



# Lessons learned from the implementation of the Emergency Program of the Regional Initiative for Sustainable Energy (PU-IRED)

Energy is essential for any country's economy and industrial activities. The United Nations has identified access to electricity as a lever for achieving the Sustainable Development Goals (SDGs) and ensuring people's well-being. Despite its importance for economic and human development, the WAEMU sub-region has one of the lowest electrification rates in the world. At the regional level, the electrification rate in WAEMU was 17% in 2007, with a low proportion of renewable and sustainable energy sources (hydro, solar, biomass, wind) in the generation mix – they accounted for only an estimated 36% in 2007. At the end of the 2000s, the region experienced an energy crisis which gave rise to the Regional Initiative for Sustainable Energy (IRED). The IRED was implemented in several phases, including an emergency phase which aimed to provide a short-term response to the crisis by increasing production

and improving the transmission and distribution networks of electrical energy in the member countries of the Union.

The evaluation finds that the IRED Emergency Program boosted energy infrastructure that increased energy production, transmission and distribution. Twelve years after the start of IRED, seven projects have completed construction and are operating, three are under construction and three are still at the stage of starting work. No project has to date been fully completed with a finalized completion report.

This brief shares the lessons learned from the process evaluation of the PU-IRED, implemented by the BOAD in the WAEMU countries. The evaluation was initiated in 2021 by BOAD and conducted by the International Initiative for Impact Evaluation (3ie).

<sup>1</sup> Regional Sustainable Energy Initiative (IRED) Annex Document, September 2009, WAEMU

## Evaluation findings

IRED's Emergency Program was deemed pertinent because of its relevance to both BOAD's strategic orientations in the energy sector and IRED's objectives. It has provided countries with energy infrastructure that has helped increase production and improve the transmission and distribution networks of electrical energy.

However, while they were intended to provide solutions in the short term, the projects implemented through IRED's Emergency Program have experienced significant delays due to several factors that have led to the following conclusions:

- The involvement of institutions such as the Parliament and the structure in charge of the evaluation of public policies can facilitate the lifting of conditions of loan agreements and the ex-post monitoring and evaluation of projects.
- Updating feasibility studies (of all types) is essential during the appraisal of projects and at the start of work (if necessary) in order to control project costs and ensure proper implementation.
- Establishing a framework and respecting the deadlines for entry into force and the lifting of conditions preceding the first disbursement can help to reduce delays in the early stages of project implementation.
- The establishment of (automated) monitoring and evaluation systems is essential for effective project monitoring and data collection on development indicators.
- The establishment of an (automated) mechanism for monitoring the implementation of the recommendations that result from supervisory missions is necessary in order to quickly resolve difficulties encountered by the projects.

## Recommendations

It is recommended that:

- Institutions such as the Parliament and the structure in charge of evaluating public policies in each country should be consulted during the appraisal missions for the financing of projects in the country in order to facilitate the appropriation of the projects by these two actors.
- Feasibility studies should be updated at the time of appraisal of project financing if they were conducted several years earlier.
- The deadlines for the lifting of conditions preceding the first disbursement should be standardized.
- Regional projects should have a single overarching monitoring and evaluation system that allows for data feedback and integrated knowledge management.
- Follow-up on recommendations from project supervision teams should be ensured through a mechanism that involves the recipient states and donors.





## Context

At the end of the 2000s, the countries of the West African Economic and Monetary Union (WAEMU) experienced enormous difficulties in meeting the energy demands of economic development and growing populations. Despite the measures taken by individual countries to address energy challenges, the WAEMU region experienced an energy crisis between 2006 and 2008. A report by the WAEMU Commission describes the situation of poor access to energy with a sub-regional electrification rate of 17% in 2007<sup>2</sup>, high electricity costs due to the preponderance of thermal energy, which accounted for two-thirds of the power supply, and dilapidated infrastructure, with more than half of the production

provided by power plants that are more than twenty years old, resulting in high losses. This situation has led to major disruptions in the distribution of electricity with load shedding sometimes exceeding twelve (12) hours per day. The deficits, although difficult to quantify, have been estimated at over 100 GWh per year in some cases.

To address the crisis in a sustainable manner, the Heads of State and Government of the WAEMU decided to set up the Regional Sustainable Energy Initiative (IREN) to respond to the urgent challenges of the energy crisis while at the same time adopting a forward-looking approach to improving the energy sector by 2030.



<sup>2</sup> Regional Sustainable Energy Initiative (IREN) Annex Document, September 2009, WAEMU



## Details of the Regional Sustainable Energy Initiative Emergency Program

The Regional Sustainable Energy Initiative (IRED) is a program initiated in response to the energy crisis that occurred in WAEMU countries between 2006 and 2008. Its vision is that by 2030, all citizens of the Union will have access to low-cost energy, with a large integrated and harmonized West African power exchange market producing clean energy while relying on a dynamic public-private partnership.

The IRED implementation roadmap included three objectives:

- **Making energy available in the short term (2009-2012):** The goal of the emergency phase is to relieve the immediate difficulties of frequent load shedding and to lay the foundations for a sustainable energy strategy.
- **Achieving the competitive energy turnaround in the medium term (2012-2020):** This phase involves making structural investments to support low-cost energy production in WAEMU countries.
- **Establishing a sustainable energy supply in the long term (2020-2030):** This phase involves exploring various production sources with the aim of moving towards a sustainable and environmentally friendly energy supply.

Through the emergency phase of IRED, thirteen (13) projects were financed in the eight WAEMU member countries. They focused on strengthening electricity production and improving transmission and distribution networks.

These projects can be divided into three categories according to sub-sector:

- **Power generation projects:** These projects aim to build thermal and hydroelectric power plants to increase countries' electricity production capacity. Ex: (i) the project to build a 100 MW diesel thermal power plant in Gorou Banda in Niger and (ii) the project to build a national control center in Bamako and to double the capacity of the Sotuba hydroelectric power plant in Mali.
- **Projects to reinforce electricity transmission and distribution networks:** These projects aim to construct transmission lines to transmit high voltage electricity away from generation sites, the construction of transformation stations to convert high voltage energy into medium and low voltage, and the construction of transmission lines for the distribution of electricity (low voltage) to households. E.g.: (i) the project to reinforce the National Interconnected Network (PR-RNI) in Burkina Faso and (ii) the project to reinforce and rehabilitate the transmission and distribution of electrical energy by CI-ENERGIES in Côte d'Ivoire.
- **Interconnection projects:** These projects aim to construct high voltage power transmission lines from one region to another or from one country to another. E.g.: (i) the construction of the 161 kV Bembèrèkè-Kandi-Malanville power interconnection line in Benin and (ii) the power interconnection project for the member states of the Organisation pour la Mise en Valeur du fleuve Gambie (OMVG) in Guinea Bissau.





## Details of the Regional Sustainable Energy Initiative Emergency Program

The projects were financed in the countries through loan agreements between the governments and the BOAD. The implementation of the projects involved the ministries of finance, the ministries of energy and the power utilities in the countries.

In accordance with BOAD procedures, project implementation was marked by the following key stages:

- **Project identification:** This phase follows the financing requests made by the countries. BOAD carried out identification missions in the countries and met with the ministries of energy, power companies, and officials from the ministries of finance. The objective of these exchanges was to better understand the projects, assess their profitability and examine the capacity of the countries' finances to support the repayment of the loans.
- **Project approval:** After the financing appraisal, the projects were presented to the BOAD Board of Directors which approved the loan agreements for financing.
- **Entry into force of the projects:** After their approval, the projects were subject to the conditions for the entry into force of the loan agreements. These conditions vary from one project to another and depend on the nature of the project and the negotiations between each country and the BOAD. However, the most common conditions for entry into force are: (i) a legal opinion certifying that the Loan Agreement has been duly

authorized or ratified by the Parliament of each borrowing country and is legally binding; and (ii) evidence of the borrower's commitment to pay its counterpart of the financing net of taxes and all taxes and customs duties on all goods and services required for the project.

Once these conditions are met, the loan agreement becomes effective and the projects begin the procurement procedures for the recruitment of contractors and other requirements.

- **Lifting of conditions preceding the first disbursement:** The first disbursements were subject to preceding conditions. Similar to the entry into force conditions, they vary from one project to another depending on their nature and the negotiations between each country and the BOAD. However, the most common conditions preceding the first disbursement are: (i) proof of budget allocation of at least part of the government's contribution, (ii) proof of obtaining the environmental compliance certificate, (iii) proof of compensation of persons affected by the project (PAP), (iv) the lending agreement between the borrowing government and the organization in charge of project implementation and operation. Failure to lift the conditions precedent to the first disbursement may result in the work stoppages or delays.



## Results

- IRED's Emergency Program has provided countries with energy infrastructure that has contributed to increased electricity production and improved transmission and distribution networks.

The implementation of projects in WAEMU countries through the PU-IRED has led to significant results with the realization of infrastructure for the production, transmission, distribution, and interconnection of electricity. Out of the thirteen projects included in this study, seven projects have a 100% completion rate, while work is still in progress on the remaining six projects. In terms of impacts, data was collected only for the Burkina and Côte d'Ivoire projects. In Burkina Faso, the data indicates that PU-IRED has contributed to increasing the power generation capacity over the period 2014 to 2017. In Côte d'Ivoire, PU-IRED has contributed to the efficiency of the electric power transmission and distribution system. Several indicators such as the System Average Interruption Duration Index (SAIDI), the number of connections, undistributed energy, and the electrification rate have improved significantly after the implementation of the projects.

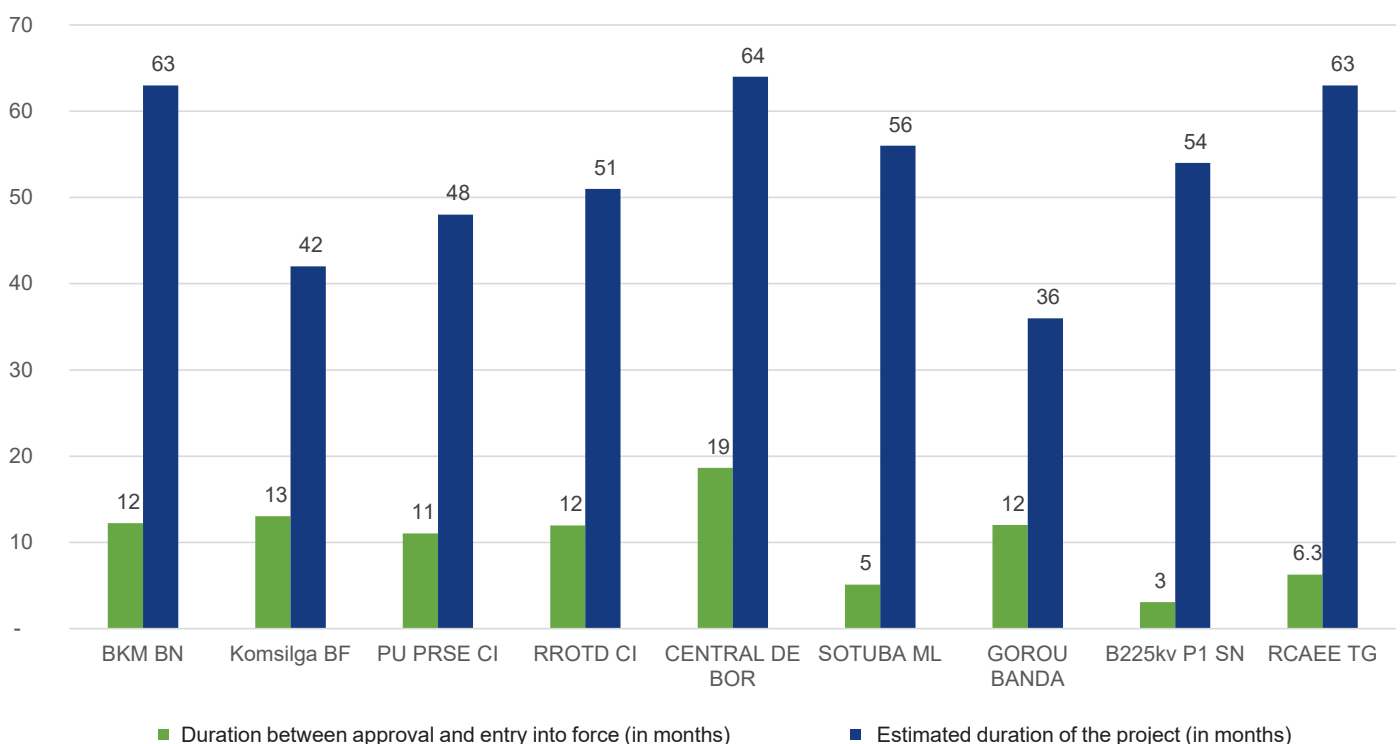
However, despite the development results obtained, the projects implemented under PU-IRED have experienced significant delays. In comparison with the forecasted durations, the data indicate that the average duration was 214% of initial projections. In other words, on average, the projects have lasted more than twice as long as was planned. The main factors that explain these delays are presented below.

- The parliaments and the structures in charge of the evaluation of public policies were not involved during the consultations in the countries, which did not favor appropriations for the projects by these two key actors who play a major role in the cycle of the projects financed by the donors, particularly development banks.

The development banks finance projects in the countries through loan agreements signed with the countries. For their entry into force, these loan agreements are subject to ratification by the Parliament of each country. Within the framework of PU-IRED, the projects have spent an average of 10 months waiting for this entry into force and have thus consumed an average of 20% of their expected implementation periods. One of the factors that explains this situation is the sometimes-long delay in the ratification of loan agreements in parliament.

The structures in charge of the evaluation of public policies lead the national evaluation systems in the countries and are a central actor in the monitoring and evaluation of public policies. Their involvement in the appraisal of projects would help to clarify project choices and improve ex-post monitoring and evaluation of projects when project management units are no longer in place.

**Figure 1: Planned duration of projects as compared to duration for entry into force after notification**



Source : PU-IRED process evaluation report



## Results

- **The lack of updates to the feasibility studies during project appraisal and start-up led to difficulties in implementing the projects, particularly in controlling costs.**

The lack of updates to the feasibility studies has hampered the quality of the appraisal of some projects and led to biases in the cost estimates.

BOAD projects are appraised on the basis of technical-economic, financial, and environmental feasibility studies. For PU-IRED projects, the average duration between the year of completion of the feasibility studies used in the appraisal of these projects and the year of their approval is 22.6 months. With these delays, the feasibility studies are no longer relevant, and when they are not updated, they lead to difficulties in the efficient implementation of projects, particularly in the lack of control of the characteristics of the projects such as cost, duration, scope and technical specificities. For example, the project to strengthen the production of electricity by building a 15 MW thermal power plant in Guinea Bissau was appraised in 2010 on the basis of feasibility studies conducted in 2004. The failure to update the feasibility studies resulted in the project cost not being properly budgeted. In fact, after its approval in 2010, the Board of Directors of BOAD was required to increase the project's funding twice, in 2017 and in 2021.

- **The implementation performance of the PU-IRED projects was hampered by delays in lifting the conditions preceding the first disbursement.**

Overall, the projects spent an average of 23 months to remove these conditions and thus used

up an average of 43% of their planned implementation time. In addition, 50% of the projects took more than 21.5 months to remove the conditions and used up more than 39% of their planned implementation time. Among the factors that explain these delays is the absence of a standard governing the time limits for lifting suspensive conditions at the first disbursement.

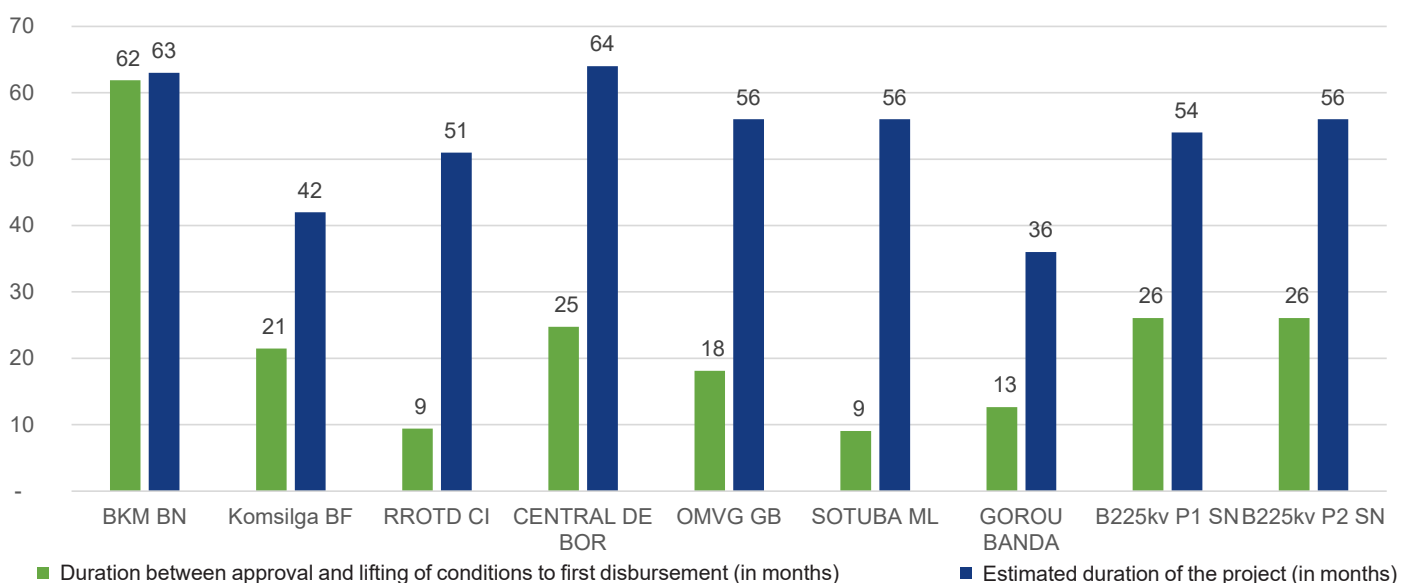
- **PU-IRED lacks an effective overall monitoring and evaluation system.**

As a regional program, PU-IRED suffered from the absence of an overall monitoring and evaluation system that would facilitate the dissemination of data and allow countries to learn from each other's project experiences. There is no budget dedicated to monitoring and evaluation activities and no monitoring and evaluation specialist in the project management units.

- **PU-IRED lacks a mechanism to follow up on the recommendations of supervisory missions.**

The weak implementation of the recommendations from project supervisory missions did not favor a speedy resolution of the difficulties encountered by the projects. Reports from the supervisory missions note that several recommendations are repeated from one mission to another because they have not been implemented. This failure to implement the recommendations has caused delays in the implementation of the projects.

**Figure 2: Comparative analysis between forecast duration of projects and duration for the lifting of conditions preceding the first disbursement**



Source : Rapport de l'évaluation de processus du PU-IRED

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## Recommendations

- The Parliament and the structure in charge of evaluating public policies should be consulted during missions for the appraisal of financing of the projects in order to promote appropriations for projects by these two structures which play a key role upstream and downstream in the cycle of projects financed by the development banks.
- Feasibility studies should be updated during project appraisal. To this end, more resources will need to be allocated to the preliminary studies required for project appraisal. These resources would be used to update feasibility studies when they have been carried out several years before project appraisal or before the start of work. They would also be used to carry out specific ex-ante evaluations of the results and expected effects of projects, in addition to detailed preliminary studies and environmental and social impact studies.
- The lifting of conditions precedent to the first disbursement should be governed by a standard. Such a standard would provide legal and regulatory instruments for deciding to act when the time limits for lifting conditions prior to the first disbursement are deemed to be too long.
- A comprehensive monitoring and evaluation system should be put in place in the framework of regional programs/projects. This system should be able to provide all actors with real-time data on the progress of projects and on development results for the indicator targets. It is important to integrate a knowledge management component into this system in order to disseminate evidence and lessons learned at local, national, and regional levels to inform decision-making and facilitate inter-country learning.
- A mechanism for following up on the recommendations of project supervision should be established within the framework of regional programs, with the involvement of the borrowing states and donors. Such a mechanism would facilitate the implementation of recommendations and learnings in the implementation of programs/projects.

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## What is WACIE?

The West Africa Capacity Building and Impact Evaluation (WACIE) program was launched to help build evaluation capacity in the eight countries that comprise the West African Economic and Monetary Union (WAEMU): Benin, Burkina Faso, Cote d'Ivoire,

Guinea-Bissau, Mali, Niger, Senegal and Togo. Program goals include increasing evaluation capacity in targeted countries, ensuring that policymakers have access to relevant evidence and promoting the use of high-quality evidence by relevant stakeholders.

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## The West African Development Bank (BOAD)

The West African Development Bank (known by its French acronym BOAD) is the common development financing institution of the West African Economic and Monetary Union (WAEMU). BOAD is a public international institution whose purpose is to promote the balanced development of member states and to contribute to the achievement of economic integration in West Africa. The member states are: Benin, Burkina

Faso, Côte d'Ivoire, Guinea-Bissau, Mali, Niger, Senegal and Togo. By treaty of the West African Economic and Monetary Union (WAEMU), the BOAD is a specialized and autonomous institution of the Union. It contributes "in full independence to the attainment of the objectives of the WAEMU without prejudice to the objectives assigned to it under the WAEMU Treaty".

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This brief is based on the 3ie and BOAD report "Synthèse de l'évaluation de processus du

programme d'urgence de l'initiative régionale pour l'énergie durable (PU-IREN)", 2022 .



The International Initiative for Impact Evaluation (3ie) promotes evidence-informed, equitable, inclusive and sustainable development. We support the generation and effective use of high-quality evidence to inform decisionmaking and improve the lives of people living in poverty in low- and middle-income countries. We provide guidance and support to produce, synthesise and quality assure evidence of what works, for whom, how, why and at what cost.




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