

White Paper ICO

The use of new technologies
for the synthesis of
polymeric bitumen binders

Annotation

The idea of the project is the construction of the first unique plant in Eurasia for the production of polymer bituminous binders with the capacity of 150,000 tons per year by the investment of the financial blockchain-product - SINT derivative.

Investments in the amount of \$ 30 million will be directed to the construction of production facilities, the purchase of machinery and equipment.

The resulting product is a raw material for road construction, the production of waterproofing, roofing and paint products.

The demand for polymer bituminous binders is several times higher than the capacity of the plant, that will provide guaranteed sale of the product and return on investment.

Buying SINT each investor is guaranteed the growth of investments twice or more. In addition, in the case of growth of the value of the cryptocurrency the company will compensate for the exchange difference. The invested funds are protected in case of a decrease in value. The growth of profits is guaranteed to investors. Capitalization of investments by 8.5% is envisaged after the commencement of production on March 1, 2019

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1. Definitions

Polymer bituminous binders (PBB) is a polymer composite consisting of a high molecular weight petroleum solvent agent, polymers (rubber chips), fillers contained in a polymer, a protonated complex and various modifiers.

Quality - heat resistance, operational strength, ductility, water resistance, durability. The raw material – rubber crumb. Solved problems are utilization of rubber waste, recycling of polymer waste, production of modern PBB based on low-liquid oil fractions.

Derivative or derivative financial instrument is a contract by which the parties entitled and/or undertake to perform certain actions in relation to the underlying asset. This contract is an agreement between two parties under which they assume an obligation or acquire the right to transfer the underlying asset within the prescribed period at the agreed price.

SINT derivative is a contract for the sale of products of the company LLC "Synthesis technology" in the form of SINT intangible asset, which includes an option (put option) for the redemption of SINT within the agreed period at the agreed price.

Crypto economy is a socio-economic relationship in a digital society that focuses on interactions using network protocols. The main directions of the crypto economy, which are part of the study, are: cryptographic tokens (crypto-currencies), digital assets; decentralized social security and crowdfunding systems; decentralized management systems; self-fulfilling "smart" contracts; commerce markets for computing resources; online trust systems and reputation systems; consensus algorithms and so on.

Primary capital raising, or **ICO, Initial Coin Offerings**, a way of raising capital through investment in the project (including using crypto currency).

2. Brief description of the project

This project for the production of polymer bituminous binders was developed at Moscow School of Management Skolkovo as part of the program for the professional training of teams for the management of projects for the development of monocities in the Russian Federation.

The project is aimed at diversifying the economy of the municipal formations of the Kemerovo Region.

The advantages of the investment project in general can be formulated as follows:

1. High investment attractiveness of the project due to the relevance, profitability and payback period less than 3 years.
2. The main business idea is connected with modern and actual production of polymeric bituminous binders.
3. Ecological component of the project: raw materials are rubber crumb, recycled from large-sized tires. The implementation of this project will significantly reduce the accumulated environmental damage.

The project involves the construction of a large plant for the production of polymer bituminous binders with a capacity of 150,000 tons per year. The total amount of investments is \$ 30 million.

The implementation of the investment project for the construction of the plant for the production of polymer bituminous binders can be broken down into several stages.

I stage. At this stage, registration of documents for the land plot is carried out (their approval has already been carried out), the coordination of design and estimate documentation (design has already been done). Preliminary work is carried out for the organization of construction of industrial premises, storage tanks for PBB and raw materials (duration 5 months).

II stage. At this stage, the construction and production of equipment is carried out (duration of 9 months).

Stage III. At this stage, we hire and train personnel, set up equipment, issue a trial batch of products and reach production capacity (duration 3 months).

In accordance with the planned volumes of production of polymer bituminous binders and the requirements for equipment, procurement will be carried out in Russian and foreign manufacturers of individual technical project.

The final delivery date for the equipment is 01/02/2019.

The final term of installation of equipment 01/03/2019.

3. Technology of production of polymer bituminous binders and market

New technologies for the synthesis of polymer bituminous binders (PBB) are based on the principle of forming a polymer composite from a high molecular weight petroleum agent, polymers (rubber chips), fillers contained in a polymer, a protonated complex, and various modifiers. The main difference from the applied crumb rubber bitumen modification technologies is chemical (nanomolar) transformation of the initial components (raw materials).

The obtained homogeneous polymer-bitumen composition has properties of thermal stability, operational strength, ductility, water resistance, characteristic of cross-linked polymers (rubber) and high-molecular oil components. Molecular synthesis of polymer-bitumen binders used in this project is a product of modern nanotechnology process. This technology is used on an industrial scale for the first time in the Russian Federation.

The key issue in the construction of the roadway is the quality of bituminous binders in the production of asphalt concrete and compliance with the technology of production. If the second component requires only the resolution of organizational issues, there is no possibility to influence the quality of bitumen traditionally used in the construction of roads. To correct this situation, Rosavtodor made a decision to certify all the bituminous binders produced in accordance with modern requirements that meet world standards, which opens the possibility of creating new materials for independent producers of bituminous binders. Over the past four years, five laboratories have appeared in Russia that are capable of attesting bituminous binders in accordance with the American standard Superpave. The basic evaluation of the American standard is the classification of bituminous binders in terms of performance properties - PG.

Their list includes such parameters as the maximum values of air temperature in summer and in winter. Even the modern domestic product - polymer-bitumen binder PBB 130, has characteristics only + 49 ° C ... 17 ° C, respectively (the cost of such material is about 1.5-2 times higher than standard bitumen).

The company "ECO" conducted research and they showed that the technology developed by us allows to dissolve the rubber crumb in the following oil environments: bitumen of any brand, fuel oil, tar, heavy oil residues. Using the all above types of raw materials, we have obtained PBB, able to withstand the difference in temperatures up to 120 ° C. Using all of the above types of raw materials, we have obtained PBB, capable of withstanding the difference in temperatures up to 120 ° C. At the same time, the technology makes it possible to obtain a range of products from mastics, waterproofing materials, road bitumen binders to roofing materials.

Technology for the production of polymer bitumen binder concentrates (PBB) is based on a three-stage process for the synthesis of high molecular weight aromatic, naphthenic, asphaltene compounds, polymers, resins, oils contained in heavy petroleum fractions with block polymers based on butadiene, styrene, isoprene, polyamides, and partial destruction of heavy hydrocarbons and their subsequent separation into the fuel mixture.

In the reactor R-101/1-3 (periodic action) are the main processes of partial devulcanization and depolymerization, synthesis of new complex monomers, block copolymers and selective cracking of heavy hydrocarbons. Next, the reaction mixture enters the reactor R-201 (continuous

action), where the reactions of oxidative polymerization, polycondensation and oligomerization, the formation of complex organic acids and their anhydrides occur. In the reactors R-301/1-3 (periodic action) is the stabilization of high molecular polymer mass and its final "drying". Next, the resulting polymer composite is sent to the filling and packaging section or to the production of modified bitumens and other polymeric bitumen binders (depending on the recipes and regimes of the reactor sections). The resulting inert gas and a mixture of light hydrocarbons are diverted to the fuel network with supply for utilization in the incinerator.

The presence of three oil refineries will allow to obtain the best raw materials for the release of higher quality bituminous binders in Kuzbass. There is a unique opportunity to create an enterprise for the production of inexpensive bitumen binders for various purposes. These binders can satisfy the different needs of the region. Despite the availability of a large, constantly replenished volume of rubber KGSB, the proposed technology will allow full recycling of this type of waste. In addition, it will meet the needs for high-quality bituminous binders in a well-developed road construction industry. It is possible to produce inexpensive high-quality roofing materials. The organization of production of bituminous binders will also satisfy the need for some materials for general civil construction.

4. Use of blockchain technology in SINTEC project

To ensure the transparency of the financial and technological flows of the project, the blockchain electronic document management system (BEDMS) will be used on the basis of an electronic document circulation system with open source Alfresco Community Editions and database on the blockchain. All ongoing financial payments and deductions, contracts, internal project documents, internal documents of the project production invoices for production leave, will be signed electronically and registered in the blockchain (similar to BEDMS DocSensus of Deloitte). Any investor will be able to fully control all stages of project implementation, shipment of finished products, etc. To ensure protection against forgery and any manipulation of SINTEC products, each lot will be marked with a chemical marker with registration in the blockchain. Thus, if the products are used as an example for the production of roadway cover, it will always be possible to determine in which area the batch of products was used and from the calculation of the service life, it will be possible to plan repair and other types of work, and, accordingly, to plan financial costs for servicing organizations. If in the future, the tax service will use the blockchain technology, there will be no need to send any reports, as all information will be available in real time and fully transparent to any regulatory authorities.

5. Project economics

This project involves crowdfunding investments in derivative SINT, which is implemented in the form of a financial instrument on the blockchain-ETHEREUM platform and provided goods production of polymer-bitumen binders.

The first stage, the investment campaign (fundraising (ICO)), involves a 30-day period: ICO's in the acquisition of SINT options using the US dollar (USD), bitcoin (BTC) and other crypto-currencies.

The cost of 1 SINT = 5 USD.

The minimum amount of investments is 5 USD.

Crypto-currencies are exchanged at the rate taken from <http://coinmarketcap.com> at the time of transfer. From the first day of the investment campaign will be installed a discount, net of purchased SINT tokens (options).

1st day - 50% discount.

2nd day - 50% discount.

3rd day - 50% discount.

4th-6th day - 40% discount.

7th-13th day - 35% discount.

14th -20th - 30% discount.

27th- 30th - 25% discount.

The total number of tokens sold for the entire investment company will be 13,200,000.

The number of SINTs, intended for sale, for each day of the campaign is fixed and every day the investment of the company will decrease.

A total of 13,200,000 SINTs will be issued, 11,000,000 SINT will be sold to the ICO and 2,200,000 SINT will be left to the developers to pay for the bounty company payments to the project's advisers and the project team.

At the expense of funds raised ICO will be the formation of the investment budget for the construction of a plant for production of polymer bituminous binders.

The total amount of investment required to implement the project is **\$ 30 million**.

The largest share belongs to the acquisition of a land plot (S=8,633 acres) with necessary infrastructure facilities – \$5.1 million.

The project documentation – \$0, 69 million

The construction of industrial and storage facilities - \$ 4.95 million.

The construction of tanks for PBB, tar oil, fuel oil and reagents - \$ 1.34 million.

The cost of production equipment is \$ 10.72 million.

The acquisition of equipment - \$ 2.01 million.

The operating expenses - \$ 5.19 million.

The second stage. The acquisition of the land plot, the construction of the plant, the acquisition and the installation of equipment, hiring and training of personnel, the production of a limited number of PBB - December 2017 - February 2019.

The third stage. The reverse repurchase of SINT begins in March 2019 for the amount of 1.6 million USD every month. Each investor has the right to choose between selling SINT or obtaining an appropriate amount of polymer bituminous binders.

For investors who will not buy SINT in the first month of the production, 8.5% per annum will be added for each calendar day of the month after March 1, 2019, and within 18 months.

The compensation cost in case of growth rate of the initially invested assets on the redemption date will be made at the expense of profits from the project and not lower than the cost of the course taken with <http://coinmarketcap.com> at the time of redemption.

The example of buying and redemption of SINT tokens depending on the day of the investment company and the day of redemption:

Let's say the purchase amount is 100 USD.

On the first day of the investment campaign with a 50% discount and the cost of 1 SINT = 2.50 USD you can buy:

$100 \text{ USD} : 2,50 \text{ USD} = 40 \text{ SINT}$.

The redemption on March 1, 2019:

$40 \text{ SINT} \times 5 \text{ USD} = 200 \text{ USD}$.

Thus, the invested funds are doubled.

But if the investor decides to leave the funds and does not present them to the ransom immediately, then 8.5% annually are invested in the invested funds.

Therefore, if the redemption date is September 1, 2019:

$200 \text{ USD} \times 183 \text{ days} \times 8,5\% = 8,52 \text{ USD}$.

The amount received by the investor = $200 \text{ USD} + 8,52 \text{ USD} = 208,52 \text{ USD}$.

If the term of the redemption date is December 1, 2019:

$200 \text{ USD} \times 274 \text{ days} \times 8,5\% = 12,76 \text{ USD}$.

The amount received by the investor = $200 \text{ USD} + 12,76 \text{ USD} = 212,76 \text{ USD}$.

In the event that the crypto-currencies have grown in value since the moment of investing, the percentage of the difference in the initial value of the crypto-currency and their value at the time of redemption is added to the repurchase amount.

Let's say that the purchase amount is 1 BTC, which is 3 500 USD at the time of purchase.

On the first day of the investment campaign with a 50% discount and the cost of 1 SINT = 2.50 USD you can buy:

$$3\,500\text{ USD} : 2,50\text{ USD} = 1400\text{ SINT.}$$

The redemption on March 1, 2019:

$$1\,400\text{ SINT} \times 5\text{ USD} = 7000\text{ USD.}$$

In the event of an increase in the value of BTC to 1 BTC = 5,300 USD, the number of SINTs purchased on the first day of the campaign is recalculated according to the following formula:

In the event of an increase in the value of BTC to 1 BTC = 5,300 USD, the number of SINTs purchased on the first day of the campaign is recalculated according to the following formula:

$$5\,300\text{ USD} : 2,50\text{ USD} = 2\,120\text{ SINT.}$$

The redemption on March 1, 2019:

$$2\,120\text{ SINT} \times 5\text{ USD} = 10\,600\text{ USD.}$$

Thus, the invested money grows three times and triples its value. In addition, in the case of the rising value of cryptocurrencies the campaign compensates the exchange difference. In the event of a decline in value, all funds are protected and guarantee the growth of investors' profits.

That is, as a result, subject to the action of the production of polymer bituminous binders and in the case of the repurchase of investor funds after March 1, 2019, the funds are preserved from fluctuations in value on foreign exchange exchanges and an additional 8.5% is charged, which exceeds the weighted average interest on the deposit in commercial banks.

To protect the funds collected on the ICO, various hedging schemes are used in cooperation with hedge funds. In order to neutralize the impact of risks on the project implementation, a comprehensive risk analysis was carried out depending on the degree of influence and the amount of the alleged damage. A set of measures aimed at eliminating risks and protecting investments was developed. Details of this information can be found in the business plan of the project.

Regardless of the amount of funds raised through the ICO project, the construction of the plant will be provided at the expense of the project participants' own funds, borrowed funds, as well as through a set of program activities to support investment projects under the current legislation.

6. Project team

The project team consists of practitioners, high-level professionals who have a lot of implemented projects in their fields of activity.

Staff composition and professional experience of SINTEC project developers.

1 The director of the project and the General Director of the company SINTEK - Viktor Fedorovich Gluhov, the honored power engineer of Kuzbass, more than ten years he directed the largest power station Tom-Usinskaya GRES, under his leadership the largest projects in the energy sector related to increasing the capacity of existing production facilities and commissioning of new facilities were implemented.

2 The chief economist of the project Tatyana Rusinova, an economist, a graduate of the international faculty of management of the Federal State Educational Institution of Higher Professional Education of the TSU, the Skolkovo Moscow School of Management, has the experience of municipal service and an economist for more than 10 years.

3 The project's lawyer is Mikhail Shevtsov - a lawyer, a graduate of the International Institute of Economics and Law, and has more than 10 years of experience in the field of jurisprudence.

4 Construction and technological support of the project - LLC "Siberian Company", a director - Vyacheslav Parfyonov. This company provided construction work at energy facilities in the Kemerovo region.

5 Management and marketing of the project - Anton Porokhin, an economist, a deputy head of the department of marketing and management of the Novokuznetsk branch-institute of the Kemerovo state university, a graduate of the Skolkovo Moscow School of Management, an economist for more than 14 years.

6 Urban Nikolay – a candidate of chemical sciences, a head of the scientific and innovation sector of the Novokuznetsk branch-institute of the Kemerovo state university, a scientific secretary of the expert council under the head of the city for innovative industrial development since 2011. (Novokuznetsk)

7 Designing and engineering support of the construction - LLC “Intertekenergo”, an executive director - Tsyplenkov K.M. The company "Intertehenergo" was founded in 2011 and specializes in engineering services in the area of generation of heat and electricity transmission and distribution.

7. Conclusion

The project is the construction of the first unique plant in Eurasia for the production of polymer bituminous binders with the capacity of 150,000 tons per year. The total cost of the project is \$ 30 million. The participation of investors in the project involves the purchase of the SINT derivative,

which is implemented as a financial instrument on the ETHEREUM blockchain platform, in turn, SINT is provided with the product of production - polymeric bituminous binders.

Sales of SINT options will occur within the ICO.

SINT acquisition options could be implemented with the help of the US dollar, bitcoin and other crypto-currencies. A more detailed description of the investment terms for the SINT option is available on the project website.

The invested funds grow twice or more. In addition, in the case of growth of the value of the cryptocurrency the company will compensate for the exchange difference. In the event of a decline in value, all funds are protected and investors are guaranteed profit growth. After the start of production from March 1, 2019, the capitalization of investments is provided by 8.5%.