

**PROJECT INFORMATION DOCUMENT (PID)**  
**APPRAISAL STAGE**

Report No.: 97671

<b>Project Name</b>	Ghana Sankofa Gas Project
<b>Region</b>	Africa
<b>Sector</b>	Oil, Gas and Mining
<b>Project ID</b>	P152670
<b>Borrower(s)</b>	Republic of Ghana
<b>Implementing Agency</b>	Sankofa Gas Field International JV
<b>Environment Category</b>	<input checked="" type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> FI <input type="checkbox"/> TBD
<b>Date PID Prepared</b>	May 20, 2015
<b>Date of Appraisal Authorization</b>	May 29, 2015
<b>Date of Board Approval</b>	July 30, 2015

**I. Country Context**

Ghana, with a population of about 25 million and GDP per capita of US\$1,730, has experienced strong and broadly inclusive growth over the past two decades. There have been significant improvements in poverty and social indicators and the country is transitioning to lower middle-income status. The economy has outperformed most of the developing Sub-Saharan countries by a large margin. Nevertheless, about a quarter of the population lives below the poverty line, over 8 percent in extreme poverty, and six to seven million jobs will need to be created in the next two decades to absorb new entrants into the labor market. Success in addressing these challenges will critically depend on complementing extractive industries with diversified private sector-led growth in labor intensive industries.

Oil and gas developments significantly complement the country's efforts to move to middle income status. Ghana's economy is expected to maintain robust growth over the medium term, bolstered by improved oil and gas production, increased private-sector investment, improved public infrastructure development, and sustained political stability. Oil reserves are estimated at around two billion barrels, and there have been 24 new oil and gas discoveries since the Jubilee discoveries in 2007. Oil production increased gradually from between 70-80,000 barrels per day (b/d) in 2012 to 120,000 b/d in 2014. In 2012, oil production earned Ghana approximately US\$3 billion, accounting for about 22 percent of total value of exports and around 5% of total government revenue. Over the medium term, financing of Ghana's Growth and Poverty Reduction Strategy is critically dependent upon the revenues generated from royalties from hydrocarbon exports.

The energy sector is inextricably linked to Ghana's macroeconomic performance through multiple channels, namely through the real sector, the fiscal accounts, and the balance of payments. Recent studies estimate the fiscal shock of the gas and power shortages and oil and gold price declines at a minimum of 2 percentage points of GDP and it is expected to have a protracted impact. By having a more stable local gas supply, these kind of shocks will be mitigated. With the development of Sankofa, output growth will be less volatile, and hence the likelihood of debt sustainability will be enhanced.

The Sankofa oil field<sup>1</sup> is expected to produce oil in the order of 30,000-45,000 b/d on average per day in the 2017-2022 period, equivalent to approximately US\$5 billion at current World Bank Group oil price projections. Hence, the impact of Sankofa development on the balance of payments is critical in reducing the pressure on the currency, which in turn, will enhance debt sustainability given the composition of public debt.

The Sankofa Gas Project will complement the World Bank and IMF's macroeconomic and fiscal support programs by supporting the GoG strategy<sup>2</sup> to leverage new domestic gas and oil resources to develop the manufacturing sector and higher value agriculture. This strategy will require significant investments in infrastructure and removal of the main bottlenecks to economic growth, including inadequate and unreliable electricity supply and lack of affordable bank financing for the private sector. The Sankofa Project will help unlock such infrastructure investments by catalyzing foreign direct investment in the country and setting a significant precedent in the international investment markets.

## **II. Sector and Institutional Context**

The energy sector in Ghana includes the petroleum and electricity sub-sectors and, given the high dependency of electricity sub-sector, they are strongly interlinked. The commercialization of Ghana's natural gas resources is driven by the power sector's need for fuel. The current volumes of proven reserves in Ghana's domestic gas fields are sufficient for domestic use of gas for the foreseeable future. The power sector critically depends on additional gas resources becoming available as an alternative and relatively less expensive fuel source to improve electricity services and reestablish the sector's financial equilibrium. At the same time, monetization of Ghana's domestic gas resources depends on the ability of the electricity sector to consume and pay for the gas.

Given the supply risks from Nigeria, development and maximization of domestic gas resource use is crucial to the security of fuel supply to the Ghanaian power sector. The West African Gas Pipeline (WAGP) has experienced severe supply shortages in Nigeria and frequent interruptions in deliveries. Prospects for attaining the contractual level of supply remain uncertain and depend upon domestic Nigerian gas/supply demand pressures that take priority over exports through WAGP. Domestic gas in Ghana has been slow to arrive. Although Jubilee oil production began in December 2010, the pipeline and processing plant needed to process and transport associated gas did not enter into service until the end of 2014. Therefore, over the last several years, unavailability of firm capacity of gas on a long-term basis from Nigeria and from domestic gas fields have led to an additional cost of US\$30 million per month of light crude oil (LCO) to avoid major load shedding.

Ghana's 2011 Petroleum Revenue Management Act (PRMA) provides a solid system for collection, allocation and management of petroleum revenues. Under the PRMA, all royalties, taxes, and participating interests are to be deposited into a consolidated account. From the consolidated account, GNPC receives a priority distribution equal to its equity finance costs plus a portion of the revenue from carried and participating interests (CAPI).<sup>3</sup> The remaining oil revenue is distributed between the current-year budget (limited to 70 percent of revenue), the Ghana Stabilization Fund, and the Ghana Heritage Fund. The PRMA establishes governance, oversight, and disclosure requirements and defines the eligible categories of investment for petroleum revenues. It prohibits using oil revenues as collateral for debts and

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<sup>1</sup> The proposed Sankofa Gas Project is a part of the integrated development of the Offshore Cape Three Points Gas and Oil fields.

<sup>2</sup> Ghana Shared Growth and Development Agenda II (2014-17)

<sup>3</sup> The current level of CAPI contributions to GNPC is set by the GoG at 30 percent of the net cash flow from the carried and participating interests after deducting the equity financing cost of GNPC.

guarantees. The PRMA is designed to ensure that the oil and gas revenues that accrue to Ghana are primarily used for protecting the future of Ghana's public and the macroeconomic health over the medium term.

### *Ghana's Electricity Sector*

Access to electricity in Ghana, at about 75 percent, is well above other countries in sub-Saharan Africa. Electricity consumption per capita was 344 kilowatt hours (kWh) per capita in 2011. Ghana was one of the first countries in sub-Saharan Africa to unbundle its power sector into separate generation, transmission, and distribution utilities. Ghana was also one of the first countries in sub-Saharan Africa to attract private investment through independent power projects (IPPs). Ghana's high-voltage power grid is interconnected with neighboring countries (Cote d'Ivoire, Togo, Benin and, in the near future, Burkina Faso). Already an electricity exporter, Ghana is well positioned to further develop its role as electricity exporter and energy 'bank' in the sub-region. While fuel shortages and macroeconomic shocks have impacted the sector in the past few years, the Ghanaian power sector remains one of the most advanced in Africa.

Traditionally, hydropower has been the main source of energy, but it is increasingly being complemented by thermal generation. Ghana has an installed power generation capacity of over 2,800 MW, made up of 1,600 MW of hydropower plants, 1,200 MW of gas/oil fired thermal facilities, and 2.5 MW of grid-connected solar. Approximately 800 MW of additional thermal generation capacity is currently under construction by public utilities and independent power producers. Total power generation was 13TWh in 2014. Electricity demand at peak is currently about 2,000 MW and is projected to grow by an average 5.8 percent per year in the coming decade. Ghana has been experiencing significant power outages in recent years. This is mainly due to a shortfall in generation capacity, caused by a reduction in hydropower generation due to low water levels in the main hydropower reservoir, unreliable gas supply through the WAGP system and delayed development of Ghana's domestic gas fields.

The hydropower generation and gas fuels supply shortfalls created an increasing dependency of the generation system to run on liquid fuels, which in turn increased the cost of power generation and has required considerable government subsidies. Thermal generation has been mostly run on LCO in the past decade. Developing natural gas resources is therefore critical to reduce generation costs in Ghana. The proposed Project supports the development of the largest natural gas field in Ghana, which is also the first non-associated gas resource in country to be exploited. The activities under the Project would produce up to 180 mmcfd from mid-2018 for almost 15 years. As Sankofa gas is non-associated, it will be able to provide base-load gas supply to power up to 1,000MW of generation capacity.

The Sankofa Project is designed to substitute expensive, imported alternate liquid fuels used by the power sector of Ghana with domestic, abundant and reasonably priced natural gas. The Project will also enable new thermal power generation capacity to be constructed. Gas production at other fields currently in operation in Ghana will decline rapidly after 2020. The Sankofa gas field is expected to be in production for almost two decades thereafter. The Project will therefore help address Ghana's current financial challenges in the downstream power sector.

GoG is taking a number of parallel actions in order to start a virtuous cycle of increasing revenues and reducing costs in the electricity sector. The 2013 tariff increase already has a visible effect on the financial equilibrium of the sector. Short term efficiency measures in ECG supported by IDA and medium term reforms to the management of the distribution sub-sector as part of the Millennium Challenge Corporation (MCC) Compact II, will help to improve billing, revenue collection, operational efficiency and attract private financing. A PURC-led cash management system for the sector is at an advanced stage of preparation. This will bring greater predictability to the flow of funds in the power sector.

### **III. Project Development Objective(s)**

The Project's Development Objective (PDO) is to increase the availability of natural gas for clean power generation by leveraging private capital investment.

### **IV. Project Description**

World Bank Guarantees, along with IFC lending and MIGA political risk insurance, are expected to support the development of the largest foreign direct investment opportunity in Sub-Saharan Africa in recent times. World Bank Group support will underpin US\$8 billion of foreign private investment in the economy. The Project will be structured in a manner that reduces Ghana's fiscal support at a time when macroeconomic uncertainty is affecting the investment climate. The World Bank Group is expected to support the Government of Ghana (GoG) and private parties to ensure timely completion of the Project. The technical development of the different fields (oil and gas) with regard to their expected commercial operation dates is slightly sequenced and for this reason the joint development of both OCTP components is referred to as Phase 1 (oil) and Phase 2 (natural gas). The proposed IDA support will only apply to the Phase 2 (gas) development and related commercial agreements. The oil field development under Phase 1 will not benefit from IDA support.

Eni is to be the operator of the entire block, holding a 44.4 percent participating interest, with Vitol holding 35.6 percent, and the Ghana National Petroleum Corporation (GNPC) the remaining 20 percent. The project will use a shared floating production storage and offloading unit (FPSO), which can process both oil and natural gas. The non-associated gas development will consist of five wells linked to the FPSO. A subsea pipeline will carry the gas from the FPSO to an onshore receiving facility at Sanzule. From there, a connection will be made to an existing pipeline that connects another field, Jubilee, with thermal generation plants at Aboadze, near Takoradi in Western Ghana.

The total capital cost of the Phase 1 and 2 developments over the project lifetime is US\$7.9 billion (including exploration costs). The private sponsors envisage financing their share of the project costs during construction through a mix of equity, shareholder loans, and commercial debt. GNPC's 15 percent share of construction costs is carried by Eni and Vitol at no cost during construction while its additional 5 percent share will also be carried and repaid with the proceeds from oil lifting. GNPC will be the offtaker of the Sankofa gas and resell it to the downstream power sector.

The security package agreed by all parties includes a comprehensive set of risk mitigation structures, but limited government support aimed at enhancing the creditworthiness of GNPC as offtaker of the gas for the duration of the GSA. The World Bank has worked with GoG, GNPC, and the private sponsors to make sure that principles of efficiency and effectiveness have been applied in the design and use of IDA Guarantees. The amount requested by the GoG to be used for both Payment and Debt Guarantees amounts to a total of US\$700 million. This World Bank Guarantee support will leverage substantially larger gas payment flows over the terms of the contract and facilitate an investment in the Sankofa project of up to US\$7.9 billion by the private sector.

The security package consists of different layers of recourse and intervention, including a mix of liquidity reserves in form of cash escrow, and letter of credits backstopped by IDA Payment Guarantees, a limited Sovereign Guarantee backed by a notional amount of IBRD Loan Guarantees. MIGA guarantees are expected to support termination payments for financiers and private equity partners at the partner company levels

## V. Financing (in USD Millions)

Source	Financing Plan	Total
<b>IDA</b>	<b>Guarantees (Partial Risk)</b>	<b>500.00</b>
<b>IBRD</b>	<b>Guarantees (Partial Risk)</b>	<b>200.00</b>
<b>Others</b>	<b>Total Capital Cost</b>	<b>7,900.00</b>
	<i>Of which Phase I (oil)</i>	<i>3,900.00</i>
	<i>Of which Phase II (gas)</i>	<i>4,000.00</i>
	<b>Funding requirement to first production</b>	<b>3,900.00</b>
	<i>Eni (equity and shareholder loans)</i>	<i>2,200.00</i>
	<i>Vitol</i>	<i>1,700.00</i>
	<i>Vitol equity/shareholder loans</i>	<i>500.00</i>
	<i>Vitol debt (commercial and DFI)</i>	<i>1,200.00</i>

## VI. Implementation

The Sankofa Project is being developed by Eni, Vitol, and GNPC. As Eni is the designated operator of the Project, a Joint Operating Agreement establishes the respective rights and obligations of each of the parties. A Heads of Agreement for the Commercialization of Non-Associated Gas was signed by GoG (Ministry of Finance and Ministry of Energy and Petroleum), GNPC, Eni Ghana and Vitol Upstream Ghana Ltd to acknowledge the key principles that have been agreed to develop the Sankofa oil and gas field.

### *Government Stakeholders*

**GNPC.** The Ghana National Petroleum Corporation (GNPC), was set up in 1983, and became operational in 1985. It is Ghana's National Oil Company, with the mandate to explore, develop, produce and dispose of petroleum. It holds stakes in all petroleum licenses in Ghana including the Jubilee, TEN and Sankofa Gye-Nyame fields. GNPC's revenues are regulated by the PRMA. GNPC has also been appointed by the Government as the national midstream gas company responsible for gas aggregation, transportation, and commercialization.

### *Private Sponsors*

**Eni.** Eni S.p.A. is an Italian multinational oil and gas company listed on the Milan and New York stock exchanges owned at 30 percent by the Italian government. In 2013 it produced 1.6 million barrels of oil equivalent per day and had sales of EUR 115 billion. Eni SpA employs over 82,000 people worldwide and is one of the largest international oil company operators in Africa with more than 11,500 employees on the African continent. Eni's local subsidiary, Eni Ghana Exploration and Production Ltd is the operator of the Sankofa project and holds a 44.4 percent stake in the Project.

**Vitol.** The Vitol Group is a privately held company founded in Rotterdam in 1966 with its largest operations in Geneva, Houston, London, and Singapore. It is privately held by its employees. The group's turnover in 2014 was US\$270 billion, making it the largest independent oil trader in the world. In addition to its share of the Sankofa project, Vitol also holds licenses for oil and gas fields in Cote d'Ivoire. Through its 40 percent subsidiary, Vitol distributes and markets Shell-branded fuels and lubricants in

Africa. It currently operates in 16 African countries, employs 2,200 people, and owns 1,470 service stations. Vitol will hold a 35.6 percent stake in the Sankofa Project through its local subsidiary Vitol Upstream Ghana Limited.

## VII. Safeguard Policies (including public consultation)

<b>Environmental and Social Performance Standards (PS) Triggered by the Project</b>	<b>Triggered</b>
<b>PS 1.</b> Assessment and Management of Environmental and Social Risks and Impacts	Yes
<b>PS 2.</b> Labor and Working Conditions	Yes
<b>PS 3.</b> Resource Efficiency and Pollution Prevention	Yes
<b>PS 4.</b> Community Health, Safety and Security	Yes
<b>PS 5.</b> Land Acquisition and Involuntary Resettlement	Yes
<b>PS 6.</b> Biodiversity Conservation and Sustainable Management of Living Natural Resources	Yes
<b>PS 7.</b> Indigenous People	No
<b>PS 8.</b> Cultural Heritage	No
<b>OP 7.50: Projects on International Waterways</b>	No

## VIII. Contact Points

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