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Kontakt/Contact
ZBW – Leibniz-Informationszentrum Wirtschaft/Leibniz Information Centre for Economics
Düsternbrooker Weg 120
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E-Mail: *rights[at]zbw.eu*
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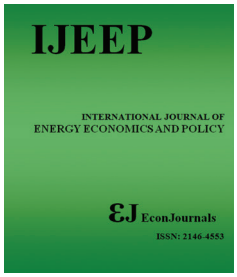

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Regional Features of Energy Resources Extraction in Eastern Siberia and the Far East

Ruslan A. Abramov[1]*, Sergey A. Tronin[2], Alexander V. Brovkin[3], Khin Cho Pak[4]

[1]Department of State and Municipal Management, Plekhanov Russian University of Economics, Moscow, Russian Federation,[2]Department Corporate Finance and Corporate Governance, Financial University under the Government of the Russian Federation, Moscow, Russian Federation, [3]Departments of Accounting, Statistics and Audit, Moscow State Institute of International Relations (MGIMO University), Moscow, Russian Federation, [4]Department of Economics, University South Korea, Yonsei School of Business, Yonsei University, South Korea. *Email: abramovra@rea.ru

ABSTRACT

The role and importance of the energy sector in the development of the Russian economy is currently difficult to overestimate, because among all sectors of the economy it performs a supporting function and is of fundamental importance. Therefore, the main goal of the work is to analyze the characteristics of oil production in Siberia and other regions of Russia. The authors analyzed the global volumes of oil production. It is established that Russia is the top five in oil production. It is established that the production of condensate in the Yamal-Nenets Autonomous District may increase to 21.2 million tons in 2,030, ethane - 13 million tons of propane - 8.6 million tons, butane - 4.9 million tons. Also, the authors analyzed the operational equipment breakdowns.

Keywords: Energy Sector, Economic Policy, Resources, General Model, Refined Products
JEL Classifications: Q400, Q430, Q480

1. INTRODUCTION

In conditions of falling hydrocarbon production in traditional regions, the most urgent task is the formation of new large centers of economic development, including in the field of production, processing and transportation of hydrocarbons, including on the basis of the creation of clusters (Zhiltsov, 2017; Chizhankova et al., 2017). In recent decades, the author of the dissertation individually and together with co-authors prepared a large number of publications on the issues under consideration (Bashmakov, 2009; Henderson and Ferguson, 2014).

One of the modern features of the development of the gas complex in Russia is the change in the lateral and geographical structure of the production of gaseous hydrocarbons, which leads, among other things, to a change in its phase composition (Zelenovskaya, 2012). This is one of the prerequisites for the transition to the innovative trajectory of the industry development (Kryukov, 2016).

Until recently, in Western Siberia - the main gas producing center of Russia - the bulk of gaseous hydrocarbons (more than 90%) was represented by "dry" senoman gas, consisting of almost one methane. Cenomanian gas deposits are located at depths of 900–1200 m from the ground surface (Simon, 2009; Eliseeva et al., 2010; Ponomarev-Stepnoi et al., 2010; Siddi, 2017). In the presence of a powerful system of gas pipelines, it was necessary to prepare such gas for transport near the fields (remove solid mechanical impurities and drain water) and then transport it to the end users - to the European part of Russia and Western Europe (Nekrasov and Sinyak, 2007). However, intensive development of the Cenomanian deposits in such unique fields as Medvezhye, Urengoy, Zapolyarnoye, etc., led to the fact that the reserves of gas are substantially depleted, and production of Cenomanian gas in Nadym-Taz mejdurechie YANAO began to fall (Morales, 2015).

2. MATERIALS AND METHODS

In work methods of the analysis, processing, information comparison were used. This made it possible to identify the specifics of the problems posed. The economic evaluation of the implementation of the development project was carried out in accordance with the guidelines for the valuation of reserves

and resources (Alekseenko, 2008). In this section, the estimated capex, operating expenses (OPEX), budget and commercial appeal prepared and planned gas-bearing mineral deposits in Eastern Siberia and the Far East (Morales, 2015). The section presents the main technical and economic indicators of the development of prepared and projected gas-bearing subsoil (Filippov et al., 2017):

- Investments (capital investments);
- Operating cost;
- Indicators of economic efficiency.

Baseline data of costs and prices of sales, as well as economic performance indicators are given in constant prices 2013 the paper discusses the period of development of centers of gas production from 2012 to 2030 (Alkhasov and Alkhasova, 2018).

The regulatory framework for reforming the energy sector is presented by the following documents:

1. Federal laws (hereinafter-FZ),
2. Resolutions of the government of the Russian Federation, including,
3. Orders of the government of the Russian Federation,
4. Orders of the Ministry of industry and energy of the Russian Federation and Federal tariff service of Russia.

3. RESULT AND DISCUSSIONS

Neither Russian nor world history has ever known such a sharp differentiation of mineralogical, climatic conditions of field development, phase composition of hydrocarbons, primarily natural gas.

Thus, at present, the Russian gas industry is faced with the inevitable changes in the raw material base - in the structure of natural gas production in Russia, the share of fatty poly-component gas is rapidly increasing (Hagem et al., 2006; Attanasi and Freeman, 2012). This fact radically changes the overall paradigm of gas production development in Russia: If natural gas production was still determined by the reserves of the field and the development of transport infrastructure, now these two important factors have been added to the requirement for the presence of gas processing and petrochemical industries, product pipeline systems.

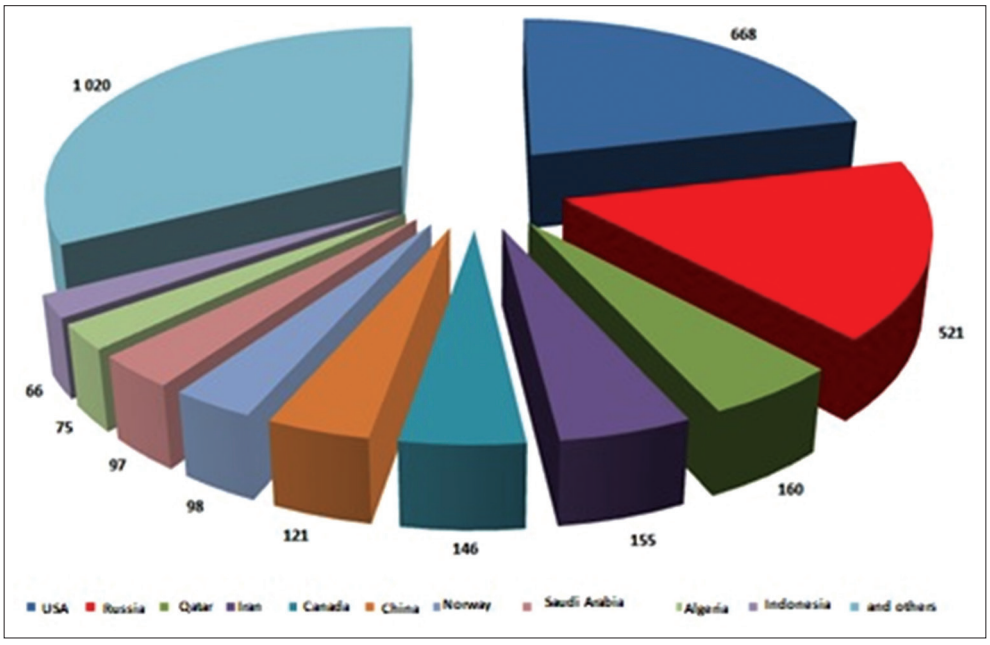
The authors analyzed the volume of oil production in the world and directly in Russia (Figure 1).

To maintain gas production in YNAO, lower Cretaceous gas deposits, which are located at great depths (2500–3000 m), are gradually introduced into development. The gas composition of these deposits is fundamentally different. In addition to methane, it contains a lot of condensate - hydrocarbons of gasoline fractions and high concentrations of ethane, propane and butane. This is "fat" gas. The presence of methane homologues fundamentally changes the attitude to the development of such deposits and creates an opportunity to form large clusters with a significant processing component.

Until now, the main center of hydrocarbon production in Russia was Western Siberia. But the role of Eastern Siberia and the Far East, the shelf of the Arctic seas, primarily the Barents and Kara seas, is gradually increasing. East Siberian and far Eastern gases are also highly condensate and have a multi-component composition (Lukiyanova, 2014).

According to the concentration of helium in gas (0.2–0.6%), the ancient gases of Eastern Siberia and Western Yakutia have no analogues on the Eurasian continent. This is the second province in the world in terms of resources and reserves of helium-containing gas, second only to the USA in terms of initial resources of helium. But given that the extraction of helium-containing gas in the United States due to the exhaustion of its reserves and resources is falling and will continue to fall, the Lena Tunguska province in the next 10–15 years can and should become the main supplier of helium to world markets. Helium is the most important, absolutely necessary

Figure 1: Gas production by countries, 2016, million t.ne.e

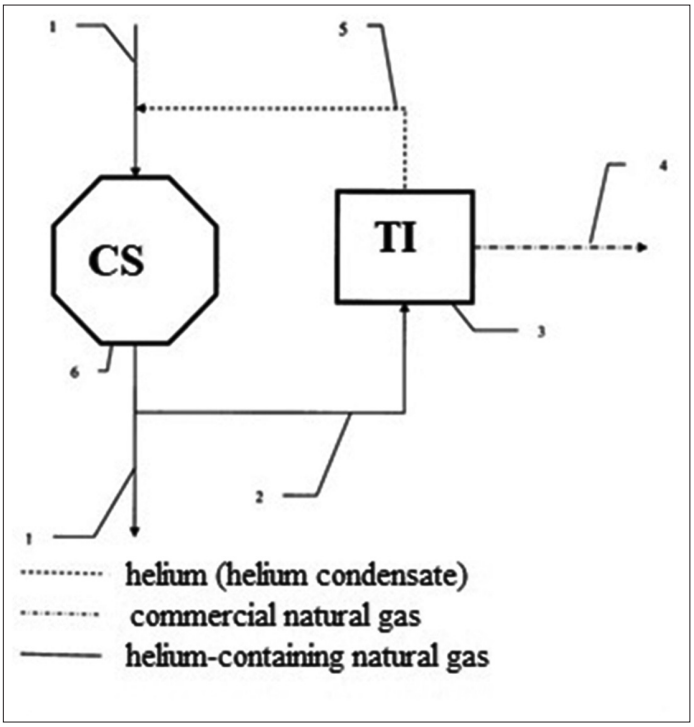


product for realization of a large number of modern high industrial and medical technologies, energy saving. Developed countries of North America, Western Europe, Asia-pacific region are the main consumers of helium in the world. For consumption, the helium concentrate released from the gas is purified from impurities and then supplied to consumers in liquefied form. Russia's task is to develop high technologies using helium and to ensure stable and increasing supply of helium to the world markets. The scheme of pipeline transportation of helium from deposits to consumers is shown in Figure 2. The helium-containing natural gas (hereinafter referred to as GPG) extracted from the field by the compressors of the head compressor station (CS) (not shown) is supplied to the main gas pipeline 1 and transported to the compressor-equipped linear CS 6. Subject to the supply of purified natural gas (commercial gas) GPG is transported via a gas pipeline-branch 2 to the plant's technological unit 3, where it is extracted from the GPG helium or helium concentrate, after which the purified natural gas through the gas pipeline 4 are transported to the consumer, and the helium or helium concentrate separated in the process unit 3 is returned to the main gas pipeline 1 through the helium duct 5, where it together with the helium-containing natural gas is fed to the compressors of the linear CS 6, whence, after compression, the helium-containing natural gas is transported by the compression energy gas trunk gas pipeline to subsequent consumers.

The main objective of the Siberian-Volga cluster is to create a large-scale supply to the domestic market and export of energy gas and petrochemical products on the basis of the capacities for the production of gaseous hydrocarbons in Western Siberia and processing in the Volga Federal district of Russia's largest mining and processing center.

One of the existing problems of the industry is the lack of a stable and sustainable resource base. In the USSR, this problem

Figure 2: Scheme of pipeline transportation of helium



was solved by building a product pipeline (shflu-wire), which transported gas processing products from Western Siberia to petrochemical enterprises in the Volga region. Subsequently, the product pipeline was put out of order and regular stable deliveries stopped. Some of the raw materials were transported by rail (Sinyak and Kolpakov, 2014).

In connection with the prospects for the formation of processing industries in the Northwestern center, it is planned that part of the raw materials from the West Siberian gas producing region will be supplied to this region. At the same time, the Northwest center can act as an independent industrial cluster.

The priority of the choice of fields planned for commissioning was determined by the existing volumes of explored reserves, prospects for the creation of transport infrastructure and the needs of the domestic and foreign markets in natural gas.

In addition, several gas production centers have been allocated for the development of deposits of dry and condensate fatty gas:

1. Big Urengoy. Deposits: Vyngayakhinskoe, Urengoy, Enahance, North-Urengoy, Yurharovskoe, Yamburg, Yuzhno-Messoyakhskoye, Yevo-Yakhinskiy, Arctic Fox, Pyakyakhinskoye, Samburg, Khalmerpayutinskoye, Yuzhno-Messoyakhskoye, Yaro-Yakhinskiy, Kanskoe, Couch, Severo-Gubkinskoye, Thermokarst, Ust-Chaselskoye.
2. Yamal. Deposits: Bovanenkovo, Kruzenshternskoye, Kharasaveyskoe, South-Tambeyskoye.
3. Ob and Tazov lips. Deposits: Semakovskoe, Atipayutinskoe, offshore North-kamennomysskoe, shelf kamennomysskoe-sea, shelf Atipayutinskoe.

Comparative volumes of possible natural gas production in Siberia and the Far East are shown in Figure 3.

It is assumed that some of the deposits of the Yamalo-Nenets region, which are not included in the list of priorities, will be introduced into development after 2030.

Currently, the balance of the assigned deposits and oily deposits in the Urengoy gas the Large gas production center. The deposits of the Ob and Tazov lips, as well as the Yamal center on the balance sheet contain only high-lying senoman deposits of dry gas. In this regard, the deposits of the Ob and Taz regions are not considered when taking into account the formation of processing facilities and the transport of fatty natural gas, as well as ethane, propane, butane.

The big urengoy center as a part of fatty gas extracts ethane, propane, butane and condensate on deposits. However, ethane released from the extracted gas in the North of Western Siberia is not used in petrochemicals, although it is the most valuable raw material for this industry, and is pumped back into the gas and burned in the energy sector (Dmitrievskii, 2010; Volkonskii and Kuzovkin, 2011).

Condensate production in the Yamalo-Nenets Autonomous district may increase in 2030–21.2 million tons, ethane - 13 million tons of propane - 8.6 million tons, butane - 4.9 million tons (Table 1). Based on the information about the phase composition of gas in

Figure 3: The volume of possible natural gas production in Siberia and the Far East

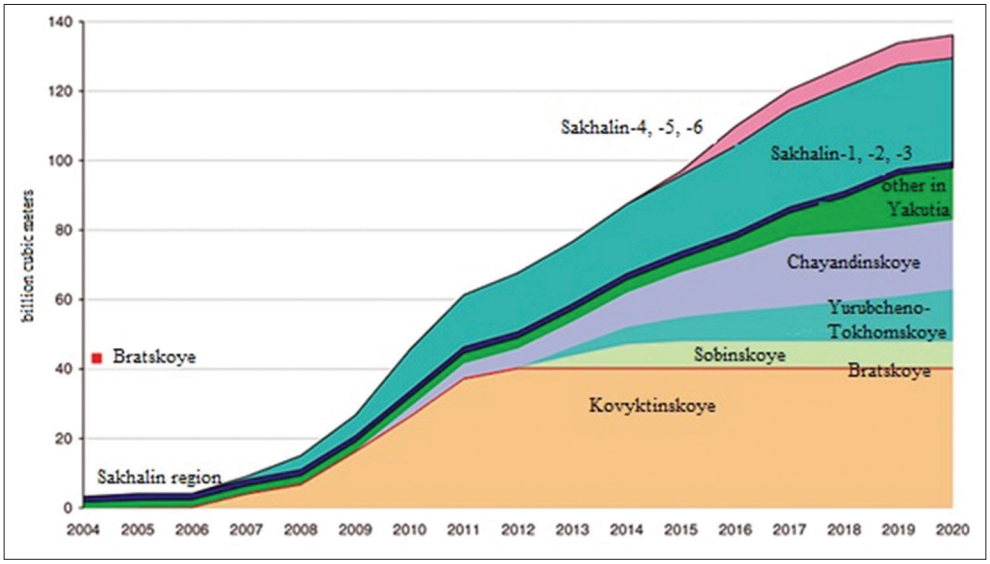


Table 1: Forecast of production of fatty natural gas in the Northern areas of the West Siberian oil and gas province

Indicator	2012	2015	2016	2017	2018	2019	2020	2025	2030	Total
Fatty gas, billion cubic meters	85	110	114	117	123	130	142	180	180	3164
Big Urengoy center	85	110	114	117	123	130	142	180	180	3061
To develop	85	109	113	111	110	108	107	96	81	2036
On planned	0	0	1	6	13	21	35	82	82	1025
New discoveries not included in the list	0	0	0	0	0	0	0	2	17	103
Components of fatty gas	19	26	27	28	30	32	36	48	48	812
Methane raw gas, billion cubic meters	75	97	101	104	109	114	125	157	157	2771
Ethan, million t	5,5	7,3	7,6	7,8	8,2	8,6	9,7	13,0	13,0	223
Propane, million t	3,5	4,7	4,9	5,1	5,3	5,6	6,3	8,6	8,6	147
Bhutan, million t	2,0	2,6	2,7	2,8	3,0	3,2	3,6	4,9	4,9	82
Condensate, million t	7,6	11,5	12,1	12,5	13,4	14,4	16,2	21,2	21,2	360

some fields and deposits, the level of methane homologues at C2-C4 and above, the forecast of ethane, propane, butane and condensate production in the North of Western Siberia was made.

An important aspect of the analysis is the organizational structure of gas production in the North of Western Siberia. Different companies have independent development strategies in the region. The largest gas producer in the region is the state company JSC "Gazprom." In this regard, it is necessary to calculate the production of fat and dry gas separately gas monopolist (Table 2).

Ethane-containing unstable gas condensate is transported to the condensate transport preparation plant located in Novy urengoy. The company is detalizaziya condensate and allocation of ethane. Currently, there are no capacities for processing and transportation of ethane. In this regard, ethane is pumped back into the gas and subsequently burned in the energy sector. Construction of Novy urengoy gas chemical complex for the processing of ethane in polymer production will allow to partly solve the problem of burning of petrochemical raw materials. It is assumed that the capacity of the ethane plant will be 500 thousand tons, with possible subsequent expansion to 1.5 million tons.

In fact, Novy-functioning factory on preparation of condensate and designed the Novy Urengoy gas chemical complex is a single production complex (Zhiltsov, 2017). However, formally the main raw material, which should go to the Novy Urengoy gas and chemical complex will be supplied from the factory on preparation of condensate for transport. Next, unstable condensate enters the process chain at the Surgut condensate stabilization plant. Currently, preparations are underway to implement the second stage at the Novourengoy plant for the preparation of condensate for transport, which will increase the volume of products. The issues of capacity expansion at the Surgut condensate stabilization plant are considered. This paper considers a variant in which the growth of fat gas production additional production capacity on gas processing and gas chemistry will be located directly on the Novy urengoy gas and chemical complex. After that, a wide fraction of light hydrocarbons is sent directly to the processing capacity of the Volga center. This is due to the need to calculate the maximum amount of gas processing products in the form of a broad fraction of light hydrocarbons, which can be processed locally and then transported to the European part of Russia.

Taking into account the need for efficient use of all associated components of natural gas, one of the possible technological solutions is to pump ethane into the existing system of main gas pipelines with bringing ethane-containing gas to 8% in the pipeline. Next, Ethan will especially stand out when passing the main gas pipeline through the Volga and the North-West

Table 2: Forecast of natural gas production in the Northern regions of the West Siberian oil and gas province of JSC gazprom

Indicator	2012	2015	2016	2017	2018	2019	2020	2025	2030	All
Fatty gas (Greater Urengoy area), bcm	61	77	80	81	85	88	96	119	119	2129
to develop	61	77	80	81	85	88	96	117	107	2061
on planned	0	0	1	4	9	15	24	54	54	679
New discoveries not included in the list	0	0	0	0	0	0	0	2	11	68
Components of fatty gas	14	18	19	20	21	22	24	31	31	546
Methane raw gas, billion cubic meters. m	55	68	71	72	75	78	84	103	103	1865
Ethan, million t	4,0	5,1	5,3	5,4	5,6	5,9	6,5	8,6	8,6	150
Propane, million t	2,5	3,3	3,5	3,5	3,7	3,8	4,3	5,7	5,7	99
Bhutan, million t	1,5	1,8	1,9	1,9	2,0	2,2	2,4	3,2	3,2	55
Condensate, million t	5,5	8,2	8,5	8,7	9,2	9,8	10,9	14,0	14,0	242

refining centers. This will solve the problem of utilization of significant volumes of this raw material and load the capacity of petrochemical centers with raw materials.

Currently, after the separation of ethane from unstable gas condensate at the condensate treatment plant hydrocarbon mixture is supplied to the Surgut factory on condensate stabilization (SZSK), where the production of gas.

A significant increase in the production of fatty gas will lead to a rapid increase in associated gas components. It is assumed that the supply of raw materials to SZSK will remain in the existing volume and the additional volumes of propane-butane fraction will be focused on the projected Novy Urengoy gas and chemical complex for the production of gas liquids, with the subsequent construction of transport infrastructure for deliveries of raw NGL from Western Siberia to the Volga and North-Western refining centers.

In the West Siberian center of gas production it is planned to drill 2853 gas production wells with a total cost of 7,270,30 million rubles. The average debit of one production well in the West Siberian cluster will be 350–500 thousand cubic meters of gas per day. The volumes of oil production are shown in Figure 4.

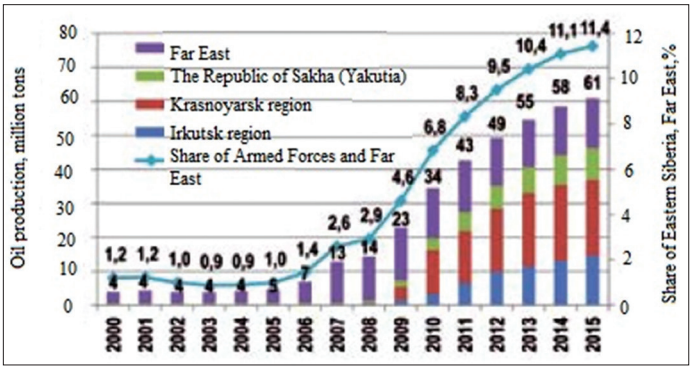
For the purpose of complex development of the Western Siberia subsoil it is planned to place UKPG, gas processing plants and petrochemical complexes on the basis of hydrocarbon raw materials of the West Siberian center of gas production and production of products of processing with high added value.

In Western Siberia the gas mixture is separated into the unit and the factory on preparation of condensate.

Capital investments are distributed unevenly over the years, the main share of investments falls on the 1st years of projects - the period of exploration, the years of the beginning of industrial operation and construction of gas processing plants and petrochemical complexes. In the structure of capital investments the main share falls on the objects of GPP, NHC and transportation of hydrocarbons and refined products (Kryukova et al., 2016).

The existing gas processing capacities consist of modular gas fractionation units with a capacity of 3 billion cubic meters of natural gas per year. In the planned petrochemical complex includes a typical installation of pyrolysis EP-300 capacity of

Figure 4: Oil production in Eastern Siberia and the Far East



300 thousand tons of raw materials (ethane, propane, butane), and the polymerization of an annual output of 300 thousand tons of commercial products (polyethylene, PVC, polypropylene, polystyrene), and also the installation for the liquefaction of helium.

The total capacity of UKPG for processing of fatty gas in Western Siberia will amount to 170 billion cubic meters of raw materials per year. The capacity of the projected Novourengoy gas chemical complex will be 400–2000 thousand tons per year for the processing of polyethylene, the capacity of 8000 thousand tons per year for the production of shflu.

The largest capital investments in processing facilities for the period 2012–2030 in the Siberian-Volga cluster will be the expansion of the condensate deethanization plant in Novy Urengoy - 167 billion rubles, and significant investments will be made in the creation of capacities for the production of shflu at the Novourengoy gas chemical complex. The construction of units on the unit will de-gas in the Volga and Northwestern regions of the processing goes 25,962 million RUB million RUB 21,635, respectively.

Total capital expenditures in the construction of refining capacity in the West Siberian gas production center will be 382,554 million.

The distribution of capital expenditures for the construction of the pipeline system in the gas production centers is primarily focused on the share in the supply of natural gas in the appropriate direction. Thus, investments in the construction of the pipeline system of the West Siberian center of gas production will amount to 601,920 million rubles (Construction of product pipelines Surgut-Volga region, Volga region - North - West).

OPEX include the following items:

- The cost of production of gas and condensate production;
- Operating costs of the fractionation;
- Pyrolysis production costs;
- Production costs flavoring;
- Operating costs of the polymerization;
- Storage of helium;
- Depreciation;
- Transportation of gas and refined products.

Operating costs, which take into account the costs of extraction and sale of hydrocarbons, were calculated in accordance with the unit costs obtained on the basis of the analysis of financial statements according to the US GAAP international standard of the company conducting field development in the relevant regions of Eastern Siberia and the Far East.

Depreciation charges were calculated according to the current norms of depreciation charges put into effect on January 1, 2002 on the basis of the Order of the Government of the Russian Federation of 01.01.2002 N 1 and according to item 10 of Art. 259 of the tax code of the Russian Federation part two.

Works and services of production appointment rendered by the service companies were defined taking into account the level of cost of services of the service organizations operating now in JSC Gazprom and other companies conducting development of fields in the corresponding centers of production (Buley et al., 2016).

Other expenses are taken in the amount of 10% of the current expenses. This work takes into account the cost of financing measures to improve conditions and labor protection in the amount of 0.2% of the total cost of production in accordance with Art. 226 of the labor code.

Operating costs form the cost of production taking into account the transport component. In the cost structure, the main share of costs falls on depreciation charges (30–40%) and the cost of transportation of raw materials (30–60%). The costs of transporting raw materials is higher, the greater the share of gas exports, due to the considerable remoteness of gas-bearing mineral deposits in Eastern Siberia and the Far East markets of energy resources.

So the operational costs the development of the Siberian and Volga cluster for the period from 2012 to 2030-ies will be 22,629,058 million RUB (Table 3).

In the structure of the state's income, the main contribution will be made by export duty and income tax.

So, the budget efficiency of development of the West Siberian center of gas production for the period from 2012 to 2030 will be

Table 3: Dynamics of operating costs of development of the Siberian-Volga cluster

Indicator	2015	2016	2017	2018	2019	2020	2025	2030	All
Operating costs, million RUB	728,303	755,956	848,556	880,827	940,429	984,700	1,233,502	1,429,246	22,629,058
Production costs of gas production	96,318	98,166	100,009	101,848	103,682	105,509	117,105	132,368	2,357,570
Operating costs of the fractionation	13,336	13,826	13,483	13,961	14,889	16,503	21,957	24,819	395,936
The costs of de-ethanization plant (Novy Urengoy factory on preparation of condensate)	10,422	10,578	10,737	10,898	11,061	11,227	12,095	13,030	243,888
Costs of conversion of unstable de-ethanized condensate (Novourengoiskiy factory on preparation of condensate for transport)	40,444	39,474	40,538	45,782	70,957	101,985	172,268	181,089	2,417,083
Costs of condensate stabilization and gas fractionation plants (Surgut condensate stabilization plant)	71,061	72,127	73,209	74,307	75,422	76,553	82,469	88,843	1,662,941
Costs Northwest petrochemical cluster	0	0	0	0	0	−11,396	8,701	19,426	170,505
The costs of de-ethanization plant (Volga petrochemical cluster)	0	0	19,391	19,682	19,977	20,277	21,844	23,532	347,729
Depreciation with capital investments planned for the fields	38,509	51,446	62,304	72,029	81,819	92,866	139,060	188,893	2,286,289
Depreciation on previous years 'capital investments	18,898	23,622	28,346	33,071	37,795	42,520	66,142,	89,764,	1,091,335
Transportation of gas to the domestic market	230,525	234,408	263,215	267,273	274,649	275,054	303,374	342,913	6,036,479
Transportation of gas for export	191,495	194,721	218,650	222,021	228,148	228,485	252,010	284,855	5,014,449
Transportation of condensate	2,113	2,208	2,170	2,283	2,488	2,823	3,888	4,395	67,880
Transportation NGL	5,834	5,651	5,780	6,540	7,588	9,881	17,128	17,359	253,041
Other expenses, including the cost of measures to improve working conditions and safety	9,348	9,730	1,0723	11,132	11,954	12,414	15,460	17,961	283,933

Table 4: Dynamics of tax revenues from the development of the Siberian and Volga cluster, million RUB

Indicator	2020	2025	2030	All
The tax on gas production	230,801	256,168	289,554	5,157,185
The tax on extraction of condensate	6,071	8,362	9,452	145,983
The export duty on gas	351,362	402,456	469,100	7,965,178
VAT payable	333,909	423,967	493,791	7,719,925
Insurance premium	5,395	5,959	6,583	118,749
Personal income tax	2,338	2,582	2,852	51,458
Wealth tax	19,862	17,305	9,087	281,039
Profit tax	233,822	302,919	356,125	5,382,939
Taxes, RUB million	1,183,558	1,419,718	1,636,544	26,822,454
Federal budget	947,862	1,123,827	1,300,362	21,578,022
Regional budget	220,370	281,279	325,056	4,985,164
Local budget	9,931	8,653	4,543	140,519
Extrabudgetary fund	5,395	5,959	6,583	118,749

26,822,454 million rubles, including the Federal budget-21,578,022 million rubles - the regional budget - 4,985,164 million rubles, the local budget-140,519 million rubles, extra-budgetary funds-118,749 million rubles (Table 4).

In exploration and production, the following key parameters were selected: Oil recovery ratio, the share of hydrocarbon production on the shelf, the share of new regions, primarily with complex climatic conditions and relatively undeveloped infrastructure, the share of involvement of hard-to-recoverable reserves, the volume of reproduction of the mineral resource base.

The following key parameters were chosen: The share of oil products output from the volume of processed oil, the depth of oil processing, the share of light oil products output, Nelson's index of complexity, the share of associated petroleum gas utilization, the share of fatty gas processing and methane homologues and associated components utilization.

On the basis of the general model of the three-zone innovation cluster proposed by the author and the organization of the structure of the center of the industrial cluster, a model of the oil and gas cluster was formed, taking into account the specifics of the development of relevant industries:

1. Oil and gas cluster center;
2. Internal environment of the oil and gas cluster;
3. The external environment.

4. CONCLUSION

Taking into account the prospects of hydrocarbon production in the new oil and gas production centers, the geography and location of existing hydrocarbon production and processing centers, servicing and related industries, the development of world energy markets, it is possible to form cluster structures: Siberian-Volga, East Siberian, far East, arctic.

Currently, the Russian gas industry is faced with the inevitable changes in the raw material base: In the structure of natural gas production in Russia, the share of fatty poly-component gas is rapidly increasing. Under these conditions, the qualified use and deep processing of all components while minimizing their losses is one of the most priority tasks for the development of an innovative component of the oil and gas industry in Russia. This fact radically changes the overall paradigm of gas production development in Russia - if natural gas production has been determined so far by the reserves of the field and the development of the gas pipeline infrastructure, now these two important factors have been added to the requirement for the presence of gas processing and petrochemical industries, a system of product pipelines.

The peculiarities of the geographical location of hydrocarbon deposits in Siberia and the far East, their phase composition, existing and prospective processing facilities, sales markets allowed to identify several independent clusters that can ensure the development of oil and gas potential, give a significant impetus to the socio-economic development of the region and Russia as a whole.

The paper presents proposals for the formation of the Siberian-Volga cluster, including capacity for production, gas processing and petrochemistry, transport and sale of gas products.

The proposed concepts allow to organize with high efficiency the production and processing of natural gas in the framework of the clusters under consideration.

In Western and Eastern Siberia, production of oily condensate gas will increase and exceed 200–250 billion cubic meters per year. Qualified its use will require significant investments in the creation of gas processing plants, product pipelines and petrochemical clusters. In implementing this program, Russia will take one of the first places in the world for the production of polymer and other large-tonnage chemical products. Economic indicators of development of gas clusters indicate the effectiveness of the projects. The projects will provide a significant inflow of investments in the regions, will ensure the creation of jobs, receipt of tax payments at all levels.

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