments attracted to the economy in 2017 was 85.8%.

In 2009 - 2017, the Republic of Azerbaijan exported 37297.4 million cubic meters of natural gas. Currently, Russia, Iran, Turkey and Georgia, Greece are among the buyers of Azerbaijani gas.

According to experts, the gas extracted from the Shahdeniz-3 field will generate an additional 15 billion cubic meters of gas annually in 2030-2035. Our country also has the opportunity to export gas from other fields, except the Shahdeniz field. After 2021-2022, 5-7 billion cubic meters of Umid and Babek fields, 5 billion cubic meters of Absheron field and 4-5 billion cubic meters of Azeri-Chirag-Guneshli fields will be exported.

REFERENCIES

Azerbaijan

1. Azərbaycanın statistik göstəriciləri, DSK, 2018
2. Azərbaycanın energetikası , DSK, 2018
3. Azərbaycanın xarici ticarəti, DSK, 2018
4. A.Ə. Əliyev, A.Ş. Şəkərəliyev, İ.Ş.Dadaşov "Dünya iqtisadiyyatı: müasir dövrün problemləri", Bakı, 2003
5. A. S. İsayev "Neft və qaz sənayesinin iqtisadiyyatı" Bakı, 2008
6. A.Şəkərəliyev, Q. Şəkərəliyev, "Azərbaycan iqtisadiyyatı: reaallıqlar və perspektivlər", Bakı, 2016
7. A.M.Quliyev, F.N. Məmmədov , K.M.Nəbiyev, X.M.Nəbiyev, "Enerjidaşıyıcılar: imkanlar, perspektivlər", Bakı, 2006
8. Hacızadə E.M. "Azərbaycanın təbii qaz potensiali: reallıqlar və virtual cizgilər", Bakı, 2001.
9. URL: http://www.stat.gov.az/

Russian

1. А.Ф. Джинджолия, "Мировая экономика и международные экономические отношения", учеб. пос.М., 2013
2. Годовой отчет ПАО «Газпром» за 2017 год
3. В.М. Кудров, Мировая экономика: социально-экономические модели развития, учебное пособие М. ИНФРА-М, 2011
4. В.М. Кудров, Мировая экономика: социально-экономические модели развития, учебное пособие М., ИНФРА-М, 2015
5. Кулбатыров Н. Н. Энергетический аспект евразийской интеграции, Евразийская Экономическая Интеграция. – 2014. – №. 1
6. Кузнецов А. М. Мировой рынок природного газа: современные тенденции и перспективы развития , Вестник МГИМО Университета, 2012. – №. 1
7. Митрофанов В. И. Эконометрическое исследование влияния конъюнктуры мирового финансового рынка на динамику индекса РТС нефти и газа Научно-практический журнал «Экономика, статистика и информатика. Вестник УМО. – 2014. – №. 6
8. Морозов В.С. "Крупнейшие нефтегазовые транснациональные корпорации в отрасли производства сжиженного природного газа", Известия Санкт-Петербургского государственного экономического университета. 2015. № 6
9. Окороков В. Р. "Цели и тенденции развития мирового ТЭК и его последствия для российской энергетики", Вестник Ивановского государственного энергетического университета. – 2014. – №. 1
10. Рыбалкин, В.Е. "Международные экономические отношения", учебник / под ред. В.Е. Рыбалкина – Юнити-Дана, 2012.
11. Пашковская М.В. "Мировая экономика", учебник М.: МФПУ 2012.

English

1. Andrew C. Inkpen, Michael H. Moffett, "The Global Oil & Gaz Industry: Managemant, Strategy and Finance", 2011
2. Charles E. Brown, World energy resources, 2002
3. Subhes C. Bhattacharya; "Energy Economics: concepts, ıssues, markets and governance", 2011.
4. BP Statistical Review of World Energy, June 2018 (electronic resource)
5. Platts 250 Global energy companies rankings 2017. (electronic resource).
6. World energy balances 2017 (electronic resource)
7. URL: http://www.investing.com/

APPENDIX

Appendix 1. Table 1.8 Gas trade in 2016 and 2017

Billion cubic metres	2016				2017			
	Pipeline Imports	LNG imports	Pipeline exports	LNG Exports	Pipeline imports	LNG imports	Pipeline Exports	LNG Exports
US	79,5	2,4	58,6	4,3	80,7	2,2	66,1	17,4
Canada	21,1	0,3	79,5	+	24,0	0,4	80,7	+
Mexico	37,5	5,9	+	-	42,1	6,6	+	-
Trinidad and Tobago	-	-	-	14,3	-	-	-	13,4
Other South Cent. America	16,2	15,6	16,2	6,4	15,4	13,8	15,4	5,8
France	32,2	9,1	-	1,5	33,5	10,8	-	1,0
Germany	95,6	-	9,1	-	94,8	-	7,1	-
Italy	60,5	5,9	-	-	53,8	8,4	43,3	-
Netherlands	36,8	1,3	46,8	0,9	40,9	1,6	109,2	0,8
Norway	+	-	109,4	6,0	+	-	0,1	5,8
Spain	15,5	13,8	0,6	0,2	14,4	16,6	0,6	0,1
Turkey	36,9	7,8	0,6	-	42,8	10,9	10,8	-
United Kingdom	35,2	11,0	9,7	0,6	39,4	7,2	21,6	0,3
Other Europe	94,8	7,9	13,9	1,3	103,7	10,2		0,2
Russian Federation	18,1	-	200,1	14,6	18,9	-	215,4	15,5
Ukraine	10,5	-	-	-	13,3	-	-	-
Other Cis	29,3	-	68,5	-	30,1	-	67,5	-
Qatar	-	-	18,5	107,2	-	-	18,4	103,4
Other Middle East	25,8	13,7	8,0	18,8	22,2	13,0	12,5	19,1
Algeria	-	-	38,1	15,8	-	-	36,4	16,6
Other Africa	8,3	10,7	8,6	30,0	7,6	8,2	8,7	38,9
Australia	6,4	0,1	-	59,2	5,8	-	-	75,9
China	36,0	35,9	-	-	39,4	52,6	-	-
India	-	23,6	-	0,1	-	25,7	-	-
Japon	-	113,6	-	-	-	113,9	-	-
Indonesia	-	-	8,2	22,2	-	-	8,0	21,7
South Korea	-	45,7	-	0,1	-	51,3	-	0,1
Other Asia Pacific	18,1	32,5	20,0	53,4	17,7	40,0	18,8	57,2
Total World	714,4	356,7	714,4	356,7	740,7	393,4	740,7	393,4

Source: According to the data of the BP Statistical Review of World Energy, June 2018, it has been compiled by the representative. https://www.bp.com/ (25.10.2018)

Appendix 2. Table 2.11 the largest 25 transnational oil and gas companies in 2017 in different parts of the world

Company	Region	Return on invested capital, RİOC%	Assets, million dollar	Revenues, million dollar	Profits, million dollar
"Qazprom"	EMEA	7	296840	107217	16696
E.ON SE	EMEA	35	71693	43559	6069
"Reliance İndustries"	Asia/Pacific Rim	7	109641	51218	4638
"Korea Electric Power" Corp.	Asia/Pacific Rim	6	158163	53152	6269
"China Petrolium & Chemical "Corp.	Asia/Pacific Rim	5	220530	284146	6868
"Lukoyl"	EMEA	5	87982	91708	3628
"Indian Oil" Corp. LTD	Asia/Pacific Rim	12	42436	55117	3162
"Valero" Energy Corp.	Americas	8	46173	70166	2286
"Exxon Mobile" Corp.	Americas	4	330314	197518	7840
"Total" SA	EMEA	4	230978	127925	6196
"Oil &Natural Gas" Corp.LTD	Asia/Pacific Rim	7	57427	22051	3180
"PTT" Plc	Asia/Pacific Rim	5	65618	50525	2727
"China Shenhua" Energy Co Ltd	Asia/Pacific Rim	5	84869	26948	3666
"PJSC Transfert"	EMEA	10	48542	14880	4085
"Centrica" plc	EMEA	18	28377	35127	2167
"SSE" plc	EMEA	11	30998	37636	2073
"Enter prise Products Partners" LP	Americas	5	52194	23022	2500
"NextEra " Energy İnc	Americas	5	89993	16155	2912
"İberdrola"SA	EMEA	4	120097	32882	3044
"Phillips 66"	Americas	5	51653	70898	1549
"SK İnnovation" Co Ltd	Asia/Pacific Rim	7	28977	35148	1466
"PJSC Rosneft" Oil Co	EMEA	2	193520	83601	3176
"Royal Dutch Shell"plc	EMEA	2	411275	233591	4575
"Enel" Spa	EMEA	2	175122	77839	2893
"Electricite de France" SA	EMEA	2	316984	80138	2554

Source: According to the data of the Platts 250 Global energy companies' rankings 2017, it has been compiled by the representative. https://top250.platts.com/ (20.01.2019)

Appendix 3. Table 3.3 Natural gas production in the Republic of Azerbaijan in 2003 - 2017, mln m^3

Years	Natural gas - total	including:	
		associated gas	natural gas
2003	5 128	3 170	1 958
2004	4 995	3 051	1 944
2005	5 732	3 855	1 877
2006	9 076	6 727	2 349
commodity	6 080	...	...
2007	16 850	9 593	7 257
commodity	10 832	4 034	6 798
2008	23 399	10 588	12 811
commodity	16 336	3 935	12 401
2009	23 598	12 080	11 518
commodity	16 325	5 220	11 106
2010	26 312	12 370	13 943
commodity	16 673	4 798	11 875
2011	25 728	13 357	12 371
commodity	16 361	4 449	11 912
2012	26 796	13579	13 217
commodity	17 242	4 483	12 759
2013	29 245	13 945	15 300
commodity	17 895	3 294	14 601
2014	29 555	13 945	15 610
commodity	18 827	3 837	14 990
2015	29175	13663	15512
commodity	19236	4341	14895
2016	29331	13952	15379
commodity	18718	3917	14801
2017	28596	13905	14691
commodity	18186	4112	14074

Source: According to the data of the Azerbaijan's energy, SSC, 2018, it has been compiled by the representative. https://www.stat.gov.az/ (08.03.2019)

Appendix 4. Figure 3.2 Structure of foreign investment in the country's economy in 2016, in percent

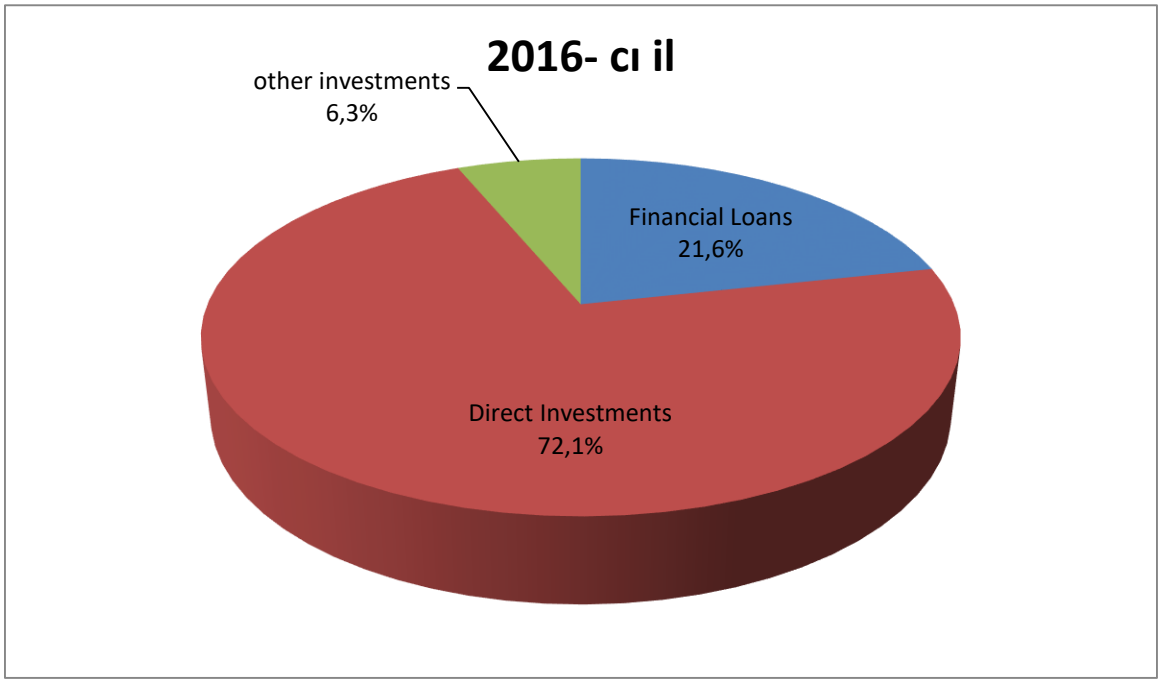
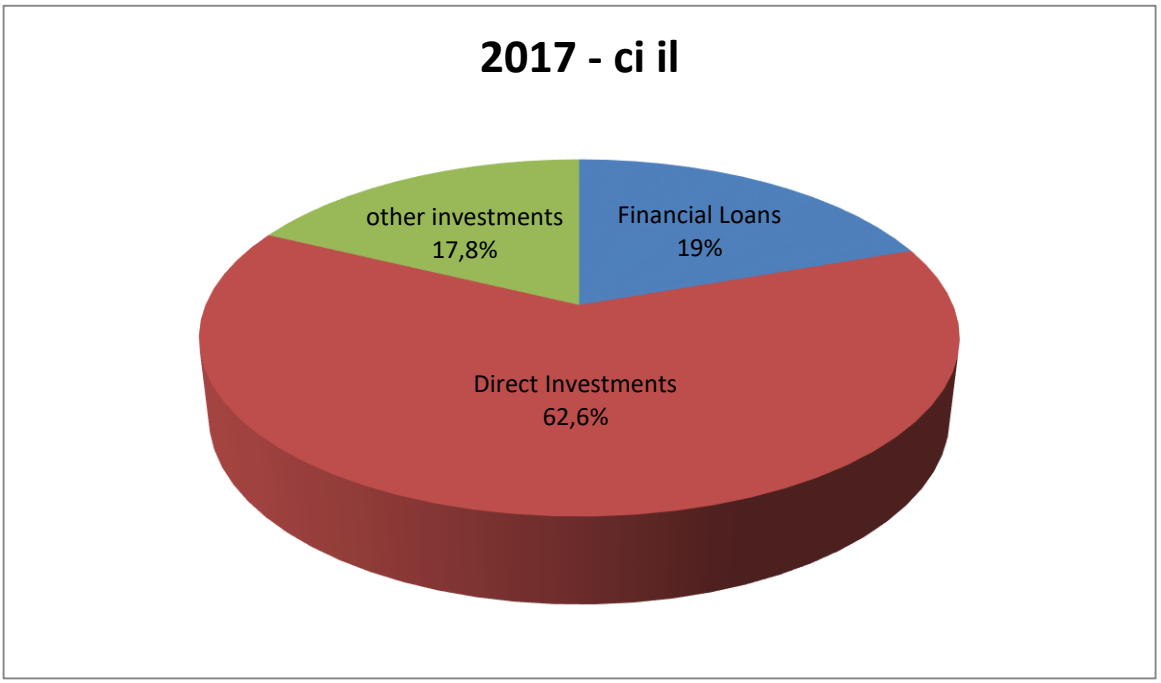


Figure 3.3 Structure of foreign investment in the country's economy in 2017, in percent



Source: According to the data of the State Statistical Committee of Azerbaijan, it has been compiled by the representative. https://www.stat.gov.az/ (16.03.2019)

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