



**ENVIRONMENTAL IMPACT ASSESSMENT (EIA)
FOR
EGYPTIAN OIL & GAS ACTIVITIES**

**SUBMITTED TO
OVERSEAS PRIVATE INVESTMENT CORPORATION (OPIC)**

**PREPARED BY
Firebird
DEVELOPMENT INC.**

FEBRUARY 2004

CONTENTS

Introduction

1. Project Description	
1.1 Apache Concessions	1.3
2. Environmental Baseline Conditions	
2.1 Area 1	2.3
2.2 Area 2	2.12
2.3 Area 3	2.27
3. Potential Environmental Impacts & Mitigations	
3.1 Impacts from Onshore Drilling Activities	3.2
3.2 Impacts from Pipeline Installation	3.14
3.3 Impacts from Gas Plant Construction and Operation	3.17
4. Appendices	
A. Maps	
B. Photos	
C. Wellsite Footprint	
D. EH&S Documents	

Introduction

This report contains the environmental assessment of a number of activities that reflect Apache's oil and gas operations inside Egypt. Complete details are available in the individual EIA reports that Apache has prepared for each activity. These reports have been submitted, as a reference, to OPIC as part of this submittal.

It should be noted that in October, 2002, Apache submitted to OPIC a full EIA report specifically covering its West Mediterranean deepwater development. This report, which has been posted on OPIC's website, describes a variety of activities including drilling new offshore wells, completing old wells, tie-in pipelines, onshore production facility (Gas Plant), and transferring the produced sales gas to existing facilities.

Apache Overall Operations

Egypt is one of Apache Corporation's most important international regions, and its estimated proved reserves in Egypt constitute 10.4 percent of Apache's total estimated proved reserves. Through December 31, 2003, the investments of the Apache Egypt Companies in Egypt total approximately US \$2.1 billion.

Apache and its affiliated companies ("Apache") have a significant operating presence in Egypt. As of December 31, 2003, Apache held interests in 10.2 million acres in Egypt and is the number one producer of oil/condensate and the number two producer of natural gas in the Western Desert. Apache's total production ranks number three for all of Egypt and accounts for 14% of Egypt's total production. In addition Apache is the most active driller with 20 drilling/completion rigs operating.

Apache owns a 75 percent interest in the Qarun Concession and a 100 percent interest in the Khalda/Khalda Offset Concession, located in the Western Desert of Egypt. The operating interest in Qarun was acquired from Phoenix Resources in 1996. In addition to the Qarun and Khalda/Khalda Offset Concessions, Apache holds interests in the East Beni Suef Concession to the south of the Qarun Concession, WD-19 Concession to the north of Qarun, and four other blocks in the Western Desert the Matruh Development Lease, the North East Abu Gharadig Concession (NEAG), the East Bahariya Concession, and the West Mediterranean Block I (partly onshore and partly offshore).

In 2001, Apache acquired all of Repsol's interest in the Khalda Concession, the Ras Kanayes Concession, the Ras El Hekma Concession, the North East Abu Gharadig Concession and the portion of the West Mediterranean Concession onshore and offshore up to 100 meters water depth. Included in the transaction was Repsol's interest in the Umbarka Development Lease, and in the South Umbarka Concession. Apache has become operator of all these areas except North East Abu Gharadig.

Pursuant to the terms of the concession agreements, Qarun Petroleum Company (QPC) and Khalda Petroleum Company (KPC) have been formed as joint venture companies between the contractor (Apache and its partners, if any) and the Egyptian General Petroleum Corporation (EGPC) to conduct development activities in each concession. Additional joint venture companies exist under each concession where production has been established in name only and are actually managed by either QPC or KPC. It should be noted that the QPC is ISO 14001 certified.

Egypt's Petroleum and Environmental Policy

The Ministry of Petroleum oversees almost all activities of the Egyptian petroleum sector concerning exploration, production, refining, marketing, distribution, and services. The petroleum sector is a significant source of government revenues (along with tourism and Suez Canal tariffs).

Egypt's stated reserves are 3.5 billion barrels of oil and 62 trillion cubic feet of natural gas, with an additional 80 to 100 trillion cubic feet yet to be discovered. Approximately one quarter of Egypt's daily oil production and one third of daily gas production comes from the Western Desert.

With a youthful population of nearly 70 million, growth in the Egyptian economy is heavily dependent on oil and gas produced within Egypt as well as revenues derived from exports of refined products. Though Egypt is considered to be a net exporter of oil

at the present time, continuing decline of the large, maturing Gulf of Suez oil fields may create a net import position within a decade, barring significant new field discoveries.

Egypt's energy policy is focused in the following areas:

- Increasing exports of oil and gas products while maintaining or increasing petroleum production to meet domestic requirements.
- Achieving self sufficiency in Natural Gas production while building infrastructure for significant exports of liquefied natural gas (LNG).
- Promoting industries that rely on natural gas as a raw material and fuel.
- Reducing dependency on petroleum imports of some products (e.g. gas and oil) that are used in power generation.
- Reducing environmental pollution through progressive conversion of power generation from oil to abundant, cleaner-burning natural gas and the conversion of gasoline vehicles to natural gas in urban areas, specifically Cairo.

Exploitation of its natural gas resources is the underpinning of Egypt's future economic development. Egypt expects that it will play a major role as an LNG exporter, and forecasts that it will be ranked No. 6 worldwide by 2006. With its strategic location within the Mediterranean basin Egypt has signed long-term gas sales agreements to supply European, American, and Near East markets. The government's target by 2010 is to:

- Produce 100 million tons annually of oil, gas, and petrochemicals of which 50% is natural gas,
- Export 30 million tons annually of natural gas,
- Displace imports and generate export sales of over \$ 4 billion per year
- Directly and indirectly, create 100,000 new jobs.

Environmental protection has become one of the most important concerns vis-à-vis energy developments in Egypt. The impact of energy policies and activities on environmental quality must be regarded as an extremely significant consideration for petroleum companies operating in Egypt. .