Case Summary

The Egyptian starch & Glucose Co.
Tora Plant

Company Information:

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Position:	General Manager
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Sector:	Private
Project Title:	Fuel switching of 3 boilers From Mazot to Natural Gas
Type of Project:	Air pollution reduction and Improvement of work environment.

1. Basic Information:

1.1 Main Products

No.	Product	Average Annual production(ton)
1	Starch	10000
2	Glucose	30000
3	Modified Starch	2000
4	Animal Feed	17000
5	Corn Oil	1000

1.2 Raw Material&utilities :

No.	Material	Average Annual Consumption (ton)
1	Yellow Corn (USA)	76000
2	HCl	0.5
3	Na2CO3	90
5	Sulfur Powder	192
Energy		
Mazot		40 tons/day
Electricity		
Production Process		14694348 (kwh/year)
Wastewater plant		2001600 (kwh/year
Water		
Raw Water (Directly from Nile)		200 m3/ hr

1.3 Project Location:

Crnish El-Nile, Tourah, Helwan Governorate, Egypt.

1.4 Project Objectives:

- Reduction of the gas emissions of (SOx, NOx, CO) to comply with the environmental law no. 4/1994 and other environmental regulation.
- Improving ambient air quality.

1.5 Project Description:

- The Egyptian starch & Glucose Company has three boilers. that burn heavy fuel oil (Mazot) which is producing high levels of gas emissions, The three boilers are in very bad conditions low efficiency of the heating process and unsafe condition for work environment.
- The proposed project is to switch the fuel from Mazot to Natural Gas for all boilers**.**

1.6 Project Components:

- The suggested projects includes the following components:

1. External piping
2. Internal piping
   a. Pipes
   b. Pressure Reduction Unit.
3. Burning systems
   a. Burner.
   b. Automatic Control of air fuel ratio.
   c. Leakage tester.
   d. Automatic control for each zone for min/max pressure gas and air.
   e. Scavenging air (purging).
   f. Control for temperature of each zone to control burners operation.
   g. Oxygen trims measuring.
   h. Flame detector.
   i. Pilot burner.

1.7 Actual Project Cost:

Total project cost US$ 0.37 M with US$ 0.334 M Financed from EPAPII as follows:

The project component	The estimated cost US$
External piping	86.547
Internal piping	88.780
Burning systems (for the three boilers)	152.727

1.8 EPAP Technical Support:

EPAP TA assisted the company to prepare:

- Environmental audit.
- The technical specifications.
- Designing a self monitoring scheme.
- Tender documents.
- Procurement procedures.

2. Eligibility Criteria

2.1 **Environmental:**

- The Project will reduce soot and CO emissions

Emission Loads for Boiler 2

Emission Type	*Before Intervention (tons/year)*	*After Intervention (tons/year)*
Sulphur Dioxide (SO_2)	*4774*	*Traces*
Carbon Dioxide (CO_2)	*618601*	*309300*
Carbon Monoxide (CO)	*6688*	*Traces*
NO_x	*21*	*10*
Dust	*500*	*Traces*

Emission Loads for Boiler 2

Emission Type	*Before Intervention (tons/year)*	*After Intervention (tons/year)*
Sulphur Dioxide (SO_2)	*3235*	*Traces*
Carbon Dioxide (CO_2)	*72120*	*36000*
Carbon Monoxide (CO)	*645.4*	*Traces*
NO_x	*NA*	*NA*
Dust	*40.5*	*Traces*

Emission Loads for Boiler 3

Emission Type	*Before Intervention (tons/year)*	*After Intervention (tons/year)*
Sulphur Dioxide (SO_2)	*600.5*	*Traces*
Carbon Dioxide (CO_2)	*87078*	*43539*
Carbon Monoxide (CO)	*287.5*	*Traces*
NO_x	*NA*	*NA*
Dust	*208.5*	*Traces*

2.2 **Financial:**

- Payback Period: 4.2 month.

3.Current status of project procedures

3.1 Steering committee approval: approved

3.2 Co-financers approval: Previous no-objection for all Fuel switching projects

3.3 Technical Procedures:

Technical Document	submitted	Approved	Date
Environmental Assessment	Y	Y	May 2008
Compliance Action Plan (CAP)	Y	Y	June 2009
Environmental Impact Assessment (EIA)	Y	Y	26/2/2009
Technical Agreement	Y	Y	Jan 2009

3.4 Implementation Procedures:

3.4.1 Procurement Procedures:

- The company followed Shopping Procedure for supply, Install and commissioning of Burners.
- According to previous no-objection for all fuel switching project (internal & external piping), direct contract for internal & external piping Was performed with town gas which has a concession for gas distribution in this area

- Internal piping was done by misr gas under the authorization of Town gas.

3.4.2 Status of Implementation:

Technical Document	submitted	Date	
		Achieved	Planned
Credit worthiness certificate	Y	24/9/2007	
Sub-loan Agreement	N		
Invitation Letter	Y	5/1/2008	
Technical and financial Evaluation	Y	24/1/2008	
Awarding and Contracting, Direct contract (Internal Piping) with Misr Gas	Y	27/1/2008	
Awarding and Contracting, Direct contract (External Piping) with Town Gas	Y	1/4/2008	
Awarding and Contracting for Burners	Y	19/3/2008	
Installation and Commissioning	Y	Apr 2009	
Monitoring: Q1:	Y	Oct 2009	Jul 2009
Q2:	Y	Jan 2010	Oct 2009
Q3:	Y	March 2010	Jan 2010
Q4:	Y	July 2010	Apr 2010