

Guinea: Sector Programme; Power Supply in Conakry

Final follow-up / Ex-post evaluation

OECD sector	23040: Electricity transmission/distribution	
BMZ project ID	1992 65 448	
Project-executing agency	Entreprise Nationale d'Electricité de Guinée (ENELGUI) (implementation) Société Guinéenne d'Electricité (SOGEL) (operation)	
Consultant	N/A	
Year of ex-post evaluation	2005	
	Project appraisal (planned)	Ex-post evaluation (actual)
Start of implementation	June 1993	June 1994
Period of implementation	60 months	96 months
Investment costs	EUR 5.1 million	EUR 1.6 million
Counterpart contribution	No information available	-
Financing, of which Financial Cooperation (FC) funds	EUR 5.1 million	EUR 1.6 million
Other institutions/donors involved	World Bank, African Development Bank, AfD, EU, JICA, USAID	World Bank, African Development Bank, AfD, EU, JICA, USAID
Performance rating	6	
• Significance / relevance	6	
• Effectiveness	6	
• Efficiency	6	

Brief Description, Overall Objectives and Project Objectives with Indicators

The project 'Power Supply in Conakry' constitutes an independent project in Guinea's power sector that was to be carried out as part of a sector programme aiming to rehabilitate the sector (Energy II Project), the financing of which was managed by the World Bank. This sector programme comprised a bundle of investments and also planned an extensive number of reforms, in particular the restructuring of the sector and the reorganization of the programme-executing agency (ENELGUI). The total cost of the sector programme - USD 135 million - was covered by funds from the World Bank, the African Development Bank (AfD), the French Caisse Française de Développement (formerly CFD, now AfD), the Economic Development Fund of the EU (FED), the Japan International Cooperation Agency (JICA), the US Agency for International Development (USAID), the Guinean government and German Financial Cooperation (FC). Some USD 10 million of the total programme cost went towards domestic expenses that were contested by the programme-executing agency.

At the time of the appraisal of the project 'Power Supply in Conakry' in the year 1993 the German FC contribution was originally estimated at EUR 5.1 million and meant to finance the foreign exchange costs that incurred in connection with the rehabilitation of the Tombo heat

power plant and with the construction of a load dispatch center. Only around EUR 1.6 million of the financial contribution that had been committed were disbursed. The statements below refer to the project 'Power Supply in Conakry.'

The project-executing agency in charge of implementing the project 'Power Supply in Conakry' was the state power utility ENELGUI, which had been founded in 1987 but has since been liquidated.

The overall objectives of the project were to ensure power supply in greater Conakry-Kindia in an economically efficient manner and simultaneously to encourage the institutional reform of the power supplier ENELGUI. The project objectives were (i) the establishment of financial, tariff-policy and personnel-policy autonomy required for the future operator via privatization and (ii) satisfaction of current and expected - mainly productive - demand on the basis of cost-covering tariffs through the application of a strategy for operation and expansion targeting long-term incremental costs. No indicators were defined to measure achievement of the overall objectives. The indicators of achievement of the project objectives matched the criteria defined by the World Bank for measuring the success of its sector programme. They included transferring responsibility for the power sector to a private operator, an improvement in the regulatory framework, and the implementation of all planned measures targeting the rehabilitation and the expansion of the supply infrastructure. The readiness for disbursement of the FC financial contribution was made dependent on the satisfaction of state payment arrears owed to the project-executing agency and the granting of permission to the executing agency to adjust the power tariffs to match the development of the costs.

Project Design / Major Deviations from the original Project Planning and their main Causes

Through today, demand for power in Guinea is highest in the capital of Conakry and the surrounding area as well as in the city of Kindia, which is connected to the grid via a transmission main. Approx. 90% of national power consumption is attributed to the Conakry-Kindia supply area. The remainder is attributed to several remote, isolated networks that are supplied by small diesel-powered centers and run-of-river power plants. Only 11% of Guinea's population of nearly 8 million have access to electricity. Whereas the connection rate in urban areas is 33%, it has stagnated at below 2% for the rural population.

The FC project was designed as one of several measures of a multilaterally financed sector programme that aimed to give Guinea's electricity sector a solid economic foothold through far-reaching reforms (including reorganization of the executing agency, involvement of a private operator, tariff adjustments etc.). The sector's key problem was identified in the project appraisal; namely, the inability of the stakeholder institutions in the power sector to operate and expand the power supply infrastructure in a technically proper manner and on a healthy financial basis. At the beginning of the 1990s demand peaked at 70 MW, compared to assured supplies of only 44 MW. The result was chronic power cuts. Grid losses and power theft increased dramatically. The technical and non-technical grid losses were far above 30%. The collection rate (including quantities that were not charged) was below 33%. In consequence, the state power utility ENELGUI went bankrupt.

In order to fulfil a key prerequisite for implementation, the programme-executing agency ENELGUI was transformed in 1994 into a state-owned enterprise (SOE), and its supply facilities were transferred to the private operator SOGEL via a 10-year concession contract awarded following an international tender. ENELGUI bought a stake in SOGEL by contributing one-third of the equity, and a consortium headed by HydroQuebec contributed two-thirds. In October 2001 the concession contract was terminated prematurely by HydroQuebec after it became apparent that SOGEL was unable to operate the facilities as successfully as had been hoped for. The consortium's shares in the company were sold to the Guinean state, which then liquidated the state-owned enterprise ENELGUI and transferred its assets to the state power utility Société Electricité de Guinée (EDG), which had been founded in December 2001.

The failure of the private operator and the return of the power supply infrastructure in greater Conakry-Kindia to a state enterprise – which was essentially the situation before the sector programme started - were symptomatic of the disappointments that accompanied the project. As regards the Guinean government, from the very beginning it lacked the willingness and the determinedness to implement the agreed sector reforms. The slow progress in reducing the

liabilities of the public authorities to the electricity sector as well as insufficient state support for SOGEL and ENELGUI in financial and tariff-policy matters contributed substantially to the sector's persistent liquidity problems. Another factor that caused problems for the operator was that it was contractually obliged to accept the facilities although they had been technically neglected by ENELGUI. The operator's insufficient scope for action was another obstacle. Key areas of responsibility were divided up between SOGEL and ENELGUI, which, among other things, also caused investments undertaken under the sector programme to be performed by ENELGUI instead of by SOGEL. What is more, SOGEL had very little freedom to make decisions relevant to the company's financial health (tariff adjustments, cost controls, establishment of customer relations). Frequently, however, even SOGEL's management lacked the necessary motivation, and ended up blaming deficiencies on external circumstances. Added to this was the inability of the donor community to recognize and resolve the errors and deficiencies of the project design and those that arose during implementation (such as a fundamental overestimate of the willingness of the government of Guinea to introduce reforms, poor contractual protection of the private operator, inconsistent handling by the donor community of cases involving non-observance of covenants, excessive demands on the management capacities of ENELGUI, etc.).

All in all the misguided developments and the faults in the project environment led to the failure of the sector programme – which officially ended on December 31, 1998 – despite the implementation of the majority of the planned investments. On a positive note, the rehabilitation of the diesel power plant Tombo I (24 MW), the construction of the diesel power plant Tombo III (33 MW) and the rehabilitation of the distribution network in Conakry were completed in spite of delays, and a decrease in technical grid losses was noted (from over 30% in 1994 to 21% in the year 1999). The readiness for operation of the power plants also increased since then. The availability of the thermal power plants rose from < 50% (1994) to > 80% in the year 1999. In contrast, the expansion of the load dispatch center, the rehabilitation of the transmission line from Conakry to Kindia and the rehabilitation of the diesel power plant Tombo II were not carried out. The adoption of the new energy law in 1993 was not followed by any effective implementing regulations. The concept of sector rehabilitation via a private operator that was under the influence of an enterprise controlled by the state was revealed to be a failure of the reform policy. The hoped-for financial recovery of the power supplier that was to result from the restructuring of the sector did not occur. Both SOGEL and ENELGUI were ready for bankruptcy when the programme was nearing completion at the end of 1998. Almost no progress was achieved in reducing power theft and in registering and collecting customer receivables. As late as 1999 only 48% of the power deliveries were invoiced. The collection rate for the power deliveries that were invoiced improved from < 60% to 83.5%. Taking the insufficient invoicing into consideration, overall only 40% of the power deliveries fed into the grid actually led to incoming payments. The availability of the thermal aggregates ready for operation rose to over 80%, owing mainly to the installation of new units. Only the construction of 38 MW of new thermal generation capacity led to the increase in net power generation from 283 GWh in the year 1994 to 552 GWh in 1999. However, due to improper maintenance of the facilities the availability of the aggregates soon worsened. The start of operation of the Garafiri hydropower plant (75 MW) at the end of 1999 brought temporary relief to the supply situation. The maintenance problems and the breakdowns continued, however. Design and construction errors at the Garafiri plant also had their impact. Within a brief time the technical condition of the plant deteriorated, which ultimately led to long downtimes as of 2002. Power supply in Conakry was interrupted repeatedly virtually throughout the entire year 2003, and in the following year power cutoffs were once again standard practice.

The FC project 'Power Supply in Conakry' that was carried out as a submeasure under the sector programme 'Energy II' was preceded by an overall project in which FC had already been involved since 1980 (rehabilitation of the power supply in Conakry/Kindia, BMZ no. 1980 65 674). The follow-up project that is the subject of this report provided for financing for four individual measures: the delivery of spare parts for the machine units at the power plant Tombo I, the installation of the power plant component of the new switchboard at Tombo I-III to complement the grid component financed by the CFD, the turn-key expansion of the load dispatch center and environmental protection regulations (handling of used oil) as an integral part of the supply and service contract for the power plant Tombo III. The foreign exchange

costs associated with the measures were estimated at EUR 5.1 million and were to be covered by a financial contribution to be on-lent to the project-executing agency ENELGUI.

The project-executing agency was given advice on the tender for the components and monitoring of implementation by a consultant financed by the World Bank who guided every investment measure under the sector programme. An expert from German TC was also involved; he was assigned to the Tombo power plant (Advisor at Tombo Diesel Power Plant - 91.2093.2-01.100). The delivery and installation of the spare parts for Tombo I and the installation of the switchboard plant were completed by May 1996. The environmental protection measures were carried out during the construction of the Tombo III power plant, which started operating in October 1997. The project measures (spare parts for Tombo power plant, the switchboard plant and the environmental protection measures) were applied as required. Altogether the costs incurred by the three measures matched the estimate on which the project appraisal was based. Overall we judge the costs to be adequate. The project measures were fully financed out of FC funds. There are no indications of misappropriation of funds.

The tender documents for the load dispatch center were completed in 1997. In view of the persistent unwillingness of the Guinean government to introduce reforms, the worrisome financial situation of the sector, and the significant sustainability risks, the German federal government consented to postpone the implementation of this part of the project until significant progress could be noted with regard to the rehabilitation of the sector.

Despite the still desolate condition of the power sector, the cost estimate for the load dispatch center was adjusted in 1998 – a sign of good will of the German government. On the basis of revised tender documents that estimated the total cost of the components at EUR 6.2 million, the German partners suggested financing the foreign exchange costs (approx. EUR 5.8 million) out of the remaining funds of EUR 3.5 million and increasing the financial commitment already made by EUR 2.3 million. This increase had already been promised during the intergovernmental negotiations in October of 1998. At the same time, the freeze on FC disbursements was upheld owing to the inadequate overall sector conditions. The pullout of the operator SOGEL in the year 2001, the persistent reluctance of the Guinean government to carry out reforms and the fact that a load dispatch center can make only a minor contribution to resolving the existing bottlenecks in power supply ultimately led to the termination of FC activities in Guinea's electricity sector at the end of 2002. The financial contribution was reduced to the disbursed amount of EUR 1.6 million and the amount of the reduction – EUR 3.5 million – was reprogrammed along with EUR 2.3 million in funds reserved for the increase; they were then used to fund the project 'Social Marketing of Contraceptives II' (BMZ no. 2001 65 688).

Key Results of the Impact Analysis and Performance Rating

The final evaluation of the sector programme and of the FC project, which was carried out under this programme, revealed numerous deficiencies in both planning and implementation. Although the still unresolved main problem was correctly identified by the donor community, the extent of the misguided sector developments was not analyzed properly, nor were the possibilities for correcting them. The extensive political risks associated with the reform programme that was launched were underestimated. The overall contractual and institutional conditions for including the private sector in the form of an operator company proved to be inadequate and could not be corrected afterwards. Although the government of Guinea agreed to use the sector reform programme designed by the donor community as a precondition for the implementation of an investment programme, the government failed to demonstrate 'ownership.' The investment programme comprised various individual measures – some of which were poorly prepared and coordinated – of the participating donors and therefore required managerial capabilities that the project-executing agency did not possess. The donors, in turn, were not able to reach an agreement, neither on how to implement covenants and accords nor on how to assess progress with the sector reforms. Despite negative experiences with the execution of the sector programme and the lack of consent of the World Bank, several donors were willing to finance the construction of the Garafiri hydropower plant. Solely FC did not participate in the financing for the Garafiri hydropower plant; what is more, it was the only donor that refused to disburse committed FC funds because of non-adherence to the reform course and of the poor financial condition of the sector.

Even if an indicator was not defined to measure achievement of the overall objectives, the project progress and the development of the sector environment suggest that economically efficient assurance of power supplies and the institutional reform of the project-executing agency both failed. The supply gaps did not decrease despite the rehabilitation measures and the construction of additional generation capacity. The condition of the sector infrastructure and the financial situation of the power supplier hardly improved. The inadequately prepared sector reforms – which were implemented only half-heartedly – either ceased or, in some cases, were even reversed through the transfer of the sector infrastructure to the state-owned Société Electricité de Guinée (EDG).

Measured against the indicators defined to measure achievement of the project objectives, the project clearly failed. Nearly all of the criteria defined by the World Bank to rate its programme's performance failed to be met (no cost-covering tariffs, operator model a failure, etc.). Solely the fact that most of the planned investments were carried out can be considered successful to a certain extent. As the measures were not sustainable, this was a short-lived effect: the intended impacts of the investments either did not arise or arose only temporarily. In the case of investments for which financing through German FC had been planned, the disbursement of the FC funds even had to be cancelled for the largest component (load dispatcher) owing to the persistent reluctance of the Guinean government to introduce reforms, and the pledged funds had to be reduced accordingly.

Additionally, it can be noted that the programme was in line with the goals and requirements of German DC and with the sector-policy priorities and targets of the Guinean government, yet during its implementation it met with heavy political resistance and a lack of cooperativeness on the part of the recipients. Even though the project was not assigned high priority during the programme appraisal in terms of Guinea's development goals – since it did not contribute directly to satisfying basic needs – it was plausible to expect that improving the reliability of supplies in the electricity sector would improve the conditions for the development of commercial sectors. This did not happen, however. Instead, power supply in greater Conakry worsened in the past five years to such a level that the Guinean government considers it a serious risk to the economic future of essential branches such as food processing and tourism. This can be considered additional proof of the lack of sustainability of the project measures.

Based on a combined assessment of all impacts and risks described above, we have arrived at the following rating of the project's developmental effectiveness:

Effectiveness

The project objectives were (i) the establishment of financial, tariff-policy and personnel-policy autonomy required for the future operator via privatization and (ii) satisfaction of current and expected - mainly productive - demand on the basis of cost-covering tariffs through the application of a strategy for operation and expansion targeting long-term incremental costs. Measured against the indicators of achievement of the project objectives, the project is a clear failure. In 1998 the private operator SOGEL was ready for bankruptcy. After all, owing to the reluctance of the Guinean government to introduce reforms, the operator was not autonomous, neither in financial terms nor in its ability to determine tariff policy. Finally, in 2001 the private operator HydroQuebec withdrew from the company. Consequently, the privatization of the operator was reversed through its transfer back to a state-owned enterprise, to the Société Electricité de Guinée (EDG). The tariffs still do not cover the costs. Including the power deliveries that were not invoiced, the collection rate was only 40% at the end of the project. Guinea's electricity sector is facing financial collapse. Owing to insufficient operation and poor maintenance, the infrastructure for power generation, transmission and distribution is deteriorating (**subrating effectiveness: 6**).

Relevance/Significance

The overall objectives of the project were to ensure power supply in greater Conakry-Kindia in an economically efficient manner and simultaneously to encourage the institutional reform of the power supplier ENELGUI. The institutional reform of the power supplier ENELGUI was a complete failure. The overall sector conditions are utterly inadequate. Apart from an insufficient infrastructure for transmitting and distributing the generated electricity, Guinea is suffering from a massive power bottleneck that manifests itself in daily power cutoffs. In view of the existing deficit between power supply and demand, reliable and secure power supply cannot be guaranteed for greater Conakry-Kindia. Apart from insufficient funds, the main causes of the desolate situation in the sector are inefficient operation and inadequate maintenance of the existing facilities and distribution grids, and above all excessively high commercial losses in distribution and a poor collection rate. This poor collection rate is reflected in the disastrous revenue situation of the sector institutions. As the Guinean government dragged its feet when it came to initiating reforms, and in light of the desolate sector situation, the FC project was discontinued (**subrating relevance/significance: 6**).

Efficiency

In terms of the criteria of production efficiency and allocation efficiency as well, the project was a total failure. The poor collection rate combined with tariffs that do not cover the costs led to an utterly unacceptable allocation efficiency. Due to inadequate maintenance of the existing facilities and to totally inefficient operation, the production efficiency is not given. For the most part, the measures financed until the project was cancelled were without effect (short-lived effect) owing to the poor maintenance and operation, and it was impossible for a sustainable developmental impact to develop. Efficient operation is not possible in view of the conditions in Guinea's electricity sector (**subrating efficiency: 6**).

Overall, the project is a total failure. Since the Guinean government was unwilling to perform reforms, the project was discontinued and undisbursed FC funds were reprogrammed (**performance rating: 6**).

General Conclusions

Generally it can be noted that the approach and design of reform processes stipulated in covenants and implementation agreements ought to be based on a realistic estimate of the willingness of the political stakeholders to introduce reforms as well as on the overall conditions necessary for the initiation of these reforms. Additionally, in complex investment programmes involving several donors/financing institutions, it is essential to take into consideration or to ensure that the individual measures are in harmony and are coordinated adequately during implementation, that the donors act in concert, and that the programme-executing agency is principally able to manage the project sufficiently well.

The project offers strong confirmation of the realization that if the overall sector conditions are insufficient, investments in grid-based electricity supply facilities can at best generate a short-lived impact, but that sustainable impacts will be impossible to achieve.

Legend

Developmentally successful: Ratings 1 to 3	
Rating 1	Very high or high degree of developmental effectiveness
Rating 2	Satisfactory developmental effectiveness
Rating 3	Overall sufficient degree of developmental effectiveness
Developmental failures: Ratings 4 to 6	
Rating 4	Overall slightly insufficient degree of developmental effectiveness
Rating 5	Clearly insufficient degree of developmental effectiveness
Rating 6	The project is a total failure

Criteria for the Evaluation of Project Success

The evaluation of the "developmental effectiveness" of a project and its classification during the ex-post evaluation into one of the various levels of success described in more detail below concentrate on the following fundamental questions:

- Are the project objectives reached to a sufficient degree (aspect of project **effectiveness**)?
- Does the project generate sufficient significant developmental effects (project **relevance** and **significance** measured by the achievement of the overall development-policy objectives defined beforehand and its effects in political, institutional, socio-economic and socio-cultural as well as ecological terms)?
- Are the funds/expenses that were and are being employed/incurred to reach the objectives appropriate and how can the project's microeconomic and macroeconomic impact be measured (aspect of **efficiency** of the project concept)?
- To the extent that undesired (side) effects occur, are these tolerable?

We do not treat **sustainability**, a key aspect to consider for project evaluation, as a separate category of evaluation but instead as a cross-cutting element of all four fundamental questions on project success. A project is sustainable if the project-executing agency and/or the target group are able to continue to use the project facilities that have been built for a period of time that is, overall, adequate in economic terms, or to carry on with the project activities on their own and generate positive results after the financial, organizational and/or technical support has come to an end.