

**STRATEGY PREPARATION FOR PRIVATIZATION OF  
LARGE INDUSTRIAL ENTERPRISES OF AZERBAIJAN REPUBLIC  
INSTITUTION BUILDING TECHNICAL ASSISTANCE, LOAN NO. 27690AZ**

**COMPANY PROFILE – SUMGAI SUPERPHOSPHATE PLANT JSC**

**June 2003**

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*The contents of this report is subject to and does not override the terms and conditions of our appointment as set out in the Contract of February 17, 2003.*

*ã Ernst & Young 2003*

## ABBREVIATIONS

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AZM	Azerbaijan Manats
USD	United States of America dollar
RUR	Russian Roubles
WIP	Work-in-Progress
Q	Quarter of the year
The Company	Sumgait Super-phosphate Plant JSC
EBITDA	Earnings before interest, tax, depreciation and amortization
K	Thousands
M	Million
B/S	Balance Sheet
P&L	Profit and Loss Statement
FCST	Forecast
AGAAP	Azeri Generally Acceptable Accounting Principles
FSs	Financial Statements
IAS	International Accounting Standards
GOA	Government of Azerbaijan Republic
IVS	International Valuation Standards
MED	Ministry of Economic Development of Azerbaijan Republic
MoL	Ministry of Labor of Azerbaijan Republic
SWOT	Strengths, Weaknesses, Opportunities and Threats
TOR	Terms of Reference
US GAAP	US Generally Acceptable Accounting Principles
GBV	Gross book value
AD	Accumulated depreciation
NBV	Net book value

## ***Overview of Business and Operations***

### **General**

Sumgait Superphosphate Plant is located in the Sumgait industrial zone of Apsheron peninsula of the Azerbaijan Republic, 3 km west of the city of Sumgait and 35 km north of Baku.

Total area of Sumgait Superphosphate Plant is 60.8 hectares, including:

- the area occupied by production shops and facilities is 16.5 hectares
- the area of the roads is 16.0 hectares
- the area of unused land is 28.3 hectares

Presently, the plant is named 'Sumgayit Super-phosphate Open Joint Stock Company' (on the basis of Decree # 241 of Privatization Department of State Property of the Ministry of Economic Development dated on 27.11.2001).

The Company was able to produce the following main products:

- Sulphate acid;
- Oleum;
- Accumulator acid;
- Granular Superphosphate (in bulk);
- Granular Superphosphate (in 50 kg packing);
- Aluminium sulphate (solid);
- Aluminium sulphate (liquid).

The factory's first shop was sulphate acid production shop with productive capacity of 120 K tons per year. The shop launched its production in 1961.

In the 1963 super phosphate powder production shop was constructed. The capacity of this shop was 720K tons per year. In 1969 as a result of

reconstruction, productive capacity of the shop was increased to 840K tons per year.

In 1964 Granular Superphosphate production Shop was added. The shop productive capacity was 314 K tons per year. In 1969 productivity of the shop was increased to 400 K tons per year.

In 1966 the Aluminium Fluoride Shop was constructed with productive capacity of 2,200 K tons per year.

In 1975 Sulphate acid production shop was constructed with productive capacity of 450 K tons per year

In 1979 the second section of Simple superphosphate shop was added to the existing facilities. The production capacity of the new shop was 360 K tons per year, which brings the total Company's fertilizer capacity up to 1,200 K tons per year.

In 1979 the new Aluminium Fluoride production Shop with productive capacity of 4,500,000 tons per year was erected.

In 1975-83 due to the customers requirements the Company increased the production of granulating fertilizers and launched new Granular Superphosphate production Shop with productive capacity of 700 K tons per year.

Finally in 1989: Sulphate acid production shop was added with productive capacity of 240,000 tons per year.

At present sulphate acid and aluminium sulphate shops are partially in the operational condition, the superphosphate production shop is out of operation although the main production equipment is still in operational status.

### ***Plant and equipment***

There are two main technology and 8 subsidiary shops at the plant.

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Main production areas:

- Superphosphate Production;
- Sulphate Acid Production.

Subsidiary shops:

- Motor Transport Shop
- Control Equipment and Automation Shop;
- Railway Shop;
- Mechanical repairs and construction Shop;
- Power Shop;
- Electricity and Communication Shop;
- Technical Controls Shop; and
- Central Scientific Research Laboratory.

### *Main Production process*

#### *Production of sulphate acid*

Solid and crystal sulphur is used as a raw material. In accordance with structural requirement of manufacture, prior to delivery of solid sulphur to furnace for burning, it fluxed by means of heating elements in bunkers using water vapour under barometric pressure of 5-6 kg/cm<sup>2</sup> and at 110-120°C temperature. Liquid sulphur is delivered to furnaces (with 100 tons per day production capacity of each) burned by using air at 950-980°C and the output is 10% concentrated gas Sulphide anhydride – SO<sub>2</sub>.

Total volume of gas used to be 60,000-67,000 cubic meters. Produced gas is supplied to contact apparatus at 420-430 degrees centigrade and, using

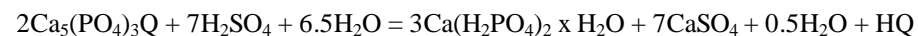
vanadium catalyst, Sulphide anhydride is oxidized to Sulphate anhydride (SO<sub>2</sub> to SO<sub>3</sub>).

Produced sulphate anhydride –SO<sub>3</sub> gas oleum, passing through 1st and 2nd monohydrate absorbers and, as a result of absorption, turn into oleum and vitriolic oil. Excess produced oleum and vitriolic oil are transported to the acid storage and sent therefrom to purchasers. Presently, the shop is operating with interruptions due to financial difficulties in purchase of sulfur raw materials and depending on demands in the manufactured product. Total product manufactured in 2002 was 24,143 tons.

#### *Simple superphosphate production*

Main raw material used for production of simple superphosphate is apatite concentrate. Apatite concentrate is purchased generally from Kirovsk city of Murmansk region or from Kovodorsk plant.

Weight of P<sub>2</sub>O<sub>5</sub> in apatite concentrate is 39.4%. To produce simple superphosphate fertilizer apatite concentrate is fed to receiving bunkers of chambers from storage through conveyor belt and hydraulic unit, therefrom delivered to elevators, simultaneously 66-68% sulphate acid at 54-58°C is delivered to elevators, fracturing reaction is as follows:



As a result, simple superphosphate fertilizer, P<sub>2</sub>O<sub>5</sub> with acidity of 11-12% and weight of 16-17% received at the chamber. Produced fertilizer is fed to storage through belt conveyor. During 24 days transformation process via clamshell cranes is executed for full maturing of the fertilizer at the storage. As the fertilizer's acidity drops to 6.8-7% /to be determined by analysis/, the fertilizer is considered ready for granulation or land fertilizing.

#### *Granular superphosphate production*

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To produce granular superphosphate, simple superphosphate raw material is fed to receiving bunkers of granulating drum through belt conveyor and then to granulators. At granulators simple superphosphate is moisturized as necessary by water sprinkler. Using electric motor simple superphosphate fertilizer is granulated in inclined rotating granulating drums and re-fed to drying drums to dry up the moisture. Following drying drum, normal granular elements are delivered by the elevator to sifter and then conveyed by belt conveyors to receiving bunkers of the department and from there loaded to motor transport or railway cars and sent for sale.

### *Aluminium sulphate production*

Aluminium hydroxide is used as a raw material. Aluminium hydroxide raw material is delivered by elevator from receiving bunkers to reactors, pulp with density of 1.30 and volume of 1.42 is produced, 92-94% sulphate acid is delivered, and as a result of boiling at 110-120°C using the heat releasing from exothermic reaction, depending on the purpose, 7.2% liquid or 17% aluminium sulphate is produced.

Aluminium sulphate in crystal condition is conveyed to storage by belt conveyor and from there sent to purchasers, whereas liquid aluminium sulphate is collected in finished product tanks and from there loaded to cisterns and sent to purchasers.

### *Geographical Markets*

Sumgayit Superphosphate Plant was originally established to satisfy the demand in phosphate fertilizers of Caucasian Republics and Northern Caucasus. The Company's secondary goal was to provide the chemical and petrochemical industries of Azerbaijan and Georgia with sulphate acid.

### *Fertilizers Business*

The Company at its best years was able to produce 1,200 K of phosphate fertilizers a year. The Company started to reduce the production of the

phosphate fertilizers from the late eighties and completely stopped fertilizers production in 1994.

According to the Management it is unlikely to return to the traditional CIS markets due to the fact that the Company is able to produce fertilizers with 19% of the useful content. At the same time the Russian competitors are able to produce phosphate fertilizers with over 60% of the useful content.

According to the Company's management at present Azerbaijan agricultural sector needs about 200 K tons of fertilizers a year. In line with the agrarian development programme being implemented currently by the Azerbaijan Government the domestic demand in phosphate fertilizers is expected to grow. Phosphorus is a nutrient required in relatively large amounts by plants and most crops, such as wheat, barley, potatoes, peas, corn and cotton, require significant quantities of phosphorus during the early stages of growth. The demand in phosphate fertilizers is forecast to increase worldwide. Given the availability of cheap skilled labour and the Company's experience in production of phosphate fertilizers Sumgayit Superphosphate plant is the most suitable facility to restore the fertilizers production.

### *Sulphate Acid, Oleum and Aluminium Sulphate*

The Company originally produced sulphate acid in order to satisfy the needs of the phosphate fertilizers. Sulphate acid was never a core product for the Company. The total maximum production capacity of the Company for acid and oleum was 690 K tonnes per annum. At the moment the management of the Company is considering Azerbaijan and Georgia to be major markets for sulphate acid and oleum. Azerbaijan Republic can also be the market for sulphate, accumulator acid and electrolyte.

According to the management the acid, oleum and aluminium sulphate are consumed by Azerbaijan's chemical, energy, oil distillation and water cleaning industries. According to the management, the need of the chemical industry is 9 K tons of sulphate acid, 1.2 K tons of oleum, and the need of energy industry is

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3.5 K tons of sulphate acid, and water cleaning needs 1.7 K tons of aluminium sulphate.

The management believes that more demand will come from the side of the Georgian 'AZOT' JV. It is expected that 'AZOT' will commence its operations within the near future. The annual expected demand from the Georgian company would be 50,000 tons of oleum.

### *Industry Overview*

The market of chemicals offered by the Company is highly competitive in CIS. The largest Russian fertilizer manufacturers (nine companies) are united in the association 'Phos Agro' (the former asset of Menatep Group). The Association also controls the only Russian supplier of the raw material used for phosphate fertilisers, company Apatit (Murmansk, Russia). This leaves very little opportunities for the phosphate fertilizers producers out of the association, unless they would be able to locate alternative sources for the raw materials.

Many companies in the CIS are also producing sulphate acid, oleum and aluminium sulphate. The management believes that this leaves little opportunity for the Company to penetrate into the Russian market. According to the management, old technology and dependence on raw materials limit the Company's market to domestic consumers and a limited number of consumers in the neighbouring Georgia.

Global participants engaged in manufacturing phosphorous fertilizer materials, or mixed fertilizers from phosphorous materials, including phosphoric acid; normal, enriched, and concentrated superphosphates; ammonium phosphates; nitrophosphates; and calcium metaphosphates, are as follows:

AKZO Nobel NV (Netherlands)  
ATOFINA (France)  
Chiretech Inc. (USA)  
Cochin Minerals & Rutile Ltd (India)  
Exxon Mobil Chemical Company (USA)  
Imperial Chemical Industries Plc (UK)

Mitsui & Co Ltd (Japan)  
Nichimen Corporation (Japan)

### *Suppliers*

The following main raw materials are necessary for the phosphate fertilizers production:

- Apatite concentrate;
- Sulfur;
- Chalk; and
- Vanadium catalyst (contact mass).

Apatite (Russia) appears to be the only supplier of the apatite concentrate in the CIS.

Sulphur is imported from Astrakhan and Orenburg regions of Russia. The same suppliers can be used for supplying sulphur acid and aluminium sulphate production.

The aluminium hydroxide that is necessary for aluminium sulphate production can be sourced from Ganja Silt Soil Plant.

The chalk and other necessary chemicals can be easily sourced from the suppliers in CIS.

### *Investment requirements*

It is clear that the Company requires replacement of most of its equipment and significant repair works of the production facilities. The existing equipment has not been maintained for many years and it is technologically outdated. The management of the Company believes, however, that some elements of the

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existing equipment may be refurbished at a minimum cost and be used for production.

According to the Management, partial rehabilitation of the Company's operation may be justified if the Company focuses on production of phosphor fertilizers. Based on the market analysis performed by the management of the Company the demand for the phosphate fertilizers in Azerbaijan is 200 K tons per year. The management provided us with the estimate of costs necessary for production of 200 K of fertilisers.

Expenses	Value 000' USD
Raw materials	13,521
Utilities	2,506
Wage and other labour related expenses	270
Sales general & admin	828
<b>Total Estimation</b>	<b>17,125</b>

Thus the production costs of 1 ton of the phosphate fertilizers will be USD86. The management considers that the Company would be able to sell the phosphate fertilizers for USD100 per ton since to the best of their knowledge the market price for such fertilizers is USD110-120 per ton.

Apart from the amount shown in the table above which would be initial investment into the working capital the management estimates that approximately US\$2.5 to US\$3 million need to be invested into the repair of the buildings and equipment.

### *Privatisation developments*

According to the management there were discussions with the representatives of the Russian 'Super Phos' Association. However the representatives were sceptical about the real potential of the Company due to its outdated technology and worn out equipment. Additional discussions are expected with another Russian company, Itera on their potential interest in the Company.

The size of the Company and its historic production capacity are far exceeding the Company's potential markets. According to the management, for the

Government to be able to attract an investor, the Company needs to be downsized to the levels that would allow for the economic production.

According to the law on privatization, employees are allowed to buy out 15% of the shares at discounted price. As the case with many other large industrial enterprises, a limited number of shares (less than 5%) were acquired by the Company's employees.

## **Organizational Structure, Management and Personnel**

### *Personnel*

The number of Company's employees reduced from 1,322 persons in 1990 to 540 in 2002. Among this 540 employees 480 are active employees who are on payroll and receive salaries. Other employees are on unpaid leave.

### *Remuneration*

The Company's monthly payroll expenses are approximately US\$16 K.

## **Summary SWOT Analysis**

### *Strengths*

- The Company has experience in production of phosphate fertilizers, sulphur acid and oleum;
- The Company is the only manufacturer of the phosphate fertilizers in Transcaucasian region;
- The Company has the management and technical staff capable to launch fertilizers production and strengthen the production of sulphur acid.

### *Weaknesses*

- The Company's technology is outdated and requires replacement to be able to compete with higher quality imports;

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- The majority of the raw materials must be imported from overseas;
- The size of the Company's potential market is significantly lower than the Company's historic production capacities;
- Large size of the Company results in high property and land taxes that the Company has to pay with its limited resources;
- The majority of the infrastructure is hardly usable and requires investment;
- The Company has poor environmental protection systems in place.

### *Opportunities*

- The strategy for reviving the agriculture industry in Azerbaijan's offers an opportunity for the Company to be the major supplier of phosphate fertilizers to this industry;
- Capitalize on the existing demand for sulphur acid and increase supplies of the acid to domestic and foreign consumers through technology and cost improvements;

### *Threats*

- The Company cannot be a going concern without support of the State;
- It is uneconomical to transport fertilizers produced by the Company due to the low useful content in the total mass of the fertilizers;
- Russian and other foreign competitors have significant advantages over the Company due to their access to raw materials and larger consumer markets.
- The owners of the only producer of the raw materials in the CIS are hardly interested in acquiring the Company.

**Additional information and data including Reformatted Financial Statements and Financial Performance materials are available upon request.**

**When writing to AIPAF please provide a short background on your company activities and plans about the project.**