

AZPROMO PROJECT PLAN

PROJECT: NPK Fertilizer

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- The image contains a large, semi-transparent watermark of the AZPROMO logo. The logo features a stylized orange 'O' with a flame-like shape above it, and the word 'azpromo' in a grey, lowercase, sans-serif font below it.

1) *Background and Sector review*

Agriculture in Azerbaijan

Agriculture is a fast growing sector in Azerbaijan. It has grown by 5-6% in the last decade, and 99.7% of produce is generated in the private sector.

Azerbaijan is strong in the cultivation of specialized, often rare, crops. As well as cotton, tea, tobacco and vegetable production. Azerbaijan produces other potentially valuable crops, including pink grapes and persimmon. 90% production of these crops are dependent on irrigated lands, which constitute one third (1,433 thousand ha) of total agricultural lands.

With the availability of relatively cheap energy, approximately 30% of irrigation (556 thousand ha) is done through mechanical and pumping means. The rest is irrigated through an energy efficient gravity system, using irrigation channels.

According to the Food and Agriculture Organisation, Azerbaijan has a comparative advantage in production of fruit (oranges, apples and pomegranates) and vegetables (tomatoes and cabbages), as well as oilseeds (sunflower) and nuts.

Food products are high on the government's agenda to encourage domestic production to meet increasing demand in neighbouring, regional markets. To improve access to these markets, technical production and processing standards are improving. Azerbaijan is a member of the International Organisation of Standardization (ISO).

Azerbaijan has continued preparation for accession to the WTO and the Codex Alimentarius, which includes an approximation to EU rules. It has developed food standards on milk and canned meat and is under-going advanced work on amendments of the food safety and hygiene laws.

Crop Production in Azerbaijan

Azerbaijan has favorable natural and climatic conditions for crop production. It has a well established infrastructure and increasing consumption of the domestic and regional, means the crop production sector is increasingly attractive both for local and foreign investors.

The Government of Azerbaijan actively supports the sector. The "Law on Grain of the Republic of Azerbaijan" introduced incentives and subsidies for the full substitution of imported foodstuffs by local producers.

The production of grain has increased from 1.8 Million tonnes in 2012 to 2.3 Million tonnes in 2014. Most of this is consumed in the domestic market.

The strategic location of Azerbaijan is surrounded by growing markets for agricultural produce, such as Saudi Arabia and other parts of the Middle East. However, this growing, regional export market is under-exploited. In 2014, Azerbaijan exported only 20 tonnes to regional markets.

Growing regional demand for NPK Fertilizer

The increasing demand for crop production, has witnessed a corresponding increase in regional demand for NPK fertilizer. According to the FAO, the consumption of (NPK) is expected to grow in the Central Asian region by 3.7% up to 2018. This is above the global average. According to the FAO, with a successive growth of 1.8 percent per year, global demand for fertilizer is expected to reach 200.5 Million tonnes by the end of 2018.

Access to large supplies, and relatively cheap natural gas in Azerbaijan

The biggest cost component in Fertilizer production are energy prices. The importance of natural gas (which accounts for about two-thirds of the production capacity of ammonia) is high, in relation to nitrogen fertilizer production.

It is expected that almost all new fertilizer projects will be based on natural gas in the near future. This puts Azerbaijan in a relatively advantageous position, due to its location near the Shah Deniz Natural Gas field, which is one of the largest natural gas fields in the world. The Sumgait Industrial Chemical Park (SCIP) is near this field, only 30kms from Baku.

2) Project Objective

- To establish an NPK (Nitrogen, Phosphorous and Potassium) fertilizer production facility in Sumgait Industrial Park, and to develop a regional marketing operation to cover the Central Asia and Middle East market.

3) Project Description

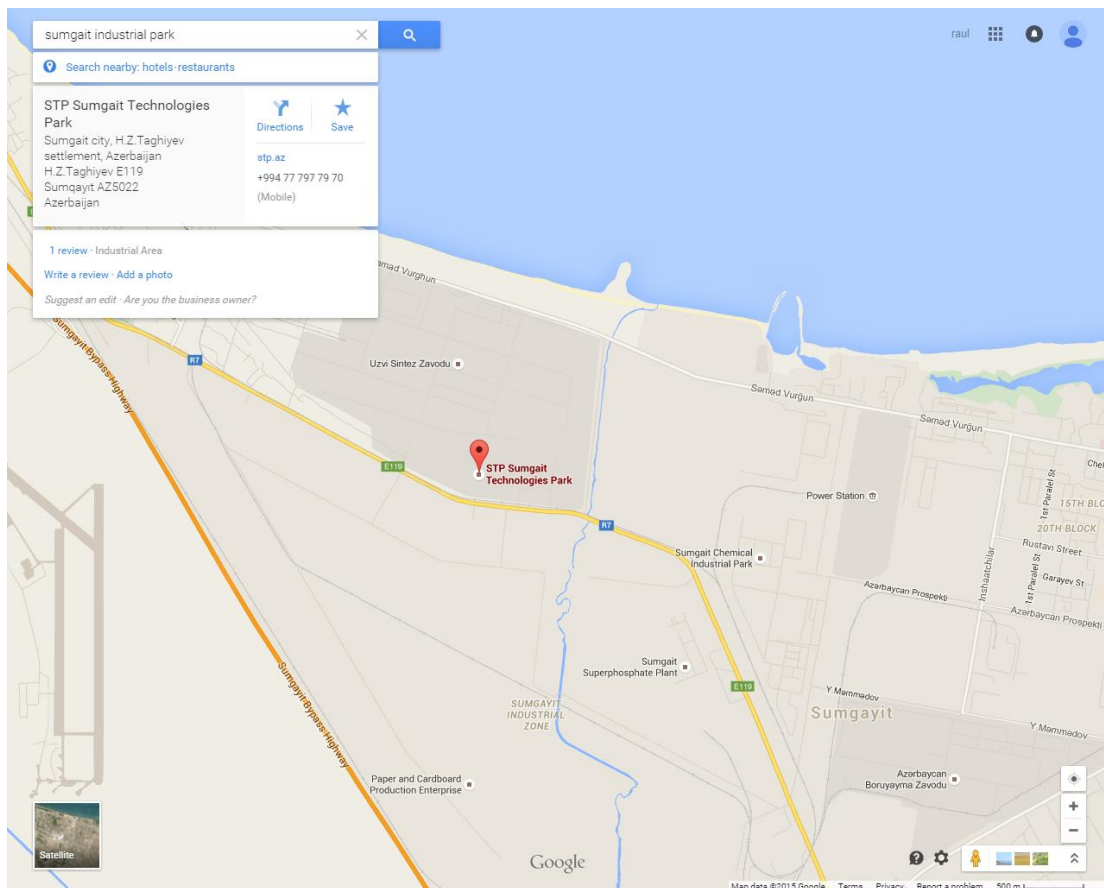
To create an NPK production facility in Sumgait Chemical Industrial Park. This is near the main inputs to the production process of a power station. Its strategic location on the Caspian Sea, and access to transport links (the Elat Sea Port, and Baku- Tbilisi-Kars railway), will give the proposed facility access to raw materials, and buyers in regional markets.

4) Location Description: Sumgait Chemical Industrial park

Sumgait Chemical Industrial Park, is ideally suited to an NPK production facility.

The map below shows the park is close to a power station for the supply of cheap energy, has good transport links, for the supply of raw materials, is a near a Phosphate plant, a key ingredient in NPK fertilizer.

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Incentives: Residents of the park are exempt, for 7 years from property tax, land tax, corporate income tax and VAT on imported equipment for up to 7 years.

For more details see <http://www.scip.az/index.php?lang=en>

5) Marketing Strategy

Market Size: As described above, the regional market for NPK fertilizer is growing. According to the FAO, the consumption of (NPK) is expected to grow in the Central Asian region by 3.7% up to 2018. This is above the global average of 1.8%.

Key Customers: The main consumers of fertilizers are Turkey and Kazakhstan. In 2014, Kazakhstan imported US\$85 Million of fertilizer. Turkey imported US\$1.4 Billion.

Key Competitors: The main regional supplier of fertilizer, and therefore competitor to Azerbaijan is the Russian Federation. In 2014, it exported US\$ 9.1 Billion of fertilizer.

Within Azerbaijan, whilst a fertilizer plant is being constructed by Samsung, and is to be completed in 2016, the plant will focus on the production of ammonia and urea. It will produce 1,200 tons of ammonia and 2,000 tons of urea per day.

Competitive Advantage of Azerbaijan: A key advantages for the production of Azerbaijani fertilizer are:

- 1) its proximity to the key customers of Turkey and Kazakhstan, through the opening of the Baku -Tbilisi-Kars railway,
- 2) access to natural gas.

6) Production, Manufacturing Operations Overview

The production of NPK fertilizer will involves the use of Natural Gas, and the following mechanical components.

1) The components of an NPK Production Line will be as follows:

- Weighing & Blending System
- Belt conveyor
- Furnace
- Rotary drum granulator
- Rotary dryer
- Rotary cooler
- Rotary coating machine
- Packing machine
- Cyclones & dust collector
- Vibrating screen
- Bucket elevator
- Scrubbers

2) The NPK production process.

- a) The raw materials are placed in to the weigh belts conveyors, and are weighed. They are moved to the Mixer for producing an homogenous mixture. The material is mixed with the recycled material and taken for granulation in the granulation drum. This is where the partial granulation is achieved with a very fine jet of water spray.
- b) The fine powder is deposited on a small nuclei. This process can be controlled to produce a particle size as per the demand of the customers.
- c) The material is taken to dryer drum where hot air (generated in the furnace) is passed through it.
- d) The raw materials have low melting points, which makes it easily melt and get deposited on the nuclei.
- e) The high temperature evaporates the water and the material is air dried.
- f) The material is cooled by blowing ambient air through it in cooler drum. The desired size of particles is obtained by using vibrating screens. The screened particles of uniform size are precisely packed. The oversize material (after crushing) and undersize are recycled.

Source: Food and Agriculture Organisation

7) Project Management and Organization Structure

The Project will be led by the Sumgait Industrial Park, with support from AZPROMO.

The proposed financial scheme and share distribution is negotiable. The project envisages the majority of the financing, and share ownership will be from the investor.

8) Project implementation schedule

The project will take up to 2 years to be realized, from initial creation of project team to final marketing of the Fertiliser.

Project Implementation				
	Year 0,5	Year 1	Year 1,5	Year 2
Project Team				
Location review and acquisition				
Site operations construction				
Asset Procurement				
Asset Testing				
Marketing				

9) Estimated Budget and balance sheet

The assets focus on the capital expenditure for equipment, whilst the main liabilities relate to energy costs.

NPK Fertiliser Estimated Project Balance Sheet							
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Assets US\$ Million							
Cash	1	1	5	5	7	7	7
Land	1	1	1	1	1	1	1
Building	2	2	2	2	2	2	2
Equipment	220	220	220	220	220	220	220
Total Assets							
Liabilities	200	190	160	130	100	60	30
Owners Equity	24	34	68	98	130	170	200