

Prospects for the development and strengthening of production and financial potential of the petrochemical industry in Russia

Perspectivas para el desarrollo y fortalecimiento de la producción y el potencial financiero de la industria petroquímica en Rusia

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ABSTRACT:

This paper presents an analysis of the assessment and development trends of the petrochemical industry in Russia as one of the most perspective. The authors make an assessment of the current development state of the industry, the main petrochemical companies of the country as well as their performance by region. The paper also presents the forecast of prospects in the given industry. Based on the study, the authors come to the conclusion that the financial and economic potential of petrochemical companies can be strengthened by the following methods: 1) implementing the state program "Strategy for Development of the Russian Chemical and Petrochemical Complex in the Period up to 2030"; 2) enhancing the production potential of companies engaged in the petrochemical and chemical industries; 3) strengthening cooperation ties within the framework of associations, unions, business incubators, technoparks, industrial parks with the aim of creating economic added value; 4) enhancing the financial potential of the petrochemical industry by improving the indicators of financial stability, business activity, liquidity and solvency of petrochemical companies and organizations. These processes will contribute to an increase in the market value of the main petrochemical companies in the course of introducing a unified corporate management strategy.

Keywords Petrochemical industry, production, financial potential, corporate strategy.

RESUMEN:

Este artículo presenta un análisis de la evaluación y las tendencias de desarrollo de la industria petroquímica en Rusia como uno de los que mas tienen futuro. Los autores hacen una evaluación del estado de desarrollo actual de la industria, las principales empresas petroquímicas del país, así como su desempeño por región. El documento también presenta la previsión de las perspectivas en la industria. Con base en el estudio, los autores llegan a la conclusión de que el potencial financiero y económico de las empresas petroquímicas puede ser fortalecidos por los siguientes métodos: 1) implementar el programa estatal "Estrategia para el Desarrollo del Complejo Químico y Petroquímico Ruso en el Período hasta 2030 "; 2) potenciar el potencial productivo de las empresas dedicadas a la industria petroquímica y química; 3) fortalecer los lazos de cooperación en el marco de asociaciones, sindicatos, incubadoras de empresas, tecnoparques, parques industriales con el objetivo de crear valor económico añadido; 4) potenciar el potencial financiero de la industria petroquímica mejorando los indicadores de estabilidad financiera, actividad empresarial, liquidez y solvencia de empresas y organizaciones petroquímicas. Estos procesos contribuirán a un aumento del valor de mercado de las principales empresas petroquímicas en el proceso de introducción de una estrategia de gestión corporativa unificada.

Palabras clave Industria petroquímica, producción,

The relevance of the research issue can be defined by the following circumstances. First, in scientific aspect, of particular interest are the possibilities and prospects for the development of the petrochemical industry, in particular, within the framework of state programs for the economic development of regions. In most cases, this entails the emergence of petrochemical cluster formations in different regions, which is due to the implementation of cluster policy in Russia. Therefore, there appears a need to study the prospects for the development of the petrochemical industry and to form an appropriate corporate strategy for companies participating in the petrochemical cluster, which will strengthen the financial potential of companies engaged in the petrochemical industry and increase their market value in the postindustrial economy. It should be especially noted that the processes of introducing chemical products into the consumer sector of the economy involve the introduction of scientific and technological progress, characterized by the implementation of new methods of petrochemical technology in the production process. In the context of the globalization of world economic relations, the level of chemicalization of the country's economy is a universally recognized indicator of scientific and technological progress.

A large number of studies carried out by representatives of the labor theory of value and the theory of marginal utility were devoted to the problems of managing the performance of companies: A. Smith, D. Ricardo, J. Keynes, K. Marx, A. Marshall, J. Mill, J. Hicks. Later on, these issues were considered by I. Ansoff, A. Damodaran, G. Desmond, R. Kelly, T. Koller, T. Copeland, S. Myers, M. Miller, F. Modigliani, D. Murrin, Sh. Pratt, D. Fishman, J. Friedman, D. Hay, R. Hampton, V.F. Sharp, F.M. Scherer, S.V. Valdaytsev, V.V. Grigoryev, A.G. Gryaznova, V.L. Inozemtsev, A.P. Kovalev, V.I. Koshkin, D.S. Lvov, B.Z. Milner, L.D. Revutskiy, T.V. Tazikhina, M.A. Fedotova.

Currently, in the context of limited financial resources, it becomes important to study the essence and content of the notion of "financial potential" of companies, which was highlighted in the works of Yu.I. Bulatova (2011), A.S. Getmantsev (2012), Zh.G. Golodova (2010) and R.A. Prokopenko (2008).

The need for the development of the petrochemical industry, the high degree of its impact on the quality of life of the population as well as the income level of the population as one of the key factors in the economic development of the region or the country was unequivocally emphasized by non-Russian authors such as Ya-Mei Chen, wan-Yu Lin and Chang-Chuan (2014). Other authors (Waziri A. Galadima and Amina S. Abdullahi, 2014) monitored the impact of the petrochemical industry on processes pertaining to the migration of labor resources and the creation of new jobs in related industries and industries for the further processing of raw materials (Tsertseil and Ordov, 2016).

The petrochemical sector includes the following main production groups:

- production of synthetic rubber;
- production of basic organic chemicals;
- production of carbon black;
- tire industry (Ryazanov, 2009).

Table 1. Production volumes of the petrochemical industry's final product in Russia for the period 1995-2004

	1995	2000	2001	2002	2003	2004
Synthetic rubber	7340	29498	29821	33056	39961	51241

Basic organic chemicals	6803	17587	23516	23781	28828	28715
Carbon black	564	1777	3186	3661	5490	6660
Tire industry	5960	20607	25393	26003	26316	29028
Total: petrochemical products	24983	85171	102568	107480	124513	144052

Note. Based on data from: http://minpromtorg.gov.ru/common/upload/files/docs/Razvitie_him_kompleksa.pdf)

In accordance with the "Strategy for Development of the Russian Chemical and Petrochemical Complex in the Period up to 2030", the main forecast indicators of production of the main types of chemical and petrochemical products have been formed, which is reflected in Table 2.

Table 2. Main forecast indicators of production of the main types of chemical and petrochemical products

Indicator, thousand tons	2012 reality	2013 reality	2014 reality	2015 assessment	2016 forecast	2017 forecast	2018 forecast	2019 forecast
Large-capacity plastics	3460,8	4013,3	4105,3	4674,3	5101	5262	5723	6267
Polyethylene	1406	1705,1	1486	1634	1763	1848	2053	2158
Polypropylene	658,4	859,2	1042,2	1270,5	1420	1430	1445	1505
Polyvinyl chloride	615,8	627,1	652,1	704,3	923	932	933	933
Polystyrene	347.6	416,8	499,3	490,4	491	460	460	460
Synthetic rubbers	1253,3	1261	1143,7	1312,8	1419	1464	1475	1481

Note. Based on data from: <http://www.garant.ru/products/ipo/prime/doc/71224670/#ixzz4e9gLPiMe> and http://minpromtorg.gov.ru/common/upload/files/docs/Razvitie_him_kompleksa.pdf

According to Table 2, the largest volume of petrochemicals produced in Russia falls on such types as plastics and polyethylene. Synthetic rubbers are accounted for the lowest volume of production in physical terms.

Table 3. Release of the main petrochemical products as a percentage of the previous year

Indicator	January-February, 2017	February 2017 in % to February 2016	February 2017 in % to January 2017	January-February 2017 in % to January-February 2016
Plastics in primary forms, million tons	1,3	99,2	93,1	101,6

Synthetic rubbers in primary forms, thousand tons	291	111,2	92,6	113,5
Paint polymer-based materials, thousand tons	102	109,9	128	110,7
Chemical fibers, thousand tons	27,9	102,2	105,8	104,9
Tires and rubber inner tubes, million items	9,1	96,8	126,4	107,3

Note. Based on data from: <http://www.garant.ru/products/ipo/prime/doc/71224670/#ixzz4e9gLPIMe>

The largest number of enterprises of the petrochemical industry of Russia is located in the Volga Federal District, which includes the following territories: Perm Krai, Nizhny Novgorod Region, Republic of Tatarstan, Republic of Bashkortostan, Saratov Region, Samara Region, Orenburg Region. As an example, it is possible to consider measures to develop and modernize the oil and gas chemical complex of the Republic of Tatarstan for the period 2015-2019, which implies meeting domestic needs for raw materials.

Table 4. Areas for the development of the oil and gas chemical complex of the Republic of Tatarstan for the period 2015-2019

Enterprise, products	Contents of the program for the development of the oil and gas chemical complex of the Republic of Tatarstan for the period 2015-2019
PJSC "Tatneft", oil production	Introduction of effective resource-saving well drilling technologies for oil production and associated gas transportation; research and development in the creation of innovative technologies for the production of catalysts, technologies for the computer simulation of chemical processes, the production of biodegradable products and products from renewable raw materials
PJSC "Nizhnekamskneftekhim", oil processing with a view to obtain raw materials for subsequent redistribution	Modernization of the production of alpha-olefins with a view to provide raw materials for the production of linear polyethylene
PJSC "Kazanorgsintez", production of high and low pressure polyethylene	Modernization of the technological process, improvement of the parameters of the catalysts used: achievement of the quality indicators of the production process to the level of ± 3 sigma
PJSC "Nefiskosmetiks",	Expansion and technical re-equipment of

household chemicals	household chemicals production with a view to increase production output and reduce overhead costs (cost optimization) for improving the competitiveness of the final product in the retail market
Integrated Chemical Complex JSC "Ammoni", raw material receipt for further processing	Modernization of the process of carbamide, ammonia and methanol production. Based on the commodity production of the complex, it is possible to create resins and chemical fibers in the republic
JSC "KZSK-Silicon", synthetic rubbers	The final stage of construction, in the long term: raw semi-finished product manufacturing (1st stage of processing)
JSC "Kazan Synthetic Rubber Plant", synthetic rubbers	Growth in synthetic rubber and sealant production

Note. Compiled by the authors

According to Table 5, the following industries act as industrial consumers of the petrochemical industry's products in the Republic of Tatarstan: the defense industry, the automotive industry, and the chemical industry.

Table 5. Interaction of anchor enterprises of the petrochemical industry of the Republic of Tatarstan with supporting industries

Product	Industry of the product's subsequent use
Isoprene rubber	Defense industry, automotive industry
Butyl rubber	Automotive industry
Halobutyl rubber	Automotive industry
Butadiene rubber	Tire industry
Styrene, polystyrene	Latex industry
Neonol	Production of synthetic detergents
Ethylene glycol	Raw materials for polyethylene production

Note. Compiled by the authors

In the list of petrochemical industries, tire production acts as a finished product sold for final consumption. Tsertseil (2014a; 2014b; 2015) conducted a study on the degree of concentration of the tire industry market in Russia. According to this study, in 2012, the tire market was represented by the following companies: GOC "Cordiant", PJSC "Nizhnekamskshina", LLC "Nokian Tires", LLC "Amtel", JSC "Altai Tire Plant", LLC "Michelin", LLC "Nizhnekamsk Truck Tire Production Plant", JSC "Petroshina". The main share (more than 70%) of the market in 2012

belonged to GOC "Cordiant", PJSC "Nizhnekamskshina", LLC "Nokian Tires" and LLC "Nizhnekamsk Tire Production Plant", whose market shares were almost the same (Tsertseil, Kookueva and Ordov, 2017). In 2015, the distribution of the companies' market shares was as follows, as reflected in Table 6.

Table 6. The share of major producers of the tire industry at year-end 2015, %

Tire industry enterprise	2012, market shares, %	2015, markets shares, %
LLC "Nokian Tires"	27,04	26
PJSC "Nizhnekamskshina"	24,78	20
GOC "Pirelli"	-	17
GOC "Cordiant"	21,75	14
LLC "Nizhnekamsk Truck Tire Production Plant"	-	4
JSC "Altai Tire Plant"	3,22	4
LLC "Continental Kaluga"	-	4
LLC "Yokohama"	-	3
LLC "Michelin"	3,33	3
OOO (LLC) Nizhnekamsk Solid Steel Cord Tire Factory	-	2
JSC "Petroshina"	0,81	0,3

Note. Compiled by the authors based on data from: <http://shinakama.tatneft.ru/upload/files>

According to Table 6, there appeared new participants in the tire industry market in 2015. At the same time, the main share of the consumer market of the tire industry falls on four large companies, covering over 80% of the market capacity with their products.

The sequence of actions that determine the processes of strengthening both the production and financial potential of enterprises and companies in the petrochemical industry is as follows:

The first level includes the strengthening of the production potential of key enterprises participating in petrochemical cluster formations within the framework of the state program "Strategy for Development of the Russian Chemical and Petrochemical Complex in the Period up to 2030".

The second level includes the strengthening of the production potential of enterprises engaged in the petrochemical and chemical industries as well as the strengthening of cooperative ties within the framework of the creation of associations, unions, business incubators, technoparks and industrial parks with the aim of creating economic added value (Samorokov, 2008).

The third level includes the strengthening of the financial potential of the petrochemical

industry by improving the indicators of financial stability, business activity, liquidity and solvency of enterprises and organizations of the petrochemical industry. One of the results of this process will be the growth of the market value of key enterprises of the petrochemical industry in the process of implementing a unified corporate management strategy.

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