DEMYSTIFYING THE OIL AND GAS INDUSTRY: GHANA

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This is some well-deserved aphorisms!

• Ten years from now, twenty years from now, you will see: oil will bring us ruin ... Oil is the Devil’s excrement. **Venezuelan Oil Minister and OPEC Founder Juan Pablo Pérez Alfonzo** 1973
Dividing The Oil & Gas Cake

Compliments of Revenue Watch Institute
PRESENTATION OUTLINE:

1. Overview of the Oil and Gas Industry in Ghana
   - Ghana’s Hydrocarbon Potential – Sedimentary basins
   - History of Oil Exploration
   - Discoveries in Ghana
   - Current activities: The Jubilee Field

2. Managing Ghana’s potential Oil Wealth
   - Oil & Gas Legislation
   - Why a Law about Oil & Gas Revenue?
   - The 4 big Challenges facing Oil-Producing Countries (12 Questions)
   - Some Proposed Answers
   - Your Contributions, Survey

3. Conclusion: Summary of presentation and parting remarks.
GHANA’S OIL & GAS INDUSTRY
INTRODUCTION

1. Western Basin
2. Central Basin
3. Eastern Basin
4. Voltaian Basin
PHASES OF EXPLORATION

Å Initial Phase 1896 – 1967
Å Second Phase 1968 – 1980
Å Third Phase 1981- 2000
Å Current Phase 2001 – To Date
Exploration activities were intermittent and unsustained

- Petroleum exploration limited to onshore.

1968-1980
- Intense exploration activity in the offshore
- 31 wells drilled, 3 discoveries (Cape Three Points, Saltpond and the North and South Tano)

1981-2000
- New regulatory and legal framework established
- Exploration Program intensified further
- Comprehensive Exploration promotion Program

2001-Present
- Focus on Deepwater
DISCOVERIES

Five (05) major discoveries since 2007
Jubilee
Odum
Sankofa
Tweneboa
Dzata
Phased Development

- Phase 1 production starts in 4th Quarter 2010
  - 280 Million Barrel+ to be produced
  - 120,000 Barrel/Day Oil Production
  - 120 MMSCF/Day Gas Production

- Phase 2 production expected to start in 2013
  - Additional infrastructure required
    - 240,000 Barrel/Day Oil Production
    - 240 MMSCF/Day Gas Production
• Reserves
  – 800 Million Barrels of Oil
  – Upside of 1.5 Billion Barrels of oil
  – Light Sweet Crude
Offshore loading to shuttle tanker

Water Injection

Gas Re-injection

Production Cluster

Production Cluster

FPSO
Subsea Fabrication Progress

- Trees and Manifolds

- Water injection manifold

- Subsea tree #5

- Subsea controls;

- Umbilical termination

10” flexible line
with end connector
Natural Gas

Natural Gas will drive the economic development of Ghana

National Corporation, GNPC, playing lead role in:

- Harnessing the natural gas for domestic use
- Dry gas to be used for power generation and fertilizer production primarily
- Sizing the gas infrastructure to enable the monetization of Jubilee field gas and other indigenous natural gas reserves in its vicinity;
STRATEGIC PLAN

• To Bring Associated Gas from the Jubilee Field to shore

• To process the transmitted wet gas into dry gas and liquids including
  - Liquefied Petroleum Gas (LPG)
  - Condensate
  - Propane
Commercialization Project – Concept

- LPG Buoy
- Gas Plant
MANAGING GHANA’S POTENTIAL OIL WEALTH
Gas Revenue Mgmt Law?

- There is big money in oil and gas compared to the size of the economy*.

- Revenues come from the extraction of a non-renewable resource.

- Revenues are different from normal tax revenues.

- Uncertainties about price and extraction, hence about future revenue.
1. What makes up petroleum revenues?
2. How much revenues should we expect?
3. Who should collect the revenues, how often?
4. Should petroleum revenues be counted as part of general revenues or as special revenues?

5. Spending-Saving Challenge
How much should go into Gov’t Coffers for Current Budget Spending? How much to Save?

6. Budget Allocation Challenge
What should be priority allocation in the budget and should we restrict budget uses?
Savings Challenge

7. Should we establish Savings fund(s)?
8. Who should manage the fund(s), and How?
9. Who may authorize withdrawals from the fund(s), How, and by How much?

Accountability, Transparency Challenge

10. How do we ensure transparency and accountability?
11. What measures are needed to ensure public oversight?
12. What other safeguards do we need if any to protect oil & gas revenues from abuses?
What Makes Up Oil & Gas Revenues?

**DIRECT - Revenue Streams**

- Royalties on Oil & Gas
- State Participation
  - Initial Carried Interest
  - Additional Carried Interest
- Corporate income Tax
- Additional “Profit Tax”
- Dividends from NOC,
- Return on Investments

**OTHERS**

*All payroll taxes, VAT, Other Corporate Taxes of mid-stream and downstream activities*
How Much Revenues Should We Expect?

Proven Oil Reserves in Barrels per Head (2009 Data)
### Fiscal Benefits

**Fiscal Benefit to the State**

<p>| | |</p>
<table>
<thead>
<tr>
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<tbody>
<tr>
<td><strong>A</strong> Gross Production</td>
<td>100,000 barrels per day</td>
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<tr>
<td><strong>B</strong> Royalty</td>
<td>5% of A = 5,000 barrels per day</td>
</tr>
<tr>
<td><strong>C</strong> Net Production</td>
<td>95,000 barrels per day</td>
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<tr>
<td><strong>D</strong> Production Cost</td>
<td>10,000 bpd = Cash Equivalent</td>
</tr>
<tr>
<td><strong>E</strong> Basis for Carried Interest</td>
<td>C – D = 85,000 barrels per day</td>
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<tr>
<td><strong>F</strong> Carried Interest</td>
<td>10% of E = 8,500 barrel per day</td>
</tr>
<tr>
<td><strong>G</strong> Development Cost</td>
<td>$3Bln @ $60pb = 10,500 bpd</td>
</tr>
<tr>
<td><strong>H</strong> Basis for Additional Interest</td>
<td>E – F – G = 66,000 bpd</td>
</tr>
<tr>
<td><strong>I</strong> Additional Interest</td>
<td>3.75% of H = 2,475 bpd</td>
</tr>
<tr>
<td><strong>J</strong> Basis for Tax</td>
<td>H – I = 63,525 barrels per day</td>
</tr>
<tr>
<td><strong>K</strong> Tax</td>
<td>35% of J = 22,234 barrels per day</td>
</tr>
<tr>
<td><strong>L</strong> Total State Share</td>
<td>B + F + I + K = 38,209 barrels per day</td>
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CAUTION

Depends on:

Å Fiscal Regime in the petroleum agreement
Å Quantity of oil produced plus associated gas
Å Costs
  ï Discovery Cost
  ï Development Cost, and
  ï Production Cost
Å Prices – Highly Unpredictable

But for planning purposes ..........forecast, averages Variable Revenues
Government Revenue at Different Average Gov't Take of Gross Oil at Different Average Price/bbl: Jubilee I (500m barrels)

- 38% GT
- 40% GT
- 45% GT
- 50% GT
- 55% GT

US$ Millions

Average Price/bbl of Crude (2011-2035)

- $40
- $50
- $60
- $65
- $75
- $90
- $100

295
349
427
369
437
443
524
641
534
443
524
568
553
568
694
694
655
655
801
801
786
786
961
961
874
874
1067
1067
Government Revenue at Different Average Take of Gross Oil at Different Average Price/bbl (800 mmbls)

- 38% GT
- 40% GT
- 45% GT
- 50% GT
- 55% GT

Average Price of Crude (2011-2035)
Gas Revenues in Cedis/Per Person/Daily: 2011-2020
(10-year average = 19 Pesewas Daily,
GH¢5.70 monthly)

Jubilee I & II (500 million bbls + Associated gas
Average Price $65
Q3: Collector, How Often?

Possible Collector(s)

How – cash or oil and gas?
When- monthly, quarterly, half yearly, yearly?

Recommendation:

- Quantity Assessment Body
  - GNPC, Petroleum Regulatory Authority, GRA
- Collector: Ghana Revenue Authority
- Cash + Oil (revenue equivalent)
- Monthly, Electronic Transfer
Q4: General Revenues or Special Revenues?

Maximize Tracking and Transparency of Revenues

- Royalties on Oil & Gas
- State Participation
  - Initial Carried Interest
- Corporate income Tax
- Additional “Profit Tax”
- Dividends from NOC
- Additional Carried Interest
- Payroll taxes, VAT,
- Withholding Taxes
- Downstream Corporate Taxes
- Duties

Ghana Petroleum Account

OTHERS

GNPC

General Gov’t Coffers
**Natural Capital**

- **Petroleum**
- **Financial Wealth (GPA)**

**Current Spending (Budget)**

- **Public Investment**
  - **Human Capital**
  - **Physical Investment + Institutions & Processes of Good Governance**

- **Financial Investment (Savings)**
  - **Public Current Consumption**
    - **General Admin**
    - **Wages & Salaries**

**Q6**

**Q5**

**Q7-Q9**

**Q10 – Q12 Trans & Account.**
Q5: Spending-Saving Challenge

- Growth and Development Needs
- Macroeconomic Stability
  - Inflation
  - Interest Rate
  - Exchange Rate
- Intangible choices of intergenerational equity
- Efficiency of Planning, Budgeting, Implementation
- Quality of Public Financial Mgmt
- Commitment of Political Regimes to Good Economic Governance
Botswana

A Series of 5-6 NDP
A NDP 10 (2009-2015)
A Gov’t must work from a 6-year Budget. May be modified but not ignored.
A Spending determined by long-term revenue estimates, with limits
A Screening of Investment projects:
– Economic Feasibility Test,
- Social Rate of Return Test
A Projects ranked based on SRRT
Nigeria

- Started oil production in 1956
- Economic growth: (cocoa, palm oil, groundnut)
- Windfall oil revenues started in 1974-78, 1979-81
- 1974-78: Invested 40% of oil revenue in roads, education
- By mid1980s Debt/GDP = 100%, Non-oil export industry declined, Net food importer.
- Inequality increased by nearly 30% (1985-2000)
Some Lessons

- Big push spending is often accompanied by massive waste.
- Public Inv scaled up too quickly are bound to multiply waste, corruption, inefficiencies (Nigeria)

- Starting point of transforming resources revenues into development is long-term view of National Dev.
- Public Inv. should be part of a dev strategy with a long-term framework (6-10 years) (Botswana)

- Public Inv. In Agric & Rural Dev must precede ambitious projects in petrochemicals and steel (Indonesia & Chile)
Projected Time Path of Revenue Flows
(500 Million barrels)

Big Spending

Low Spending Era

2018

- $50/bbl ($437)
- $65/bbl ($567)
- $75/bbl ($655)
- $100/bbl ($873)

Ghana: Expected Time Path of Revenue Flows

($50 Million barrels)

2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
Recommendations

Â Yearly, determine Benchmark Revenue from oil & gas subject to a set of formulas.

Â Annual Budget Funding Amount = predetermined percent of Benchmark Revenue

Â Adopt a Spending-Saving Rule: Example: 60/40, 65/35, 70/30, 80/20, 90/10 percent

Â Annual Budget Funding Amount must not exceed a Ceiling to be determined by set of formulas.

Â Periodically, revise the Spending-Saving Rule rule with majority Parliamentary approval.
Challenge: Should We Restrict Spending in the Budget and if so to What?

Non-Debt Consumption Spending versus Investment Spending (percent of GDP)

- Non-Debt Consumption Exp
- Public Investment Exp
- Domestically Financed

Years: 1981 to 2008
Recommendations

- No cash distribution to citizens
  - No earmarking of revenues for specific spending or special considerations, except mitigating activities
  - Use of special or block grants on need basis, time limited, for mitigating activities
  - Over a planning horizon (4-5 years), Public Investments (physical and human development) should not be less than 70% of the allocation of oil & gas revenues into govt’ coffers.
Recommendations for Priority Spending:
The hardware of building a good society

- Agriculture and Agro-Business
- Road & Rail Infrastructure (Transport)
- Water & Sanitation
- Housing Infrastructure
- Physical Infrastructure in Education & Health
- Energy
- Forest and Water Bodies
(2) Essential Elements of a Good Society

- Public Safety,
- Security,
- Law & Order Institutions
- Political Gov.
- Processes & Institutions of Economic Gov.
- Culture
- Human Capital Development

(3) MDGs as a useful framework for the provision of essential public and merit goods – basic education, health, water, sanitation, maternal mortality
QUESTIONS 7, 8, 9

Managing Savings – Savings Challenge

Rules and Guidelines
Q7: Why Save? Why Resource Funds

(a) Provide savings for future use – Entitlement of future generation.
(b) Improve predictability in public spending
(c) Induce Gov’t to strengthen domestic tax policy and administration
(d) Generate additional income, support for external value of Cedi
(e) Need to strike the right balance b’w current spending needs & future investments

Hence the establishment of Funds.........
Fund(s)- Savings Challenge

**Single Fund**

- Ghana Petroleum Fund
  - Permanent or Growth Fund

**2-Funds**

- Ghana Petroleum Funds
  - Heritage or Growth Fund: Generate savings for future generations
  - Stabilization Fund: Rainy Day funds of there is a sudden temporary decline in oil prices
MANAGING THE SAVINGS

Parliament of Ghana

Ministry of Finance & Economic Planning

Bank of Ghana
Operations Mgmt of Funds Oversees Investment Mgmt Via Investment Managers

Investment Advisory Board
Advisory services to Minister Oversight functions
Best Practice & Recommendations

1. Best Practice

- Finance generally has overall responsibility in the use and mgmt of funds
- Central banks hold and manage funds
- Central banks typically employs fund managers (external, domestic)

2. Obligations of the

- Minister of Finance and Economic Planning
- Bank of Ghana
- Investment Advisory Board

3. Guidelines on how to invest the Savings Funds

- Qualifying Instruments (Safe securities, Investment grade bonds, No equities, No real estate)
- Put a greater percent of Savings in HF
  - Invest no more than 20 percent of HF Savings at Home in Economically Targeted Investments - Commercial basis, & High SRR
Authority to Withdraw Funds

- Clear Deposit and Withdrawal Rules
  - Ghana Petroleum Account
  - Ghana Petroleum Funds (Savings)
- Withdrawals require detailed submission to Parliament as part of Budget.
- All requirements for withdrawals to be certified by Independent Auditor
- Parliament approves withdrawals as part of Budget Appropriation Process.
- Withdrawals from Stabilization Fund is intended to ensure fiscal discipline.
Public Oversight, Accountability and Transparency Challenge
Ensure Transparency & Accountability

- Designation of where revenue collection goes
- Clear Reporting Guidelines and Timelines
- Auditing guidelines
- Publication of Reports
Public Oversight and Safeguards

- Reporting and Publication of all payments into the Ghana Petroleum Account – quarterly
- Reporting and Publication of all activities of Savings Fund(s)
- Mandate public access to information, On-line
- Limit confidentiality provisions
- Conformity to EITI Principles
Q12: Additional Safeguards?

| Å Are existing budget processes adequate enough? |
| Å Limits on Public Consumption Expenditures? |
| Å Limits on Borrowing against assets of Fund(s) or against Proven Oil Reserves – The Case of Mexico (1977-82) and Nigeria (2004) |
| Å Public Oversight Committee independent of Parliament? |
CONCLUSION
The Gratification of Wealth is not found in mere possession or in lavish expenditure, but in its WISE APPLICATION.

Miguel de Cervantes Saavedra (16th Century Spanish Author of Don Quixote de la Mancha)

20th & 21st South Korea, Singapore (Resource Poor) Outperformed resource rich Venezuela, Ecuador, Nigeria (per capita income $245 b/w 1965-2000, $350bn in 1995$); Botswana leveraged diamonds to create MIC in 4 decades.
With all the accumulated experience since 1974 available to them, oil-rich developing countries can no longer plead either innocence or ignorance.”

Dr. Ngozi N. Okonji-Iweala (MD of the World Bank)
Dividing The Oil & Gas Cake

Cartoon: Compliments of Revenue Watch
THANK YOU