



Project Information Document/ Integrated Safeguards Data Sheet (PID/ISDS)

Concept Stage | Date Prepared/Updated: 25-Sep-2017 | Report No: PIDISDSC22460



BASIC INFORMATION

A. Basic Project Data

Country Ghana	Project ID P163984	Parent Project ID (if any)	Project Name Ghana - Energy Sector Transformation Initiative Project (P163984)
Region AFRICA	Estimated Appraisal Date Dec 04, 2017	Estimated Board Date Mar 13, 2018	Practice Area (Lead) Energy & Extractives
Financing Instrument Investment Project Financing	Borrower(s) The Republic of Ghana	Implementing Agency Ministry of Energy	

Proposed Development Objective(s)

The project development objectives are to (a) strengthen the capacity of the power sector to plan and implement sector reforms, and (b) improve energy sector planning and coordination in Ghana.

Financing (in USD Million)

Financing Source	Amount
International Development Association (IDA)	20.00
Total Project Cost	20.00

Environmental Assessment Category C-Not Required	Concept Review Decision Track I-The review did authorize the preparation to continue
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Other Decision (as needed)

B. Introduction and Context

Country Context

Over the past decade, Ghana experienced strong economic growth resulting in substantial progress with poverty



reduction. The 2015 World Development Indicators show that the national poverty headcount reduced from 39.1 percent of the population in 2005 to 24.2 percent in 2012. Ghana also transitioned into Lower Middle Income Country status following the start of oil production in 2011 as GDP growth rose to as high as 14 percent. However, the recent lower commodity prices on international markets, with the lower oil and gas prices being the major factors for lower earnings, negatively impacted this growth trend. Gross Domestic Product (GDP) growth has slowed from the high 14.0 percent in 2011 to 4.2 percent in 2014, putting a strain on available Government resources. The government's initial policy response was slow and limited, and the public debt stock increased as the fiscal and current account deficits expanded, inflation spiked to 17 percent, international reserves dwindled, external debt amortizations accelerated, and the Ghanaian cedi (GHC) began to depreciate rapidly.

However, during the past few years, Ghana experienced several serious external and domestic macroeconomic shocks, which fueled inflation, exacerbated fiscal imbalances and are still adversely affecting the real sector. Lower prices for key exports have persisted with gold prices falling from US\$1,600 in 2012 to US\$1,200 in 2014 and further to US\$1,073 per ounce in 2015, before rising again to US\$1,300 in mid-2016. Oil prices declined from US\$91 in 2012 to US\$54 per barrel in 2014 and further to US\$35 per barrel in 2015. These sharply lower prices for Ghana's key exports as well as energy rationing due to the shortage of electricity generating capacity relative to demand, weighed heavily on both the supply and demand sides of the economy. Hence GDP growth slowed from 7.3 percent in 2013 to 4 percent in 2014 and to 3.9 percent in 2015. All major sectors experienced lower growth in 2014, but the slowdown was sharpest for industry where growth decelerated from 6.6 percent in 2013 to less than 1 percent in 2014.

The fiscal consolidation efforts, which started in 2013 and were strengthened under the program agreed with the IMF, began to show some results as revenues improved and some elements of expenditure were better controlled, but challenges still abound. In 2013, largely through expenditure measures, including reduced spending on wages and goods and services, the fiscal deficit narrowed to 10.7 percent of GDP (versus 11.6 percent in 2012), but still well above the target of 5 percent. In 2015, the government adopted a multiyear fiscal stabilization plan, with the support from the IMF, the World Bank and other Development Partners resulting in a considerably smaller deficit of 6.3 percent of GDP. This consolidation was achieved both through revenue and expenditure measures, including, inter alia, rationalization of the Value-Added Tax (VAT), a new structure for petroleum taxes and special levies for fiscal stabilization, further actions to control the public-sector wage bill and the elimination of petroleum subsidies through liberalization of the regime. After achieving a substantial degree of fiscal consolidation in 2015, however, Ghana missed its 2016 fiscal target by a large margin. The fiscal deficit rose to 7.8 percent, significantly higher than the target of 5.3 percent. The slippage was due to revenue shortfall and to overspending ahead of the December 2016 elections and this worsened the already exacerbated debt situation, as Ghana's public debt stock reached US\$29.2 billion, or 73.1 percent. The 2017 budget aims to achieve gradual fiscal consolidation in 2017 and a sharper expenditure adjustment in 2018. The budget target for the 2017 fiscal year is set at 6.5 percent of GDP and is supported by an ambitious revenue increase, including from oil revenue, of 2.1 percent of GDP.

Ghana is making strong efforts to regain and sustain its economic stabilization program with performance on fiscal consolidation, as well as the external position expected to improve over the medium-term, despite recent challenges. With the expectation of no further major negative terms-of-trade shocks, improved stability in prices and the exchange rate as well as improvement in the electricity supply situation, Ghana's medium-term economic prospects are expected to improve. The GDP growth rate is expected to reach 7.5 percent in 2018. The oil and gas sector is expected to drive medium-term growth with overall oil production likely to increase by more than 50 percent as the TEN oil field comes into production in 2017, followed by oil and gas production at the Sankofa field in 2018. The gas component of the Sankofa project is also expected to bolster domestic energy supply and support growth in other sectors, including manufacturing. The non-oil sector is therefore also expected to post modest growth. While the downward trend of



headline inflation has created room for policy easing as the Monetary Policy Committee (MPC) of the Bank of Ghana cut the policy rate by 350 bps between November 2016 and May, 2017, Ghana is likely to face high financing costs in the external market as the US Federal Reserve gradually increases its benchmark interest rate. In addition, the substantial legacy debt of the energy SOEs, excess capacity issues and ongoing operational losses pose substantial fiscal contingent liability risks and risks to the financial sector over the medium term. Furthermore, delays in the resolution of the energy SOE legacy debt as well as reforming the energy sector to prevent further arrears, technical problems in the oil sector and continued weak commodity prices and capital flows are major risks for Ghana's economic outlook.

Sectoral and Institutional Context

Power Sector

Ghana has high electricity access rate at over 83 percent (2016), second only to South Africa in sub-Saharan Africa. Total installed generation capacity is 2,800MW (56 percent Hydro, 44 percent Thermal, 0,1 percent Solar), with network losses of: Transmission 4 percent and Distribution 25 percent (12 percent technical, 13 percent commercial). The Government has set (a) universal access to electricity, and (b) 10 percent of power supplied by renewable energy source, as targets to be met by 2020. Ghana is also participating in the United Nations' Sustainable Energy for All (SE4ALL) initiative, which sets the universal access target to be met by 2030. With the support of Development Partners, the Government has been working on off-grid solutions (solar panels, biomass) and mini-grid pilot programs to address the disparity between urban centers (where access is over 85 percent) and rural communities (41 percent).

The power sector is unbundled and has considerable private sector participation. The Volta River Authority (VRA) manages hydropower assets and part of the thermal generation capacity. Independent Power Producers (IPPs) account for 15 percent of installed generation capacity. The transmission system is owned and operated by the Ghana Grid Company (GRIDCo), which was incorporated as a private limited liability company in 2006 following the separation of the transmission functions of the VRA from its other activities. The distribution of electricity is carried out by the Electricity Company of Ghana (ECG), with about 2.6 million customers in the south and center of the country, accounting for about 90 percent of retail power sales, and the Northern Electricity Distribution Company (NEDCo), a subsidiary of VRA, which handles the remaining 10 percent. Ghana's high-voltage power grid is interconnected with neighboring countries (Cote d'Ivoire, Togo, Benin and, soon, Burkina Faso) and the country is a member of the West African Power Pool (WAPP). The Ministry of Power is responsible for energy sector policies, while the Energy Commission (EC) and the Public Utilities and Regulatory Commission (PURC) regulate the industry, as the technical and economic regulators respectively. Ghana was one of the first countries in sub-Saharan Africa to unbundle its power sector and was also one of the first countries in sub-Saharan Africa to attract private investment through independent power projects (IPPs).

Large number of emergency power plants have contributed to excess capacity and high costs. To address supply shortfalls due to low water levels and erratic gas supply from the West African Gas Pipeline, Government, in 2014-2015, contracted several emergency power projects (EPPs) without a competitive process. The emergency capacity together with IPPs added more than what was needed to meet domestic power consumption until around 2021. While several projects have now been halted, or delayed, up to 1,900MW of excess capacity is still going ahead and, if not stopped or delayed, could cost the sector in unnecessary capacity payments by 2018

The power sector is in serious financial difficulties. The sector's financial difficulties mainly stem from: (i) high cost of fuel used by thermal power plants; gas supply shortages¹; (ii) high payments for installed capacity to EPPs and IPPs; (iii)

¹ The unreliable supply of gas from Nigeria and suspension of gas supply through the West African Gas Pipeline (WAGP) in 2016 due to nonpayment by Ghana, has led to stranded power plants without gas supply.



high transmission & distribution losses; (iv) low revenue collections by ECG; and (v) non-payment by Government entities. Due to these factors, electricity sector revenues from tariff collection do not cover costs. The sector entities therefore have had to resort to expensive external debt to finance their operations. VRA has relied on short term financing on domestic market to cover operating costs including fuel for many years. Thus, the sector has accumulated US\$2.3 billion of net external debt as of March 2017. The cost of debt service has become a great burden on the financial situation of the sector. However, as international experience show, debt restructuring would only provide temporary liquidity if sector reforms that address the underlying issues are not implemented.

Although tariffs were increased in December 2015 by 47 percent on average, the increase did not resolve the sector's poor financial position. Growth in electricity demand in 2016 has been lower than originally forecast, as consumers responded to the higher prices by rationalizing their consumption. There is some evidence indicating that industrial and commercial consumers have begun to use diesel generators, which on a marginal cost basis may work out to be cheaper than grid power at higher consumption levels. This indicates that consumer elasticity of demand for electricity may impact the Government's ability to close the revenue gap through further tariff increases, particularly in the absence of sustained improvement in the quality and reliability of supply.

Oil and gas sector

Ghana has oil and gas resources but their commercial utilization is limited. Ghana has three commercial oil and gas development projects. Petroleum production from the Jubilee field began in 2010 and is now about 100,000 barrels per day (b/d), having recovered from production curtailments that occurred in April-May 2016 because of damage to the Floating Production, Storage and Offloading (FPSO) facilities. The Tweneboa Enyenra Ntomme (TEN) development began production in August 2016 and is expected to reach 65,000 b/d in 2017. The Sankofa integrated oil/gas development has begun oil production in July 2017 and gas production is expected in 2018. The remaining commercial oil reserves from these three commercial developments are approximately 800 million barrels, and a likely additional phase of development at Jubilee would add about 100 million barrels. However, beyond Jubilee, TEN and Sankofa, no other fields are moving towards commercial development, and exploration activity is at a virtual standstill. Once development of the three existing fields is complete, production could reach 200,000-250,000 b/d by 2020 but, absent new developments, would begin to decline shortly thereafter.

A robust system of managing petroleum revenues is in place. The National Petroleum Corporation (GNPC) is designated as the petroleum/gas aggregator. The Ghana National Gas Company (GNGC) has been incorporated as a fully owned subsidiary of GNPC. Bulk Oil Storage and Transportation Company (BOST) is responsible for construction and operation of onshore pipelines and storage facilities. The Petroleum Commission is the upstream oil and gas regulator. Ghana adopted the Petroleum Revenue Management Act (PRMA) in 2011, which provides for a framework under which the collection, allocation and management of petroleum revenues are implemented. From the consolidated revenue account, petroleum revenue is distributed to (a) GNPC equal to its equity finance costs plus a portion of revenue from Carried and Participating Interests (CAPI), (b) Up to 70 percent for current budget, (c) the balance is allocated to Ghana Stabilization Fund and Ghana Heritage Fund. The PRMA prohibits petroleum revenues to be used as collateral for debts and guarantees.

Gas supply from the West African Gas Pipeline (WAGP) is unstable. The WAGP, an offshore pipeline built to transport natural gas from Nigeria to Ghana, has been unreliable and had been suspended due to accumulated payables. WAGP has experienced severe supply shortages in Nigeria and interruptions in deliveries have compromised its contractual ability to supply Ghana with 120 MMcfd of firm gas. In June 2016, ongoing payment issues led to temporary suspension of gas supply. The West Africa Pipeline Company (WAPCo) and Government reached agreement and gas supply has been



restarted after some payments were made in installments and against pre-payment of invoices since early 2017. The unreliable gas flows have led to about 700MW of idle electricity generation capacity, reliance on more expensive liquid fuels, and further deterioration of the financial viability of the power sector. Based on projections, the overall gas supply and demand should balance from 2018 to 2020 for Ghana, provided however that, as discussed later, the gas transmission network can be interconnected in time.

Domestic gas infrastructure is inadequate to meet the power sector's needs. With the commissioning of Sankofa in 2018, gas supply in the west of Ghana is expected to be in excess to the offtake there, while the power plants in the east will continue to experience gas supply shortages unless adequate gas transmission capacity interconnecting the west and the east is set up in time. This gas supply imbalance, if not addressed, would have significant financial consequences in the form of (i) capacity charges for idle power plants in the east (Tema), and (ii) capacity charge from non-utilization of Sankofa gas.

Sector planning and coordination

Energy sector planning is unsystematic and the operational mandates of key power and gas sector operators are not aligned within a coherent sector regulatory framework. The current planning and commercial operation in the sector lacks coordination and consensus building among the various implementing, supervisory and regulatory agencies as evidenced by the excess capacity created by the EPPs and the lack of coordinating gas development with the power sector's needs. With the assets, such as the Akosombo dam and WAGP, which are technically large-scale energy storage facilities, an integrated approach in operations and planning would enable Ghana to establish a resilient energy system that will provide buffer to cope with short-term fluctuations in fuel supply, and allow improved absorption capacity of intermittent renewable energy such as solar and wind power. When efficiently operated, such system would potentially enable Ghana to become one of the key power exporters to the West Africa Power Pool (WAPP) countries. To operationalize such system fully would require: (i) coordination within and between the gas and power systems; (ii) rationalizing the roles and mandates of energy SOEs and agencies, and restructuring of the institutional set up; (iii) strengthening of the regulatory environment; and (iv) capacity building to operate the system and to allocate resources in the most efficient way.

Government approach to addressing sector issues

Government has outlined a turnaround program for the sector. The current Government, in place since December 2016, has outlined a turnaround program with four objectives to address the problems in the sector: (i) restoring the power sector's financial viability, (ii) improving sector planning and investment decisions, (iii) improving the regulatory framework and (iv) expanding electricity access to remote communities. In meetings with the World Bank's Senior Management between November 2016 and April 2017, the Government requested the Bank's assistance in defining the specific actions needed for implementing this program and ensuring the sustainability of the energy sector operations in the future.

The role of Development Partners

Ghana is fortunate to have many development partners supporting its power sector. The largest of these is the Millennium Challenge Corporation (MCC). Under the "Compact Program" MCC is proving \$500 million for the concession of ECG's management and operation of the distribution system, tariff review and regulation, energy efficiency, among others. The program reached an important milestone on August 30, 2016 when the Request for Proposal for the concession was sent to the shortlisted firms. With the conditions fulfilled, the Compact has become effective and about



US\$280 million of grant funds have been made available for efficiency improvement investments in ECG. The concessionaire is expected to take operational control of ECG assets from early 2018. The proposed TA activities will be closely coordinated with the MCC Compact.

Relationship to CPF

The proposed operation is fully aligned with the World Bank's Country Partnership Strategy (CPS) for Ghana (2013-2017), as adjusted during the Performance Learning Review (PLR) which extended its period until 2018. The CPS focuses on three strategic pillars of support to the Government: (i) improved economic institutions; (ii) improved competitiveness and job creation; and (iii) protection of the poor and vulnerable. The proposed project supports the first pillar by focusing on improving natural resources governance, and the second pillar by improving delivery of energy infrastructure. Given the high cost to the economy of the frequent blackouts experienced in recent years, the TA will also focus on activities aimed at increasing the availability of electricity and diversifying the energy mix, as emphasized in the CPS.

The proposed operation is also aligned with the priorities identified in the Government's Shared Growth and Development Agenda (GSGDA II). By improving the financial viability and functioning/coordination of the energy sector, the TA will contribute to ensuring and sustaining macroeconomic stability, enhancing competitiveness of Ghana's private sector. The TA also aims to ensure effective alignment of operational mandates of key sector operators including GNPC, GNGC, BOST, ECG, VRA, PURC, and Energy Commission within a coherent sector regulatory framework.

C. Proposed Development Objective(s)

The project development objectives are to (a) strengthen the capacity of the power sector to plan and implement sector reforms and (b) improve energy sector planning and coordination in Ghana.

Key Results (From PCN)

The results of the operation will be measured using the following key outcome indicators:

Potential PDO Indicators

- (a) Improved E--billing and e-payment system developed and functional
- (b) Number of key sector policy and reform proposals validated and endorsed at the institutional level
- (c) Steering group for sector coordination and reform implementation established
- (d) Integrated Medium-term Energy Strategy adopted

Potential Intermediate Indicators:

- (e) Energy Sector regulatory framework review completed and recommendations adopted
- (f) VRA restructuring study completed and validated
- (g) Grid resilience and reinforcement study for GRIDCo completed and validated
- (h) Geospatial mapping completed



D. Concept Description

The proposed TA will support the four objectives of the Government's sector turnaround program discussed above. The proposed activities complement and support other activities by the Government and Development Partners. The project involves a comprehensive package of interventions for the next five years to help improve power sector performance across the supply chain and bring it to a sustainable state.

The Project would be implemented in three phases that would allow prioritizing critical activities and adjusting the scope based on circumstances and the results of the activities under each of the phases.

- Phase 1 would focus on the most urgent issue: restoring the sector's financial viability. It would start immediately with initial financing from the Project Preparation Advance. The recently approved EMAP grant for the development of a competitive IPP procurement strategy would proceed in parallel.
- Phase 2 would focus on the structure of the sector and its regulatory environment, addressing issues related to energy sector planning, coordination, transparency and governance.
- Phase 3 would focus on the medium-term, setting the stage for bringing electricity access to more of the remote areas and increasing the gas sector's contribution to the economy. This phase would also consolidate the recommendations of the various activities into a medium-term integrated energy sector strategy.

During preparation, the project would conduct a rapid assessment of ongoing and recently completed analytical work and existing policies, regulations and directives in the power and gas sectors to outline strategic priorities for early implementation and to help refine the scope of the subsequent activities to be carried out in each of the project's three phases.

The estimated cost of the activities is around US\$20 million.

2. Overall Risk and Explanation

The overall risk rating for the operation is preliminarily determined as moderate. The major risks are discussed below.

Political and Governance Risk is rated Moderate. The Government has strong and sustained political will to implement the sector reforms. Continuous engagement with the Government and close collaboration with the IMF and other development partners will help mitigate these risks and ensure the consistent implementation of the reform agenda.

Macroeconomic Risk is rated Moderate. Macroeconomic risks arise, *inter alia*, from Ghana's long-standing difficulties in restraining inflation and maintaining a stable exchange rate. However, an agreed IMF program and IDA DPOs are expected to provide restraint and implementation of appropriate actions at fiscal management which will stabilize the macroeconomic situation.

Sector Strategies and Policies Risk is rated Substantial. The Project will support the Government's reform objectives and initiatives that aim to turn-around the current power sector situation, however this will require extensive coordination, clear and transparent process and sustained political will. The continued dialogue and support by the donor community, including IMF, would be necessary to maintain this momentum through the project period.



Technical Design of Project or Program Risk is rated Moderate. The technical design of the project is simple. Similar TA activities have been carried out in Ghana previously and there is substantial global knowledge on the issues the project aims to address. The comprehensive nature of the Project may, however, create coordination issues as different institutions and agencies will need to be included into the implementation. The phased design of the project along with the high-level Steering Committee will provide mitigation. In addition, an effective coordination mechanism will be structured during preparation.

Institutional capacity for implementation and sustainability. This risk is rated Moderate. Implementation of the project involves several agencies and activities in several locations. Coordination with other development partners is also essential. The risk of this is delays in implementation. As a mitigation, the project will rely on a well experienced Project Implementation Unit, with extensive implementation experience of Bank projects. The Project may also face challenges in the sector entities' technical capacity to supervise the project activities. Any such shortcomings will be identified during preparation and mitigation measures will be put in place to address them.

Fiduciary risk is rated Moderate. The existing financial management arrangements under the on-going GEDAP PIU have been reviewed periodically and found satisfactory. The TA will benefit from the same arrangements for implementation.

Environmental and Social risks are rated Low. There are no foreseen environmental or social impacts stemming from the TA activities.

Stakeholder risk is rated Moderate. There are complex stakeholder relationships in Ghana linked to underlying sector that could also cause implementation delays for the whole TA. The Project will mitigate this risk through holding regular consultations with the stakeholders and the public on the outputs of these activities. The project would also develop a communication strategy.

Safeguards

Safeguards

There are no environmental and social impacts expected from this TA. The Project is therefore in the environmental and social Category C.

Climate Change

Ghana is vulnerable to climate variability, notably through its effects on agricultural productivity and food security, forest production, water resources, health and exposure to natural disasters. A climate change screening of the TA will be carried out to assess risks and identify specific mitigation measures as required.

Gender and Citizen Engagement

In 2010, the Government set a National Energy Policy to facilitate the attainment of middle income status by 2020. Realizing that women are one of the most important actors in the energy sector through their contact, use and management of energy, the Ministry of Energy developed a policy goal to mainstream gender in the energy sector. The challenges of energy and gender include the dominance of women in the collection and use of fuelwood and charcoal, high exposure of women to indoor pollution, limited involvement of women in the planning and management of energy services and few women in management positions in the energy sector. The ministry sought to address the challenges



by promoting the use of modern forms of energy in the households, supporting the development of women in the energy sector, promoting the development of solar and renewable forms of energy and ensure women participation in formulation and implementation of energy interventions. (GOG, National Energy Policy 2010).

Subsequently, the Ministry of Gender, Children and Social Protection developed a national gender policy in 2015 to ensure gender equality and women’s empowerment including the energy sector in the country. The national policy seeks to promote the application of sustainable energy sources particularly for women and households. The National Gender Policy also seeks to facilitate awareness of the creation of alternative energy sources and inform decisions on the application at the household level where women are the lead users. The impact of the both policies have yet to be assessed.

The project team will identify, during preparation, actions that can be incorporated in the project design.

SAFEGUARDS

A. Project location and salient physical characteristics relevant to the safeguard analysis (if known)

This is a technical assistance project which would include many specialized sector diagnostic work, which would not involve any physical activity. All the activities will be conducted from the offices of the Ministry of Energy, and specialized energy related agencies.

B. Borrower’s Institutional Capacity for Safeguard Policies

The borrower entity is currently implementing investment projects category A, and given its strengths in the sector, the Bank is using country systems for some safeguards, with a good track record.

C. Environmental and Social Safeguards Specialists on the Team

Gloria Malia Mahama, Social Safeguards Specialist
Anita Bimunka Takura Tingbani, Environmental Safeguards Specialist

D. Policies that might apply

Safeguard Policies	Triggered?	Explanation (Optional)
Environmental Assessment OP/BP 4.01	No	
Natural Habitats OP/BP 4.04	No	
Forests OP/BP 4.36	No	
Pest Management OP 4.09	No	
Physical Cultural Resources OP/BP 4.11	No	
Indigenous Peoples OP/BP 4.10	No	



Involuntary Resettlement OP/BP 4.12	No
Safety of Dams OP/BP 4.37	No
Projects on International Waterways OP/BP 7.50	No
Projects in Disputed Areas OP/BP 7.60	No

E. Safeguard Preparation Plan

Tentative target date for preparing the Appraisal Stage PID/ISDS

Oct 31, 2017

Time frame for launching and completing the safeguard-related studies that may be needed. The specific studies and their timing should be specified in the Appraisal Stage PID/ISDS

To be discussed

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APPROVAL

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