



1. Project Data

Project ID P094916	Project Name 3A-WAPP APL 2 (OMVS Felou HEP)	
Country Africa	Practice Area(Lead) Energy & Extractives	Additional Financing P114935
L/C/TF Number(s) IDA-42150,IDA-42160,IDA-42170,IDA-46450,IDA-46460	Closing Date (Original) 30-Jun-2010	Total Project Cost (USD) 241,000,000.00
Bank Approval Date 29-Jun-2006	Closing Date (Actual) 31-Dec-2014	
	IBRD/IDA (USD)	Grants (USD)
Original Commitment	160,000,000.00	0.00
Revised Commitment	149,174,716.19	0.00
Actual	151,331,477.67	0.00

Sector(s)
Hydropower(93%):General public administration sector(7%)

Theme(s)
Regional integration(33%):Regulation and competition policy(33%):Water resource management(17%):Trade facilitation and market access(17%)

Prepared by Mario Marchesini	Reviewed by Robert Mark Lacey	ICR Review Coordinator Christopher David Nelson	Group IEGSD (Unit 4)
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2. Project Objectives and Components

a. Objectives

The project development objective in the PAD (page 12) of June 2006 was “to augment the supply of low cost hydroelectricity from the OMVS Power System to the national power utilities of Mali, Mauritania, and Senegal.” The Project Agreement of September 2006 between IDA, OMVS and SOGEM mentions the second project development objective of “developing a nucleus of a well-functioning, cooperative, power pooling mechanism for the WAPP Zone B OMVS Countries of West Africa.”

Additional financing of US\$85 million equivalent was approved by the Board in August, 2009, largely to meet higher than anticipated costs in



the design and build contract for the Felou hydroelectric plant. The project objectives and associated outcome targets were not changed.

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

No

c. Components

1) **Component 1 - Design, construction and commissioning:** (cost at appraisal, excluding contingencies and interest during construction: US\$102.1 million; formally revised estimate at the time of additional financing: US\$181.3 million; cost at completion: US\$172.6 million). This component was for the design and build contract of the Felou 60MW run-of-the river hydroelectric plant, located on the Senegal River in Mali about 200 km downstream of the Manantali hydropower plant, with an interconnection to the 225 kV transmission system linking Dakar (Senegal), Nouakchott (Mauritania) and Bamako (Mali). Sponsored by the governments of Mali, Mauritania and Senegal, through the Senegal River Basin Development Organization (OMVS), the project was developed and overseen by the Société de Gestion de l'Énergie de Manantali (SOGEM). The operation of the project was contractually delegated to Synohydro, the design and build contractor, until October 2015. This component of the project accounted for over 90% of the total project cost.

2) **Component 2 - Project Cycle Management Contract:** (cost at appraisal: US\$2.9 million; formally revised estimate at the time of additional financing: US\$8.6 million; cost at completion: US\$10.3 million). This component covered comprehensive project cycle management support to oversee the design, construction and commissioning of the Felou plant.

3) **Component 3 - WAPP Action Plan for the OMVS Power System:** (cost at appraisal: US\$7.5 million; formally revised estimate at the time of additional financing: US\$7.8 million; cost at completion: US\$0.6 million). This component was to strengthen joint operations and management of the OMVS power system as well as coordination with the three national utilities, Electricite du Mali (EDM), Societe Nationale d'Electricite du Senegal (SENELEC), Societe Mauritanienne d'Electricite (SOMELEC). It mainly involved upgrading communication, data acquisition facilities and software to enable real-time information exchange between the load dispatching center at the Manantali hydropower station and the three national power utilities.

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

Cost: At appraisal in 2006, the total expected project cost (including contingencies and interest during construction) was about US\$125 million. The estimate was increased at the time of its restructuring in August 2009 to about US\$241 million, equivalent to a 93% increase. This was primarily due to an increase in the cost of the design and build contract, notwithstanding an open international competitive bidding process. The estimates for the Project Cycle Management Contract, price contingencies and interest during construction were also adjusted upward because of the increase in the cost of the design and build contract to which they were tied. Cost at completion was about US\$201 million, lower than anticipated at the time of restructuring, mainly due to cost savings in the design-build contracts and adjustments to price and physical contingencies.

Financing: The project was financed through a combination of IDA credits and European Investment Bank (EIB) loans. At closure, about US\$150 million were provided by IDA and US\$26 million by EIB. The implementing agency, SOGEM, contributed about US\$25 million. Consistent with OMVS policies, the cost of the project was to be equally shared between the member states, independently of how the benefits were to be shared. Therefore, under the original financing plan, Mali, Mauritania and Senegal were to each borrow one third of the funds made available from IDA and the EIB. However, at the time of the project restructuring in August 2009, IDA was not in a position to extend new loans to Mauritania. The additional IDA financing of about US\$85 million to fund the increased project cost was therefore extended to Senegal and Mali.

Dates: Given the delays in the award process of the design and build contract and the time needed to mobilize the additional financing, the project could not be completed by the original closing date of June 2010. At the time of the project restructuring in August 2009, the closing date was extended by three years from June 2010 to June 2013. In June 2013, the closing date was extended by additional 18 months until December 2014.

3. Relevance of Objectives & Design



a. Relevance of Objectives

Host countries' strategy:

The project objectives were - and still are - highly relevant to the power sectors of Mali, Mauritania and Senegal. The Felou plant aims to address the long-standing energy sector challenges that the three countries face, including large capacity shortfalls and the reliance on expensive emergency thermal general capacity to address the supply deficiencies. Besides, the project was – and still is today – fully consistent with the authorities' strategies to tap the region's large hydroelectric potential and create a cooperative power pooling mechanism for integrating national power system operations into a unified regional electricity market. As a key component of this vision, OMVS was mandated by the governments of Mali, Senegal and Mauritania to implement a multi-purpose water resources development program, including electric power generation, in the Senegal River Basin. The hydropower potential of the Senegal River Basin is estimated at 1,200 MW, of which only about 200 MW was developed at the time of appraisal.

World Bank strategy:

The development of the Felou hydroelectric plant is in line with the Bank's policies aimed at promoting regional integration in Africa. The objectives of the project were at appraisal – and remain today - fully aligned with the World Bank Group (WBG) priorities for OMVS. Supporting projects that help the region tap its potential to generate power from renewable sources, including hydroelectric facilities, is among such priorities.

The objectives of the project also fitted at approval the WBG country-specific priorities for Mali, Mauritania and Senegal. The CAS strategy for each of the three countries at the time of appraisal called for higher and sustainable growth to generate employment and raise the living standards. Increasing generation from economically viable hydroelectric projects was a part of the CAS strategies to promote growth. The relevance of the project's objectives remains high, as the project is fully consistent with the strategic priority of the OMVS countries to strengthen reliable sources of low-cost energy in order to sustain broad-based growth and employment, as envisaged under the current country-specific WBG strategies, notably the FY14-15 Mali Interim Strategy Note, the FY13-17 Senegal Country Partnership Strategy and the FY14-16 Mauritania Country Partnership Strategy.

Rating

High

b. Relevance of Design

The project design was sound in terms of its focus on two objectives and three components. The first two components were closely linked to the first project objective of increasing the supply of hydroelectric energy to the national utilities of Mali, Mauritania, and Senegal. The third component was linked to the second project objective - which was added subsequently at the time of the Project Agreement - of developing a nucleus of a power pooling mechanism between Mali, Mauritania and Senegal.

However, the overall design of the project could have been strengthened by including a capacity building component, specifically addressing SOGEM's shortcomings in the area of project implementation. SOGEM was supported by an engineering consulting firm during construction. Nonetheless, project implementation still proved to be challenging. SOGEM's capacity issues were among the main contributing factors in the slow implementation of the project. A capacity building component focused on SOGEM could have strengthened the project's readiness for implementation.

Rating

Modest

4. Achievement of Objectives (Efficacy)

Objective 1



Objective

“Augment the supply of low cost hydroelectricity from the OMVS Power System to the national power utilities of Mali, Mauritania, and Senegal.”

Rationale

Outputs

- The design-build contract for the Felou plant was signed in May 2009.
- An engineering consulting firm was recruited in November 2009. The firm oversaw the day-to-day performance of the design-build contractor until the handing over of the Felou plant to the OMVS Power System Operator.
- The interconnection with the OMVS transmission system was completed in July 2013.
- The performance testing of the Felou hydroelectric plant was completed in April 2014.

Outcomes

- The Félou HEP has supplied about 320-350 GWh/year to the interconnected regional grid. The overall amount of hydroelectric energy generated by the OMVS Power System and supplied to Mali, Mauritania and Senegal is estimated at 1,121GWh. This is equivalent to over 98% of the key PDO indicator target of 1,142 GWh, which is, therefore, considered as achieved. The offtake of the national utilities was 562 GWh, 346 GWh and 213 GWh for EDM, SENELEC and SOMELEC, respectively. Also, the availability of the Felou plant has been very high at about 98%.
- The project contributes to a reduction in the region’s overall cost of electricity generation. At about US\$0.11/kWh, the Felou plant is one of the lowest-cost plants in the region, together with Manantali. The region’s average cost of generation is very high as a result of the power sector’s dependence on expensive oil-based thermal generation. In turn, this translates into high end-user tariffs in the US\$0.20-0.30/kWh range, which are, nevertheless, not sufficient to cover the overall generation cost.
- 63MW of hydroelectric generation capacity was added to the OMVS power system in April 2014, thus contributing to a reduction in the region’s capacity deficit through the expansion of renewable generation capacity, consistent with the sector strategies of the authorities and of the Bank.
- The Felou project reduces greenhouse gas emission through the supply of clean energy to the interconnected grid and its equivalent displacement of fossil-fuel based electricity generation. As a source of renewable energy, the Felou project generates carbon emission reductions. The Bank signed an Emission Reduction Purchase Agreement with SOGEM for the purchase of 701,665 Certified Emissions Reductions (CERs), to be generated from July 2013 to December 2018, under Tranche 2 of the Umbrella Carbon Facility.
- The project contributed to the development of a Clean Development Mechanism capacity within SOGEM and to raise awareness on carbon and climate finance, not only at the level of the company management level but also of the governing bodies of the OMVS.
- The project supports local community development with the electrification of ten villages along the transmission “right of way” of the OMVS Power System through connection to the grid. The program has been implemented for the villages of Médine, Lontou and Bengassi and is about to be expanded to the villages of Kaffa, Kounda, Fatola Mamoubougou, Lomba, Keniou and Boteguekourou. The proceeds from the sales of carbon credits are earmarked to finance the electrification of these villages. A special rural electrification account was created to hold the payment of carbon revenues.
- The Félou hydroelectric project was the first Clean Development Mechanism project registered in a regional operation and the first hydro plant to issue CERs in West Africa. The project is therefore expected to have a significant demonstration impact.

Based on these considerations, the efficacy of Objective 1 is rated “**Substantial**”.

Rating

Substantial

Objective 2

Objective

“Develop a nucleus of a well-functioning, cooperative, power pooling mechanism for Mali, Mauritania and Senegal.”



Rationale

Outputs

- It was agreed that about 45% of the energy generated at the Felou plant would be dispatched to Mali, 30% to Mauritania and 25% to Senegal, while allowing operational flexibility for the efficient management of the overall system, including of the Manantali hydroelectric plant.

Outcomes

- The project contributed to build capacity for the management of the overall OMVS power system.

However, the acquisition and installation of a SCADA system, which was envisaged under Component 3, was not implemented. Therefore, the efficacy of Objective 2 is rated “**Modest**”. The project team has noted that the acquisition of the SCADA system, which is expected to enhance the technical and economic management of the power pooling system, is to be supported by a new OMVS project currently under preparation.

Rating

Modest

5. Efficiency

With an estimated average incremental cost of US\$01.11/KWh, the Felou project is among the plants in the region with the lowest generation cost. Nevertheless, as discussed earlier, the overall construction cost of the Felou plant nearly doubled, despite an open international competitive bidding process, and there was about a four-year delay in the commissioning of the project. This had a very substantial impact on the revised estimated of the project’s ERR. As discussed in the ICR, the ERR declined to about 15%, about half of what was projected (30%) at appraisal.

Besides, the Felou’s ERR is very sensitive to a number of variables, including hydrology, inadequate O&M and the economic value of the electricity dispatched to the grid.

- As for the hydrology, the ICR assumes an average generation of 335GWh/year. Although the hydrology risk is not discussed at length in the ICR (nor in the PAD), it is noted, however, that a 20% reduction in generation (and sales) would lower the ERR to 10.8%.
- The economic benefit of Felou’s generation is based in the ICR on the assumed value of unserved energy in the region of US\$01.14/KWh. It should be noted, however, that run-of-river hydroelectric plants with no reservoir, such as the Felou plant, do not have operational flexibility to dispatch electricity at the time when this is more valuable, ie. at peak time. Therefore, run-of-river hydro plants’ generation during off-peak times carries in principle a lower economic value. There is no differentiation in the ICR (nor in the PAD) on the value of electricity generated by the Felou plant during peak/off-peak times. This can be, however, a significant factor affecting the economic viability of the project, since a 20% change in the economic value of electricity would have a very large impact on the ERR.

In sum, the project’s economic return is very sensitive to both hydrology and the economic value of electricity. An adverse scenario in regard to both variables would cause the ERR to decline to 10% or even lower.

Taking into account the delay in the project commissioning, the large construction cost increase (which both reflect operational and administrative inefficiencies, especially related to SOGEM's capacity) and the very substantial reduction in ICR’s revised estimate of the ERR, the project’s efficiency is rated “**Modest**”.

Efficiency Rating

Modest



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	✓	30.00	0 <input checked="" type="checkbox"/> Not Applicable
ICR Estimate	✓	15.00	0 <input checked="" type="checkbox"/> Not Applicable

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

6. Outcome

The key project development objective of increasing the supply of clean and low-cost electricity to the interconnected grids of Mali, Mauritania and Senegal was - and still is - highly relevant to the authorities' and the World Bank's strategy. There were, however, significant shortcomings in the project design, notably the lack of a capacity building component to support SOGEM, the implementing agency. Relevance of design is, therefore, rated modest. Efficacy of the first objective – to augment the supply of low cost hydroelectricity from the OMVS Power System to the three national power utilities – is rated substantial. The Felou plant has supplied about 320-350 GWh/year to the interconnected regional grid. At an average incremental cost of US\$01.11/KWh, it is among the lowest cost generation facilities in the region. Efficacy of the second objective – develop a nucleus of a well-functioning, cooperative, power pooling mechanism for Mali, Mauritania and Senegal – is rated modest. Efficiency is rated modest. SOGEM's capacity issues were among the main contributing factors leading to a four-year delay in the project commissioning.

The ex post ERR of 15% was half of the 30% estimated at appraisal. Overall, the shortcomings are significant and lead to an Outcome assessment of **"Moderately Unsatisfactory"**.

a. Outcome Rating
Moderately Unsatisfactory

7. Rationale for Risk to Development Outcome Rating

- Poor hydrology is a key risk to project's development outcome, as it directly impacts the Felou plant's ability to generate electricity. Run-of-river hydroelectric projects, like the Felou plant, cannot mitigate this risk.
- Poor operation and maintenance (O&M) is an additional risk to the project's outcome. A temporary O&M contract was signed with Sinohydro, the EPC constructor, and has been extended to April 2016. A subsidiary of SOGEM, SEMAF, which is already handling the O&M of Manantali, is to assume responsibility for the O&M of Felou from May 2016 onwards.
- Sector risk: There is a risk of irregularity in the payment by EDM, SENELEC and SOMELEC of their electricity purchases from the OMVS power system, including from Felou, as the three national utilities are financially constrained. A build-up of arrears can affect the financial viability of SOGEM and potentially jeopardize Felou's operations. An important risk mitigant is the strategic importance of the Felou project, as it is one of the lowest-generation cost plants in the region. As noted in the ICR (pages 16), the three utilities' payment performance appears to have improved after the commissioning of Felou. However, as of early June 2015, EDM still had arrears of about FCFA 3.3 billion, of which 1.43 billion in dispute with SOGEM. Based on these considerations, the overall Risk to Development Outcome is considered as **"Substantial"**.

a. Risk to Development Outcome Rating
Substantial



8. Assessment of Bank Performance

a. Quality-at-Entry

Appropriate decisions were made at the design and preparation stage, including the choice to focus on a few components and two objectives. However, there were some shortcomings in project preparation and design, as noted earlier. In particular, SOGEM's capacity issues were not adequately addressed, which led to substantial delays in project implementation. As also noted in the ICR, the project readiness for implementation could have been improved through early preparation of bidding documents and the implementation of capacity building measures. SOGEM's weak internal control environment and financial management systems were not identified at appraisal among the risks and not sufficiently addressed.

Besides, there were significant shortcomings in the M&E Design. The PAD mentions only one project development objective. The second project development objective was added at the time of the Project Agreement and there was no indicator for the second objective in the original M&E design. The only PDO level performance indicator for the second objective was added about three years after the Project Agreement at the time of the additional financing in August 2009. Also, the link between the second objective and its PDO indicator was rather tenuous, as also noted in the ICR (page 24).

The project cost was substantially underestimated, although, as noted in the ICR (page 14), the large cost increase was due in part to exogenous factors, such as adverse changes in the EUR/US\$ exchange rate (as the contract was denominated in euros).

Some key project risks were not identified at appraisal. These include: i) hydrology, which is typically a key risk for run-of-river hydroelectric plants; and ii) sector risks concerning the financial viability of the three participating utilities, which can in turn lead to irregularity in the payment of their purchases from the OMVS power system, including Felou.

Based on these considerations, Quality at Entry is rated "**Moderately Unsatisfactory**".

Quality-at-Entry Rating
Moderately Unsatisfactory

b. Quality of supervision

The ICR notes (page 34) that the quality of supervision reporting was rather poor in the earlier years (this included, for instance, limited information in the ISRs and lack of attached back-to-office reports), but it improved significantly over time. The above noted weaknesses in SOGEM's capacity, including its weak internal control environment and financial management systems, were repeatedly criticized by Bank supervision reviews, and advice was provided in these and in other areas. The Bank worked closely with SOGEM's staff and provided specific recommendations in a number of areas, including financial management, procurement and environmental and social management, which contributed to the progress in the implementation of the project. The Bank also provided guidance and oversight in the preparation of SOGEM's operational manual, which was completed in July 2010.

Based on these considerations, quality at supervision is rated "**Moderately Satisfactory**".

Quality of Supervision Rating
Moderately Satisfactory

Overall Bank Performance Rating
Moderately Unsatisfactory

9. Assessment of Borrower Performance

a. Government Performance

The Governments of Mali, Mauritania and Senegal, while not directly involved in the implementation of the project, played a key role in the definition of the implementation arrangements and in the tariff adjustment process. The commitment of the authorities to the project was strong at the time of project preparation and appraisal, as the Felou plant was – and still is today – grounded in the need of the region to diversify away from fossil-fuel based generation and expand sources of low-cost energy to improve access and sustain growth. Also, the governments remained mostly supportive during implementation, although there were weaknesses in the key area of the tariff adjustment process. In July 2008, in order to simplify the process of implementation, which was shared earlier between OMVS for Component 2 and SOGEM for Components 1 and 3, the authorities designated SOGEM as the sole implementing agency.

The payment performance of the three participating utilities appears to have improved, as shown by the decision of the authorities to push



for the settlement of their respective national utilities' arrears to SOGEM and accept, although with delay, a tariff increase. This is an indication of the authorities' commitment to the project. Nevertheless, as of early June 2015, EDM still had arrears of about FCFA 3.3 billion, of which 1.43 billion are in dispute with SOGEM.

Based on these considerations, the Governments' performance is rated as **"Moderately Satisfactory"**.

Government Performance Rating
Moderately Satisfactory

b. Implementing Agency Performance

SOGEM performed slowly, in particular during the early phase of project implementation, which resulted in about a four-year delay in project completion. SOGEM's capacity and staffing constraints remained an issue over the life of the project. The Bank provided advice in various areas - including procurement, financial management, the submission of audit reports and reporting on environmental and social safeguards. However, as noted in the ICR (page 35), notwithstanding the delays and capacity constraints, SOGEM showed strong commitment to the project and dedication in addressing various implementation challenges.

Based on these considerations, the implementing agency performance is rated **"Moderately Unsatisfactory"**.

Implementing Agency Performance Rating
Moderately Unsatisfactory

Overall Borrower Performance Rating
Moderately Unsatisfactory

10. M&E Design, Implementation, & Utilization

a. M&E Design

The key PDO level performance indicator for the first objective – “measuring the amount of low cost hydroelectric energy supplied by the OMVS power system to EDM, SENELEC and SOMELEC” - was included in the original results framework. The original project documentation only had one PDO indicator. The performance indicators are mainly keyed to Components 1 and 2 of the project, which accounted for over 90% of the project cost. At the time of the additional financing, seven intermediate indicators were added and one was dropped. The majority of indicators focused on aspects of physical implementation, including the selection of the design-build contractor and the engineering firm as well as on the performance testing and the availability of power generation units. An intermediate indicator on the amount of generation capacity installed was added with ISR 7. Other indicators concerned the monitoring of power sector information and the implementation of a regional sector database. Indicators had quantitative baseline, as appropriate, and targets. Also, there was no indicator for the second objective in the original M&E design.

b. M&E Implementation

The key PDO level performance indicator for the second objective - of “putting operating rules in place on the basis of sound economic dispatch criteria” - was added about three years after the Project Agreement (that established the second objective of developing the foundations of a power pooling mechanism for the region) at the time of the additional financing in August 2009. Also, the link between the second objective and its PDO indicator was rather tenuous, as also noted in the ICR (page 24).

SOGEM monitored progress in the achievement of the indicators and collected the performance data required by the M&E plan. The information collected was shared with the Bank in progress reports.

c. M&E Utilization

The information provided by the M&E system has informed decision-making. For instance, the monitoring of power sector information has supported the three national utilities in: i) their decisions about the dispatch of emergency thermal facilities in order to meet demand; and ii)



power generation planning.

M&E Quality Rating
Substantial

11. Other Issues

a. Safeguards

The project was classified as Category A. Four safeguards policies were triggered: Environment Assessment (OP/BP 4.01); Involuntary Resettlement (OP/BP 4.12); Dam Safety (OP/BP 4.37) and Projects on International Waterways (OP/BP 7.40). The ICR (para. 51) reports that compliance with environmental safeguards was either rated satisfactory or moderately satisfactory over the life of the project. The occasional lack of reporting by SOGEM, including on the status of implementation of the RAPs, is also noted in the ICR. However, the ICR states that all planned safeguard mitigation measures under the responsibility of Sinohydro and OMVS have been satisfactorily implemented, including the construction of the feeder road and water supply facilities and the allocation of funding for a new health center. An improved water waste management system was also built.

As noted in the ICR (para. 52), the environmental audit of the Felou HEP shows that: (i) the parties affected by the project have been equitably compensated and all complaints resolved; (ii) the measures included in the RAP have been for the most part implemented; (iii) the mechanisms of dispute resolution have worked well; and (iv) there has been an improvement in the social conditions, including through the provision of potable water supply facilities. However, the environmental audit recommends a number of minor corrective measures, which are part of the Environmental and Social Management Plan, to be addressed by SOGEM and/or Sinohydro, while Felou is still under the operating warranty. These include measures such as the reforestation of the site and the follow up on the maintenance of the trash management system. The ICR reports (page 61) that a Resettlement Action Plan was prepared to determine the adequate compensation resulting from land acquisition.

b. Fiduciary Compliance

Financial Management: Capacity and staffing constraints in SOGEM's finance department remained an issue over the life of the project. SOGEM's weak internal control environment and financial management system were repeatedly criticized by external auditors and Bank supervision reviews. The ICR does not provide clear details on the timeliness of project external audits, the nature of the qualifications or the measures that were taken to address them. The project team informed IEG that, before 2012, audit reports submission was delayed, mainly due to issues faced by SOGEM in finalizing the financial statements for SOGEM and the project jointly. From 2012 onwards, at the request of the Bank, the external auditors provided separate opinions for SOGEM and the project. Unqualified opinions have since been issued on the project's financial statements. The project team stated that there has been a gradual improvement in the quality of SOGEM's financial statements, as the auditors' opinions evolved from being qualified with substantial shortcomings (irregularities in the financial statements) to unqualified in 2013 and 2014. The issues identified by external auditors were addressed through an action plan, the implementation status of which was reviewed by the Bank during supervision missions. Taking into account the implementation of the action plan, the FM rating in the ISRs was upgraded in supervision reports from unsatisfactory to moderately satisfactory.

Procurement: The ICR notes that the project was implemented in accordance with Bank's Procurement and Consultant Guidelines.

However, the ISRs noted weaknesses in SOGEM's capacity, as noted earlier, and recommended training and recruitment of procurement specialists. A rebidding process for the Design-Build contract was conducted in order to comply with the Bank's procurement eligibility requirements. Importantly, allegations of fraudulent and corrupt practices by a firm involved in the implementation of the project has resulted in an internal investigation by the Bank.

c. Unintended impacts (Positive or Negative)



d. Other

12. Ratings

Ratings	ICR	IEG	Reason for Disagreements/Comment
Outcome	Moderately Satisfactory	Moderately Unsatisfactory	With the efficacy of one out of two objectives rated modest, relevance of design modest, and efficiency modest, a moderately unsatisfactory outcome rating is indicated.
Risk to Development Outcome	Modest	Substantial	Given the hydrology (which run-of-river hydroelectric plants, like the Felou project, cannot mitigate) and sector risks (notably of irregularity in the payment by EDM, SENELEC and SOMELEC), a Substantial rating is considered more appropriate.
Bank Performance	Moderately Satisfactory	Moderately Unsatisfactory	Quality-at-Entry and Quality of Supervision are rated moderately unsatisfactory and moderately satisfactory respectively. In accordance with the Harmonization Criteria, the overall Bank performance rating in these circumstances is guided by the Outcome rating.
Borrower Performance	Moderately Satisfactory	Moderately Unsatisfactory	Government and Implementing Agency Performance are rated moderately satisfactory and moderately unsatisfactory respectively. In accordance with the Harmonization Criteria, the overall Borrower performance rating in these circumstances is guided by the Outcome rating.
Quality of ICR		Substantial	---

Note

When insufficient information is provided by the Bank for IEG to arrive at a clear rating, IEG will downgrade the relevant ratings as warranted beginning July 1, 2006.

The "Reason for Disagreement/Comments" column could cross-reference other sections of the ICR Review, as appropriate.

13. Lessons

The ICR provides useful lessons that are well grounded in the project's implementation experience. These are paraphrased below:

Careful consideration of any limitations in the capacity of the implementing agency and the inclusion in design of mitigating measures would help to avoid delays and other operational inefficiencies. SOGEM was supported by an engineering consulting firm during construction. Nevertheless, implementation was challenging and there was about a four-year delay in the completion of the project. SOGEM's capacity issues were among the main contributing factors leading to the slow implementation of the project. A capacity building component focused on SOGEM could have strengthened the project's readiness for implementation.



Early preparation of bidding documents, especially of key components of large projects, would help to avoid delays. It took a long time to award the design-build contractor of the Felou project under a two-stage bidding process. Bidding documents should be ready before Board approval, especially when large projects are involved.

Careful consideration of arrangements to address the potential build-up of accounts receivable could help to avoid operational inefficiencies. There is a risk of irregularity in the payment by the three national utilities, as they are financially constrained. Arrangements that may help to prevent the build-up of accounts receivable may include mechanisms that give the system operator ability to cut supply in case of arrears and/or provide some leeway in tariff adjustments.

Shortcomings in operation or maintenance of hydroelectric projects can have very severe impacts, including in terms of safety issues, loss in generation or heavy rehabilitation costs. Typically, the project company takes the responsibility of performing O&M activities. The track record of hydroelectric projects where the O&M responsibility has been taken by a company other than the project company, as also shown by the experience with the Manantali project, points to the importance of putting in place arrangements that ensure the plant's ability to generate electricity consistent with expectations at appraisal.

For covenants to be meaningful, it is important that the implementing agency has the autonomy necessary to comply with them. SOGEM was required to maintain a level of accounts receivable of less than 90 days and to have net revenues to be at least 1.2 times the estimated maximum debt service requirements. However, SOGEM did not have the operational and financial independence necessary to comply with these requests.

14. Assessment Recommended?

Yes

Please explain

An assessment could draw useful lessons concerning the preparation and implementation of regional power projects with complex institutional arrangements. Also, this is the first Clean Development Mechanism project registered in a regional operation and the first hydroelectric plant to issue Certified Emissions Reductions in West Africa. The assessment would also provide the opportunity to verify the ratings.

15. Comments on Quality of ICR

The discussion in the ICR could have been clearer and more detailed in a number of areas, including the M&E section, the safeguard, procurement and fiduciary compliance and the drafting of lessons. Also, the ICR departed from the guidelines in arriving at its overall assessment of outcome achievements by striking an average between the first and second objectives.

Nevertheless, taking account of the complexity of the project and sector issues, compounded by the regional dimension of the investment, the ICR provides an overall good presentation of the performance of the project and of the difficulties involved in its implementation. The discussion in the ICR of SOGEM's capacity issues is clear and candid.

- a. Quality of ICR Rating
Substantial