

**Full Name of the Project:**

|   |   |
|---|---|
| Name of the project   | Constructions of the beneficiation plant of talc-magnesite ores of the Zinelbulaksky deposit  |
| Main goals of project   | <p>This project is carried out in accordance with the Decree of the President of the Republic of Uzbekistan dated July 15, 2008 No. PP-916 “On additional measures to stimulate the implementation of innovative projects and technologies in production”, provides for the modernization, technical and technological updating of the production of LLC “BERUNIYTALK” for the implementation of innovative developments with the aim of producing high-quality and sought-after products in demand in the strategic sectors of the economy of the Republic.</p> <p>Creation of an enrichment plant for the processing of talc-magnesite ores in the Beruni district of the Republic of Karakalpakstan.</p> <p>Types of manufactured products of the processing plant:</p> <ul style="list-style-type: none"><li>• super microtalc;</li><li>• microtalc for the pulp and paper industry;</li><li>• talcum powder for medical purposes;</li><li>• microtalc for the manufacture of paints and varnishes;</li><li>• microtalc - filler of high quality plastics;</li><li>• talc pigment - filler of facade paints;</li><li>• talc filler for roofing and waterproofing materials;</li><li>• iron concentrate with additives of magnesium, titanium and chromium;</li><li>• mineral powder (enrichment waste) - aggregate of cast asphalt.</li></ul> |
| Sphere /industry  | Mining and processing industry  |
| Implementation of schedule project                                  | <p>The estimated period of the project is 25 years.<br/>Construction PF will last 2 years.<br/>For planning purposes, a planning period of up to 2029 has been selected. In the future, it is assumed that the plant will operate with the same indicators as in the last planning year (2029).</p> <p>Investment in the project:</p> <ul style="list-style-type: none"><li>• Investments in fixed assets in the period 2019-2021: \$ 5.419 million.,</li></ul> <p>Investment indicators of the project:</p> <ul style="list-style-type: none"><li>• Simple Payback Period (<b>PBP</b>): <b>4.17 years</b>.</li></ul>   |
| Location of the project   | Republic of Uzbekistan  |
| <b>Information about participants of the project:</b>               |   |
| - initiator   | LLC Beruniy Talk  |
| - co-executor (the lead sectorial of Ministry/authority/Department) | -   |
| - creditor  |   |

|   |   |
|---|---|
| Total costs of project                              | Analysis shows that the project is potentially profitable.<br>The total profit after tax is 11,705 million USD.<br>Total revenue exceeds 34.386 million USD   |
| <b>Prospective source of financing:</b>             |   |
| - own funds   | 1 billion Uzbek soums   |
| - loans of commercial banks                         | 1 000 000 USD   |
| - the required volume of direct foreign investments | -   |
| Composition of main costs                           | Purchase of equipment and machinery   |
| Projected profitability                             | - return on sales before taxes, depreciation and interest payments - the project is approaching 47%.  |
| Projected payback period                            | The calculations show that the simple payback period (PBP) of investments in the project is 4.14 years.   |
| Cash flows  | The internal rate of return (IRR) (for cash flow for all FCFF capital holders) is 25.8% (the rate is calculated without the influence of inflation).  |
| Characteristics of the planned production           | <p>Types of manufactured products of PF “BERUNIY TALK”;</p> <p><b>microtalc fractionated series I (first) grade</b> includes talc materials, for which there are no high requirements for optical-color characteristics, and the most popular chemical, dispersion, matting, and anti-sedimentation properties, hydrophobicity, atmospheric, thermal, chemical resistance and softness of the filler and additionally this is a natural combination of particles with a block and scaly form (which determines good micro-reinforcing properties and the possibility of creating dense packages in coatings), light ery color and minimal need for a binder (low DOF-, Oil absorption). In production, this type of microtalc is produced by many foreign manufacturers of talc and magnesite. Main areas of application: production of paints and varnishes, adhesives, glues, mastics, sealants, rubber and plastics, anti-corrosion compounds, wear-resistant coatings.</p> <p>1) <b>microtalc fractionated series premium</b></p> <p>The highest grade of microtalc has white and bright white types, with a pronounced macroscale structure, for use in the manufacture of paints and varnishes, paper, plastics, etc. - especially for the formation of compositions with the reinforcing effect of the filler with restrictions on the fractional composition and the highest requirements for</p> |

|  |  |
|--|--|
|  | <p>whiteness and floral shades of microtalc, its tread and structural properties.</p> <p>Magnesite is a natural magnesium fertilizer, an effective long-term active fertilizer on acidic soils with a low magnesium content. We have a high neutralizing ability superior to the action of limestone flour. Used in conjunction with other fertilizers, liming the soil. The yield increase during its application is 20-40%. It contains soluble MgO of more than 20, trace elements: cobalt, copper, zinc, manganese, iron, as well as talc as a baking powder of the soil. Magnesite is an equivalent substitute for magnesium sulfate, in contrast to which it does not acidify, but neutralizes the soil. When applied, the speed, quality of crop products is significantly improved. Magnesite is also widely used in production.</p> |
| Capacity of project/productivity             | 20 t / h   |
| Contribution to the project by the initiator | 5 000 000 USD  |
| Current status of project                    | Processing   |

### Information about the initiator of the project

|  |   |
|--|---|
| Full name of the enterprises                     | Limited liability company<br>"BERUNIY-TALK"                         |
| Requisites, email, contacts                      | Republic of Karakalpakstan, Beruniy, st. Friendship of Peoples, 12a |
| Foundation date of the enterprise                | Organized in 2007.  |
| Statutory fund                                   | 55 369 100 Uzbek sums   |
| Structure of founders and distribution of shares | Usmanov Dilmurod Khaidarovich 100%                                  |

### Information about the founders

|                |                               |
|----------------|-------------------------------|
| Full name      | Usmanov Dilmurod Khaidarovich |
| Contact number | +998 98 300-50-19,            |
| Email address  | berunitalk@mail.ru            |

### Contact of the performer from the MIFT

|                |  |
|----------------|--|
| Full name      |  |
| Position       |  |
| Contact number |  |
| Email address  |  |

## GENERAL INFORMATION

|   |  |
|---|--|
| Number and types of jobs created  | <p>The staffing is compiled on the basis of management structures for the chosen development strategy of the company and includes official salaries in accordance with the market value of specialists of the required qualifications.</p> <p>The need for production workers is formed from the requirements for the production line and standards for morbidity and other reasons for the absence from the workplace. The number of auxiliary production personnel is calculated on the basis of the necessary functional responsibilities and the volume of work. In a similar way, a need is formed for administrative and commercial personnel.</p> |
| Environmental impact statement (project EIS), which includes expected types and volumes of waste, places of their utilization | The 2018 draft EIA with a positive final examination of the State Committee for Nature Protection of the Republic of Uzbekistan  |
| Information about the land plot for the construction of the enterprise  | The Zinelbulak deposit of talc stone is located in the Beruni district of the Karakalpak Republic, 12 km north-west of the village "81 km" and 42 km from the city of Beruniy.   |
| Existing infrastructure   |  |
| The required infrastructure   |  |
| Upcoming construction and installation works  | 40 000 USD   |
| Designed-estimated documentation  | 12,0-0,72-18,0 kW/h  |
| Power requirement (kWh), installed capacity (kWh or megawatt hour)  |  |
| Demand for water (cu/m)   | <p>It is planned to supply the enterprise with drinking water due to the surface runoff of the Yaman-Sai Canal, which is located at a distance of about 10 km from the southeastern sections.</p> <p>0.25-0.078-1.95</p>   |
| Gas demand (cu/m)   |  |

## MARKET ANALYSIS, PRODUCT DESCRIPTION (WORKS, SERVICES), MARKETING RESEARCH

|                 |  |
|-----------------|--|
| Type of product | <p>The current world level of talc mining (without talc stone) is more than 7.5 million tons/year, of which 1.6 million tons fall to Europe and 3.2 million tons to Asia. Its largest producers are China and the United States, which account for about half of world production. Traditionally, the leading manufacturers of talcum powder are also Finland and France. In recent decades, its production has sharply increased in Australia, India and Brazil, which allowed these countries to become large producers of raw materials. Russia is distinguished by the release of low-grade products (mainly talc stone). Talcite deposits are developed by both open and underground methods, and talc stones are only discovered. The development of talc deposits in the Urals has been going on since the end of the 19th century and meets the needs of</p> |
|-----------------|--|

|  |  |
|--|--|
|  | <p>various industries in Russia. Currently, there are about 13 talc deposits. Actually - 6 of them.</p> <p>Talc - magnesium hydrosilicate (<math>3 \text{ MgO} \cdot 4 \text{ SiO}_2 \cdot \text{H}_2\text{O}</math>; MgO - 31.74%; <math>4\text{SiO}_2</math> - 63.5%; <math>\text{H}_2\text{O}</math> - 4.8%), has a hardness of 1 on the Mohs scale (the softest mineral), specific gravity 2.7 - 2.8 poor heat - and electrical conductivity, melting point 1530 C0, high acidity (completely decomposes only in HF), the concentration of hydrogen ions in an aqueous suspension (PH) of 8.5 - 10.0 is hydrophobic. The second name for talcum used in the technical literature is STEATIT. It is characterized by high oil absorption, sheet structure, chemically neutral, electrical insulator. It is a multifunctional mineral used in combination of its properties after appropriate processing in the production of paper, paints, ceramic and rubber products, plastics, automation, as well as in the manufacture of pharmaceuticals and cosmetics.</p> <p>The mineral product - talc, due to its unique properties, has provided widespread use in the formulations of various paints and varnishes. The use of talc is no less effective in the production of plastics. If the main consumption of calcium carbonate in polymers is in the production of PVC profiles, then over 90% of talc in the industry is used in the production of polypropylene.</p> |
| Annual production (ton. year)                      | 25 000 tons  |
| <b>Prospective markets sales and their shares:</b> |  |
| Domestic   | 45%  |
| Export   | 50,5%  |
| Costs of products                                  |  |
| Demand for raw materials (per year)                | 23 564 tons  |
| Provision of raw materials                         |  |
| Market volume                                      | 23564 tons   |
| Expected market share                              | 40%  |
| Main competitors                                   | <p>In the foreign market, the largest producers of talc are:</p> <ul style="list-style-type: none"> <li>• a group of European companies Luzenac - 685 thousand tons/year;</li> <li>• Finnish mineral company Finminerals - 400 thousand tons / year.</li> <li>• Shabrovsky talc plant -65tys. tons / year;</li> <li>• Miass Talc Plant - 60 thousand tons / year;</li> <li>• Syrostan talc plant - 60 thousand tons / year;</li> <li>• “Baikal Minerals” - 70 thousand tons / year.</li> </ul>   |
| Main competitive advantage                         | <p>Lack of domestic producers of talc;</p> <ul style="list-style-type: none"> <li>• availability of its own raw material base with high-quality talc <math>\square</math> ore;</li> <li>• effective technologies for the extraction and use of high-tech equipment in the technological process can significantly reduce energy costs;</li> </ul>  |

|  |  |
|--|--|
|  | <ul style="list-style-type: none"> <li>• quick reconfiguration of the technological scheme for the release of a product brand that is in demand at a particular moment in time;</li> <li>• close proximity of large consumers of high-quality talc, which can significantly reduce the cost of transportation of finished products;</li> <li>• Talc products at the talc dressing plant are analogous to talc products of Euro-Asian companies at lower prices.</li> </ul>   |
| Main target groups of consumers  | <ul style="list-style-type: none"> <li>- rubber</li> <li>- rubber</li> <li>- plastic</li> <li>- paintwork,</li> <li>- roofing</li> <li>- ceramic (ceramics, porcelain, earthenware),</li> <li>- metallurgical,</li> <li>- electrode</li> <li>- pastry shops,</li> <li>- pulp and paper,</li> <li>- petrochemical,</li> <li>- mining and processing,</li> <li>- automobile and tractor plants,</li> <li>- combines of building materials,</li> <li>- production of household and industrial chemicals, - road-building enterprises.</li> </ul>  |
| The structure of sales according to target groups of consumers   | Producing cable and rubber products. Ceramic industry. Paint and varnish industry  |
| Pricing strategy   | <ul style="list-style-type: none"> <li>• traditional consumers (production of car tires, ceramic products, sheet-rolling production, welding electrodes, etc.) use talc of large grinding (up to 45 microns). The market price of such a product is 0.2-0.3 cu ./ 1 kg.</li> <li>• Pulp and paper mills of the timber industry complex and others, equipped with modern imported equipment, use dispersed talc (45 - 20 microns) of foreign production. Its market price is 450 - 550 USD / ton.</li> </ul> <p>Other enterprises in this industry also use domestic products. Its price is 150 - 200 cu / ton.</p> <p>The enterprises of the paint and varnish industry use micro talc, both imported and domestic production.</p> |
| Cost structure of the final product  |  |
| Availability of patents, licenses, certificates in accordance with the current legislation                 | License No. 0002 dated July 16, 2018, extended until January 15, 2043, QQ series F5.   |
| The presence of a formed database of potential customers with a confirmed willingness to purchase products | Mehrjon-mehrbon LLC, Almalyk Mining and Metallurgical Plant OJSC, JV Peng Sheng LLC, II TOSHRANGMETZAVOD JSC, Andijonkabel OJSC JV, Komfort kolor LLC, Color Termiz HC, RUBBER TECHNIKAL LLC JV PRODUCTS ", LLC Smart Heating Solution, JV LLC PROCAB, IPOOO SIRDARYA CERAMIC PRODUCTION, LLC IKBOL, JV LLC ISOCOM, LLC STM COLOR, JV LLC  |

|                                       |   |
|---------------------------------------|---|
|                                       | Millenium Light, PE TEX-NAZ, PE ALVIERO, JV EAST KOLOR, JV Uzbekkabel OJSC, Uzmetkombinat JSC.  |
| Presence of marketing research        | <p>Marketing research has established that the Uzbek consumers of talc products use the following quality categories of talc:</p> <ul style="list-style-type: none"> <li>• traditional consumers (production of car tires, ceramic products, sheet-rolling production, welding electrodes, etc.) use talc of large grinding (up to 45 microns). The market price of such a product is 0.2-0.3 cu ./ 1 kg.</li> <li>• Pulp and paper mills of the timber industry complex and others, equipped with modern imported equipment, use dispersed talc (45 - 20 microns) of foreign production. Its market price is 450 - 550 USD / ton.</li> </ul> <p>Other enterprises in this industry also use domestic products. Its price is 150 - 200 cu / ton.</p> <p>The paint industry enterprises use micro <math>\rightarrow</math> talc, both imported and domestic.</p> <p>Market research has shown that the market for high-quality talc products (super microtalc) is filled with imports. According to our data, the import volume of super microtalc exceeds 3.5 thousand tons / year.</p> |
| Presentation component of the project |   |
| Additional information                |   |
| Project risks                         |   |

### **PRODUCTION TECHNOLOGY AND PARAMETERS OF MAIN EQUIPMENT**

Depends on the investor's preferences

|                                  |   |
|----------------------------------|---|
| Type of equipment                | Determined by the project   |
| Country of origin                | Determined by investor  |
| Performance                      | 5,000 tons / year of ore  |
| Cost                             | 1 416 852 USD   |
| Energy consumption               |   |
| Installed capacity               |   |
| Overall size of equipment        | Depends on a project  |
| Weight of main equipment         |   |
| Node of main equipment (lines)   |   |
| Number of working hours per year | <p>PF working mode is 12 months a year.</p> <p>The operating mode of the closed ore warehouse is adopted year-round:</p> <ul style="list-style-type: none"> <li>• for the reception of ore from the open pit during daylight hours in 1 shift for 12 hours (with a 5-day working week) 90 working days in the summer period;</li> <li>• for shipment of talc ore to the beneficiation plant in 3 shifts of 8 hours (with a 7-day working week) 270 working days a year.</li> </ul> <p>The total number of hours of operation per year in a closed ore warehouse is 7,560.</p> |

|   |   |
|---|---|
|   | The working hours of the processing plant are 270 working days per year in 3 shifts of 8 hours each (with a 7-day working week), which will be 6,480 business hours per year.   |
| Duty cycle  | The finished goods warehouse operates as packaged concentrates accumulate and are shipped by road to consumers in 1 shift for 8 hours (with a 5-day working week), 190 days a year, 1,520 hours of work per year.   |
| Periodicity of the planned –warning repair (design and preparation works) | Mechanical repair shops operate 190 working days a year, in 1 shift of 8 hours (with a 5-day working week), which will amount to 1,520 hours of work per year.  |
| Number of people involved in the production process and their functions   | In accordance with the plan to create 31 jobs in the enterprise. Functionally, project personnel can be divided into groups: <ul style="list-style-type: none"> <li>• main production personnel;</li> <li>• auxiliary production staff;</li> <li>• administrative staff;</li> <li>• sales staff.</li> </ul> |

**STEP-BY-STEP, DESCRIPTION OF PRODUCTION TECHNOLOGY**  
(*Show schematically*)