



**REALIZING THE POTENTIAL FOR PROFITABLE INVESTMENT IN AFRICA**  
High-Level Seminar organized by the IMF Institute and the Joint Africa Institute  
**TUNIS, TUNISIA, FEBRUARY 28 – MARCH 1, 2006**

**Realizing the Potential for  
Profitable Investment in Africa**

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Paper presented at the high-level seminar: *Realizing the Potential for Profitable Investment in Africa*  
Organized by the IMF Institute and the Joint Africa Institute  
Tunis, Tunisia, February 28 – March 1, 2006

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# The AZITO Project

A model of independent power production (B.O.O.T.) and of public-private partnership in sub-saharian Africa



Seminar on « Realizing the Potential for Profitable Investment in Africa »  
Tunis, 28th February-1st March 2006

**Férid Nandjee, Managing Director AZITO ENERGIE**



# Summary

## 1. Introduction

- ◆ BOOT concept and project financing
- ◆ approach from a developer for a BOOT project

## 2. Context and specificities of the project

- ◆ Objectives of the project
- ◆ The Ivorian electricity sector and the position of Azito
- ◆ Schedule of the project
- ◆ The project

## 3. The contractual and financial structure

- ◆ The contractual structure
- ◆ The financial structure

## 4. The risks analysis

## 5. Few milestones of the project construction

## 6. Operation experience

## 7. Lessons of experience

# 1. INTRODUCTION

- **BOOT CONCEPT AND PROJECT FINANCING**
- **APPROACH FROM A « DEVELOPER » FOR A BOOT PROJECT**

# What do B.O.O.T and project financing mean?

- Concession given by the Government of a country to a local private company in order to build, finance, operate and eventually transfer to the host country, infrastructure projects (energy, telecom, water, etc.)
- B.O.O.T. Concept (Build, Own, Operate, Transfer)
- The loans are subscribed by the Project Company only, without any corporate guarantee from the sponsors (non recourse or limited recourse financing)
- The debt service is therefore only paid by the cash flows generated by the Project Company
- Thus it is absolutely necessary to:
  - ◆ analyze the fundamentals of the project and its economic justification
  - ◆ identify the risks and transfer them from the Project Company to the other Project participants
  - ◆ Have a well-designed, secure and balanced partnership between the public and private sector

# The approach from a « developer »

## ■ Is the project realistic?

- ◆ Is there a precedent? (a BOOT project already financed)
- ◆ If yes, how has been the partnership between public and private sector? (Good partnership)
- ◆ Is the electricity production, transmission and distribution company interested in the project? (yes, and the company is private managed)
- ◆ Leadership engaged at the government level? (BNETD – strong commitment from the government)

# The approach from a « developer »

## ■ Do we have a local presence?

- ◆ Our local organization? (strong representation of ABB in Côte d'Ivoire)
- ◆ Can we find solid partners? (good local partner: IPS (West Africa), a subsidiary of AKFED)

## ■ Are we competitive?

- ◆ EPC contractor engaged? (yes, very active since several years)
- ◆ Other advantages ? (all the necessary resources are available = EPC/ O&M/ transmission lines / development / investment / insurance/ financial advice)

## 2. THE CONTEXT AND SPECIFICITIES OF THE PROJECT

- OBJECTIVES OF THE AZITO PROJECT
- THE IVORIAN ELECTRICITY SECTOR AND POSITION OF AZITO
- SCHEDULE OF THE PROJECT
- THE PROJECT

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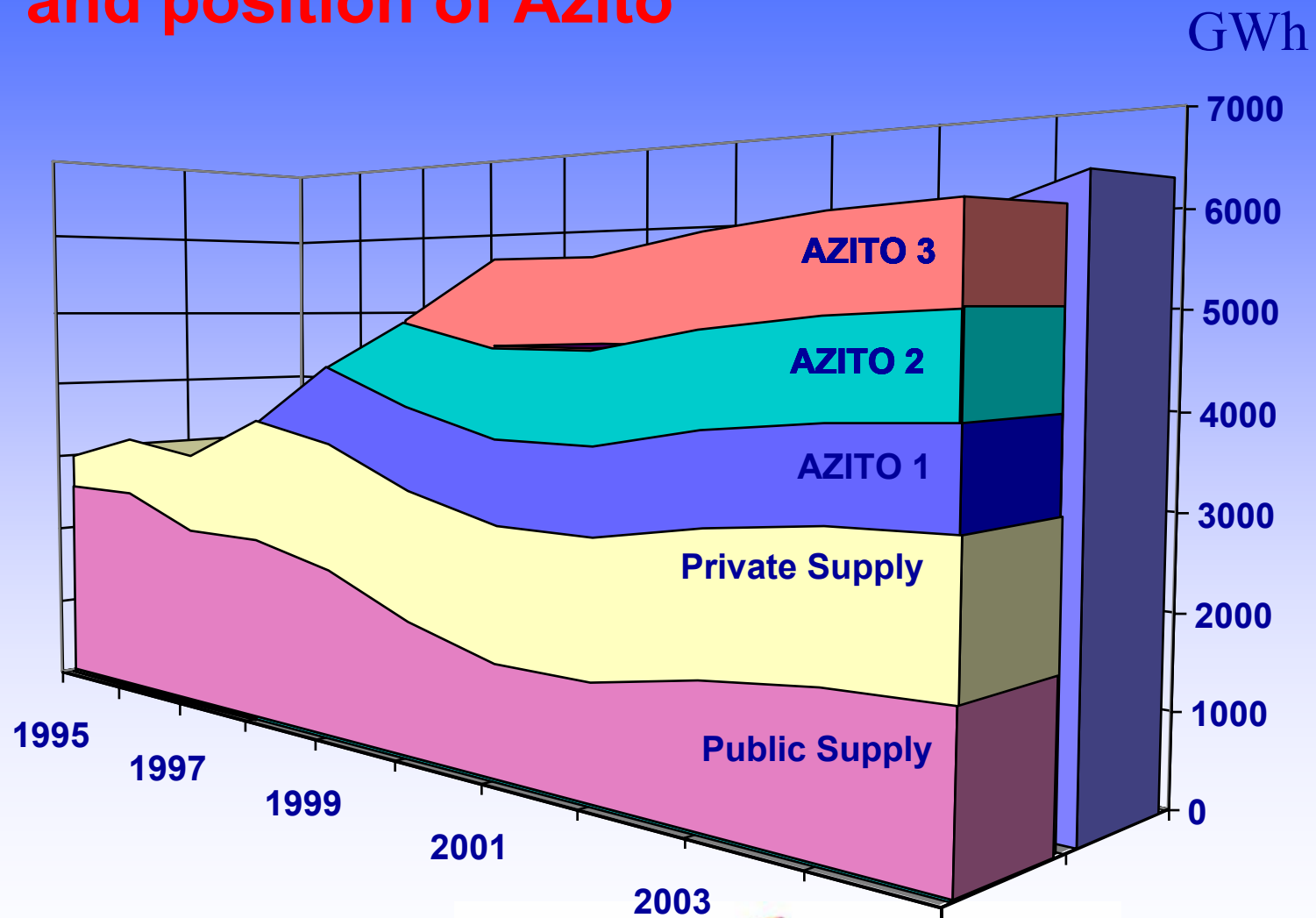
# Objectives of the AZITO Project

- Respond to the energy demand growth
- Use national natural gas
- Export electric energy in the sub-region

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# The electricity sector in Côte d'Ivoire and position of Azito



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# Schedule of the Project

- **International bid** October 1996
- **Offers Submission** April 1997
- **Notification of the Winner** June 1997
- **Signature of the Concession Agreement** Sept. 1997-  
July 1998
- **Beginning of the construction** July 1998
- **Financial Closing** February 1999
- **Gas Turbine 1 operation (1st turbine)** January/March 1999
- **Gas Turbine 2 operation (2nd turbine)** February 2000

## → Exceptional time schedule

- for the financing of the project (June 1997 - February 1999)
- for the completion of Phase 1 (GT1) (July 1998 - January 1999)
- thanks to the strong partnership between all the government's organization, the project company, the contractors and the sponsors

# The Project: Description

- **Site**: Azito Village, Republic of Côte d'Ivoire, near Ebrié lagoon, west side of Abidjan
- **Power Plant**: 2 x 150 MW Gas turbines (ALSTOM GT 13E2) built on a turnkey basis (EPC contract).
- **Energy Evacuation contract**: A 225 kV Switchyard at Azito, an extension of the existing Abobo switchyard and a 225 kV double circuit overhead transmission line from Azito to Abobo (17 km) on a turnkey basis.

# The Project:

## Environmental and social aspects

- The Azito power plant was built in accordance with the environmental guidelines
  - ◆ of the Ivorian law
  - ◆ of the World Bank
- Atmospheric emissions continuously measured at the stacks and noise levels are below the limit values
- Triple certification (Quality, Security and Environment) obtained by the Operator in 2004
- Social impact of the project (employment during construction, building of infrastructures in the Azito village and continuous relationships kept with Azito villagers by having a social committee comprising of all the operators present on the site)

# 3. THE CONTRACTUAL AND FINANCIAL STRUCTURE

- THE CONTRACTUAL STRUCTURE
- THE FINANCIAL STRUCTURE

# Concession Agreement (1/2)

- **Parties: Government of Côte d'Ivoire (GOCI) & Azito Energie**
- **Duration: 24 years, including the construction period**
- **Obligations of Azito Energie :**
  - ◆ **Respect of technical specifications (capacity, heat rate...)**
  - ◆ **Commercial Operation of the Power plant at a fix date**
  - ◆ **Provision to State of capacity and energy production**
- **Obligations of Government :**
  - ◆ **Buy the energy on a "Take or Pay" basis (CIE)**
  - ◆ **"classical" tariff formula:**
    - ◆ **Capacity charges components**
    - ◆ **Energy charges component**
  - ◆ **Supply the gas**

# Concession Agreement (2/2)

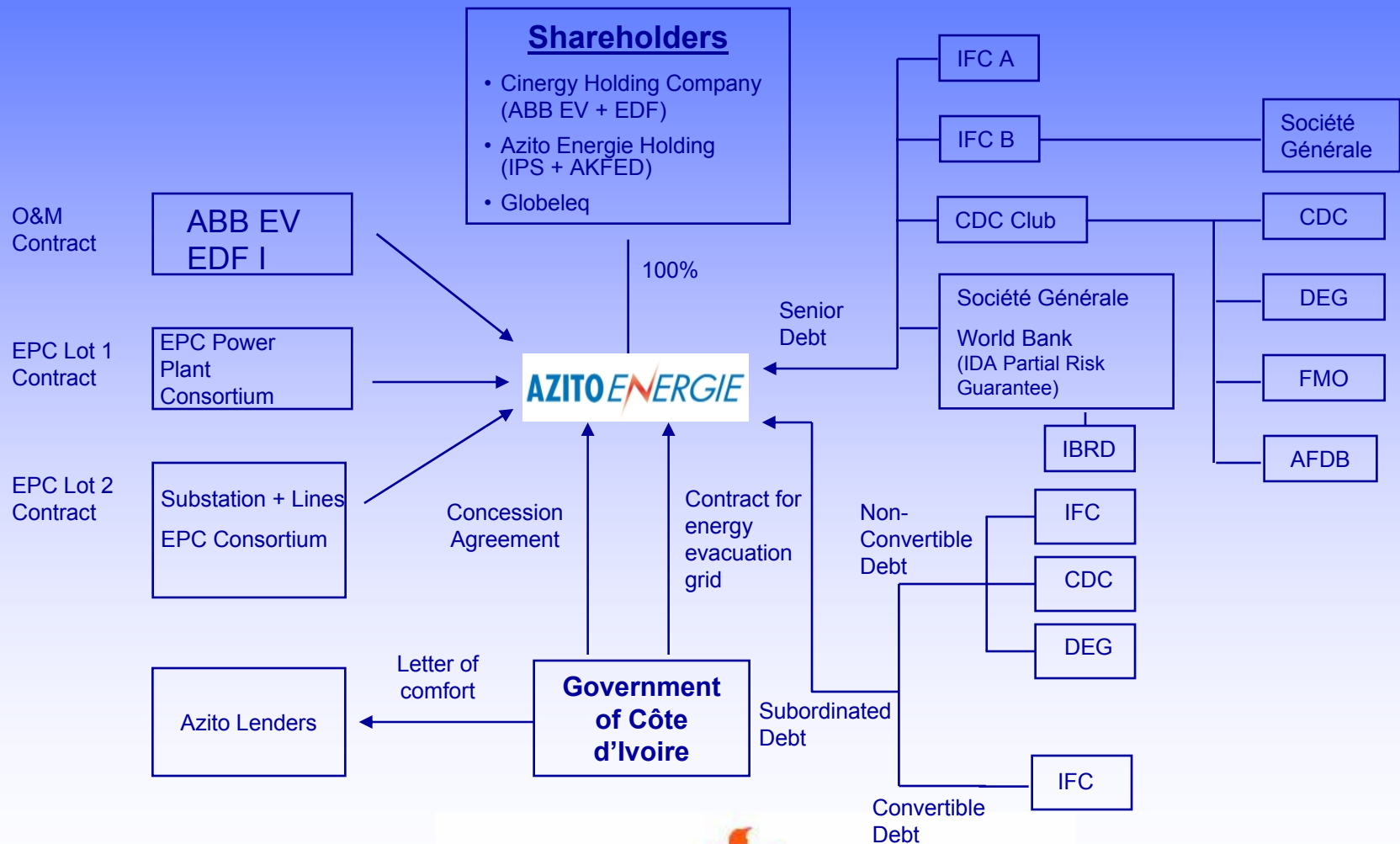
- In case of problem:
  - ◆ Details the events of defaults from Azito Energie / State
  - ◆ Details the “Force Majeure” Events
  - ◆ Possibilities of “remedy”
  - ◆ Possibilities of termination
  - ◆ Financial Treatment of termination
- Miscellaneous Stipulations:
  - ◆ Insurance Obligations
  - ◆ Stabilization of fiscal taxes / “change in law”
  - ◆ Reserve account to be constituted by State (3 months)
  - ◆ “Step-in” rights for the Lenders



# Substation and Transmission Lines Turnkey Contract: “CCEM Contract”

- Parties : Government of Côte d’Ivoire & Azito Energie
- Concerns :
  - ◆ Unit 1 : AZITO sub-station and tie-in on existing 225 kV line
  - ◆ Unit 2 : new 225 kV double circuit overhead transmission line Azito-Abobo, extension of Abobo sub-station
- General Principle : Turnkey Contract
- Payments : Fix monthly amounts until December, 2010

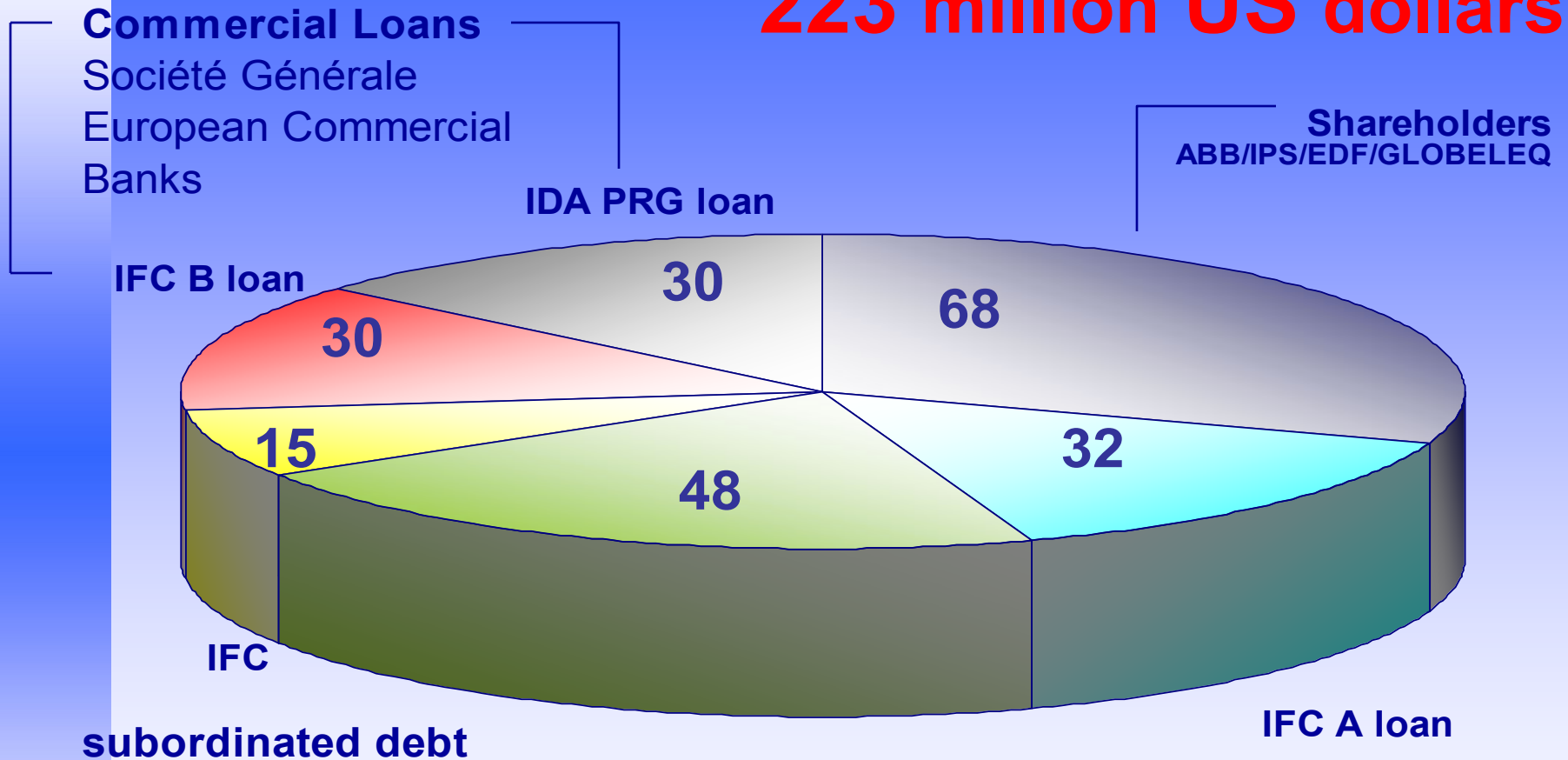
# Structure of the Azito Project



# Partial Risk Guarantee from IDA

- Guarantees the PRG commercial loan (30 M.USD) against payment defaults due to a default of the State (/CIE) vis a vis Azito Energie under the Concession Agreement (or the CCEM). In particular:
  - Payment default of CIE / State on the amounts due under the concession agreement (monthly payments, termination payment)
  - Nationalization, expropriation, transfer / convertibility
- Exclusions:
  - ◆ Default of the Project Company (“commercial risk”)
  - ◆ “Natural” Force Majeure (insurable)

# Total cost of Azito Project: 223 million US dollars



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# 4. THE RISKS ANALYSIS

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# Main risks

- Construction risk
  - ◆ Construction Delay
  - ◆ Over Budget
- Operation risk
  - ◆ Technical problems / technology
  - ◆ Over Budget
- Market risk
- Payment by CIE / State
- Gas supply
- Exchange rate / Money Transfer
- Institutional risk/change in sector organisation

# 5. MILESTONES OF THE CONSTRUCTION

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# Main milestones during construction of the Azito Power Plant



**End of July, 1998 :**  
Site leveling and civil works

**September 19<sup>th</sup>, 1998:**  
Arrival of gas turbine (340 tons) and generator (225 tons) of Phase 1 on the Azito site



**December 16<sup>th</sup>, 1998:**  
Energizing of Azito switchyard and tie-in existing transmission line



**January 15<sup>th</sup>, 1999 :**  
Phase 1 completed  
Phase 2 in construction

**May 7<sup>th</sup>, 1999:**  
Arrival of the second turbine and generator



**February 2000**  
both 150 MW turbines are in operation





# 6. OPERATION EXPERIENCE

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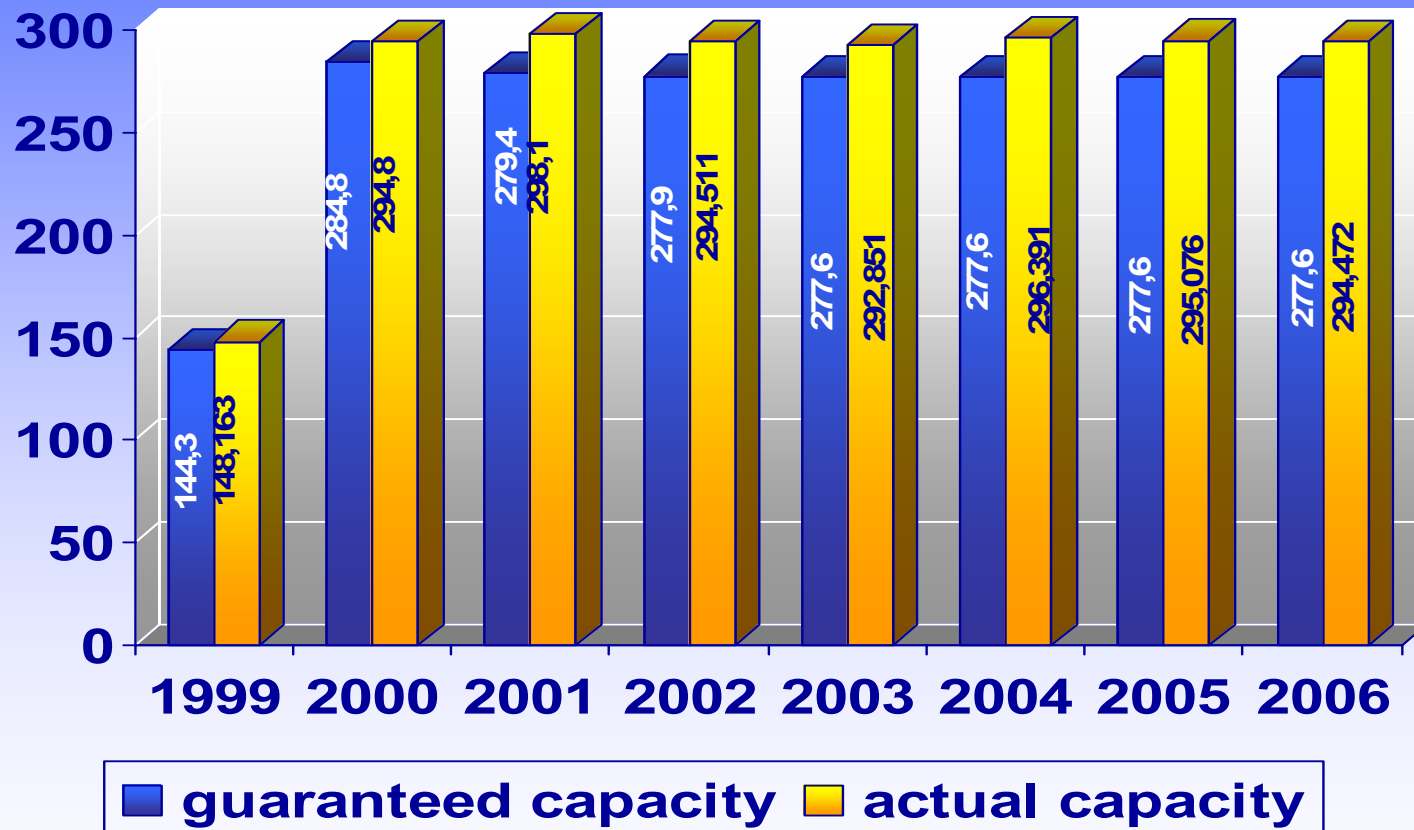
# Operation experience 1999-2005

- Global country difficult situation since 2000
- Stressed financial situation of the electricity sector (2000-2005) but priority payment to the independent energy and gas producers
- A set of measures have been taken into account to ensure the financial equilibrium of the electricity sector (in CIE concession contract renewal on October, 2005)

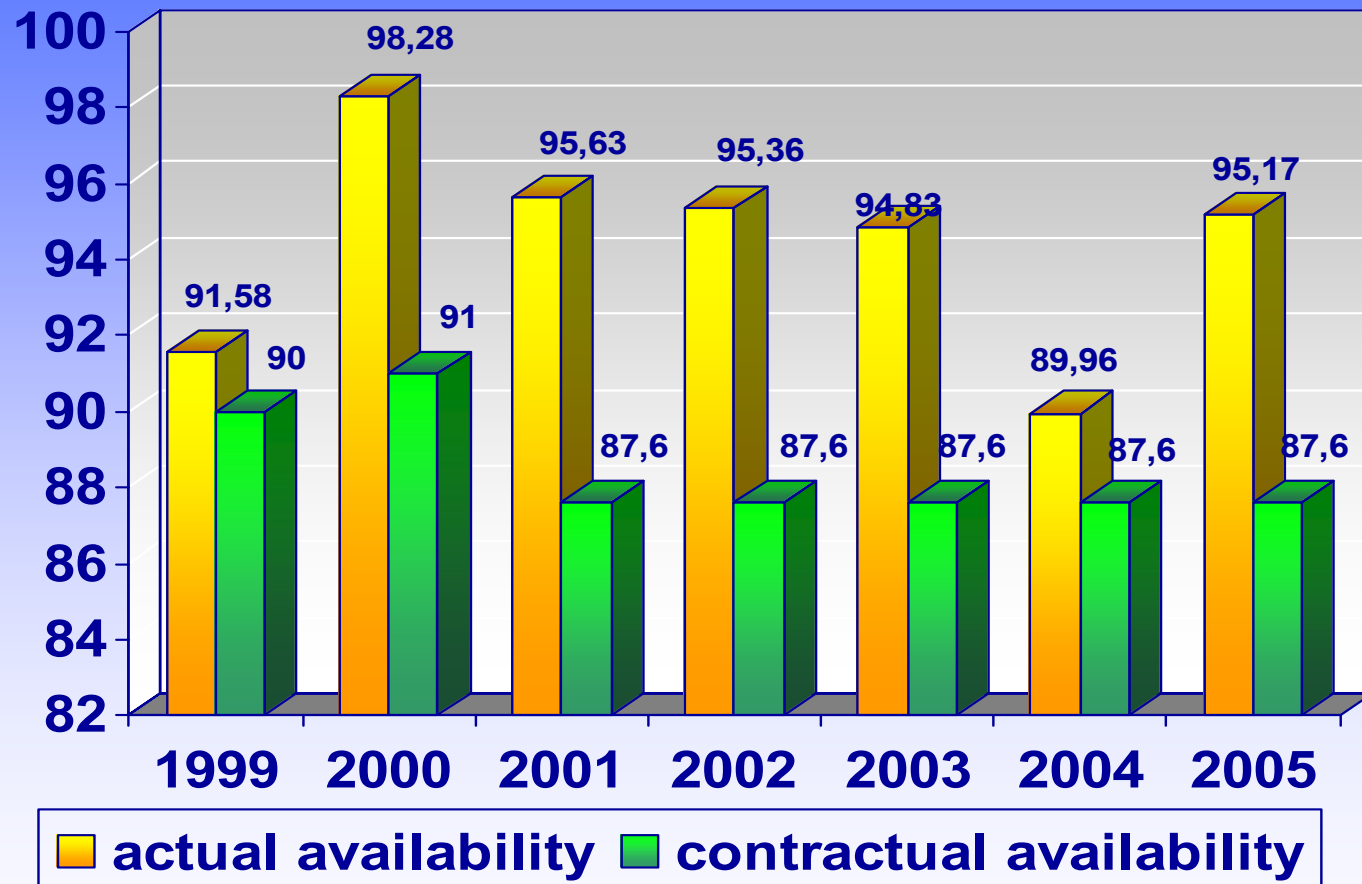
**=>But... so far, no direct material impact on the Project :**

- ◆ Plant always continuously operated and even produced 2'185 GWh in 2005 (highest level)
- ◆ All the invoices have been paid in full and on time by the State (priority given by the State to support private sector)

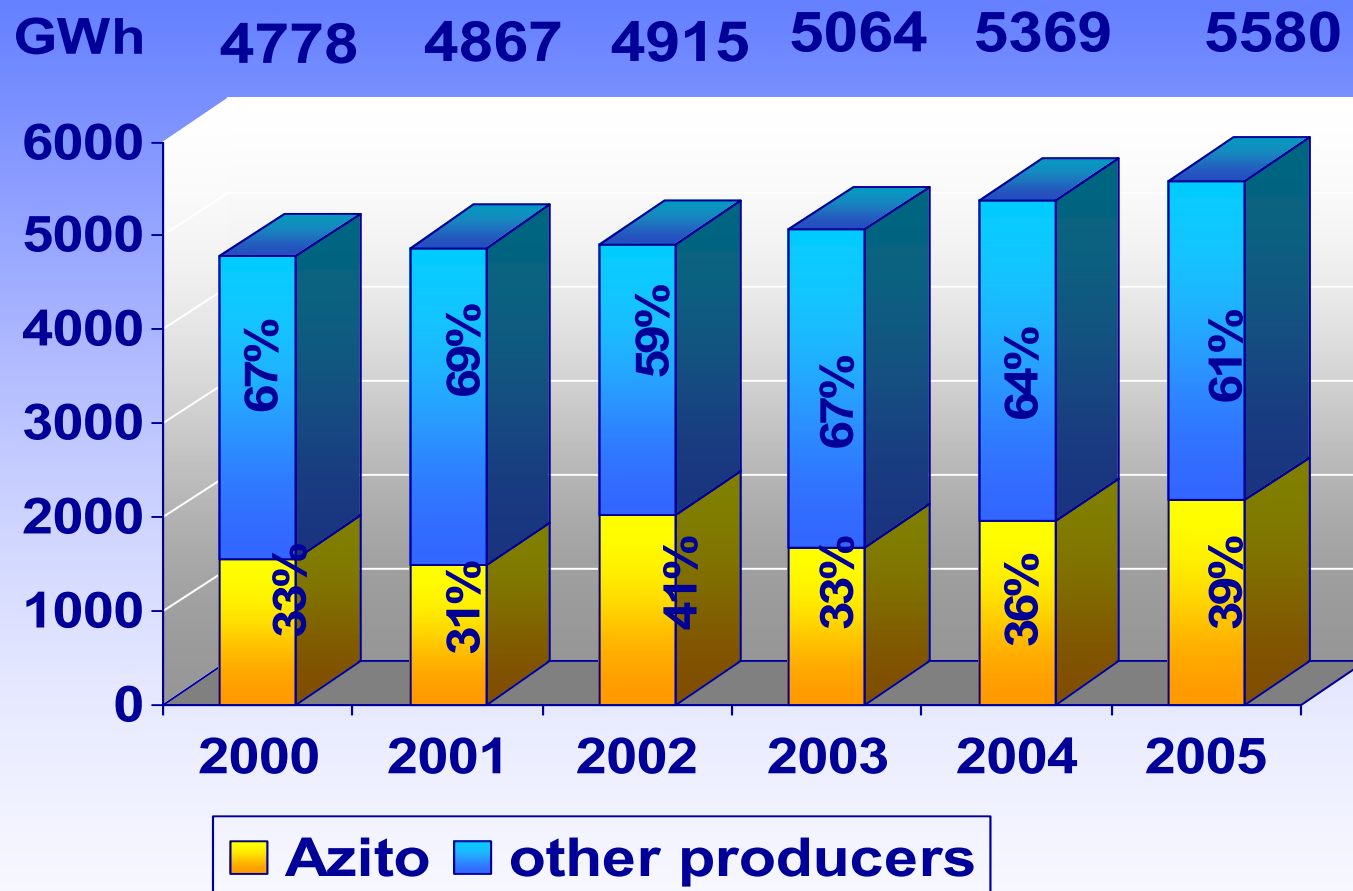
# Operation data: actual capacity compared to guaranteed capacity



# Operation data: Azito power plant equivalent availability factor (%)



# Operation data: Share of Azito Plant in the country energy production



# 7. AZITO : LESSONS OF EXPERIENCE

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# AZITO : a successful BOT experience and public-private partnership

- As of to date, the most powerful power plant in West Africa (BOOT)
- First Infrastructure Project in Sub-Saharan Africa, mobilizing a long term commercial debt (61 Mio USD on 10/12 years)
- First project in an IDA country to benefit from a PRG (Partial Risk Guarantee) from World Bank
- Project developed with an exceptionally short schedule
  - ◆ June 1997 Consortium ABB / IPS Winner
  - ◆ January/March 1999 1st turbine in operation
  - ◆ February 2000 2nd turbine in operation
- Good and balanced public-private partnership contributed to the success of the Project

# Conclusion :

## What made it possible

- Côte d'Ivoire's situation was better in 1998 when the project was launched
- Project's fundamentals were sound
  - ◆ pressing need for power
  - ◆ power sector well managed and financially balanced
- Côte d'Ivoire clearly engaged on the liberalization path and already familiar with concessions / BOT concepts
- State of Côte d'Ivoire, Sponsors and Arrangers highly committed to the Project (both at top and working level)
- Strong contractual framework (as far as the power sector and the project itself are concerned) and Strong financing structure (IDA PRG + IFC B loan)



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