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DEVELOPMENT TRENDS OF THE CEMENT INDUSTRY IN UZBEKISTAN

Abstract: *The article provides an overview and analysis of the cement industry in Uzbekistan. The authors analyzed the volume of construction work, the volume of production and sales of cement products on the exchange, as well as the target parameters of the production of cement products in 2019-2025. The advantages and disadvantages of each production technology are presented in detail. The authors reviewed the existing and projected cement manufacturing enterprises in Uzbekistan.*

Key words: *cement industry, technologies, dry production technology, wet production technology, clinker.*

Language: *English*

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Introduction

In order to further improve the construction industry, form mechanisms for the consistent development of architecture and construction institutions, ensure the efficiency of the public administration system, progressive implementation in the field of digital technologies; the President's decree approved the Strategy for modernization, accelerated and innovative development of the construction industry of the Republic of Uzbekistan in 2021-2025 [1].

Analyzing the above indicators, one can see that there is a stably positive dynamics of growth in construction volumes and similarly repeated rates of GDP growth, but with a slightly different amplitude. As a result of the pandemic, at the end of 2020, GDP growth amounted to 101.6%, while the volume of construction work increased by 109.1% compared to the previous year.

The republic is also carrying out large-scale work to further deepen structural reforms in the construction materials industry, aimed at ensuring sustainable growth rates of production and export of competitive products, as well as modernization, technical and technological renewal of enterprises.

Methods.

The achieved level of cement production of about 9000 thousand tons per year (as of 2018) is not able to meet market needs (Table 3). As shown in Table 1, the volume of construction work is growing every year, over 20 years from 388 billion Uzbek soums in 2000 to 65,154.6 billion Uzbek soums in 2020, which indicates significant economic growth in the industry.

Table 1. The volume of construction work in the Republic of Uzbekistan (in billion soums)

Years	2000	2004	2008	2012	2016	2020
Construction work volumes	388,4	1121,9	3575,9	11753,9	29413,9	65154,6

Source: State Statistics Committee of the Republic of Uzbekistan

In order to optimize the volume of supplies, stable and rhythmic satisfaction of the needs of the sectors of the economy of the republic in cement, including the implementation of the most important nationwide development and modernization programs and large investment projects, the Cabinet of Ministers of the Republic of Uzbekistan annually approves the balance of production and consumption of cement.

In order to create favorable conditions for the accelerated development and diversification of the industry, attracting investments in the processing of local mineral raw materials and increasing the export of construction materials, the government approved the forecast parameters for expanding the raw material base of the construction industry. Based on geological exploration, production and processing of local raw materials in 2019-2025 and Target parameters for the production of construction materials in 2019-2025, taking into account the diversification and expansion of the range of products, it is envisaged to increase the production of wallpaper by more than 47 times, aerated concrete blocks - 7 times, paint and varnish materials - 4 times, composite reinforcement rebar and basalt - 3 times and cement - 2 times [2].

Table 2. Target parameters for the production of cement products in 2019-2025, taking into account the diversification and expansion of the product range (in thousand tons)

The name of indicators	2018 (fact)	Forecast							
		2019	2020	2021	2022	2023	2024	2025	Dynamics, in 2025 by 2018 (%)
Cement, including high quality and special types based on energy saving technologies	9 080	10 984	13 400	16 400	19 100	19 500	19 900	20 260	223,1

Source: Resolution of the President of the Republic of Uzbekistan PP-4335 of 23.05.2019 "On additional measures for the accelerated development of the construction materials industry."

These target parameters were developed by the government taking into account the increasing demand for construction products. According to the Resolution, it is planned to systematically increase the volume of cement production in the country by more than 2 times. The production plan was at the level of 10,984 thousand tons of cement in 2019, and in fact, 10,549.8 thousand tons of cement were produced in the republic (Table 2), which indicates that the planned volumes were not fulfilled due to the temporary suspension of cement production at the end of 2020 at Kuvasaycement JSC and Akhangarantsement JSC, due to the decrease in gas pressure supplied to cement producers.

Table 3. Indicators on production volumes, sales and price indices of cement in Uzbekistan for 2016-2019

	2016	2017	2018	2019
Cement production in Uzbekistan (thousand tons)	8645,9	9132,2	9080,4	10549,8
Sale of cement at the commodity and raw materials exchange of Uzbekistan (mln. Soums)	2435307,3	2330384,6	5546717,0	4839813,1
Price index (December to December of the previous year; percentage)	135,7	122,1	97,9	119,9

Source: State Statistics Committee of the Republic of Uzbekistan

All large cement enterprises of the republic are included in the register of monopolists, and the value of their products is declared. For the construction of facilities financed from centralized sources, cement is supplied at the declared price, and for other consumers, cement is sold through exchange trading at free (market) prices.

Results and Discussion.

Cement industry in Uzbekistan

Currently, there are 12 cement plants in Uzbekistan with a total annual capacity of more than 9.0 million tons, including large ones - JSC Kizilkumcement, in Navoi region, production capacity - 3,500 thousand tons), JSC Akhangarancement (Akhangaran region, 1740 thousand tons), JSC Bekabadcement (Bekabad region, 1250 thousand tons), JSC Kuvasaycement (city of Kuvasay, 1080 thousand tons), Jizzakh cement plant (city of Jizzak, 1000 thousand tons of gray cement or 450 thousand tons of white cement), - and small cement production with a total capacity of 640 thousand tons per year (Table 4) [6].

Table 4. Design capacity of enterprises for cement, thousand tons

Plants in operation		**Plants under design and construction**	
Company*	**Capacity**	**Company***	**Capacity**
JSC “Kizilkumcement”	3 500	“Titan Cement” LLC	221
JSC “Akhangarancement”	1 740	JV “Shanfeng Bridge of Friendship”	1 200
JSC “Bekabadcement”	1 250	“Yaypanshifer LLC.”	100
JSC “Kuvasaycement”	1 080	“Gallaorolcement” Subsidiary	100
“Jizzakh cement plant”	1 000	JSC “Sherobod Cement Plant”	1 500
“JV Fergana Cement” LLC	120	JV ‘Surkhancementinvest”	360
‘Turon Eco Cement Group” LLC	100	**Total**	**3 531**
“Farhadshifer” LLC	100		
“Everest Metal Favotir” LLC	100		
“Kezar” LLC	60		
JV “Sing lida” LLC	100		
“Buyuk” Private Enterprise	60		
Total	**9 210**		
Overall		**12 482**	

** All operating, designed and constructed enterprises are full-cycle factories.*

The capacity utilization of cement plants of the republic is close to 100%. It should be noted that on the newly introduced technological lines of Bekabadcement JSC and the Jizzakh cement plant, the efforts of the specialists of these enterprises have achieved the design indicators of cement production in a short period of operation. Similar results were achieved by the collectives of small enterprises JV Fergana Cement LLC, Turon Eco Cement Group LLC and Farhadshifer LLC.

Along with the increase in the volume of cement production, much attention is paid to expanding the range of products and their quality. All large cement enterprises have implemented a quality management system, received international certificates ISO 9001: 2000 and ISO 9001: 2015. Small enterprises have also begun work in this direction.

In 2020-2021, the association plans to launch another 10 new cement plants. These factories will be built in the Republic of Karakalpakstan, Jizzakh, Kashkadarya, Surkhandarya, Tashkent, Andijan, Fergana and Namangan regions.

In recent years, large-scale work has been carried out to reform the sector, improve the efficiency and potential of enterprises. From a critical point of view, the activity of each enterprise is analyzed, on a systematic basis, work is underway to reduce the cost of production by improving the quality and production of energy-saving, innovative construction materials. The enterprises use digital technologies, automated processes dangerous to human life. Special attention

is paid to the development of new directions in the production of construction materials and the attraction of foreign investors into this process, the development of new types of products and the attraction of innovations [5].

In the CIS countries and in Uzbekistan, in particular, cement plants use predominantly the "wet" method, at the same time, almost all foreign manufacturers of the binder work according to the "dry technology".

In a number of Western European countries and Japan, due to the high fuel consumption, the wet method is completely absent, all 100% of the cement is produced using an economical dry method. In the USA, Canada, many countries, the dry method prevails, according to which 60-80% of factories work. In the CIS countries, only about 15% of the total volume of cement production is carried out by the dry method, and the rest is carried out by the wet method.

Conclusions

Construction, as part of the economy, is involved in the creation and modernization of fixed assets for all other sectors of the economy, and thus is a key fund-forming industry. Cement is a semi-finished product from the group of construction materials and occupies the most important direction in the development of the construction industry. The cement production process itself is capital intensive and energy intensive.

Thus, the creation of advanced technologies with minimal expenditure of material and energy resources is one of the main tasks of the construction industry, which includes the production of building materials and products.

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