Quartz technology LTD

Volume of investments required: **$ 20 300 thousand**

Intended use of investment required:

R&D	**2 %**
Fixed assets acquisition	**67 %**
Working capital (reconstruction and building of production facilities)	**20 %**
Other (infrastructure development)	**10 %**
Marketing	**1 %**

Company profile:

1. Date of establishment - January 1, 2003

2. Stage of development - Start-up

Quartz Technologies, Inc. was established to mine and process quartz-containing ores of Eastern Siberia with fur-ther obtaining high-quality kinds of silicon and manufacturing electrotechnical products (the Solar Silicon project)

1996-2002 - Before becoming a legal entity, the company carried out a set of pilot-scale, estimation, surveying and experimental work at the expense of participants of the project and under support of Irkutsk Region Admini-stration and the government of Buryat Republic; the deposit of impurity-free quartz (superquartzite) was discov-ered. The Territorial Committee on Natural Resources was provided with 960 thousand tons under the Category C1 for silicon production and with 66 thousand tons for quartz granules. Raw material basis for the project was formed. All required examinations were carried out and corresponding authorizations of local administrative bod-ies for allocation of production under the project were obtained. The technolological road (28 km) leading to the mine was built. The company started building the mine's infrastructure. Basic project's technologies were devel-oped and patented in the Russian Federation. Pilot samples of the products manufactured in the course of mastering technologies were tested at the leading enterprises of Russia.

2003-2004 -The fulfillment of the project was carried out at the expense of the project participants' investments amounted to $ 840 th. of the initial capital of "Quartz Tecnologies, Inc.", putting into operation pilot industrial quartz granule production capacity with the annual turnover of at least $1,300 thousand. In order to complete the work it is necessary to invest additional funds in the amount of $ 450 th. Further fulfillment of the project presup-poses finding investors under the following condition: % in charter capital + credit + leasing.

3. Size and source of investment to date:

- $ 130 th., budget funds of Irkutsk Region Administration, Russian Federation Ministry of Science and enter-prises' resources for financing R&D
- $ 600 th. provided by the Siberian Branch of the Russian Academy of Science

4. Industry - non-ferrous metallurgy, microelectronucs, instrument making, power engineering

5. Target market - non-ferrous metallurgy, light technology, microelectronics, instrument making, power engineering

6. Sales in 2003 - none

7. Description and value of assets

Quartz deposit, mine, share ownership on the building of quartz granule pilot production, technological facilities of the production concerned .

8. Intellectual property rights

Agreement on transferring owner's rights to the Russian Federation patents was reached and applications for the initial company's capital were prepared.

9. Signs of public recognition

2003 - winner of innovation projects of the Irkutsk Scientific Center of the Siberian Branch of the Russian Acad-emy of Science and of investment projects of the Irkutsk Oblast;

2004 - Decree of Irkutsk Oblast Governor No. 104 dated 09.03.2004 on including the project concerned in the list of top priority projects of the Irkutsk Oblast.

Owners:

“Oka-K”, Limited Liability Company	**48,8%**
Sevzoto, Private Company.	**38,4%**
Geochemistry Institute of the Siberian Branch of the Russian Academy of Science	**8,6%**
Irkutsk Relay plant, Public Corporation.	**4,2%**

Management and key personnel:
Romanov, Victor - Director, 56, M.Sc., has been engaged in the work in the production field for 34 years, began his career as an engineer, one of the latest positions - Deputy Director of a defense industry eneterprise, initiator of the project
Nepomnyaschih, Alexander - Scientific Advisor of the project, 61, Doctor of Sciences(physics and mathematics), professor, Deputy Director of Geochemistry Institute of the Siberian Branch of the Russian Academy of Science, scientific advisor of the project.
Spiridonov, Alexander - Leading Geologist, 59, Doctor of Sciences (geological mineralogy), Deputy Director of Geochemistry Institute of the Siberian Branch of the Russian Academy of Science
Mihailo,v Mihail - Leading Technologist, deals with quartz processing, 55, Candidate of Sciences (geological mineralogy), leading researcher of Geochemistry Institute of the Siberian Branch of the Russian Academy of Science
Yeremin, Valeri - Leading Metallurgist, 48, head of a department of Silicon, Ltd., initiator of the project .
Krasin, Boris - Leading Technologist, deals with multisilicon production, 64, Candidate of Sciences (mineralogy), Institute of Geochemistry Institute of the Siberian Branch of the Russian Academy of Science, initiator of the project concerned

Products characteristics:

Products of Quartz tech-nologies, Inc. (year of coming to the market)	Characteristics	Analogous products	Advantages of the products of Quartz technologies, Ltd.
Quartz granules (a year of investments)	Raw material for manufacturing quartz crucibles	Kind IOTA 4Unimin (USA)	Lower price due to processing know-how
Metallurgical silicon (3 years of investments)	Raw material for multisilicon production	Elkem(Norway)	Higher quality due to quartzite quality and refining know-how
Multisilicon (3 years of investments)	Material for manufacturing solar cells (solar silicon)	Bayer (Germany) Crystalox (England)	Independence of the production on scrap Ecologically “pure” silicon production proc-ess Possibility of great price reduction (provided by

			know-how)

Note: Raw material for multisilicon production is cuttings-off of electronic kind monocrystal ingots (scrap)

Markets and competition:
At present the volume of world's solar silicon production is determined by the amount of scrap available at the market and on the whole is 5,000 tons at the price of over $60 per kg. At the same time the silicon deficiency in 2003 was more than 4,000 tons and it tends to increase. In the Russian market the Solar silicon volume at the price of up to $ 40 per kg in 2003 was estimated to be about 1,000 tons per year. There is no competition in the multisilicon market.
Development of alternative technologies is intensively carried out in all the countries having "silicon" technology, but no data on industrial implementation of these projects are available. It should be noted that there is no alterna-tive to the method of obtaining solar silicon through direct carbothermal reduction with SiO2.
The company's task is to put an end to solar silicon deficiency in Russian and world markets when silicon volume will reach about 4,000 tons per year with further holding the market share of at least 1/3 of the market.
Perspectives of the development (with requested investments obtained)
6 months - putting into operation quartz granule production that provides sale of the products in the volume of at least $1,300 housand per year with the IRR = 65%.
2 years - putting into operation fined metallurgical silicon production that provides sale of the products in the vol-ume of at least $14,600 thousand per year when IRR=25%;
3 years - increasing multisilicon production volumes up to the values presupposed by the project till reaching the output of the products in the volume of at least $127,000 thousand per year when IRR=101%.