

**GHANA'S OIL FIND:**  
Technological Challenges for  
Upstream Skills Development

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## ABSTRACT

### **DISCUSSES:**

- Jubilee Field Development Criteria
- Skills requirement for Ghana's Oil and Gas Industry
- Concept of Local Content in Oil and Gas Development
- Challenges in developing local expertise

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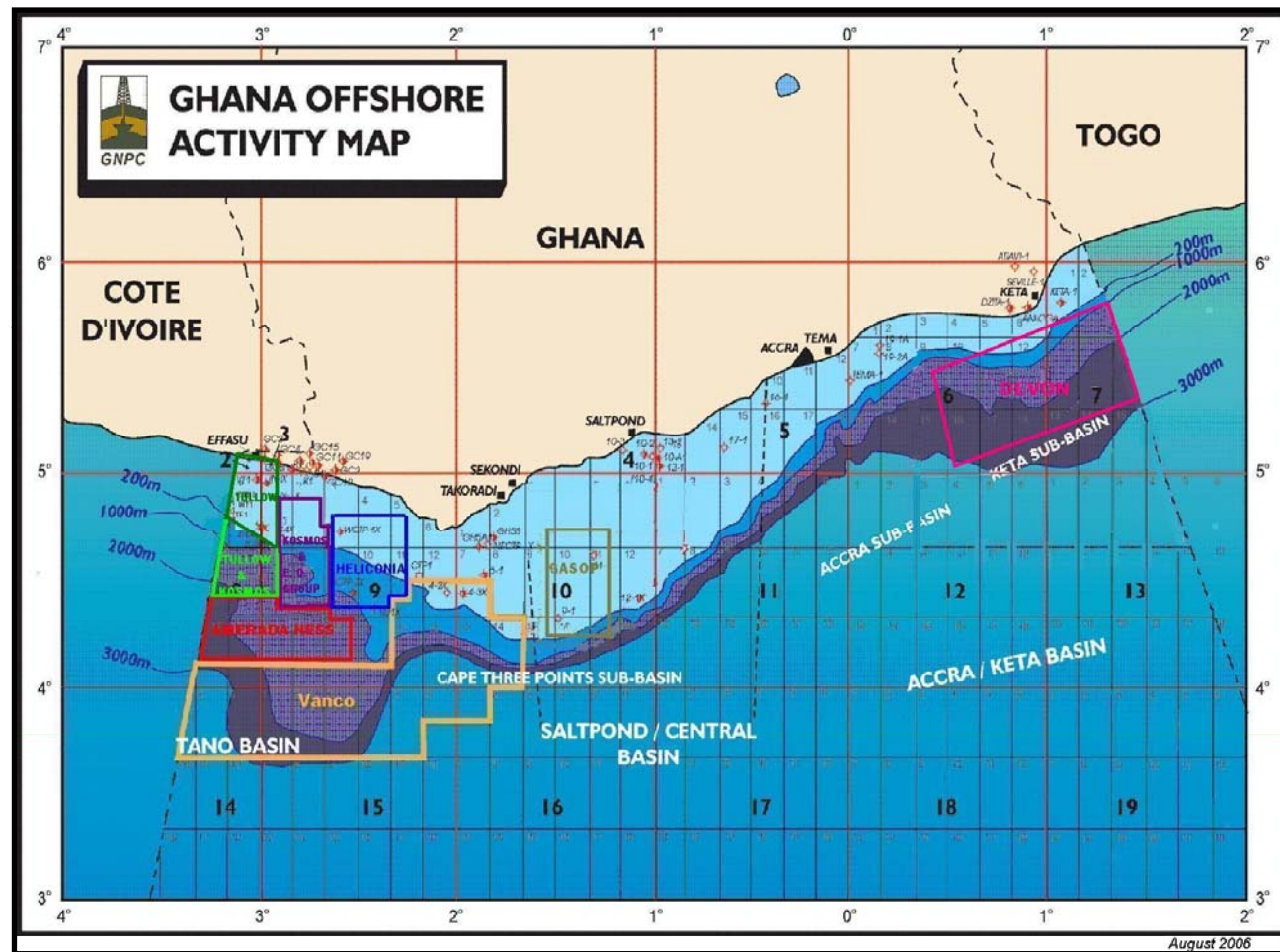
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## CONTENT

- Introduction
- Jubilee Field Development
- Black Gold: Blessing or Curse
- Skills Requirements
- Local Content
- Local Education/Training Institutions
- Recommendations/Conclusions

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Source: GNPC

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## JUBILEE FIELD DEVELOPMENT

- Significant oil/gas find off Cape Three Points by Consortium of Kosmos, Tullow, Anadarko, Sabre and GNPC announced in June/September 2007.
- Two blocks in pressure communication and hence being treated as same reservoir. Unitized as the Jubilee Field.
- Development based on 800 million to 3 billion barrels of light crude oil.

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## **JUBILEE FIELD DEVELOPMENT (Cont'd)**

- Development Plan based on No Gas Flaring, First Oil by end 2010, Philosophy of maximising resource value.
- Phase 1: Produce oil by end 2010.
  - Daily oil production of 120,000 barrels and 120 million cubic feet of gas through seabed Christmas Trees.
  - Produced oil transported by shuttle tankers from Floating Production Storage and Offloading (FPSO) facility.
- Phase 2: From 2010 to 2012 to produce 250,000 barrels oil and 250 million cubic feet gas per day.

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# JUBILEE FIELD PRODUCTION

Artist Impression



Source: GNPC

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## FISCAL BENEFITS FOR GHANA

- Assumptions: 120,000 barrels oil per day  
US\$ 60 per barrel
- Amounts to: Approx. US\$ 2.8 million per day  
US\$ 1 billion per annum
- Exact Amount Depends on Ghana's Share Holding

## OTHER FINDS

- Other important finds have been made since Jubilee



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## JUBILEE FIELD DEVELOPMENT: Gas Commercialisation Plan

- Phase 1: Produce 120 million cubic feet gas per day.
  - Gas pipeline from the Field to Effasu to ship 30-50 million cubic feet gas to feed Osagyefo Thermal Plant. Rest of gas to be reinjected to improve reservoir pressure.
  
- Phase 2: Produce 250 million cubic feet gas per day.
  - Second pipeline to be laid to Takoradi and connected into West Africa Pipeline.
  - Will also supply Aboadze Power Plant.

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## **BLACK GOLD: BLESSING OR A CURSE**

- Oil booms raise a great deal of expectations about amount of money that will be spent, about the number of jobs that will be created, and too often governments and oil companies often feed these expectations about how this new “black gold” will change everything on the ground’. Ian Gary of Oxfam America

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## **SKILLS REQUIREMENT**

- Exploration and associated services
- Drilling services
- Petroleum engineering
- Engineering, surveying design and support services
- Construction, fabrication and installation
- Production, operation and maintenance
- Health, safety and environment
- Security and personnel services
- General services

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## LOCAL CONTENT

- Government of Ghana formed various committees, including committee on Local Content, Infrastructure and Capacity Building for the Petroleum Industry
- Local Content and Participation Policy in Oil and Gas Industry issued in September 2009 for Stakeholders' review
- Work took cognisance of experience in other countries and the following Ghanaian Laws:
  1. Ghana National Petroleum Corporation Law 1983, Act (64)
  2. Petroleum Exploration and Production Law 1984 PNDCL 84
  3. Public Procurement Act 2003 (Act 663)
  4. Ghana Investment Promotion Centre Act 1994 (Act 478)

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#### LOCAL EDUCATION AND TRAINING INSTITUTIONS

#### Kwame Nkrumah University of Science and Technology

#### Courses: Degree Programmes in

- Petroleum Engineering
- Petrochemical Engineering
- Chemical Engineering
- Geological Engineering
- Geomatic Engineering
- Mechanical Engineering
- Electrical/Electronic Engineering
- Structural Engineering
- Computer Engineering

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#### University of Ghana (UG)

#### Courses: Degree Programmes in

- Computer Engineering
- Geology
- Physics
- Oceanography

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#### University of Mines at Tarkwa (UMaT)

#### Courses: Degree Programmes in

- Petroleum Engineering
- Geological Engineering
- Geomatic Engineering
- Electrical/Electronic Engineering
- Mechanical Engineering

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#### Polytechnics

#### Courses: Diploma, Certificate and Vocational Programmes in

- Electrical/Electronic Engineering
- Computer Science
- Mechanical Engineering



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#### **Petroleum Skills Development Institute (PSDI)**

#### **Programme will comprise:**

- Doing Business in Oil Industry
- Petroleum Policy, Law and Contracts
- Fundamentals of Finance and Accounting for Oil/Gas Industry
- Logistics, Procurement and Supply Chain for Petroleum Industry
- Operations and Project Management
- Quality Management
- AUTOCAD

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#### Petroleum Skills Development Institute (PSDI)

#### Programme will comprise: CONT'D

- Exploration and Production for Non Technical Persons
- Health, Safety and Environment
- Drilling Essentials for Non-Drilling Professionals
- Hazardous Areas Operation
- Operation and Maintenance for Engineers and Technicians
- Upstream Design and Fabrication
- Welding
- Diving and Subsea Work

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## RECOMMENDATIONS

- Establishment of a national policy on local content and transfer of technology
- Legislation on local content, engineering, surveying and related professional practices
- Educational institutions to introduce programmes to produce competent skills for petroleum industry
- Government to support tertiary institutions to strengthen education/training programmes

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#### ***RECOMMENDATIONS (CONT'D)***

- Education institutions to establish links with known foreign centres for best practices
- Oil/Gas companies to be encouraged to form partnership with educational institutions to develop needed local training centres, internships, etc
- Local companies should form strategic alliances to increase technological base and expertise
- Local companies to form international strategic alliances with foreign service providers to benefit from their skills and expertise

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»THANK YOU