



1. Project Data

Project ID P094919	Project Name 3A-1st Ph. Inter-Zonal Transm. (FY11)	
Country Western Africa	Practice Area(Lead) Energy & Extractives	
L/C/TF Number(s) IDA-49710,IDA-H7190	Closing Date (Original) 31-Dec-2015	Total Project Cost (USD) 36,347,292.55
Bank Approval Date 29-Jun-2011	Closing Date (Actual) 31-Dec-2018	
	IBRD/IDA (USD)	Grants (USD)
Original Commitment	41,900,000.00	0.00
Revised Commitment	41,802,482.52	0.00
Actual	36,347,292.55	0.00

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2. Project Objectives and Components

a. Objectives

The project under review is the First Phase of the Inter-Zonal Transmission Hub Project of the West African Power Pool (WAPP) APL3 Program.

The project development objective (PDO) is: "to reduce the cost of, and improve the security of electricity supply to Burkina Faso, while increasing the Recipient's electricity export capacity." (Financing Agreement



dated March 26, 2012, Schedule 1, page 7). There were no changes to the PDO, outcome targets, PDO indicators, or project components in any of the three project restructurings. (ICR, paragraph 19)

For the purposes of this ICR Review, the project's results will be assessed under two sub-objectives:

Sub-objective 1: To reduce the cost of, and improve the security of electricity supply to Burkina Faso

Sub-objective 2: To increase Ghana's electricity export capacity

b. Were the project objectives/key associated outcome targets revised during implementation?

No

c. Will a split evaluation be undertaken?

No

d. Components

According to the Project Appraisal Document (PAD, page 8-9), the Inter-Zonal Transmission Hub WAPP APL3 (Phase 1) project will finance the following components of investments and technical assistance:

Component 1: The 225kV Transmission Line between Bolgatanga (Ghana) and Ouagadougou, (Burkina Faso) (US\$84.2 million appraisal and actual cost, of which US\$16.4 million was financed by IDA).

This component involves the construction of a 225 kV transmission line from Bolgatanga in the northern part of Ghana to the capital of Burkina Faso. It includes the following sub-components:

- Construction of about 210 km of 225 kV transmission line
- Construction of a new 225/161 kV substation in Bolgatanga, Ghana
- Extension of the 225/90 kV Zagtoui substation and construction of a new 90/33 kV substation in Burkina Faso
- Installation of telecommunications systems, Supervisory Control and Data Acquisition (SCADA) systems and Energy Management Systems (EMS)
- Implementation of Environmental Management and Resettlement Action Plan and strengthening the management of the Kaboré Tambi National Park.

Component 2: Reinforcement of the transmission grid in Ghana (US\$6 million appraisal and actual cost, financed by IDA).

This component includes high voltage (HV) network reinforcements in Ghana to be able to transmit 100 MW across the interconnection line and provide n-1 reliability. (Note: a 'safety net' minimum reliability standard of n-1 for contingencies on the core grid means that the system is planned such that, with all transmission



facilities in service, the system is in a secure state, and for any one credible contingency event, the system moves back to a satisfactory state.) At appraisal, the 161 kV reinforcement had sufficient level of preparation and financing to warrant including the following sub-components under this project:

- A 330/161 kV 200 MVA transformer to be installed in Aboadzé
- The pre-investment studies of the 161 kV Atebubu-Tamale line

Component 3: Electrification of rural localities along the right of way in Burkina Faso (US\$9 million appraisal cost estimate; US\$6 million actual cost, financed by IDA).

This component includes the design, engineering and works to utilize the shield wire of the 225 kV interconnection line for providing electricity to localities no further than 6 km from the right of way. At appraisal, an estimated 7,000 households were expected to benefit in Burkina Faso. The ICR (page 10) indicates 3,400 beneficiary households.

Component 4: Supervision/Owner's Engineer (US\$4.2 million appraisal cost estimate; US\$7.2 million actual cost, financed by IDA).

This component was to finance a single owner's engineer responsible for supervising works and ensuring coordination in both Ghana and Burkina Faso. By the time of project approval in June 2011, the consultant engaged by the WAPP Secretariat had already prepared the draft final versions of the interconnection line bidding documents. The task of the owner's engineer covers the entire period from finalization of the bidding document to the commissioning of the facilities. The consultant was to assist SONABEL and GridCo with project management and supervision of design, construction and commissioning of the investments under Components 1, 2 and 3.

Component 5: Capacity building and institutional support to GRIDCo and SONABEL for project implementation (US\$7.6 million appraisal cost estimate; US\$6.3 million actual cost, financed by IDA).

This component will finance a capacity building program for the concerned utilities in High Voltage system Planning, O&M of HV transmission systems, SCADA development, operation and maintenance, commercial transactions, Telecommunications and HV network protection. It will also include the acquisition of Hotwire O&M equipment for the trained staff. Experts from WAPP Secretariat and the ECOWAS Regional Electricity Regulatory Authority (ERERA) will be associated to the training sessions on Planning and Commercial Transactions. It will also cover the acquisition of equipment, training and operational expenses of the Project Implementation Units.

e. Comments on Project Cost, Financing, Borrower Contribution, and Dates



Project Cost. According to the ICR (page 43), the total estimated project cost at approval was US\$111.0 million, including the co-financiers' contributions (as delineated below), while the actual total cost at project closing was US\$109.7 million.

Project Financing. IDA provided a grant (H 7190) of US\$16 million equivalent to Burkina Faso and a credit of US\$25.9 million equivalent (Cr. 49710) to Ghana, for a total IDA financing of US\$41.9 million. The co-financiers included the French Agency for Development, AFD (US\$32.3 million), the European Investment Bank, EIB (US\$30.9 million), the Societe Nationale d'electricite du Burkina Faso, SONABEL (US\$3.4 million), and GridCo of Ghana (US\$2.5 million).

Borrower Contribution. The Borrowers participated in project financing through SONABEL and GridCo, for Burkina Gaso and Ghana, respectively, in the amounts indicated immediately above.

Dates. The project was approved on June 29, 2011 and was declared effective almost 18 months later (due to delays in agreeing on common procurement procedures and complying with cross-conditionalities among co-financiers) on December 14, 2012. A midterm review was conducted on March 30, 2015, or just nine months before the original closing date of December 31, 2015. There were separate extensions of the closing date for the grant and credit, and the project finally closed on December 31, 2018, that is, three years after the original closing date, for a total implementation period of six year as from the effectiveness date.

The project was restructured three times (Level 2), as follows:

First restructuring in November 2015, one month before the original closing date: Due to delays in procurement, modifications in the technical scope. and difficulties encountered during construction, the closing date of the grant for Burkina Faso was extended by three years to December 31, 2018, while the closing date for the credit to Ghana was also extended by 24 months to December 31, 2017. Changes were also made in the financing plan for the Burkina Faso grant, and reallocations were made among disbursement categories.

Second restructuring in March 2016: Changes in the financial plan and reallocations among disbursement categories were made for the credit to Ghana.

Third restructuring in December 2017: Due to further implementation delays in the works financed by the project, the closing date of the Ghana credit was extended by one year to December 31, 2018.

3. Relevance of Objectives

Rationale

Regional Context. Burkina Faso and Ghana are members of the Economic Community of West African States (ECOWAS), a regional group that was founded in 1975 to achieve “collective self-sufficiency” among its 15 member states (with an estimated 380 million population in 2020). The principal goal of ECOWAS is



to create a single, open trading union within West Africa. Among other measures, this union was to be achieved by setting up regional markets for electricity and other infrastructure services.

The ECOWAS region has sizeable energy resources, including having one-third of African oil and gas reserves, more than 23,000 MW of technically exploitable hydropower capacity, and bountiful solar energy. However, these resources are highly unevenly distributed, with Nigeria having 98 percent of recoverable oil and gas resources and five countries having 91 percent of the region's hydro potential. Moreover, member countries, also have significant supply and demand imbalances. For example, some countries have significant potential for electricity generation while having a small domestic demand (e.g., Guinea), while others are still unable to meet the small local demand at affordable costs (e.g., Liberia).

Consequently, an energy policy for ECOWAS was adopted in 1982, leading to the establishment of a number of region-wide energy programs, one of which was the West Africa Power Pool (WAPP). Set up in 1999, WAPP was intended as the main mechanism for facilitating the integration of the national power systems and operations into a regional electricity market. WAPP's long-term goal is to provide the citizens of ECOWAS member countries with a stable, reliable, and affordable electricity supply.

Country Context. Burkina Faso is a low-income country with less than 100 MW of hydro power capacity and no known oil resources. About 90 percent of the population still depends on firewood and charcoal for meeting their energy needs. The country's electrification rate is only about 23 percent, with about 40 percent in urban areas and only 3 percent in rural areas. Over 90 percent of electricity production depends on petroleum products that are entirely imported. As a landlocked country, the need to transport fuels by road from ports over distances of more than 1,000 km away has prevented Burkina Faso from improving electricity supply and expanding access. At the time of project appraisal, Burkina Faso faced multiple energy sector needs: (i) additional supply capacity to meet growing demand; (ii) improved energy access for rural and peri-urban populations; (iii) improved energy efficiency and equity through tariff and subsidy reforms; and (iv) more sustainable fuelwood supplies while promoting the use of alternatives such as liquefied petroleum gas (LPG). For Ghana, electricity supplies come from hydro (57 percent) and thermal (43 percent) sources, with the thermal generation mix transitioning from crude oil to natural gas as the main fuel source. Given this mix of relatively low-cost gas and hydro, the project expects to help significantly in reducing the cost of electricity supply to Burkina Faso, facilitating cross-border electricity exchanges among WAPP countries, and accruing financial benefits to Ghana from power sales.

Strategic Alignment. The project's development objectives (PDOs) were closely aligned at appraisal with the Burkina Faso Country Assistance Strategy (CAS) 2010-2012, as well as currently with the Systematic Country Diagnostic (SCD). The Burkina Faso SCD is appropriately focused on reducing the country's dependence on imported fuels and high electricity costs. The PDOs were also well aligned at appraisal with the Ghana CAS 2008-2012 and remains so with its current SCD, which supports the Ghana's aim of becoming a net electricity exporter. The PDOs are strongly consistent with the regional strategic goal of enabling binational and regional power trade, by paving the way for the development of the second phase of the intra-zonal network that will link Burkina Faso and Mali. The latter would strengthen the interconnection between WAPP Zone A and Zone B, thus further increasing Ghana's capacity to export electricity.

World Bank Involvement. The World Bank has been supporting and continues to finance strategically selected power sector investments geared toward developing interconnected power systems and cross-border transmission corridors among the ECOWAS member countries. As such, the PDOs are directly



consistent with the longer-term strategy of ECOWAS and the World Bank to develop and transform WAPP into a regional electricity market.

Rating

High

4. Achievement of Objectives (Efficacy)

OBJECTIVE 1

Objective

To reduce the cost of and improve the security of electricity supply to Burkina Faso

Rationale

Theory of Change. The results framework presented in the PAD (pages 25 to 26) was designed to serve as a monitoring tool and does not adequately reflect the project's theory of change. Although useful for tracking project results, it only presents the year-by-year incremental values as they move toward the achievement of the targets at project completion, the data sources, and the frequency and agency responsible for data collection. Restricted to one table with no accompanying discussion, the PAD's results framework does not analyze causality and attribution aspects.

The ICR (pages 7 and 8) constructs the project's theory of change. The project's core investment activities are to interconnect Burkina Faso to the cross-border trade of surplus power from Ghana, and at the same time create the backbone of the transmission system in Burkina Faso. As a straightforward infrastructure project, these main activities are expected to increase electricity supplies in Burkina Faso and thereby reduce the high supply costs and reduce the serious outages in the country that, as the principal counterfactual, would worsen in the absence of the project. The ICR also identified appropriately the main critical assumptions related to (i) the importance of concurrently completing the project components financed by other donors and (ii) the need for adequate institutional capacity within SONABEL and GridCo. The investment activities by their very nature would also be expected to lead directly to an increased power export capacity for Ghana. Consequently, this theory of change also applies to Objective 2 discussed below.

Project Design. The project's design was appropriate and straightforward. Burkina Faso and Ghana have already had previous experience with cross-border power trade and day-to-day operations. The main transmission investments and ancillary activities are technically and operationally well known in the



international power industry. The interconnection line was the subject of a detailed feasibility study dated December 2010, which compared two expansion plans and conducted an economic analysis under varying parameters related to physical costs, load factors, alternative fuel costs, etc.

Outputs:

- The 225 kV transmission line of about 210 km was constructed.
- The new 225/161 kV substation in Bolgatanga, Ghana was constructed.
- The 225/90kV Zagtouli substation was extended, and the new 90/33 kV substation was constructed in Burkina Faso.
- The telecommunications, SCADA and Energy Management Systems were installed.
- The Environmental Management and Resettlement Action Plan and the strengthening of the management of the Kabore Tambi National Park were implemented.
- The feasibility and environmental studies for the 161 kV Atebubu-Tamale line was completed,
- A 330/161 kV transformer at Aboadze was commissioned.

In respect of capacity-building, 82 staff were trained on network live operation and maintenance, as targeted.

Outcomes:

The two PDO outcome indicators for Objective 1 were adequate for measuring its achievement, and include the following:

- Reduction in the average weighted annual cost of electricity supply in Burkina Faso (in US\$/kWh)
- Reduction in the annual total duration of outages in Burkina Faso due to generation capacity deficit and load shedding (in hours)

The first indicator was more than achieved, while the second one was almost fully achieved. The average cost of electricity in Burkina Faso has decreased by US\$0.05 per kWh. The baseline value (in US\$/kWh) was 0.2634 and the target value was 0.25, while the actual value achieved was 0.20. This result can be attributed to the project, as the new interconnector enabled the flow of cheaper hydro power from Ghana into Burkina Faso, thus substituting for higher-cost electricity from using imported heavy fuel oil (HFO) fuel in local electricity generation.

Moreover, overall system reliability has improved, based on operational statistics from the Bolgatanga-Ouagadougou transmission interconnection. Operational targets have been exceeded: the transmission line has operated 8,497 hours per year, which is higher than the 7,884 hours targeted. This indicates a higher level of availability of 97 percent compared to the targeted 90 percent. In terms of attribution, the project-supported Bolgatanga-Ouagadougou transmission interconnection has helped directly in reducing outages from 130 to the target of 8 per year.

Although not explicitly stated in the PDOs, the project also resulted in providing electricity access to communities close to Ouagadougou and along the transmission route. The ICR (page 37) indicates that in Burkina Faso, 3,474 households were connected along the transmission line's right of way, which slightly exceeded the original target of 3,400 households. Direct project beneficiaries were 20,844, which slightly exceeded the original target of 20,400. individuals. For this ICR Review, the Bank's ICR team provided the



additional information that as part of ICR preparation, the team had a series of interactions with beneficiaries and also conducted an audit on the number of households and businesses connected. The audit covered the socioeconomic impact of those connections, as contained in the May 2019 report entitled “Rapport Definitif: Audit sur l’installation de compteurs electriques dans vingt-cinq localites electricifiees le long de la ligne 225 kv au Burkina Faso”. A total of 25 villages were electrified by using two different technologies. Whilst 14 villages were supplied from the existing 33 kV supply network, the other 11 villages were electrified from a 34.5 kV source using the shield wire of the newly constructed 225 kV transmission line.

The proportion of female beneficiaries who have embarked on new and diversified economic activities was about 31%, according to the ICR (page 19-20), quoting an audit by the World Bank. Women benefited through the reduction in fuel wood used as well as specialized training in live line works, substation automation, and procurement.

Rating

Substantial

OBJECTIVE 2

Objective

To increase Ghana's electricity export capacity.

Rationale

The theory of change as presented under Objective 1 above also applies for Objective 2.

Outputs:

- The same outputs under Objective 1 above (first five bullets) apply under this objective.

Outcomes:

At the time of its preparation, the ICR (page 16) reports that SONABEL's operational statistics indicate that about 222 GWh of energy had been transferred from Ghana to Burkina Faso (via the transmission line that had 200 MW capacity), which already surpassed the annual target of 158 GWh after only six months of operation during the latter half of 2018. Attribution to the project is strong, inasmuch as imports from Ghana that were made possible by the interconnector now represent a step-wise increase of 23 percent within Burkina Faso's current supply mix. The feasibility study that was completed under the project also resulted in delineating options for additional reinforcement of Ghana's grid in order to further facilitate regional power trade.



Rating
Substantial

OVERALL EFFICACY

Rationale

The PDO indicators for both Objective 1 and 2 have been met or exceeded. Beyond those indicators, energy access to rural households along the right of way were also achieved. With the achievement of Objective 1 as substantial, and that of Objective 2 as also substantial, the project's overall efficacy in achieving its PDOs is substantial.

Overall Efficacy Rating

Substantial

5. Efficiency

Economic Analysis. According to the ICR (page 18), the project's economic internal rate of return (EIRR) is 29.7%, and the Net Present Value (NPV) is US\$230 million, at a discount rate of 10%. Table 8 of the ICR presents the comparison of the economic analysis at appraisal and at completion. Taking into account the actual figures at completion for investment costs, avoided generation costs in Burkina Faso, incremental generation costs in Ghana, and incremental transmission losses (1.13 % at the end of 2018 after the line had operated for only half a year), the EIRR (32.6 %) and NPV (US\$284 million) at appraisal did not diverge significantly from those obtained at completion.

Financial Analysis. The financial returns would also be higher for SONABEL, according to the ICR (page 19) since the interconnector would enable the transmission of lower-cost electricity from Ghana to substitute for expensive diesel power generation in Burkina Faso. At appraisal, the financial internal rate of return was estimated at 37 % and was calculated at 29.6 % at project completion. For Ghana, the project's financial viability improved with 13.5 % at project completion compared to the 12.2 % appraisal estimate.

Implementation Efficiency. The project encountered serious implementation delays. There was a delay of about 18 months between approval and effectiveness mainly due to difficulties in coordinating the co-financiers, harmonizing their procedures, and accomplishing the cross-effectiveness provisions of the legal covenants of the various financing agreements for the World Bank, EIB, and AFD. The complexity of meeting legal covenants delayed readiness for implementation. Safeguards application and compliance issues also materialized at the outset.



Efficiency Rating

Substantial

a. If available, enter the Economic Rate of Return (ERR) and/or Financial Rate of Return (FRR) at appraisal and the re-estimated value at evaluation:

	Rate Available?	Point value (%)	*Coverage/Scope (%)
Appraisal	✓	32.60	95.00 <input type="checkbox"/> Not Applicable
ICR Estimate	✓	29.70	95.00 <input type="checkbox"/> Not Applicable

* Refers to percent of total project cost for which ERR/FRR was calculated.

6. Outcome

The relevance of objectives is substantial. The project's efficacy in achieving objective 1 is substantial, and its achievement of objective 2 is also substantial. The project's efficiency is substantial. On the basis of these sub-ratings, the overall project development outcome is satisfactory.

a. **Outcome Rating**
Satisfactory

7. Risk to Development Outcome

Risks at appraisal. The project's risks were identified adequately, except for the risk of incompatibility and difficult coordination among the three financiers (World Bank, EIB and AFD). A major shortcoming was that there was no formal agreement among the three that AFD and EIB had accepted the Bank's procurement guidelines and Standard Bidding Documents, which was cited only informally in the PAD. Another major shortcoming was the absence of mitigation measures (despite the High risk rating) for the risk of delays arising from cross-effectiveness covenants among the three financiers. These risks materialized and resulted in significant, years-long delays in project implementation.



Risks at completion. No direct technical risks are foreseen with the transmission assets, given their standard use in the international electricity industry. However, there are two other possible risks to the sustainability of project development outcomes, as follows:

(1) There is a minor risk that the facilities would be poorly maintained by the two utilities, which could jeopardize their reliability. Regular and continuous maintenance would be required; however, SONABEL and GridCo have long-standing records of good performance in terms of managing and maintaining their assets.

(2) There is a minor risk that Ghana's surplus generation capacity would be reduced; however, Ghana's current excess generation capacity is 1,500 MW (i.e., an overall demand of 2,600 MW compared to a total capacity of 4,100 MW), which could be expected to meet continuously the import requirement of Burkina Faso.

8. Assessment of Bank Performance

a. Quality-at-Entry

The project was conceptualized within the WAPP framework, wherein the member countries were already committed to improving their respective energy sectors and benefiting from regional power trade. The project's design and preparation built upon the established operational working relationship between Burkina Faso and Ghana related to electricity trade. As such, the PDOs were a direct fit into the power pool integration stages of the WAPP. Consequently, the target outcomes (reduce costs, improve power supply, enable increased trade) were readily translatable into quantitative indicators that were measurable within specific time frames. At the project design and preparation stages, the existing institutional foundations also made it possible to establish a Joint Implementation Committee comprising SONABEL and GridCo and their respective senior management. Moreover, the project's design included a single, internationally recruited Owner's Engineer to support the Project Implementation Units in both countries and keep all stakeholders apprised of the project's implementation progress.

Regarding the choice of the Adaptable Program Lending (APL) lending instrument, since 2005 the Bank's Executive Board of Directors had already endorsed the application of the APL instrument, within the framework of the World Bank's Regional Integration Assistance Strategy (RIAS) for West Africa, as the vehicle for providing IDA credit support to the WAPP initiative. Several lending operations have been approved under the WAPP APL facility totalling 60 percent of the US\$ 350 million initial allocation. Consequently, the project used the same instrument.

One significant shortcoming was that the use of Bank procurement procedures by the other two co-financiers was not formally signed and made binding. The engineering studies and bidding documents were not yet finalized when the project was presented to the World Bank's Board, hence the project was not ready to start implementation when the project was approved. Subsequently, procurement processes continued to be lengthy, implementation was delayed significantly, and thus disbursement was very slow during the initial years of the implementation period.



Overall, the Bank's quality at entry was moderately satisfactory. Although there was rigorous technical preparation and project economic analysis of the project within a conducive WAPP development context, the absence of an instrument that legally bound the co-financiers to uniform procurement procedures was a significant shortcoming that resulted in serious implementation delays.

Quality-at-Entry Rating Moderately Satisfactory

b. Quality of supervision

With the difficulties in obtaining agreement on procurement procedures and fulfilling cross-conditionalities among the project's three co-financiers, the project became effective only on December 2012, which was a long delay of 18 months after its approval on June 2011. Three years later, on November 2015, the project was restructured as the delayed procurement was finally starting to advance well. The Bank's team, for which the TTLs and some key staff were based in Accra and Ouagadougou, conducted semi-annual supervision missions. This continuous presence on the ground and the support from specialized experts helped resolve project implementation challenges. The supervision missions' aide-memoires helped to keep all stakeholders informed about project developments, while the Implementation Supervision and Results Reports (ISRs) served to alert Bank management on the need for corrective measures and other necessary initiatives. For example, restructurings were done when the project met significant delays. The midterm review of March 2015 was significant in that it led to the project's first major restructuring November 2015, which led to: (a) extension of the closing date of the grant to Burkina Faso by 36 months from December 31, 2015, to December 31, 2018, and the closing date of the credit to Ghana by 24 months to December 31, 2017, due to delays in procurement, change in technical scope, and construction challenges; and (b) introduction of changes in the Financing Plan, which included reallocation between disbursement categories under the grant to Burkina Faso (IDA H719-BF). There were four Task Team Leaders between the project's preparation and closing stages. However, according to the ICR (page 27), "transitions were adequately managed and did not affect implementation progress."

A significant shortcoming, however, was the lack of adequate on-site supervision of safeguards implementation. The Bank team was late in responding and organized a mission after two fatal accidents had already occurred. Moreover, it was only in 2018, the final year of project implementation, after all compensation payments had been completed, when a formal Grievance Redress Mechanism was established. After the accidents, the Bank team and the implementing agencies worked more closely together to put a system in place that would minimize the risk of future accidents.

The ISRs appeared to lack candidness in assessing safeguards compliance. As indicated earlier, the ISRs rated safeguards compliance as either Satisfactory or Moderately Satisfactory, despite the two deaths in 2017 and the absence of a Grievance Redress Mechanism until the last year of the project.

Quality of Supervision Rating



Moderately Satisfactory

Overall Bank Performance Rating

Moderately Satisfactory

9. M&E Design, Implementation, & Utilization

a. M&E Design

As discussed under Section 4 on Efficacy, the project's results framework (as presented in the PAD) is adequate for monitoring project results, although as noted it did not really discuss the theory of change. The M&E design was appropriate and consistent with the monitoring requirements for an electricity interconnection project. The PDO outcome indicators and the six intermediate results indicators are adequate for measuring project results and are aligned with power trade and cost reduction objectives, as discussed in the Guidance Note for preparing PDO and indicators for interconnector transmission projects in Sub-Saharan Africa (March 2019).

b. M&E Implementation

SONABEL and GridCo were responsible for collecting and sharing data with stakeholders regarding implementation progress. The PIU collected data regularly on all the intermediate and final indicators, which were shared with the Bank project team in the field and during supervision missions. A minor shortcoming was the inadequate reporting with respect to the set of indicators in the monthly and quarterly progress reports of the owner's engineer

c. M&E Utilization

Data collected by the PIU was utilized by the Bank project team for the preparation of the ISRs and the aide-memoires, which allowed the implementing agencies to take remedial actions on issues that have emerged and Bank management to provide guidance on specific measures to address implementation challenges.

M&E Quality Rating

Substantial

10. Other Issues

a. Safeguards

The project was assigned a Category B (Partial Assessment), due to potential adverse environmental and social impacts, which at the appraisal stage were considered to be generally small-scale and site specific, and for which readily known mitigation measures could be put in place. The project triggered four



World Bank safeguards policies: Environmental Assessment (OP/BP 4.01); Involuntary Resettlement (OP/BP4.12); Natural Habitats (OP/BP 4.04); and Physical Cultural Resources (OP/BP 4.11).

Burkina Faso and Ghana completed and--after clearance from the World Bank--disclosed the transmission line's Environmental and Social Impact Assessment (ESIA) studies and its associated Environmental and Social Management Plan (ESMP) within the countries and at the Bank in 2011. Before appraisal, the two countries also prepared and conducted consultations for the Resettlement Action Plans (RAPs). The project's appraisal concluded that both SONABEL and GridCo had sufficient capacity to manage the potential negative impacts of the project's transmission line and substation construction.

There were gaps in implementing social safeguards and failures in guaranteeing operational safety, the latter resulting in two deaths. The management of the two utilities and the owner's engineer were deficient in deploying health and safety supervisors at all project sites. Only one was deployed for all the sites, despite distances of hundreds of kilometers between them. On July 2017 a transmission tower collapsed while two workers were conducting assembly works, killing one worker and seriously injuring the other. A month later, a minor drowned in a pool of water that had formed under the excavated tower foundations.

The Bank's project team conducted a detailed supervision mission and, together with SONABEL, the owner's engineer, and the contractor, developed a 20-point action plan to avoid future accidents and address related social issues, including compensation and observance of local sacrificial rituals.

There were also weaknesses with respect to compliance with social safeguards. Compensations to project affected persons (PAP) were delayed due to various reasons. Some PAPs had insufficient documentation to support compensation claims. Much time was required to verify and assess the claims. Also, seasonal farmer migration made it difficult to conduct the asset inventory surveys and the valuation of adequate compensation when the concerned parties had gone to other locations. All compensations were completed before project closing, according to the ICR team.

Finally, a Grievance Redress Mechanism for GridCo was established only toward the end of the implementation period when a complaint regarding delayed compensation was escalated. Otherwise, no mechanism was in place except for a traditional, verbal process involving local government authorities that acted as interlocutors between PAPs and project entities when complaints arose.

Throughout project implementation and until the project closed on December 2018, the ISRs' ratings for safeguards compliance were either Satisfactory or Moderately Satisfactory, which did not seem justified particularly in 2017 when the two fatal accidents occurred and in the latter years of the project when a Grievance Redress Mechanism still had not been established.

b. Fiduciary Compliance

Financial Management. The ICR provides little information on the project's financial management aspects, except to indicate that ratings were either Satisfactory or Moderately Satisfactory throughout the



implementation period. SONABEL and GridCo were responsible for implementing the financial management arrangements. The ICR further states that interim financial reports, annual audit reports, and withdrawal applications were prepared and submitted to the Bank, without indicating whether these were all on time and had no qualifications. The ICR team later clarified that the fiduciary authorities (who provided inputs and reviewed the ICR) did not raise any concerns on the quality of the reports submitted by the client during and after the project.

Procurement. Difficulties in agreeing on a joint procurement strategy also caused delays in procurement processes. Procurement of the transmission line was also designed to be conducted jointly by SONABEL and GridCo. The joint procurement of the transmission line by SONABEL and GridCo required that all procurement matters had to be cleared by the three funding agencies (World Bank, EIB, and AFD). According to the PAD, there was an informal agreement that both EIB and AFD would use World Bank procurement guidelines and Standard Bidding Documents.

c. Unintended impacts (Positive or Negative)

d. Other

11. Ratings

Ratings	ICR	IEG	Reason for Disagreements/Comment
Outcome	Satisfactory	Satisfactory	
Bank Performance	Moderately Satisfactory	Moderately Satisfactory	
Quality of M&E	Substantial	Substantial	
Quality of ICR	---	Substantial	

12. Lessons

The ICR derived several lessons from the project's implementation experience. The main ones are presented here, with some paraphrasing:

Smooth and speedy project implementation requires the advance preparation of key technical studies and the launching of major procurement packages. The three-year extension of the project's closing date was due in large part to the late preparation of the detailed engineering studies and the ensuing change in scope of works and late finalization of the bidding documents. Thus, it is essential to conclude all preparatory studies and use an advanced procurement approach for large and capital-intensive infrastructure projects. In the particular case of this project, French



versions of the procurement documentation critically needed to be prepared in advance of project approval.

Cross-effectiveness clauses among co-financiers could entail risk of delays. Requirements to comply with legal covenants and cross-conditionality can delay loan/credit effectiveness and start-up of implementation. For this project, 18 months of delay occurred before effectiveness because the other financiers experienced delays in obtaining approval from their respective authorities. Multi-donor project should be presented to the Board only when all have approved the arrangements. Also, the number of covenants needs to be restricted.

Complex and multi-country/multi-donor projects require a joint procurement strategy, a Joint Implementation Committee, and a common Owner's Engineer to ensure adequate coordination and effective implementation. These provisions would help ensure minimal disruption and successful project implementation in situations where there are multiple contractors constructing different sections of the transmission line. It would also help avoid different owner's engineers providing differing and potentially conflicting advice on the same project. Joint implementation would also help ensure that all stakeholders are provided with the same level of information and involvement.

Adequate safeguards supervision is critical in ensuring robustness in implementing environmental and social mitigation measures. Accidents that occurred might have been avoided if the following actions had been taken ahead of time, instead of in reaction to the accidents after their occurrence: (i) certification of workers carrying out installations especially at heights; (ii) involvement of community organizations/NGOs in the implementation and/or monitoring of social programs and public sensitization; and (c) securing all work sites with wooden barricades before starting any works. Albeit late, these measures were put in place to greatly reduce the risk of fatal accidents from happening again.

13. Assessment Recommended?

Yes

Please Explain

There is a case for an assessment given that delays in this APL were primarily due to a lack of coordination among the co-financiers. It would be useful, if after a further phase, the program could be re-evaluated to see whether the lessons pertaining to the lack of coordination had been recognized and rectified. This would be



useful for other regional infrastructure programs and projects. In Phase II there is a proposed link between Burkina Faso and Mali and a strengthening of the interconnection among the WAPP countries.

14. Comments on Quality of ICR

The ICR was well prepared. It was appropriately focused on providing quantitative evidence to substantiate the project's achievements and referred often to the project's theory of change, which the ICR constructed since the PAD did not provide one. The key lines of argument were convincing (especially on the role of this particular project within the larger WAPP framework) and the overall writing and presentation were clear, albeit repetitive across some of the sections, which contributed to making the ICR's main text too lengthy at 33 pages (or about twice the number of pages indicated in the guidelines). There were some minor shortcomings. The bottom of Table 5 seems to have been cut in the formatting, hence the information is incomplete. There was some inconsistency in the gender-based outcomes (31 % in para 51 versus 55 % in the Annex). The M&E section used a lot of "boiler plate" text on the importance of the Bank's ISRs and aide-memoires, at the expense of discussing actual on-the-ground experience from the implementing agencies' perspectives. Finally, although not explicitly stated in the PDO and a relatively small component of the project, there could have been more detailed discussion regarding the "huge impacts" (ICR, page 33) of providing electricity access to communities along the route of the transmission line. This was turned into a lesson but there was little or no supporting discussion in the text, which seems to be a significant imbalance compared to the two pages (pages 24-25) dedicated to the issue of coordinating procurement among the co-financiers.

Overall, given its mostly objective self-evaluation as well as its focus on results and evidence, the ICR's quality is substantial.

a. Quality of ICR Rating

Substantial