

AID-FOR-TRADE: CASE STORY

AFRICAN DEVELOPMENT BANK GROUP

NEPA-CEB Interconnection Project

Case Story Prepared for the 3rd Global Review on Aid for Trade

Date of submission: January 31, 2011
Region: West Africa
Countries: Nigeria, Benin and Togo
Type: Project
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SUMMARY

The African Development Bank's support to Aid for Trade is guided by the Bank's strategic framework on regional integration. Within this framework, investments in multicounty physical infrastructure, such as transport, energy, ICT and water facilities, are seen as key in promoting integration by fostering the free movement of goods, services and persons, and promoting cross-border scale economies and efficiency. In this context, the NEPA-CEB Interconnection Project, jointly financed by the AfDB, the Banque Ouest Africaine de Developpement (BOAD), the Economic Community of West African States (ECOWAS), the Federal Government of Nigeria (FGN), and the Communauté Electrique du Benin (CEB), can be considered a successful example of the AfDB's support to Aid for Trade.

Prior to launching the project, studies had shown that an interconnection between the electricity grid of the National Electric Power Authority (NEPA) in Nigeria and that of the Communauté Electrique du Benin (CEB), which serves Togo and Benin, would be technically feasible and would represent the most economic alternative available for supplying power to Togo and Benin, which had been facing increasing difficulties in securing an adequate and reliable energy supply. While supporting the overall goal of integrating African transmission grids to facilitate cross-border energy flows and encouraging regional economic integration and trade, the project helped to secure Benin's and Togo's supply of electricity at a minimum cost, created a new and steady source of income to Nigeria through energy export and generated new economic opportunities in the three concerned countries and the region.

ISSUES ADDRESSED

- Availability and reliability of power supply to Togo and Benin;
- Inclusion of Nigeria into the West African Power Pool (WAPP);
- Interconnection of the electricity grid of West African countries to facilitate cross-border energy flows and to encourage private investment in power generation.

OBJECTIVES PURSUED

With the overarching goal of fostering regional integration and intra-regional trade through the implementation of regional operations, the NEPA-CEB Interconnection Project also aimed to contribute to the following sector goals:

- Provide an alternate source of power to Togo and Benin in order to meet the shortfall in the electricity imports from Ghana and Cote d'Ivoire and to improve voltage on the Communauté Electrique du Benin (CEB) transmission network;
- Reduce power outages in Togo and Benin during drought years and, thus, limit economic and social hardships on the population of the two countries; and

- Link the electricity grid of Nigeria to the already connected grids of Benin, Togo, Ghana, Cote d'Ivoire and Burkina Faso in order to improve reliability of supply and optimize production cost within the sub-region.

DESIGN AND IMPLEMENTATION

The project consisted of the following components:

- Construction of a transmission line from Ikeja West in Nigeria to Sakete in Benin;
- Extension of an existing substation in Ikeja West;
- Provision of consultancy services to NEPA and CEB to review contractors' designs, calculations and drawings, supervise the installation of equipment, monitor environmental measures, train NEPA and CEB staff on environmental management, and assist in the testing and commissioning of the project installations.

The roles and responsibilities of each party were clearly defined, including project management, implementation structure, and institutional arrangements for supervision, monitoring and evaluation. It was defined that NEPA and CEB would take responsibility for overall implementation of the project, under the AfDB's supervision. To this end, a Project Implementation Unit (PIU), headed by a project manager, was set up in each institution; and a Joint Project Implementation Committee (JPIC), consisting of the Executive Director of NEPA, the Director of Design and Development from the CEB and the project managers of the two PIUs, was established to oversee and coordinate the activities of the two PIUs.

In addition, it is relevant to note that the project was designed as part of a wider project, which would allow greater power exchange between countries in the West African sub-region. The transmission line from Ikeja West to Sakete would be later extended to Togo, Ghana and Côte d'Ivoire, where it would be connected to the existing transmission grids in those countries. Côte d'Ivoire already supplied electricity to some parts of Burkina Faso through a line that would be extended to Ouagadougou. Another line would be erected between Côte d'Ivoire and Mali to link with a transmission grid extending to Senegal and Mauritania. In this sense, although this was a single operation involving three countries, it was designed to magnify positive spillover effects into other countries in the sub-region by taking into account wider regional objectives and goals for energy integration.

PROBLEMS ENCOUNTERED

Problems faced by the NEPA-CEB Interconnection Project arose from both unrealistic assumptions made at the project appraisal stage and from implementation challenges, which tend to be common in projects of this magnitude.

First, two assumption problems threatened the sustainability of the project:

- It had been envisaged that Nigeria would have excess capacity that would allow it to export power to CEB without constraints. The projected generation capacity expansion, however, did not materialize. At the project completion stage, Nigeria had an available generation capacity that was substantially below the projections. Despite the serious internal deficits, Nigeria still managed to meet its obligations under the project;

- It was assumed that efficient power distribution companies would result from sector institutional reforms in Togo, Benin and Nigeria, but this only materialized in the cases of Togo and Benin.

In terms of implementation challenges, the following can be cited:

- Contractor performance was below expectation due to contact changes. For instance, the contractor for the Nigeria part was changed midway through the project, while the contractor for the Benin side kept changing its name. These factors resulted in procurement and, consequently, implementation delays; which frustrated some stakeholders;
- Despite the fact that several coordination meetings were called to enhance project implementation and allow for early detection of potential problems, not all stakeholders participated fully in the meetings. As a result, problems could not be addressed on time, also resulting in implementation delays;
- Although some training was provided as part of the project, it did not fulfill the needs of the staff managing the power stations. Upon project completion, the Bank was informed that further training would be required to enable effective operation of the newly implemented systems, with which the station staff was not familiar;
- The co-financiers of the project (BOAD and ECOWAS Fund) did not make explicit efforts to harmonize instruments, systems and/or approaches. Discussions with other donors revealed that they preferred using their own systems focusing on their own portion of the project.

FACTORS FOR SUCCESS

In general, the main factors that contributed for the successful implementation of the NEPA-CEB Interconnection Project were the strong ownership and commitment portrayed by all countries involved, as well as the existence of an overarching regional objective of energy integration. It is widely recognized that regional operations are more complex, more time-consuming and costlier to prepare and supervise than single country operations. This is mainly due to the inherent complexity and higher transaction costs of negotiating with multiple stakeholders. In this sense, the fact that countries clearly recognized the benefits of integration from the onset of negotiations, coupled with the fact that the project was designed as part of the wider regional integration agenda, greatly facilitated the achievement of a consensus and allowed for a smoother implementation of this particular project when compared to other regional operations.

Specifically, all parties involved satisfactorily performed their duties under the project. Despite constant changes in the composition of the management team, the AfDB ensured institutional continuity and carried out its supervisory role throughout the implementation of the project, while also guaranteeing that measures identified in the environmental and social impact assessment were properly implemented. Executing agencies and project implementation teams also satisfactorily managed the project in spite of implementation constraints arising from delays in disbursements and problems with contractors. They were responsive to Bank supervision findings and recommendations and collected the necessary information to allow for proper

monitoring and evaluation. Finally, the co-financiers also fulfilled their obligation under the project.

Lastly, it is important to highlight the engagement of the local communities that were affected by the project as an important factor for success. Measures to mitigate negative social and environmental effects were designed and implemented with the participation of village leaders through the organization of seminars and information campaigns, which greatly increased ownership of the project.

RESULTS ACHIEVED

The NEPA-CEB Interconnection project successfully delivered its expected outputs (i.e. construction of the transmission line, extension of substations and effective provision of consultancy services, while mitigating negative environmental and social impacts), which ensured the achievement of the expected outcomes (i.e. the interconnection between Nigeria, Benin, and Togo improved the lives of people in each of the countries through increased energy availability. It has also provided a steady source of income to Nigeria through energy export). Most important, however, are the additional results achieved through this project, which are in line with the goals and objectives of the Aid for Trade initiative:

- On the Benin side, the project had a significant impact on poverty levels in the project area through the creation of economic opportunities. As power supply became available and reliable, hotels and other related businesses started operating, generating new employment opportunities and increasing household incomes.
- On the Nigerian side, the benefits are more at the national level since revenues collected from the sale of electricity accrue to the national utility and the Federal Treasury. It is interesting to note, however, that there has been increased cropping alongside the rights of way (ROW) as farmers believe that their crops are protected from wildlife by the presence of the transmission line. In addition, the offered compensation for removal from the ROW has resulted in some substandard accommodation being destroyed and funds being made available to construct better dwelling places.
- In Benin and Togo the availability of electricity has positively impacted on the trading activities for farmers in general, and women in particular, as produce can be preserved for longer periods of time. Other social benefits that commonly arise from electrification have also been observed, and are especially notable in the town of Sakate, which is growing at a fast pace.

LESSONS LEARNED

Many lessons can be drawn from the NEPA-CEB Interconnection Project, some specific to energy sector projects, others related to the design and implementation of regional operations. For the purpose of this case story, it is arguably more interesting to analyze the lessons that can be drawn for future projects that are multinational in nature, as regional integration clearly has the potential for positive externalities given the lack of economies of scale in most countries in Africa. In this sense, in terms of design and implementation, the following lessons should be highlighted:

- Country ownership and political commitment to the regional goals of the project should be assessed and ensured at the outset through close dialog with participating countries;
- A participatory process for projected beneficiaries / impacted communities should be included during project preparation to enhance ownership;
- A detailed capacity assessment should be conducted prior to appraisal to ensure that assumptions are realistic and will not jeopardize the sustainability of the project;
- If capacity constraints are identified, a specific training/capacity building program should be planned and included as a key project component starting at the design stage, not later;
- Implementation periods should also be realistically projected, and timeframes should be adjusted to prevent stakeholders from getting frustrated with constant delays caused by the inherent complexities of regional operations;
- To prevent delays, all requirements for implementation, including recruitment of project management personnel, consultants, contractors and experts should be finalized prior to approval, as these steps usually take longer for regional operations than for single country operations;
- In addition, procurement and disbursement practices need to be clearly understood by project implementation personnel and harmonized across borders to speed up implementation. For this specific project, it is interesting to note that both Benin and Nigeria experienced serious challenges in clearing project equipment at the port, which caused significant project delays. In this sense, although this was not a Trade Facilitation project in the strict definition of the term, it clearly showed the need to reduce regulatory and legal barriers, as well as simplify and harmonize rules that regulate cross-border operations.

CONCLUSION

The NEPA-CEB Interconnection Project delivered for the African Development Bank's mission to improve productivity and foster growth through regional integration, in line with the Bank's mandate under the Aid for Trade initiative and its recognized comparative advantage in infrastructure operations. For the countries of Nigeria, Benin, and Togo, there were benefits in terms of energy infrastructure, energy supply, and private sector development, which translated into new trade opportunities and increased capacity to trade.

It is widely recognized that trade is an important engine for growth, and that development partners should stand ready to respond to requests for support through programs and projects that support trade development. The challenge, however, is to properly design and implement these projects to achieve maximum impact. In this sense, the NEPA-CEB Interconnection Project provides important lessons on what makes a multicountry project aimed at fostering trade and regional integration succeed, while also raising issues that could potentially make it fail. It provides a good case for where development and commercial objectives were achieved, but with just enough challenges and shortcomings involved to inform future projects.

Of all lessons, perhaps the most valuable is the need to ensure country ownership and political commitment. This case story has shown that this is more easily achieved when the countries themselves are able to identify their needs, develop a strategic framework through which these needs can be addressed and formulate a clear demand to development partners. Through the

experience of the NEPA-CEB Interconnection Project, it became clear that this is possible not only at the country level, but is also attainable at the regional level. Through its support to the Aid for Trade initiative, the African Development Bank will continue to assist its member countries in identifying needs, and will continue to provide the funding and technical knowledge necessary to address them, both locally and regionally.