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The World Bank

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Report No: PAD2576

INTERNATIONAL DEVELOPMENT ASSOCIATION

PROJECT APPRAISAL DOCUMENT

ON A

PROPOSED CREDIT

IN THE AMOUNT OF SDR 14.2 MILLION
(US$20.0 MILLION EQUIVALENT)

TO THE

REPUBLIC OF GHANA

FOR THE

GHANA ENERGY SECTOR TRANSFORMATION INITIATIVE PROJECT

June 21, 2018

Energy and Extractives Global Practice
Africa Region

CURRENCY EQUIVALENTS
(Exchange Rate Effective May 31, 2017)

Currency Unit =	New Ghanaian Cedi (GHC)
GHC 4.44 =	US$1
US$1.00 =	SDR 0.70589066

FISCAL YEAR
January 1 – December 31

ACRONYMS

AfDB	African Development Bank
CAGD	Controller and Accountant General's Department
CPS	Country Partnership Strategy
CWM	Cash Waterfall Mechanism
DA	Designated Account
DPO	Development Policy Operation
EC	Energy Commission
ECG	Electricity Company of Ghana
EPP	Emergency Power Producer
ESMAP	Energy Sector Management Assistance Program
FM	Financial Management
FMC	Financial Management Consultant
GDP	Gross Domestic Product
GEDAP	Ghana Energy Development and Access Project
GHC	New Ghanaian Cedi
GIS	Geographic Information System
GIZ	German Agency for International Cooperation (*Deutsche Gesellschaft für Internationale Zusammenarbeit*)
GNGC	Ghana National Gas Company
GNPC	Ghana National Petroleum Corporation
GRIDCo	Ghana Grid Company Limited
ICB	International Competitive Bidding
IFC	International Finance Corporation
IFR	Interim Financial Report
IMF	International Monetary Fund
IPF	Investment Project Financing
IPP	Independent Power Producer
JICA	Japan International Corporation Agency
KfW	German Government-owned Development Bank *(Kreditanstalt für Wiederaufbau)*
KOICA	Korea International Cooperation Agency
LNG	Liquefied Natural Gas
MCC	Millennium Challenge Corporation
MDAs	Ministries, Departments, and Agencies
MIGA	Multilateral Investment Guarantee Agency

MoEn	Ministry of Energy
MoF	Ministry of Finance
MoGCSP	Ministry of Gender, Children and Social Protection
MoME	Ministry of Monitoring and Evaluation
MW	Megawatt
NCB	National Competitive Bidding
NEDCo	Northern Electricity Distribution Company
NPV	Net Present Value
PDO	Project Development Objective
PIM	Project Implementation Manual
PIU	Project Implementation Unit
PPA	Power Purchase Agreement
PPSD	Project Procurement Strategy for Development
PURC	Public Utilities Regulatory Commission
SDR	Special Drawing Rights
SECO	State Secretariat of Economic Affairs (Switzerland)
SOE	State-owned Enterprise
SORT	Systematic Operations Risk-Rating Tool
TEN	Tweneboa Enyenra Ntomme
TTL	Task Team Leader
USAID	U.S. Agency for International Development
VRA	Volta River Authority
WAGP	West African Gas Pipeline
WAPP	West African Power Pool

Regional Vice President:	Makhtar Diop
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BASIC INFORMATION

Country(ies)	Project Name	
Ghana	Ghana Energy Sector Transformation Initiative Project	
Project ID	Financing Instrument	Environmental Assessment Category
P163984	Investment Project Financing	C-Not Required

Financing & Implementation Modalities

[ ] Multiphase Programmatic Approach (MPA)	[ ] Contingent Emergency Response Component (CERC)
[ ] Series of Projects (SOP)	[ ] Fragile State(s)
[ ] Disbursement-linked Indicators (DLIs)	[ ] Small State(s)
[ ] Financial Intermediaries (FI)	[ ] Fragile within a non-fragile Country
[ ] Project-Based Guarantee	[ ] Conflict
[ ] Deferred Drawdown	[ ] Responding to Natural or Man-made Disaster
[ ] Alternate Procurement Arrangements (APA)	

Expected Approval Date	Expected Closing Date
13-Jul-2018	

Bank/IFC Collaboration

No

Proposed Development Objective(s)

The Project development objectives is to: strengthen the capacity of the energy sector to implement sector reforms, and improve energy sector planning and coordination in Ghana

Components

Component Name	Cost (US$, millions)
Component 1: Management of energy sector financial flows	5.30

Component 2: Sector Planning and coordination	3.50
Component 3: Energy access	2.00
Component 4: Natural gas	3.20
Component 5: Project management	2.00
Follow up activities and Contingencies	4.00

Organizations

Borrower:	The Republic of Ghana
Implementing Agency:	Ministry of Energy

PROJECT FINANCING DATA (US$, Millions)

SUMMARY

Total Project Cost	20.00
Total Financing	20.00
of which IBRD/IDA	20.00
Financing Gap	0.00

DETAILS

World Bank Group Financing

International Development Association (IDA)	20.00
IDA Credit	20.00

IDA Resources (in US$, Millions)

	Credit Amount	Grant Amount	Total Amount
National PBA	20.00	0.00	20.00
Total	**20.00**	**0.00**	**20.00**

Expected Disbursements (in US$, Millions)

WB Fiscal Year	2019	2020	2021	2022	2023
Annual	1.39	1.94	3.57	6.01	7.10
Cumulative	1.39	3.33	6.89	12.90	20.00

INSTITUTIONAL DATA

Practice Area (Lead)

Energy & Extractives

Contributing Practice Areas

Climate Change and Disaster Screening

This operation has been screened for short and long-term climate change and disaster risks

Gender Tag

Does the project plan to undertake any of the following?	
a. Analysis to identify Project-relevant gaps between males and females, especially in light of country gaps identified through SCD and CPF	Yes
b. Specific action(s) to address the gender gaps identified in (a) and/or to improve women or men's empowerment	No
c. Include Indicators in results framework to monitor outcomes from actions identified in (b)	No

SYSTEMATIC OPERATIONS RISK-RATING TOOL (SORT)

Risk Category	Rating
1. Political and Governance	Moderate
2. Macroeconomic	Moderate
3. Sector Strategies and Policies	Substantial
4. Technical Design of Project or Program	Low
5. Institutional Capacity for Implementation and Sustainability	Moderate
6. Fiduciary	Substantial

7. Environment and Social	Low
8. Stakeholders	Moderate
9. Other	
10. Overall	Moderate

COMPLIANCE

Policy

Does the project depart from the CPF in content or in other significant respects?

[ ] Yes [✓] No

Does the project require any waivers of Bank policies?

[ ] Yes [✓] No

Safeguard Policies Triggered by the Project	Yes	No
Environmental Assessment OP/BP 4.01		✓
Performance Standards for Private Sector Activities OP/BP 4.03		✓
Natural Habitats OP/BP 4.04		✓
Forests OP/BP 4.36		✓
Pest Management OP 4.09		✓
Physical Cultural Resources OP/BP 4.11		✓
Indigenous Peoples OP/BP 4.10		✓
Involuntary Resettlement OP/BP 4.12		✓
Safety of Dams OP/BP 4.37		✓
Projects on International Waterways OP/BP 7.50		✓
Projects in Disputed Areas OP/BP 7.60		✓

Legal Covenants

Sections and Description

Establishment and appointment of members to the Technical Committee by October 31, 2018 or any other date agreed with the Association

Sections and Description
Establishment and appointment of members to the Steering Committee by October 31, 2018 or any other date agreed with the Association

Sections and Description
The Recipient, through MoEN, shall ensure that: (a) all consultancies related to technical assistance, design and capacity building under the Project, the application of whose results could have environmental, social and health and safety implications, shall only be undertaken pursuant to terms of reference reviewed and found satisfactory by the Association; and (b) such terms of reference shall require the technical assistance, design and capacity building activities to take into account the requirements of the applicable Association Safeguards Policies and EHS Guidelines.

Conditions

Type	Description
Effectiveness	Preparation of Project Implementation Manual in form and substance satisfactory to the Association.
Effectiveness	Appointed to the Project Implementation Unit (PIU) a financial management specialist and a procurement specialist with training, experience and under terms of reference satisfactory to the Association.

GHANA
GHANA - ENERGY SECTOR TRANSFORMATION INITIATIVE PROJECT

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I. STRATEGIC CONTEXT

A. Country Context

1. **Over the past decade, overall economic growth in Ghana was robust while poverty declined.** The 2015 World Development Indicators show that the national poverty headcount was reduced from 39.1 percent 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 gross domestic product (GDP) grew 14 percent. However, the recent lower commodity prices on international markets has had a negative impact on this growth trend. Economic growth slowed from 7.3 percent in 2013 to 3.7 percent in 2016, putting a strain on the overall macroeconomic outlook.

2. **The strong growth was followed by external and domestic macroeconomic shocks, which fueled inflation and exacerbated fiscal imbalances.** The sharply lower prices for Ghana's key exports—oil and gold—coupled with energy rationing due to the shortage of electricity generating capacity in 2014 and 2015, weighed heavily on the economy. The industrial sector's contribution to GDP fell from 26.6 percent to 25.1 percent between 2014 and 2015, accompanied by job losses, especially in the mining and quarrying subsector, which contracted by 6.1 percent in 2015. In 2016, the mining and quarrying sector contracted a further 10.7 percent, much of which was attributed to production problems in the oil sector.

3. **Implementation of a fiscal consolidation program reduced the fiscal deficit initially, but a revenue shortfall and overspending reversed the trend.** In 2015, the Government adopted a multiyear fiscal stabilization plan, with support from the International Monetary Fund (IMF), World Bank, and other development partners, bringing the fiscal deficit to 7 percent of GDP in 2015 from 10.7 percent in 2013. After achieving a substantial degree of fiscal consolidation, however, Ghana missed its 2016 fiscal target by a wide margin. The fiscal deficit rose to 9.3 percent of GDP on cash basis, significantly higher than the target of 5.2 percent. The slippage was due to a revenue shortfall and overspending ahead of the December 2016 elections, increasing Ghana's public debt to US$29.6 billion or 73.4 percent of GDP. The fiscal slippage experienced in 2016 was reversed as Ghana's fiscal deficit at the end of December 2017 went down to 6 percent of GDP against the target of 6.3 percent for the year. Even though revenues (including grants) underperformed by 5.4 percent (equivalent to 1.1 percent of GDP), recurrent and capital expenditures were reduced to achieve the lower deficit. The primary balance improved from a deficit of 1.4 percent of GDP at the end of 2016 to a surplus of 0.8 percent at the end of December 2017—the first time since 2013. The debt-to-GDP ratio reduced from 73.4 percent in 2016 to 69.2 percent in December 2017.

4. **Ghana's medium-term economic prospects are expected to improve with increased oil production.** The GDP growth rate is expected to reach 7 percent in 2018.[1] The oil and gas sector is the main driver of the medium-term growth with oil production likely to increase by more than 50 percent as the Tweneboa Enyenra Ntomme (TEN) oil field started production in July 2017, followed by expected oil and gas production at the Sankofa field in 2018. The gas output of Sankofa is expected to bolster domestic

[1] World Bank estimate, Macro Poverty Outlook, April 2018.

energy supply and reduce fuel costs in the electricity sector. The recovery of the agriculture sector and stabilization of electricity supply are also expected to support overall growth.

5. **The macroeconomic outlook is however subject to both domestic and external risks.** Ghana is likely to face high financing costs in the external market as the U.S. Federal Reserve gradually increases its benchmark interest rate. Also, the country's heavy reliance on primary commodities, including cocoa, gold, and oil, as well as the projected weakness and possible volatility in international commodity prices create significant uncertainty about its growth, export receipts, and domestic revenue. In addition, the substantial legacy debt of the energy state-owned enterprises (SOEs), costly generating capacity, and operational losses within the power sector pose substantial fiscal contingent liability risks and risks to the financial sector over the medium term. Delays in the resolution of the energy sector's legacy debt is a significant risk for Ghana's economic outlook.

B. Sectoral and Institutional Context

Power Sector

6. **Ghana has connected about 84 percent of its population to electricity supply.**[2] This high access rate (2017) is second only to South Africa in Sub-Saharan Africa but there is disparity between rural and urban access. Total installed generation capacity is 4,741 megawatt (MW) (42 percent hydro, 57 percent thermal, and 1 percent solar), while the peak load was 2,433 MW in 2018.[3] Transmission and distribution losses were 4.4 percent and 25 percent, respectively.[4] The Government's goal is to achieve universal access to electricity and scale up renewable penetration by 10 percent by 2030.[5] Ghana is also committed to the United Nations' Sustainable Development Goals, which includes the target of universal access to modern energy service by 2030. As part of the access agenda and also as included in the Nationally Determined Contribution, the Government committed to scale up access and adoption of 2 million efficient cookstoves by 2030. The Government aims to reduce the disparity between urban centers (where access is over 85 percent) and rural communities (60 percent) in terms of both affordability and cost of grid connection due to differences in the level of income as well as geographical distances. With the support of the World Bank and other development partners,[6] the Government has been working on off-grid solutions (solar panels and biomass) and mini-grid pilot programs to bridge the gap.

7. **Ghana has implemented a wide range of power sector reforms, and private sector participation is significant.** Ghana was one of the first countries in Sub-Saharan Africa to unbundle its power sector and attract private investment through independent power producers (IPPs), though all utilities are state-owned. The Volta River Authority (VRA) is the state-owned generation company, which manages both hydro and thermal assets. The transmission system is owned and operated by the state-owned Ghana

[2] Ministry of Energy, Access Secretariat.
[3] Ministry of Energy/GRIDCo.
[4] http://www.energycom.gov.gh/energy-statistics.
[5] United Nations Framework Convention on Climate Change (UNFCC) Ghana Nationally Determined Contribution (Paris Agreements-COP21).
[6] Including the Government of Netherlands, State Secretariat of Economic Affairs (Switzerland, SECO), Japan International Corporation Agency (JICA), Korea International Cooperation Agency (KOICA), German Agency for International Cooperation (*Deutsche Gesellschaft für Internationale Zusammenarbeit*, GIZ), and the German Government-owned Development Bank *Kreditanstalt für Wiederaufbau* (KfW).

Grid Company Limited (GRIDCo), incorporated in 2006. The distribution of electricity is carried out by the Electricity Company of Ghana (ECG), with 3.8 million customers in the south and center of the country, accounting for 90 percent of retail power sales, and the Northern Electricity Distribution Company (NEDCo), a subsidiary of VRA, which services the remaining 10 percent of the market. Ghana's high-voltage power grid is interconnected with neighboring countries (Côte d'Ivoire, Togo, Benin, and, soon, Burkina Faso) and the country is a member of the West African Power Pool (WAPP). The Ministry of Petroleum and the Ministry of Power were merged into the Ministry of Energy (MoEn) in 2017, which is responsible for energy sector policies. The Energy Commission (EC) and the Public Utilities Regulatory Commission (PURC) regulate the industry, as the technical and economic regulators, respectively.

8. **To reduce electricity shortages, the Government fast-tracked private power plants that have led to excess generating capacity and high costs.** To address supply shortfalls due to low water levels in the main dams and erratic gas supply from the West African Gas Pipeline (WAGP) to provide fuel to power plants, the Government contracted three emergency power producers (EPPs) without a competitive process during 2014–2017. In addition, also through a noncompetitive process, ECG signed 43 power purchase agreements (PPAs). However, demand growth has since reduced due to tariff increases and slower economic growth; hence, these plants, if built, are projected to result in 1,900 MW of excess capacity by 2019 (50 percent increase in current installed capacity). The resulting excess capacity would cost the sector up to US$680 million per year in unnecessary capacity payments. To mitigate the financial consequences, the new Government that took office in January 2017 conducted a review of the PPAs and is moving forward to rationalize the projects that have not yet broken ground.

9. **High costs and operational inefficiencies have created serious financial difficulties in the sector.** The sector's financial difficulties mainly stem from (a) high cost of fuel used by thermal power plants; (b) gas supply shortages; (c) high payments for installed capacity to EPPs and IPPs; (d) high distribution losses; (e) low revenue collections by ECG; and (f) nonpayment by Government entities. Due to these factors, electricity sector revenues from tariff collection do not cover costs, and to continue their operations, the sector entities have had to resort to expensive external debt. The VRA has relied on short-term financing on the domestic market to cover operating costs including fuel for many years. As of March 2017, the sector had accumulated US$2.3 billion of net debt.[7] The cost of servicing this debt has become a financial burden on the sector.

10. **Although tariffs were increased by 47 percent in December 2015, the increase did not improve the sector's financial position.** Growth in electricity demand in 2016 was lower than originally forecast, as consumers responded to the higher prices by rationalizing their consumption. The average electricity tariff was GHC 0.817 at the end of 2016 (US$0.18[8]). Residential tariffs are progressive with a lifeline rate of GHC 0.336 (US$0.076) for consumption up to 50 kWh per month. Commercial tariffs are significantly higher than residential tariffs due to the cross subsidy they provide to the residential consumers. There is anecdotal evidence 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 affect the Government's ability to close the revenue gap through further tariff increases, particularly in the absence of sustained

[7] Debt stock is net of intrasectoral debt stock.
[8] at exchange rate of GHC 4.4 = US$1 as of October 2017.

improvement in the quality and reliability of supply. The Millennium Challenge Corporation (MCC) is assisting PURC to review the tariff methodology.

11. **In March 2018, PURC announced electricity tariff reductions of 17 percent for residential and 30 percent for commercial consumers.** The impact of the tariff reduction is yet to be seen, but there is a perceived concern that it will lead to a significant revenue reduction for the power sector. Data indicate that demand has increased from 2,229 MW in March 2018 to 2,433 MW in April 2018[9] and may increase further due to the tariff decrease.

Oil and Gas Sector

12. **Ghana's domestic gas production has not met expectations but could provide meaningful supply for the power sector in the medium term.** Ghana has three commercial oil and gas development projects: Jubilee, TEN, and Sankofa. Petroleum production from the Jubilee field began in 2010 and averaged 84,000 b/d (barrels per day) in the first half of 2017. This production is less than the anticipated 100,000 b/d because of curtailments from ongoing work on the Floating Production, Storage, and Offloading facilities which may continue into 2019. The TEN field began production in August 2016 and has averaged 48,000 b/d in 2017, less than the anticipated 50,000 b/d. Most of the gas from these fields is associated gas (130 MMcfd out of 150 MMcfd) so the underproduction of oil has resulted in inconsistent supply of gas. The Sankofa integrated oil and gas development began oil production in July 2017, and non-associated gas production is expected to start in June 2018. Following a September 2017 ruling by the International Tribunal for the Law of the Sea clarifying the boundary line with Côte d'Ivoire, new exploration activities are likely, and current concessionaires will submit revised development plans for additional wells for TEN.

13. **Pipeline supply of natural gas has been below expectations.** WAGP is an offshore pipeline built to transport natural gas from Nigeria to Ghana. Historically, both supply shortages in Nigeria and nonpayment for gas by Ghana have caused supply interruptions. Deliveries of gas have been far less than the contractual 120 MMcfd. In the second half of 2017, deliveries averaged 50 MMcfd on a pay-as-use basis.

14. **Gas transport infrastructure needs to be made available to balance gas supply between the west and the east.** With the commissioning of Sankofa in 2018, gas supply in the west of Ghana is expected to be more than the offtake there, while the power plants in the east will continue to experience gas supply shortages until an adequate gas pipeline capacity connects the east and the west. This gas supply imbalance, if not addressed, would have significant financial consequences including capacity charges for idle power plants and a charge for non-utilization of Sankofa gas. Work is ongoing to complete the commercial and operational agreements between the West Africa Pipeline Company and Ghana National Gas Company (GNGC) and to make the necessary infrastructure upgrades/investments to reverse the flow of gas between the west (Takoradi) and the east (Tema). A 450 MW Karpower barge, a potential future offtaker for Sankofa gas, has been docked at Tema and could be moved to Takoradi to help mitigate the local gas supply imbalance.

[9] MoEn/ECG.

15. **Power and gas sector planning must be coordinated to balance gas supply and demand.** The size of the power sector's gas demand is uncertain due to the over commitment to IPPs and the price sensitivity of electricity consumers. Similarly, the supply of gas from WAGP and domestic associated-gas production is not certain. The Government has signed a Gas Sales Agreement for imported liquefied natural gas (LNG) with West Africa Gas Limited (ratified by Parliament in October 2016) for 180 MMcfd, while Ghana National Petroleum Corporation (GNPC) announced in September 2017 that they have signed an additional LNG Gas Sales Agreement for imports of 250 MMcfd. In this context, it is not clear what volume of natural gas will be necessary to balance gas supply and demand or how much gas may be available at a competitive price to incentivize a switch to industrial use of gas for thermal energy.

16. **The boundaries of mandates given to the gas sector entities are not well defined.** GNPC is the state-owned natural gas aggregator. As such, GNPC purchases gas and sells it to consumers in the power sector at a blended price. GNGC is a subsidiary of GNPC, which owns, maintains, and operates domestic gas transportation infrastructure. The state-owned Bulk Oil Storage and Transportation Company, historically responsible for oil storage and transportation, has also been given responsibilities to construct and operate the gas transportation infrastructure, causing confusion about the role of the two institutions. As the energy sector's price regulator, PURC is developing a gas pricing policy to guide GNPC in setting gas tariffs.

Sector Planning and Coordination

17. **Though efforts are ongoing, operational mandates of key power and gas sector operators need to be better defined.** With the merger of the Ministries of Power and Petroleum in early 2017, the Government has taken an important step toward better coordination of sector activities. Effective planning and commercial operation in the energy sector requires strong coordination and consensus building among the various implementing, supervisory, and regulatory agencies. Previous coordination mishaps led to the over contracting of IPPs and lack of planning for gas transportation infrastructure to meet the power sector's needs. With the hydro and domestic gas assets, an integrated approach in operations and planning would enable Ghana to transform the current system into a resilient energy system that could cope with short-term disruptions in fuel supply and improve absorption capacity of variable renewable energy such as solar and wind power. When efficiently operated, such a system would potentially enable Ghana to also become one of the key power exporters to the WAPP countries. Operationalizing such a system would require (a) coordination within and between the gas and power systems; (b) rationalizing the roles and mandates of energy SOEs and agencies and restructuring of the institutional set up; (c) strengthening of the regulatory environment; and (d) capacity building to operate the system and to allocate resources in the most efficient way. Underpinning all the above is the availability of good data and information sharing as a much more transparent approach to economic regulation, planning, and investment decisions.

Government's Program to Address Sector Issues

18. **The Government has outlined a turnaround program with four objectives to address the problems in the sector:** (a) restoring the power sector's financial viability; (b) improving sector planning and investment decisions; (c) improving the regulatory framework; and (d) expanding electricity access to remote communities. The program is expected to be elaborated in detail as part of the Energy Sector

Recovery Plan, in which the Government will outline the comprehensive action plan for the energy sector to recover its sustainability.

19. As part of the turnaround program, the Government has implemented the following actions:[10]

- **Implementation of a Cash Waterfall Mechanism (CWM) for transparent allocation of power sector revenues among the operating entities.** The Government has formed a Finance Working Group within the MoEn, supported by a consultant, funded by U.S. Agency for International Development (USAID), and the World Bank team. The group is responsible for the implementation and monitoring of the CWM, the structure of which will be developed under this project.

- **Establishment of a sector coordination body within the MoEn with responsibility for** (a) aggregating and monitoring sector technical and financial data; (b) carrying out holistic, least-cost system planning based on the above data; and (c) implementing the competitive process for investments for both the oil/gas and power sector.

20. **In addition, the Government has initiated implementation of specific measures to improve sector finances.** The Government is preparing an Energy Sector Recovery Plan, which would include the following actions:

- Rationalizing PPAs to buy electricity from IPPs. The previous Government made commitments to power generation capacity exceeding what was expected to be necessary to meet near-term demand. The report on how to rationalize the signed thermal PPAs was completed and cleared by the Attorney General in April 2017.

- Reaching an agreement with WAGP on the implementation of the gas pipeline interconnection and the commercial and operational terms for reverse flow. A meeting of the ministers of the WAGP member countries in May 2017 agreed to the implementation of the pipeline. The Construction Management Agreement was signed in May 2018. The parties to this interconnection are now working on finalizing the Interconnection Agreement and Gas Transportation Agreement. If domestic gas cannot be transported from west to east, there will be significant financial consequences, including (a) low utilization of thermal power plants (790 MW) in the east around Tema and (b) non-utilization of Sankofa gas while incurring capacity charges annually.

- As a transitional mechanism, the Ministry of Finance (MoF) will pay the electricity bills of ministries, departments, and agencies (MDAs) from their budgetary allocations directly to distribution utilities. All consumers, including MDAs, will be transitioning from credit meters to prepaid meters. In addition, the Government intends to install solar panels on the roofs of Government buildings to decrease their consumption of grid power.

[10] These measures were agreed as prior actions under the US$200 million Macroeconomic Stability for Competitiveness and Growth II DPO (P157343), which was approved by the World Bank Board in December 2017.

- Selecting a concessionaire for ECG. Under the Compact Program signed with the MCC, the Government has agreed to bring in a private sector concessionaire to operate and invest in ECG, whose poor performance is at the core of the financial difficulties of the sector. The bidding process is ongoing and a preferred bidder was selected in April 2018.

- Restructuring the debt stock of the power sector to longer tenor with the objective of lowering its financial burden and to help introduce market discipline into the sector and its payment practices. In October 2017, the Government auctioned an 'Energy Bond', aiming to raise GHC 6 billion (US$1.4 billion) to refinance part of the estimated US$2.5 billion sector debt. The bond raised GHC 4.7 billion (approximately US$1 billion), and an additional US$130 million was raised in January 2018.

C. Higher Level Objectives to which the Project Contributes

21. **The project is fully aligned with the World Bank's Country Partnership Strategy (CPS) for Ghana 2013–2017 (Report 76369-GH)**, as adjusted during the Performance and Learning Review (Report 105306-GH), which extended its period until 2018. The CPS focuses on three strategic pillars of support to the Government: (a) improved economic institutions; (b) improved competitiveness and job creation; and (c) protection of the poor and vulnerable. The proposed project supports the first pillar by focusing on strengthening the capacity of the power sector to implement sector reforms and the second pillar through improved energy sector planning and coordination, which will help improve the quality of electricity service. Given the limited access in remote areas and high cost of electricity supply, the project will contribute to activities aimed at increasing the availability of electricity and diversifying the energy mix, as emphasized in the CPS.

22. **The project is also aligned with the priorities in the Government's Coordinated Program of Economic and Social Development Policies.**[11] By improving the financial viability, functioning, and coordination of the energy sector, the project will contribute to ensuring and sustaining macroeconomic stability and enhancing the competitiveness of Ghana's private sector.

23. **The project is part of a package of dialogue and support to the energy sector and not a stand-alone operation.** The project links to the Second Macroeconomic Stability for Competitiveness and Growth (P157343) DPO and prepares the ground for potential private sector involvement in the energy sector by leveraging public/concessional funding, as outlined by the Maximizing Finance for Development approach. The sector reform agenda to be defined under this project would be supported under future DPO series, which is expected to have a strong energy sector focus.

24. **The project has close synergies with other World Bank-financed operations.** It is closely linked with the Sankofa Gas Project (P152670), which supported the Government's strategy to leverage domestic gas and oil resources, reducing the use of petroleum in electricity generation, and thereby removing the main bottlenecks to economic growth—including inadequate and unreliable electricity supply. Moreover, the project is complementary to the Ghana Energy Development and Access Project (GEDAP - P074191) as it intends to investigate further how to reduce imbalances in access to electricity between urban and

[11] https://s3-us-west-2.amazonaws.com/new-ndpc-static/CACHES/PUBLICATIONS/2018/04/11/Coordinate+Programme-Final+(November+11,+2017)+cover.pdf.

rural areas and how to improve the commercial performance of ECG and the financial viability of the power sector, thereby reducing the sector's fiscal burden and creating space for social investments. Finally, the project builds on and provides continuation to the recently closed Gas and Oil Capacity Building Project (P120005) as it will support GNPC in building its capacity in areas that were not included in the Gas and Oil Capacity Building Project, including to undertake the gas aggregator role in the sector and improve coordination with SOEs in the electricity sector. In parallel, an ongoing project financed by the Energy Sector Management Assistance Program (ESMAP) will help the Government to develop a transparent process for procuring IPPs.

25. **The World Bank Group has about US$2 billion of exposure in Ghana's energy sector, including over US$1.2 billion in World Bank and Multilateral Investment Guarantee Agency (MIGA) Guarantees and International Finance Corporation (IFC) Loan in WAGP and Sankofa.** IDA also has two ongoing operations: (a) the GEDAP for US$220 million; (b) the Ghana-Burkina Transmission Interconnection (P094919, WAPP 3) approved in 2011 with commissioning expected by end of Q3 2018. IFC has provided loans to develop the Jubilee oil field and to convert a VRA-owned single cycle power plant to a combined cycle power plant. Finally, MIGA has issued a guarantee for the Takoradi 3 power plant for up to US$88.4 million.

Table 1. World Bank Group Investments and Projects

World Bank Group Agency	Operations	Amount (US$, millions)
IDA	Partial Risk Guarantee for the West Africa Gas Pipeline	50
	Partial Risk Guarantee for the Sankofa Gas Project	500
	GEDAP	220
	Ghana-Burkina Transmission Interconnection (WAPP 3)	26
IBRD	Loan guarantee for Sankofa Gas Project	200
IFC	Credit to Vitol	300
	Jubilee oil field	265
	Takoradi International Company (TICO) combined cycle conversion	105
MIGA	Guarantee for breach of contract for the West Africa Gas Pipeline	217
	Takoradi 3 power plant	88
	Total	1,971

II. PROJECT DEVELOPMENT OBJECTIVES

A. PDO

26. The Project Development Objectives (PDOs) are to strengthen the capacity of the energy sector to implement sector reforms and improve energy sector planning and coordination in Ghana.

B. Project Beneficiaries

27. Direct beneficiaries of the project are the energy sector operators, regulatory institutions, and Government entities who will receive advice, analyses, and training in designing and implementing energy

sector reforms and operations. Indirect beneficiaries are the current and future electricity consumers who will benefit from enhanced sector governance and improved energy services and access.

C. PDO-Level Results Indicators

28. The project's outcomes will contribute to achieving the Government's sector reform objectives, including (a) stabilizing sector finances; (b) establishing transparent investment planning and regulatory frameworks; (c) increasing electricity access in remote areas and access to modern biomass cooking solutions; (d) effectively utilizing domestic gas for power generation to reduce the cost of electricity; and (e) optimizing planning and operation of the sector to maximize domestic resources—natural gas, hydro and renewable energy—to improve financial and environmental sustainability of the sector. Some of these higher-level objectives would be achieved during the project's implementation and some only after the closing date, depending on the Government's actions and resources.

29. The implementation of the strategies and sector reform platforms to be defined under the project would be supported by the future DPO series, which is expected to focus on an enabling environment to allow Ghana to access and leverage private sector investments for sustainable development of the energy sector.

30. The achievement of the PDOs will be measured through the following key indicators:

- Power sector revenue allocated to sector entities through the Cash Waterfall Mechanism
- E-billing/e-payment system is communicated to stakeholders and rolled out by NEDCo
- Electrification strategy and investment plan for remote areas is adopted and communicated to stakeholders
- Clean cooking strategy is adopted and communicated to stakeholders
- Sector coordination body has endorsed a least-cost power expansion plan
- Strategy for competitive tendering of gas/LNG volumes for balancing gas supply and demand for power plants is adopted and communicated to stakeholders

31. Because this is a technical assistance project, the Corporate Core Sector Indicators are not applicable. Citizen engagement and gender aspects will be monitored through the intermediate indicators.

III. PROJECT DESCRIPTION

A. Project Components

32. Ghana has a pathway to recover from the power shortages of a few years ago and the high fuel costs that created a substantial debt burden and excess emergency power contracts. This pathway would

be outlined in the Energy Sector Recovery Plan under preparation, as indicated earlier. As Ghana looks forward to building a sustainable sector based on its hydropower assets, a strong solar resource, and domestic natural gas resources, success will depend on commitment to fundamentals in the energy sector, coordination between actors in the sector, and a vision of the sector's future. The project supports a comprehensive package of regulatory, policy, and operational measures and platforms for stakeholder engagement throughout implementation that will help the Government address near-term challenges and lay the ground work for transformation.

33. The project has five components: (a) Management of energy sector financial flows; (b) Sector planning and coordination; (c) Energy access; (d) Natural gas; and (e) Project management. In addition to advisory and analytical work, the components also include training and capacity building to the staff of the energy sector entities and some software and small equipment for business operations.

34. **Component 1: Management of energy sector financial flows (US$5.3 million equivalent).** The activities under this component will assist in addressing the financial viability of the energy sector by improving revenue management at sector level, improving revenue collection at the utilities' level, improving organizational structures, and strengthening the power companies' operational and financial management (FM) functions. The activities included are described in the following paragraphs.

35. **Cash Waterfall Mechanism.** This activity will help the Government finalize the structuring of the CWM and its implementation arrangements, establish a trustee for the CWM, and provide training to key stakeholders (MoEn, MoF, PURC, EC, ECG, NEDCo, and VRA) in financial modeling and FM. Implementation of the CWM is expected to ensure that all stakeholders in the power supply chain benefit proportionately from the total revenue collected by ECG, NEDCo, and VRA in a transparent manner. A major benefit from the implementation of the CWM is the high level of predictability of the revenue streams in the energy sector. The Cabinet approved the concept of the CWM on July 20, 2017.

36. **Electronic billing and collection of electricity payments from customers.** This activity will help design the implementation arrangements for an e-billing/e-payment mechanism for NEDCo and finance the required software to roll it out. Implementation of the mechanism will improve collections, be more convenient for customers, and improve the commercial performance of the utility. Kenya's well-performing e-billing/e-payment system will be used as an example. A training/study tour will be organized in Kenya. ECG has already started the implementation of an electronic billing and collection system for its customers and Kenya's experience will help enrich the system.

37. **VRA restructuring.** This activity will inform the design and implementation of the Government-approved new structure for VRA. The new structure would break up VRA into several companies, one each for hydro, thermal, and other assets. The operations of these companies would be overseen by a holding company. The Government intends to engage a private operator for the thermal asset company and has issued a Request for Proposal for a transaction adviser to advise it on the appropriate structure and to help select the operator. The adviser was selected in November 2017. The project will coordinate with the adviser.

38. **Component 2: Sector planning and coordination (US$3.5 million equivalent).** To enhance planning and coordination across the energy sector, this component will assist the Government to design effective institutional arrangements with clear mandates for the regulatory institutions in the energy

sector, conduct technical studies on the sector including electricity sector assessment and a gas sector assessment. This component will provide analyses, advisory services and a range of training programs to build capacity of key institutions, including (a) load forecasting and least-cost investment planning; (b) implementing Wholesale Electricity Market operations and regulation;[12] and (c) cross-border trading under the WAPP. To improve regulatory transparency, the component will finance equipment for remote monitoring of dispatch and outages to enable independent validation of data provided by the sector operators. This component envisages also (a) a grid resilience and reinforcement study on GRIDCo; and (b) an institutional, regulatory and technical aspect's study to determine the factors which affect GRIDCo's operations in the region. The work may identify additional needs for analysis that may lead to changes to the scope of the other activities.

39. **Electricity sector assessment and support for implementing recommendations.** This activity will assist the Government in clarifying the roles and mandates of the regulatory institutions. It will provide recommendations on optimal set-up to enhance the coordinated planning and management capacity of the energy utilities and other relevant agencies, such as the regulators, EC and PURC. A consultation workshop with various stakeholders will build consensus on the best options to implement and recommendations will address the regulatory framework, institutional set-up, and institutional capacity to support coordination and effective operation of planning, generation, transmission, and distribution. Capacity building will be directed to support implementation of the recommendations.

40. **Gas sector assessment and support for implementing recommendations.** The gas sector assessment will review the regulatory framework, institutional setup, and the commercial arrangements to support coordination and sustainable development of the gas sector value chain through to gas-fired power generation. Particularly in the midstream, there is a need to clarify conflicting roles among institutions, close gaps in regulatory oversight, and develop policies to communicate tariff changes between the gas and power sectors. The activity will explore the policy and operational requirements to take advantage of the hydro and gas assets and renewable energy potential in Ghana to allow the country to operate its energy system in a flexible and resilient manner. Capacity building will be directed to support implementation of the recommendations.

41. **Regional power trading.** As the cooperation deepens among countries in the WAPP, policy and regulatory reforms will be required of all countries in the region to strengthen contractual and operational mechanisms for trading and securing payment. A gap analysis will identify any policies and regulations that are not in line with the evolving regional standards and outline the steps necessary for GRIDCo's full participation in regional trade. The activity will also include regional market analysis on cost and demand projections in the region for power export from Ghana. Capacity building will be directed to support implementation of the recommendations.

42. **Grid resilience and reinforcement study for GRIDCo.** This study, supported by capacity building, will help (a) identify the investments that will be needed to expand electricity from renewable energy and assess the impact of integration of renewable energy in the grid; and (b) review the institutional, regulatory, and technical aspects affecting GRIDCo's operations to enable it to function as a fully interconnected and synchronized regional power system, while insulating Ghana from external

[12] The Government established the wholesale electricity market through Electricity Regulation, 2008, L.I 1937. Design of its structure is being developed by consultants engaged by GRIDCo.

disturbances to its system. The capacity building would include training for GRIDCo, EC, and PURC staff to evaluate new renewable energy project proposals for impact on security of supply and the financial viability of the sector.

43. **Component 3: Energy access (US$2.0 million equivalent).** This component has three activities: (a) conducting feasibility and investment planning studies for grid extension and off-grid electrification to reach the Government's goal for universal electrification by 2030; (b) preparing a strategy for increasing access to safe clean cooking as committed under SDG 7; and (c) conducting studies to upgrade NEDCo's sub-transmission, distribution and operational systems to improve its operational efficiency.

44. **Investment plan for 100 percent electrification.** This activity will develop a bankable investment plan by collecting the necessary information and lessons learned from previous electrification projects, utilize geospatial mapping to determine the limits of extending the grid, and determine the cost of stand-alone off-grid and mini-grid solutions where grid extension will not be feasible, in particular for the north of Ghana. Capacity building to provide technical skills in the maintenance of renewable energy systems will be included and expected to also increase employment opportunities for local people. The strategy will be developed in consultation with representatives of affected communities, and the final product will be reviewed with these representatives (refer to the Gender section below).

45. **Strategy for increasing access to safe, clean cooking.** The strategy will outline how the Government will support the increase in access to clean cooking as committed. It will be looking at regulatory and incentive structures that can be utilized to increase access.

46. **NEDCo's operating systems upgrade.** This activity will assist NEDCo to improve its operational efficiency. This activity will update NEDCo's distribution system master plan, update distribution standards and produce documented design and construction standards that will guide future expansion and network improvements, and develop the geographic information system (GIS) for NEDCo's Techiman operational area. The project will also finance the purchase of small tools and equipment for NEDCo's business operations and provide training to NEDCo staff across functional areas (that is, commercial, management, engineering, operations, finance, and services). The activities comprise the following:

- **Update of NEDCo's distribution system master plan.** The existing master plan, which was developed with the support of JICA in 2008 is 10 years old. There is an urgent need to update the plan to address system inadequacies by the optimal introduction of elements such as loops or rings in the distribution system for contingency planning and update the location of switches, lines, and substations to ensure minimum disturbance to customers during system faults. The updated plan will also facilitate the adoption of new metering technology to improve NEDCo's commercial performance, increase supervisory control and data acquisition applications, and other best practice emerging technologies that are currently deployed by utilities. The updated master plan is thus expected to improve the operational efficiency of NEDCo.

- **Update of NEDCo's distribution specifications and construction standards.** NEDCo currently uses outdated engineering and construction standards. The standards need to be updated to meet today's engineering practice (for example, moving from bare conductors to insulated cables to make it harder for people to steal electricity). NEDCo therefore requires

documented design and construction standards that will guide future expansion and network improvements.

- **Development of a GIS in NEDCo's Techiman operational area.** The GIS will complete the capture of NEDCo's assets in its five operational areas. The digitization of the company's assets in a geospatial format will provide opportunities for efficiency improvements and greater effectiveness in engineering analysis, technical operations, and commercial operations.

47. **Component 4: Natural gas (US$3.2 million equivalent).** The fourth component includes three activities: (a) development of a strategy for balancing natural gas demand and supply; (b) review of WAGP treaties and operation; and (c) support for GNPC in their role as gas aggregator, as well as GNGC and other gas sector agencies and institutions. Each of these activities will be associated with training to build capacity, including key technical staff from GNPC and the MoEn, on gas aggregation.

- **Strategy for balancing gas demand and supply.** This activity will review the functioning of the gas sector and develop a strategy to aggregate and allocate natural gas flows, including an options paper on models for gas pricing, pipeline capacity nomination, allocation of gas to power plants. A starting point is an assessment of whether past and future investment decisions will result in a near-term gas deficit or surplus and to lay out the role gas imports should play in the midterm.

- **Review of WAGP treaties.** This study will review the WAGP treaties and operation to identify what is required to further utilize WAGP for the benefit of the region. An options paper will contrast different operational, commercial, and ownership paradigms that could be explored, including third-party access to the pipeline, procedures of nominating capacity, and reverse flow beyond Ghana (Tema). If Ghana can use WAGP on commercial terms, there may be additional opportunities for investment in the energy sector in the coming years. The study would articulate near-term options to address urgent issues and then develop longer-term options.

- **Support for capacity building and vocational training.** As the national aggregator of gas, GNPC has an important role to play in purchasing gas, setting and communicating gas prices, and coordinating available volumes with power generators and the grid operator to ensure security of supply. The project will provide technical support to GNPC, as well as GNGC and other gas sector agencies and institutions, to reinforce their capacity to price and allocate gas transparently to facilitate the reintegration of natural gas in the power sector. In addition, the project will also continue to support the capacity building that was initiated with the Gas and Oil Capacity Building Project and support activities such as development of training curriculum, support for international certification, and other training activities to support increased employment of Ghanaians in the oil and gas sector.

48. **Component 5: Project management (US$2.0 million equivalent).** This component will cover support to the Project Implementation Unit (PIU) to manage the activities described in Components 1 through 4. The component will finance the engagement of consultants to handle the required fiduciary,

monitoring, reporting, and coordinating responsibilities. It will also finance the operating costs of the PIU, required project management, consultations and coordination workshops, and the development and implementation of a communications strategy for the energy sector.

49. The communication strategy would include (a) opinion research to assess public attitudes about reforms; (b) messaging workshops to design key campaign messages; (c) training sessions for journalists; and (d) media monitoring to enhance press coverage of reforms and development of an advertising campaign suitable for different media such as newspaper, radio, Internet, and television. This activity would be accompanied by training to build the capacity of the MoEn and the sector regulators to proactively communicate with the public as the sector continues to evolve.

B. Project Cost and Financing

Project Components	Project Cost (US$, millions)	IBRD or IDA Financing (US$, millions)	Counterpart Funding
1. Management of energy sector financial flows	5.3	5.3	0
2. Sector planning and coordination	3.5	3.5	0
3. Energy access	2.0	2.0	0
4. Natural gas	3.2	3.2	0
5. Project management	2.0	2.0	0
Follow-up activities and contingencies	4.0	4.0	0
Total Costs			
Total Project Costs	**20.0**	**20.0**	
Of which: *Training* *Software and small equipment:* *Follow-up activities to support implementation of recommendations:* *Contingencies:*	 *2.2* *1.5* *2.0* *2.0*		
Total Financing Required	**—**	**20.0**	**—**

50. **Retroactive financing.** Up to US$4 million, or 20 percent of the IDA credit, will be available to finance eligible expenditures incurred from January 1, 2018, to credit signing.

C. Lessons Learned and Reflected in the Project Design

51. The project design has reflected the following lessons learned from similar projects.

52. **Technical assistance loans provide a platform for consultation which can generate stronger ownership by the different stakeholders involved in implementing reforms**. The earlier Poverty Reduction Support Credit series in Ghana highlights the importance of Government ownership over the agreed reforms, which can be achieved only when there is broad consensus among the different stakeholders engaged in the process. This engagement with Government stakeholders should be not only gradual but also sustained over a long period, with the need to be pragmatic and with an incremental approach rather than a large and complex reform that might not generate the needed consensus. As a result of the technical assistance loan, it is expected that a broad political consensus on sector reform will be achieved, minimizing the risks posed by shifting political priorities and bureaucratic inertia.

53. **Transparency—both in the availability of market information and in the interactions among market players—is an important underpinning of a competitive market.** An effective energy sector that attracts investment while delivering good quality and cost-effective services requires a high degree of transparency and rule-based, technical—rather than political—decision making. Efficient investment in power generation by the private sector will depend on transparent and predictable gas and electricity pricing, dispatch, and gas allocation. In line with lessons from the Vietnam Power Sector Reform Development Policy Operation (DPO) (P115874), the project supports platforms and processes for making market-relevant information available.

54. **Streamlining project implementation in a single entity reduces the transaction cost for the Government**. The implementation arrangement with a PIU and a steering committee follows the practice of other technical assistance projects, such as the Ghana Public Financial Management Reform Project (GIFMIS, P151447), the Ghana Economic Management Strengthening Project (GEMS, P152171), and the Ghana Economic Management Capacity Building Project (P092986). These projects had the common characteristic that their activities interacted with many entities in the Government under the purview of a line ministry, with a steering committee to coordinate the overall engagement with the different agencies. The implementation arrangements for the project also requires the preparation of a Project Implementation Manual (PIM) that provides a framework for the needed coordination within the Government and facilitates the creation of collective awareness during consultation efforts.

55. **Capacity building should be designed as a means to trigger actions from analytical work generated from the project.** Experience suggests that traditional formal training courses and providing technical advisers seldom results in sustainable capacity increase. The capacity building offered by the project goes beyond this traditional type. The capacity-building activities will be designed to build a connector between the diagnostic work and action plans expected to be rolled out, through the exchange with practitioners, which might include both overseas visits or bringing practitioners to Ghana. Therefore, the project seeks to promote customized training plans, closely linked to the analytical and policy activities to strengthen the implementation capacity of the necessary changes that may take place after the project closes.

56. **Successful implementation of analytical and policy studies requires good Government capacity, adequate resources, and intensive supervision by World Bank staff.** The project design has considered

these lessons from the Ghana Gas and Oil Capacity Building Project (P120005) by establishing a strong execution mechanism comprising an experienced and effective project coordinator, high-level steering committee, and early involvement of the various sector entities in the design of the project. The project provides adequate resources for strengthening the arrangements as required during implementation. In addition, the World Bank has a highly qualified project team, including an experienced task team leader (TTL) based in the country, to provide implementation support throughout the project period and is prepared to step up these resources as required.

57. **Technical assistance should be targeted and flexible.** The project has considered this lesson from technical assistance projects in Tanzania by supporting implementation of the Government's reform program, yet providing flexibility to accommodate evolving circumstances.

IV. IMPLEMENTATION

A. Institutional and Implementation Arrangements

58. The implementation arrangements mirror those successfully used for the ongoing GEDAP. The MoEn will have the overall responsibility for the project's implementation.

59. **Project steering committee.** This committee will oversee implementation and ensure effective coordination and cooperation between the energy sector entities involved in the project. It will be chaired by one of the deputy ministers for energy, who will be supported by the PIU and appointed staff from the MoEn. Committee members will consist of representatives from the MoF; the Ministry of Gender, Children, and Social Protection (MoGCSP); the Ministry of Monitoring and Evaluation (MoME); other relevant government agencies; and the chief executives of the energy entities involved in the project: ECG, NEDCo, GRIDCo, GNPC, GNGC, EC, NPA, and PURC. In addition, the MoEn Directors for Accounts and Procurement as well as any other relevant staff of the ministry will attend selected meetings as required. It will meet at least twice a year or more frequently, if required, and report to the Minister for Energy. The Steering Committee would be set up by October 31, 2018.

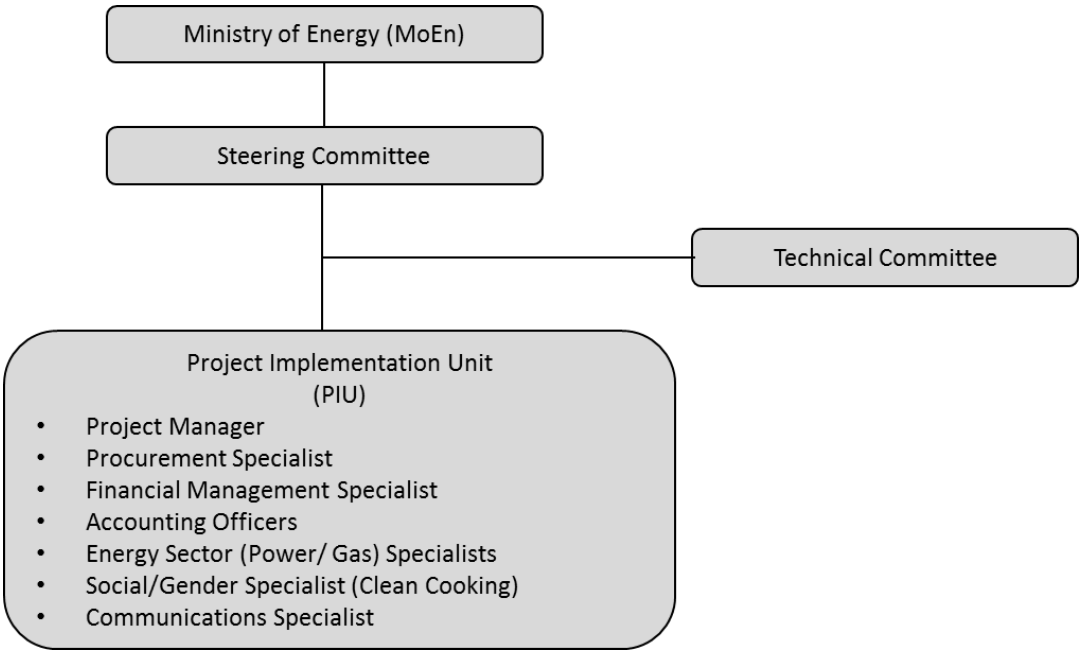
60. **Technical committee.** For quality control, the Government will establish a technical committee, chaired by the Project Manager or his designate, and will consist of senior-level technical specialists of the sector entities. The technical committee will be responsible for providing quality assurance on the technical aspects of the project including (a) providing input for terms of reference for relevant work; (b) providing relevant data and information required for the implementation of activities under Components 1 through 4; (c) reviewing consultants' reports; and (d) supporting the implementation of the project. It will be set up by October 31, 2018, with clear responsibilities and reporting arrangements.

61. **PIU.** The PIU will manage the day-to-day operations of the project under the purview of the MoEn. It will report to the steering committee. Its responsibilities include (a) managing procurement and FM of project funds; (b) engaging and supervising consultants under Components 1 through 4, including ensuring that arrangements for quality control of outputs are in place; (c) serving as a single point for tracking of the progress of implementation and monitoring and evaluation of project outcomes; (d) monitoring costs and financing; (e) preparing quarterly reports; and (f) organizing workshops and consultations and developing a communications strategy for the sector.

62. The PIU will be led by a project manager. The staff includes a procurement and an FM specialist, two accounting officers, a monitoring and evaluation officer, a communications officer, a power sector specialist, a gas sector specialist, and a social and gender specialist.[13] In addition, the electricity and gas entities will assign technical specialists to the PIU on need basis to assist with specific issues. Staff with expertise in FM and procurement will be assigned to the unit from the MoEn to be trained. Their assignment will be completed before project effectiveness.

63. Initially, the project will be managed by the existing PIU for the GEDAP as its current workload is significantly reduced given the planned closure of the GEDAP in January 2019. The key staff who have already gained experience in managing IDA-financed projects will be reappointed to the project PIU but will be training the ministry staff in parallel with the aim to move gradually toward using Ghana's country systems. The PIU will transition to a fully budgeted unit within the MoEn, and its transition progress will be assessed at midterm review to see if the project can transition to the country systems. The team will be strengthened with relevant staff, as found necessary during implementation.

Figure 1. Project Implementation Arrangements



B. Results Monitoring and Evaluation

64. The Results Monitoring Framework to document and monitor the project's development impact has been finalized. The PIU will have the monitoring and evaluation responsibility. It will prepare quarterly progress reports for the World Bank and the steering committee based on an outline to be agreed per the results monitoring plan, as described in Section VII. The PIU will consolidate the information it obtains from the different project stakeholders, such as ECG, NEDCo, GRIDCo, GNPC, GNGC, EC, PURC, and VRA.

[13] Social and Gender Specialist will also be responsible for clean cooking activities.

65. The progress reports will include the status of the results indicators and action plans, listing any corrective actions to be implemented with deadlines and persons responsible clearly identified. The reports will be sent to the World Bank for information, and the evaluation of the results indicators will be a part of the supervision missions.

C. Sustainability

66. **The Government has demonstrated commitment to sector reforms.** The Government has demonstrated strong commitment to the energy sector by outlining several measures to recover financial sustainability in the power sector including (a) Completing the ECG concession; (b) issuance of an energy bond; and (c) establishment of the CWM. Yet, there are several key challenges related to the long-term sustainability and growth of the energy sector. Primary issues related to the sustainability of sector development include (a) maintaining and improving the financial viability of the power sector; (b) improving sector planning and investment decisions; (c) improving the regulatory framework; and (d) expanding electricity access to remote communities. The project will support the Government and the sector institutions to address these issues and develop skills to implement improvements during project implementation and after the project closes.

67. While the IDA financing under the project will address several of the issues critical to the long-term sustainability of the sector, the project's sustainability depends on the Government's willingness to implement the recommendations coming out of the project activities.

D. Role of Partners

68. Apart from the World Bank, many other development partners support Ghana's energy sector. The largest of these is the MCC. Under the 'Compact Program', the MCC is providing about US$500 million for the concession of ECG's management and operation of the distribution system, tariff review and regulation, and 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 short-listed firms. With the conditions fulfilled, the Compact Program has become effective and about US$280 million of grant funds have been made available for efficiency improvement investments in ECG. A preferred bidder was selected in April 2018 and the concessionaire is expected to take operational control of ECG's assets from early 2019. The project activities will be closely coordinated with the MCC Compact Program through regular information exchanges.

69. Several other donors support the energy sector through studies, capacity building, and investment. The African Development Bank (AfDB) has been focusing on renewables. The United Nations Development Programme has supported renewables and the Sustainable Energy for All (SEE4ALL) program, which is a joint initiative of the United Nations and the World Bank. USAID has supported generation, gas transmission infrastructure, electricity tariffs, and renewable energy. Other partners active in the sector include the Government of Netherlands, SECO, JICA, KOICA, GIZ, and KfW. Their support has focused on mini-grids and renewable energy technologies. An effective donor coordination group, chaired by the MCC, meets regularly to ensure that efforts are harmonized.

70. The ESMAP has generously supported the preparation of the project, by providing additional resources for activities that complement those included in Component 1. The ESMAP will finance the development of a competitive process for procurement of future IPPs. The objective is to develop a procurement strategy that will result in the lowest-cost generation offers and maximizes the value for Ghana. The activity will assess international experience in competitive selection models and outline improvements to enhance the regulatory framework for IPP contracting and oversight.

V. KEY RISKS

A. Overall Risk Rating and Explanation of Key Risks

71. The overall risk to achieving the project's objectives is Moderate. The table below summarizes the ratings by risk category following the Systematic Operations Risk-Rating Tool (SORT).[14]

Table 2. Systematic Operations Risk-Rating Tool

Risk Category	Rating
1. Political and governance	Moderate
2. Macroeconomic	Moderate
3. Sector strategies and policies	Substantial
4. Technical design of project or program	Low
5. Institutional capacity for implementation and sustainability	Moderate
6. Fiduciary	Substantial
7. Environment and social	Low
8. Stakeholders	Moderate
9. Other	—
Overall	Moderate

72. **Political and Governance risks are Moderate.** Ghana has made significant progress on governance indicators, transparency of regulatory frameworks, and in the control of corruption, yet, the perception of corruption could be significant. To mitigate these risks, the project includes several opportunities for consultations and citizen engagement as well as publication of results from the Results Framework.

73. **Macroeconomic risks are Moderate.** The country is already addressing the fiscal and monetary policie, supported by a DPO. The risk for this project relates to the failure to address macroeconomic challenges on time, which could worsen the financial health of the sector entities and jeopardize the achievement of the project's objectives. The coordinated implementation of the project with the proposed DPO will provide some mitigation.

74. **Sector Strategy and Policy risks are Substantial.** The specific risk factors include (a) reluctance of the Government to effectively coordinate the activities with the relevant entities; (b) application of policies and strategies during implementation that negate the outputs of the project activities; (c) failure

[14] SORT rating corresponds to the four rating levels: High, Substantial, Moderate, and Low. For example, a Substantial rating for the sector strategies and policies indicates that these factors can create challenges for the policy reform which can affect the achievement of the PDO of the project.

to implement the financial recovery plan or back-tracking on the commitments; and (d) the dynamic nature of the sector's development that could render some of the planned activities irrelevant. The project will address these risks to the extent possible through agreements on a firm implementation and coordination plan before negotiations. Furthermore, the project has a flexible design that allows adjustment to the activities in response to changed circumstances.

75. **Fiduciary risks are Substantial.** These risks relate to the MoEn's limited capacity to apply the World Bank's new Procurement Framework and FM procedures. These risks are mitigated by (a) engaging experienced procurement and financial management consultants (FMCs) to the PIU; (b) training the MoEn's procurement staff and accountants in procurement and FM by the PIU's experienced consultants and World Bank staff; (c) preparing a project budget for the first year before effectiveness; and (d) preparing a PIM before effectiveness.

76. **Institutional Capacity for Implementation and Sustainability has a Moderate risk rating.** The Government and the MoEn have a good track record in implementing the GEDAP. However, there is a risk of delays because of the large number of activities under the project and there is also a risk that the quality of the outputs will not meet expectations for all the activities. These risks will be addressed by staffing the PIU with experienced specialists in adequate numbers and the presence of the high-powered steering committee. In addition, the World Bank team will include qualified electricity and gas specialists to provide advice on the terms of reference and the study outputs. Finally, there is a risk that the PIU will not be able to transition to the country system if it does not receive the necessary budget or personnel allocation. The World Bank will intensify its implementation support during the project period to mitigate such risk.

77. **Technical Design and Environmental and Social Aspects have a Low risk rating.** The project activities are similar to activities in other power sector technical assistance projects and have no negative social or environmental impacts. The activities have been discussed and agreed with the MoEn and the relevant entities.

VI. APPRAISAL SUMMARY

A. Economic and Financial (if applicable) Analysis

78. **The economic benefits of the project, though difficult to measure, are expected to be much higher than the proposed financing.** The project is a technical assistance project that does not finance investments, which would generate cash flows, and therefore, it does not lend itself to traditional calculation of net present value (NPV) or economic or financial rate of return. However, if the Government implements the reforms resulting from the project's recommendations, the potential benefits would be substantial.

79. **Public sector financing of project activities will help lower barriers to future commercial financing.** Public financing is justified given the many challenges that create barriers for attracting commercial financing for Ghana's energy sector development. The poor financial situation of the power sector companies severely constrains their ability to access commercial financing. Thus, companies across the value chain are deprived of the much-needed financing required to fund investments, but, more importantly, to meet their operating and maintenance expenses. Through a comprehensive package of

regulatory, policy, and governance measures and platforms for stakeholder engagement throughout implementation, the operation is expected to create an enabling environment for future commercial financing for the sector and further involvement of the private sector.

80. Because the power sector does not cover its cost, it had a revenue deficit of US$794 million in 2016. Over the years, the recurring revenue deficit has led to an accumulation of US$2.3 billion in net external debt stock (March 2017).[15] Poor collections, high system losses, high cost of liquid fuels, and unpaid bills by the Government institutions (US$1 billion) are major sources of the revenue shortfall.

81. The project supports the development of both short-term and medium-term sector reforms to address this issue, in close coordination with other activities by the Government, the World Bank Group, the IMF, and development partners. In the short term, the project supports the Government's implementation of a financial turnaround plan to stabilize the sector's finances. To sustain financial viability, improve supply reliability, and encourage private sector investment, the project supports the development of a strategy to improve the sector's operational, institutional, and regulatory environment.

82. **Methodology.** Even though it is not possible to quantify the project's overall benefits and costs in monetary terms, the World Bank carried out a rough analysis of Component 1 (management of power sector financial flows) to illustrate the potential financial benefits. This component will provide analytical and advisory assistance to improve the transparency and management of the financial flows in the energy sector by improving revenue collection through the implementation of electronic billing and collections, allocation of the collected revenue among the sector entities through a CWM, and improvement of the operational efficiency of the distribution entities. The analysis includes only financial considerations because the benefits and costs to society are hard to quantify.

83. **Assumptions.** The financial analysis of Component 1 rests on the following assumptions:

- Current annual revenue gap in the power sector is approximately US$500 million before debt service.
- A new local financing with seven-year tenor and 17 percent interest rate will fill the revenue gap annually.[16] Amortization of the debt is assumed to equal payment for the full tenor.
- If the Government implements the improvements that will be developed under Component 1, the revenue gap is assumed to decrease by 50 percent annually.
- Lifetime of the analysis is 10 years.
- Discount rate is 10 percent.

[15] Revenue Monitoring Unit, MoEn.
[16] This tenor and interest rate are based on the latest auction for Ghana's Energy Bond.

84. **Results.** The analysis illustrates that the financial benefit from the decrease in interest payments is about US$2,465 million over the assumed 10-year period. The financial real NPV at 10 percent discount rate is US$1,184 million.

B. Technical

85. The project design was informed by sustained World Bank engagement with the Government in the energy sector over the past several years. In meetings with the World Bank's senior management between November 2016 and April 2017, the Government requested the World Bank's assistance in defining the specific actions that would be needed to turn around the performance of the energy sector. The project has been prepared in response to the Government's request and the components have been developed in collaboration with the Government and the sector entities.

C. Financial Management

86. The World Bank has conducted an FM assessment of the implementing entity, MoEn. The assessment concluded that the MoEn's accounts department has limited understanding of IDA disbursement and FM procedures. Despite the MoEn having implemented previous IDA-funded projects and currently implementing the GEDAP, FM activities were undertaken by a dedicated PIU.

87. As it is important to strengthen Ghana's country systems, the project will use those aspects of the country's FM systems which can be relied upon while building capacity in the weaker areas. It has therefore been agreed that the project will use a hybrid arrangement where the Director of Accounts of MoEn has the overall FM responsibility but is supported by experienced consultants in the PIU.

88. Under the oversight of the Director of Accounts, the FM responsibility will initially be handled by the FM consultant currently supporting the GEDAP who in turn will be supported by a dedicated project accountant from the MoEn who is imbedded as part of the PIU.

89. Following the closure of the GEDAP in January 2019, the project will reconstitute the PIU and reappoint the key consultants, including the FMC who is already familiar with IDA's disbursement and FM procedures.

90. The agreed arrangements, after the implementation of the agreed action plan to address identified weaknesses, satisfy the World Bank's minimum requirements under World Bank Policy and Directive for Investment Project Financing (IPF) and the residual risk is Moderate. Details of the FM arrangements and the actions that are needed to reduce the residual risk are documented in Annex 1.

D. Procurement

91. The World Bank has carried out an assessment of the procurement unit of the MoEn. The assessment established that the procurement unit did not have adequate experience in IDA procurement procedures. It has therefore recruited a Director of Procurement who has some experience in IDA procurement procedures. None of the current staff in MoEn's procurement unit is familiar with the World Bank's new Procurement Framework and this poses a major risk to project implementation. The procurement risk rating is therefore Substantial and the project has put in place adequate mitigation

measures (Annex 2). The appointed procurement staff from MoEn would be trained by the PIU procurement specialist until the implementation function is mainstreamed to the MoEn.

92. Procurement will be carried out in accordance with (a) World Bank Procurement Regulations for IPF Borrowers: Procurement in IPF for Goods, Works, Non-Consulting and Consulting Services, dated July 2016; (b) the Guidelines on Preventing and Combating Fraud and Corruption in Projects financed by IBRD Loans and IDA Credits and Grants, dated October 15, 2006, revised in January 2011; and (c) the provisions that will be stipulated in the Legal Agreement.

93. **Project Procurement Strategy for Development (PPSD).** The MoEn has prepared a PPSD, which was reviewed and approved by the World Bank. Assessment conducted in the document indicates that MoEn, through GEDAP, have been implementing other on-going projects funded by the World Bank since the year 2000. They have been involved in World Bank and other donor-financed projects including those from the AfDB and the Embassy of Switzerland and hence have gained extensive experience in project procurement and FM as well as institutional project management. The established PIU is implementing various donor funded projects and have demonstrated that their procurement capacity to be adequate. adequate internal technical and administrative controls and anti-corruption procedures including satisfactory appeals mechanisms for bidders.

94. The PPSD has been accompanied by a corresponding 18-month Procurement Plan. As procurement strategy, services will be procured mainly through international quality and cost-based selection. Given the nature of the services, it is expected that many firms are interested in submitting their proposals. Procurement of goods, which is limited, will be through international competitive bidding (ICB) or national competitive bidding (NCB) and price quotations and will not require the application of domestic preference.

E. Social (including Safeguards)

95. The project's anticipated social safeguards impacts are negligible because the project provides technical assistance that does not involve land acquisition, relocation, or displacement. The project does not trigger any safeguards policies and no instruments are needed.

96. **Citizen engagement.** The Government and the World Bank have agreed that once the findings of the various studies have been drafted, consultations will be arranged with a wide variety of stakeholders, including civil society organizations, nongovernmental organizations, local organizations, and women's groups. The World Bank team will agree with the Government on the preparation of a communication strategy and the arrangements for consultations with stakeholders to expand the scope of citizens' engagement. The project will seek to monitor and report on the number of citizen engagement meetings held and the percentage of participants who consider their views have been taken into account.

97. **Gender.** Based on the technical assistance nature of the project, the World Bank determined that it did not meet the requirements for a 'Gender Tag'. None of the activities to be carried out during the implementation will have a direct effect on individuals and they will not result in outcomes that would close gender gaps. However, there are meaningful opportunities for integrating gender elements into some activities within Components 1 and 3 of the project to make it gender-informed. Also, the capacity-

building activities included in all the components will be gender sensitive, by ensuring that the beneficiary institutions include women in these opportunities.

98. Within Component 1, implementation of e-billing/e-payments may have different implications for men and women. There may be gender-specific risks or underlying barriers that would affect customer benefit or the overall effectiveness of the project to improve collections. Therefore, the activity will develop a gender-responsive implementation plan recommending targeted policies where necessary. The implementation plan would be based on gender-differentiated analysis including collecting sex-disaggregated data where necessary, such as data on women's access and usage of mobile phones, to inform project design and create a baseline to understand the efficacy of an information and communication technology intervention. The activity would develop indicators to drive data collection throughout the implementation process. Consultations during the development of the implementation plan will aim to increase women's participation in the program design. Recommendations would identify solutions to address gender inequalities related to e-billing/e-payments and identify opportunities for women to be active agents of change.

99. Within Component 3, the assessment of off-grid electrification will outline impacts in gender, poverty reduction, and improved women entrepreneurship within the off-grid market and clean cooking. The assessment will consider the different energy needs and uses of men and women in the household and in income-generating activities based on gender-disaggregated data. The options paper for successful off-grid models that can be replicated and scaled up will include gender-specific recommendations informed by women's and men's different decision-making powers over energy. Consultations to develop the implementation strategy will incorporate women's participation in decision-making processes. The implementation strategy for off-grid electrification and clean cooking would identify solutions to address gender inequalities related to access to energy services, opportunities for women to be active agents of change, and specific actions to enable women to engage in entrepreneurial activities within the energy sector and supported by greater access to electricity.

F. Environment (including Safeguards)

100. The World Bank conducted an environmental safeguards assessment, which determined that because the project activities do not involve any physical works there are no environmental impacts and hence no safeguards instruments are needed for the project. The World Bank's environmental safeguards team will continue its engagement with the project to ensure that activities remain within the project categorization and provide further guidance should changes occur before appraisal.

101. **Climate change mitigation co-benefits.** Consistent with the World Bank's Climate Change Action Plan, the total climate co-benefits in this project amount to US$4.0 million (20 percent).[17]

- Strategic assessment of off-grid solar solutions in Component 3 is eligible for mitigation co-benefits under Article 9.1: Support to national, regional, or local policy, through technical

[17] According to the GCC Climate Co-Benefits Assessment team.

assistance or policy lending of the Multilateral Development Banks' List of Eligible Mitigation Activities.[18]

- Studies to promote use of renewable energy in Component 4 are eligible for mitigation co-benefits also under Article 9.1: Support to national, regional, or local policy, through technical assistance or policy lending of the Multilateral Development Banks' List of Eligible Mitigation Activities.

G. Other Safeguard Policies (if applicable)

102. Not applicable.

H. World Bank Grievance Redress

103. Communities and individuals who believe that they are adversely affected by a World Bank (WB) supported project may submit complaints to existing project-level grievance redress mechanisms or the WB's Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed in order to address project-related concerns. Project affected communities and individuals may submit their complaint to the WB's independent Inspection Panel which determines whether harm occurred, or could occur, as a result of WB non-compliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the World Bank's attention, and Bank Management has been given an opportunity to respond. For information on how to submit complaints to the World Bank's corporate Grievance Redress Service (GRS), please visit http://www.worldbank.org/en/projects-operations/products-and-services/grievance-redress-service. For information on how to submit complaints to the World Bank Inspection Panel, please visit www.inspectionpanel.org.

[18] 2016 Joint report on Multilateral Development Banks' Climate Finance.

VII. RESULTS FRAMEWORK AND MONITORING

Results Framework

Project Development Objective(s)

The Project development objectives is to: strengthen the capacity of the energy sector to implement sector reforms, and improve energy sector planning and coordination in Ghana

PDO Indicators by Objectives / Outcomes	DLI	CRI	Unit of Measure	Baseline	Intermediate Targets					End Target
					1	2	3	4	5	
Strenghten the capacity of the energy sector to implement sector reforms										
Power sector revenue allocated to sector entities through the Cash Waterfall Mechanism.			Percentage	0.00	0.00	0.00	25.00	50.00	100.00	100.00
E-billing/e-payment system is communicated to stakeholders and rolled out by NEDCo			Yes/No	N	N	N	Y	Y	Y	Y
Electrification strategy and investment plan for remote areas is adopted and communicated to stakeholders			Yes/No	N	N	N	N	Y	Y	Y
Clean Cooking strategy is adopted and communicated to stakeholders			Yes/No	N						Y
Improve energy sector planning and coordination in Ghana										
Sector coordination body has endorsed a least-cost power expansion plan			Yes/No	N	N	N	N	Y	Y	Y
Strategy for competitive tendering of gas/LNG volumes for balancing gas supply and demand for power plants is			Yes/No	N	N	N	Y	Y	Y	Y

PDO Indicators by Objectives / Outcomes	DLI	CRI	Unit of Measure	Baseline	Intermediate Targets					End Target
					1	2	3	4	5	
adopted and communicated to stakeholders										

Intermediate Results Indicators by Components	DLI	CRI	Unit of Measure	Baseline	Intermediate Targets					End Target
					1	2	3	4	5	
Management of power sector financial sector flows										
No. of sector staff trained (male and female).			Number	0.00	0.00	10.00	25.00	40.00	50.00	50.00
of which female.			Number	0.00	0.00	2.00	4.00	8.00	10.00	10.00
Citizen engagement: Number of citizen engagement meetings held			Number	0.00	0.00	0.00	2.00	2.00	1.00	5.00
Percentage of participants in citizen engagement meetings who consider their views have been taken into account.			Percentage	0.00						50.00
Sector planning and coordination										
Electricity sector assessment concluded and report adopted.			Yes/No	N	N	N	Y	Y	Y	Y
Gas sector assessment concluded and report adopted.			Yes/No	N	N	N	N	Y	Y	Y
Energy access										
NEDCo's distribution system plan updated.			Yes/No	N	N	N	Y	Y	Y	Y
NEDCo's distribution specifications and construction			Yes/No	N	N	N	N	Y	Y	Y

standards approved.										
GRIDCo's grid recilience and reinforcement study concluded.			Yes/No	N	N	N	Y	Y	Y	Y
Gender. The strategic assessment of electrification options outlines the impacts of different electrification strategies on women and women's entrepreneurship\income generation.			Yes/No	N	N	N	Y	Y	Y	Y
Natural gas										
Gas supply and demand study completed.			Yes/No	N	N	N	N	Y	Y	Y

Monitoring & Evaluation Plan: PDO Indicators

Indicator Name	Power sector revenue allocated to sector entities through the Cash Waterfall Mechanism.
Definition/Description	The indicator measures the proportion of the power sector revenue collected annually that is allocated to ECG, VRA, NEDCo, IPPs, fuel suppliers through the Cash Waterfall Mechanism. The power sector revenue in 2018 would be all revenues from ECG and VRA, but after ECG concession the revenue would be defined as Concessionaire Payment (Lease + Electricity Payment) and VRA revenues.
Frequency	Quarterly
Data Source	Escrow Trustee's documentation.
Methodology for Data Collection	Data collected by PIU from Escrow Trustee
Responsibility for Data Collection	Ministry of Energy will provide the information to the World Bank.

Indicator Name	E-billing/e-payment system is communicated to stakeholders and rolled out by NEDCo
Definition/Description	E-billing/E-payment system is structured rolled out by NEDco. The roll out would be communicated to the stakeholders.
Frequency	Quarterly
Data Source	NEDCo Board resolutions.
Methodology for Data Collection	NEDco to submit the Board resolution to PIU
Responsibility for Data Collection	PIU at the Ministry of Energy

Indicator Name	Electrification strategy and investment plan for remote areas is adopted and communicated to stakeholders
Definition/Description	An adoption of the strategy and investment plan would be confirmed by Minister of Energy, and the strategy/investment plan would be disseminated to the public.
Frequency	Quarterly
Data Source	Ministry of Energy
Methodology for Data Collection	Letter confirming the adoption of the strategy and investment plan will be sent by the Minister of Energy.
Responsibility for Data Collection	PIU at the Ministry of Energy

Indicator Name	Clean Cooking strategy is adopted and communicated to stakeholders
Definition/Description	Adoption of strategy for clean cooking will be confirmed by the Minister of Energy, and will be disseminated publicly
Frequency	Quarterly
Data Source	Ministry of Energy
Methodology for Data Collection	Letter confirming the adoption of the Clean Cooking strategy will be sent by Minister of Energy
Responsibility for Data Collection	Ministry of Energy PIU

Indicator Name	Sector coordination body has endorsed a least-cost power expansion plan
Definition/Description	Ministry of Energy adopts the Least Cost Generation Plan.
Frequency	Quarterly
Data Source	Ministry of Energy
Methodology for Data Collection	Letter confirming the adoption of the Plan to be sent to the PIU.
Responsibility for Data Collection	PIU at the Ministry of Energy

Indicator Name	Strategy for competitive tendering of gas/LNG volumes for balancing gas supply and demand for power plants is adopted and communicated to stakeholders
Definition/Description	Strategy will be adopted by the Ministry of Energy
Frequency	Quarterly
Data Source	Ministry of Energy
Methodology for Data Collection	Letter confirming the adoption of the Strategy will be sent to PIU
Responsibility for Data Collection	PIU at the Ministry of Energy

Monitoring & Evaluation Plan: Intermediate Results Indicators	
Indicator Name	No. of sector staff trained (male and female).
Definition/Description	Number of personnel in the Energy Sector that received training through this project
Frequency	Quarterly
Data Source	Project progress reports
Methodology for Data Collection	Data to be collected through entry forms and exit surveys at training
Responsibility for Data Collection	PIU at the Ministry of Energy

Indicator Name	of which female.
Definition/Description	Female personnel that received training through the project
Frequency	Quarterly
Data Source	Project progress reports
Methodology for Data Collection	Data to be collected through entry forms and exit surveys at training
Responsibility for Data Collection	PIU at the Ministry of Energy
Indicator Name	Citizen engagement: Number of citizen engagement meetings held
Definition/Description	Meetings will be held to inform and obtain feedback from the public about the policy reform agenda of the energy sector to be supported under the project
Frequency	Quarterly
Data Source	Minutes of consultations.
Methodology for Data Collection	Minutes and surveys from the meetings.
Responsibility for Data Collection	PIU at the Ministry of Energy

Indicator Name	Percentage of participants in citizen engagement meetings who consider their views have been taken into account.
Definition/Description	Measurement of how much of the participants to the meetings on policy reform agenda felt that their inputs were taken into account
Frequency	Quarterly
Data Source	Participants at the meetings
Methodology for Data Collection	Minutes and surveys taken at the meetings held.
Responsibility for Data Collection	PIU at Ministry of Energy

Indicator Name	Electricity sector assessment concluded and report adopted.
Definition/Description	Electricity Sector Assessment Report to be completed and adopted by the Ministry of Energy
Frequency	Quarterly.
Data Source	Project progress report.
Methodology for Data Collection	Letter from Ministry of Energy informing the completion of the assessment and its adoption
Responsibility for Data Collection	PIU at the Ministry of Energy

Indicator Name	Gas sector assessment concluded and report adopted.
Definition/Description	
Frequency	Quarterly
Data Source	Ministry of Energy
Methodology for Data Collection	Letter from Ministry of Energy informing the completion of the assessment and its adoption
Responsibility for Data Collection	PIU at the Ministry of Energy

Indicator Name	NEDCo's distribution system plan updated.
Definition/Description	NEDco's distribution plan is updated
Frequency	Quarterly
Data Source	NEDCo
Methodology for Data Collection	Letter from NEDco board that indicates the completion and adoption of the NEDco distribution plan
Responsibility for Data Collection	PIU of the Ministry of Energy

Indicator Name	NEDCo's distribution specifications and construction standards approved.
Definition/Description	NEDco's technical specifications on distribution system and construction standards and protocol has been updated
Frequency	Quarterly
Data Source	NEDCo
Methodology for Data Collection	Letter from NEDco board informing the completion of the report and its adoption
Responsibility for Data Collection	PIU at the Ministry of Energy

Indicator Name	GRIDCo's grid recilience and reinforcement study concluded.
Definition/Description	GRIDco's study on grid resilience and identification of required additional investments are completed
Frequency	Quarterly
Data Source	Project progress reports.
Methodology for Data Collection	Letter from GRIDco board informing the completion of the assessment and its adoption
Responsibility for Data Collection	PIU at the Ministry of Energy

Indicator Name	Gender. The strategic assessment of electrification options outlines the impacts of different electrification strategies on women and women's entrepreneurship\income generation.
Definition/Description	Input provided by female population and groups to the impact of the electrification and clean cooking strategies to inform it.
Frequency	Quarterly
Data Source	Project progress reports
Methodology for Data Collection	Minutes and Surveys taken at the public consultation meetings
Responsibility for Data Collection	PIU at the Ministry of Energy

Indicator Name	Gas supply and demand study completed.
Definition/Description	Study on the projected gas demand study completed
Frequency	Quarterly
Data Source	Project progress reports.
Methodology for Data Collection	Letter from Ministry of Energy informing of the completion of the study.
Responsibility for Data Collection	PIU at the Ministry of Energy

ANNEX 1: Implementation Arrangements and Support Plan

Ghana

Ghana Energy Sector Transformation Initiative Project

Implementation Arrangements

1. The implementation arrangements mirror those successfully used for the ongoing GEDAP. The MoEn will have the overall responsibility for the project's implementation.

2. **Project steering committee.** This committee will oversee implementation and ensure effective coordination and cooperation between the energy sector entities involved in the project. It will be chaired by one of the deputy ministers for energy, who will be supported by the PIU and appointed staff from the MoEn. Committee members will consist of representatives from the MoF; the Ministry of Gender, Children, and Social Protection (MoGCSP); the Ministry of Monitoring and Evaluation (MoME); other relevant government agencies; and the chief executives of the energy entities involved in the project: ECG, NEDCo, GRIDCo, GNPC, GNGC, EC, NPA, and PURC. In addition, the MoEn Directors for Accounts and Procurement as well as any other relevant staff of the ministry will attend selected meetings as required. It will meet at least twice a year or more frequently, if required, and report to the Minister for Energy. The Steering Committee would be set up by October 31, 2018.

3. **Technical committee.** For quality control, the Government will establish a technical committee, chaired by the Project Manager or his designate, and will consist of senior-level technical specialists of the sector entities. The technical committee will be responsible for providing quality assurance on the technical aspects of the project including (a) providing input for terms of reference for relevant work; (b) providing relevant data and information required for the implementation of activities under Components 1 through 4; (c) reviewing consultants' reports; and (d) supporting the implementation of the project. It will be set up by October 31, 2018, with clear responsibilities and reporting arrangements.

4. **PIU.** The PIU will manage the day-to-day operations of the project under the purview of the MoEn. It will report to the steering committee. Its responsibilities include (a) managing procurement and FM of project funds; (b) engaging and supervising consultants under Components 1 through 4, including ensuring that arrangements for quality control of outputs are in place; (c) serving as a single point for tracking of the progress of implementation and monitoring and evaluation of project outcomes; (d) monitoring costs and financing; (e) preparing quarterly reports; and (f) organizing workshops and consultations and developing a communications strategy for the sector.

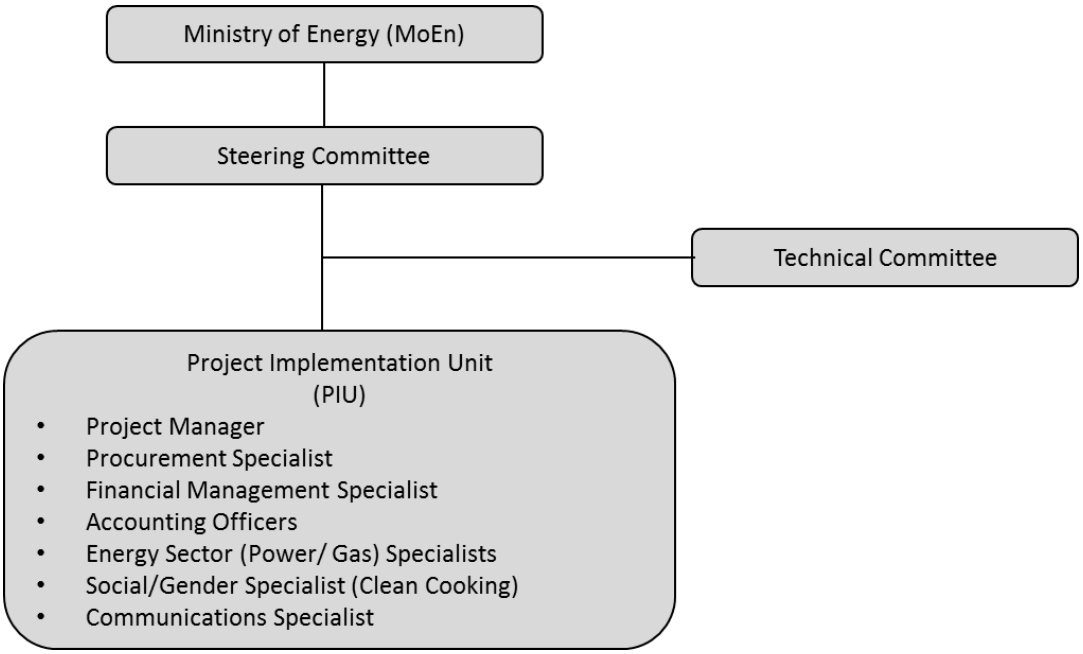
5. The PIU will be led by a project manager. The staff includes a procurement and an FM specialist, two accounting officers, a monitoring and evaluation officer, a communications officer, a power sector specialist, a gas sector specialist, and a social and gender specialist.[19] In addition, the electricity and gas entities will assign technical specialists to the PIU on need basis to assist with specific issues. Staff with

[19] Social and Gender Specialist will also be responsible for clean cooking activities.

expertise in FM and procurement will be assigned to the unit from the MoEn to be trained. Their assignment will be completed before project effectiveness.

6. Initially, the project will be managed by the existing PIU for the GEDAP as its current workload is significantly reduced given the planned closure of the GEDAP in January 2019. The key staff who have already gained experience in managing IDA-financed projects will be reappointed to the project PIU but will be training the ministry staff in parallel with the aim to move gradually toward using Ghana's country systems. The PIU will transition to a fully budgeted unit within the MoEn, and its transition progress will be assessed at midterm review to see if the project can transition to the country systems. The team will be strengthened with relevant staff, as found necessary during implementation.

Figure 1.2. Project Implementation Arrangements



7. The strategy for implementation support (IS) has been developed based on the nature of the project and its risk profile. It aims to make IS to the client more flexible, efficient and focused on preventing risks and efficiently addressing implementation challenges. The strategy will combine technical advice with supervision of implementation progress, and evaluation of results on the ground.

Implementation Support Plan

8. The World Bank team members will be based at headquarters and in the Accra office to ensure timely, efficient and effective implementation support to the client. Formal implementation support missions and field visits will be carried out at least twice a year.

9. Technical. The World Bank's team, which will include relevant specialist in power and gas sectors, will provide the required assistance, advice and guidance to the terms of references and reviewing outputs

by the consultants. The World Bank's team will conduct periodic visits to Accra to provide the necessary review and guidance.

10. **Procurement.** The procurement team will provide timely support to the PIU to enhance their capacity and contract management efficiency. Implementation support for procurement will follow a risk-based approach and will include: (i) support in selection of consultants; and (ii) implementation support to strengthen the procurement mechanisms in both PIU and MoEn.

11. **Financial Management.** As part of its project implementation support missions, the World Bank will conduct risk-based FM implementation support and monitoring at appropriate intervals. During the project implementation, the World Bank will monitor the project's FM arrangements in the following ways: (a) review the project's semi-annual interim financial reports (IFRs) as well as the entity's and the project's annual audited financial statements and auditor's management letters and remedial actions recommended in the auditor's management letters; and (b) during the World Bank's on-site missions, review the following key areas, (i) project accounting and internal control systems; (ii) budgeting and financial planning arrangements; (iii) disbursement arrangements and financial flows, including counterpart funds, as applicable; and (iv) any incidences of corrupt practices involving project resources. As required, a World Bank-accredited FM specialist will participate in the implementation support process.

Table 1.3. Implementation Support Plan

Time	Focus	Skills Needed	Resource Estimate (staff weeks (SW))
First twelve months	Task management	Senior Energy Economist / Energy specialists (2)	10 SWs
	Technical review of the technical aspects of setting up and implementing the RSM; Support FI in the selection process of sub-projects	Power/Gas sector experts	6 SWs
	Procurement review of Consultants Quality and Cost-based Selection (QCBS) Packages and other procurement activities and review	Procurement specialist	6 SWs
	FM	Senior Financial management specialist	6 SWs
12-54 months	Task management	Senior Energy Economist / Energy specialist	16 SWs
	Guidance and implementation support on technical issues	Power/Gas sector experts	10 SWs
	Review of procurement documents, and procurement guidance	Procurement specialist	10 SWs
	Financial management and disbursements	Financial management specialist	10 SWs

12. The staff skills mix and focus in terms of implementation support is summarized in the tables below.

Table 1.2. Skills Mix Required

Skills Needed	Number of Staff Weeks	Number of Trips	Comments
Task management	26	Field trips as required	Headquarters and Country based
Power/Gas sector experts	16	2-3	Headquarters based
Procurement specialist	16	Field trips as required	Country office based
Senior Financial management specialist	16	Field trips as required	County office based

Annex 2. Financial Management

Ghana

Ghana Energy Sector Transformation Initiative Project

Introduction

1. In line with the Financial Management Practices Manual issued by the World Bank's Financial Management Sector Board on March 1, 2010, a World Bank team conducted an FM assessment on the MoEn's Financing and Accounting Unit on the proposed FM arrangements to be used to support the implementation of the project. The objective of the assessment was to determine whether the (a) agency has adequate FM arrangements in place to ensure project funds will be used for purposes intended in an efficient and economical way; (b) project's financial reports will be prepared accurately, reliably, and on time; and (c) entities' assets will be safeguarded.

2. The assessment indicated that MoEn's accounts department has limited understanding of IDA disbursement and FM procedures. Even though the MoEn has implemented previous IDA-funded projects and is currently implementing the GEDAP, fiduciary arrangement was undertaken through a PIU.

3. In line with the World Bank's default position of using country systems, this project will use those aspects of the country systems which can be adequately relied upon. It has therefore been agreed that the Director of Accounts of the MoEn will have overall FM responsibility for the project.

4. Under the oversight of the MoEn's Director of Accounts, the FM responsibility will initially be handled by the FM consultant currently supporting the GEDAP who in turn will be supported by a dedicated accountant assigned by the Director of Accounts and embedded as part of the PIU. The responsibility of the project accountant is to ensure that throughout implementation there are adequate FM systems in place which can report adequately on the use of project funds. In addition, with the supervisory role of the Director of Accounts, the project accountant will be tasked with maintaining oversight responsibilities with regard to ensuring compliance with financial covenants such as submitting unaudited IFRs, maintaining internal controls over project expenditure, and engaging external auditors. The project accountant will also be responsible for maintaining and operating the project's Designated Account (DA) and supporting the processing of payments to contractors and service providers and verifying and authorizing payments for all contracts and activities under this project. The World Bank will periodically assess the capacity and adequacy of the project accountant and should there be the need to strengthen the FM systems, the project will be advised to competitively recruit a FM consultant to support implementation.

Strengths and Weaknesses of MoEn's FM System

5. The MoEn's accounts department has a fully functioning Accounting Unit, which is staffed with a mix of qualified and unqualified accountants with varying levels of experience in public sector accounting. However, the World Bank's assessment indicates that the Controller and Accountant General's Department (CAGD) staff have not been adequately trained in the management of donor-funded projects and this creates an inherent risk. To address this risk, it is proposed that the Director of Finance will identify a Government of Ghana/CAGD staff who will be embedded in the PIU and fully dedicated to the

project. The rationale is to allow for a mentoring and coaching training program by the FMC currently managing the GEDAP PIU. The presence of an already existing Accounting Unit that is familiar with the established processes and procedures as complemented by adequate staffing is the key advantage of relying on the GEDAP Finance and Accounting Unit for implementation. The unit has over the years successfully supported the implementation of the IDA-funded project with a Moderate risk rating while its FM performance is rated Satisfactory.

Action Plan to Address Identified Weaknesses

6. The action plan in Table 2.1. indicates the actions that are needed to address the weaknesses identified in the FM arrangements. Some of these actions are to be completed before credit effectiveness. Compliance will be monitored during implementation.

Table 2.1. FM Action Plan

	Action	Date Due By	Responsibility
i.	Prepare a PIM	Before effectiveness	Project coordinator
ii.	World Bank fiduciary team to organize training	After effectiveness	World Bank FM specialist
iii.	Prepare a comprehensive budget on the use of funds—at least indicating the annual work plan and Procurement Plan for the first year of implementation together with a six-month cash forecast	After effectiveness	Project coordinator/Project FMC

Summary of FM Assessment

7. The key findings of the FM arrangement are presented in the following paragraphs.

8. **Budgeting arrangements.** The MoEn follows the budget preparation guidelines as per the Public Financial Management Act, 2016 (Act 921), and the annual budget guidelines issued by the MoF. In addition, the processes for budgeting will be complemented by the World Bank-approved PIM. For this project, the budget will be derived from the IDA allocations which will serve as the basis for preparing the Annual Work Plans and Procurement Plans. The project coordinator is responsible for initiating the budgeting process for the project and obtains inputs (activities, schedules, timelines, and cost) from the beneficiary agencies. Once the budget is completed it will be approved by the members of the steering committee for onward submission to the World Bank for adoption. The current budgetary control processes used mostly for the Government's discretionary budget are capable of monitoring commitments and outstanding balances and this helps reduce risk of multiple payments. The assessment indicates that budgeting processes are satisfactory and can be relied upon to reflect the various components to be implemented.

9. **Accounting arrangements.** The assessment noted that though there are accountants within the MoEn with some technical skills in accounting, these staff do not have experience in the FM of IDA-funded projects. To mitigate this risk, for an initial period, the Director of Accounts will assign a staff to work under the supervision of the existing FMC of the GEDAP PIU until the closure of the GEDAP by January 2019.

10. Under the oversight and supervision of the Director of Accounts of the MoEn, the FMC, working in close collaboration with the dedicated project accountant at the MoEn, will be responsible for overall fiduciary aspects of the project. Specific accounting issues such as recording and processing of payment vouchers will be handled by the Accounting Unit of MoEn working together with staff of the current GEDAP PIU. The Accounting Unit is staffed with an adequate number of staff with various levels of skills and competences. For this project, the daily transactional issues will be handled by a dedicated project accountant, with the requisite skills and experience. In terms of accounting systems, the Government is in the process of rolling out an automated integrated FM system (under GIFMIS) using Oracle Financials and is currently transitioning from a manual system to an automated accounting system. Until such time that the rollout is fully completed, accounting for use of the project funds will be cash based. It is expected to be carried out by the MoEn through using a combination of spreadsheets and the existing AccPac application.

11. **Internal control and internal auditing.** The assessment indicated that the internal audit and control environment is adequate for project implementation. The role of the internal audit will be regularly assessed during supervision missions by reviewing their reports and management responsiveness to their findings. This is to ensure that the role is not limited to transactional reviews (pre-auditing) but adds value to the overall control environment through risk assessment.

12. Consistent with the decision to adopt some aspect of the use of country systems for implementation, the project's internal controls will rely on the Government-established accounting and internal control guidelines as documented in the Public Financial Management Act, 2016 (Act 921), and any subsequent regulations or amendments including aspects of the Financial Administration Regulation 2004, and informed by the Internal Audit Agency Act, 2003 (Act 658).

13. In addition, the expenditure initiation and related controls will follow the authorization and approval processes pertaining to the MoEn and complemented by additional guidelines in the PIM and the revised Accounting Procedures Manual. The MoEn has a functioning Internal Audit Unit headed by a qualified and experienced Chief Internal Auditor who helps ensure a sound control environment throughout implementation. Adequacy of internal controls in the Government has never been questioned except that the internal auditors have traditionally been focusing on preaudits and compliance rather than on systemic issues. Currently, the internal control features within the Government provides for preauditing of Government expenditure transactions. This form of expenditure validation, as part of the payment processing arrangements, will continue and will cover all expenditures, before their approval, including those under the project. Lack of adequate focus of internal auditors on risk is an area that the Government seeks to manage to ensure that the role is not limited to transactional reviews (preauditing) but adds value to the overall control environment.

Funds Flow and Disbursement Arrangements for the Project

14. This operation is an IDA credit of US$20 million. The proceeds will be used by the MoEn and other beneficiary agencies for payment for eligible expenditures as defined in the Financing Agreement and further detailed in the respective Annual Work Plans and Budget and Procurement Plans. The proposed arrangement is to use a single DA (denominated in U.S. dollars) and specifically opened at the Central Bank (Bank of Ghana), under the direct responsibility of the Chief Director but managed and operated by the Director of Accounts in collaboration with the project coordinator. Disbursement arrangements have

been designed in consultation with the MoEn after considering the assessments of the implementing agency's FM capacities and anticipated cash flow needs of the operation.

15. **Disbursement arrangements and use of funds.** Proceeds of the financing will follow the standard World Bank procedures for IPF, for use by the Borrower for eligible expenditures as defined in the Financing Agreement. Funds flow and disbursement will be implemented under the principles of traditional IPF arrangements using report-based disbursement arrangements. Under this approach, the allocated resources will be advanced to the MoEn's DA based on an approved six-monthly forecast of expenditures and replenished quarterly for further periods of six months using IFRs prepared by the MoEn. The processing of expenditures will be undertaken with AccPac and manual processing. The IFRs (including the 'procurements subject to prior reviews' and 'DA reconciliation statement') will serve as the basis for requesting advances and for documentation. Upon effectiveness, the initial request for advance will be based on the consolidated expenditure forecast for six months, subject to the World Bank's approval, that is, TTL, and FM systems, of the estimates and cash flows. Subsequent replenishments of the DA will be done quarterly based on the forecast of the net expenditures for the subsequent half-year period.

Table 2.2. Disbursement Categories

Category	Amount of the Credit Allocated (SDR)	Percentage of Expenditure to be Financed (inclusive of taxes)
1. Goods, works, non-consulting service, consulting services, training, and operating cost of the project	SDR 14.2 million	100
Total	SDR 14.2 million	

16. **Retroactive financing.** Up to US$4 million, or 20 percent of the IDA credit, will be available to finance eligible expenditures incurred from January 1, 2018, to credit signing. Additional instructions for disbursements will be provided in a Disbursement Letter to be issued for this project.

Financial Reporting Arrangements

17. The project will prepare and submit quarterly unaudited IFRs to account for activities funded under the credit. The project accountant is responsible for preparing and submitting the IFRs. Financial reporting will be report based, and it is expected that the PIU will maintain adequate filing and archival system of all relevant supporting documents for review by the World Bank's FM team during supervision missions and for audit purposes. The IFRs are expected to be submitted not later than 45 days after the end of each quarter. The financial reports will be designed to provide relevant and timely information to the project management, transfers to beneficiaries' agencies, and to various stakeholders monitoring the project's performance. The formats, content, and frequency of reporting have been agreed. These reports should, at a minimum, include the following:

(a) A statement of sources and uses of funds showing the use of funds by components as per the Project Appraisal Document (useful in monitoring implementation of the components);

(b) A statement of sources and uses of funds showing the expenditure by category as per the Financing Agreement (for allocating expenditure as per the Financing Agreement);

(c) A budget variance report comparing the utilization of approved budget against expenditure (useful to the TTL to monitor implementation and fund utilization);

(d) A DA reconciliation statement;

(e) A list of payments (made in that quarter) made against contracts subject to the World Bank's prior review, that is, signed and ongoing contracts;

(f) A cash forecast for six months (to be the basis of requesting for additional disbursement); and

(g) Any other report that shall be required to provide additional information on project expenditure.

Auditing

18. In line with its mandate as per the Audit Service Act, 2000 (Act 584), the Auditor General is solely responsible for the auditing of all funds under the Consolidated Fund and all public funds as received by Government ministries, agencies, and departments. The capacity of the Audit Service is satisfactory. In this regard, and consistent with the use of country FM systems, the Audit Service will conduct the audit of the project's financial statements as part of the MoEn's agencies, and departments annual audit and included by way of notes, the activities financed under the project. The independent audit of public accounts, conducted by the Auditor General, continued to achieve good progress, and the audit processes have been strengthened, with greater compliance with standards. While the focus is on regulatory and transaction basis, some performance audits and systems audits may be undertaken if the World Bank determines that there is the need for value-for-money considerations.

Conclusion

19. A description of the project's FM arrangements as documented in the preceding paragraphs indicates that they satisfy the World Bank's minimum requirements under World Bank Policy and Directive for IPF. Overall the FM residual risk is initially rated Substantial and this is due to the limited capacity of the Government's accounts staff in managing IDA-funded projects; however, this risk is mitigated through the reliance on the technical capacity of the existing staff of the GEDAP PIU who will be collaborating and working with the Government staff. Thus, the overall residual risk is Moderate.

Supervision Plan

20. Based on the risk rating and the gradual move to country systems, it is expected that in the first year of implementation there will be four quarterly on-site visits, supplemented by desk reviews of IFR and audit reports, to ascertain adequacy of the systems. The FM supervision missions' objectives will include ensuring that the project maintains strong FM systems throughout implementation. In adopting a risk-based approach to FM supervision, the key risk areas of focus will include assessing the accuracy

and reasonableness of budgets, their predictability and budget execution, compliance with payment and fund disbursement arrangements, and the ability of the systems to generate reliable financial reports.

Annex 3. Procurement

Ghana

Ghana Energy Sector Transformation Initiative Project

1. Even though the MoEn has implemented IDA-funded projects using GEDAP's PIU, implementation of the project will rely on the MoEn's Procurement Unit for sustainability. It has therefore been agreed that the Director of Procurement, who joined the ministry in October 2017, will have overall procurement management responsibility for the project. Based on this, the MoEn Procurement Unit was assessed to establish whether it has the capacity to implement the project using IDA's procurement procedures.

2. Using the Procurement Risk Assessment and Management System, an assessment was conducted. The organogram of the ministry was discussed and the necessary questionnaire was administered. The key risk factors that were assessed are the following:

(a) Accountability for procurement decisions in the implementing agency;

(b) Internal manuals and clarity of the procurement process;

(c) Records keeping and document management system;

(d) Staffing;

(e) Procurement planning;

(f) Procurement documents (bidding and proposals documents, short-list report, evaluation);

(g) Advertisement, proposal submissions, and so on;

(h) Evaluation and award of contracts;

(i) Review of procurement decisions and resolution of complaints;

(j) Contract management and administration; and

(k) Procurement oversight.

Table 3.1. Summary of Key Findings

Sl. No.	Risk Factor	Observation	Comments
a	Accountability for procurement decisions in the implementing agency	The MoEn's organogram has a structure that has adequate accountability mechanism for procurement and other governance decision.	Satisfactory
b	Internal manuals and clarity of the procurement process	The ministry currently uses the Procurement Manual of the Public Procurement Authority and will have to develop a PIM.	Inadequate

Sl. No.	Risk Factor	Observation	Comments
c	Records keeping and document management system	The Procurement Unit keeps records of procurement activities but records do not include payment information. Overall, records keeping need to be improved by ensuring that records of all the key procurement transactions are documented and paged.	Inadequate
d	Staffing	The existing procurement officers in the ministry do not have enough experience in IDA procurement procedures. The ministry has therefore recruited a Procurement Director in the last quarter of 2017. He has some experience in IDA procurement procedures and is to be supported by two procurement officers. None of the team has had exposure or training in the New Procurement Framework.	Major risk
e	Procurement planning	Satisfactory	Satisfactory
f	Procurement documents (bidding and proposals documents, shortlist report, evaluation)	Available	—
g	Advertisement, proposal submissions, and so on	Satisfactory	Satisfactory
h	Evaluation and award of contracts	Satisfactory. However, approvals by the entity head for post-review procurement which require clearance from the entity head could be delayed considerably due to potential bureaucratic practices within the ministry.	The ministry should ensure smooth approval of contract awards.
i	Review of procurement decisions and resolution of complaints	No such issue has arisen.	The project shall institute a mechanism to deal with the situation should it arise.
j	Contract management and administration	Satisfactory	
k	Procurement oversight	The Director of Procurement is required to supervise the operations of the Procurement Unit.	

3. **Conclusion on the procurement risk assessment.** Based on the above findings, the procurement risk rating is Substantial.

4. **Thresholds for prior review and procurement methods.** The World Bank reviewed its prior review and method thresholds in January 2017. Based on the risk assessment, the threshold in Table 3.2 applies to the project.

Table 3.2. Thresholds Effective January 1, 2017

	Prior Review Threshold in US$, thousands					Procurement Methods Thresholds in US$, thousands							
			Consultants		Single Source and Direct Contract	Works			Goods, IT and non-consulting services			Short List of National Consultants	
Risk Rating	Works	Goods, IT, Systems and Non-consulting services	Firms	Individuals		Open International or ICB	Open National or NCB	Request for Quotation/ National Shopping	Open International or ICB	Open National or NCB	Request for Quotation /National Shopping	Consulting Services	Engineering and Construction Supervision
Substantial	≥10,000	≥2,000	≥1,000	≥300	≥100	≥15,000	<15,000	≤200	≥3,000	<3,000	≤100	<300	≤500

5. **Applicable guidelines.** Procurement will be carried out, per the New Procurement Framework, in accordance with the (a) World Bank Procurement Regulations for IPF Borrowers: Procurement In IPF for Goods, Works, Non-Consulting and Consulting Services, dated July 2016; (b) the Guidelines on Preventing and Combating Fraud and Corruption in Projects financed by IBRD Loans and IDA Credits and Grants, dated October 15, 2006, revised in January 2011; and (c) the provisions that will be stipulated in the Legal Agreement. The bid documents will be based on the Standard Procurement Documents, recently enhanced with the Environment, Social, Health, and Safety.

6. **Preparation of PPSD.** The PPSD is finalized and accompanied by a corresponding 18-month Procurement Plan. The assessment conducted in the document indicates that MoEn, through GEDAP, have been implementing other on-going projects funded by the World Bank since the year 2000. They have been involved in World Bank and other donor-financed projects including those from the AfDB and the Embassy of Switzerland and hence have gained extensive experience in project procurement and FM as well as institutional project management. The established PIU is implementing various donor funded projects and have demonstrated that their procurement capacity to be adequate. adequate internal technical and administrative controls and anti-corruption procedures including satisfactory appeals mechanisms for bidders.

7. As for the procurement strategy, the services will be procured mainly through international quality and cost-based selection. Given the nature of the services, it is expected that many firms are interested in submitting their proposals. Procurement of goods, which is limited, will be through ICB or NCB and price quotations and will not require the application of domestic preference.