

Case Summary**Abu- Zaabal Company for Fertilizers And Chemical Industries**Company Information:

Contact Person:	Eng /Moastafa El Gabali		
Position:	Executive Director		
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Sector:	Private		
Number of labors:	1600		
Project Title:	Rehabilitation of Phosphoric acid plant.		
Type of Project:	Air Pollution & work environment control, Water recycling		

1. Basic Information**1.1 Main Products**

Products	Actual Average Production, t/y
Powdered and granulated Single Super Phosphate (17% P ₂ O ₅)	585,000
Granulated Triple Super Phosphate (48% P ₂ O ₅)	87,000
Sulfuric acid	300,000 (used in production)
Phosphoric acid (48-50% P ₂ O ₅)	41,000 (34,800 used in TSP production)

1.2 Raw Materials & Utilities

Raw materials		Current Consumption, t/y	
Phosphate Ore (24-30% P ₂ O ₅)		628,000	
Sulfur		100,000	
Utilities	Usage	Consumption, m3/y	Source
Water	Total	4,500,000	Ismailia Canal
Fuel	Type	Consumption /y	
	Natural gas, m3/y	15,000,000	
Electricity	Source	Consumption, MWh/y	
	Self Generated Electricity	25,000	
	Grid Electricity	25,000	
Products		Actual Average Production, t/y	
Powdered and granulated Single Super Phosphate (17% P ₂ O ₅)		585,000	
Granulated Triple Super Phosphate (48% P ₂ O ₅)		87,000	
Sulfuric acid		300,000 (used in production)	
Phosphoric acid (48-50% P ₂ O ₅)		41,000 (34,800 used in TSP production)	

1.3 Project Location:

El Maahd road – Abu Zaabal – Qulubia Governorate

1.4 Project Objectives:

- Reduction of Hydrogen fluoride (HF) and dust in work Place, to reach Compliance with Egyptian Environmental law.
- Eliminate Cooling Ponds.

1.5 Project Description:

Rehabilitation of phosphoric acid production units to increasing the line efficiency and achieve design capacity. Modifications include filter, agitators and scrubbers, heat exchanger, pumps

Abu Zaabal Company has an old belt weigher. This weigher is in bad condition causing a huge load of dust pollution. The company needs to replace it with a new one in the phosphate grinding plant. This project is part of rehabilitation of the phosphoric acid plant.

AZFC is requesting the purchase cooling tower to minimize contamination of water table by P_2O_5 caused by discharging cooling water in a cooling pond.

Abu Zaabal Fertilizer & Chemical Co. will revamping its existing Lupolco mills which is part of Phosphoric acid plant through EPAP II. The revamp of the three mills will drastically minimize dust emissions at the plant to standard acceptable dust level emissions using distributed control system (DCS) to monitor productivity and emissions standards and bring their productivity to original design., Rehabilitation of bag filter & feeding system

A pneumatic conveying system will be installed to transport phosphate rock from the three mills to Silo 241. Air emissions in this area are expected to be reduced to the law limits.

1.6 Project Components:

- 1) Filter , Agitators,Scrubber,Spare Parts
- 2) Belt conveyor
- 3) Cooling Tower
- 4) Heat exchanger
- 5) Pumps
- 6) Roll Feeder ,Classifier , Grinding Table, Mill Liner ,Gear box
- 7) Feeding, Control system, Bag Filters
- 8) Pneumatic Conveyers

1.7 Actual Project Cost:

Total project cost for the 8 components is \$ 9.330 M of which MUS\$ 8.291 are financed from EPAPII

Component 1: Total cost MUS\$ 5.468 M of which MUS\$ 4.971 are financed from EPAPII for (Filter, Agitator, Scrubber, and Spare Parts).

Component 2 :Total cost for Belt weigher US\$ 0.119 M with US\$ 0.116 M Financed from EPAPII

Component 3 :Total cost for cooling Tower US\$ 0.403 M with US\$ 0.391 M Financed from EPAPII

Component 4 : Total cost for Heat exchanger is MUS\$ 0.223 of which MUS\$ 0.193 are financed from EPAPII

Component 5: Total cost for Pumps is MUS\$ 0.484 of which MUS\$ 0.435are financed from EPAPII

Component 6 :Total cost for the first part, rehabilitation of Lupolco mills, US\$ 0.858 M with US\$ 0.752M Financed from EPAPII

Component 7 :Total cost for rehabilitation of feeding & de-dusting and control system for Lupolco mills, US\$ 1.511 M with US\$ 1.172 M financed from EPAPII

Component 8 :Total cost for Pneumatic Conveyers US\$ 0.264 M with US\$ 0.261 M Financed from EPAPII

1.8 EPAP Technical Support:

The PMU assisted Abu Zaabal Company in auditing, bidding and any technical data needs.

EPAP II TA has prepared the Audit and compliance action plan (CAP)

EPAP II PMU assisted the company in preparing:

- Tender document.
- The bid evaluation report and procurement procedures.
- Contract between the company & the bidder.

2. Eligibility Criteria

2.1 Environmental

- 1) The Project will reduce Dust and HF emissions
- 2) The Project will improve the environmental conditions by eliminating soil contamination with P2O5 which is currently occurring due to the usage of a cooling pond.

Load reduction

Sub-project Components	Target pollutant	Load reduction
Rehabilitation of process units Installation of heat exchanger	HF in workplace HF in stack emissions Scrubber waste water Fluorosilicic acid and P2O5 in phosphogypsum	42% 6.83 t/y 100% 50%
Installation of cooling tower	Amount of cooling water to pond	100%
Revamping of Lopulco mills Replacement of belt weigher Installation of control system and bag filters for Lopulco mills	Dust in workplace at Lopulco mills	TSP 56%, PM10 90%
Pneumatic conveying system for phosphate rock	Dust in workplace	50%

2.2 Financial:

Payback Period is 1.06 years

3. Current status of project procedures

3.1 Steering committee approval: approved

3.2 Co-financers approval: approved

Item	No Objection
Comp 1:Rehabilitation of phosphoric acid production units(filter, agitators and scrubbers) Direct contracting	January 2007
Comp 6: Rehabilitation of Lupolco mills Direct contracting	Oct 2007

3.3 Technical Procedures:

Technical Document	submitted	Approved	Date
Environmental Assessment	Y	Y	Aug 2009
Compliance Action Plan (CAP)	Y	Y	Aug 2009
Environmental Impact Assessment (EIA)	Y	Y	Feb 2009
Technical Agreement	Y	Y	Jan 2009

3.4 Implementation Procedures:

3.4.1 Procurement Procedures:

The Procurement Procedure were followed for the 8 component

1. With respect to the implementation of the project, The Company asked for a “Direct Contracting” to Profile Company for these Items (Filter, Agitators, Scrubber, Spare Parts) because Profile Co. is the only company in the world which has the patent for these parts.
2. AZFC requested for “shopping” method for purchasing the Belt Wires
3. AZFC requested for “shopping” method for purchasing the Cooling Tower.
4. AZFC Used “shopping” method for purchasing the Heat exchanger
5. AZFC Used “shopping” method for purchasing the Pumps
6. The company asked for a “Direct Contracting” to Metso Co.to revamping Lupolco mills and that supplies original spare parts for Lupolco mills, because Lupolco Co. has ceased to exist and therefore cannot do the refurbishing of the mills. Metso Co. is the only specialized company in the world that is dedicated to revamping Lupolco mills and that supplies original spare parts for Lupolco mills.
7. The company followed proposed EPAPII single stage model for rehabilitation of feeding & de-dusting and control system for Lupolco mills.
8. AZFC requested for “shopping” method for purchasing the Pneumatic Conveying

3.4.2 Status of Implementation:

Technical Document	submitted	Date	
		Achieved	Planned
Credit worthiness certificate	Y	Feb 07	
Sub-loan Agreement	Y		
Bidding Document(B.D)/ Invitation letter (IL)	Y	Comp 2 : 17/8/07(IL) Comp 3: 16/7/ 07(IL) Comp 4: 1/12/2007(IL) Comp 5:25/12/2007(IL) Comp 7 : 26/6/08(B.D) Comp 8 : 15/1/09(IL)	
Technical and financial Evaluation	Y	Comp 2: 31/10/07 Comp 3: 15/9/07 Comp 4: 30/12/08 Comp 5:2/8/2008 Comp 6: 18/7/08 Comp 7: 5/4/09	
Awarding and Contracting	Y	Comp 1: 25/1/07 Comp 2: 4/11/07 Comp 3: 5/11/07	

		Comp 4: 20/1/08 Comp 5:3/3/2008 Comp 6: Feb. 08 Comp 7:28/8/08 Comp 8: 14/4/09	
Installation and Commissioning	Y	Dec 2011	Sep 2011
Monitoring: Q1:	Y	Apr 2012	Dec 2011
Q2:	Y	July 2012	Mar 2012
Q3:	Y	Dec 2012	Jun 2012
Q4:	Y	Mar 2013	Sep 2012