



1. Project Data

Project ID P162245	Project Name Water and Electricity Upgrading Project	
Country Central African Republic	Practice Area(Lead) Water	
L/C/TF Number(s) IDA-D2690	Closing Date (Original) 30-Jun-2022	Total Project Cost (USD) 17,386,927.83
Bank Approval Date 17-Jan-2018	Closing Date (Actual) 30-Jun-2023	
	IBRD/IDA (USD)	Grants (USD)
Original Commitment	20,000,000.00	0.00
Revised Commitment	20,000,000.00	0.00
Actual	17,386,928.28	0.00

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2. Project Objectives and Components

a. Objectives

According to the Loan Agreement (Schedule 1), the Project Development Objective (PDO) was to enhance SODECA's and ENERCA's operational performance and increase access to improved water supply and electricity in Bangui and selected towns. The PDO as formulated in the Project Appraisal Document (PAD, p. 14) is identical to the Loan Agreement. The PAD identified the Project Area to include Bangui, Bambari and Berberati. (PAD, p. 14)



The PDO did not change during the life of the project, and this review has assessed the PDO achievement in terms of the following four objectives:

- I. Enhance SODECA's operational performance.
- II. Enhance ENERCA's operational performance.
- III. Increase access to improved water supply in Bangui and selected towns.
- IV. Increase access to improved electricity in Bangui and selected towns.

The PDO outcome targets for access to water supply were reduced in scope during the only restructuring of the project; therefore, the ICR (p. 12) and ICR Review opted to conduct a split evaluation.

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

Yes

Did the Board approve the revised objectives/key associated outcome targets?

No

c. Will a split evaluation be undertaken?

Yes

d. Components

Component 1: Water Supply Infrastructure. (US\$6.7 million at appraisal, and US\$5.7 million actual). This component financed:

- civil works in *Bangui* to secure the water intake station including the installation of a new backup generator, replacement of electro-mechanical equipment at the water treatment plant and pumping stations, the installation of a remote control and monitoring system and new bulk meters, and the extension of the water distribution network to facilitate up to 3,000 new household connections and 15 new public standposts. The June 2022 restructuring dropped the installation of the remote control and monitoring system and the 15 new public standposts and reduced the number of household connections from 3,000 to 2,000 (Amended legal agreement, p. 1). There is a discrepancy between the ICR (p. 9) and the amended legal agreement (p. 1), where the revised legal agreement retains the bulk meters and the ICR indicates that they were dropped.
- the rehabilitation of civil works in *Bambari* that included the intake and water treatment plant, reservoir, and the transmission and distribution lines to facilitate up to 300 new household connections and 60 new and restored public standposts. The June 2022 restructuring dropped these activities and replaced them with the installation of pumps in *Bangui* for the intake station and pumping stations (Amended legal agreement, p. 1).
- the rehabilitation of civil works in *Berberati* including boreholes, an associated power source, disinfection equipment, and the drilling and equipment of three new boreholes and the extension of the distribution network to facilitate up to 300 new household connections and 40 new and restored public stand posts.



- Feasibility studies and supervision activities for all three sites; and inputs for SODECA to ensure the continuation of the operation of water facilities.

Component 2: Energy Infrastructure. (US\$8.4 million at appraisal, and US\$7.2 million actual). This component financed:

- the installation of backup equipment, refurbishing existing turbine alternators at the Boali 1 hydropower plant; the purchase and installation of 500 smart meters and 6,000 prepaid meters; a communication campaign; and targeted investments in the distribution system in *Bangui*.
- the construction of a new hybrid solar-diesel power station; the rehabilitation of the existing distribution network and the construction of a new distribution network with up to 600 connections in *Bambari*.
- the conversion of existing diesel generators into hybrid solar diesel power stations; rehabilitation of the existing distribution networks, and construction of a new distribution network and new connections including a dedicated distribution line to SODECA's boreholes in *Berberati*.

Component 3: Technical Support to Water and Energy Sectors (US\$4.9 million at appraisal, and US\$3.4 million actual). This component financed:

- technical assistance to SODECA aimed at improving their operational performance, including feasibility studies for four selected towns, a financial audit of SODECA, and vehicles and mopeds for the Project.
- technical assistance to ENERCA aimed at improving their operational performance, Dam Safety Study, and the financial audit of ENERCA.
- an energy sector strategy, a least cost development plan and tariff study, a rural electrification and investment strategy, drafting of the electricity law's application decrees, and a study on a proposed regional project to bring power generated in Mobayi (Democratic Republic of Congo) to Bambari and Bangassou.
- Project Implementation Unit (PIU) costs such as studies, PIU salaries, operational costs, and the financial audit of the Project.

Component 4: Contingent Emergency Response (US\$0 million at appraisal, and US\$0 million actual). This component intended to finance:

- a disaster response contingency funding mechanism that could be triggered in the event of an Eligible Crisis or emergency.

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



Project Cost: The total project cost was estimated at US\$20 million but the actual total cost was US \$16.27 million.

Financing: At appraisal, the IDA financing was estimated at US\$20 million. The amount used was US\$17.39 million, which was 87 percent of the loan. The ICR (p. 46) indicated that the difference in total costs and financing is because the ICR team converted the component costs into US\$ using the exchange rate on the project's closing date, while the disbursement data under the "Financing" section in the "Data Sheet" had been calculated using the exchange rate at the time of each disbursement.

The project refunded the undisbursed amount to the national IDA envelope of the Central African Republic.

Borrower Contribution: At appraisal, no borrower's contribution was estimated, and none materialized at project closing.

Dates: The Project became effective on May 24, 2018, and was completed by June 30, 2023, following one extension that added 12 months to the project period. A Mid Term Review (MTR) was conducted from November 2-12, 2021. There was one restructuring of the project that include the following:

- On June 22, 2022, a level 2 restructuring modified Component 1 by dropping activities to address emergency water shortages in Bangui and Berberati. The restructuring established a new PIU in the Ministry of Development of Energy and Water Resources to manage the project, reallocated budget across components, revised the results framework and reduced PDO 3 targets, and extended the project closing date from June 30, 2022, to June 30, 2023. At the time of restructuring, US\$10.54 million was disbursed (60.6 percent) of the US\$17.39 million.

3. Relevance of Objectives

Rationale

The Central African Republic (CAR) has a long history of violence related to natural resource disputes and inter-ethnic tensions and is considered a Fragile, Violence and Conflict (FCV) country context. At design and appraisal, the PDOs were highly relevant to the 2016 IDA Turnaround Eligibility Note (TEN) that was supporting the Recovery and Peace Building Assessment (2017-2021). Recovery efforts from the conflict included the restoration of basic services.

The PDOs remained relevant to the World Bank's Country Partnership Framework (CPF 2021-2025) for the CAR. The project sought to address the development problem of access to basic water and electricity services, which underpin human development in the country and strengthen the state-citizen compact for basic services. The CPF highlights that improved infrastructure will support service delivery in social sectors, facilitate income generating activities and expand state presence by facilitating access between the capital and the regions (CPF, p. 28). Inadequate electricity has important human capital and social implications, as it hobbles the functionality of hospitals, schools, and social service provision. Lack of access to basic water has a direct impact on treatment costs related to infectious disease, time from missed work and time spent fetching water, and lower school attendance (PAD, p.19).



This development problem fits under Focus Area 1 of the CPF - Human Capital and Connectivity to Boost Stabilization, Inclusion, and Resilience and directly contributes to the achievement of “Objective 1.5: Build resilient infrastructure (power, mobility, water) for improved connectivity”, and the CPF’s indicators on people with access to improved water and electricity services (CPF, p.29, 55).

The Project is aligned with CAR’s National Water Policy (Politique Nationale de l’Eau) 2021-2030, which has four strategic orientations, the first being to guarantee access to water and sanitation for all by 2030. The Project is also consistent with CAR’s objective of providing access to clean and affordable electricity services to 50 percent of its population by 2030, as established in its 2010 National Energy Policy Document (Document Politique Energétique Nationale) (ICR, p.12).

The Project builds on a previous World Bank engagement in the water and electricity sector under the CAR Emergency Urban Infrastructure Rehabilitation and Maintenance Project (P104595) and the Emergency Power Response Project (P114111) that were implemented since 2009 (PAD, p.18).

The development problem of providing access to water and electricity as articulated by the CPF and the government’s national water and energy policies is directly aligned with the PDO of the project. The operational performance of the water and electricity service providers underpins the sustainability of these services and is therefore appropriate to be included in the PDO.

Rating

High

4. Achievement of Objectives (Efficacy)

OBJECTIVE 1

Objective

Enhance SODECA’s operational performance.

Rationale

The theory of change (ToC) in the Implementation Completion Report (ICR, p.7) identified NRW reduction as the outcome indicator to measure operational performance. The inputs identified to reach the outcome target included:(i) construction of water connections, (ii) rehabilitation of storage tanks and transmission and distribution lines, and (iii) technical assistance. The technical assistance inputs were not explicit in the ICR’s ToC but were included in the PAD. These inputs included: (a.) new equipment such as leak detection, geographic information systems (GIS), new commercial and billing system, (b.) training, (c.) client enumeration to verify existing accounts, and (e.) strategic business plan (2018-2022). As a result of these inputs, expected outputs would have been # of household water connections constructed, # of storage tanks and kilometer of pipeline rehabilitated. Regarding technical assistance, output or intermediate outcomes expected would have been # of leaks detected and resolved, updated user cadaster, improved billing efficiency. The PDO outcome would be reductions in NRW.



A shortcoming of the ToC in the ICR is that it included a limited set of inputs and confused outcome indicators, such as NRW, with output indicators. In addition, there were no identified intermediate outcome indicators such as improved billing efficiency that would have embodied the inputs of improved user cadaster along with new billing software and training, which could lead to reduced commercial losses supporting reductions in NRW. Other inputs that were included in the technical assistance to support SODECA's operational efficiency, but not directly impacting NRW, included the preparation of a financial model, human resource plan, and independent financial audits.

The ToC made some critical assumptions related to this objective: (i) peace and stability would be maintained, (ii) SODECA leadership are committed, and (iii) SODECA can cover required expenses through tariffs and subsidies. These assumptions did not hold true as there was a resurgence in violence leading up to the presidential elections, starting in 2019, and up to December 2020 and after, bringing project activities to a halt (ICR, p. 23), SODECA's leadership was not engaged in project missions and activities (ICR, p.25), and the Project reallocated resources to SODECA to cover operational materials because of rising costs due to supply chain issues as a result of COVID-19 and the conflict.

The ICRR identified inconsistencies in the information presented in the ICR, which included three topics: (i) definition of NRW used at appraisal and ICR, (ii) calculations of NRW at ICR, and (iii) the contributing activities to measure and reduce NRW.

Definition of NRW and baselines: The definition of NRW used at appraisal does not adhere to international good practice. NRW is a measure of the volume of water that is produced and distributed, but that is not billed, and it is not a metric intended to measure cashflow. The modified definition at appraisal includes the "*volume of water that is billed but unpaid*" (PAD, p. 41), which was the basis for the reported baseline of 72 percent NRW (PAD, p. 69). This modified definition incorporates other efficiency metrics related to collections and confuses the intention of the NRW metric. Neither the June 2022 restructuring nor the ICR identified this issue. The PAD (p. 69) also provided information on volumes of water produced and volumes of water billed as of 2016 allowing for an estimation of NRW according to international good practice, which was 61 percent. Supporting data to validate the percent of NRW at ICR using the PAD definition was not available; however, data provided by the Task Team was available to substantiate the definition of NRW without the PAD modification. Any further discussion in the ICRR on NRW reductions will rely on the NRW international standard definition and reference the PAD definition as needed.

Calculations of NRW at ICR: There was no supporting data such as production and billing volumes of water in the ICR to substantiate the reported reduction in NRW from 72 percent at appraisal to 50 percent at closing. It should be noted that the end target for NRW was 62 percent (a reduction of 10 percentage points). The reduction to 50 percent was first reported in the Implementation Supervision Report (ISR) #8 (January 2022) with a specific date of November 2021, and this figure was maintained throughout the life of the project.

The Task Team provided IEG additional data on volumes of water produced, and volumes of water billed for the year 2022 to substantiate the numbers reported in the ICR. However, there were inconsistencies between the NRW figures reported in the ICR and the data provided by the Task Team from the client (correspondence Feb 15th, 2024). Using the best available information from the PAD (p. 74) for the year 2016 and data provided by the client for 2022, the Task Team and ICRR author agreed that a baseline of NRW using the international definition was 61 percent (not 72 percent). The data provided by the client for 2022 generated a NRW rate of 48.3 percent (a reduction of 12.7 percentage points from baseline). The first quarter of 2023, prior to the project closing, showed a NRW rate of 52.3 percent (a reduction of 8.7 percentage



points from baseline). These two data points suggest that the reduction in NRW at ICR ranged between 8.7-12.7 percentage points, and this is in line with the original target using the PAD definition of NRW.

Contributing activities to measure and reduce NRW: The ToC described above articulates a series of interventions intended to reduce NRW that would focus on physical losses through the construction of social connections and public standposts as well as the rehabilitation of civil works (water treatment facilities and replace/repair of transmission lines). Commercial losses would be reduced through improved cadaster management and the installation of a new billing and collection system.

The ICR (p. 13) reported that the reductions in NRW were principally achieved through improvements in production systems, household metering, and rehabilitation and extension of networks. Upgrading of works such as production systems (i.e. wells) would exacerbate NRW without improvements in billing because it would push more water into the system. The production levels at the end of 2022 were lower than production levels in 2016 (PAD, p. 74), despite the project aiming to increase production (correspondence with Task Team Feb 27th, 2024). See further explanation below in Objective 3. In 2022, the total volume of water produced by SODECA was estimated at 11,517,500 m³ (correspondence with Task Team Feb 27th, 2024) as compared to 2016, which was 12,978,000 m³ (PAD, p. 69). Meanwhile, in 2022 the estimated volume of water billed was 5,545,995 m³ (correspondence with Task Team Feb 27th, 2024) compared to 2016 when it was 5,017,000 m³ (PAD, p. 69). Therefore, with reductions in volumes of water produced and increases in volumes of water billed, a reduction in NRW, using the international standard - not the PAD definition, is justifiable; 61 percent in 2016 vs 52.3 percent in the first quarter of 2023.

OUTPUTS:

The output level indicator for this objective in the results framework was limited to:

- Independent Audit & Financial Statements for 2017, 2018, 2019, and 2022 available, **exceeding** the target of having at least one audited financial statement. (PAD, p. 42) (ICR, p. 37)

The ICR reported the following additional outputs that did not have targets and were not included in the results framework:

- Installation of GIS software with related training conducted. This was achieved, but at the end of project and did not influence NRW indicator. (ICR, p. 38)
- Procurement of leak detection equipment with related training conducted. This was achieved but was not operational at project close. (ICR, p. 38)
- Installation of commercial and billing software and related training conducted. This was achieved but at the end of the project and did not influence NRW indicator. (ICR, p. 38)
- Rehabilitation of networks. There was no indicator provided in the results framework nor ICR to quantify length of networks rehabilitated. (ICR, p. 13)
- Rehabilitation of reservoirs. There was no indicator provided in the results framework nor ICR to quantify the number of reservoirs rehabilitated. (ICR, p.13)
- Installation of household meters. There was no indicator provided in the results framework nor ICR to quantify the number of meters installed. (ICR, p. 13)

OUTCOMES:



- **Reduction in Non-Revenue Water:** The ICR reported a 22-percentage point reduction. The supporting evidence was not consistent and subsequent information provided by the client and the team justified a reduction from 61 percent (baseline) to 48.3-52.3 percent NRW using the standard international definition of NRW. This is an 8.7-12.7-percentage point reduction out of a target of 10 percentage points (baseline 62 percent NRW). (correspondence with Task Team February 27, 2024). **(achieved).**

The Project resulted in achieving the original outcome target, resulting in a **Substantial** efficacy rating.

The ToC in the ICR had several shortcomings to logically capture the expected change in NRW as previously mentioned. These shortcomings included a lack of indicators to capture outputs or intermediate outcomes that would have helped support the ToC. A reduced set of indicators in the results framework could be a reflection that the project contains two sectors and there was decision at design and during implementation to maintain simplicity in monitoring given the FCV context and capacity constraints of the counterparts. Likewise, the emphasis on physical losses and a lack of emphasis on reducing commercial losses in the ToC may have reflected the realism of the Bank Task Team that the organizational behavior changes within SODECA to improve billing may have been limited given the FCV context. In either case, one or two output or intermediate outcome indicators supporting NRW would have benefited the ToC. Nevertheless, the information provided by the Task Team, despite its weaknesses, substantiates the reduction in NRW, and indicates that SODECA's operational performance was enhanced. Moreover, there were no other investments made by other organizations to support SODECA with NRW reduction. (ICR, p.13)

Rating

Substantial

OBJECTIVE 1 REVISION 1

Revised Objective

No change.

Revised Rationale

As outlined above.

Revised Rating

Substantial

OBJECTIVE 2

Objective

Enhance ENERCA's operational performance.

Rationale

The ToC for this objective suggested that improvements in operational performance of ENERCA would largely be accomplished through the procurement of the following inputs: (i) pre-paid and smart meters, (ii)



technical assistance, (iii) consultancy to develop an energy sector strategy, (iv) consultancies for feasibility studies to expand access, (v) consultancy for tariff study, and (vi) consultancy for financial audits. The principal resulting outputs directly impacting PDO outcome would include (i) pre-paid and smart meters installed, and (ii) sector strategy developed. The other outputs such as (iii) feasibility and tariff study completed, and (iv) financial audits conducted would help ENERCA's overall operational performance, but do not directly impact the PDO outcome indicator.

Similar to objective 1, the ToC in the ICR for this objective missed the opportunity to capture intermediate outcome indicators to support the PDO indicator and reflect the logic of moving from outputs to outcomes. The PDO outcome would be that the bill collection ratio improved.

The ICR also mentions that the installation of hybrid solar-diesel power stations would reduce operating costs for ENERCA, which was not part of the ToC for this objective. These hybrid power stations are captured under Objective 4, but they also have a direct positive impact on ENERCA's operational costs.

The ToC made some critical assumptions related to this objective: (i) peace and stability would be maintained, (ii) ENERCA's leadership is committed, (iii) ENERCA can cover required expenses through tariffs and subsidies, and (iv) long-term sector strategy is established and maintained. Some of these assumptions did not hold true, such as the resurgence in violence bringing project activities to a halt (ICR, p. 23), and ENERCA not yet being able to cover operational expenses (ICR, p. 19). The assumption that the ENERCA leadership would be engaged did hold true and was a large part of the success for making progress on the electricity component despite the challenges with COVID-19 and the resurgence in violence (Interview with Task Team).

OUTPUTS:

The output level indicators for this objective in the results framework were limited to:

- 5,500 Prepaid and smart electricity meters installed, **exceeding** the original target of 5,200 meters. (ICR, p.36)
- Independent Audit & Financial Statements for 2017, 2018, 2019, and 2020, **exceeding** the original target of having at least one audited financial statement. (PAD, p. 42) (ICR, p. 37)
- Least-cost development plan and tariff study (2020-2024) was prepared and **achieved**. (ICR, p. 37-38)

The ICR (p. 40) reported the following additional outputs that were achieved but not included in the results framework:

- Energy sector strategy prepared and related application decrees of electricity laws issued.
- Rural electrification and investment strategy prepared.

OUTCOMES:

Increase in the energy bill collection ratio from 60 percent in 2016 to 63 percent in 2023. (Original target was 70 percent). The ICR (p. 34) reported an increase to 76 percent without any supporting documentation, and the subsequent information on billing and collection rates for 2021 and 2022 shared by the client substantiated an increase to only 63 percent. The ICRR uses the best available information which is the 63



percent bill collection ratio from the ENERCA Project Activity Report 2022. (**not achieved**). The total amount of electricity billed in megawatt hours (MWH) almost doubled between 2016 and 2022 from 73,797 MWH (PAD, p. 76) to 129,048 MWH (ENERCA Activity Report 2022), and the amounts billed in terms of francs (CFA) went up from 7.40 billion to 12.72 billion CFA. However, collections rose at slower pace from 4.44 billion CFA in 2016 to 7.92 billion CFA in 2022 representing a bill collection ratio of 63 percent in 2022. The ENERCA activity report indicates that one reason for the slow growth in collections is due to a lack of payment from other government entities and a reduction in budget support in the last few years leading up to 2022 (ENERCA Project Activity Report 2022). Unpaid debt from other government entities makes up 19 percent of total unpaid debt. While household collections increased due to prepaid meters, ENERCA continues to struggle with payment from its larger consumers such as government agencies.

The **Project achieved or exceeded all the output targets** but did not achieve the outcome target. Despite the lack of evidence at the outcome level, it is plausible that improved collections did occur among specific customers such as residential and commercial sectors due to prepaid and smart meters. As a result, this objective has an overall **Modest** efficacy rating. The 2022 Annual Activity Report was used as the basis to validate the outcome results.

The ToC in the ICR had shortcomings in logically capturing the expected change in bill-collection ratio. One important shortcoming was a missing assumption around payments from other government entities to ENERCA. Failure by other government entities to pay for electricity services, due to decreased budget support, appears to be one principal factor that offset the gains in collections made by ENERCA with the installation of prepaid meters. Given the macro fiscal volatility of the country context, it may have been more realistic to specify the outcome target as a subset of electricity users (e.g. residential and commercial) to accurately capture the impact of the project interventions and eliminate the risk of non-payment posed by government entities. ENERCA's operational performance was modestly enhanced.

Rating

Modest

OBJECTIVE 2 REVISION 1

Revised Objective

No change.

Revised Rationale

As outlined above.

Revised Rating

Modest

OBJECTIVE 3

Objective

Increase access to improved water supply in Bangui and selected towns.



Rationale

The ToC in the ICR (p.7) for this objective included inputs such as the procurement of goods and services to: (i) upgrade pumping stations, (ii) rehabilitate networks and reservoirs, (iii) conduct water quality tests at rehabilitated reservoirs, and (iv) expand networks and install community water points. The principal resulting outputs would include: (i) pumping stations upgraded, (ii) networks and reservoirs rehabilitated or expanded, (iii) community water points installed, and (iv) water quality tests conducted. The ToC included increased water production (volumes of water) as an outcome indicator, but this would be a prerequisite (i.e. intermediate outcome) to the PDO outcome of people provided with access to improved water sources (outcome indicator).

The ToC was explicit that the rehabilitation of the water treatment facilities for Bangui was intended to improve the quality of water supply, but this activity was eliminated with the restructuring. The ToC was not explicit on how Component 3 technical assistance activities would contribute to improved services, and therefore assumed that infrastructure alone would improve the delivery of services, which was a shortcoming of the ToC for Objective 3.

The Project adjusted component activities to address the critical needs of the population prior to the June 22, 2022, restructuring. In February 2019, Bangui experienced emergency water shortages due to pump failures. Several pumps required replacement, which the project financed, and as a result restored services to 199,703 people (ICR, p. 17). In addition, network rehabilitation in Berberati, that was originally not planned, was required to connect the rehabilitated water points. Also, during the COVID-19 operational expenses for oil and chemical reagents that were needed to maintain service provision (ICR, p.14). As result, the rehabilitation of the water treatment plant in Bambari was cancelled.

The Task Team and client adjusted activities to help restore services to a significant population, but as the ICR (p. 29) noted, the restructuring did not incorporate an indicator in the results framework for “access to restored water supply services”. As a result, this population was not considered in the benefits for the economic analysis. The restructuring was a missed opportunity to fully account for these positive outcomes because the costs for these interventions were captured in the economic analysis while the benefits were not.

The same critical assumptions made in the ToC for Objective 1 apply to Objective 3 except for two additional assumptions: (i) that the existing water production equipment remained functional and (ii) the complementary sector activities such as the distribution main in Bambari financed by Arab Bank for Economic Development in Africa (BADEA) are completed on time (ICR, p. 7). Neither assumption held true, and the project had to restructure to address the pump failures and do light rehabilitation of a distribution main that was to be replaced with BADEA financing.

OUTPUTS:

The output level indicators for this objective in the results framework were limited to:

- 2,625 new piped household water connections were constructed out of the original target of 3,600. This target was **not achieved**. (ICR, p.34)
- 47 improved community water points constructed or rehabilitated out of the original target of 115. This target was **not achieved**. (ICR, p. 39)



The ICR reported (p.40) the following additional outputs that did not have targets and were not included in the results framework:

- 9 pumps installed in Bangui pumping stations.
- Back-up power generators and electrical cabinets were installed in Bangui, Bambari, and Berberati. ()
- Reservoirs in Bambari and Berberati rehabilitated.
- Distribution network in Berberati extended.
- Existing distribution network in Bambari rehabilitated.
- Pumping and treatment stations in Bambari rehabilitated.

OUTCOMES:

- 22,525 people were provided with new access to an improved water supply out of the original target of 40,000. This target was **not achieved**.
- 1,945 m³/hour water production capacity constructed or rehabilitated out of an original target of 300 m³/hour. This was **achieved** through the installation of 4 intake pumps in Bangui, 2 intake pumps in Bambari, and 4 boreholes in Berberati. This target was exceeded. (ICR, p. 35)
- 0 Water quality tests at rehabilitated utility water storage that meet required standards. The original target was 85 percent, and this was **not achieved**. (ICR, p. 35)

The Project made progress but did not achieve the original PDO indicator target for the number of people with new access to improved water supply. The Project exceeded the production capacity target but did not achieve the water quality target. The ICR reported a series of additional outputs not in the results framework that supported the results achieved for the PDO indicator. The objective to increase access to improved water supply was modestly achieved against the original targets. The efficacy rating is thus **Modest**.

Rating

Modest

OBJECTIVE 3 REVISION 1

Revised Objective

There was no change in the objective.

Revised Rationale

At the project restructuring on June 22, 2022, the original PDO remained unchanged but some of the PDO targets decreased in scope. The rationale for the restructuring was the need to finance emergency rehabilitation works to reestablish services, additional works that were to be financed by another entity, and operational expenses to ensure that services did not collapse during the COVID-19 pandemic.

Theory of Change: The TOC provided under Objective 3 above applies to the revised Objective 1 as well except that the rehabilitation of the water treatment plant was dropped. The Project adjusted component activities to address the critical needs of the population, but as the ICR (p. 29) noted, the restructuring did not incorporate an indicator in the results framework for “access to restored water supply services”. As a result, this population was not considered in the benefits for the economic analysis. The restructuring was a missed



opportunity to fully account for these positive outcomes because the costs for these interventions were captured in the economic analysis while the benefits were not.

The restructuring scaled back only the PDO 3 indicator target - *the number of people provided with access to improved water sources* from 40,000 to 32,000 people to account for reduced funding to extend the networks. Likewise, the related intermediate results indicator – *new piped household water connections that are resulting from project intervention* was scaled back from 3,600 to 2,600. In addition, the need to restore water supply services required an increase in the PDO indicator target of *water production capacity constructed or rehabilitated* which was modified from 300 m3 per hour to 1,800 m3 per hour.

The output level indicators for this objective in the results framework were limited to:

- 2,625 new piped household water connections were constructed **exceeding** the revised target of 2,600. (ICR, p.34)
- 47 improved community water points constructed or rehabilitated out of a revised target of 100. This target was **not achieved**. (ICR, p. 39)

See original objective 1 for the additional outputs that did not have targets nor were included in the results framework:

OUTCOMES:

- 22,525 people were provided with new access to an improved water supply, **not achieving** the revised target of 32,000.
- 1,945 m3/hour water production capacity constructed or rehabilitated **exceeding** the revised target of 1,800 m3/hour. This was achieved through 4 intake pumps in Bangui, 2 intake pumps in Bambari, and 4 boreholes in Berberati. (ICR, p. 35)
- 0 Water quality tests at rehabilitated utility water storage that meet required standards. The original target was 85 percent, which was not revised, it was **not achieved**. (ICR, p. 35)

The ICR reported the following additional outcomes that did not have targets and were not included in the results framework:

- 199,703 people in Bangui had their water supply restored. (ICR, p. 17)

The Project achieved 70 percent of the PDO indicator target for the number of people with new access to improved water supply. The target was partly reached because of contractor performance issues and the cancellation of the contract for the installation of community standpipes. However, the Project also made adjustments and provided critical interventions to restore improved water supply services to a population of 199,705 in Bangui that had lost access to services. While the restoration of services was not incorporated into the results framework, the Project should be credited for this achievement, as it clearly contributed to achieving the objective of increased access to improved water supply. The outcome target for production capacity was exceeded enabling the restoration of services for the population in Bangui, but the water quality



target was not achieved. Despite these weaknesses, the efficacy rating is a weak **Substantial** given the overall progress toward the PDO.

Revised Rating Substantial

OBJECTIVE 4

Objective

Increase access to improved electricity in Bangui and selected towns.

Rationale

The ToC for this objective suggested that improvements in operational performance of ENERCA would largely be accomplished through the procurement of the following inputs: (i) rehabilitation of four turbine alternators at the Boali hydropower plant, (ii) hybrid solar-diesel electricity plants in Bambari and Berberati, (iii) rehabilitation of the local distribution network to reduce loadshedding (i.e. scheduled outages), and (iv) pre-paid and smart bulk meters. The principal resulting outputs would be: (i) four turbine alternators rehabilitated, (ii) solar-diesel electricity plants installed, (iii) local distribution networks rehabilitated, (iv) pre-paid and smart meters installed. These outputs would contribute to intermediate outcomes such as increased generation. The PDO outcome would be people with increased access to new or improved electricity services.

The ToC (ICR, p. 7) was not explicit how Component 3 technical assistance activities would contribute to the desired outcomes; however, the rural electrification and investment strategy could eventually lead to expanded access to electricity in the future. Similar to the water supply objectives, the ToC for Objective 4 was focused on infrastructure and did not mention activities to support capacity development of ENERCA in electricity service delivery, which was a weakness as sustainable service delivery goes beyond construction of infrastructure.

The ToC for Objective 4 had the same critical assumptions as Objective 2, and the engagement and leadership of ENERCA with the Project underpinned the achievements for this objective and the ability to exceed the original targets (Interview with Task Team).

OUTPUTS:

The output level indicators for this objective in the results framework were limited to:

- 5,500 Prepaid and smart electricity meters installed, **exceeding** the original target of 5,200 meters. (ICR, p.36)
- 4 Turbine alternators of Boali 1 hydropower plant refurbished, **achieving** the original target of 4. (ICR, p. 45)

The ICR reported the following additional outputs that did not have targets and were not included in the results framework:

- Construction of hybrid solar-diesel power stations in Bambari and Berberati. (ICR. P 45)



- The distribution network in Bambari rehabilitated and extended. (ICR, p. 45)

OUTCOMES:

- 25,000 people were provided with a new or improved electricity service, **exceeding** the original target of 16,000. (ICR, p. 21)
- 2.8 MW generation capacity installed, **exceeding** the original target of 1 MW. (ICR, p. 21)

The ToC for the objective was largely based on increasing electricity production through the Boali hydropower plant, the construction of the hybrid solar diesel powerplants, rehabilitating and extending the distribution network, and installing prepaid meters. As result, the Project exceeded the original PDO targets for both people with access to improved electricity services and generation capacity, hence achieving the objective to increase access to improved electricity, resulting in a **High** efficacy rating.

Rating
High

OBJECTIVE 4 REVISION 1

Revised Objective

No change.

Revised Rationale

As outlined above.

Revised Rating

High

OVERALL EFFICACY

Rationale

While noting the weaknesses in the availability and quality of data for NRW, there was sufficient evidence through multiple sources to substantiate Objective 1 efficacy rating as Substantial. Objective 2 made progress at the output level but had weaknesses in the data and the outcome target was not achieved resulting in a Modest rating. Objective 3 made progress at the output level, but the original PDO target related to access to water supply services was not achieved resulting in a Modest rating. Objective 4 received a High rating for substantially exceeding PDO targets related to electricity. The combined overall efficacy rating is a weak Substantial rating.



Overall Efficacy Rating

Substantial

OVERALL EFFICACY REVISION 1

Overall Efficacy Revision 1 Rationale

Under Revision 1, the overall efficacy is assessed as Substantial based on underlying efficacy ratings of Substantial for Objective 1 and Modest for Objective 2. Under Revision 1, Objective 3 rating improved from Modest to Substantial accounting for progress made toward the revised outcome targets and the additional population served with restored water supply services. The Objective 4 rating is High.

Overall Efficacy Revision 1 Rating

Substantial

5. Efficiency

Ex Ante Economic Efficiency: At appraisal, the economic rate of return (ERR) was estimated at 9.6 percent with a Net Present Value of US\$3.42 million for the investments based on various benefit streams for water that included: (i) reduction of the water-related burden of disease; and (ii) opportunity cost of time, (iii) productivity and education gains due to times saved realized by households gaining access closer to their home (PAD p. 64). The main benefit stream for the electricity component was the cost savings for consumers relative to private energy generation from small diesel generators (PAD, p. 70). For reference, this NPV calculation used a discount rate of 6 percent.

Ex Post Economic Efficiency: The economic analysis at project completion in the ICR included the same benefits streams identified at appraisal (ICR, p. 18). The economic rate of return (ERR) at closing was estimated at 16.8 percent with a Net Present Value of US\$5.15 million. The ex-post analysis also used a discount rate of 6 percent.

The ex-post ERR considered the *costs* associated with restoring water supply services in Bangui but did not incorporate the benefits of those restored services to 199,705 people with improved water supply as they were not captured in the results framework. As a result, the ERR is likely a conservative estimate.

Financial Efficiency: The ICR (p. 52) indicated that both utilities (SODECA and ENERCA) at appraisal were not financially viable as neither utility could cover their operational and maintenance costs. Operational efficiency metrics such as NRW for SODECA was at 61 percent at baseline (using the standard international definition) and ENERCA's electricity transport and distribution losses were at 48.5 percent. In addition, at appraisal, ENERCA reported a 60 percent collection rate which indicated that actual revenues of ENERCA were based on 31 percent of its production. There was no financial net present value calculated at appraisal.

The ICR (p. 57) reported significant improvements for ENERCA's bill collection ratio from 60 to 76 percent, but subsequent correspondence with the Task Team and information provided by the client substantiated only an increase to 63 percent. The reduction in NRW for SODECA was approximately 10 percentage points going from



63 percent to 47.3-52.3 percent; however, the project did not monitor other financial efficiency metrics such as operating cost coverage ratio or collection ratio to have broader assessment of financial efficiency. At project close, neither utility was financially viable, and both continued to struggle to cover operating costs (ICR, p 19).

Operational and Administrative Efficiency: The project was designed to be implemented over 4 years. Delays in implementation were a result of several factors that included: (i) a resurgence in violence related to the presidential elections in 2020 that halted project activities, (ii) the COVID-19 pandemic, (iii) change in Project Implementation Unit (PIU) to a different ministry, and (iv) severe water shortages that required emergency interventions, (v) procurement issues and market availability of qualified contractors, and (vi) delays in compensation for Project Affected Peoples (PAPs) resulted in some works not being executed. The resurgence in violence forced a halt in project activities, and COVID-19 slowed implementation with supply chain issues and a rise in the price of materials. Moreover, the market availability of quality contractors also impeded the completion of some of the planned water supply infrastructure such as community standpipes (ICR, p. 24).

As a result, disbursements reached US\$8.77 million (50 percent) by the time of the MTR in November 2021. These challenges led to a number of actions including: (i) dropping activities such as the water treatment plant in Bangui and reallocating resources to finance emergency water supply interventions, supporting SODECA with operational costs such as oil and chemical reagents during COVID-19, and allocating more resources to the PIU to cover increased supervision costs of enhanced security and air travel because of the violence; (ii) in 2020 relocated the PIU from an existing World Bank financed project in the transportation sector to the Ministry of Development of Energy and Water Resources, and (iii) extension of the project closing date by 12 months.

Conclusion. The project's estimated ERR at 16.8 percent at project close was a significant result compared to a range of 10-12 percent discount rate suggested for sub-Saharan African countries in the World Bank economic analysis guidelines. Moreover, the ERR calculated for the water supply component is likely conservative because it did not account for the benefits of restoring critical water supply services. While the project required a 12-month extension, the project substantially achieved the desired results despite the significant setbacks from civil unrest, COVID-19, and changing of the PIU to a difference ministry, and dealing with low market availability of quality contractors. As a result, the rating for efficiency is considered **Substantial**.

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	✓	9.60	100.00 <input type="checkbox"/> Not Applicable
ICR Estimate	✓	16.80	100.00 <input type="checkbox"/> Not Applicable

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



6. Outcome

The PDO was highly relevant to the government and Bank strategy for Central African Republic and directly aligned with the sector strategies and organizational needs of SODECA and ENERCA. Efficacy of the four PDOs to enhance SODECA and ENERCA’s operational performance and increase access to improved water supply and electricity in Bangui and selected towns was rated as Substantial given the supporting evidence that the targets were almost fully achieved, and several outputs exceeded the targets. Efficiency was rated as Substantial. The economic analysis showed that the project had a high ERR. The project benefited from exceeding targets for PDO 4 in the electricity component at reduced costs, and adjusting activities to meet the critical needs of water supply of the population for which the benefits were not accounted for. Actions were also taken to improve the administrative efficiency by moving the PIU to a more relevant ministry in 2020.

The overall outcome, accounting for the split evaluation, was rated Moderately Satisfactory, reflecting minor shortcomings in the Project’s achievement of its objectives and in its efficiency. The table below shows a comparison between the ICR split rating and that of the ICRR, which upgraded Split 1 for PDO 3 from Modest to Substantial accounting for reestablishing services for 199,705 people, and downgrading PDO 2 from Substantial to Modest based on the best available evidence to substantiate the results.

	Original	Revised
Relevance	High	High
<i>PDO Objective 1</i>	Substantial	Substantial
<i>PDO Objective 2</i>	Modest	Modest
<i>PDO Objective 3</i>	Modest	Substantial
<i>PDO Objective 4</i>	High	High
Efficacy	Substantial	Substantial
Efficiency	Substantial	Substantial
Outcome	Moderately Satisfactory	Moderately Satisfactory
Numerical value of outcome rating	4	4
Amount disbursed (out of US\$17.38 million total disbursed)	US\$ 10.54 million	US\$ 6.84 million
Share of disbursements	60.6%	39.4%
Weighted value of outcome ratings	2.42	1.58
Rounded score	4.0	
Final Outcome Rating	Moderately Satisfactory*	

*Note that according to the IEG ICR Guidelines, an outcome rating can be no higher than Moderately Satisfactory if one of the objectives is rated as modest achievement.

- a. **Outcome Rating**
Moderately Satisfactory



7. Risk to Development Outcome

Based on the information in the ICR, the following issues posed risks to the development outcome:

- **Political Risk: Armed conflict in project areas poses a major risk for the sustainability of project outcomes.** The situation in the project area is currently stable; however, cycles of conflict and violence continue to plague the country and threaten the project's development outcomes particularly around Bambari and to a lesser extent Berberati. If there is a resurgence of violence in the future, project-supported infrastructure could be damaged and service delivery halted, as was the case during the civil war (ICR, p. 28).
- **Institutional and Financial Risk: SODECA and ENERCA struggle with limited capacity and financial sustainability.** SODECA continues to operate in a reactionary manner responding to daily challenges in service delivery limiting their ability for long-term planning. Their financial position limits their ability to cover daily operating expenses including electricity payments to ENERCA, putting the sustainability of investments and services at risk. ENERCA also struggles to cover the operation and maintenance costs of its services, despite improvements in their bill collection ratio (ICR, p. 28). Overstaffing in ENERCA contributes to inefficiencies in their cost structure, and loss of talent contributes to their struggles in service delivery (ENERCA Activity Project Report – 2022) and their financial sustainability.
- **Ownership Risk: and commitment to project outcomes.** Despite the overarching challenging country context in terms of fragility and country economic factors, ENERCA's management demonstrated commitment to the project and empowered its staff to take decisions supporting implementation. This commitment was evidenced by the achievements in the electricity component of the project and signals a positive sign for the future of the organization. While SODECA's technical staff were engaged in the project, the management did not empower them to take decisions causing delays. The SODECA management were not engaged in the project activities (ICR, p.29) putting at risk the longer-term sustainability of investments. The World Bank continues to provide technical assistance to SODECA on the implementation of its 2023-2025 Strategic Plan and the more elaborate five-year strategic plan (2023-2027) developed with Bank executed trust fund support. However, without a follow-on investment project from the World Bank providing direct financial support to implement core actions and further improvements to its infrastructure, SODECA's progress may be limited (ICR, p. 29).

8. Assessment of Bank Performance

a. Quality-at-Entry

The technical design of the project was grounded in the needs of both SODECA and ENERCA and responded to the service delivery challenges in a post-conflict setting in each sector in Bangui, and on reestablishing services in Bambari and Berberati. The project recognized the synergies between the water and electricity sector and recognized that improvements in the water sector would be limited without supporting the electricity sector.

The design was informed by lessons learned from the preceding CAR Emergency Power Response Project (Projet d'Urgence en Réponse à la Crise Énergétique, P114111, EPRP) and other World Bank



experience supporting the water and energy sectors in FCV contexts. These lessons included using an established PIU, at least initially, given the low-capacity context. The project also aimed to leverage prior investments from previous projects to get quick wins. Project activities were agreed upon with the MDEWR and were well-coordinated with the complimentary interventions of key development partners (ICR, p 27).

A noted shortcoming in the ICR was that the Task Team underestimated the capacity of the PIU. The PIU was originally established to manage the CEMAC Transport-Transit Facilitation Project (Projet de Facilitation du Transit et des Transports en Zone CEMAC), and since it had developed capacity in Bank policy it was tasked to also manage the Water and Electricity Upgrading Project. This strategy made sense given the limited capacity in other government entities, but the PIU was overburdened and did not give the project priority. The Task Team worked with the client to arrange a project advance to ensure readiness, but this had limited impact because of capacity constraints in the PIU to utilize it. An additional shortcoming was that at appraisal any compensation for Project Affected Peoples (PAPs) would be covered by ENERCA or SODECA due to the limited financing from the loan. However, these entities struggled to provide such compensation, despite government assurances, and PAP compensation would be an impediment to implementation of some works such as the water transmission line in Bambari (ICR, p. 27). The Project had strategic relevance, a sound technical design, a focus on reaching vulnerable populations with basic services, and clear implementation arrangements. Despite some minor shortcomings, the ICRR rates the Quality at Entry as Satisfactory.

Quality-at-Entry Rating Satisfactory

b. Quality of supervision

The quality of supervision was adequate. A key factor in supervision was that the Task Team included a Bangui based energy specialist as co-Task Team Leader. In addition, a local water consultant was hired to augment the international-based Task Team Leader who was not located in the country. The presence of staff in the country to supervise and troubleshoot problems was critical to support implementation.

Despite dealing with a complex environment that included security challenges and the restrictions placed on Bank staff during the COVID-19 pandemic, the Task Team maintained regular contact with the client and conducted 11 supervision missions. In between formal supervision missions, the Task Team held monthly meetings with the PIU, ENERCA, and SODECA to improve contract management and supervision.

The Task Team eventually recommended moving the PIU from the CEMAC project and mobilizing a new PIU in MDEWR, which was a more natural fit since it is the ministry that oversees ENERCA and SODECA. Moreover, the Task Team was proactive and adapted the project to meet the emergency water supply needs that emerged in February 2019 because of dysfunctional infrastructure. This intervention avoided a humanitarian crisis. In addition, the Project helped SODECA procure basic supplies needed for daily operations during COVID-19 when supply chain issues raised prices on goods. The Task Team demonstrated agility, responded to the client's needs, and restructured the project accordingly. The restructuring eliminated some of the technical assistance activities, and the Task Team responded by securing trust fund resources to support the client with technical assistance.



Despite security challenges, COVID-19 restrictions, emergency needs, and the need to relocate the PIU to another institution, the Task Team demonstrated agility and proactivity to provide close supervision to ensure project activities advanced. The Task Team did not make the necessary adjustments at the restructuring to capture the population that benefited from having water services reestablished, nor were PDO indicators that were reported on in 2021 updated during the last years of the project.

There were moderate shortcomings in the identification of opportunities and threats; therefore, the rating for Quality of Supervision is Moderately Satisfactory

Quality of Supervision Rating

Moderately Satisfactory

Overall Bank Performance Rating

Moderately Satisfactory

9. M&E Design, Implementation, & Utilization

a. M&E Design

The project did not have an explicit theory of change in the PAD, but the results framework was logical and the PDOs had indicators at outcome levels. The results framework captured key metrics related to infrastructure for both water supply and electricity. The definitions of the PDOs and intermediate outcomes indicators were generally clear, and the level of detail of the results framework generally corresponded to the capacity of the PIU to manage the project.

One of the main shortcomings of the results framework was the inclusion of NRW reduction as a PDO indicator for water, which appeared to be overly ambitious given the fragile country and institutional context of SODECA.

To address NRW in a meaningful and sustainable manner, it requires buy-in from the utility's management to ensure that it is an organizational priority since it requires the operations, engineering, and commercial departments to work across silos. To lay the foundation for NRW reduction, the results framework could have focused on the output rather than at the PDO level, and on the technical building blocks. For example, a subset of indicators such as the number of water audits conducted, km of pipeline rehabilitated, number of trainings conducted on NRW, NRW reduction and energy efficiency strategies endorsed by management, number of pilot district metered areas implemented, number of change management pilots conducted, number of macro and micro meters installed, or updated user and network cadaster are examples of the types of indicators that could have been used to lay a foundation for NRW reduction.

Moreover, the definition of NRW used at appraisal was not aligned with international best practice. The Task Team at appraisal was explicit about this, but the justification to incorporate other efficiency metrics such as collections (billed but unpaid volumes of water) into the NRW was not clear, and complicated monitoring by the PIU. This was evidenced in the monitoring which did not adhere to the PAD definition.



b. M&E Implementation

The project performance was monitored through regular reporting by SODECA and ENERCA and then compiled by the PIU. The Task Team held monthly meetings with stakeholders to review progress on procurement, safeguards, financial management, and troubleshoot issues. Various challenges arose during implementation in monitoring results such as the miscalculation in the number of people provided with access to services. The household size that was being reported did not correspond with the definition in the results framework, which was eventually corrected by the Task Team and PIU.

During implementation, the Task Team appropriately scaled back the target for PDO 3 indicator on the *number of people with access to an improved water source* to reflect changes to Component 1 interventions because of the restructuring. Given the potential for a humanitarian crisis with a collapsed water supply system in Bangui, the restructuring could have included an indicator such as the *number of people with restored water supply* to give the project proper credit for the intervention.

In addition, the ongoing monitoring of NRW for water and the bill collection ratio for electricity proved to be challenging to report on regularly. The Implementation Supervision Report #8 from January 2022 noted the first changes in the NRW and the bill collection ratio indicators. Both changes were significant, but the justification for the change was not documented. The values reported in ISR #8 were maintained through project close, and limited information was provided in the ICR to substantiate the change. The methods for measuring some of the indicators were inadequate, causing confusion in how to measure them resulting in inadequate reporting.

c. M&E Utilization

The PIU and the Bank team utilized the M&E to diagnose and troubleshoot bottlenecks as they occurred in implementation. The Task Team tracked contracts and PAP compensation issues in a regular manner to guide the client on making course corrections, and monitored project advances that informed the restructuring of components and related indicators and targets.

The results framework allowed for the majority of intermediate and some of the PDO indicators to be adequately tracked. The shortcomings of the results framework and monitoring included: (i) the definition of NRW was not aligned with international standards confusing calculations during implementation, (ii) data to monitor the NRW and bill collection ratio indicators for water and electricity were inconsistent between the ICR and information provided by the client but were ultimately resolved; (iii) an indicator for the number of people having restored access to improved water services would have formally given credit to the project for its intervention and accounted for in the economic analysis.

Collectively, the issues identified above constitute minor shortcomings in the M&E design, implementation, and utilization; therefore, the Overall M&E Quality is rated Substantial.

M&E Quality Rating

Substantial

10. Other Issues



a. Safeguards

The Project was designated as Category B. Environmental and social risks were deemed low and manageable, and consistent with the experience in previous projects of a similar nature. The safeguard policies triggered were Environmental Assessment (OP 4.01), Physical Cultural Resources (OP/BP 4.11), Involuntary Resettlement (OP 4.12), and Safety of Dams (OP 4.37) (ICR, page 26).

The PIU was responsible for the Environmental and Social Management Framework (ESMF) and the Resettlement Policy Framework (RPF), which were prepared and disclosed both in the country and on the World Bank's website with some delay. Environmental and social screenings and environmental and social studies including environmental and social impact assessments and environmental and social management plans were carried out prior to the start of works. In addition, the Task Team provided No Objections to the Resettlement Action Plans (RAPs) prior to commencing work.

During implementation, supervision missions identified that contractors were not always following certain risk mitigation measures such as barricading open trenches or holes. Monitoring environmental compliance by the PIU was complicated when its environmental special departed, and the position was not filled for several months in 2022. This position was eventually filled, and the new person was mentored by the Task Team.

The most significant issue was the delay and lack of compensation to some of the Project Affected Peoples (PAPs) by SODECA. The delay in payments caused delays in works and resulted in the canceling of an activity to replace a water transmission pipeline. As a result, the project instead made temporary improvements to the transmission line. The project's Grievance Redress Mechanism committees were established in Bambari and Berberati prior to the start of activities, with complaints being registered and resolved during the project duration (ICR, p. 26)

The overall safeguard rating of the project was moderately satisfactory. This was driven by OP 4.01 and 4.12 being rated as moderately satisfactory, while OP 4.11 and 4.12 were rated as satisfactory.

b. Fiduciary Compliance

Financial management: The project generally complied with the Bank's financial management (FM) requirements. During the first two years of the project, the PIU's internal controls and record keeping were deficient. The PIU was delayed in submitting quarterly interim financial reports (IFRs) and external auditor reports, and the IFRs did not adhere to standards of quality. During this time, the FM rating was downgraded to Moderately Unsatisfactory, but the situation improved over time with the recruitment of an experienced financial specialist. Once the PIU had an experienced FM specialist, the project consistently submitted on time quarterly IFRs adhering to quality standards and certified annual external audit reports, and effectively kept up-to-date transaction records. The PIU acted on the recommendations by the Bank team and the external auditor. At project close, unused funds were returned to the Bank. The project closed with a Moderately Satisfactory FM rating (ICR, p. 27).

Procurement. The project suffered from regular procurement delays and proactive contract management was lacking by the PIU. The PIU initially had procurement staff that did not meet the expectations to



comply with procurement policy. In 2019, the PIU was able to contract a senior procurement specialist and with support from the Task Team, management of procurement processes improved over time. Contract management remained a significant issue throughout implementation with contracts expiring before contracts could be extended or canceled. The ICR noted that procurement issues are endemic across the country portfolio regardless of sector, and that significant improvement was observed once the new PIU was established with continued coaching by the World Bank team (ICR, p. 24).

c. Unintended impacts (Positive or Negative)

None

d. Other

11. Ratings

Ratings	ICR	IEG	Reason for Disagreements/Comment
Outcome	Moderately Satisfactory	Moderately Satisfactory	
Bank Performance	Satisfactory	Moderately Satisfactory	Shortcomings with bank supervision.
Quality of M&E	Substantial	Substantial	
Quality of ICR	---	Modest	Modest

12. Lessons

Selecting outcome indicators that are fit for purpose can ensure that realism is built into the project results framework. In fragile country contexts, security, macroeconomic stability, and institutional capability influence project outcomes. The project aimed to restore basic services in conflict-affected areas, acknowledging the potential for conflict resurgence. Public institutions like SODECA often struggle in such contexts, operating reactively even at project close. While including Non-Revenue Water (NRW) indicators is technically justified due to losses, reducing NRW is complex. It requires organizational prioritization, behavior change, strategic planning, and technical capacity building. In FCV contexts, where institutional capability is low and institutions operate reactively, understanding their capacity and willingness to reduce NRW is crucial. Monitoring NRW reduction at an intermediate outcome level seems more practical, allowing tailored interventions to build institutional capability without risking project outcomes.

Establishing a technical assistance mechanism through Bank-executed trust funds at the start of a project can improve outcomes and relationships with client. In FCV contexts, where capacity constraints are likely to be endemic and procurement delays anticipated, establishing a



technical assistance mechanism through Bank-executed trust funds from the beginning of the project can accelerate capacity development. Often, investment projects will include a component on capacity or institutional development with technical assistance being procured through the project. If procurement delays occur or there is a shift in need, technical assistance is often first to be cut. Particularly in FVC contexts, the development of human capital within institutions is essential, and Bank-executed trust funds offer the potential to deliver high quality technical assistance in a timely manner. Establishing a trust-funded technical assistance mechanism from the beginning of the project would support the Bank Task Team in delivering the best advice and developing trust with the client. In this project, the Task team mobilized trust funds only after it became clear that project financed technical assistance would be delayed or cut, which was well into implementation (ICR, p. 30 and ICRR author).

Identifying synergies between sectors, particularly in FCV settings, can be a way to leverage existing capacity. The connections between water and electricity service delivery can be highly interdependent, and in FCV contexts where capacity constraints are salient, tackling two sectors in one project can be strategic. In contexts such as CAR, where the provision of water supply is reliant on pumping and electricity, investments in water supply service delivery may have a limited impact without simultaneously addressing electricity. In such contexts, analyzing the institutional arrangements to understand if there are natural connections that could leverage existing capacity and relationships would be important. In the context of CAR, the existence of a Ministry of Development of Energy and Water Resources provided the space to bring project management under one institution benefiting both the water and electricity sector. This does not guarantee project success, but strengthening the capacity of an institution with ties to both sectors not only leverage existing capacity and accountability mechanisms but also potentially minimizes the need to have two projects with implementing units in different agencies (ICR, p. 29-30).

Market analysis of contractors at project identification or preparation could mitigate against delays. In FCV contexts, where availability of quality consultants and contractors in country may be limited, understanding the market in-country and at the sub-regional level is important. Typically, this market analysis is expected by the Bank from the client through the procurement strategy that is to be developed during project preparation. Given capacity constraints in such contexts, assistance from the Bank to do this market analysis at an early stage such as at identification could help guide the dialogue with the client on the best way to proceed with procurement to mitigate delays. (ICRR author)

Including compensation of PAPs as an eligible expenditure in the project design can help mitigate implementation delays. Even in non-FCV contexts, it can be difficult for implementing agencies to secure budget to compensate PAPs in a timely manner. This issue is particularly salient in FCV contexts, such as CAR, where fiscal constraints can be higher, and utilities struggle to finance basic operational costs as demonstrated by SODECA. While the government may signal their ability to cover such costs, implementation may prove more challenging as was the case in this project delaying project interventions or resulting in canceled activities. Including PAP compensation as an eligible expenditure in the project design in FCV contexts could ease the burden on implementing agencies to secure and disburse resources in a timely manner mitigating against the risk of lengthy implementation delays (ICRR author).



13. Assessment Recommended?

No

14. Comments on Quality of ICR

The ICR was well-written, concise, and generally supported the ratings. The theory of change was clear with some shortcomings. The ICR captured the country and institutional aspects, which are important given the FCV context, the changes to the project during implementation, and appropriately applied the ICR guidelines for a split rating because of the restructuring that reduced the scope of PDO 3. The ICR was relatively candid about the weaknesses during implementation and data availability.

The ICR could have gone beyond the infrastructure elements in the theory of change to better explain the institutional aspects that supported project outcomes. Likewise, more discussion on the institutional constraints for both implementing agencies (SODECA and ENERCA) would have provided a clearer picture of the challenges faced by these two providers. The main weakness of the ICR was the inconsistency in the information provided to substantiate PDO 1 and 2 outcomes. There was little supporting evidence in the ICR to substantiate the ratings for these two PDOs. Follow-up discussions with the Task Team produced additional information provided by the client, which contradicted the figures presented in the ICR.

Further discussion with the Task Team reconciled the information to support the ratings presented in this ICRR. As a result, the figures for the PDO 1 and 2 outcome indicators were modified. While the achievements in PDO 1 were reduced from a 22-percentage point change in reduction of NRW to 10 percentage points, the documented change achieved the original target. However, the achievements for PDO 2 were scaled back from a 16-percentage point increase to a 3-percentage point increase (out of a target of 10 percentage points). The ICR presented figures that substantially exceeded the original targets; however, the post-ICR information that was shared confirmed achievements against the original targets just of a lesser magnitude. Since these issues were addressed after the ICR was written, the rating of the ICR is Modest.

a. Quality of ICR Rating

Modest