Russia to strengthen position in global graphite market

Russia plans to significantly strengthen its position in the global graphite market in the coming years, through the increase of production of both traditional crystalline and cryptocrystalline graphite, along with the more valuable isostatic graphite.

In recent years, Russia has faced with an acute shortage of graphite, despite the fact that it currently remains the world’s fourth country, in terms of reserves.

According to various estimates, currently more than 360 enterprises from different sectors of Russian industry (mostly high-tech) experience a shortage of graphite supplies from the domestic market, being forced to import it from abroad.

At present total volume of graphite production in Russia stands at about 10,000 tons, of which crystalline graphite – 6,000 tons, while cryptocrystalline – 4,000 tons. Most of Russian graphite is produced at two largest crystalline graphite fields, known as Taigynsky and Botogolskoe, while in case of cryptocrystalline graphite most of which is produced at Kureiskaya field.

JSC “Uralgraphite” currently remains Russia’s sole and the largest producer of crystalline graphite, manufacturing six grades of graphite at the capacities of the Kyshtym processing plant. As a rule, the quality of processed ore is low, with the average graphite content in the ore about 3.2% at the major Russian Taigynsky field.

The production capacities of Uralgraphite are currently not
able to meet the ever-growing needs of Russian companies in crystalline graphite, which are estimated at at least 40,000-42,000 tons, and about 14,000-16,000 tons of cryptocrystalline per year.

Due to continuing development of the Russian industry and associated with this growth of demand for graphite, the government is considering several ways of provision of at least local demand in graphite.

One of such measures is the attraction of private investors to invest in the exploration and development of new graphite fields in the country and the provision of funds from the state budget for the same needs.

According to Russian Ministry of Natural Resources, almost 100% of potential graphite fields are located in Siberia and in particular the Krasnoyarsk Territory, and the Evenki Autonomous Area.

According to a recent report of the Ministry, the balance reserves of graphite ore under the A + B + C1 category in Russia are 139.71 million tonnes (while graphite – 13.54 million tonnes). Of which, the majority accounts for cryptocrystalline graphite of high quality with graphite carbon content up to 82%. The reserves of crystalline graphite are also significant and estimate at 4.5 million tons. However, about 77% of all reserves of crystalline graphite are contained in poor ores with graphite content less than 4-6%.

One of the negative factors is the fact that much of the balance reserves of crystalline graphite requires reassessment, as their development is not practical for a number of reasons, due to poor quality of ores, bad preparation characteristics, as well as location in conservation areas or protective pillars.

At the same time, in addition to traditional types of graphite, the government has also plans to create conditions
for the increase of production isostatic graphite, an improved version of the mineral.

This project is expected to be implemented by Energoprom, one of the world’s largest manufacturers of coal-graphite products. The volume of investments in the project at the initial phase will be $20 million.

According to plans of Energoprom, the production of Russian isostatic graphite will be cheaper than its foreign counterparts. Moreover, it will have high quality, thanks to the use of advanced production technologies.

Currently among the world’s leading producers of isostatic graphite are such countries as the U.S., Japan and Germany, with Russia planning to join the leaders in the coming years.

Currently, the demand for isostatic graphite is steadily growing, with a particular interest being attracted by such industries as semiconductor manufacturing, aviation and rocketry, engineering, non-ferrous metallurgy, nuclear energy, the production of solar cells and liquid crystal displays.

At the same time analysts of the Russian Ministry of Natural Resources believe that the implementation of these state plans may be associated with serious difficulties, given the poor quality of local graphite ores, as well geographic remoteness of discovered fields from the main regions of consumption.

One of the directions of providing industrial raw graphite is the creation of new SMEs and centers of mining and processing of high quality graphite ores.